

LIVES SAVED

Report

SAVING 600,000 LIVES IN NIGERIA AND KENYA:

The impact of complementing
tobacco control with harm
reduction by 2060

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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 Nigeria and Kenya. A total of 281 million people live in these countries. Of these, 38,851 die prematurely every year because they use tobacco products.

WHO projects that smoking prevalence in Kenya will decrease from 20.5% in 2000 to 8.6% in 2025 and for Nigeria from 9.4% in 2000 to 2.6% in 2025. Despite these optimistic projections, the delay in preventing smoking-related disease, disability and premature deaths in these African countries calls for urgent action.

Data presented in this report shows that tobacco use contributes to several major causes of death in Nigeria and Kenya that are set to increase over the next few decades. These include ischemic heart disease, tuberculosis, and stroke. They will impose significant human and economic costs.

The report considers how tobacco harm reduction (THR) products could reduce this burden especially among men. 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 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 health benefits effects of switching to THR are still needed, results of studies using biomarkers of future diseases are promising. Biomarkers can play a crucial role in tobacco control, by providing measurable and earlier indicators of exposure to tobacco-related toxicants and the potential harm they cause.

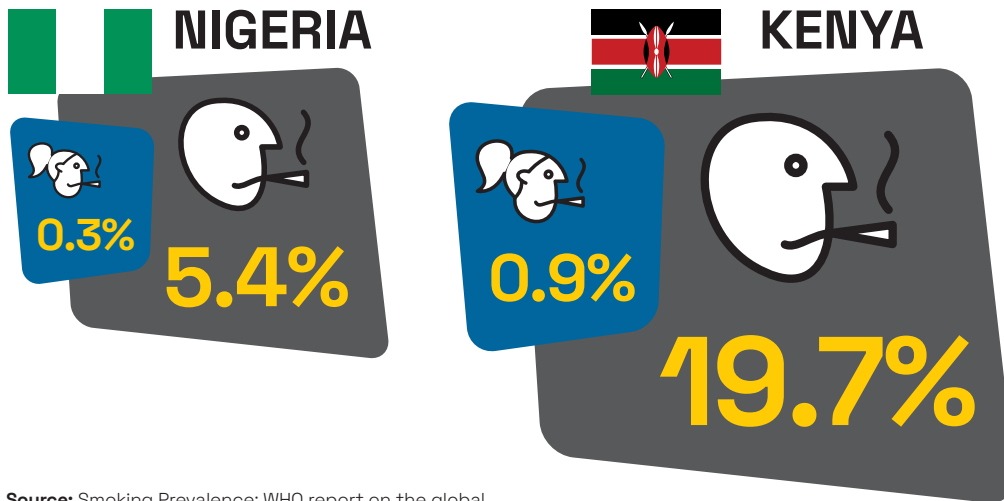
This report also comes at a time when many countries have recently reversed bans on many THR products and liberalized their approach to THR, often including THR into national harm reduction strategies. New and innovative THR products are being developed worldwide and its role in smoking cessation and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

We note that, although the use of the full range of THR products are permitted in Nigeria and Kenya, the expanded use of these by those people who smoke and cannot or will not quit, remains disappointingly low. In addition, proposed prohibitive regulation in Kenya (especially regarding oral nicotine pouches) threatens to stall the momentum gained towards creating a smoke free society. Health gains would be greatly increased, if smoke free nicotine alternative products were to be made more accessible, affordable and acceptable.

We calculated the combined impact of embracing THR and better cessation services in Nigeria and Kenya on long term trends in health.

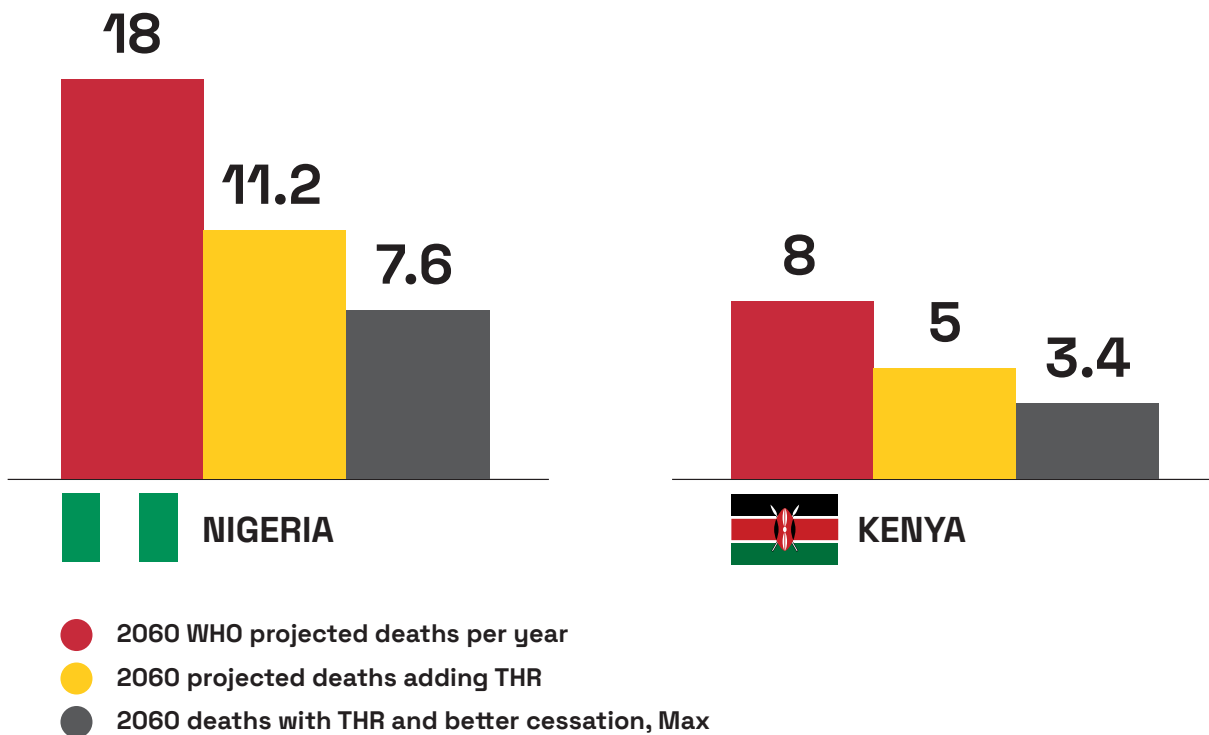
The analysis shows that over 600,000 lives could be saved by 2060 through these interventions, compared to continuing with current WHO-directed tobacco control efforts alone.

