

**Lives Saved Report: Tobacco harm reduction and better treatment could **save nearly 880,000** lives up to 2060 in Malaysia and Uzbekistan.**

**REPORT SUPPORTED BY INTERNATIONAL AND LOCAL TOBACCO HARM REDUCTION EXPERTS**

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**NEARLY 880,000 LIVES COULD BE SAVED UP TO 2060 BY  
ACCELERATING BETTER TOBACCO CONTROL POLICIES IN  
MALAYSIA AND UZBEKISTAN.**

Report supported by International and Local Tobacco Harm Reduction Experts, August 2024

# Contents

<b>1. Executive Summary</b>	4
<b>2. Rationale</b>	6
<b>3. Benefits of Tobacco Harm Reduction (THR)</b>	8
<b>4. Analysis of key indicators in Malaysia and Uzbekistan</b>	10
<b>5. The Approach</b>	16
<b>6. Potential Lives Saved by THR across Malaysia and Uzbekistan</b>	19
<b>7. What actions are needed to save lives?</b>	23
<b>8. About the Authors</b>	27
<b>9. Acknowledgments</b>	32
<b>10. References</b>	33

# 1. Executive Summary

**GLOBAL PROGRESS TO END SMOKING HAS STALLED. CURRENT APPROACHES TO TOBACCO CONTROL HAVE NOT BEEN SUFFICIENT. THE WORLD HEALTH ORGANIZATION (WHO) PROJECTS THAT 1.27 BILLION PEOPLE GLOBALLY WILL SMOKE BY 2025. OVER EIGHT MILLION ANNUALLY WILL DIE FROM TOBACCO USE. THIS IS UNACCEPTABLE FROM A PUBLIC HEALTH PERSPECTIVE.**

This report focuses on two countries – Malaysia and Uzbekistan. A total of 66 million people live in these countries. Thousands die prematurely every year because they use tobacco products.

WHO projects that smoking prevalence in Malaysia will increase, from 29.7% in 2020 to 30% in 2025 and for Uzbekistan, a small decrease from 14.6% in 2020 to 10.2% in 2025.

Data presented shows that tobacco use contributes to several major causes of death in these countries that are set to increase over the next few decades. These include lung and oral cancer, COPD, heart disease, and stroke. They will impose significant human and economic costs.

The report considers how tobacco harm reduction (THR) products could reduce this burden. THR products use nicotine without the deadly exposures that cause harm. THR products (e-cigarettes/vapes, heated tobacco products, snus, oral nicotine pouches, and e-shisha products) are rapidly gaining traction among consumers worldwide. But in most countries, these innovations have not yet been embraced by physicians and governments as key to cutting premature deaths.

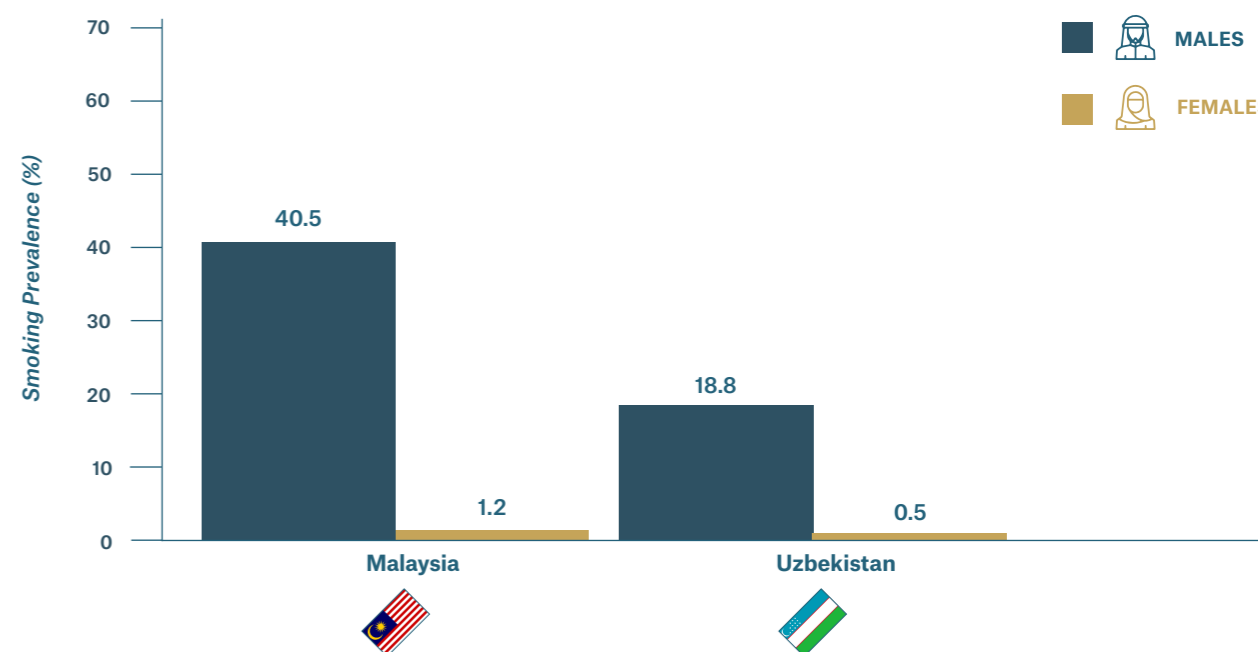
The report comes as the quality of evidence on the benefits of smoking cessation and THR has strengthened. Cessation at every age is associated with longer survival, and switching to THR products is almost twice as effective for cessation as nicotine replacement therapies. While long-term studies on the potential positive health effects of switching to THR are still needed, results of studies using biomarkers of future diseases are promising.

This report also comes at a time when many countries have recently reversed bans on many THR products and liberalized their approach to THR. New and innovative THR products are being developed worldwide and its role in smoking cessation and harm reduction have been well documented. A further sign of growing acceptance of the value of THR and the demand for them by consumers.

We calculated the combined impact of embracing THR, better cessation services, and improved lung cancer treatment in the two countries on long term trends in health.

The analysis shows that over 880,000 lives could be saved by 2060 through these interventions, compared to continuing with traditional tobacco control alone.

Figure 1: Adult smoking rates by sex, 2023



**Data Source:** WHO report on the global tobacco epidemic 2023 country profiles  
**Malaysia:** <https://www.who.int/publications/m/item/tobacco-mys-2023-country-profile>  
**Uzbekistan:** <https://www.who.int/publications/m/item/tobacco-uzb-2023-country-profile>

To achieve these gains, key actions are needed, including:

- **Activating health professionals (especially physicians) to communicate the benefits of THR to patients in all clinical encounters, to counter disinformation about nicotine and the value of THR, and to develop a regional equivalent of the Royal College of Physicians report on THR and vapes.**
- **Encouraging risk-proportionate regulation: Governments should continue to revise regulations to improve access to less harmful nicotine / THR products and invest in national science and research to advance THR.**
- **Strengthening consumer representation: Creating independent, science-based consumer groups able to advocate for their needs, based on sound science.**
- **Where appropriate, involving religious communities: Supporting religious leaders to guide their communities to quit smoking and support tobacco harm reduction.**

Embracing THR, smoking cessation, and improved lung cancer treatment represents a major opportunity for Malaysia and Uzbekistan to dramatically improve the health of its populations.

## 2. Rationale

### GLOBAL PROGRESS TO END SMOKING HAS STALLED

Current approaches to tobacco control have stalled. The World Health Organization (WHO) projects that 1.27 billion people globally will smoke by 2025<sup>1</sup>, and that tobacco use will kill 8.7 million annually.<sup>2</sup> Deaths are projected by WHO to increase to 10 million in five years before declining to about 6.5 million by 2060.<sup>3</sup> *This is not what public health success looks like.*

We focus on two countries **Malaysia and Uzbekistan.**



Malaysia



Uzbekistan

These are largely Muslim societies with cultural similarities and comparable lifestyle behaviours, but with widespread variations in resources and levels of economic development. These factors have an impact on the use, trends, and types of tobacco products used in the region.

