

Chapter 5

Chronic Disease Prevention and Health Promotion

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5.1 Introduction

Chronic diseases include conditions such as heart disease, stroke, cancer, diabetes, respiratory conditions, and arthritis. In high-income countries, chronic diseases have long been the leading causes of death and disability. Globally, more than 70 % of deaths are due to chronic diseases, in the United States, more than 87 % (World Health Organization [WHO] 2011). Almost one in two Americans has at least one chronic condition (Wu and Green 2000). Aside from the cost in terms of human welfare, treatment of chronic disease accounts for an estimated three quarters of U.S. health care spending (Centers for Disease Control and Prevention [CDC] 2012). Chronic diseases directly affect overall health care budgets, employee productivity, and economies. Globally, noncommunicable diseases account for two-thirds of the overall disease burden in middle-income countries and are expected to rise to three-quarters by 2030, typically in parallel to economic development (World Bank 2011). Of particular concern to many low- and middle-income countries is that threats to population health occur on two fronts simultaneously: “In the slums of today’s megacities, we are seeing noncommunicable diseases caused by unhealthy diets and habits, side by side with undernutrition” (WHO 2002).

Four modifiable risk factors are principal contributors to chronic disease, associated disability, and premature death: lack of physical activity, poor nutrition, tobacco use, and excessive alcohol consumption (CDC 2012). One in three adult Americans is overweight, another third is obese, and almost one-fifth of young people between

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6 and 19 years of age is obese, even though rates are not increasing at previous levels (Katz 2013). Although smoking has declined considerably over recent decades, about 20 % of Americans still smoke. Rates of smoking are markedly different across socioeconomic groups, and much higher among economically disadvantaged people (Garrett et al. 2011). Globally, deaths from smoking are expected to increase dramatically in low-income countries. In the twentieth century, tobacco-use killed around 100 million people worldwide. In the twenty-first century, an estimated one billion will die prematurely—a tenfold increase. By 2030, more than 80 % of deaths attributable to tobacco will be in low-income countries (WHO 2012).

In principle, if a risk factor can be modified, then much illness and suffering (morbidity) and early death (mortality) can be avoided or prevented. Therefore, prevention and health promotion policies seek ways in which the impact of modifiable risk factors can be reduced. How one analyzes the causal pathways that lead to the development of risk factors may encourage one to explore a range of different interventions. An obvious starting point is to focus on individual behavior or lifestyle, because what an individual does (or fails to do) typically plays a central role in chronic disease. Consider the following line of thought by John H. Knowles, an outspoken critic of the American health care system in the 1970s:

Prevention of disease means forsaking the bad habits which many people enjoy—[but the] cost of sloth, gluttony, alcoholic intemperance, reckless driving, sexual frenzy, and smoking is now a national, and not an individual, responsibility. This is justified as individual freedom—but one man's freedom is another man's shackle in taxes and insurance premiums. I believe the idea of a 'right' to health should be replaced by the idea of an individual moral obligation to preserve one's own health—a public duty if you will. The individual then has the 'right' to expect help with information, accessible services of good quality, and minimal financial barriers (Knowles 1977).

Knowles comment is interesting on several counts. First, it underscores that even though population health usually features centrally in health promotion, cost considerations are never far removed and are equally prominent in current debates, especially in political fora.¹

Second, in invoking three of the deadly sins (gluttony, sloth, and lust), Knowles illustrates in a frank way that discussions about health promotion are not confined to medical or public health concepts. Implicitly or explicitly, these discussions almost always entail moral concepts (such as personal responsibility or deservingness) that are embedded in deeply held normative frameworks.

¹For an example of such a political debate, see the 2012 platform of the U.S.'s Republican Party: "... approximately 80 % of health care costs are related to lifestyle—smoking, obesity, substance abuse—far greater emphasis has to be put upon personal responsibility for health maintenance ..." (GOP 2012). Reforming Government to Serve the People is available at <https://www.gop.com/platform/>. This quote also illustrates the inaccurate use of statistics. Although the burden of chronic diseases is indeed roughly 80 %, it is an exaggeration to claim that personal responsibility alone accounts for the total burden. Exact estimates may not be straightforward due to complex interactions of different factors. Consequently, a more realistic estimate attributes 40 % to personal behavior, 30 % to genetic predispositions, 15 % to social circumstance, 10 % to inadequate health care, and 5 % to environmental causes (Schroeder 2007).

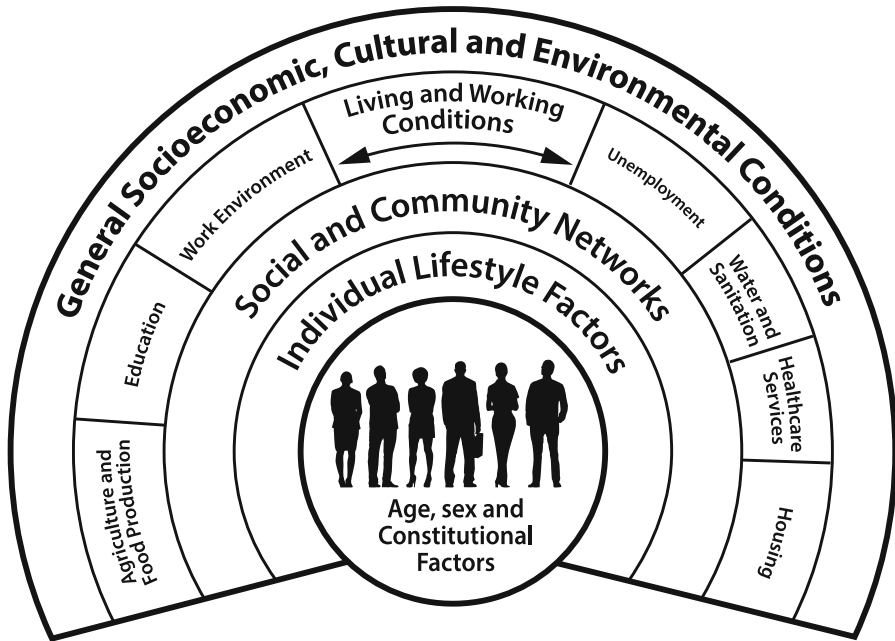


Fig. 5.1 Factors determining health and chronic diseases (Originally published in Dahlgren and Whitehead (1991). Reproduced from Acheson (1998). Reproduced with permission)

And finally—although Knowles acknowledges elsewhere in his essay the role of taxes and other measures to improve health and eradicate poverty—he concludes by stating “the costs of individual irresponsibility in health have now become prohibitive. The choice is individual responsibility or social failure” (Knowles 1977). The policy interventions he mentions aim for broader recognition of personal responsibility and therefore focus on education and information campaigns to empower people to behave responsibly. But this analysis is shortsighted. It fails to consider the responsibility of those who produce, market, and sell products (e.g., unhealthy foods, drinks, or tobacco) and of those who regulate markets or set business standards (e.g., trade groups or national or regional policy makers). His point could best be made if all people lived in similar environments and conditions, had sufficient disposable income, had ready access to healthy and affordable food, had equal opportunity to exercise, and experienced other health-conducive conditions. But this is not the case. People live in vastly different contexts, and many different factors determine health (Fig. 5.1).

Although Fig. 5.1 provides a useful overview of many factors that affect health, the concept of “lifestyle,” commonly encountered in the broader debate around chronic diseases is problematic. It can suggest that people choose, for example, smoking or heavy drinking as others might decide between taking up golf or tennis as a hobby. The point is that “lifestyle” implies degrees of freedom and the possibility of genuine opportunity and choice. But assume that you grew up in an inner-city

borough as a child of low-income obese and smoking parents. Many in your family and social environment smoke and are obese. Compared to the national average, you are among the most overweight, and you fail to lose weight as an adolescent. You remain obese. Calling your obesity a matter of lifestyle makes little sense. Now assume you started smoking as a minor (<18 years of age) just as 88 % of U.S. adults who smoke daily (U.S. Department of Health and Human Services 2012). It can be cynical to treat this “lifestyle” as voluntary and freely chosen if, for example, many of your role models smoke and if smoking in your social setting and challenging environment functions as a coping mechanism to relieve stress. The different spheres in the diagram therefore need to be understood as highly interdependent. Regarding terminology, the concept of lifestyle factors should be replaced with that of *personal behavior*. Doing so acknowledges that powerful constraints can severely infringe on the development of healthy habits and behavior. In the worst case, these constraints may thwart development of healthy habits and behaviors altogether, even when individuals have the best of intentions.