Figure 1. Nigeria and Kenya adult smoking rates by sex, 2023 (Cigarette Smoking Prevalence (%)):



Source: Smoking Prevalence: WHO report on the global tobacco epidemic 2023 country profiles

Figure 2. Decrease in tobacco-related deaths, if THR were implemented in Nigeria and Kenya along with improved cessation (in thousands)



EXECUTIVE SUMMARY

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 national equivalents of the Royal College of Physicians report on THR and smokefree nicotine alternatives to provide guidance to physicians
- **Encouraging risk-proportionate regulation:** Governments should embrace the role of harm reduction in tobacco control, as mentioned in Article 1(d) of the FCTC. They should integrate THR into broader national approaches to harm reduction by continuing to revise legislation and taxation to improve access to THR products and invest in national science and research to guide and advance THR. Where regulation has played a role to safeguard demographic groups from smoking (note the low smoking prevalence for women, 0,3% in Nigeria and 0,9% in Kenya, these measures should remain intact.
- **Strengthening consumer representation:** Strengthen the role and effectiveness of independent science-based consumer groups who advocate for THR progress and do so in an integrated way with other major national harm reduction advocacy and consumer groups.
- **Where appropriate, involving religious leaders from Christianity and Islam and their communities:** Supporting religious leaders to guide their communities to quit smoking and support tobacco harm reduction.

Embracing THR, cessation, and improved lung cancer treatment represents a major opportunity for Nigeria and Kenya to dramatically improve the health of their populations and demonstrate global health leadership.



1. 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 (1), and that tobacco use will kill 8.7 million annually. (2) Deaths are projected by WHO to increase to 10 million in five years before declining to about 6.5 million by 2060. (3) This is not what public health success looks like.

Based on the [WHO report on the global tobacco epidemic](#), 2023, (2) in 2021 Kenya had an adult daily smoking prevalence of 7% and Nigeria 2%. This figures obscure differences in tobacco use by sex. As seen in Figure 1, while Nigeria has a male smoking prevalence of 5.4%, the female smoking preference is only 0.3%. Kenya has a male smoking prevalence of 19.7%, the female smoking preference is only 0.9%.

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, “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.” (4)

These products include vapes, oral nicotine pouches e-shisha and heated tobacco products. They are gaining traction by 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. (5)

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. (6) However, COP10 did not have substantive, potentially life-saving discussions on 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. (7)

The omission of a focus on THR has two unfortunate consequences. Access to nicotine replacement therapies (NRT) remains paltry across LMICs. (8) This is despite NRTs having been included on the WHO Essential Drug List in 2009. (9) Both Nigeria and Kenya host major PEPFAR (President’s Emergency Plan for AIDS Relief) and Global Fund programs to address AIDS, malaria and TB. None incorporate smoking cessation programs despite high smoking rates among male patients.

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

RATIONALE

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. (10) To date, the FDA has authorized marketing of 45 products, including 34 tobacco- and menthol-flavoured e-cigarette products and devices. They include four major categories: heated tobacco products, e-cigarettes, snus, and oral nicotine pouches. (11) All of them use nicotine. None involve combustion. All substantially reduce exposure to the toxic substances in combustible cigarettes. (12, 13).



2. 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* (15), 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.” (15)

Cho et al. show 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. (16)

The Lancet (17) and the **New England Journal of Medicine** (18) 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.”

Why does this matter for THR? Multiple studies, and Cochrane systematic reviews (19), 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, nicotine pouches, and heated tobacco products as cessation interventions. Further, there is a major gap in knowledge about how to reach those who smoke, are older than 40 years of age, and smoke heavily (more than 20 cigarettes a day).

BENEFITS OF TOBACCO HARM REDUCTION (THR)

This figure shows an illustrative model, based on the article by Cho et al, NEJM Evidence, 2024