Based on the [WHO report on the global tobacco epidemic, 2023](#), in 2021 Uzbekistan had an adult daily smoking prevalence of 8% and Malaysia 17%. These figures obscure large differences in tobacco use by sex. As seen in Table One, while Malaysia has a male smoking prevalence of 40.5%, the female smoking prevalence is only 1.2%. In Uzbekistan, 18.8% of males and 0.5% of females smoke.

This report aims to provide an alternative vision of what is possible. We consider the benefits of interventions based on tobacco harm reduction (THR) products, which include nicotine without the deadly exposures that cause the harms. As stated in a recent article by 15 past presidents of the Society for Research on Nicotine and Tobacco (SRNT), *“Nicotine is the chemical in tobacco that fosters addiction. However, toxic constituents other than nicotine, predominantly in smoked tobacco, produce the disease resulting from chronic tobacco use.”*<sup>4</sup>

These products include vapes, oral nicotine pouches and heated tobacco products available in all these countries. They are gaining traction with consumers but are not yet embraced by physicians and governments as key to cutting premature deaths. We also consider the benefits of better treatment for lung cancer, knowing it accounts worldwide for 2.5 million cases and 1.8 million deaths a year.<sup>5</sup>



### WHO NEGLECTS THE LIFE-SAVING POTENTIAL OF TECHNOLOGICAL INNOVATION

The WHO Framework Convention on Tobacco Control (FCTC) is the first international treaty negotiated under the auspices of WHO. FCTC has led international control efforts for over two decades. Decisions taken at its governing body's 2024 gathering (known as COP10) focused on a variety of worthy issues, including environmental effects of tobacco cultivation and cigarette filters, and guidelines for tobacco advertising and media promotion.<sup>6</sup> However, COP10 did not discuss tobacco harm reduction (THR). Nor did it address the role of innovation and technology improvements that could reduce tobacco harms, and the need to adapt policies as these become available.<sup>7</sup>

This omission from WHO's first treaty, not to elaborate on THR methods, has had two unfortunate implications. First, it perpetuates a view among public health experts that innovation and new technology is irrelevant to ending smoking. Second, it implies that equity in access to effective, life-saving technologies is not relevant in tobacco control. That partly explains why access to nicotine replacement therapies (NRT) remain paltry across LMICs.<sup>8</sup>

We have seen remarkable progress across the fields of biotechnology, pharmaceutical innovation and diagnostics led by private companies and supported in part by leading health research funders like the U.S. National Institutes of Health (NIH). The result is that a range of THR products have met the United States Food and Drug Administration (USFDA) criteria of being *“appropriate for the protection of public health.”*<sup>9</sup> They include four major categories: heated tobacco products, e-cigarettes, snus, and oral nicotine pouches. All of them use nicotine. None involve combustion.

All substantially reduce exposure to the toxic substances in combustible cigarettes.<sup>10,11</sup> One new addition, a charcoal-free shisha, represents a unique potential contribution for tobacco harm reduction in those countries where it is available, notably in the Middle East.<sup>12,13</sup>

### 3. Benefits of Tobacco Harm Reduction (THR)

#### THE QUALITY OF EVIDENCE ABOUT THE BENEFITS OF THR FOR CESSATION AND HARM REDUCTION HAS STRENGTHENED

In recent months, leading medical journals have published views that support the value of smoking cessation and tobacco harm reduction.

Cho and colleagues, writing in NEJM Evidence<sup>14</sup>, draw on four national cohorts involving 1.48 million people followed for 15 years to produce updated data on the benefits of adult cessation by age. They state that *“Cessation at every age was associated with longer survival, particularly cessation before 40 years of age.”*

Cho et al. shows no differences in survival between men and women who never and formerly smoked before age 40, compared to a decade difference among those who quit between 50-59. Note that in the older age group, former smokers still show a decade advantage in survival compared to current smokers. No other public health interventions can achieve this for people at age 50.

Pair this with a Korean study from JAMA Network Open, focused on cancer risk following cessation. Almost three million people were followed for over 15 years. Regardless of quitting age, a significant reduction in cancer risk was observed.<sup>15</sup>

The Lancet<sup>16</sup> and the New England Journal of Medicine<sup>17</sup> each recently carried articles calling for a greater focus on the value of THR for cessation. Beaglehole and Bonita (both previous directors of chronic diseases at WHO), writing in The Lancet, make the case for WHO to adopt THR to save lives. As they note, *“The FCTC does not prohibit harm reduction approaches but leaves it up to countries to decide how to regulate e-cigarettes and other novel nicotine products.”*

Further, *“WHO’s lack of endorsement of tobacco harm reduction limits healthier choices for the 1.3 billion people globally who smoke and who are at an increased risk of early death.”*

Nancy Rigotti of Harvard Medical School, writing in the NEJM, suggests that we have reached a *“tipping point”* in the quality of trial evidence, that requires physicians to *“acknowledge this progress and add e-cigarettes to the smoking cessation toolkit.”* What she says about e-cigarettes also in our view, applies to all categories of THR.



#### WHY DOES THIS MATTER FOR THR?

Multiple studies, and Cochrane systematic reviews<sup>18</sup>, conclude that e-cigarettes (vapes) are almost twice as effective as achieving cessation than NRTs. In short, current evidence suggests that e-cigarettes are the most widely available effective means for smokers to quit. Cho et al.’s comments in the NEJM about the benefits of smoking cessation at every age do not differentiate between cessation methods; they apply to quitting with THR products or with NRTs.

More studies are needed to thoroughly assess the effectiveness of snus, oral nicotine pouches, and heated tobacco products as cessation interventions. However, the United States’ FDA has granted *“modified risk tobacco product”* status to some oral and heated tobacco products based on submitted scientific evidence.<sup>19</sup> Real-world evidence also exists, including meaningful reductions in cigarette smoking in countries such as Sweden and Japan due to switching to THR products.<sup>20</sup>

Because these are newer technologies (except for snus), we do not have studies on long-term effects of switching to THR products. In the meantime, we can look to the plethora of impressive studies using biomarkers of outcomes that have high predictive value for cancers, respiratory and heart disease.<sup>21,22,23</sup>





These studies are used by companies in their FDA applications in the United States and deserve to be cited and used more extensively by the public health community when motivating policy makers.

#### COUNTRY-SPECIFIC STUDIES OF LIVES SAVED ARE NEEDED TO DRIVE NATIONAL CHANGE

Across diverse disciplines, there is a long history of using rigorous methods to provide data on alternative futures.<sup>24</sup> Such *“foresight studies”* provide policy makers and the public a compelling vision of a future that is better than the status quo and is possible through the application of knowledge and interventions available today. We apply such an approach to show that it is possible to influence the course of the tobacco epidemic.

# 4. Analysis of key indicators in Malaysia and Uzbekistan

**Table 1: Demographic and development data for Malaysia and Uzbekistan**

	 Malaysia	 Uzbekistan
Gross Domestic Product GDP/capita in thousands \$	11.6	2.5
Education (years)	10.7	11.9
Population in millions	31.8	34.2
<b>2021 Life Expectancy (Males/Females)</b>		
 MALES	70.4	69.9
 FEMALES	75.7	75.1



**Data source:** IMHE country profiles.

<https://www.healthdata.org/research-analysis/health-by-location/profiles> and World Bank for GDP - <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD> and UNDP - <https://hdr.undp.org/data-center/specific-country-data#/countries/>

GDP per capita across these countries ranges from a low of \$ 2,496.1 in Uzbekistan, to \$ 11,648.7 in Malaysia. Life expectancy exceeds 75.7 in Malaysia and 75.1 in Uzbekistan.



