



The origins, development, effects, and future of the WHO Framework Convention on Tobacco Control: a personal perspective

Derek Yach

Worldwide, more than 1 billion people use tobacco, resulting in about 6 million deaths per year. The tobacco industry's documented history of subverting control efforts required innovative approaches by WHO—led by Gro Harlem Brundtland—including invocation of its constitutional authority to develop treaties. In 2003, WHO member states adopted the WHO Framework Convention on Tobacco Control (WHO FCTC). In the decade since, 177 countries have ratified and started to implement its full provisions. Success has been tempered by new challenges. Tobacco use has fallen in countries that are members of the Organisation for Economic Co-operation and Development but increased in low-income and middle-income countries, a result in no small part of illicit trade and cheap products from China and other unregulated state monopolies. This review of 50 years of policy development aimed at reducing the burden of disease attributable to tobacco reviews the origins and strategies used in forging the WHO FCTC, from the perspective of one who was there.

Introduction

In 1954, the tobacco industry issued *A Frank Statement to Cigarette Smokers*,¹ claiming, “we believe the products we make are not injurious to health. We always have and always will cooperate with those whose task it is to safeguard the public health”. A defensive reaction to mounting evidence about the health effects of tobacco, this assertion was inconsistent with scientific consensus even at that time. Nonetheless, the public health community took almost a decade to respond. The Royal College of Physicians (1962)² and the US Surgeon General (1964)³ issued reports on the health consequences of tobacco use. Over time, large prospective studies strengthened the epidemiological evidence. The Global Burden of Disease reports^{4,5} synthesised this evidence, showing that about 3 million people died as a result of tobacco use in 1997 and projected a sharp increase over the ensuing decades.

The WHO Framework Convention on Tobacco Control (WHO FCTC)—adopted by member states in 2003—is a cornerstone of 50 years of policy development aimed at reducing the burden of disease attributable to tobacco. A review of the origins and strategies used in forging the WHO FCTC, from the perspective of one who was there, could serve those who aim to apply the WHO FCTC process to deal with other threats to public health.

Response to a global threat

Evidence of the harmful health as well as economic effects of tobacco was globalised through resolutions of WHO's World Health Assembly starting in 1970,⁶⁻⁹ and World No Tobacco Days,¹⁰ and through the World Conference on Tobacco or Health.¹¹ The first effective policy responses—strategies to reduce consumption, such as increased excise taxes and marketing restrictions for cigarettes—were introduced in Australia, Canada, Finland, Norway, and Singapore.⁶ In the USA, the 1964 Surgeon General's report was further bolstered by the ban on television

advertising of tobacco products beginning in 1971 and campaigns to protect non-smokers from exposure to second-hand smoke. In 1999, the World Bank identified many of these measures as the most cost-effective way to tackle tobacco consumption for all countries.¹²

Transnational tobacco control gained support as countries with effective policies recognised their progress could be undermined by cross-border advertising and illicit trade, resulting in an unintended consequence: the rapid expansion of tobacco use in resource-poor countries. Calls for action were issued at the 1993 All Africa Tobacco Control Conference in Zimbabwe¹³ and 1994 World Conference on Tobacco Control in Paris.¹⁴ WHO resolutions for development of an international strategy for tobacco control in 1995¹⁵ and formally calling for an international WHO FCTC in 1996^{16,17} resulted from the tireless efforts of a small WHO secretariat in the face of opposition from senior WHO officials.

The Canadian Government strongly supported the rationale and political imperative for the WHO FCTC. Analyses of the economic and development aspects of tobacco by Canada's International Development Research Centre would underpin the WHO FCTC. The Centre brought leaders in tobacco control to Bellagio, Italy, in 1995 to discuss how to accelerate action. Many participants had a role in the subsequent work of the Tobacco Free Initiative.¹⁸ WHO spent 3 years developing *Health-for-all policy for the twenty-first century*.¹⁹ In May 1998, the WHO noted the document and a related resolution²⁰ in words that would support the WHO FCTC: “as global interdependence increases, so will the need for global, ethical, and scientific norms, standards and commitments, including some that are legally binding.”²¹

Tobacco control becomes a WHO priority

Gro Harlem Brundtland's commitment to evidence-based policies and awareness of international political strategy honed over a decade as Norway's Prime Minister

Lancet 2014; 383: 1771-79

Published Online

January 22, 2014

[http://dx.doi.org/10.1016/S0140-6736\(13\)62155-8](http://dx.doi.org/10.1016/S0140-6736(13)62155-8)

50140-6736(13)62155-8

The Vitality Institute, New York, NY, USA (D Yach MBChB)

Correspondence to:

Derek Yach, 3 Columbus Circle, Suite 1656, New York, NY 10019, USA

dyach@thevitalitygroup.com

For more on the **International Development Research Centre** see <http://www.idrc.ca/EN/Pages/default.aspx>

played a part in her decision to advance tobacco control within the global health agenda on her election as WHO Director-General in 1998. Brundtland served three terms as Prime Minister—1981, 1986–89, and 1990–96. As Minister of Health, she strongly supported national action, which the tobacco industry noted with concern in internal documents. “The emphasis on smoking became clear early on with the keynote address by Norway’s Prime Minister, Gro Harlem Brundtland...she spent much of her time attacking tobacco and transnational tobacco companies and calling for a complete ban on the sale, promotion and marketing of tobacco.”²²

After Brundtland took the helm at WHO, Philip Morris secretly circulated a document within the industry that stated: “whatever else happens, the election of Brundtland has caused the tobacco issue to be suddenly and dramatically pushed to the top of WHO’s action agenda. It is also clear that the new Director-General will be a figure to be reckoned with, that she will bring unusual energy to the fight, and that she has staked much on the outcome.”²³

Her post-election address made clear that tobacco control would be a priority: “we need to address a major cause of premature death which is dramatically increasing—killing four million people this year—and—if we let it go on without action—10 million people in 2030—half of them dying in middle age—not old age. The major focus of the epidemic is now shifting to the developing countries. I refer to tobacco. I am a doctor. I believe in science and evidence. Let me state here today. Tobacco is a killer. We need a broad alliance against tobacco, calling on a wide range of partners to halt the relentless increase in global tobacco consumption.”²⁴

Key strategies to mobilise support for the WHO FCTC

Tobacco control has always been fundamentally different from infectious disease control. The vector—the tobacco industry—is ever present, watchful, and dedicated to thwarting progress. This required approaches never before used by WHO, embodied by eight key strategies.²⁵

(1) Build a team to drive change. The key decisions of Brundtland’s term emerged from intense discussions within her transition team. Richard Peto and Chris Murray laid out the epidemiological rationale and argued that tobacco control should be the front end of a broader focus on non-communicable diseases. Judith Mackay urged the use of Article 19 of the WHO constitution—the ability to develop treaties—to address a global health threat. Jonas Store understood how tobacco control would both be supported by the Organisation for Economic Co-operation and Development countries and complement efforts to control malaria, a major threat to African countries. I was appointed to lead the Tobacco Free Initiative, had worked for many years on tobacco control in South Africa, and was a key figure in the pan-African tobacco control movement.