Focusing on just the individual is therefore overly narrow when identifying policies to prevent chronic diseases. Yet, removing the individual from the equation is also unhelpful (Schmidt 2009). The central ethical issues surrounding health promotion and prevention of chronic diseases concern the relative responsibilities of all agents whose actions influence the health of others. These agents include, in addition to individuals, health workers, governments (at different levels), and corporate entities.

5.2 Individuals

Except for some genetic conditions and extremely toxic environments (i.e., chemical exposure), individual behavior typically plays a causal role in bringing about bad—as well as good—health. People may or may not eat healthily; they may or may not use tobacco or illegal drugs; they may consume alcohol excessively or in moderation; they may exercise too little or too much; and they may regularly brush their teeth, go for medically recommended checkups, and take their medications—or fail to do so. However, it is important to recognize that implementation of measures such as praise or blame, or financial rewards, or penalties—although they presuppose a certain degree of causal responsibility—do not mean that individuals also automatically need to be held fully responsible in a moral (or legal) sense. Causal responsibility in the present context simply means that a person has behaved in ways that contributed to, say, poor health. Therefore, a smoker with lung disease arguably has some causal responsibility for the condition. But if it turns out that the smoker started becoming addicted as a child, it is clear that the outcome cannot simply be treated as the result of an entirely voluntary choice. Where there is no, or limited, opportunity of choice, there is the risk of “victim blaming” (Crawford 1977) and holding people responsible for factors that are, in fact, beyond their

control. Conversely, ignoring the scope of possible behavior change can lead to fatalism and resignation (Schmidt 2009).

For individuals to take causal and other responsibility for their health, they require, among other things, information that they can understand, affordable access to health care, and, oftentimes far more important, environments conducive to health in which capabilities may be developed so that one can flourish in life (e.g., residential, work, and play settings) (Venkatapuram 2011; Ruger 2006). According to the adage “ought implies can,” we can only hold people responsible for their actions if they could have acted otherwise. Of course, it is true in some sense that people who smoke, or overconsume unhealthy food, or fail to exercise, could oftentimes have acted otherwise, in principle: it was not literally impossible for them to act otherwise. However, the relevant question is not whether it is literally possible to engage in healthy behavior, but whether it is reasonably feasible for people to engage in healthy behavior. Talk of personal responsibility therefore requires a clear focus on the settings in which people live and on their behaviors when presented with different choices. Consideration should also be given to the possibility that policies implementing personal responsibility through, for example, rewards and penalties, may impact core values underlying a health system, such as a sound doctor-patient relationship, equity, or risk sharing, which may affect their overall acceptability in positive or negative ways (Schmidt 2008).

5.3 Formal and Informal Health Workers

Health professionals play a central role in chronic disease prevention and health promotion (Dawson and Verweij 2007). In primary prevention, they focus on averting poor health in the first place and on promoting good health. In secondary prevention, they offer information, tests, and screenings aimed at early detection and treatment of diseases. Diabetes, blood pressure, and some cancer screenings can have utility, especially when targeting at-risk populations in a nonstigmatizing way. Primary care physicians are often in a good position to decide on the appropriateness of screenings. Their knowledge of patient background and overall situation can help them tailor tests on the supply side to the actual needs on the demand side, bearing in mind patient preferences and individual risks.

Cost effectiveness aside, a physician would be wrong to offer every available test to every patient because the clinical benefit is not always clear. A recent systematic review and meta-analysis of randomized controlled trials concerning general health checkups (i.e., comprising health risk assessments and biometric screening for high blood pressure, body mass index, cholesterol, and blood sugar) found no association with lower overall mortality or morbidity (Krogsbøll et al. 2012). On the basis of these findings, the researchers caution that checkups may needlessly increase diagnoses and use of drugs. They recommend clinically motivated testing of individuals to initiate preventive efforts but discourage screening at the population-level for

lack of evidence. The authors acknowledge limitations in their research, including that most of the trials were relatively old and that changes in interventions and care pathways reduce applicability to current practice. All studies entailed voluntary invitations to get checkups, so selection bias may have overrepresented privileged people (in typically better health to start with) and not reached those needing attention the most (Krogsbøll et al. 2012). The focus on all-cause mortality has also been criticized as setting too high a threshold (Sox 2013). Yet despite the somewhat intuitive appeal of using general health checkups in secondary prevention, there is little robust evidence from randomized controlled trials to show any major impact on overall mortality.

An ethical problem arises when offering preventive screenings that do not follow evidence-based guidelines (U.K. National Screening Committee 2013). Such screenings may increase the number of “worried well” who oftentimes are confused by complex probabilities of detecting and preventing diseases. Clinicians must therefore do their utmost to understand risks and benefits of screening tests and communicate these to patients in ways that are easily comprehensible and not misleading (Wegwarth and Gigerenzer 2011). For example, a physician might tell his 50-year-old patient that she should undergo breast cancer screening because it reduces risk by 14 %. But this information is incomplete, as relative risk rates alone obscure the basic reference point against which the comparison is made. Another way of providing the same information would be to use absolute risk rates and to say that if one screens 1000 women for 20 years, four breast cancer deaths can be averted, even though eight among all screened women still die from breast cancer. In addition, over the 20 years, the 1000 women taking part in screening experience 412 false positives, and of 73 women who are diagnosed with breast cancer, 19 experience overdiagnosis and are treated for a cancer that would not have developed into a lethal tumor, with treatment typically consisting of hormone- radio- or chemo-therapy, and partial or full surgical breast-removal (Hersch et al. 2015). This way of presenting data (Fig. 5.2), especially when combined with other relevant information about screening accuracy and rates of overdiagnoses, provides more adequate context for considering benefits and risks—yet, this presentation method is far from being universally adopted (Gigerenzer et al. 2010).

Adequate risk information in secondary prevention matters not only from a patient-empowerment perspective but also because it can mitigate real or perceived conflicts of interests of physicians. Physicians, anyone who markets or manufactures screening equipment, and those who analyze data typically experience financial gain when more patients undergo screening. Therefore, a central ethical issue of secondary prevention is not only how to avoid premature mortality in the most efficient and cost effective way but also how to eliminate potential conflicts of interests. Patients can become entangled in competing interests, as illustrated by the controversy surrounding prostate-specific antigen, or PSA, testing to detect prostate cancer. Although physicians and others experienced financial gain, patients experienced no reduced mortality and instead higher morbidity and loss of quality of life

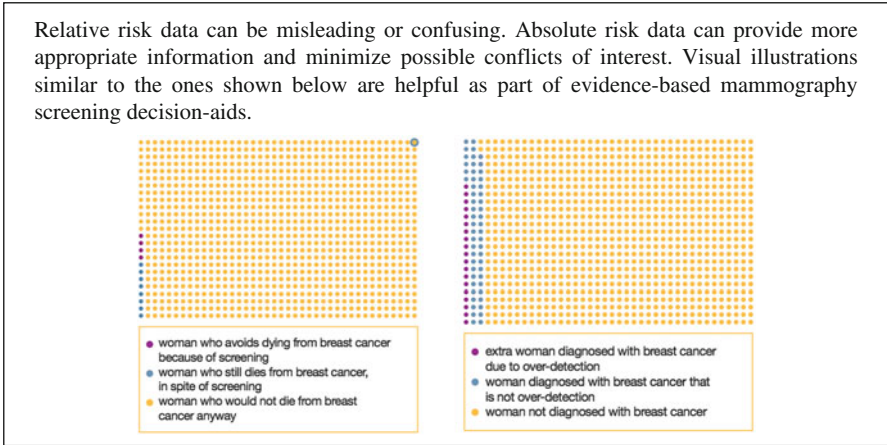


Fig. 5.2 Communicating benefits and harms of breast screening (Originally published in Hersch et al. (2015). Used with permission)

due to the entailed procedures (Ablin 2010). The question of “what is the magnitude of benefits and risks, and to whom?” is therefore an important one to ask in all secondary prevention, especially because the net gain for patients is not always obvious.

