



World Health  
Organization

# It's time to invest in cessation



THE GLOBAL  
INVESTMENT CASE

FOR TOBACCO  
CESSATION

## **It's time to invest in cessation: the global investment case for tobacco cessation**

ISBN 978-92-4-003928-5 (electronic version)

ISBN 978-92-4-003929-2 (print version)

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**Suggested citation.** It's time to invest in cessation: the global investment case for tobacco cessation. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.

**Cataloguing-in-Publication (CIP) data.** CIP data are available at <http://apps.who.int/iris>.

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## **Acknowledgements**

The World Health Organization (WHO) acknowledges with thanks all those who contributed to the preparation of this document. Particular thanks are due to the following people, who helped to bring the document to fruition.

Ruediger Krech, Director of the Health Promotion Department, and Etienne Krug, Director of the Social Determinants of Health Department, who oversaw the creation of the document.

Data analysis: Guillermo Sandoval, Robert Totanes, and Dongbo Fu

Writer: Annette David

WHO reviewers: Vinayak Prasad, Virginia Arnold, Douglas Bettcher, Susannah Robinson, Jeremias Paul, and Tessa Edejer

This document has been made possible through funding provided by Bloomberg Philanthropies.

# THE GLOBAL INVESTMENT CASE FOR TOBACCO CESSATION

*Helping people to quit tobacco use is vital to ending the tobacco epidemic. Tobacco cessation is a critical public health investment. It saves lives, protects health and ultimately, saves governments money.*

The entry into force in 2005 of the WHO Framework Convention on Tobacco Control (FCTC) – WHO’s first global health treaty – has accelerated global progress in reducing tobacco use.<sup>1</sup> Largely, these gains have come through the adoption of key demand reduction strategies highlighted in the MPOWER package.

Despite significant progress in the last 15 years, there are still 1.3 billion tobacco users today, trapped by nicotine’s addictiveness and the manipulative influence of the tobacco industry. Helping them quit tobacco use is the key to breaking this cycle of dependence.

Investing in six key tobacco cessation interventions could help millions of tobacco users quit successfully, save millions of lives, and offer a significant return on investment for governments. These include three population-level approaches (i.e. brief advice in primary care, national toll-free quit lines and mCessation) and 3 pharmacologic interventions (i.e. nicotine replacement therapy (NRT), Bupropion, and Varenicline).

This document presents the case for why countries should invest in tobacco cessation from health and economic perspectives. It presents data from a return-on-investment (ROI) analysis of 124 low- and middle-income countries. The approach builds on previous methodologies and tools developed over the past two decades to support the implementation of the WHO ‘best buy’ interventions for noncommunicable diseases (NCDs), for which tobacco use is a major risk factor.<sup>2</sup>

## MPOWER

*MPOWER is an acronym that represents key policy strategies proven to effectively reduce the demand for tobacco, based on provisions from the WHO Framework Convention on Tobacco Control.*

The 6 **MPOWER** measures are:

- M**onitor tobacco use and prevention policies
- P**rotect people from tobacco use
- O**ffer help to quit tobacco use (Cessation)
- W**arn about the dangers of tobacco
- E**nforce bans on tobacco advertising, promotion and sponsorship
- R**aise taxes on tobacco

# KEY FINDINGS



**US \$1.68**

ADDITIONAL INVESTMENT  
PER CAPITA IN CESSATION OVER  
A 10-YEAR PERIOD (2021-2030)  
RESULTS IN



**BY 2030**



**152 MILLION**

SUCCESSFUL QUITTERS



NEARLY

**3 MILLION**

LIVES SAVED



**BY THE TIME QUITTERS REACH  
THE AGE OF 65 YEARS**



**16 MILLION**

LIVES SAVED



**US\$ 7.50 RETURN**

ON EVERY DOLLAR INVESTED



# WHY CESSATION MATTERS



## **THERE ARE STILL TOO MANY TOBACCO USERS.**

Globally, the prevalence of tobacco use has decreased, with the fastest declines recorded in the years immediately following the entry into force of the WHO FCTC. However, these reductions in prevalence have been outpaced by population growth. This means that the number of smokers globally has increased from 0.99 billion in 1990 to 1.14 billion in 2019.<sup>3</sup> There are also approximately 302.5 million smokeless tobacco users worldwide.<sup>4</sup>