(2) Shine light on tobacco industry role in thwarting progress. Among the outcomes of *State of Minnesota versus Philip Morris*²⁶ was a requirement that tobacco companies open all secret records. “...35 million pages of long-secret documents were opened for public scrutiny... their revelations about political trickery have altered the course of national debates from Egypt to Argentina.”²⁷

Exploration of the records by the Tobacco Free Initiative revealed a decades-long campaign to subvert public policies.²⁸ An inquiry initiated by WHO in collaboration with the World Bank led to a report showing well-financed and effective industry efforts to stop, slow, or delay the introduction of effective tobacco control policies within WHO and member states.²⁵ The inquiry yielded outcomes in two areas without which there might have been no WHO FCTC. The World Health Assembly adopted *Transparency in tobacco control*,²⁹ a 2001 resolution warning governments about tobacco industry tactics, and developed language supportive of making tobacco companies liable for harm in the final adopted text of the WHO FCTC. It also galvanised a global network of non-governmental organisations linked to major media, which reframed the tobacco control debate in terms of corporate accountability rather than human frailty.

Public access to industry records also led to the discovery that some critics of tobacco control were on the industry payroll²⁸—notably Roger Scruton,^{30,31} whose opinion pieces appeared in *The Wall Street Journal* and *Financial Times*. In a lengthy email exchange, he quibbled with his Japan Tobacco International paymasters about his fees for editorials and commentaries related to tobacco.³²

I was singled out in internal tobacco company communications.^{33,34} Shabanji Opukah—of British American Tobacco—noted in a memo: “as discussed we also believe the research is driven by anti-tobacco lobbyists most likely under the guidance of Dr Derek Yach...it will be interesting to hear from you about the latest activities of Dr Yach, who as you mentioned in our telephone conversation, is currently based in Ghana. It is worth noting that his presence there is most likely to cause some concern if not problems for industry there in particular and for Africa in general.”³⁵

(3) Facilitate development of an effective media-supported nongovernmental organisation movement. *Tobacco kills—don’t be duped*³⁶ and *Channeling the outrage*³⁷—two WHO initiatives funded by the UN Foundation—provided the money and the means that resulted in the Framework Convention Alliance. Non-governmental organisation, media advocates, and government officials who were committed to tobacco control and who met on a regular basis were provided with an electronic safe space, closed to the general public and tobacco industry representatives, in which they could discuss strategy and tactics, through Globalink,³⁸ a network funded by the American Cancer Society through the International Union Against Cancer.

(4) Gain support of the UN and Bretton Woods system. With the exception of the 1996 International Civil Aviation Organization's ban on smoking on airplanes,³⁹ tobacco control was not a priority for the UN until 1998. The UN Conference on Trade and Development—responsible for coordinating policies related to tobacco—was moribund. Brundtland requested that Secretary General Kofi Annan shift this role to WHO, leading to a UN and Bretton Woods agreement about the importance of demand-reduction to tobacco control across all UN agencies and the need for many UN bodies to take action to support the evolving WHO FCTC.^{40,41}

Table 1 shows early shifts in policies achieved through the UN Economic and Social Council Ad Hoc Committee on Tobacco Control.⁴⁰ Several initiatives have not been continued and some agencies—notably UNICEF and the World Bank—have scaled back their advocacy and action-oriented approaches to tobacco control. Although WHO leads implementation of the FCTC, it is a UN treaty requiring support from many agencies. A separate WHO FCTC secretariat had to be established to manage the legal and intergovernmental aspects of the treaty process, independent of the core tobacco control functions of WHO. Funding for the FCTC secretariat is crucial, and should come from member states, but it does not.

(5) Develop country-specific strategies to build consensus. The tobacco industry's documented history of thwarting tobacco control required special attention from countries most likely to oppose the WHO FCTC (China, Germany, Japan, USA), while encouraging others (Brazil, Canada, Iran, Ireland, Norway, Palau, South Africa) to be more active. The USA's position was complicated by the fact that the Centers for Disease Control (CDC) and the National Institutes of Health strongly supported multilateral treaties, whereas the State Department was reluctant, in principle, to endorse such treaties, irrespective of their goal. Germany's position was crucial because decisions of the European Union must be adopted by consensus. The Tobacco Free Initiative shared evidence with the German government about how past administrations had responded to

pressure from the tobacco industry.⁴⁴ Hours before the final negotiating session in March, 2003, Germany requested inclusion of a reservation clause, allowing parties to withdraw from obligations they may not like, thus weakening the WHO FCTC. The clause was rejected. Germany backed down and went with what, by then, was rolling consensus. WHO FCTC Article 30 clearly states that there is no reservation clause.⁴⁵

Table 2 shows meetings arranged by WHO to build support for the WHO FCTC and to reduce opposition. Meetings in Japan⁵⁸ and China⁵⁹ led by Brundtland played an important part in the final stages of negotiation. The newly formed Framework Convention Alliance awarded so-called Dirty Ashtray or Orchid awards to countries that were either obstructing or promoting effective measures in the WHO FCTC.⁶⁰ Notable winners of the Dirty Ashtray included Japan, for urging the Conference of the Parties⁶¹ to allow tobacco industry interference in product regulation, and the USA, for advocating a 75% majority voting requirement to implement WHO FCTC recommendations. Orchid winners included Norway, for being the first to ratify the FCTC, and Kenya, for saying that “tobacco taxes are win-win—good for health and good for revenue.”⁶²

(6) Establish reliable surveillance systems to measure progress, and invest in applied research. Epidemiological studies have been crucial for establishment of causal links between tobacco and many health outcomes. WHO believed that for every country to understand the need for action, as well as assess the effect of their policies, a global surveillance system for tobacco use in young people was needed. This system was to be based on surveys carried out and interpreted nationally and supported by investment in national research capacity for tobacco control and policy-oriented research for tobacco control. In collaboration with WHO, the US CDC initiated the Global Youth Tobacco Survey in 1999,^{63,64} which has completed surveys in 180 countries to date. Many have been repeated, and more recently—with support from Bloomberg Philanthropies and the Bill & Melinda Gates Foundation—adult surveys have been done in 20 countries by the end 2012.