For these and other reasons, many in the public health community are skeptical about the relative utility of secondary prevention in a clinical context. Often this is paired with a call for shifting political and financial support to primary prevention and the broader sphere of public health (Sackett 2002; Mühlhauser 2007). Here, the objective is to avoid poor health in the first place by empowering people with different ways to lead healthy lives. Too often, only the privileged few in certain populations have this capability (WHO 2008).

Of course, this way of thinking immediately broadens the concept of health professional. Clearly, it is outside the scope of, say, a hospital-based general internist to reduce junk-food outlets or to increase exercise opportunities in a low-income part of town, even if the internist has good reasons to believe these structural features are key contributors toward rising levels of obesity among patients. But once we recognize how differences among settings in which people live can affect the incidence and prevention of chronic diseases, it becomes apparent that public health professionals outside the clinical context have as much, if not more, of a role to play compared to physicians when it comes to chronic disease prevention and health promotion.

A range of corresponding interventions are relevant to this discussion, including literacy, safe sex, hygiene and health awareness campaigns, financial subsidies for healthy food or gyms, exercise stations in parks, breastfeeding rooms in workplaces,

and fluoridation of water. The public health field is heterogeneous and comprises numerous different actors both in and outside a clinical context. Public health, despite its many contexts and support from government and private sectors, is typically underfunded. This is especially true for informal grassroots campaigns, which often have a considerable competitive advantage over formal program structures. Grassroots campaigns evolve from the communities they seek to help. Because nearly every intervention that addresses chronic diseases has to do with how one lives one's life, top-down interventions are often experienced as intrusive forms of external meddling (Morain and Mello 2013). Conversely, initiatives led by a community member can be perceived more sympathetically than instructions from men in white coats who speak in formal and technical terms (unless, of course, that happens to be the target population, which, typically, it is not).

Health professionals working on chronic disease prevention and health promotion therefore span a wide field. In a looser sense, many professionals not generally seen as concerned with health could be included too, such as teachers, architects, town planners, or spiritual leaders. Each has perspectives that can be highly influential, but each is inherently limited in scope because chronic conditions result from complex interplay of different factors. This raises another key ethical issue involving how to determine the optimal mix of strategic approaches, bearing in mind the relative strengths and weaknesses.

Further, just as users and payers of health care should have a keen interest in having systematic studies and evaluations done to determine which of several drugs aimed at reducing, for example, severe headache, is most efficacious (and cost effective), we should be interested in the evidence base for possible benefits and harms of different interventions being implemented by health professionals concerned with chronic conditions. Yet, in an almost tautologic approach, health professionals often assume any preventive method will be good because its aim is prevention. But several strategies could be aimed at the same problem. Given that budgets are generally limited, it can be useful to determine which intervention is most effective and, for example, how its relative effectiveness and cost compare with its intrusion into peoples' lives. Such comparisons can help achieve value for money, even if the complex interplay of agents complicate this process.

5.4 Governments (At Different Levels)

Chronic disease prevention and health promotion policies often face criticism for promoting a "nanny state." This means that although government may legitimately use taxes and other measures to create health-conducive infrastructure that prevents chronic disease such as clean water supplies, sanitation services, or clean air acts, it should otherwise stay out of people's lives, and, in particular, refrain from telling citizens how to live their life (Childress et al. 2002; Gostin 2010; Dawson

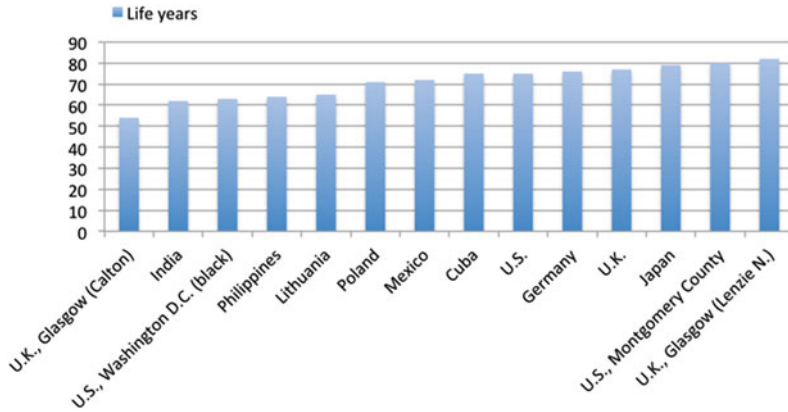


Fig. 5.3 Male life expectancy, between- and within-country inequities, selected countries (Figure is adapted from World Health Organization (2008))

and Verweij 2007). Many good reasons support this viewpoint. Still, many variables related to chronic diseases are linked to legitimizing governments in the first place.

For example, consider the U.S. Declaration of Independence. It declares that “all men are created equal; that they are endowed by their Creator with certain unalienable Rights; and that among these are Life, Liberty, and the pursuit of Happiness.” Numerous countries express similar sentiments in legal frameworks and charge states with providing environments that enable conditions for a good life, and prevent harm. Moreover, building on the United Nations’ (U.N.) *International Covenant on Economic, Social and Cultural Rights* of 1966 and clarifying *General Comment 14* by the U.N.’s Committee on Economic, Social and Cultural Rights, several countries have incorporated the right to health in their constitutions (WHO 2013). Yet, not all people live equally long, nor are they equally happy (in a nontrivial sense). For example, life expectancy differs widely, not just between countries at different levels of development, but also within countries, and sometimes with differences of almost 30 years across just 10 miles (see the data on two areas in Glasgow, Scotland, located near one another, Fig. 5.3). Chronic diseases are a major contributor to this variation.

Going back to the focus on personal responsibility, one might argue this variation in life expectancy is due to some people simply not wanting to be healthy or living long. But this is clearly myopic. Government planning at different levels has immense impact on both the prevalence and prevention of chronic diseases. It is sometimes argued that the best prevention is to instill in people the desire to live long and healthily (Rosenbrock 2013). For some, this might entail a state-guaranteed minimum income (irrespective of whether one works), since economic livelihood is

of course a major factor in how one views one's own future. While a positive impact of such policies on the incidence of chronic disease and mortality would certainly be plausible, there is a wide range of less radical and politically more feasible options in the menu of different levels of government action. These include town planning, zoning laws, school and university meal plans, and, of paramount importance, regulation of industry where markets fail. These and other interventions can only be implemented by governments. An important part of chronic disease prevention and health promotion is to monitor where differences in morbidity and mortality are such that government action is warranted, and to impress on elected officials their responsibility in creating appropriate environments.

The monolithic notion of “the” government is, of course, an overly simplistic one. Key personnel in health departments may well wish to limit the size of, for example, soft drinks. Or they may wish to standardize ways in which nutritional content is shown on food packaging. Such measures would enable more informed consumer choice, and, more indirectly, incentivize producers to reconsider whether food composition can be optimized for health impact, given the secondary “showcasing” effect of labeling.² But their colleagues in trade or industry, as well as in the treasury, may point out the risk of tax shortfalls that could result from lower consumption. Or they may worry about pushback from lobbyists in the corporate sector who fear losing profits for their clients. Politicians may often be more concerned with their short-term re-election prospects than with making substantial (or even just incremental) longer-term progress on chronic disease prevention. These conflicting perspectives within government are inevitable. But only government can determine the playing field and ground rules for industries producing, selling and marketing food, drink, tobacco, and other products contributing to unhealthy behavior. In liberal economies that, typically, pursue a hands-off approach toward regulating markets, the central ethical challenge then is to decide at which points markets are considered to have failed, other options of market regulations are unfeasible, and government action is warranted, despite possible drawbacks.