## **UNLESS CURRENT TOBACCO USERS QUIT, THE COSTS OF TOBACCO USE WILL CONTINUE TO RISE.**

Tobacco users are at heightened risk for death, disability and chronic health issues due to NCDs such as ischaemic heart disease, chronic obstructive pulmonary disease, cancers and stroke, are the predominant causes of tobacco-attributable deaths. They are also the major contributors to tobacco-related health care costs. In 2019, tobacco caused nearly 8 million deaths and 200 million disability-adjusted life years (DALYs).<sup>4</sup> The total economic loss due to tobacco is estimated at US\$ 1.4 trillion annually.<sup>5</sup> Without cessation, the health burden and costs of tobacco will continue to accrue.



## **CESSATION INTERVENTIONS ARE PROVEN TO WORK.**

Nicotine addiction is powerful, but there are proven ways to help people break free from their tobacco dependence. Currently, accepted evidence-based cessation strategies include population-level interventions (brief advice, quit lines, mCessation), individual specialist approaches (intensive behavioral support, cessation clinics) and pharmacologic interventions (nicotine replacement therapies (NRTs) and non-nicotine pharmacotherapies). Implementing these measures has been shown to result in a 2-15% increase in the proportion of tobacco users who quit tobacco use for 6 months or more, over no intervention.<sup>6</sup> When applied universally over the global population of over a billion tobacco users, the absolute effect size would be considerable.



TABLE 1

**INCLUDED CESSATION INTERVENTIONS WITH COVERAGE TARGETS AND EFFECT SIZES USED**

	INTERVENTION	DEFINITION / DESCRIPTION	ASSUMED COVERAGE TARGET	IMPACT / EFFECT SIZE % of intervention users that quit tobacco
POPULATION-LEVEL INTERVENTIONS	<b>Brief advice</b>	Advice to stop using tobacco, usually taking only a few minutes, is given to all tobacco users during the course of a routine consultation and/or interaction with a physician or health care worker.	50% of all tobacco users aged 15+	2%
	<b>National toll-free quitline</b>	A national toll-free quit line is a telephone counselling service that can provide both proactive and reactive counselling. A reactive quit line provides an immediate response to a call initiated by the tobacco user, but only responds to incoming calls. A proactive quit line involves setting up a schedule of follow-up calls to tobacco users to provide ongoing support.	5% of all tobacco users aged 15+	5%
	<b>mCessation</b>	Tobacco cessation interventions are delivered via mobile phone text messaging. Mobile technologies provide the opportunity to expand access to a wider population, and text messaging can provide personalized tobacco cessation support in an efficient and cost-effective manner.	3.5% of all tobacco users aged 15+	4%
PHARMACOLOGICAL INTERVENTIONS	<b>Nicotine replacement therapy (NRTs)</b>	NRTs are available in several forms including gum, lozenges, patches, inhalers and nasal spray. These cessation tools reduce craving and withdrawal symptoms by providing a low, controlled dose of nicotine without the toxins found in cigarettes. The doses of NRT are gradually reduced over time to help the tobacco user ween off of nicotine by getting used to less and less stimulation.	An additional 5% on top of estimated current NRT use among tobacco users aged 15+ (varies per country)	6%
	<b>Bupropion</b>	Non-nicotine pharmacotherapy: These pharmacotherapies reduce cravings and withdrawal symptoms and decrease the pleasurable effects of cigarettes and other tobacco products.	An additional 1.5% on top of estimated current NRT use among tobacco users aged 15+ (varies per country)	7%
	<b>Varenicline</b>	Non-nicotine pharmacotherapy: These pharmacotherapies reduce cravings and withdrawal symptoms and decrease the pleasurable effects of cigarettes and other tobacco products.	An additional 1.5% on top of estimated current NRT use among tobacco users aged 15+ (varies per country)	15%

Adapted from the following source: WHO. WHO Report on the Global Tobacco Epidemic, 2019. Geneva: World Health Organization; 2019. License: CC BY-NC-SA 3.0 IGO.