**Table 2: Top five risks underpinning death, disease, and disability in Malaysia and Uzbekistan**





	 Malaysia	 Uzbekistan
Rank (2021)		
1	High BP	High BP
2	High fasting plasma glucose	Diet
3	TOBACCO	Malnutrition
4	Diet	Air Pollution
5	High BMI	High BMI

**Data source:** IMHE country profiles. <https://www.healthdata.org/research-analysis/health-by-location/profiles>

**BP = Blood Pressure, BMI = Body Mass Index**

Table 2 shows that tobacco use features as one of the top five risks across the two countries and remains in the top ten as number 8 in Uzbekistan. Diet-related and clinical factors related to chronic disease feature strongly as major risks driving the burden of disease, with high blood pressure as the top risk across the board.

**Table 3: Smoking rates and numbers of smokers in Malaysia and Uzbekistan**

	 Malaysia	 Uzbekistan
<b>Smoking Prevalence (%)</b>		
 MALES	40.5	18.8
 FEMALES	1.2	0.5
<b>WHO estimated 2025 prevalence</b>	20	10.2
<b>WHO Survey Year</b>	2019 15-75 yrs.	2019 18-69 yrs.

**Data source:** Smoking Prevalence and WHO survey year: WHO report on the global tobacco epidemic 2023 country profiles

**WHO estimates 2025 prevalence:** WHO global report on trends in prevalence of tobacco use 2000-2030 (<https://www.who.int/publications/i/item/9789240088283>)

Note that there are very large differences between male and female smoking rates. The opportunity to ensure that women maintain such low rates demands greater support to efforts to promote their behaviour as the desired social and health goals. Industry should be required to show that they are not marketing any tobacco or related products to women in much the same way they are required to do this for youth. The male smoking rates, especially those present in Malaysia are among the highest in the world, and reflect smoking rates last seen in the UK well over 40 years ago.



**Table 4: Diversity of tobacco use and harm reduction products in Malaysia and Uzbekistan**

Traditional Tobacco	Reduced Risk Option	Local & Popular Brands
Cigarettes, Cigar, Pipe Tobacco in Uzbekistan	Vapes, Heated Tobacco Products	Malaysia - NCIG, RELX
Shisha, Huqa/Hookah	Limited options in Uzbekistan	
Chewable Tobacco, Nasvai, Naswar, Nass	Nicotine Pouches	

**Data source: Malaysia** ([https://globalactiontoendsmoking.org/wp-content/uploads/2022/02/Malaysia\\_Country\\_Report\\_02.0822.pdf](https://globalactiontoendsmoking.org/wp-content/uploads/2022/02/Malaysia_Country_Report_02.0822.pdf))

**Uzbekistan** ([https://globalactiontoendsmoking.org/wp-content/uploads/2024/02/Uzbekistan\\_country\\_report\\_3.21.22.pdf](https://globalactiontoendsmoking.org/wp-content/uploads/2024/02/Uzbekistan_country_report_3.21.22.pdf))

**Table 5. Top ten causes of death in 2021 in Malaysia and Uzbekistan (IHME)**  
Those strongly related to tobacco are highlighted.

	 Malaysia	 Uzbekistan
<b>Rank (2021)</b>		
1	IHD	IHD
2	Covid-19	Stroke
3	Stroke	Covid-19
4	Lower RI	Cirrhosis
5	Road Injuries	Lower RI
6	CKD	Diabetes
7	COPD	Neonatal Diseases
8	Diabetes	HyperHD
9	Lung Cancer	Road Injuries
10	Cirrhosis	CKD

**Data source:** IMHE country profiles.

<https://www.healthdata.org/research-analysis/health-by-location/profiles>

**IHD = Ischaemic Heart Disease, RI = Respiratory Infection, CKD = Chronic Kidney Disease, COPD = Chronic Obstructive Pulmonary Disease.**

Smoking is a major cause of chronic obstructive pulmonary disease (COPD), ischaemic heart disease (IHD), stroke, tuberculosis, and lung cancer deaths. The table shows the importance of other important risks: the impact of COVID 19, alcohol, diet and obesity-related, as well as road injuries. The overall burden of diseases strains the ability of health systems.



## MALAYSIA

Cardiovascular disease (CVD), reflected by ischemic heart disease (IHD) in table 5, is the number one cause of death in Malaysia. IHD is caused by several factors. These include high blood pressure, diabetes and unhealthy diets, a lack of physical activity, and genetics. An important article, *A Review of Smoking Research in Malaysia*<sup>25</sup> provides a summary of recent smoking research in this country from 1996-2015. It shows significant gaps in research. For example, most studies are small, cross-sectional, and related to youth uptake and determinants. There is a lack of clinical studies and smoking cessation interventions. The role of pharmacotherapy and of tobacco harm reduction have not adequately been studied. It addresses gaps in research capacity. Smokeless tobacco use increased to 21% among men by 2015, up from 1% in 2011. There are not many studies on shisha and chewable tobacco, which is a growing category in this country. ***“There is a need for conclusive research into the use of e-cigarettes and vaping and its role in helping smokers quit.”***



## UZBEKISTAN

Cardiovascular disease (CVD), reflected by ischemic heart disease in table 5, is the number one cause of death in Uzbekistan. Usmonova et al report in *Patterns of adult tobacco use in Uzbekistan | European Journal of Public Health | Oxford Academic (oup.com)*<sup>26</sup> that the smoking rate in Uzbekistan remains low relative to neighbouring countries, perhaps due to widespread use of cheaper nasway. The smoking rates in men (about 22-24%) and women (2%) are similar for Uzbekistan and Turkmenistan despite popular comments that Turkmenistan’s smoking prevalence is below 5% overall. This diversity of tobacco use is SIGNIFICANT, especially with the high prevalence of very toxic smokeless tobacco. ***“These findings establish a baseline for future surveys and highlight the importance of smokeless tobacco in assessing overall consumption”***. In addition, although snus is banned (but still used), the sale of oral nicotine pouches is allowed and regulated. These products could displace oral cancer-causing naswar and nass.<sup>27</sup> The *Global Action to End Smoking Report | FSU Project Overview | Global Action to End Smoking*<sup>28</sup> notes that ***“changes in smoking habits between 2008 and 2018 were not caused by the appearance on the market of new tobacco- or nicotine-containing products, but by policy changes that increased excise duties on some tobacco products at a rate higher than inflation.”***

Lastly, the potential role of religion in THR is discussed later in this report.

### NOTABLY, COPD AND LUNG CANCER MADE THE TOP TEN CAUSES OF DEATH IN MALAYSIA AND UZBEKISTAN

- 39 percent of COPD deaths in Malaysia are attributable to smoking.<sup>29</sup> (IHME).
- 54 percent of lung cancer in Malaysia and 47% in Uzbekistan are attributable to smoking.<sup>29</sup> (IHME).

## Calculating the “size of the price”: the aim

This study aims to provide national policymakers and public health experts with estimates of the value of THR, better cessation programmes, and improved access to lung cancer diagnostics and treatment in terms of measured as ***“lives saved”*** over the next three to four decades.





## 5. The Approach

We compare WHO projections of future tobacco-related deaths by 2060. These are based on continued and more effective implementation of the key components of the WHO Framework Convention on Tobacco Control (FCTC), simplified into six policy measures labelled collectively as MPOWER. Disappointingly, THR was omitted from the MPOWER<sup>30</sup> approach. The WHO projections also leave out potential improvements in the effectiveness of cessation services, as well as access to rapidly improving diagnostics and treatments for lung cancer. We focus on lung cancer for two reasons. It accounts for 2.5 million of the 8.5 million tobacco deaths, and better diagnostics and treatment suggest that within a decade, lung cancer will no longer have a five-year survival of about 10-20% but approach the survival rate of breast cancer which has reached 90% - global average of 70% (80-90% in developed countries).