A second closely related question is what intervention to pursue once the need for action has been identified. Figure 5.4 shows the Intervention Ladder published in a report by the Nuffield Council on Bioethics (2007) on public health ethics. The model suggests that governments have a range of different options at their disposal that become increasingly intrusive or paternalistic the higher one moves up the ladder. At the same time, each rung up the ladder requires more robust justification and evidence, although the report points out the bottom rung, “doing nothing or simply monitoring,” also requires justification.

²For example, it has been shown that large U.S. chain restaurants changed menus in anticipation of a legal mandate requiring public calorie posting, resulting in a 12 % reduction in calories (or about 56 fewer calories per item, see Bleich et al. 2015).

In preventing chronic diseases and promoting health, governments have a range of policy options differing in justification, evidence requirements, and extent of intrusion.

- **Eliminate choice:** Prohibit substances such as trans fats. Remove obese children from their home.
- **Restrict choice:** Ban unhealthy foods from shops or restaurants. Add fluoride to water.
- **Guide choice through disincentives:** Tax cigarettes. Discourage the use of cars in inner cities through charging schemes or by limiting parking spaces.
- **Guide choice through incentives:** Give tax breaks to commuters.
- **Guide choice by changing the default policy:** In restaurants, instead of providing fewer health options and including fries as a standard side dish (with healthier options available) make healthy options standard menu fare (with fries optional). Regulate salt levels of fast food meals because consumers can add salt afterwards.
- **Enable choice:** Create tax-funded smoking cessation programs, build cycle lanes, or provide free fruit in schools.
- **Provide information:** Implement campaigns to encourage people to walk more or to eat certain amounts of fruit and vegetables daily.
- **Do nothing or simply monitor the current situation.**

Fig. 5.4 The intervention ladder (Adapted from Nuffield Council on Bioethics (2007))

5.5 Corporate Entities

In the United States, the Institute of Medicine (1988) defines public health as “what we, as a society, do collectively to assure the conditions in which people can be healthy.” In the United Kingdom, the Faculty of Public Health (2010) of the Royal Colleges of Physicians suggests that public health is the “science and art of preventing disease, prolonging life, and promoting health through organized efforts of society.” These, and other conceptualizations, emphasize the collective nature of public health work (Verweij and Dawson 2007). Companies that facilitate consumer access to tobacco or to healthy and unhealthy food and drink are part of society and contribute via goods, services, and employment opportunities. In return, they often receive generous tax breaks. Company operations benefit further from diverse financial arrangements and infrastructures put in place by governments to ensure stability

of civic and economic life, since both are essential to how markets function. It is therefore reasonable to ascribe some responsibilities for public health to companies. In many instances, this is achieved through voluntary corporate social commitments, such as charters or formal partnerships with charitable or community organizations. Increasingly, companies view their own ethical actions as an attractive side of their branding, especially in countries where consumers' awareness is high.

Although many companies generate profits through healthful products, many others benefit from bringing products to market that will likely cause harm. Product demand is rarely a function of basic human needs but, rather, is defined by social and cultural norms. These norms are often fueled—if not generated—by aggressive marketing to adults and children. The basic tension regarding the role of companies in relation to public health is their *prima facie* obligation to contribute to population health, while also maximizing owners or shareholders' profits. Public health would be promoted by measures such as providing honest nutritional information and other content of products; avoiding claims that are misleading (as is sometimes the case with vitamins, supplements, or some diagnostic tests); not denying or underplaying potential harm (as with so-called alcopops, which are high-alcohol drinks made to look like soft drinks); or not exploiting the “pester power” of children, particularly by marketing products to them and confusing the boundary between giving information and advertising. But realizing these aspirations typically curbs consumption and therefore reduces market shares and profits.

Companies therefore prefer as little regulation as possible and favor information-based over price-based interventions or more intrusive options (Fig. 5.4). In all high-income countries, company and government officials liaise to negotiate consumer protection policies, insofar as political and consumer pressure creates demand. These negotiations often reveal the limitations of corporate social responsibility, as perhaps illustrated most clearly by the tobacco industry. For decades, the industry pursued the strategy that there was no hard evidence that tobacco was harmful to health. When this strategy became too absurd to sustain, and, in particular, when the evidence of the harmful effects of secondary smoke became overwhelming, the industry caved in and agreed to implement a series of consumer protection measures in most developed countries (Brandt 2007). However, in many instances, this tug-of-war was repeated in other countries, despite a range of robust provisions in WHO's Framework Convention on Tobacco Control (2003), the only supranational hard law instrument on a major risk factor for chronic conditions that is legally binding in more than 170 countries. From a narrow business perspective, this behavior is entirely rational. But from an ethical viewpoint, it is extremely questionable. For example, it has been accepted in the United States and Europe that it is not appropriate to glorify tobacco on billboards, to give cigarettes away for free in promotions at rock concerts geared towards young people, or to sell them individually, then why should these and other practices be commonplace in many low-income countries, especially in Africa (Action on Smoking and Health 2007)? The obscene tenfold global increase in deaths attributable to tobacco in the twenty-first century has already been noted. What makes this prospect all the more appalling is the industry's refusal to take seriously the standards it agreed to uphold in high-

income countries. For if these standards were upheld, history would not repeat itself with such horrific consequences.

5.6 Case Studies

In the following five cases, the reader is put in the position of a public health practitioner to illustrate how key ethical issues can arise in the prevention of chronic diseases and health promotion. The cases highlight several real-world, practical constraints: limited budgets; insufficient evidence for how interventions will work in structurally different settings; organizational constraints, particularly from specific formats for decision making; and clashes of perspectives and worldviews. Three cases concern children, an especially vulnerable population (Verweij and Dawson 2011). The cases ask whether the parents alone can make sound health decisions for their children, and if not, what interventions would be acceptable to reach the parents. The interventions range from chemical and behavioral to social ones, and central to each are ethical questions around their justification (because of competing interests) and oftentimes unclear evidence. Several cases touch on whether or not to engage the public in decision making—and if so, how? Public engagement is an increasingly popular approach being applied broadly to health policy. Yet, it is not always clear who should be involved in which decision-making processes and on what grounds (Kreis and Schmidt 2013).

Mah et al. provide an intriguing scenario in which a municipal public health department needs to decide whether to accept increased contributions to a youth after-school program from a local fast food-chain in exchange for mentioning the chain's name as part of the (renamed) program. The background section describes how food and beverages are marketed to children and notes that globally, self-regulation models are the most common approach. This case combines real and perceived conflicts of interests for the company and for notoriously cash-strapped public health workers. Woven into the case is the media's role. The discussion questions invite analyses from the vantage points of different stakeholders and address ways to modify the base scenario, adding layers of complexity.

Blacksher's case focuses on obesity prevention, media campaigns, and stigma. She describes the human and financial toll of obesity worldwide, focusing on children as an especially vulnerable group. She also presents a range of different policy options to address childhood obesity before charging the reader, acting as a state commissioner for health, to recommend a statewide obesity policy for a disproportionately poor and vulnerable population. The process for reaching consensus on this policy recommendation is common. A task force of a dozen members is appointed, half the seats are reserved for state legislator appointees, and half reserved for public health professionals and community representatives. Due partly to their different background and priorities, the task force disagrees about how intrusive the policy should be. Members settle, however, on a statewide media campaign aimed at changing social norms. Still, how hard-hitting should the campaign

be? In the discussion questions, readers may consider, among other things, the evidence needed to justify different campaign types and if other stakeholders should (or need not) be included in the decision-making process to confer legitimacy.