	Actions taken (1992–2003)	Subsequent developments
UNICEF	Report on the Convention of the Rights of the Child and Tobacco; ⁴² strong advocacy by Carol Bellamy	No follow-up
World Bank	Authored <i>Curbing the Epidemic: Governments and the Economics of Tobacco Control</i> ; ⁷ co-supporter of the UN inquiry into the tobacco industry; ended loans for tobacco farming	Little follow-up
UNDP	Weak support in 2000	21 of 120 countries have included tobacco control in their development plans
Food and Agriculture Organization	Comprehensive analysis of tobacco farming; ⁴³ resolution to support agriculture ministries to review diversification options (never activated by any government)	In 2013, sought support from WHO for continued work but not forthcoming; acknowledges that food prices are now competitive with tobacco in many African countries
International Civil Aviation Organization	Strong support for a ban on smoking on airlines in 1992 ³⁹	Still in effect

Table 1: UN and Bretton Woods agency actions in support of tobacco control: 1992–2013

Event	
Geneva, Switzerland (1999)	Debate with CEO of British American Tobacco ⁴⁶
Davos, Switzerland (1999)	World Economic Forum launch of WHO–pharmaceutical industry partnership ⁴⁷
Geneva, Switzerland (1999)	A WHO Tobacco Free Initiative meeting for tobacco and religion ⁴⁸
Singapore (1999)	Focus on young people and tobacco ⁴⁹
Lake Tahoe, CA, USA (1999)	National Tobacco Control meeting: outlined the value of drawing on California's leadership in advocacy for tobacco control ⁵⁰
Oslo, Norway (2000)	Norway hosted "Advancing knowledge on regulating tobacco products", a major meeting for the regulation of tobacco products, resulting in production of a WHO report ⁵¹
Hannover, Germany (2000)	Hannover Expo highlighted past interactions between the German government and the tobacco industry ⁴⁴
Chicago, IL, USA (2000)	11th annual World Conference on Tobacco or Health: featured many sessions on the WHO FCTC and mobilised nongovernmental agencies to support the process ⁵²
Amman, Jordan (2001)	Globalisation of tobacco control litigation: opened by Queen Rania and considered how to build on the Minnesota Court Case ⁵³
Japan (2001)	Release of a WHO-supported book about the negative links between tobacco and the health of women ⁵⁴
South Korea (2002)	FIFA World Cup goes tobacco free ⁵⁵
Salt Lake City, UT, USA (2002)	Salt Lake City Winter Olympics hosts high-level advocacy event ⁵⁶
Dublin, Ireland (2004)	Building support for smoke free pubs ⁵⁷

Table 2: Major events that built support for the WHO Framework Convention on Tobacco Control

For many years, Canada's International Development Research Centre was one of few funders of research for tobacco control. Its focus has been economic and development issues, including support for increases of excise tax and the effect of tobacco on agriculture. In the USA, the National Institutes of Health's Fogarty International Center worked with WHO to initiate the International Tobacco and Health Research and Capacity Building Program, which has had a substantial effect on tobacco control research and policy in low-income and middle-income countries.^{65,66} However, investment in research remains minuscule compared with tobacco industry resources, and most countries lack the capacity to do any tobacco research at all.

(7) Reach out to the private sector and sports. Brundtland understood the importance of sending a clear message that anti-tobacco does not mean anti-corporate. This distinction was key to the launch of a partnership between four major manufacturers of tobacco cessation products and WHO at the World Economic Forum in 1999.⁴⁷ The same meeting saw one of the few debates between WHO (represented by me) and the CEO of a tobacco company (Martin Broughton of British American Tobacco). Broughton spoke personally about lifestyle choices, which we now know from the work of behavioural economists to be incorrect.^{67,68} "I choose to gamble occasionally on the horses, drink a little more than I tell my doctor and take very little exercise. I have chosen my lifestyle: knowing the risks. We all choose our lifestyles."⁶⁶ Repeated proposals by Broughton, that WHO should scrap work on the WHO FCTC in favour of voluntary agreements, were rejected by Brundtland.⁶⁹

WHO worked to disengage the sports community from its close relations with the tobacco industry. It hosted a meeting for tobacco control that included UN Secretary General Annan, Bishop Desmond Tutu, and Brundtland during the 2002 Salt Lake City Winter Olympics.⁵⁶ That

same year, the South Korean government—with support from WHO—declared the FIFA World Cup in South Korea and Japan smoke-free,^{55,70} ending both tobacco sponsorship and smoking in the stadium. Smoke-free women's football and volleyball followed. It became clear that all sports would be required to end tobacco sponsorship. Exposure of Formula One racing CEO Bernie Ecclestone's £1 million gift to Tony Blair's election campaign—allegedly to delay implementation of the ban—led to creation of the FIA Foundation, which funds automobile injury control.^{71,72}

(8) Select and support the best negotiators to lead the WHO FCTC process. Brundtland understood that the WHO FCTC process had to be led by negotiators with exceptional intellectual and persuasive skills covering health, politics, and development. Celso Luiz Nunes Amorim (then Brazilian Ambassador to the UN and now Minister of Defense) and Luiz Felipe de Seixas Correa (who was the lead Brazilian negotiator for the World Trade Organization) exceeded these criteria. They steered the WHO FCTC process to completion by consensus in less than 5 years. Their mantra was: nothing is agreed until everything is agreed. Their understanding of where fault lines lay between blocs of countries led to adoption of a treaty that mentions trade only in relation to illicit trade. Many resource-poor countries pressed for language calling for health concerns related to tobacco to trump trade considerations, which many Organisation for Economic Co-operation and Development countries were likely to oppose. Compromise was reached through a preamble that included that assertion that signatories were "...determined to give priority to their right to protect public health".⁷³ Although the compromise softened the regulation of trade and might be seen as a weakness that could have enabled the tobacco industry to exploit new markets, when read in conjunction with a World Trade Organization statement issued soon after adoption, it suggests that the WHO FCTC would be used

as the basis for determining the validity of future tobacco control challenges to the World Trade Organization.⁷⁴ The current Australian enforcement of plain packaging is likely to test this clause soon.⁷⁵