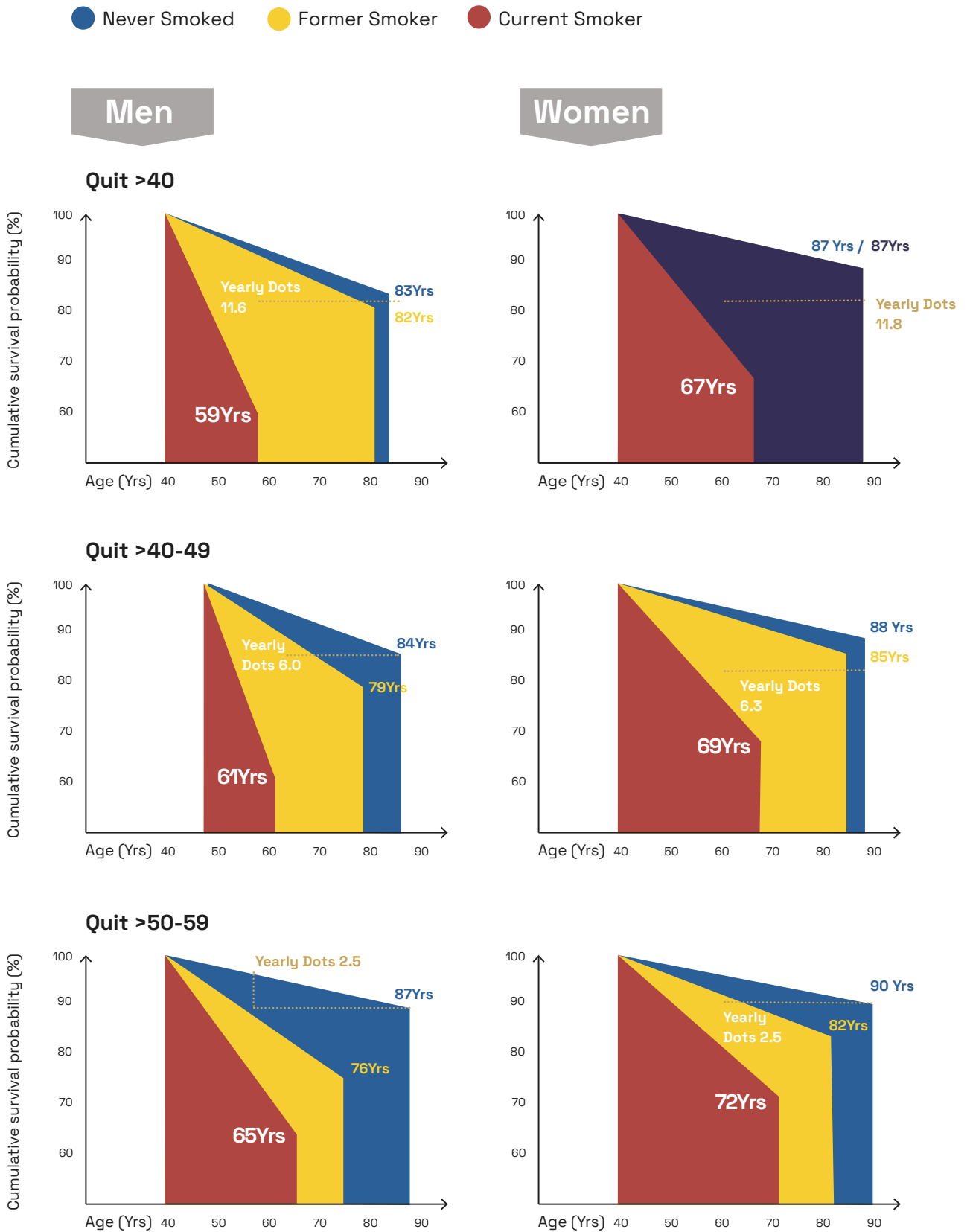


Figure 3. Life expectancy gains by age in men and women



The recent WHO guidelines on cessations ignore the potential health gains that addressing this group of smokers would achieve. They constitute about 20-25% of all adult smokers yet account for over 70% of all lung cancer and COPD cases. Manufacturers of THR products have also not addressed these smokers tending to focus on younger, lighter smokers. (20)

Table 1 shows the current state of play regarding clinical trials, cessation and all major THR categories. It shows that randomised controlled trials (RCTs) and solid evidence about the effectiveness of cessation is strongest from e-cigarettes, research is

underway in other categories. Given the diversity of THR use and legal availability, Nigeria and Kenya are well placed to carry out research across several THR categories.

The United States' FDA has granted "modified risk tobacco product" status to some oral and heated tobacco products based on submitted scientific evidence. (21) Real-world evidence also exists, including meaningful reductions in cigarette smoking in countries such as Sweden and Japan due to switching to THR products. (22)

Table 1. Status of RCTs to assess the effectiveness of THR for cessation

E-CIGARETTES (VAPES):

Several RCTs have been completed allowing for a continuously updated systematic review by the Cochrane Collaboration.

[Electronic cigarettes for smoking cessation - Lindson, N - 2024 | Cochrane Library](#)

ORAL NICOTINE POUCHES:

No systematic review. Several studies are in progress.

[Project 3: Randomized Placebo-controlled Trial of Nicotine Pouches in Smokers — Penn State \(psu.edu\) | Clinical study protocol on electronic cigarettes and nicotine pouches for smoking cessation in Pakistan: a randomized controlled trial - PMC \(nih.gov\) | Using Pod Based E-Cigarettes and Nicotine Pouches to Reduce Harm for Adults with Low Socioeconomic Status Who Smoke: A Pilot Randomized Controlled Trial | Nicotine & Tobacco Research | Oxford Academic \(oup.com\) | JMIR Research Protocols - Biomarkers of Exposure and Potential Harm in Exclusive Users of Nicotine Pouches and Current, Former, and Never Smokers: Protocol for a Cross-sectional Clinical Study](#)

SNUS:

No systematic review but there are several completed studies

[Randomized Trial to Compare Smoking Cessation Rates of Snus, With and Without Smokeless Tobacco Health-Related Information, and a Nicotine Lozenge | Nicotine & Tobacco Research | Oxford Academic \(oup.com\) | Randomised clinical trial of snus versus medicinal nicotine among smokers interested in product switching | Tobacco Control \(bmj.com\) | Randomized Clinical Trial of Snus Examining the Effect of Complete Versus Partial Cigarette Substitution on Smoking-Related Behaviors, and Biomarkers of Exposure | Nicotine & Tobacco Research | Oxford Academic \(oup.com\)](#)

HEATED TOBACCO PRODUCTS:

One study published with an update to 24 weeks being completed.

[Comparing the Effectiveness, Tolerability, and Acceptability of Heated Tobacco Products and Refillable Electronic Cigarettes for Cigarette Substitution \(CEASEFIRE\): Randomized Controlled Trial - PMC \(nih.gov\)](#)

BENEFITS OF TOBACCO HARM REDUCTION (THR)

Because these are newer technologies, 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. (23, 24, 25) These studies are used by companies in their USFDA applications 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 FOR NATIONAL CHANGE.