The case by Goldberg and Novick focuses on an intervention program in which task force members grapple with whether the use of stigma might be acceptable under certain circumstances. The authors describe empirical research findings and conceptual arguments that suggest stigma is always correlated with negative health outcomes—especially in otherwise disadvantaged populations, and certainly in the case of obesity. They describe how stigmatizing approaches are based on certain conceptions of personal responsibility that fail to consider the broad underlying structural determinants of obesity. Then the case shifts focus to another situation often encountered in public health practice: applicability of evidence base in multiple settings. Here, a program intended to empower residents to take control of their weight through meal planning, physical activity, and behavioral modification proves effective in controlled studies. The director of the county health department, attracted to the program on grounds of potential cost effectiveness, readily embraces the program. Later, however, during a program meeting, one of the department's public health nurses expresses concern about an overly strong focus on personal responsibility, which she feels makes the program unfair. Based on her knowledge of the target population, she also feels the program will be rejected. Could the program nonetheless be effective? And how might risks of stigma be minimized? These and related issues form part of the questions section.

Whereas the first three cases are set in the United States, the case by Aspradaki et al. takes us to Greece and concerns issues raised by water fluoridation. The disease burden attributable to preventable tooth decay is laid out along with the risks of using fluoride. Oral disease is on the rise in low- and middle-income countries, with poorer populations disproportionately affected. The authors describe water fluoridation in different countries before suggesting that the primary ethical tension surrounding water fluoridation arises between the concepts of autonomy and paternalism. The case description puts the reader in the position of Greece's central oral health director providing a consult to the head of public health programs in the health ministry. Negotiations on a national strategy have been held up by political and organizational digressions and by public skepticism. Still, the health ministry wants to go ahead and put in place a countrywide fluoridation program. Your task is to identify which stakeholders should be involved, how the different elements of empirical data and ethical values should be considered, and what role economic pressures might play in the decision making.

The case by Aleksandrova-Yankulovsak is about banning smoking in public places in Bulgaria. Almost half of the men and a third of the women in Bulgaria are smokers. The case provides context to smoking in Europe and nearby regions before summarizing the regulatory framework that prompted Bulgaria to consider the ban. The political process, threatened by business interests and strife within government departments, is also addressed. The case then poses the question if you, as director of the regional health inspectorate, can guarantee implementation of the new law. Other questions invite discussion on whether the law is the right tool to achieve lower

smoking rates, in principle, and how the public might view temporary legal provisions that could be repealed if political support dwindles. A further central point is how or whether economic costs can ever be set against cost in human welfare.

The cases illustrate but a fraction of the ethical issues that arise in chronic disease prevention and health promotion. Many cases will present differently depending on the country and its culture, infrastructure, health care system, and legal and political system. Similarly, this introduction is far from exhaustive. Yet, when combined, the cases and introduction introduce many central ethical issues that arise in global public health. Analyzing the ethical issues that featured centrally in justifying policies (or in the refusal of policy makers or other actors to change existing policies) will deepen the reader's engagement and reflection and, ideally, contribute to better policy and practice in the future.

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5.7 Case 1: Municipal Action on Food and Beverage Marketing to Youth

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views, or policies of the editors, the editors' host institutions, or the authors' host institutions.

5.7.1 Background

Children are exposed to a greater intensity and frequency of marketing than ever before. Evidence has demonstrated that marketing of food and beverages to children contributes adversely to health, affecting food knowledge, attitudes, dietary habits, consumption practices, and health status. Marketing to children has always raised concerns. But recently, numerous nongovernmental and international organizations and all levels of government have expressed their concern about food and beverage marketing and advertising to children as a public health issue.

Often used interchangeably with “advertising,” the term “marketing,” actually encompasses a broader range of issues. The World Health Organization (WHO) (2010) defines marketing as “any form of commercial communication or message that is designed to, or has the effect of, increasing the recognition, appeal and/or consumption of particular products and services. It comprises anything that acts to advertise or otherwise promote a product or service.”

Two large-scale global systematic reviews of evidence in the last decade have concluded that food and beverage marketing substantially affects young people and is associated with adverse health outcomes. In 2003, the U.K. Food Standards Agency commissioned a systematic review of the influence of food promotion on children’s food-related knowledge, preferences, and behaviors (Hastings et al. 2003). WHO updated the report in 2007 and 2009 (Hastings et al. 2007; Cairns et al. 2009). In 2006, the U.S. Institute of Medicine conducted a systematic review of the influences of food and beverage marketing on the diet and diet-related health of children and youth (McGinnis et al. 2006). Key findings from these reports follow:

- Food and beverages developed for and advertised to young people are predominantly calorie dense and nutrient poor;
- Marketing influences children’s food and beverage preferences, purchase requests, and short-term consumption, even among young children (ages 2–5 years); and
- There is strong evidence that child and youth exposure to television advertising is significantly correlated with poor health status, although sufficient evidence of a causal link with obesity is not yet available.

The authors of the 2009 WHO report suggest that existing research “almost certainly underestimates the influence of food promotion” and that more research is needed, especially for newer forms of media (Cairns et al. 2009).

As part of its global strategy for the prevention and control of noncommunicable diseases (WHO 2004), WHO subsequently endorsed policy recommendations for governments to take action on food and beverage marketing to children (2010,

2012). The recommendations emphasize governments' key role in developing policies to protect the public interest, including leadership roles in managing intersectoral processes and negotiating stakeholder rights and responsibilities.

The scope of existing policy interventions that address food advertising to children includes statutory regulation (i.e., general restrictions or outright prohibitions) and industry self-regulatory codes. Globally, industry self-regulatory approaches tend to be the most common approach.

Many organizations promote the adoption of comprehensive public policy interventions, with the scope of these interventions ranging from total ad bans (all commercial advertising) to food ad bans or junk food ad bans (WHO 2012).

Other organizations suggest stepwise approaches that target particular exposures, products, ages, or specific forms of marketing or media. For example, such approaches could include limiting marketing in venues such as schools, restricting junk food, protecting children younger than a certain age, defining certain television broadcasts as children's programs, or restricting promotions in television broadcasts before 10 pm, respectively (WHO 2012).

In recent years, many food and beverage companies, working with industry associations, have issued voluntary pledges to alter marketing practices toward children. For example, such pledges typically include criteria for the nutritional quality of foods advertised to children, limitations on the use of licensed characters, and marketing in schools. However, critics argue that these types of voluntary changes are not sufficient to reduce the risks of food marketing to children in a substantive way.

Despite this array of interventions, the absence of widespread agreement on the most appropriate form of collective action has led many policy makers to default to inaction.

5.7.2 Case Description

You direct the Healthy Public Policy program for a large municipal public health department that recently has come under fire in a newspaper exposé about contributions from fast food companies to after-school programs for youth that the city government runs. The exposé highlighted the contributions of Big Boss Burger, a local fast food hamburger chain with 12 locations across the city. Big Boss Burger donates cooking equipment to the city's high-priority, after-school cooking program for 9- to 11-year-olds. Although the program is well-liked by youth, it is regularly threatened by funding cuts. The chain has recently offered to scale-up its annual cash donation to cover all food and equipment costs in exchange for renaming the program "The Big Boss Burger Community Kitchen" and for placing the chain's logo on all signage and promotional materials.

The highly successful Big Boss Burger chain is owned by a beloved, self-made restaurateur who has spent his entire career in the local food industry. Considered a colorful local personality, he frequently sends Twitter updates that reflect his over-

the-top advertising style. One tweet, for example, offered a free sample of the chain's "quadruple bypass" burger to anyone who visited one of the chain's locations within the hour.

Media spokespersons for the mayor, meanwhile, have reiterated the community benefits of cultivating positive partnerships with local businesses. They note that only registered public health nutrition staff run the city's cooking programs, while insisting that Big Boss Burger has no influence whatsoever on city policies or youth curricula.