### **STRONGER TOBACCO CONTROL LAWS HAVE INCREASED PRESSURE ON TOBACCO USERS TO QUIT.**

There are now 182 Parties to the WHO FCTC, covering 90% of the world's population.<sup>7</sup> As these Parties increasingly enact and implement tobacco control policies, tobacco users' intention to quit will continue to increase. Over 60% of smokers report that they want to quit, and over 40% have attempted to do so in the past year.<sup>8</sup> However, many will fail without cessation assistance.



### **OFFERING CESSATION SUPPORT IS AN ETHICAL OBLIGATION.**

Investing in proven cessation interventions now, to meet rising demand to quit tobacco use, is not just strategic. It is also an ethical obligation, providing those addicted to nicotine with the assistance and support that they need. The United Nations Member States pledged to ensure "no one will be left behind" and to "endeavour to reach the furthest behind first" when they adopted the 2030 Sustainable Development Goals.<sup>9</sup> Tobacco users are the ones who are being left behind in tobacco control. Without cessation support, they will continue to bear the brunt of tobacco's harms.



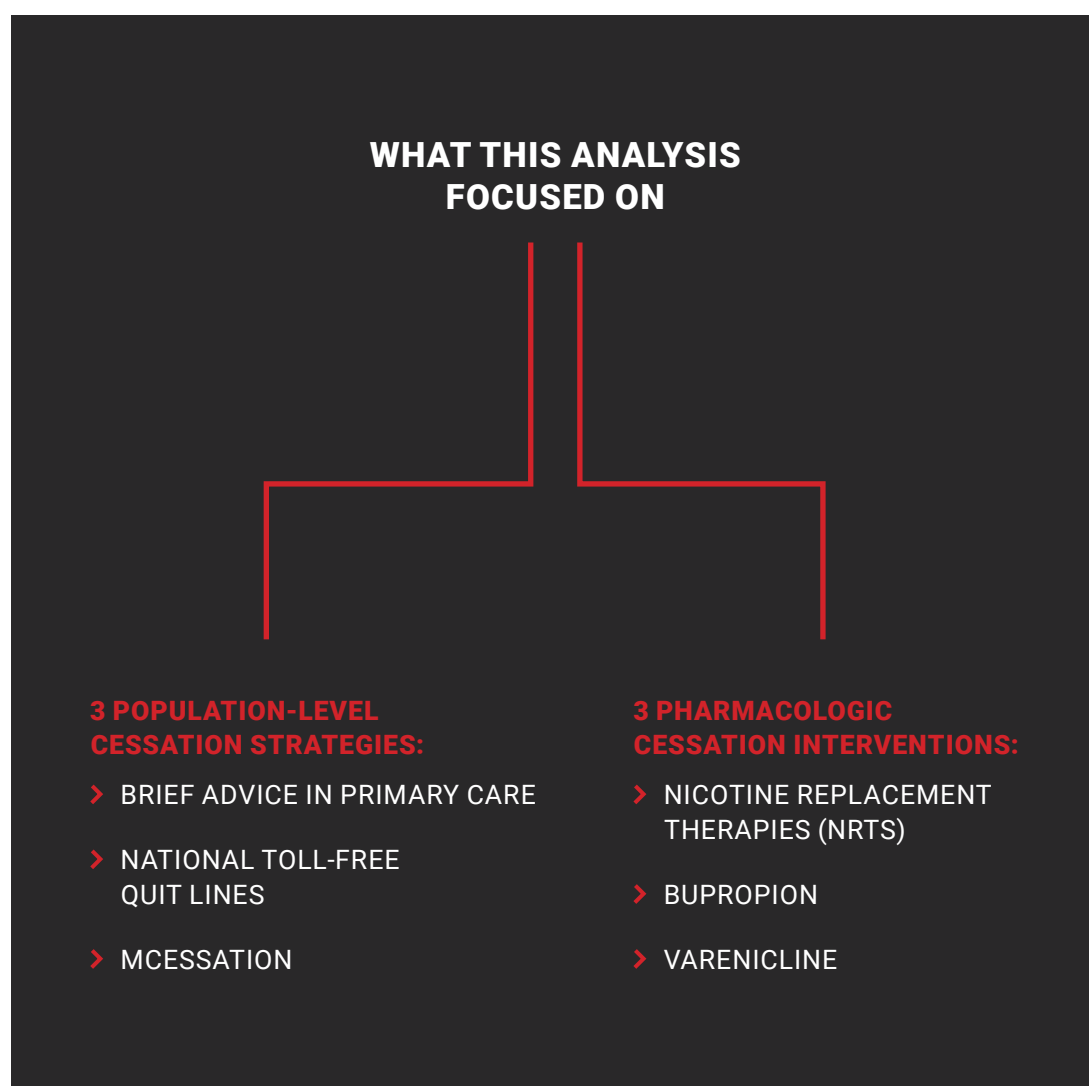
### **NOT ENOUGH TOBACCO USERS HAVE ACCESS TO HIGH-QUALITY TOBACCO CESSATION SERVICES.**