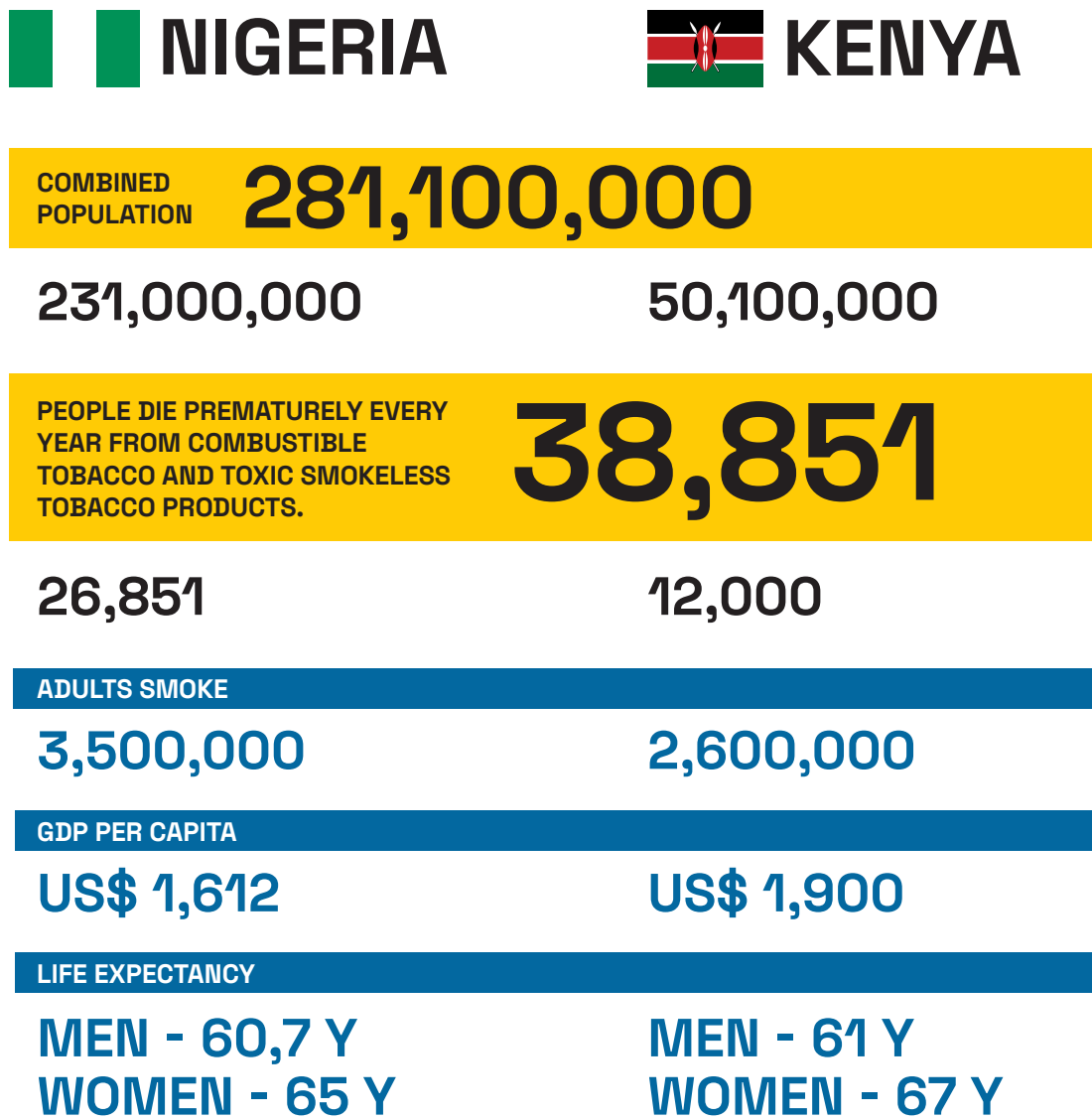
Across diverse disciplines, there is a long history of using rigorous methods to provide data on alternative futures. (26) Such “foresight studies” provide policy makers and the public a compelling vision of a future that is better than the status quo and is possible through the application of knowledge and interventions available today. We apply such an approach to show that it is possible to influence the course of the tobacco epidemic.





2.1 Analysis of key indicators in Nigeria and Kenya

Figure 4. Comparison of Health and Smoking Indicators: Nigeria and Kenya



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

ANALYSIS OF KEY INDICATORS IN NIGERIA AND KENYA

Table 2. Demographic and development data for Nigeria and Kenya

	Nigeria	Kenya
GDP/capita in thousands \$	1.6	1.9
Years of Educational Attainment (2021)	6.7	7.7
2021 Population in millions	231	50.1
2021 life expectancy males	60.7	61
2021 life expectancy females	65	67.2

Data source: population, schooling life expectancy source: IHME country profiles (<https://www.healthdata.org/research-analysis/health-by-location/profiles>) GDP/capita source: World Bank (<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD>)

Table 3. Top five risks underpinning death, disease, and disability in Nigeria and Kenya

Rank (2001)	Nigeria	Kenya
1	Malnutrition	Malnutrition
2	Air Pollution	Unsafe Sex
3	Water, Sanitation and Hygiene (WaSH)	Air Pollution
4	Unsafe Sex	Water, Sanitation and Hygiene (WaSH)
5	High Blood Pressure	High Blood Pressure

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

The table above shows that many diseases associated with poverty and low levels of investment in key development needs are common and dominate as causes of death. These however obscure the coming tide of non-communicable diseases (NCDs) driven by unhealthy diets and in men, tobacco use. Tobacco use is ranked as the 10th top risk in Kenya.

Table 4. Smoking rates and numbers of smokers in Nigeria and Kenya.

Cigarette Smoking Prevalence (%):	Nigeria	Kenya
Males	5.4	19.7
Females	0.3	0.9
WHO estimated 2025 prevalence	2.6	8.6
WHO survey year	2018	2015

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>)



LOW FEMALE SMOKING PREVALENCE IN NIGERIA AND KENYA

Note that there are very large differences between the male and female smoking rate. In both countries, female smoking rates are significantly lower than males. 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.