The media furor nevertheless has prompted city officials to explore developing a sponsorship policy for municipal child and youth programs. The Medical Health Officer has asked you to prepare a briefing note outlining the key public health considerations that such a sponsorship policy needs to address.

You face a dilemma. On the one hand, several years ago your Healthy Public Policy team launched a study of the impact of food and beverage advertising on children. Last year's update on the study to the Board of Health included a recommendation that city-operated venues and programs avoid commercial advertising of food and beverages targeting children younger than 13 years of age. Thus far, the recommendation has not led to any formal policy changes. Municipal employees partly attribute this inaction to the reluctance of local authorities to act when there are no state or national policies that govern sponsorship or marketing restrictions.

On the other hand, the financially strapped city relies on engagement with the local business community to fund many city-run programs, including health education activities. It is also well-known that the owner of Big Boss Burger grew up in a local low-income community and frequently volunteers his time at events in his former neighborhood.

5.7.3 Discussion Questions

1. What key points will you emphasize in your briefing note? How will scientific information from past public health reports and decisions influence your response? How should ethical considerations influence your briefing note?
2. What population groups are you most concerned about with regard to the sponsorship policy? What if the cooking program sponsored by Big Boss Burger was for 14- to 16-year-olds instead of 9- to 11-year-olds? For adults? For children in a high-income neighborhood?
3. Does corporate sponsorship constitute food promotion? What benefits to the municipality might be derived from Big Boss Burger's contributions (for example, local economic benefits or having increased public attention and private-sector support of priority neighborhoods)? How should the public health department weigh these benefits against population health benefits and harms? Consider your response if Big Boss Burger
 - (a) Had offered its support without the naming rights request;
 - (b) Had instead offered a cash donation to a parents' association supporting the program;

- (c) Was an organic, vegan comfort food restaurant; or
 - (d) Was a large, multinational fast food corporation.
4. How will public opinion inform your briefing note? How will you handle the situation given that Big Boss Burger is a highly popular fast food chain and that the owner is a local public personality?
 5. What are (and should be) the roles and responsibilities for various city departments in defining the sponsorship policy? Consider, for example, city departments responsible for public health, parks and recreation, municipal licensing, social services, and economic development.
 6. Let's imagine that you are a parent of two girls, ages 6 and 9 years. In an ideal world, how much food and beverage marketing do you think they should be exposed to? How does your perspective as a parent enter into your professional decisions as director of the Healthy Public Policy program? How about your perspective as a voting citizen or city resident?

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5.8 Case 2: Obesity Prevention in Children: Media Campaigns, Stigma, and Ethics

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5.8.1 Background

Worldwide obesity has doubled since 1980 and kills some 2.8 million adults each year (World Health Organization [WHO] 2012). Childhood obesity also has increased at alarming rates with some 42 million children estimated to be overweight (WHO 2013). Among Organisation for Economic Cooperation and Development (OECD) countries, the United States has the highest rate of obesity (OECD 2012). More than 35 % of adults and almost 17 % of children are obese (Ogden et al. 2012), with especially high rates among poor and minority children (Centers for Disease Control and Prevention [CDC] 2012).

Childhood obesity has serious short- and long-term health consequences. Obese children are more likely to have risk factors for cardiovascular disease, including high cholesterol and blood pressure; type 2 diabetes; skeletal problems; sleep apnea; and mental health issues, such as low self-esteem and depression (CDC 2012; Reilly et al. 2003). Children now account for half of all new cases of type 2 diabetes. Obese children are also subject to systematic discrimination (Strauss 2002). More than 50 % of overweight children become obese adults who experience elevated health risks for heart disease, stroke, diabetes, osteoporosis, lower-body disability, some types of cancer, and premature mortality (Freedman 2011; CDC 2012).

The burdens of obesity are also economic. Rising health care costs are mostly driven by obesity-related costs. Estimates indicate that in 2008 some 10 % of medical spending in the United States was related to obesity, amounting to as much as \$147 billion (Finkelstein et al. 2009). Experts estimate obesity-related costs will account for 21 % of medical spending by 2018 if obesity rates continue to rise (United Health Foundation 2009).

As the human and financial costs of obesity have become better recognized, government officials and public health leaders increasingly have called for strong action. Comprehensive approaches that act on environmental and social determi-

nants of food choice and activity level are widely recommended (OECD 2012). The complexity of such an approach is reflected in the following recommended policies and strategies: taxing unhealthy foods and beverages, such as soda and snack food, to make them cost prohibitive; providing agricultural subsidies to lower the cost of healthy foods, such as fresh produce and whole grains; setting standards to lower sodium levels and prohibit the use of trans fatty acids in food products; banning unhealthy foods from public schools and child care facilities; restricting or banning the advertising of unhealthy foods to children; posting calorie counts on restaurant and take-out menus; using “counter-advertising” to show the harmful effects of unhealthy foods; redesigning communities and streets to incorporate parks, sidewalks, and bike paths; and reducing sedentary behavior by limiting time viewing television and playing computer games (Frieden et al. 2010; Butland et al. 2007).

Children’s status as developing agents further complicates childhood obesity prevention. Parents have primary responsibility for rearing children and considerable discretion over cultural and lifestyle matters, including many daily decisions that directly affect a child’s food and activity-related environments and behaviors (Blacksher 2008). Some measures would likely confer benefit regardless of parental behavior (e.g., banning food advertising to children or removing trans fats from packaged foods). But others will have their intended effect only if parents make certain choices, some of which will require that they change their health-related habits.

Many preventive measures will be controversial because they involve government action and seek to shape personal choice. Perhaps the least controversial of the measures enable healthier choices by providing people with information and making healthy options more available and affordable; however, many are more coercive, ranging from those that eliminate and restrict choice to those that guide choice through disincentives and default policies (Nuffield Council on Bioethics 2007). Intervening in voluntary choices where effects impose no harm to others constitutes strong paternalism and is difficult though not impossible to justify (Childress et al. 2002). However, society may justifiably intervene to prohibit behaviors that expose others to serious harms, and this “harm principle” has been appealed to as the basis for removing children from homes where parental practices are judged to contribute to severe childhood obesity and attendant comorbidities (Murtagh and Ludwig 2011). Removing a child from the home poses other potential harms, further complicating the ethical dilemma (Black and Elliott 2011). These ethical considerations in combination with the difficulty of changing health habits makes obesity prevention one of the more challenging public health priorities of the twenty-first century.

5.8.2 *Case Description*

Your state is the poorest in the nation with high rates of childhood poverty, obesity, and diabetes. Located in the southeastern part of the United States in what is known as the “stroke belt,” adults disproportionately suffer from stroke and its risk factors—hypertension, high cholesterol, diabetes, and obesity. As the state’s new commissioner of health, the governor has tasked you with making obesity prevention a public health priority. The governor is concerned about public health and rising health care costs. More than 50 % of the state’s children and some 20 % of adults are enrolled in Medicaid (a federal-state program that provides health care services for low-income Americans), making it the largest item in the state budget.

The governor has requested that you convene and chair a 12-member task force to make recommendations for a statewide obesity prevention strategy. Six seats are reserved for state legislator appointees because the recommendations will need political support to be implemented. The other seats are reserved for public health, health care, and community representatives. For several months, task force members debated measures that eliminate or restrict adult choice through government action, such as taxes and bans on unhealthy foods and drinks. Those who favored such measures argued they would be the most effective, citing the success of tobacco taxes and smoking bans in reducing smoking, and could be justified on grounds that obesity-related costs constitute an economic harm to others (Pearson and Lieber 2009). Yet, many task force members, particularly elected representatives, found such measures objectionable forms of government intrusion into adult choices.

Task force members did, however, agree to tackle obesity prevention in children on grounds that the state has a role in protecting them. To that end, they endorsed measures to improve school lunches and to remove vending machines that sell soda and other sugary beverages from public school grounds. Task force members also wanted to invest in a statewide media campaign about the causes and harms of childhood obesity because they believed it would raise awareness and promote informed choices. They also thought a media campaign would help to change social norms, which they deemed essential to long-term change in their state, where fried and fatty foods are part of the cultural heritage.