Ensuring tobacco cessation interventions reach the people who need them is a significant challenge. Currently, only about 30% of the world's population has access to appropriate tobacco cessation services.<sup>10</sup> Many countries still have no national tobacco cessation strategy and only a few countries have dedicated personnel and budgets for cessation programmes.<sup>10</sup>



# WHAT THE NUMBERS SHOW

The models utilized in this study examined the impact of investing in three evidence-based population-level tobacco cessation strategies and three pharmacologic interventions. The models looked at several parameters such as per capita costs, number of successful quitters, lives saved, and the economic benefits and returns on investment after a 10-year investment period (2021-2030) and until the cohort of quitters reaches the age of 65 years.<sup>11</sup>





**AN ADDITIONAL US\$ 1.68 INVESTED IN ALL SIX CESSATION INTERVENTIONS (PER CAPITA PER YEAR FROM 2021 TO 2030)<sup>12</sup> WILL YIELD THE FOLLOWING:**

**BY 2030**



**152 MILLION**

SMOKERS WILL HAVE BEEN HELPED TO QUIT TOBACCO USE



**2.7 MILLION**

LIVES WILL HAVE BEEN SAVED

**BENEFITS WILL CONTINUE TO ACCRUE INCREMENTALLY, BEYOND THE INVESTMENT PERIOD. BY THE TIME THE COHORT OF QUITTERS REACHES 65 YEARS OLD:**



**16 MILLION**

LIVES WILL HAVE BEEN SAVED



EACH DOLLAR INVESTED WILL HAVE YIELDED

**US\$ 7.50 IN GAINS**

**THE THREE POPULATION-LEVEL CESSATION INTERVENTIONS COST LITTLE, THOUGH THEY DELIVER SIGNIFICANT RETURNS ON INVESTMENT WITHIN 10 YEARS, AND TREMENDOUS RETURNS BY THE TIME QUITTERS REACH 65 YEARS OF AGE.**



On average, countries need to invest only **21 cents per capita annually** on the three population-level interventions.



Each US\$ 1 investment yields **US\$ 3.58 in gains** by 2030;



Each US\$ 1 investment produces **US\$ 35.40 in returns** by the time quitters reach 65 years.

In total, population-level interventions can lead to **88 million successful quitters** and **1.4 million lives saved by 2030**, and **9.3 million lives saved in total** by the time quitters reach 65 years. Clearly, these three population-level interventions are highly cost-effective.

**PHARMACOLOGIC CESSATION INTERVENTIONS (NRTS, BUPROPION AND VARENICLINE) COST MORE, BUT PRODUCE SUBSTANTIAL RETURNS DEMONSTRATED OVER THE LIFETIME OF QUITTERS:**



The cost of investing in pharmacologic interventions is **US \$1.49 per capita annually**.



The 10-year return on investment is 40 cents for every dollar, but this increases to **US\$ 3.60 per dollar over the lifetime of the cohort of quitters**; and

Pharmacologic interventions can produce up to **66 million more successful quitters** and **1.3 million lives saved by 2030**, and **6.8 million lives saved** when quitters reach 65 years of age.



Lower-middle-income countries (LMICs) and low income countries (LICs) show positive but lower returns on investment than upper-middle-income countries (UMICs) for both population-level interventions and pharmacotherapies. However, the cost per capita is considerably less than for UMICs, and overall, more lives would be saved in LMICs/LICs.