Table 5. Diversity of tobacco use and harm reduction products in Nigeria

Traditional Tobacco Products	Smoke Free Reduced Risk Nicotine-based Alternative Products
Snuff (Taba)	Oral Nicotine Pouches: Allowed
Local cigarettes (Ikpa)	Vaping products (E-cigarettes): Allowed (including marketing)
Chewing tobacco	Heated tobacco Products: Allowed but not allowed to advertise
WHO survey year	Snus: Allowed (Marketing included)

Table 6. Diversity of tobacco use and harm reduction products in Kenya

Traditional Tobacco Products	Smoke Free Reduced Risk Nicotine-based Alternative Products
Snuff (Unga wa Mvuke)	Oral Nicotine Pouches: Allowed
Chewing tobacco (Kuber)	Vaping products (E-cigarettes): Allowed (including marketing)
Shisha	Heated tobacco Products: Allowed but not allowed to advertise
	Snus: Allowed (Marketing included)

ANALYSIS OF KEY INDICATORS IN NIGERIA AND KENYA

Table 7. Top ten causes of death in 2021 in Nigeria and Kenya (IHME).

Rank (2001)	Nigeria	Kenya
1	Neonatal Disorders	COVID-19
2	Malaria	HIV/AIDS
3	Lower Respiratory Infect	Tuberculosis
4	COVID-19	Lower Respiratory Infect
5	Diarrheal Diseases	Stroke
6	IHD	Neonatal Disorders
7	HIV/AIDS	Cirrhosis Liver
8	Stroke	Diarrheal Diseases
9	Congenital Defects	IHD
10	Tuberculosis	Malaria

Those strongly related to tobacco are highlighted.

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

Smoking is a major cause of ischaemic heart disease (IHD), stroke, tuberculosis, and lung cancer deaths. The table shows the importance of other important risks: the impact of COVID 19, HIV / AIDS and respiratory infections. This triple burden of diseases strains the ability of health systems.

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.

2.1.1 The Approach

We compare WHO projections of future tobacco 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, tobacco harm reduction (THR) was omitted from the MPOWER (34) approach. The WHO projections also leave out potential improvements in the effectiveness of cessation services.

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.

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 report; Lives Saved: Integrating Harm Reduction for Tobacco Control in Brazil (tobaccoharmreduction.net) (35) and Lives Saved: Tobacco Control & Harm Reduction in LMICs (tobaccoharmreduction.net) (35)

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. (36) 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.

THE APPROACH

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.
- The spectrum of THR products reduce toxic exposures by 80% and reduce tobacco-related causes of premature death by 70%. While 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.
- 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”. (37)
- 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 (traditional tobacco control). Current trends using WHO estimates. The WHO estimate of a 35% decline in global tobacco deaths from the peak of 10 million (3) 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 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). (38)

The differences between the WHO projections and those where THR alone, and THR with other measures were calculated assuming a linear relationship between lives saved over the decades. This 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. (39) Recent reviews of epidemiological and toxicological research related to THR have highlighted a range of basic concerns about methods used. (40, 41, 42, 43)

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.



3. Potential Lives Saved by THR in Nigeria and Kenya

Table 8 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.

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 a growing body of evidence that shows that nicotine itself could well be beneficial for a range of neurological conditions (44, 45), of which Parkinson’s Disease is a notable one. This disease is projected to have a major devastating impact across all countries over the next decades. (46) 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 8. Smoking related deaths and lives saved between 2020-2060 through tobacco harm reduction and better cessation.

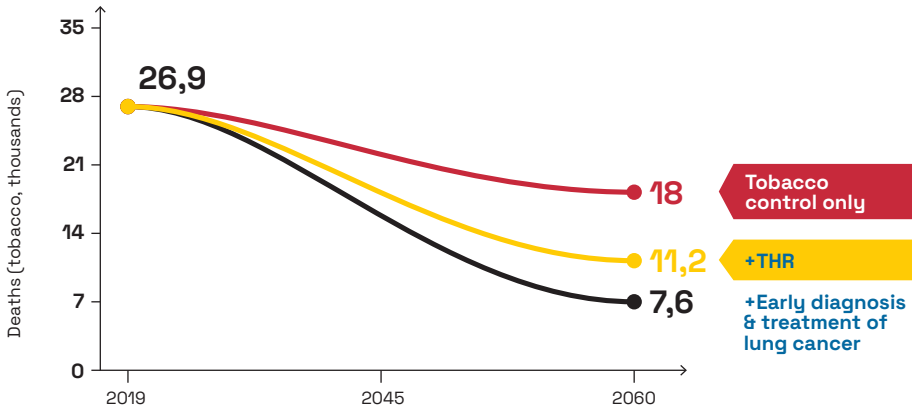
Annual Deaths from Tobacco (Thousands):	Nigeria	Kenya
2019	26.9	12.0
2060 WHO projected deaths per year	18.0	8.0
2060 projected deaths adding THR	11.2	5.0
THR+better cessation and lung cancer treatment = Max	7.6	3.4
Lives Saved		
2020-2060 total deaths - THR	272,000	12,000
2020-2060 total deaths - THR plus cessation	416,000	184,000

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 and smoking cessation.