Tobacco-related diseases are chronic conditions that take a few decades before the full benefits of cessation or harm reduction are visible in national data. This is a critical point to appreciate. Recent updates on the value of cessation (as described above) show that policy makers have overestimated how long it takes to achieve benefits from adult cessation: in terms of reduced overall mortality and in deaths from major tobacco related cancers.

All the expected premature tobacco deaths by 2060 will occur in current adult smokers. If no person under 18 years of age started smoking today, lives saved among youth would take until the 2060s to become visible in national mortality data. This reinforces the need to focus on the behaviours of middle-aged smokers and users of toxic smokeless tobacco products, if we seek population health gains within the next several decades. Many of these smokers will be in touch with health services for early-stage COPD, heart disease and possible cancer. This creates opportunities for secondary prevention (see below).

### RECENT APPROACHES TO ESTIMATING “LIVES TO BE SAVED”

There have been several recent efforts to model responses to the question: “*What would happen to the burden of disease if countries did embrace THR?*” These have been published by academics and industry. We refer readers to our earlier reports to obtain details:

- Lives Saved: Integrating Harm Reduction for Tobacco Control in Brazil (tobaccoharmreduction.net)
- Lives Saved: Tobacco Control & Harm Reduction in LMICs (tobaccoharmreduction.net)
- “Tobacco Harm Reduction and better treatment could save nearly two million lives in selected countries in the Middle East” (tobaccoharmreduction.net)

### WHY THIS STUDY IS IMPORTANT NOW

This study comes at a time when over a billion people smoke and THR products are used by 120-140 million people globally. Most people who use THR products live in high income countries. In these countries we now have powerful evidence of the impact of THR use on the declining use of combustibles. This has been well described for countries such as Sweden, UK, Japan, and USA.<sup>31</sup> We believe that when faced with a clear choice of policies, responsible governments will act to save lives and be supported by civil society.

### METHODS

The approaches used by seasoned “*modellers*” were reviewed and simplified to their essential elements. Details are contained in earlier reports. The key assumptions are repeated below.

### ASSUMPTIONS

The following **assumptions** are made in calculating lives saved.

**At present, NRTs are 10% effective in terms of cessation at one year. Vapes are twice as effective.**<sup>32</sup>

**The spectrum of THR products reduce toxic exposures by 80% and reduce tobacco-related causes of premature death by 70%. We use these conservative values for comparability knowing the emerging evidence from exposure assessments and the use of biomarkers of outcome show far greater levels of reduced harm are likely.**

**Lung cancer survival at five years will increase to 50% for most countries by 2050 driven by improvements in diagnosis and treatment.**

**WHO estimates that cessation services (a mix of medications and behavioural support) will be 50% effective in achieving one-year quit rates by 2035 and be available to 50% of smokers by 2045. This effectiveness projection is not aligned with research findings, but for the purpose of this study, it has been accepted as a “best case assumption”.**<sup>33</sup>

**The rate of decline in smoking will accelerate from 2035 onwards, which will lead to health impacts increasing sharply from 2045 onwards.**

**WHO trends suggest that from 2000 to 2025 smoking rates will fall by a third in men. We believe this could accelerate to 50% from 2030 in all countries.**

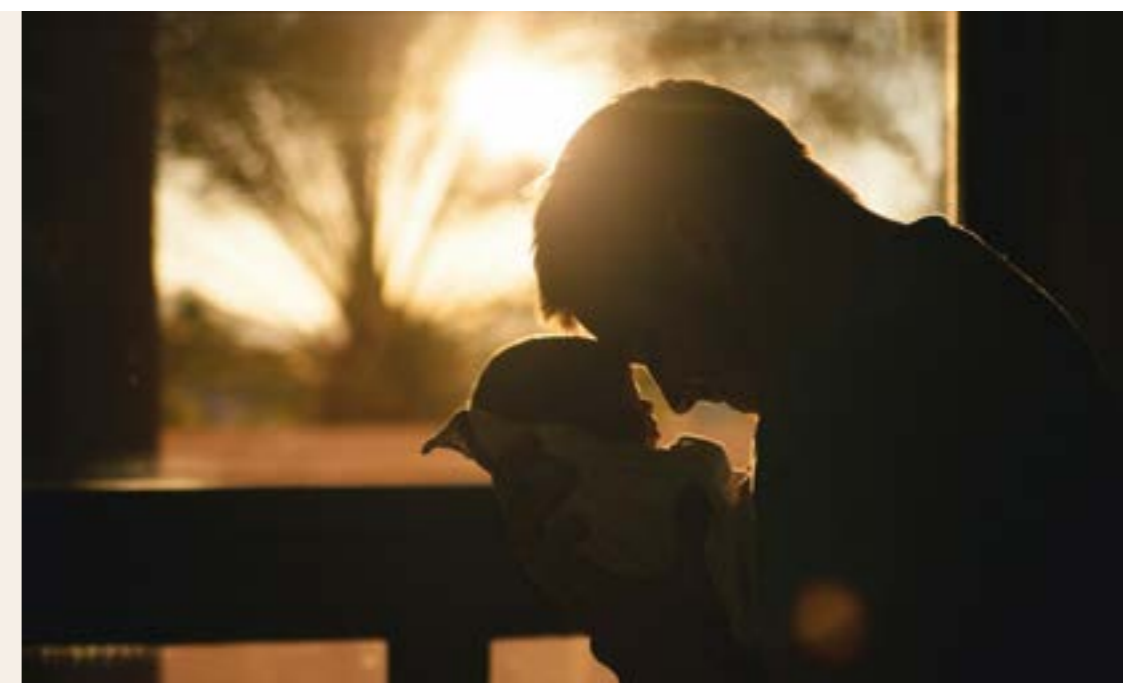
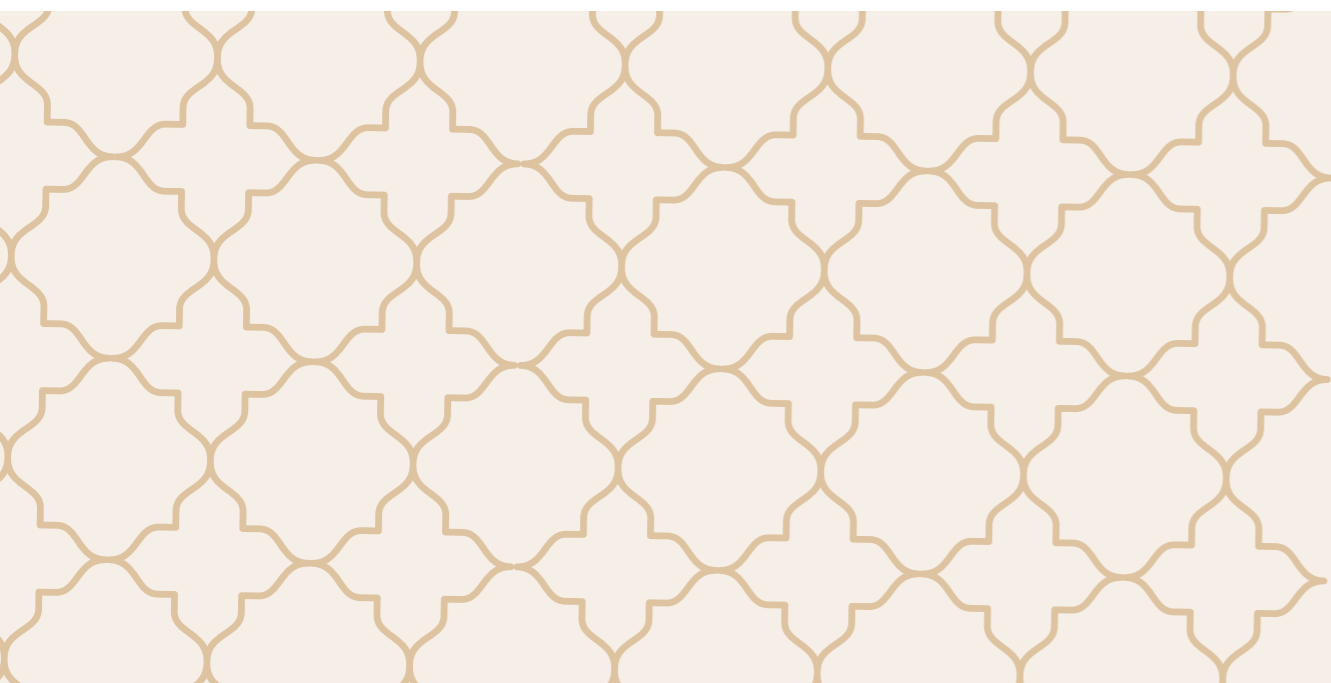
### ESTIMATES FROM ABOVE ARE USED TO MODEL THREE SCENARIOS