Progress over the past decade

The effect of the WHO FCTC in the decade since its adoption is indisputable. Progress in implementation of specific actions has been reported at the Conference of the Parties⁷⁷ and in regular WHO Global Progress Reports.⁷⁶ 68% of parties have implemented the provisions; the proportion of parties reporting development and implementation of multisectoral national strategies, plans, and programmes increased from 49% in 2010, to 59% in 2012. More than 75% of parties strengthened existing legislation or adopted new tobacco control policies after ratification.⁷⁶

Since 2003, many of the earliest adopters of comprehensive tobacco control have continued to innovate. Front runners—eg, Australia, Canada, Norway, and Singapore—have been joined by Brazil, South Africa, Turkey, Ukraine, and Uruguay. Turkey has performed a volte-face from a decade ago, when its trade representatives lobbied aggressively for voluntary agreements rather than a WHO FCTC.

In 2008, WHO identified six evidence-based measures at the heart of the WHO FCTC that were most effective for reducing tobacco use. The so-called MPOWER measures are: Monitoring tobacco use and tobacco control policies; Protecting people from the dangers of tobacco smoke; Offering help to quit tobacco; Warning the public about the dangers of tobacco; Enforcing bans on tobacco advertising, promotion and sponsorship; and Raising tobacco taxes.

MPOWER was developed to reduce smoking-attributable deaths, which are projected to reach 8 million per year by 2030 without control efforts.⁷⁷ One of the first studies of the effect of lives saved since adoption of the WHO FCTC evaluated the effect of MPOWER measures on reducing smoking-attributable deaths in 41 countries and territories from 2007 to 2010.⁷⁸ The findings suggest that full implementation of MPOWER policies will reduce the number of smokers by 14.8 million (5.2% of the total) in the countries studied and will prevent nearly 7.4 million (2.6%) smoking-related deaths worldwide by 2050. The largest number of smoking-attributable deaths averted will result from increased cigarette taxes (3.5 million), smoke-free air legislation (2.4 million), health warnings (700 000), cessation treatment (380 000), and bans on tobacco marketing (306 000). Although these numbers are large in absolute terms, they show how much still needs to be done to affect the 1 billion smokers in the world and their probability of dying prematurely.

From the start of WHO FCTC negotiations, illicit trade demanded attention because it skirts excise taxes, the most effective of all tobacco control measures. Some progress has been made in addressing illicit trade,

though much remains to be done. Shortly after the terrorist attacks in the USA on Sept 11, 2001, an unlikely group of parties—the law enforcement and tobacco control communities—convened at the UN to outline an effective approach to illicit trade. The US Bureau of Alcohol, Tobacco, and Firearms (as it was then called) sponsored the meeting after it uncovered smuggling between states with low and high tax rates, with profits used to finance the activities of Hezbollah. Despite acceptance by member states of the need for adoption of an early protocol on illicit trade in tobacco products, 9 years elapsed before governments adopted the protocol,⁷⁹ and it has yet to be ratified and fully adopted. Moreover, the protocol left several issues unresolved, including how WHO will work with Interpol and US and European tobacco companies, which have both the means and ability to reduce illicit and counterfeit products, and the source of funding for full implementation (funding from Organisation for Economic Co-operation and Development countries for other aspects of tobacco control has virtually stopped). In 2004, Philip Morris International agreed to pay the European Commission up to US\$1.25 billion to support efforts to reduce illicit trade,⁸⁰ despite explicit language in the WHO FCTC proscribing interaction with industry.⁸¹

Challenges for the second decade of the WHO FCTC

Brundtland's experience as Prime Minister enabled her to build support for tobacco control at the highest levels of the World Bank, UN, national governments, and the pharmaceutical industry, rather than relying mainly on the support of health ministers. After her term ended in 2003, both subsequent Directors-General—Lee Jong-wook and Margaret Chan—continued to strongly advocate for tobacco control. However, the funding crisis affecting WHO has reduced staff numbers and led to the Tobacco Free Initiative's absorption into a general non-communicable disease prevention department.

Efforts to control tobacco should be reinvigorated to address unfinished business, including engaging non-governmental organisation and the private sector; tackling the role of state-sponsored tobacco companies more aggressively; preventing tobacco use in girls reaching the levels of use in boys; and developing a worldwide nicotine policy to address rapid increases in use of non-combustible and non-tobacco forms of nicotine. New thinking and innovative strategies are needed if gains are to be sustained and progress is to continue.

Effective public-private partnerships need to be established and fostered. WHO's leadership was decisive in getting the WHO FCTC adopted at a high point for multilateralism and the power of treaties. Since then, a shift has occurred toward solutions that are not purely government-led but also engage civil society. This challenges WHO's narrow approach to health governance.

For more on MPOWER see
<http://www.who.int/tobacco/mpower/en>

Tobacco control has for too long primarily required government intervention, rarely engaging employers, insurers, and health, pharmaceutical, activity, information technology, and wellness enterprises, despite that their reach, expertise, access to innovation, and use of behavioural economics could bolster government policy and action.

Funding cuts to WHO's core budget, reduced visibility of the Tobacco Free Initiative, reduced funding for tobacco control from development agencies, and failure to integrate tobacco control into the post-Millennium Development Goals agenda all suggest that future success will require partnerships beyond governments and the UN. Investment for focused aspects of the WHO FCTC by the Bloomberg Philanthropies and the Bill & Melinda Gates Foundation is making a difference at a time when no other major funders have stepped forward.^{82,83} However, WHO's role in leading such partnerships remains crucial.

The health community should prepare for new and more aggressive actions by state tobacco companies. Chinese tobacco companies account for 40% of global cigarette sales and export rates are increasing.^{84,85} Multinationals based in the USA, Europe, and Japan are subject to oversight mechanisms and laws (including the Foreign Corrupt Practices Act in the USA and equivalent measures in Europe) that do not apply to Chinese and other state monopolies, which are becoming major exporters of cheap cigarettes to resource-poor countries.