POTENTIAL LIVES SAVED BY THR IN NIGERIA AND KENYA

Nigeria

Smoking-related deaths and trends under various scenarios



600,000
lives saved

Tobacco Control +
THR + early diagnosis
and treatment of
lung cancer

Kenya

Smoking-related deaths and trends under various scenarios

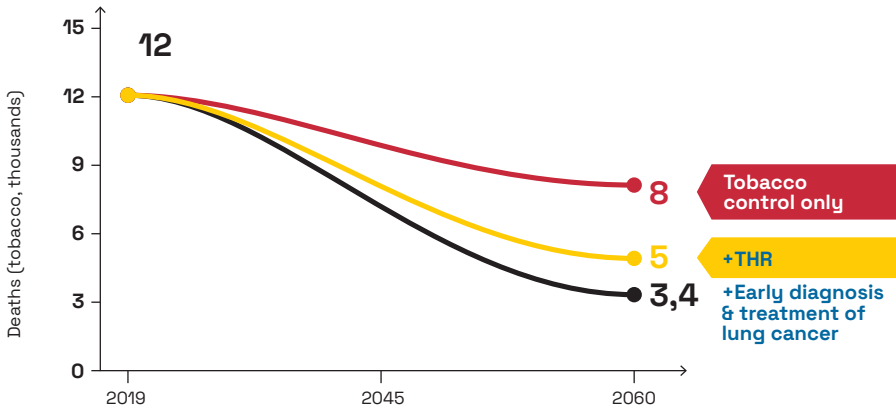


Figure 5. Projected deaths from tobacco in 2060

600,000 lives could be saved in Nigeria and Kenya

A total of 600,000 lives could be saved in Nigeria and Kenya if tobacco harm reduction products were made widely available and, if better cessation services were developed, and introduced over the next four decades. This represents a major opportunity for Nigeria and Kenya to improve the health of their populations.

POTENTIAL LIVES TO BE SAVED IN OTHER COUNTRIES

Along with the report on Czechia, our reports show by integrating tobacco harm reduction into traditional tobacco control measures, countries can drastically cut tobacco-related deaths. Millions of lives can potentially be saved through less harmful smoke-free nicotine alternatives.

who smoke. If these countries were to embrace THR, better cessation, and more effective treatment for lung cancer, we estimate that 5,47 million lives would be saved over the next decades. Note these are over and above lives to be saved by continuing with WHO's current programs alone.

The countries shown in Figure 6 include a population of 897 million people combined, with significant numbers of adults

Figure 6. Potential Lives Saved by integrating THR into Tobacco Control

5,47 MILLION

Projected Lives Saved by 2060

By integrating tobacco harm reduction into traditional control measures, countries can drastically cut tobacco deaths, potentially saving millions of lives by 2060 through safer alternatives.

Country	Smoking Rate Men (%)	Smoking Rate Women (%)	Tobacco Deaths 2019	WHO Projected Tobacco Deaths 2060	Projected Tobacco Deaths 2060 with THR
Kazakhstan	40	5	20,000	15,000	10,000
Pakistan	25	2	135,000	105,000	45,000
South Africa	35	5	35,000	25,000	10,000
Bangladesh	38	1	105,000	85,000	35,000
Brazil	18	8	190,000	125,000	60,000
Malaysia	40	1	20,000	18,000	10,000
Uzbekistan	30	1	30,000	20,000	10,000
Egypt	45	1	30,000	20,000	10,000
Lebanon	40	15	10,000	8,000	5,000
Jordan	55	10	10,000	8,000	5,000
Kuwait	35	1	5,000	4,000	2,000
Saudi Arabia	25	1	25,000	18,000	8,000
UAE	15	2	2,000	1,500	1,000

KEY RESEARCH:

All relevant Lives Saved Reports can be found on

TobaccoHarmReduction.net/resources

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4. What Actions are Needed to Save Lives?

KEY ACTIONS NEEDED INCLUDE:

- A. 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 national equivalents of the Royal College of Physicians report on THR and vapes.
- B. 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. Where certain demographic groups, such as females, have shown to have low smoking rates, all measures need to be applied to maintain this benefit for public health.
- C. Strengthening consumer representation:** Creating and strengthening independent, science-based consumer groups able to advocate for their needs, based on sound science.
- D. Where appropriate, involving religious communities:** Supporting religious leaders to guide their communities to quit smoking and support tobacco harm reduction.

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

More details on these key actions include:

- A. Activating health professionals** (physicians in particular), to counter disinformation about nicotine and the value of THR, to

communicate the benefits of THR to patients in all clinical encounters. Drawing on the groundbreaking approaches used 60 years ago by the Royal College of Physicians, they should help lead policy development by publishing a major report on the state of smoking and the role of THR in preventing and controlling tobacco-related disease, disability and premature death.

Physicians should 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. (47) They galvanised reports (48) that led to the first government actions. Doctors quit in large numbers once they understood the evidence, though this varied by region. (49) They started cessation services for their patients, and they led the development of public health policies to end smoking.

A new 16-country survey on trust and health (50), 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. (51) However, on average over 80% of physicians were at least moderately interested in receiving training in cessation and THR. (52)

Little information is available specific to physicians in Nigeria and Kenya. More studies to identify the distinctive perceptions and knowl-



edge of doctors are needed. However, the respected polling firm Ipsos recently surveyed nearly 27,000 cigarette smokers in 28 countries, the majority of physicians wrongly perceive that nicotine by itself directly causes each of the smoking-related conditions below: Lung cancer, Bladder cancer, Head/neck/gastric cancers, Atherosclerosis, Birth defects, chronic obstructive pulmonary disease (COPD).

Physicians should address missed opportunities for secondary prevention among patients who smoke.

Millions of people are diagnosed with conditions such as TB, AIDS, COPD, IHD, early-stage cancer, stroke, other tobacco-related diseases, and schizophrenia every year in Nigeria and Kenya. 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 experiences by patients. Physicians should review national data on this and implement programs that give high priority to cessation and access to harm reduction at every clinical encounter. They might start by including THR products and cessation into their large PEPFAR and Global Fund AIDS and TB treatment programs.

Medical and health experts should be encouraged to develop a national equivalent of the Royal College of Physicians (RCP) report on e-cigarettes and harm reduction. This could be facilitated through the Commonwealth Health Office as a joint venture with the RCP.