**SCENARIO 1:** Status quo (standard WHO-directed tobacco control). Current trends using WHO estimates. The WHO estimate of a 35% decline in global tobacco deaths from the peak of 10 million<sup>3</sup> is used as the basis for calculating country-specific estimates.

**SCENARIO 2:** Tobacco control + implementation of THR policies and availability of THR products. Trends that include THR uptake assuming that, as a group, they will lead to a 56% decline in tobacco deaths by 2060 and will become available increasingly from 2035.

**SCENARIO 3:** Tobacco control + THR uptake + improved access to diagnostics and treatment of tobacco-related diseases. Trends that include THR and better access and use of diagnostics and treatments (focused mainly on lung cancer, which killed an estimated 1.8 million people in 2020).<sup>34</sup>

The differences between the WHO projections and those using THR alone, and THR with other measures were calculated assuming a linear relationship between lives saved over the decades. This suggests that it is more likely to follow an inverse S shape with deaths accelerating beyond 2040. The cumulative number of deaths is not significantly affected by using linear extrapolation.



#### NOTE ABOUT THE QUALITY AND AVAILABILITY OF DATA

The quality of evidence used to develop THR policy needs to be methodologically sound. Polarization within the field of tobacco and nicotine science threatens the integrity of research.<sup>35</sup> Recent reviews of epidemiological and toxicological research related to THR have highlighted a range of basic concerns about methods used.<sup>36,37,38,39</sup>

Common issues include unclear hypotheses or methods not appropriate to test stated hypotheses; unsupported claims of causality; not controlling for potential confounding variables; amounts of product exposure not standardized or specified; non-representative study participants; and not considering effects of participants' previous combustible tobacco use.

Laboratory studies testing new technologies (such as vaping and heated tobacco devices) often use poorly reported or non-reproducible methods, under conditions incompatible with real-world use. Some papers have been formally retracted. Unfortunately, critiques and retractions cannot stop sloppy or slanted science from being repeatedly cited and potentially misleading policy makers, physicians and consumers.

## 6. Potential Lives Saved by THR across Malaysia and Uzbekistan

Table 6 contains the output of the expert analysis to calculate the number of lives to be saved between 2020 and 2060 if THR and related measures are implemented. These numbers represent the additional gains, beyond those WHO estimates, that will occur because of the roll-out of MPOWER. They represent a significant number of premature deaths.



Two scenarios are listed: the first includes accelerated access to THR products, while the second also includes better access to more effective NRTs and better access and treatment of lung cancer.

These numbers are indicative of what could happen if governments, health professionals, industry and consumers aligned on policies and actions. Failure to do so will leave the WHO projection in place. It was beyond this report to calculate the impact on disease and disability or the economic benefits of THR. That requires a separate, more detailed set of analyses ideally led by countries.

Note that there is growing body of evidence that shows that nicotine itself could well be beneficial for a range of neurological conditions<sup>40,41</sup> of which Parkinson's Disease is a notable one. Parkinson's is projected to have a major devastating impact across the Middle East over the next decades.<sup>42</sup>

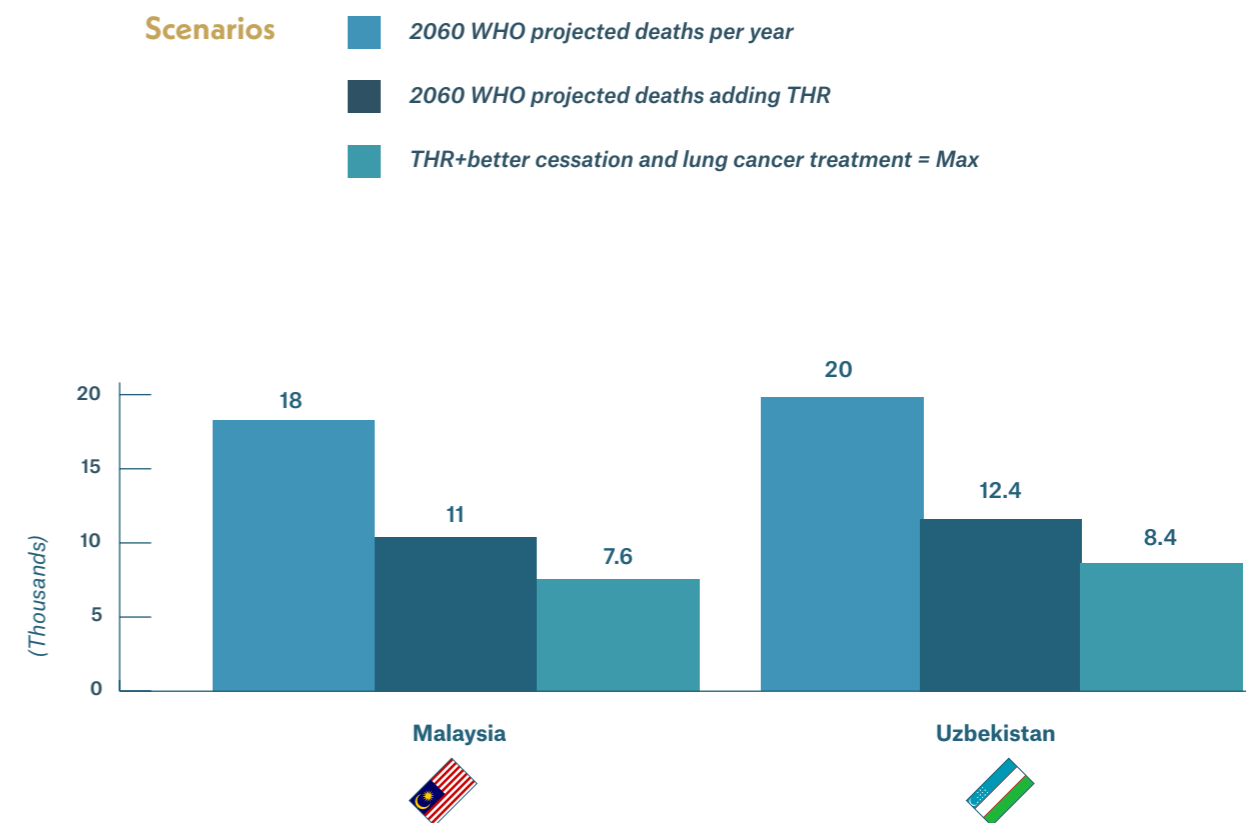
Better treatments are therefore a high priority. Of the lives saved using a background of no action, 50% will occur due to MPOWER strategies and an additional 50% due to THR, better cessation, and management of lung cancer.