INTERVENTIONS	COST PER CAPITA (US\$)		ROI AT AGE 65 YEARS (US \$)		LIVES SAVED UNTIL 65 YEARS (MILLIONS)	
	UMICs	LMICs/LICs	UMICs	LMICs/LICs	UMICs	LMICs/LICs
All interventions	2.56	1.01	9.60	3.44	7.0	8.9
Population-level interventions	0.34	0.11	43.1	18.0	4.1	5.2
Pharmacologic interventions	2.25	0.92	4.60	1.66	3.0	3.8

If the cost of pharmacotherapies could be reduced, as has been achieved for medicines used to treat other diseases, this could significantly increase the ROI, especially in LMICs and LICs.



### **MEETING GLOBAL AND NATIONAL HEALTH GOALS HINGES ON INVESTING IN TOBACCO CESSATION TO INCREASE ITS AVAILABILITY TO ALL THE WORLD'S TOBACCO USERS.**

WHO's Member States endorsed the WHO Global Action Plan for the Prevention and Control of NCDs 2013–2020, extended recently by the World Health Assembly to 2030, and the corresponding nine voluntary global targets to reduce NCD mortality. The agreed target for tobacco control is a 30% relative reduction in prevalence of current tobacco use in those aged 15 years and above between 2010 and 2025. The short time frame for attaining this target mandates aggressive promotion of cessation among current tobacco users to augment preventive strategies, which produce results long-term. Countries also have set national targets for reducing tobacco use. Encouraging and supporting current tobacco users to quit is the means to reduce prevalence quickly, to meet the 2025 global goal and national health targets.



### **CESSATION IS NOT JUST ABOUT HEALTH; IT ALSO IMPACTS NATIONAL DEVELOPMENT.**

The Sustainable Development Goals (SDGs) have already recognized tobacco's pivotal role in hindering economic development. Tobacco use imposes high productivity costs on economies because tobacco-related illnesses diminish the workforce. Over 80% of today's tobacco users are in low and middle-income countries. When they die, the majority are in their most productive years (30-65 years). This implies that tobacco's stranglehold on economic development is highest in developing countries.

Target 3.4 under SDG 3 (Good health and well-being) exhorts countries to reduce premature mortality from NCDs by one-third by 2030. Target 3A specifically highlights strengthening WHO FCTC implementation as a vital means to achieve this one-third reduction in NCD deaths. Cessation is fundamental to achieving these development targets.



### **TOBACCO CESSATION CAN SUPPORT EQUITY.**

The tobacco epidemic is a marker of social inequity. Over 80% of tobacco users live in low- and middle-income countries, where cessation services are limited. The tobacco industry's increasingly pervasive marketing and pricing strategies result in people from poorer households spending proportionately more on tobacco products. These same communities are also at far greater risk of experiencing health issues that require catastrophic spending in the future, and in these households the impact of lost earnings from poor health will be greater. Investing in cessation is a means to redress this inequity and its formidable adverse impact on health and development.

## OTHER TOBACCO CESSATION INTERVENTIONS

### BEHAVIOURAL COUNSELLING

One approach to help people who are trying to quit smoking is to offer them individual or group-based behavioural counselling and support using techniques which are supported by randomized control trials. Participants meet with a facilitator who is trained in smoking cessation counselling. Programme components are varied and can be offered one on one, through groups, online and face to face. There is good evidence through randomized control trials that behavioural support interventions, across a range of intervention types and settings, delivered to an individual or to groups, are effective in helping people to stop smoking, both through the public sector [1] and through private companies [2][3] .

**Source:** [1] <https://www.nice.org.uk/guidance/ng92/evidence/b-interventions-to-aid-smoking-cessation-behavioural-support-and-pharmacotherapy-pdf-4788920847>

[2] <https://tobaccocontrol.bmj.com/content/28/4/414?rss=1>

[3] <https://bmjopen.bmj.com/content/7/12/e016867>

### DIGITAL CESSATION: A PROMISING APPROACH TO HELPING TOBACCO USERS QUIT TOBACCO USE

Digital tools for smoking cessation include text messaging, chat bots and apps. These can be accessed at any time, on technology platforms that smokers use already, and are easily scalable to populations. Most digital tools include information, behavior change techniques to distract users from cravings, motivation, rewards and support. There is good evidence that text messaging interventions for smoking cessation are effective [1]. These same techniques can also be incorporated into chatbots. WHO has developed a number of smoking cessation chatbots over the past year on common chatbot platforms including Viber, WhatsApp, Facebook messenger and free basics [2]. It has also developed it's first digital health worker, Florence, who was designed to give additional information to smokers about quitting during COVID [3]. There are over 500 apps for smoking cessation, and a number of them have good evidence for success based on randomized control trials and other criteria. Digital tools provide new opportunities to bring cessation into the hands of millions of smokers through their phones and other devices.