Task force members cannot, however, agree on the orientation of such a campaign. Some favor an approach used by a nearby state that has attracted attention for its graphic depiction of obese and unhappy children accompanied by hard-hitting messages, such as “It’s hard to be a little girl if you’re not.” Opponents believe the campaign blames the victims and further stigmatizes obese children. They propose instead an approach that highlights environmental barriers to healthy choices and depicts unhealthy food as the culprit, not those who consume it. But proponents of the more hard-hitting approach say it is honest about the facts and highlights the essential role of parents in regulating children’s behavior. To support their case, they cite the use of similarly graphic media campaigns in tobacco cessation efforts and note that public health efforts have often relied on stigma as a tool of disease prevention, despite the controversy (Bayer 2008; Burris 2008). The task force has formulated a series of questions to take up at the next meeting.

5.8.3 Discussion Questions

1. What harms are associated with childhood obesity?
2. Are the harms of obesity and tobacco use analogous? Is the economic cost of obesity a harm to others in the same way that secondhand smoke is a harm to others?
3. Do public media campaigns that depict images of obese children stigmatize them? What is stigma?
4. Is it ever ethically permissible to use stigmatization as a tool of disease prevention and health promotion? If so, in what sort of cases? Should children ever be the targets of stigmatization?
5. Do public media campaigns that highlight the role of parents in regulating children's food and activity-related environments and choices blame the victims?
6. Should the task force consider gathering community input, particularly from people who are overweight or obese, about the sorts of messages they would find effective in changing their health habits and also find ethically acceptable? If so, should children be included in these focus groups? If so, at what age?

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5.9 Case 3: Obesity Stigma in Vulnerable and Marginalized Groups

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5.9.1 Background

For empirical and normative reasons, stigma is an enormous public health problem that can have devastating psychosocial impact (Vanable et al. 2006; Chapple et al. 2004). Moreover, there is evidence that even after controlling for confounders,

stigma is robustly correlated with adverse health outcomes (Vardy et al. 2002; Puhl and Brownell 2003). Stigma increases human suffering and diminishes health, both of which anchor ethical concerns. However, its ethical deficiencies are not solely a function of its health effects; as Burris notes, “even if [stigma] had no adverse effects on health . . . it may readily be seen as repugnant in a humane society” (Burris 2002; Courtwright 2013).

According to Hatzenbuehler et al. (2013), stigma in a public health context consists of two central components: (1) an in-group marks an out-group as different on the basis of some common demographic characteristic, and (2) the in-group assigns a negative evaluation to the characteristic. Stigma is therefore intimately connected to entrenched social power structures (Link and Phelan 2006; Scambler 2006). Unsurprisingly, while precise estimates are lacking, evidence suggests that the burden of such stigma is unequally distributed along the social gradient, and that already disadvantaged groups are more likely to experience more intense levels of stigma (Scambler 2006; Shayne and Kaplan 1991). The prospect of compound disadvantage and inequalities renders stigma a critical issue for public health ethics, one that strongly implicates concerns of distributive and social justice (Powers and Faden 2006; Courtwright 2009).

Recent data shows that the prevalence of obesity is 35.7 % in the United States (Ogden et al. 2012) and 12.0 % globally (Stevens et al. 2012). Tracking these high estimates, obesity stigma is one of the common and ethically alarming health stigmas (Puhl and Heuer 2009; Puhl and Brownell 2003). Puhl and Heuer (2010) expressly link the commonality of obesity stigma to the emphasis on personal responsibility in the United States, which is the subject of an active debate (Wikler 2002). This debate has nineteenth century roots but is ongoing (Leichter 2003) and influences public perceptions on whether collective action in the name of public health is warranted. Moreover, such perceptions vary with particular public health problems. For example, although many advocate for greater individual responsibility in wearing seat belts, few contend that such responsibility eliminates the need for guardrails and speed limits. The perceived linkages between obesity and personal responsibility suggest that approaches to health promotion emphasizing the latter run a significant risk of intensifying obesity stigma (Puhl and Heuer 2010). Goldberg (2012) argues that such risk renders these approaches ethically suboptimal.

In addition, it is well recognized that background socioeconomic conditions are primary components of obesity-creating environments (McLaren 2007; Pickett et al. 2005). The fact that socioeconomic conditions have an immense impact in determining patterns of obesity among and within populations suggests reasons for doubting that public health interventions targeted at individual lifestyle change will be particularly effective in countering obesity (MacLean et al. 2009). Indeed, the evidence obtained from analysis of other major risk factors, such as smoking, strongly suggests a lack of longitudinal efficacy for such interventions (Jarvis and Wardle 2006; Ebrahim and Smith 2001; Rose 1985).

There exists significant debate over the effectiveness of stigmatization in changing risky health behaviors. Some commentators argue that the denormalization and stigmatization of smoking has produced positive public health consequences given

the overall decline in incidence in the United States (Bayer 2008; Bell et al. 2010) and in parts of Europe (Ritchie et al. 2010). One leading bioethicist even recently endorsed a kind of “stigmatization lite” as a tool to reduce obesity (Callahan 2013). Although the evidence for efficacy of stigma as a means to enhancing public health in general remains in dispute, the evidence as to obesity overwhelmingly suggests that stigma is more likely to exacerbate obesity than to reduce it (Puhl et al. 2013; Puhl and Heuer 2010).

Finally, there is excellent evidence that interventions that target individual behavior change have the unfortunate tendency to expand health inequalities. Capewell and Graham (2010) term such interventions “agentive” because the extent of their benefits depends on the resources the individual agent can bring to bear. Thus, for example, even when the least well-off are targeted, smoking cessation programs disproportionately benefit the affluent. The result is that effective programs targeting lifestyle change can unintentionally expand health inequalities, a fact that raises significant concerns of justice.

Ultimately, though efforts to counter obesity are critically needed, it is all too easy to implement public health interventions that intensify obesity stigma, expand health inequalities, and take little account of the role background social conditions play in structuring patterns of obesity and limiting health choices. Efforts to address obesity must therefore grapple with significant ethical issues centering primarily on justice and on health equity.

5.9.2 Case Description

The Brennan County Health Department (BCHD) is considering a new health promotion program to ameliorate the high and growing rates of adult obesity in the county (prevalence and incidence of 38 and 3.5 %). The program emphasizes the need to “Take Control” by (1) assessing weight; (2) losing weight; and (3) preventing weight gain (Centers for Disease Control and Prevention 2012). It highlights the significance of personal responsibility in countering obesity and aims to empower individuals to implement lifestyle change. The program consists of twice-weekly meetings facilitated by a nutritionist held over 8 weeks, with screening performed by a family nurse practitioner. The regimen consists of modules on meal planning, physical activity, behavioral modification, and cooking instruction. The meetings would occur at 6:30 pm at Brennan County Memorial Hospital.

The hospital is located in the town of Bernsville, which sits in the northwestern corner of the county. Brennan County is rural and geographically large, with a small population spread across large distances. Multiple bodies of water traverse the county. Road quality is uneven. Educational attainment is low, with only 43 % of residents having completed some college. Thirty-eight percent of children in Brennan County live in poverty, and the violent crime rate per 100,000 people is 605 (the national benchmark is 73). Unemployment is 14.2 %. Farming is a chief economic activity, with several migrant labor camps existing in the southeastern part of

the county. In terms of demographics, 40 % of Brennan County residents are Caucasian, 35 % are African-American, 14 % are Hispanic/Latino, 10 % are Native American, and 1 % is Asian/Asian-American.

The BCHD obesity program is based on reasonably good evidence. Several controlled studies of model programs have demonstrated both reduction in body weight and prevention of weight gain. Such effects decreased over time, but statistically significant improvements were maintained at 8-month follow-up. Ongoing studies are intended to assess effect endurance at 18 and 24 months postintervention.