**Table 6: Smoking related deaths and lives saved 2020-2060 through tobacco harm reduction, better cessation, and lung cancer treatment.**

	 Malaysia	 Uzbekistan
<b>Annual Deaths from Tobacco (Thousands)</b>		
2019	27.2	30
2060 WHO projected deaths per year	18	20
2060 projected deaths adding THR	11	12.4
THR+better cessation and lung cancer treatment = Max	7.6	8.4
<b>Lives Saved</b>		
2020-2060 total deaths - THR	280,000	304,000
2020-2060 total deaths - THR plus cessation	416,000	464,000

**Figure 2. Projected deaths from tobacco in 2060**

This figure shows the number of tobacco deaths expected to occur in 2060 using three scenarios: WHO projections using FCTC and MPOWER measures; WHO projections adding THR products; and WHO projections adding THR, smoking cessation and, lung cancer innovations.





**880**  
THOUSAND

## 880,000 lives could be saved in Malaysia and Uzbekistan

A total of 880,000 lives could be saved in Malaysia and Uzbekistan if tobacco harm reduction products were made widely available, if better cessation services were developed, and if better treatment for lung cancer was introduced over the next four decades.

This represents a major opportunity for these countries to improve the health of their populations.

## 7. What Actions are Needed to Save Lives?

This study compliments and extends related studies of South Africa, Brazil, Kazakhstan, Bangladesh, Pakistan and the Middle East. Those five countries include a population of 674 million people, with 74.5 million adults who smoke. If they were to embrace THR, improve smoking cessation methods, and more effective treatment for lung cancer, we estimate that three million lives would be saved over the next decades. Note these are over and above lives to be saved by continuing with standard WHO-directed tobacco control.

### KEY ACTIONS NEEDED INCLUDE:

- **Activating health professionals (especially physicians) to communicate the benefits of THR to patients exposed to tobacco smoke or using toxic smokeless tobacco products in all clinical encounters, to counter disinformation about nicotine and the value of THR, and to develop national equivalents of the Royal College of Physicians report on THR and vapes.**
- **Encouraging risk-proportionate regulation:** Governments should continue to revise regulations to improve access to less harmful nicotine / THR products and invest in national science and research to advance THR. Cigarettes should be substantially more heavily regulated and taxed than reduced risk products. That makes it easier for consumers to switch and improve their health.
- **Strengthening consumer representation and advocacy:** Creating and strengthening independent, science-based consumer and other advocacy groups able to advocate for their needs, based on sound science. In Malaysia groups such as the Advanced Centre for Addiction Treatment Advocacy (ACATA), The Addiction Medicine Association Malaysia and Federation of Private Medical Practitioners' Associations Malaysia (FPMPAM) have played an important role in highlighting the potential role of harm reduction in tobacco control. Likewise, in Uzbekistan groups such as the Eurasian Harm Reduction Association have been powerful advocates for harm reduction methods to be used in drug control, HIV / AIDS. Similar initiatives are needed for tobacco harm reduction.
- **Where appropriate, involving religious communities:** Supporting religious leaders to guide their communities to quit smoking and support tobacco harm reduction.

Embracing THR, improved smoking cessation methods, and improved lung cancer treatment represents a major opportunity for Malaysia and Uzbekistan to dramatically improve the health of its populations.

**Activating physicians to counter disinformation about nicotine and the value of THR, to communicate the benefits of THR to patients in all clinical encounters, and to lead policy development by publishing a major report on the state of smoking and the role of THR in ending premature deaths and disease that draws on the approaches used 60 years ago by the Royal College of Physicians.**

### **ACTIVATING HEALTH PROFESSIONALS (ESPECIALLY PHYSICIANS) TO COMMUNICATE THE BENEFITS OF THR TO PATIENTS AND COUNTER DISINFORMATION**

Physicians led in the early years of tobacco control in the UK and the USA. They were the subjects of the earliest cohorts that showed that smoking kills.<sup>43</sup> They galvanised reports<sup>44</sup> that led to the first government actions. Doctors quit in large numbers once they understood the evidence, though this varied by region.<sup>45</sup> They started cessation services for their patients, and they led the development of public health policies to end smoking.

It is time for an equivalent focus on THR in Malaysia and Uzbekistan. A recent 16-country survey on trust and health,<sup>46</sup> which included the UAE, found that physicians remain the most trusted source of information. Physicians can be at the forefront of accelerating the demise of smoking and reducing tobacco-related disease, disability, and death – if encouraged to communicate harm reduction strategies to their patients. This needs to start with correcting the massive extent of disinformation.

In a 2022 survey of 15,335 physicians in 11 countries, 77% incorrectly believed that nicotine causes lung cancer.<sup>47</sup> However, on average of over 80% of physicians were at least moderately interested in receiving training in cessation and THR.<sup>48</sup>

Little information is available specific to physicians in Malaysia and Uzbekistan. Studies to identify the distinctive perceptions and educational interests of doctors in the region are needed.

The respected polling firm Ipsos recently surveyed nearly 27,000 cigarette smokers in 28 countries regarding their views on vaping.<sup>49</sup> Misinformation has spread to such an extent that only a quarter (on average) correctly perceived e-cigarettes as less harmful than smoking. In Uzbekistan 78% perceived vaping as equivalent or more harmful than combusted tobacco.

### **PHYSICIANS SHOULD TACKLE MISSED OPPORTUNITIES FOR SECONDARY PREVENTION AMONG PATIENTS WHO SMOKE**

Millions of people are diagnosed with conditions such as COPD, IHD, early-stage cancer, stroke, other tobacco-related diseases, and schizophrenia every year in Malaysia and Uzbekistan. Over 70 percent of people with several of these conditions smoke at the point of diagnosis. A year or two after diagnosis, international research suggests that most still smoke. Tobacco cessation is either not attempted or fails. This accelerates clinical decline and substantially adds to the burden of disease and suffering experienced by patients. Physicians should review national data on this and implement programs that give high priority to providing cessation support and access to harm reduction at every clinical encounter.

### **MEDICAL AND HEALTH EXPERTS TO DEVELOP A REGIONAL EQUIVALENT OF THE ROYAL COLLEGE OF PHYSICIANS REPORT ON E-CIGARETTES AND HARM REDUCTION**

Over 60 years ago<sup>50</sup> the Royal College of Physicians published the first major report on the harm of smoking. Their voice over the decades has led policy development in the UK and around the world. Earlier this year they released their latest evidence review on e-cigarettes and harm reduction.<sup>51</sup>

It is led by physicians and is meant to aid physicians in *“how e-cigarettes can be used to support more people to make quit attempts while discouraging young people and never-smokers from taking up e-cigarette use.”* An equivalent report for Malaysia and Uzbekistan, led by prestigious medical societies and academies could galvanise needed action.

### **ENCOURAGING RISK-PROPORTIONATE REGULATION: GOVERNMENTS CONTINUE TO REVISE LEGISLATION TO IMPROVE ACCESS TO THR PRODUCTS AND INVEST IN NATIONAL SCIENCE AND RESEARCH TO ADVANCE THR**

Governments in some WHO regions have made important progress and should now consider regulating nicotine products proportionate to the risk they pose to health and in ways that maximise benefits. This would allow smokers to make healthier choices, rather than continuing to smoke, as easy as possible. Taxes should be substantially higher on deadly combustibles than on THR products.

Marketing bans and warnings should discourage use of combustibles by adults and children but provide information about benefits of THR to adult tobacco users. Access to combustibles and toxic smokeless products should be severely restricted, but THR products should be made widely accessible to adults. One under-appreciated benefit of THR is that the considerable costs of innovation, marketing and distribution are carried by the private sector.