Prevention of an epidemic of tobacco deaths in women needs to be taken seriously. The ratio of tobacco use in men versus women (table 3) has reduced or reversed in all countries for which data are available.⁸⁶ Therefore, today's generation of girls could smoke at rates that their fathers did. The WHO FCTC preamble notes the "increase in smoking and other forms of tobacco consumption by women and young girls worldwide",⁷³

and refers to the Convention on the Elimination of Discrimination against Women and its implications for tobacco control. Article 4 of the WHO FCTC acknowledges "the need to take measures to address gender-specific risks when developing tobacco control strategies".⁷³ Despite these decade-old statements, there is still no focused effort to understand what drives increases in tobacco use among girls beyond the globalisation of thin cigarettes and the general empowerment of women. Poland's recent success in scuttling EU laws restricting thin cigarettes does not augur well for other countries.⁸⁷ The newly created United Nations Entity for Gender Equality and the Empowerment of Women has responsibility for implementation of the Convention on the Elimination of Discrimination against Women. There is an urgent need for it to act on this crucial issue.

The WHO FCTC preamble also states that "the Convention on the Rights of the Child...provides that State Parties to that Convention recognize the right of every child to the enjoyment of the highest attainable standard of health".⁷³ Although UNICEF was involved in the WHO FCTC during the Framework's negotiation and reviewed the implications of the Convention on the Rights of the Child for tobacco control,⁸⁸ it has remained inactive on tobacco control despite mounting evidence linking maternal tobacco use to low birthweight and many other negative health outcomes for children. WHO growth norms are based on data from fully breastfed children of non-smoking mothers because absence of these two factors are major risks for growth. Effective tobacco control should be included in maternal and child health programmes.⁴²

Tobacco control should be differentiated from nicotine control and effective harm-reduction policies should be embraced. Among the WHO FCTC's many references to tobacco product design and regulation is the following: "cigarettes and some other products containing tobacco are highly engineered so as to create and maintain dependence...tobacco dependence is separately classified as a disorder in major international classifications of disease". Articles 3 and 9 (Objective and Regulation of tobacco products) indicate that the WHO FCTC will regulate tobacco products. The WHO FCTC did not anticipate nicotine delivery systems—such as electronic cigarettes—that do not contain tobacco. These products, in the view of many informed scientists, have the potential to be disruptive to many aspects of classic tobacco control.⁸⁹⁻⁹¹

These developments demand that WHO revisit its policies on nicotine versus tobacco. More than a decade ago, Brundtland said, "Despite our concerns about these clear differences in position, we are committed to hearing how the tobacco companies do propose to reduce the harm that their products cause. Our Scientific Advisory Committee is charged with proposing appropriate national and international tobacco product regulatory frameworks. We have invited tobacco company scientists

	Boys:girls (prevalence for boys, %)	Men:women (prevalence for men, %)
Argentina	0.71 (15.1%)	1.46 (34.3%)
Chile	0.70 (28.0%)	1.36 (41.7%)
USA	0.87 (12.1%)	1.22 (26.3%)
India	3.38 (5.4%)	27.6 (27.6%)
China	9.33 (5.6%)	16.1 (59.5%)
Philippines	1.95 (23.4%)	4.6 (38.9%)
Ghana	1.22 (2.8%)	14.2 (7.1%)
South Africa	1.98 (21.0%)	3.2 (25.0%)
Uganda	1.36 (5.7%)	12.2 (18.4%)
Jordan	1.86 (13.2%)	6.3 (61.9%)
United Arab Emirates	3.36 (12.1%)	16.0 (25.8%)
Bulgaria	0.77 (24.4%)	1.70 (47.5%)
Russia	0.85 (23.3%)	2.64 (70.1%)

Table 3: Ratio of tobacco use for boys to girls (age 13–15 years) and for men to women, by country

to provide their views on product modification to this Committee...".⁹²

WHO should outline and obtain support for a research agenda to answer basic questions about electronic cigarettes, including their safety and sidestream effects (ie, effects of smoke on non-smokers), effect on reduction of tobacco consumption, and potential to encourage young people to begin smoking traditional tobacco products. It must also consider the implications of a global nicotine policy for core WHO FCTC policies on tax, tobacco industry exclusion, marketing, and product regulation. Recent statements by WHO warning against use of electronic cigarettes^{93,94} should be replaced with a process that encourages development of evidence-based policies.

The success of the WHO FCTC raises the question of whether a treaty approach would work for other major health issues. It certainly could advance work aimed at reducing counterfeit and substandard medicines and medical devices, but is unlikely to be an effective means of tackling obesity, for example. Recently, Brundtland commented that—in a world turning away from treaties—greater emphasis should be given to private-public partnerships to solve complex social issues.⁹⁵ WHO's current review of new models of engagement with the full range of private players aligned with WHO goals needs to take this into account.

Finally, a concerted effort must be made to inject youth leadership into the ranks of tobacco control. The new generation's acute sense of urgency, passion, connectivity, and media capabilities could give tobacco control the stimulus to innovate that global health demands.

Conflicts of interest

I am a paid employee of the Vitality Institute, part of Discovery Holdings SA. The company has a material interest in lowering health risks, including tobacco use, among its members. I have been a paid employee of WHO during the development of the FCTC.

Acknowledgments

I thank Eleanore Alexander, Jessica Houston, and Barbara Ravage for substantive editorial and referencing support.