Over 60 years ago (54) 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. (55) 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.” Equivalent reports for Nigeria and Kenya, that were led by prestigious medical societies and academies could galvanise needed action. Ideally, this should be a project endorsed and facilitated by the Ministry of Health.

B. Governments should continue to revise and establish risk-proportionate regulation, to improve access to THR products and invest in national science and research to advance THR.

The Nigerian and Kenyan government should be encouraged to regulate alternative nicotine products proportionate to the risk they pose to health and in ways that maximise benefits and make healthier choices as easy as possible. Importantly, they could lead the world by developing a gender specific set of policies that tighten industry ability to market and sell all forms of tobacco and THR products to women. The exception being women who smoke cigarettes. The FCTC makes provision for gender sensitive policies but no country has yet developed any.

Preferably, the Government’s regulatory progress needs to be accompanied by extensive and continuous communications programs that engage leaders in healthcare and adults who use tobacco products. The regulations should aim to balance consumer access with public health concerns, particularly focusing on preventing youth and women’s uptake while allowing adult smokers access to THR alternatives.

Good regulatory practice needs to be studied. For example, the United Kingdom approach aimed at cutting social class gradients in adult smoking through the use of THR products. (57) In this world-first government-sponsored scheme, smokers are urged to swap cigarettes for vapes in a “Swop to Stop Scheme”.

Where tobacco control has contributed to low smoking rates, especially amongst females in Nigeria and Kenya, these public health gains need to be guarded at all costs, including enforcing all the elements of tobacco control, as outlined in the Framework Convention on Tobacco Control (FCTC). Marketing restrictions, similar to those employed to prevent youth initiation and use of tobacco and nicotine products, should be considered.

Governments 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.

WHAT ACTIONS ARE NEEDED TO SAVE LIVES?

C. 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.

The wide support for harm reduction as a key public approach to addressing several major health issues—from alcohol and drugs, to HIV/AIDS and tobacco, suggests that Nigerian and Kenyan based leading NGOs and consumer groups could play important roles beyond Indonesia and in countries where the start of understanding and support for harm reduction is still rudimentary. These include examples such as THR Nigeria and the Kenya Tobacco Control Alliance and Campaign for Safer Alternatives (CASA) in Kenya.

D. 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 Nigeria - where religious leaders play a vital role in promoting health.

The first and only WHO meeting on religion and tobacco was held in 1999. (58) 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, (59) 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. (60) 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. (61) 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. (62) 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.

Addendum A

IMPORTANCE OF LOCAL NATIONAL RESEARCH IN FORMULATING EVIDENCE-BASED POLICIES

The government needs local, high-quality research to fully understand the dynamics of the smoking epidemic in Nigeria and Kenya, including why smoking rates remain high and which interventions are most likely to succeed in reducing them. This should include

A new approach into research of the risks and benefits of integrating harm reduction methods into tobacco control. At the Coresta 2024 conference (see Figure 8) in October 2024, Dr. Derek Yach, former WHO Director, highlighted the changes needed in tobacco control research, [Derek also emphasized the necessity of aligning local efforts with global initiatives to ensure comprehensive and effective tobacco control.](#)

Figure 7. Figure 6: Proposed priorities for THR research

PROPOSED PRIORITIES FOR THR RESEARCH: FOR DISCUSSION

- **Global research**
 - Long term effects on health
 - Health effects of nicotine
 - Relative effectiveness of cessation across all THR categories
 - Improving secondary prevention among high-risk tobacco users
 - Strengthening the quality of epidemiological and behavioral science
- **Country and regionally specific research**
 - Surveillance - combining questionnaires and biomarkers
 - THR product trends by age, sex, amount
 - Health care providers use, knowledge and advise about THR
 - Youth access trends and intervention impact
 - Product content assessment
- **Research to adapt policies from high income countries with declining smoking rates to LMICs**

TB and Smoking: A Deadly Combination Tuberculosis (TB) is a major global health issue, particularly in African countries. TB and smoking are closely linked, as smoking weakens the immune system, making smokers more susceptible to TB infection and increasing the likelihood of active TB in those already infected. Smoking also exacerbates the severity of TB, leading to worse outcomes and a higher risk of death from the disease.

- **Increased Susceptibility:** Smoking damages the lungs and weakens the immune system, which increases the risk of contracting TB. Studies show that smokers are about twice as likely to develop **active TB** compared to non-smokers (63)
- **Worsened TB Outcomes:** Once infected, smokers are more likely to develop active TB, which can be fatal if not treated properly. Smoking also increases the risk of recurrent TB and worsens the overall prognosis for those infected (64). A systematic review of TB and smoking found that smokers have worse treatment outcomes, including higher rates of mortality (65)



- **Mortality and TB:** Smoking has been identified as a key factor contributing to **TB mortality**. The risk of dying from TB is higher in smokers, making the combination of TB and smoking particularly deadly (66). Smoking-related mortality from TB can be reduced with tobacco cessation interventions integrated into TB programs (64).

Reducing smoking rates could significantly reduce the TB burden in countries like Nigeria and Kenya. Evidence suggests that comprehensive tobacco control measures, including smoking cessation programs, can reduce TB incidence and improve treatment outcomes for TB patients (66). Given the strong link between smoking and TB, integrating **tobacco control** into **TB prevention** and treatment programs could be a key strategy for reducing the overall disease burden and relieving pressure on the health system (64).

KEY POINTS OF IMPORTANCE:

- **Public Health Integration:** More research is needed to develop customised smoking cessation programs and to incorporate anti-smoking campaigns into TB prevention efforts (63)
- **Health System Relief:** Reducing smoking rates will help alleviate the pressure on health systems strained by the triple burden of communicable diseases (like TB), non-communicable diseases (like COPD), and emerging threats (like COVID-19) (67).