### **GOVERNMENTS TO INCREASE INVESTMENT IN NATIONAL SCIENCE AND RESEARCH**

Most publicly funded research on THR is carried out in the US and Europe and exported worldwide. Local investment in science and scientists has three effects: it ensures that locally relevant research is developed, it leads to the creation of local expertise, and building local expertise in science leads to better informed local policies and policy makers. This has been true in all successful areas of health and science. The good news is that there are academics deeply engaged in addressing tobacco control in Malaysia and Uzbekistan to build upon.

### **STRENGTHENING CONSUMER REPRESENTATION: CREATING INDEPENDENT SCIENCE-BASED CONSUMER GROUPS ABLE TO ADVOCATE FOR THEIR NEEDS**

HIV/AIDS patients and advocates rallied for better policies under the banner of *“nothing about us, without us.”* This led to changes in government policies that included a commitment to harm reduction and led to better access to antiretrovirals. As a result, millions of people are living longer and healthier lives across LMICs. Similar progress could follow if we had effective new nicotine user groups around the world.

While there are many active nicotine user groups around the world, they have yet to galvanise into a movement with impact. Their advocacy to highlight that tobacco-related deaths can be prevented, according to this study, is a much-needed element.

A report from the Global State of Tobacco Harm Reduction identified 54 consumer advocacy groups<sup>52</sup> operating around the world. Although there are some representative groups operating in Malaysia and Uzbekistan, much more should be done to galvanise support.

## WHERE APPROPRIATE, SUPPORTING RELIGIOUS LEADERS TO GUIDE THEIR COMMUNITIES TO QUIT SMOKING AND SUPPORT TOBACCO HARM REDUCTION

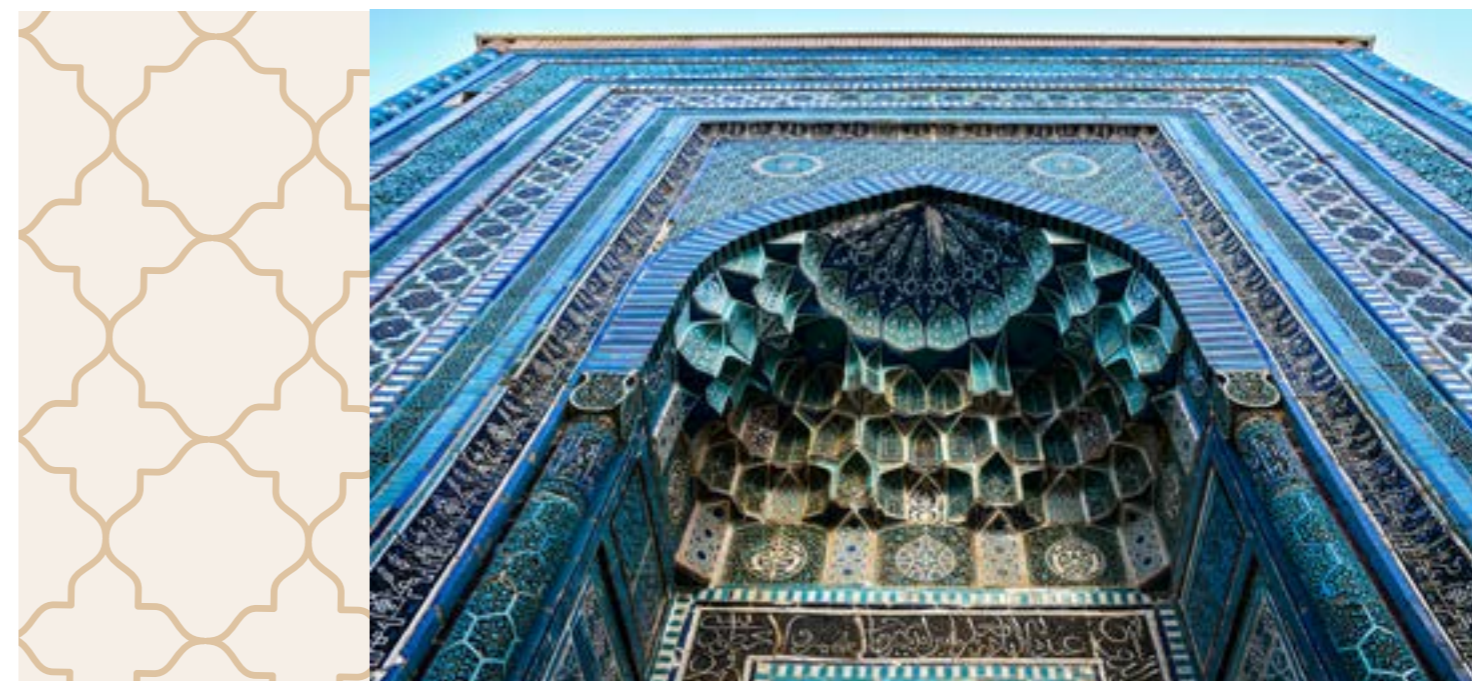
It is time to revisit and update the way Islamic scholars and leaders could support an acceleration of the need to end deaths from tobacco. This is especially important in Malaysia and Uzbekistan - where religious leaders play a vital role in promoting health.

The first and only WHO meeting on religion and tobacco was held in 1999.<sup>53</sup> The meeting was chaired by Dr M.H. Khayat, then Deputy Regional Director for the Eastern Mediterranean. The meeting acknowledged the powerful role religious leaders play in providing health advice to their communities. Of course, a quarter-century ago, there were no tobacco harm reduction options. Given that tobacco use had not spread across the world when Islam was founded, religious scholars have had to interpret texts regarding how smoking (and more recently, vaping) fits or clashes with doctrines.

Until the early 20th century, according to an article in the BMJ,<sup>54</sup> most Muslim jurists did not believe that smoking had any negative health effects. Some thought it might even aid digestion or reduce stress. As evidence of health risks increased, smoking became discouraged (mukrooh). Some scholars and institutions went further and declared smoking to be prohibited (haram).

Some published studies have considered how smoking cessation might be enhanced during Ramadan. Many Muslims perceived quitting smoking to be easier during Ramadan, when both religion and culture discourage smoking during the daytime fast, both in public and at home.<sup>55</sup> Two recent studies looked favourably at e-cigarette use for this purpose during Ramadan. One looked at vaping preferences and reasons for using e-cigarettes in the United Arab Emirates.<sup>56</sup> A majority reported starting vaping to quit smoking. Over half reported no withdrawal symptoms during the Ramadan fasting time.

The second study had a similar focus and findings but took place in Jordan.<sup>57</sup> It noted that **"Ramadan offers a good opportunity for smokers to quit, as the reported physical and psychological e-cigarette withdrawal symptoms were found to be relatively weak."** In both studies, e-cigarettes were accurately perceived as less risky than smoking.



## 8. About the Authors



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Dr. Yach is a former employee of the World Health Organization and of PepsiCo. He received his MBChB from the University of Cape Town in 1979 and his MPH from Johns Hopkins School of Public Health in 1985. In 2007, he received an honorary DSc from Georgetown University. For several years Yach led major national epidemiological initiatives in South Africa. Yach then served under Director-General Gro Harlem Brundtland, as a cabinet director where he worked on the WHO Framework Convention on Tobacco Control and the Global Strategy on Diet and Physical Activity. He led global health at Yale School of Public Health and then at the Rockefeller Foundation before becoming SVP for Global Health and Agriculture Policy at PepsiCo. After 5 years developing and leading the Vitality Institute for Prevention in New York, he founded and led the Foundation for a Smoke Free World. Currently Yach is an independent global health consultant focused on ending smoking, supporting mental health and promoting healthy diets. He has served on advisory boards of the World Economic Forum, Clinton Global Initiative, and Wellcome Trust.



