Reducing Cardiovascular Mortality Through Tobacco Control

A World Heart Federation Roadmap

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1. BACKGROUND

1.1. The importance of tobacco control

1.1.1. Tobacco control's role in reducing CVD mortality

Without accelerating the implementation of comprehensive, effective tobacco control policy around the world, it will be virtually impossible to reduce premature mortality from non-communicable diseases (NCDs) by 25% by 2025 [1]. The tobacco epidemic is a leading cause of premature CVD mortality. Globally, tobacco causes 10% of all CVD deaths. The figure is higher at younger ages: more than one third of the CVD deaths (35%) in younger adults (under the age of 45) are attributable to tobacco use [2]. In nonsmokers, especially women, secondhand smoke (SHS) exposure substantially increases the risk of CVD; reducing SHS exposure rapidly lowers the incidence of heart attack.

1.1.2. Defining tobacco control

The actions needed to reduce CVD mortality from tobacco use and secondhand smoke exposure are based on the tobacco control policies set forth in the WHO Framework Convention on Tobacco Control (WHO FCTC) [3]. The WHO FCTC sets out a comprehensive package of evidence based policy interventions for reducing both demand for and supply of tobacco and represents a strong global consensus on best practice in tobacco control. For clarity and focus, the WHF Tobacco Control Roadmap highlights the policies that are most cost-effective for reducing demand for tobacco.

1.1.3. What must be achieved by 2025

The WHO Global Action Plan (GAP) for the Prevention and Control of NCD's 2013–2020 establishes a voluntary target of reducing prevalence of tobacco use by 30% by 2025. The two components of lowering prevalence of tobacco use are reducing tobacco initiation (particularly among youth and women) and increasing quit rates for current smokers (who are primarily adult males) (Figure 1). To meet GAP mortality targets by 2025 will require a rapid increase in quit rates among current users; sustaining progress over the longer term will depend upon reductions in initiation of tobacco use. Independently of reduction of the prevalence of tobacco use, reducing non-smokers' exposure to SHS will reduce premature CVD mortality. Accelerating tobacco control measures in order to exceed the target on tobacco is one of the most feasible ways to achieve the overall GAP mortality target; globally, achievement of a 50% reduction in the prevalence of tobacco use would allow us to almost achieve the overall target for mortality [4].

1.1.4. Roadmap to stronger tobacco control

The WHO FCTC provides a detailed roadmap of evidence-based policies that reduce tobacco initiation, increase quitting, and protect from SHS. Most countries are party to the treaty and so are legally bound to enact the policies in the WHO FCTC. The GAP galvanizes commitment to WHO FCTC implementation and provides a framework for enlisting and coordinating multi-sectoral support for it. The WHF Tobacco Control Roadmap charts priority interventions for implementing the WHO FCTC, identifies obstacles to implementation of its policies, and indicates paths to bypassing these obstacles. Its milestones mark progress toward both achieving the GAP target on tobacco and more broadly, reducing CVD mortality through tobacco control. It indicates progress in both processes (e.g., enacting and enforcing policies and strengthening health systems) and outcomes (e.g., reduction in tobacco use, change in norms, and reduction of mortality). For additional information on tobacco cessation strategies see the WHF companion Roadmaps for Secondary Prevention and Hypertension.

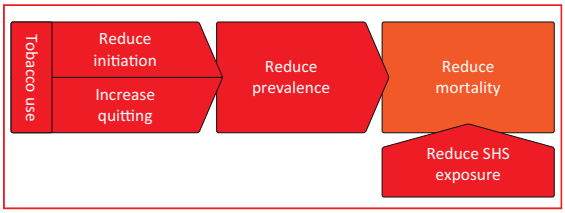

FIGURE 1. Actions for reducing CVD mortality related to tobacco. SHS, second-hand smoke.

1.2. The problem of tobacco

1.2.1. Death and disease from tobacco use

Tobacco is the only legal product, that when used as directed, kills a large proportion of its users [5,6]. Tobacco is now estimated to cause approximately 6 million deaths yearly. The majority of these deaths are among males. Globally, smoking prevalence is about five times higher among men (37%) than among women (7%) [5,7]. The

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only common risk factor that applies to the four major NCD disease groups, tobacco causes diseases in nearly all organs of the body; it also harms the fetus, impairs immune function, and causes inflammation. Chemicals in tobacco interfere with reproductive processes, increase complications of pregnancy, cause low birth weight, and damage DNA. The cardiovascular damage from cigarette smoking is immediate and there is no safe level of exposure to tobacco smoke [8]. No cigarette is safe: low-tar, and "light" cigarettes do not reduce the risk of death and disease.