References

- 1 Tobacco News and Information. Daily doc: The "Frank Statement" of 1954: a frank statement to cigarette smokers. 2000. <http://archive.tobacco.org/Documents/dd/ddfrankstatement.html> (accessed July 8, 2013).
- 2 The Royal College of Physicians. Smoking and health: a report of the royal college of physicians on smoking in relation to cancer of the lung and other diseases. 1962. <http://www.rcplondon.ac.uk/sites/default/files/smoking-and-health-1962.pdf> (accessed July 9, 2013).
- 3 US Surgeon General. Smoking and health report of the advisory committee to the surgeon general of the public health service. 1964. <http://profiles.nlm.nih.gov/ps/access/NNBBMQ.pdf> (accessed July 9, 2013).
- 4 Murray CJ, Lopez AD. Mortality by cause for eight regions of the world: Global Burden of Disease Study. *Lancet* 1997; **349**: 1269–76.
- 5 Murray CJ, Lopez AD. Global mortality, disability, and the contribution of risk factors: Global Burden of Disease Study. *Lancet* 1997; **349**: 1436–42.
- 6 Yach D, Wipfli H. A century of smoke. *Ann Trop Med Parasitol* 2006; **100**: 465–79.
- 7 WHO. Report of the WHO technical advisory group on tobacco or health (TOH/TAG/89.11). Geneva, Switzerland: World Health Organization; 1989.
- 8 WHO Tobacco Free Initiative (TFI). WHO Resolutions. http://www.who.int/tobacco/framework/wha_eb/wha_resolutions/en/ (accessed July 16, 2013).
- 9 WHO Tobacco Free Initiative (TFI). WHA23.32 Health consequences of smoking. http://www.who.int/tobacco/framework/wha_eb/wha23_32/en/ (accessed July 16, 2013).
- 10 WHO. World no tobacco day. <http://www.who.int/tobacco/wntd/en/> (accessed July 10, 2013).
- 11 WHO. 15th world conference on tobacco or health (WCTOH). 2012 http://www.who.int/mediacentre/events/meetings/2012/tobacco_or_health/en/ (accessed July 10, 2013).
- 12 World Bank. Curbing the epidemic: governments and the economics of tobacco control. Washington, DC: World Bank Publications; 1999.
- 13 All Africa Conference on Tobacco Control (500820429). 1993. <http://legacy.library.ucsf.edu/tid/tj10a99/pdf> (accessed July 8, 2013).
- 14 Chapman S, Yach D, Saloojee Y, Simpson D. All Africa conference on tobacco control. *BMJ* 1994; **308**: 189–91.
- 15 Taylor ALRR. WHO: Tobacco Free Initiative (TFI): WHA48.11 An international strategy for tobacco control. 1995 http://www.who.int/tobacco/framework/wha_eb/wha48_11/en/ (accessed July 10, 2013).
- 16 WHO Framework Convention on Tobacco Control. Process for the WHO framework convention on tobacco control. 1996. <http://www.who.int/fctc/about/negotiations/en/> (accessed July 8, 2013).
- 17 Wellcome Trust Centre. WHO Framework Convention on Tobacco Control. http://www2.history.qmul.ac.uk/research/modbiomed/Publications/wit_vols/76841.pdf (accessed Sept 12, 2013).
- 18 WHO Tobacco Free Initiative (TFI). Bellagio statement. <http://www.who.int/tobacco/research/economics/bellagio/en/index.html> (accessed July 8, 2013).
- 19 WHO Regional Office for Europe. Health 21: The health for all policy framework for the WHO European region. 1998. http://www.euro.who.int/_data/assets/pdf_file/0010/98398/wa540ga199heeng.pdf (accessed July 16, 2013).
- 20 WHO. Health-for-all for the twenty-first century (EB101/9). 1997. http://apps.who.int/gb/archive/pdf_files/EB101/pdfangl/ang9.pdf (accessed July 16, 2013).
- 21 Antezana FS, Chollat-Traquet CM, Yach D. Health for all in the 21st century. *World Health Stat Q* 1998; **51**: 3–6.
- 22 International Conference on Preventative Cardiology: memorandum (950149925). 1993 <http://legacy.library.ucsf.edu/tid/bxn54f00/pdf?search=%22gro%20harlem%20brundtland%20minister%20of%20health%20prime%20minister%20national%20action%20tobacco%22> (accessed July 12, 2013).
- 23 Philip Morris. New WHO director-general makes international regulation of tobacco one of the WHO's central objectives: A report on the 51st world health assembly and 102nd meeting of the WHO's executive board (2065285220). 1998. <http://legacy.library.ucsf.edu/tid/spt83c00/pdf?search=%222065285220%22> (accessed July 12, 2013).
- 24 Dr Gro Harlem Brundtland director-general elect the world health organization: speech to the fifty-first world health assembly. 1998. http://apps.who.int/gb/archive/pdf_files/WHA51/eadv6.pdf (accessed July 12, 2013).
- 25 WHO. The world health report. 1999. http://www.who.int/whr/1999/en/whr99_en.pdf (accessed July 12, 2013).
- 26 Tobacco Control Laws. State of Minnesota v. Philip Morris Inc. <http://www.tobaccocontrolaws.org/litigation/decisions/us-19960725-state-of-minnesota.-et-al.-v.-> (accessed Sept 12, 2013).
- 27 State of Minnesota v. philip morris. http://discovery.mnhs.org/MN150/index.php?title=State_of_Minnesota_v._Philip_Morris (accessed July 12, 2013).
- 28 WHO. Tobacco company strategies to undermine tobacco control activities at the world health organization: report of the committee of experts on tobacco industry documents. 2000. http://www.who.int/tobacco/en/who_inquiry.pdf (accessed July 12, 2013).
- 29 WHO. Tobacco Free Initiative (TFI). WHA54.18 transparency in tobacco control. http://www.who.int/tobacco/framework/wha_eb/wha54_18/en/ (accessed July 12, 2013).
- 30 Kmietowicz Z, Ferriman A. Pro-tobacco writer admits he should have declared an interest. *BMJ* 2002; **324**: 257.
- 31 Allison R. Wall street journal drops Scruton over tobacco cash. *The Guardian*, 2002. <http://www.guardian.co.uk/media/2002/feb/05/tobaccoadvertising.internationaleducationnews> (accessed July 12, 2013).