### PROF. DR. SHARIFA EZAT WAN PUTEH - MALAYSIA

Professor of Hospital Management and Health Economics. Her main interests are in the areas of health policy, health inequality and health economics. She has been appointed as a casemix consultant, ICD coding specialist to conduct research & capacity building in Health Systems in developing countries. She has sat on previous posts, as the Deputy Dean, as the Honorary Fellow to Tun Fatimah Hashim Women's Leadership Center UKM and Chairman to Technical Advisory Committee for Health Technologies, Economic Evaluation (TACHTEE), MoH. She was appointed as a consultant to the Ministry of Human Resource on Burden of Occupational Related Diseases; Grant reviewers with the Ministry of Education (MoE), consultation with MoE on the issue of vape use among university's candidates, a panel auditor for local universities with SETARA Ministry of Education, the Ministry of Health on Cluster Hospital efficiency study and Prime Minister's Department on Prevalence of Autism among children in Malaysia.

She is a reviewer of other journals, locally and abroad and published papers locally and abroad, regularly writes in newspapers, chapters, books and has appeared in the media for issues relating the care of community, health financing and Alternative Nicotine Products. She is an ardent advocate on harm reduction in Malaysia and is part of the regional harm reduction experts in Asia Pacific. Special interest Community medicine, health economics, harm reduction and health inequality.



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He has a particular interest in strengthening Health Care and national reform on the development and implementation of a new Primary Health Care system through, great experience of training which has involved carrying out needs assessments, designing training curricula, running training workshops. Implementing EBM as part of Health Care Quality Improvement; Bioethics, Health Management and Economics, Sociology and Legal Rights aspects of Health Care.

Working as independent consultant in international health for a variety of funding agencies including World Health Organisation, UNICEF, European Community AIDS Task Force, ADB and World Bank. Dr. Asadov's research has been widely published and he speaks fluent Uzbekistan, Russian and English.



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#### **PROF. RICCARDO POLOSA - ITALY**

Riccardo Polosa is full professor of internal medicine at the University of Catania and founder of the Center of Excellence for the Acceleration of Harm Reduction.

A full professor of internal medicine at the University of Catania with a specialist role as a respiratory physician, clinical immunologist, allergist and rheumatologist, Polosa is also the founder of the Center for Tobacco Research at the University of Catania, where contracted research staff conduct high-profile clinical and behavioural research. The focus of his academic research has been historically centred upon the investigation of mechanisms of inflammation,

biomarkers of disease activity, and novel drug target discovery in respiratory medicine (asthma, COPD, rhinitis) and clinical immunology (allergic and autoimmune diseases). This has culminated in the participation of his research group in large EU-funded Pan-European research consortia. Nonetheless, over the last 15 years, his main research interest has progressively shifted in tobacco-related diseases, smoking prevention and cessation, tobacco harm reduction and e-vapor products.

More specifically, he has been involved in the behavioural, clinical, physiological and toxicological evaluation of e-cigarettes for over 10 years. PI of the first RCT in the world about effectiveness and tolerability of e-cigarettes (the ECLAT study), he is the most prolific author in the field of e-cigarettes, according to recent bibliometric research. He designed and conducted dozens of research studies, working with smoking cessation specialists, clinical psychologists, experienced vapers, epidemiologists, biostatisticians, chemists, toxicologists and biologists from all over the world. He is a member of the Scientific Committee of LIAF (Italian Anti-Smoking League) and of INNCO (International Nicotine Consumer Organization). Already national coordinator for the Italian Working Group on electronic cigarettes and e-liquids, he has been elected convenor for the European Working Group on requirements and test methods for emissions of electronic cigarettes within the European Committee for Standardization (CEN/TC 437).



#### **PROF. MAREWA GLOVER - NEW ZEALAND**

Professor Marewa Glover is one of New Zealand's leading tobacco control researchers. She has worked on reducing smoking-related harm for 31 years. She is recognised internationally for her advocacy on tobacco harm reduction; and locally was a Finalist in the New Zealander of the Year Supreme Award in 2019 recognising her contribution to reducing smoking in NZ. In 2018, Dr Glover was appointed Tobacco Section Editor for the Harm Reduction Journal. In that year she also established the Centre of Research Excellence: Indigenous Sovereignty & Smoking, an international programme of research aimed at reducing smoking-related harms among Indigenous peoples globally. The Centre's research was funded with a grant from Global Action to End Smoking (formerly known as Foundation for Smoke-Free World), an independent, U.S. nonprofit 501(c)(3) grant making organisation, accelerating science-based efforts worldwide to end the smoking epidemic. Professor Glover contributed to this report independently.



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Prof. Karl Fagerström is a psychologist and founding member of the Society for Research on Nicotine and Tobacco (SRNT). He was awarded the World Health Organization medal in 1999 for his outstanding work in tobacco control. In 2013 he was the recipient of the Award on Clinical Science from the Society for Research on Tobacco and Nicotine. He has been part of the early development of the nicotine replacement products and developed the first non-tobacco nicotine pouch.



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#### **PROF. SOLOMON TSHIMONG RATAEMANE - SOUTH AFRICA**

Prof Solomon Tshimong Rataemane is the former head of Department of Psychiatry at the University of Limpopo (MEDUNSA CAMPUS in Pretoria). He has special interest in child psychiatry, mood disorders and addiction medicine. He has served as deputy chairperson and chairperson of the Central Drug Authority of South Africa from 1995 to 2005. He is currently involved with UCLA Substance Abuse Program in collaborative research to improve Cognitive Behavior Therapy for counsellors at SANCA Clinics in South Africa. He is a Board member of ICAA (International Council on Alcohol and Addictions) and serves on the Health Committee of the Health Professions of South Africa assisting in physicians' health management. He is currently the Interim Executive Dean of the Health Sciences Faculty of the University of Limpopo.

The current engagements include an effort to develop policy and protocols for management of substance abuse. He was appointed Deputy Chair of the Medical Research Council of South Africa for the triennium 2007 – 2010 and serves a third term as member of the Colleges of Psychiatry. He is a member of the following organisations, including the South African Society of Psychiatrists, Health Professions Council of South Africa, International Council on Alcohol and Addictions, World Psychiatric Association and the World Association for Social Psychiatry.



#### **PROF. MIHAELA RĂESCU - ROMANIA**

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Prof. Dr. Răescu graduated from the University of Craiova, School of Dentistry in 1995 and received post-graduate scholarships at the University of Birmingham (UK) and the University Claude Bernard Lyon II (France). She has authored and co-authored numerous studies and publications and has been a guest speaker at various professional conferences. She conducted several research projects in oral health and dentistry as well being active in product development as a project manager (European and private lab projects).

In THR research, she has studied the impact on oral health, when patients switch from cigarettes to heated tobacco products. She has also been a mentor for various projects promoting oral health. She was a participant in the Governmental Conference on Impact Industry Innovations for Economy and Society.



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#### **DR. JOHN OYSTON - CANADA**

Dr. John Oyston MB BS BMedSci, FRCA, FRCP(C) is a retired medical doctor who specialized in anesthesiology. Since 2006 he has been involved in numerous tobacco control issues including "Stop Smoking for Safer Surgery", the "Campaign for the Quit Quarter", "Tobacco21.ca", and in advocacy for encouraging people who smoke to switch to less harmful sources of nicotine. He has published editorials on tobacco control topics in the Canadian Journal of Anesthesia and the Canadian Medical Association Journal. He was an Assistant Professor at the University of Toronto, Chief of Anesthesiology at The Scarborough Hospital and a peer assessor for the College of Physicians and Surgeons of Ontario.



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### PREVIOUS REPORTS:

**Lives Saved: Integrating Harm Reduction for Tobacco Control in Brazil**

**Lives Saved: Tobacco Control & Harm Reduction in LMICs**

**Saving lives like Sweden**

(All available at [tobaccoharmreduction.net](http://tobaccoharmreduction.net))

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