Addendum B

SAFEGUARDING WOMEN AGAINST SMOKING IN NIGERIA AND KENYA

Preventing smoking uptake among women in Nigeria and Kenya is essential, not only for their individual health but for broader public health goals. As seen in other countries, such as the UK, a rise in female smoking rates would lead to increased rates of lung cancer, heart disease, and other tobacco-related illnesses. If female smoking rates were to increase, the healthcare burden would rise, and the health

gap between men and women could narrow in the wrong direction. Both countries have an opportunity to avoid this trend by maintaining low smoking rates among women through proactive policies. Lessons can be learned from other countries where female smoking rates rose after targeted marketing, leading to long-term health consequences.

TARGETED PREVENTION: LEARNING FROM THE SUCCESS OF YOUTH MARKETING RESTRICTIONS

Youth as a Precedent: Many countries, including Nigeria and Kenya, have restrictions on tobacco marketing aimed at youth. These restrictions are designed to prevent the next generation from taking up smoking by limiting advertisements, sponsorships, and product placements aimed at younger audiences. This model can be extended to prevent marketing that targets women, who might be increasingly seen by the tobacco industry as a growth market, especially if male smoking rates plateau or decline.

Industry Accountability: The tobacco industry should be required to show that they are not target-

ing women with marketing campaigns or products, just as they are required to demonstrate they do not market to youth. Such measures could include:

- Limiting advertising that appeals to women (e.g., packaging, slogans, social media campaigns).
- Banning sponsorships of events, causes, or influencers that predominantly appeal to women.
- Monitoring compliance through independent regulatory bodies to ensure that women are not being seen as a new target market.

PROMOTION OF POSITIVE HEALTH BEHAVIOURS

- **Supporting Women’s Health Goals:** Public health campaigns should emphasize the importance of maintaining non-smoking as the socially desirable behaviour for women. Educational campaigns, workplace policies, and media initiatives can reinforce the message that smoking is harmful, and that non-smoking is associated with better health, productivity, and family well-being.
- **Community Involvement:** It is also essential to engage local communities and women’s organizations in spreading these messages. Grass-roots initiatives can be particularly effective in sustaining low smoking rates among women by fostering a supportive environment where women choose not to smoke and encourage others to do the same.

The Nigerian and Kenyan governments have a unique opportunity to prevent the rise in female smoking rates by implementing policies that support and reinforce low smoking prevalence among women. Learning from global experiences, especially in countries where smoking rates increased due to targeted marketing, can help Nigeria and Kenya avoid a similar trajectory. Just as restrictions on tobacco marketing to youth have proven successful, similar measures can ensure that women are not the next target for the tobacco industry. By focusing on prevention and promoting non-smoking as the ideal health behaviour, Nigeria and Kenya can safeguard the health of its female population and reduce the overall burden of tobacco-related diseases.

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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.



MR. JOSEPH MAGERO – KENYA

Chairman: Campaign for Safer Alternatives (CASA)

Joseph Magero, BSBA (Marketing), is the Chairman of Campaign for Safer Alternatives (CASA), a pan-African organisation that advocates for the adoption of tobacco harm reduction policies in Africa. As the unifying voice for consumer organisations, CASA promotes the exchange of information and potential actions to reduce exposure to tobacco-related harm. Kenyan-born Mr Magero previously worked in the tobacco control arena for nearly a decade. His involvement entailed creating smoke-free environments, mandating bigger health warnings, making cigarettes more expensive as well as restricting advertising and marketing. Despite these efforts, smoking deaths continued to increase. This resulted in Mr Magero rethinking his approach towards tobacco control. He has since become an ardent tobacco harm reductionist, lobbying for the reduction of smoking-related diseases and mortality in Africa by advocating for reduced risk products for cigarette smokers. He is also a mentor on the Tobacco Harm Reduction Scholarships Program (THRSP) of Tobacco Harm Reduction Nigeria, which focuses on promoting safer alternatives to smoking. In 2019, Mr Magero was awarded Advocate of the Year by the International Network of Nicotine Consumer Organizations (INNCO). He holds a bachelor's degree in business administration (Marketing) from the University of Greenwich, England, and a master's degree in public policy.



UCHE OLATUNJI - THR-NIGERIA

Uche Olatunji is the Project Manager of THRNigeria, a pioneering consumer and advocacy group dedicated to advancing tobacco harm reduction (THR) in Nigeria. With a mission to provide Nigerians with unbiased, science-based resources about nicotine and safer alternatives to traditional smoking, Uche has established THRNigeria as a key platform for promoting informed decision-making and public awareness in the field of harm reduction.

Uche's work with Tobacco Harm Reduction Nigeria focuses on educating both the public and policymakers about the potential of THR in mitigating smoking-related harm. He emphasizes that, through scientific resources and clear communication, individuals can make choices that align with safer, healthier lifestyles. THR-Nigeria offers insights into alternatives like nicotine pouches, e-cigarettes, and heated tobacco products, empowering individuals who seek to quit smoking or transition to lower-risk products.



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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.



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Dr. Delon Human is a specialist family physician, global health advocate, published author, international speaker and healthcare consultant specialising in global health strategy, harm reduction and health communication. He is the former Secretary-General of the World Medical Association, International Food and Beverage Alliance and Co-founder of the African Harm Reduction Alliance (AHRA). He has acted as an adviser to three WHO Directors-General and to the UN Secretary-General on global public health strategies.



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Prof. Stöver is a social scientist and Professor of Social Scientific Addiction Research at the Frankfurt University of Applied Sciences in Germany, Faculty of Health and Social Work. Since 2009 he has been the director of the Institute of Addiction Research.

Heino Stöver's main fields of research and project development expertise are health promotion for vulnerable and marginalised groups, drug services, prison health care and related health issues (especially HIV/AIDS, Hepatitis C, drug dependence, and gender issues), and the potential of e-cigarettes. His international research and consultancy expertise includes working as a consultant for the European Commission, United Nations Office on Drugs and Crime (UNODC), World Health Organization (WHO), European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), International Committee of the Red Cross (ICRC) and Open Society Institute (OSI) in various contexts.

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