- 32 Scruton in media plot to push the sale of cigarettes (526303962). 2002. <http://legacy.library.ucsf.edu/tid/yaz10d00/pdf?search=%22roger%20scruton%20japan%20tobacco%20email%20shysters%20sophie%22> (accessed July 12, 2013).
- 33 Letter from Tom Watson to Shabanji Opukah regarding article on "Tobacco in Africa" (900027518). 1996. <http://legacy.library.ucsf.edu/tid/ggi34a99/pdf?search=%22900027518%22> (accessed July 12, 2013).
- 34 Note from Shabanji Opukah to David Lulu regarding copy of article on sales of cigarettes to minors in the greater Johannesburg metropolitan area (700850011). 1996. <http://legacy.library.ucsf.edu/tid/jbs63a99/pdf?search=%22derek%20yach%20africa%20bat%22> (accessed July 12, 2013).
- 35 Opukah S. Re: Data collection on tobacco or health (502566315). 1994. <http://legacy.library.ucsf.edu/tid/zpz28a99/pdf;jsessionid=BDC2FC8BA28DDCF49BF5E05F2A4B93F.tobacco03> (accessed July 10, 2013).
- 36 WHO Tobacco Free Initiative (TFI). Tobacco kills—don't be duped. http://www.who.int/tobacco/research/tobacco_kills/en/ (accessed July 12, 2013).
- 37 WHO Tobacco Free Initiative (TFI). NGO channel the outrage project. <http://www.who.int/tobacco/research/ngo/en/index.html> (accessed July 12, 2013).
- 38 Globalink. <http://www.ncdlinks.org/globalink/> (accessed Jan 6, 2014).
- 39 International Civil Aviation Organization. Resolution A29-15: restrictions on international passenger flights. 1992. <http://www.icao.int/Meetings/AMC/MA/Assembly%2032nd%20Session/021.pdf> (accessed July 12, 2013).
- 40 United Nations Economic and Social Council. Resolutions and decisions adopted by the economic and social council at the 10th meeting of its resumed organizational session for 1999 and at its substantive session of 1999. www.un.org/documents/ecosoc/docs/1999/e1999-inf2-add2.pdf (accessed July 16, 2013).
- 41 UN Economic and Social Council Ad Hoc Committee on Tobacco Control. 2013 [cited July 16, 2013]; Available from: www.un.org/en/ecosoc/julyhls/g2013.shtml.
- 42 Syed S. World Health Organization: tobacco and the rights of the child. 1999. http://whqlibdoc.who.int/hq/2001/WHO_NMH_TFI_01.3_Rev.1.pdf (accessed July 12, 2013).
- 43 FAO. Projections of tobacco production, consumption and trade to the year 2010. 2003. <ftp://ftp.fao.org/docrep/fao/006/y4956e/y4956e00.pdf> (accessed July 17, 2013).
- 44 WHO Tobacco Free Initiative (TFI). Global dialogue for health: Dr. Derek Yach, executive director. 2000. http://www.who.int/tobacco/dy_speeches4/en/ (accessed July 12, 2013).
- 45 WHO Framework Convention on Tobacco Control 2003. Geneva: World Health Organization; 2003. http://www.who.int/tobacco/framework/WHO_FCTC_english.pdf (accessed July 14, 2013).
- 46 Martin Broughton's remarks to the World Economic Forum: Preserving freedom of choice while protecting public health (321839808). 1999. <http://legacy.library.ucsf.edu/tid/hdm55a99/pdf?search=%22321839808%22> (accessed July 10, 2013).
- 47 WHO. WHO launches partnership with the pharmaceutical industry to help smokers quit, Davos. 1999 <http://www.who.int/inf-pr-1999/en/pr99-04.html> (accessed July 12, 2013).
- 48 WHO Tobacco Free Initiative (TFI). Meeting on tobacco and religion: meeting report (WHO/NCD/TFI/99.12). 1999. <http://webcache.googleusercontent.com/search?q=cache:8TFE0luQswAJ:www.who.int/tobacco/media/en/religioneng.doc+WHO/NCD/TFI/99.12+WHO+Tobacco+Free+Initiative+Meeting+on+Tobacco+and+Religion+May+1999+Geneva&cd=2&hl=en&ct=clnk&gl=us> (accessed July 17, 2013).
- 49 WHO Tobacco Free Initiative (TFI). International consultation on tobacco and youth- what in the world works? 1999. http://www.who.int/tobacco/dy_speeches7/en/ (accessed July 17, 2013).
- 50 WHO Tobacco Free Initiative (TFI). No where to run, no where to hide – world community joins WHO in holding up mirrors to big tobacco. 1999. http://www.who.int/tobacco/dy_speeches6/en/ (accessed July 17, 2013).
- 51 WHO. Advancing knowledge on regulating tobacco products. 2000. <http://www.who.int/tobacco/media/en/OsloMonograph.pdf> (accessed July 17, 2013).
- 52 Robert Wood Johnson Foundation. International tobacco control conference packs a crowd. 2003. <http://pweb1.rwjf.org/reports/grr/039809.htm?referer=www.clickfind.com.au> (accessed July 17, 2013).
- 53 WHO Tobacco Free Initiative (TFI). WHO consultation on litigation and public inquires as public health tools for tobacco control. 2001. http://www.who.int/tobacco/dy_speeches/en/ (accessed July 17, 2013).
- 54 Samet J, Yoon SY, eds. Women and the tobacco epidemic: challenges for the 21st century. Geneva: World Health Organization, 2001.
- 55 Fifa. Football development: global showpieces to be smoke-free events. <http://www.fifa.com/aboutfifa/footballdevelopment/medical/news/newsid=2025637/index.html> (accessed July 10, 2013).
- 56 WHO Tobacco Free Initiative (TFI). Tobacco free Olympics. 2002. http://www.who.int/tobacco/free_sports/olympics/en/ (accessed July 12, 2013).
- 57 WHO. Bulletin of the world health organization: business as usual for smoke-free places. 2006. <http://www.who.int/bulletin/volumes/84/12/06-021206/en/> (accessed July 17, 2013).
- 58 WHO Centre for Health Development Kobe. Japan. Report of the fourth meeting of the advisory committee of the WHO for health development. 1999. <http://whqlibdoc.who.int/hq/1999/a69200.pdf> (accessed July 16, 2013).
- 59 Niu SR, Yang GH, Chen ZM, et al. Emerging tobacco hazards in China: 2. Early mortality results from a prospective study. *BMJ* 1998; **317**: 1423–24.
- 60 Framework Convention Alliance. Building support for global tobacco control. Alliance bulletin smart germs and tobacco. 2004 http://www.fctc.org/index.php/component/docman/doc_view/46-fca-bulletin-46-iwg1?Itemid=21 (accessed July 12, 2013).
- 61 Mamudu HM, Glantz SA. Civil society and the negotiation of the Framework Convention on Tobacco Control. *Glob Public Health* 2009; **4**: 150–68.
- 62 Framework Convention Alliance. Bulletin. http://www.fctc.org/index.php/component/docman/doc_download/6-fca-bulletin-4-inb1?Itemid=21 (accessed Jan 6, 2014).
- 63 Warren CW. The global youth tobacco survey (GYTS): linking data to the implementation of the WHO framework convention on tobacco control. *BMC Public Health* 2008; **8** (suppl 1): S1.
- 64 Giovino GA, Mirza SA, Samet JM, et al, and the GATS Collaborative Group. Tobacco use in 3 billion individuals from 16 countries: an analysis of nationally representative cross-sectional household surveys. *Lancet* 2012; **380**: 668–79.
- 65 National Institutes of Health, Fogarty International Center. International tobacco and health research and capacity building program review 2002–2012. NIH Fogarty Center Tobacco Control Research Symposium. Bethesda, MD, USA; 2013.
- 66 National Institutes of Health, Fogarty International Center. Harnessing research evidence and capacity to inform tobacco control in low- and middle-income countries. NIH Fogarty Center Tobacco Control Research Symposium. Bethesda, MD; 2013.
- 67 Kahneman D. Thinking, fast and slow. New York: Farrar, Straus and Giroux; 2011.
- 68 Loewenstein G, Asch DA, Volpp KG. Behavioral economics holds potential to deliver better results for patients, insurers, and employers. *Health Aff (Millwood)* 2013; **32**: 1244–50.
- 69 Yach D, Bettcher D. Globalisation of tobacco industry influence and new global responses. *Tob Control* 2000; **9**: 206–16.
- 70 WHO. FIFA bags top health award - World Cup to be tobacco free. 2002. <http://www.who.int/mediacentre/news/releases/release41/en/> (accessed July 10, 2013).
- 71 Hennessy P. The ecclestone affair: Labour's first funding scandal. *The Telegraph*, 2008. <http://www.telegraph.co.uk/news/politics/labour/3179722/The-Ecclestone-Affair-Labours-first-funding-scandal.html> (accessed July 10, 2013).
- 72 BBC News. UK: Blair apologises for mishandling F1 row. 1997. http://news.bbc.co.uk/2/hi/uk_news/31780.stm (accessed July 12, 2013).
- 73 WTO. Tobacco free initiative (TFI): world health assembly resolution 56.1. 2003. http://www.who.int/tobacco/framework/fctc_en.pdf (accessed July 12, 2013).
- 74 WTO. Director general Supachai welcomes WHO tobacco agreement. 2003. http://www.wto.org/english/news_e/news03_e/sp_who_tobacco_agr_3march03_e.htm (accessed July 12, 2013).
- 75 Parliament of Australia. Tobacco plain packaging bill 2011. 2011. http://www.aph.gov.au/Parliamentary_Business/Bills_Legislation/Bills_Search_Results/Result?bId=r4613 (accessed July 12, 2013).