**Source:** [1] Whittaker R, McRobbie H, Bullen C, Rodgers A, Gu Y, Dobson R. Mobile phone text messaging and app-based interventions for smoking cessation. Cochrane Database of Systematic Reviews. 2019(10).

[2] <https://www.who.int/news/item/10-07-2020-who-and-partners-to-help-more-than-1-billion-people-quit-tobacco-to-reduce-risk-of-covid-19>

[3] <https://www.who.int/news-room/spotlight/using-ai-to-quit-tobacco>

# WHAT MEMBER STATES AND INVESTMENT PARTNERS **CAN DO**

## *Ending the tobacco epidemic requires investing in cessation.*

When employed in tandem with the other MPOWER measures, the O of MPOWER (cessation) assists tobacco users to quit successfully. It is an effective way to quickly reduce tobacco use prevalence, and to protect people from tobacco-related deaths, disability and chronic health problems.

Relatively small investments in tobacco cessation can yield large numbers of successful quitters, lives saved and significant returns on investment that continue to accrue – even after an initial 10-year investment period. Population-level interventions yield positive ROIs relatively quickly and need significantly lower per capita investments. Pharmacologic interventions cost more but result in considerable positive ROIs in the long-term. Thus, **in resource-challenged settings, efforts should initially be directed towards the promotion of population-level cessation interventions.** As resources and capacities grow, additional investments in pharmacologic interventions should be made since despite costing more, they can save additional lives and generate greater return on investment in the longer term.







Cessation is often considered only possible in high-income countries. But these results show that **it is the low and lower-middle-income countries that stand to gain the most in terms of lives saved.** Governments and donors at all levels should see tobacco cessation as a key investment in public health and an opportunity to support these countries as a public health priority.

As countries around the world continue to strengthen tobacco control measures, the need for cessation services will only increase. Governments must help tobacco users secure access to tobacco cessation services that will potentially save their lives and livelihoods. Providing cessation support will also accelerate progress towards meeting global and national health and development targets, while helping to redress the social inequity wrought by tobacco use.

We know the cost of inaction  
– *millions of deaths every year.*

We now know the cost of action  
– *an additional US\$ 1.68 per capita per year.*

The case for investment in tobacco  
cessation has never been clearer.

**It's time to invest in tobacco cessation.**

## ENDNOTES

1. World Health Organization (WHO). WHO Report on the Global Tobacco Epidemic, 2019. Geneva: World Health Organization; 2019. License: CC BY-NC-SA 3.0 IGO.
2. The model assumes a 10-year investment interval (2021-2030) with ROIs calculated for the end of the investment period (2030) and over the productive life of the cohort of quitters (until age 65 years). The benefits of proven cessation interventions were quantified using projected number of successful quitters, all-cause mortality averted due to quitting, and economic and social benefits estimated per life-year saved. Refer to accompanying methodology document for more details.
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10. Nilan K, Raw M, McKeever TM, Murray RL, McNeill A. Progress in implementation of WHO FCTC Article 14 and its guidelines: a survey of tobacco dependence treatment provision in 142 countries. *Addiction*. 2017;112(11):2023–31.
11. Additional scenarios that simulate price reductions for pharmacological interventions to achieve an ROI of at least 1 by 2030 were also considered.
12. The analysis includes a total of 124 WHO Member States, grouped according to the 2020 World Bank Country Income Classification (26 low-income countries, 49 lower-middle income countries, and 49 upper-middle income countries). The base year for costs is 2021, while a 3% discount rate was used over the 10-year period of the intervention. For this analysis, those who successfully quit tobacco after 6 months were assumed to be permanent quitters. To estimate the economic and social benefits derived from the lives saved due to the intervention, the model uses a conservative value of 1.45 times the GDP per capita per life-year saved (i.e. value of a statistical life (VSL)). VSL in this analysis represents the imputed value of the direct contribution a person makes to the economy through the production of goods and services, and the indirect contribution a person makes to the rest of society – e.g. being a member of a community. More details on the assumptions can be found in the accompanying methods document.