Globally, tobacco causes 10 percent of all CVD deaths; in some countries the figure reaches up to 25 percent of CVD deaths before age 60 [2]. A major cause of coronary heart disease, stroke, aortic aneurysm, and peripheral artery disease [8], smoking doubles the risk of heart attacks and strokes [9], making some consider tobacco use to be the most significant modifiable cardiovascular risk factor [10]. People who smoke present with myocardial infarction at a younger age than either nonsmokers or those who have quit [11].

In some areas, smokeless tobacco use is a major health problem, especially in South Asia, where it is very common, particularly among women. Widely perceived to be safer and more appropriate for women and children than cigarettes, the use of water pipes damages cardiovascular, pulmonary, and oral health, and harms the fetus in ways similar to cigarettes [12]. Although risks from smokeless tobacco like snus may be lower than the risks associated with smoked tobacco, there is evidence suggesting a link between CVD risks (including hypertension and changes in lipid profile) and the use of smokeless tobacco [13,14].

1.2.2. Death from SHS exposure

Tobacco smoke includes hundreds of toxins, and exposure to SHS kills some 600,000 people each year; worldwide, some 87% of adult deaths from SHS exposure are caused by CVD [15]. In non-smokers, SHS exposure increases the risk of CVD by approximately 25–30% [8], can increase the severity of heart attacks [16], and increases the risk of strokes by 20–30% [9]. CVD risk rises steeply at lower exposures to SHS, so even low levels of exposure result in increased risk [17–19], and there is no safe level of exposure [19].

1.2.3. Tobacco addiction

Tobacco is highly addictive [20]. Nicotine is the main cause for the addictive properties of tobacco. Psychosocial, biological and genetic factors appear to play a role in nicotine addiction. As with other addictive substances like heroin and cocaine, nicotine undermines users' freedom of choice about quitting and can thwart adherence to medical advice and treatment. Often adolescents' bodies are particularly susceptible to addiction and they become addicted more quickly than adults.

1.2.4. The tobacco industry

The tobacco industry is the cause of the tobacco epidemic. Its activities are also the most important vector of disease transmission, and the biggest barriers to disease control. Its activities are facilitated by global trends such as trade liberalization, transnational marketing, and illicit trade. There is a global consensus that there is a fundamental contradiction between public health and the interests of the tobacco industry [21]. The fact that the dangers of tobacco affect all social, ethnic, religious, and political groups would make it logical for tobacco control to be everyone's priority, but the wealth and power of the tobacco industry pushes protection from tobacco beyond the realm of the health system and into the political arena. While the health system is part of the solution to the tobacco epidemic, many of the actions required for tobacco control depend upon other sectors concerned with the broader economic and social activities that feed the business of tobacco production and sale. The lessons learned from tobacco control provide valuable insights and experience for tackling other NCD risk factors that are driven by business interests and/or social and economic forces.

1.2.5. Perception of tobacco use as fashion, "lifestyle choice", or right

Tobacco use is deeply ingrained in many societies, and reducing tobacco prevalence will require a strong and sustained commitment to changing social norms around tobacco use. Norms that limited tobacco use in some countries (particularly women's tobacco use in Asia and the Middle East) are being eroded by the tobacco industry's aggressive marketing campaigns. The tobacco industry spends tens of billions of dollars to promote its products, framing tobacco use as a personal choice that expresses identity and sustaining the perception of tobacco use as a normal activity or even a right. The widely-held perception that tobacco use is not an addiction or illness but a "lifestyle choice" has been an important barrier to putting effective policies in place, but this barrier is being overcome in a growing number of countries.

Tobacco industry advertising, promotion, and sponsorship activities associate tobacco use with fashion, friendship, independence, freedom, fun, sexual attractiveness, identity and belonging, social status and power. It particularly targets future markets of youth, women, and low- and middle-income populations.

Tobacco advertising causes tobacco use to increase and even brief exposure to it can influence adolescents [22]. Advertising and brand imagery encourage youth to start smoking and for those who are addicted, serve as cues to stimulate the cravings that make it hard to quit. In addition to traditional means of advertising, such as promotion on television, radio, and in printed media, tobacco products are advertised at point of sale, over the internet and other social media, through promotional schemes including giveaways and sales, and through tobacco packaging. Packaging is often designed to appeal to young people and women, to give the impression that products are safe, or undermine the effectiveness of health warnings [23].

The tobacco industry uses the sponsorship of charities and cultural activities under the guise of corporate social responsibility to improve its image among the public,