- 76 WHO Tobacco Free Initiative (TFI). WHO report on the global tobacco epidemic, 2013: Enforcing bans on tobacco advertising, promotion and sponsorship. 2012. http://apps.who.int/tobacco/global_report/2013/en/ (accessed July 16, 2013).
- 77 WHO. Tobacco fact sheet N°339. <http://www.who.int/mediacentre/factsheets/fs339/en/> (accessed Jan 6, 2014).
- 78 Levy DT, Ellis JA, Mays D, Huang AT. Smoking-related deaths averted due to three years of policy progress. *Bull World Health Organ* 2013; **91**: 509–18.
- 79 WHO. Fifty-sixth world health assembly (A56/8). 2013. http://apps.who.int/gb/archive/pdf_files/WHA56/ea568.pdf (accessed July 12, 2013).
- 80 European Commission and Philip Morris International sign 12-year agreement to combat contraband and counterfeit cigarettes. <http://www.ecigarettedirect.co.uk/campaign/eu-philip-morris.pdf> (accessed Jan 7, 2014).
- 81 Heyward M. Legal analysis of the agreements between the European Union, Member States, and multinational tobacco companies. <http://www.fctc.org/images/stories/Executive%20summary%20-%20legal%20analysis%20of%20EU%20agreements.pdf> (accessed Jan 6, 2014).
- 82 PR Newswire. Bloomberg report- funded report on global tobacco epidemic release by World Health Organization. 2013. <http://www.prnewswire.com/news-releases/bloomberg-philanthropies-funded-report-on-global-tobacco-epidemic-released-by-world-health-organization-214924661.html> (accessed Sept 12, 2013).
- 83 Bill & Melinda Gates Foundation. What we do: tobacco control strategy overview. <http://www.gatesfoundation.org/What-We-Do/Global-Policy/Tobacco-Control> (accessed Sept 12, 2013).
- 84 Hu TW, Mao Z, Ong M, et al. China at the crossroads: the economics of tobacco and health. *Tob Control* 2006; **15** (suppl 1): i37–41.
- 85 British American Tobacco. Annual report. 2012. <http://www.bat.com/ar/2012/downloads/batannualreport2012.pdf> (accessed July 12, 2013).
- 86 Warren CW, Lea V, Lee J, Jones NR, Asma S, McKenna M. Change in tobacco use among 13–15 year olds between 1999 and 2008: findings from the Global Youth Tobacco Survey. *Glob Health Promot* 2009; **16** (suppl): 38–90.
- 87 Castle S. *The New York Times* (New York), June 21, 2013. <http://www.nytimes.com/2013/06/22/business/global/eu-ministers-agree-to-stricter-tobacco-laws.html> (accessed Jan 6, 2014).
- 88 End Decade Review. National report on follow-up to the world summit for children: Sultanate of Oman. 2000. http://webcache.googleusercontent.com/search?q=cache:RV-WsUCwK00J:www.unicef.org/specialsession/how_country/edr_oman_en.doc+UNICEF+review+of+CRC+for+tobacco+control&cd=4&hl=en&ct=clnk&gl=us (accessed July 12, 2013).
- 89 Cobb NK, Abrams DB. E-cigarette or drug-delivery device? Regulating novel nicotine products. *N Engl J Med* 2011; **365**: 193–95.
- 90 Bates C. The counterfactual: reasonable people saying sensible things about low-risk alternative to smoking. <http://www.clivebates.com/?p=853> (accessed Sept 12, 2013).
- 91 Hajek P, Foulds J, Le Houezec J, Sweanor D, Yach D. Should e-cigarettes be regulated as a medicinal device? *Lancet* 2013; **1**: 429–31.
- 92 WHO. Director-general's response to the tobacco hearings. 2000. http://www.who.int/tobacco/framework/public_hearings/dghearings_en.pdf (accessed July 12, 2013).
- 93 WHO Tobacco Free Initiative (TFI). Questions and answers on electronic cigarettes or electronic nicotine delivery systems (ENDS). 2013. http://www.who.int/tobacco/communications/statements/electronic_cigarettes/en/index.html (accessed July 12, 2013).
- 94 WHO. Marketers of electronic cigarettes should halt unproved therapy claims. 2008. <http://www.who.int/mediacentre/news/releases/2008/pr34/en/> (accessed July 12, 2013).
- 95 Yach D, von Schirnding Y. Public health lives: Gro Harlem Brundtland. *Public Health* 2014; published online Jan 8. <http://dx.doi.org/10.1016/j.puhe.2013.08.007>.