At a recent BCHD meeting, Pauline, a public health nurse employed by the health department, expressed concern about the implementation of the program. Surprised, several attendees ask Pauline why she is hesitant, and she replies that she is concerned that the obesity program's emphasis on personal responsibility and lifestyle change might not be received well in a resource-poor county that serves multiple vulnerable populations, many of whom have documented levels of medical and institutional mistrust. The BCHD director, James, admits that Pauline's concerns are legitimate, but he also notes the evidence suggesting the intervention's efficacy. He argues that such results are so important that they justify immediate implementation. James also notes that several county commissioners have publicly declared an obesity crisis in Brennan County and have privately indicated to him that BCHD is expected to lead a transparent and vigorous response. In addition, James points out that the county does not have the funds to devote to more upstream interventions and they have several staff already trained in lifestyle change methods, so that the costs could be low.

Pauline shakes her head and says that while it is critical to address obesity in Brennan County, the program ignores the environmental and background conditions in which the most at-risk communities in Brennan County live, work, and play. She reiterates her concern that the program as it currently stands is unfair.

5.9.3 Discussion Questions

1. To what extent does the program risk creating or intensifying obesity stigma against marginalized and vulnerable groups in Brennan County? Why does this matter ethically?
2. Why are the social and economic conditions residents of Brennan County experience relevant to an ethical assessment of the obesity program?
3. How does the rural nature of Brennan County influence the ethical analysis of the program?
4. What concerns related to justice and/or health equity does the program raise?
5. How should obesity interventions be structured to minimize risks of stigma?
6. To what extent should public health interventions intended to counter obesity target upstream social determinants of obesity and obesity-related diseases?

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5.10 Case 4: Water Fluoridation: The Example of Greece

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This case is presented for instructional purposes only. The ideas and opinions expressed are the authors' own. The case is not meant to reflect the official position, views, or policies of the editors, the editors' host institutions, or the authors' host institutions.

5.10.1 Background

Dental caries is a condition with major public health impact worldwide. In most industrialized countries, it affects 60–90 % of school children and most adults, whereas in several Asian and Latin American countries, it is the most prevalent oral disease (Petersen and Lennon 2004). Dental caries significantly affects individuals and communities, leading to pain and discomfort, impairment of oral and general health, and reduced quality of life. It also highly correlates with health systems, living conditions, behavioral and environmental factors, and implementation of preventive measures (World Health Organization [WHO] 2005, 2007; Shariati et al. 2013). In low- and middle-income countries, the prevalence of oral diseases is on the rise; and in all countries, the greatest burden of oral diseases falls on disadvantaged and poor populations (Petersen 2008). Although oral disease ranks as the fourth most expensive disease to treat (WHO 2007), effective prevention and health promotion measures can greatly reduce the cost of dental treatment. As a result, the WHO has emphasized the importance of developing global oral health policies, especially the implementation of fluoride programs to prevent dental caries (WHO 2012).

For the past 60 years, fluoride use has consistently proven to be one of public health's most successful interventions (Clarkson et al. 2000). Used in tablets, mouthwash, toothpaste, gels or varnishes, fluoride also may be added to salt or drinking water to protect against dental caries (WHO 2011). High fluoride levels in drinking water ($>10 \text{ mg l}^{-1}$), are associated with dental fluorosis, a discoloring or mottling of tooth enamel, while levels below 0.1 mg l^{-1} are associated with higher levels of dental decay (Edmunds and Smedley 1996). A level of about 1 mg l^{-1} is associated with lower incidence of dental caries, particularly in children (Fawell et al. 2006). Water fluoridation adjusts the fluoride concentration of a public water supply to an optimal level to prevent dental caries (WHO 2002). Countries such as Australia, Malaysia, Ireland, Spain, the United Kingdom, and the United States use water fluoridation, delivering fluoride to about 300 million persons worldwide (Clarkson et al. 2000).

Despite the demonstrated effectiveness of fluorides in preventing dental carries, public discussions about the effectiveness of water fluoridation continue (Awofeso 2012; Rugg-Gunn and Do 2012). Several publications discuss the benefits and harms of water fluoridation (McDonagh et al. 2000; European Commission, Directorate General for Health and Consumers, Scientific Committee on Health and Environmental Risks 2011; Phillips et al. 2011; Community Preventive Services Task Force 2013). However, a lack of good-quality evidence on the potential benefits and harms has been reported (Nuffield Council on Bioethics 2007). Moreover, with the advent of genomic techniques in studying oral diseases, susceptibility to dental caries has been shown in part to be due to genetic variations (Eng et al. 2012), increasing in this way the complexity and the multicausality of dental caries.

Implementing water fluoridation programs can be controversial and generate tension between competing ethical principles and values—primarily conflicts between the principles of paternalism and autonomy. While water fluoridation is

considered to be a “test case” in the discussion about the paternalism of “collective decisions” (Dworkin 1988), appeals to paternalism point to water fluoridation’s benefits for entire communities (e.g., health needs of children, reduction in health risks and health inequalities). However, those who prioritize autonomy point out that water fluoridation intervenes in an important area of personal life without the consent of those affected, essentially coercing adults to lead healthy lives (Nuffield Council on Bioethics 2007). Despite the controversy, water fluoridation is “the most celebrated example” of “collective action/efficiency” to justify public health programs and policies (Faden and Shebaya 2010). In deliberative democracies, governments tend to address the conflict between paternalism and autonomy by focusing on elements of procedural justice—rational explanations, transparency of the decision-making process, and involvement of individuals and stakeholder groups in decision making (Nuffield Council on Bioethics 2007).

Greece, a coastal Mediterranean country in southeastern Europe, has nearly 11 million people. Among 12-year-olds, the average number of dental caries—measured as the number of decayed, missing, or filled teeth—is 2.07 per child (Kravitz and Treasure 2009). Public institutions such as universities, hospitals, and health centers of the National Health System provide limited oral health care. Most oral health care takes place in private clinics, where dental patients pay the entire cost of care. Oral health care constitutes an estimated one-third of the total expenditure on private health care in Greece (Kravitz and Treasure 2009). Since 2009, Greece has faced a severe fiscal crisis. In providing health care, public health authorities have to deal with severe budget limitations. The financial crisis is also straining the ability of individuals to pay for private sector dental treatment.

The Greek central government regulates many public health programs, including oral disease prevention and oral health promotion policies, but implementation is local. Although the government mandated water fluoridation in 1974, as of 2013 the program had not been implemented because of diffuse public resistance to such interventions. In 2008, a special commission proposed to the Ministry of Health and Social Solidarity to include water fluoridation in the national strategy for public health (Ministry of Health and Social Solidarity 2008). Given the long hiatus in implementing the program, reasonable questions could be raised about its justification, political legitimization, and social acceptance. A two-part study on these questions was carried out (Aspradaki 2012). It included interviews with key figures in the dental community from academia, the professions, and trade unions. It also included a systematic content analysis of all mentions of water fluoridation by the involved actors (e.g., dental professionals, policy makers) reported in the *Journal of the Hellenic Dental Association* for 1983 through 2011. The results showed strong skepticism among professionals about the program’s feasibility—reflecting the public’s concerns over this issue. Significant concerns were about a lack of technical infrastructure and organizational problems in the institutions that would implement water fluoridation. The vigorousness of the opposing arguments in the autonomy/paternalism debate in terms of justice, procedural justice, and public interest added to the skepticism. Concerns were also raised about the overall

importance of oral health for human life, the significance of prevention in dental care, and the concept of dental caries as an epidemic.

5.10.2 *Case Description*

You serve as the central oral health policy director. One morning you receive a call from Dr. Papadakis, head of the Public Health Programs and Policies Division at the Ministry of Health and Social Solidarity. Dr. Papadakis is considering implementing mandatory water fluoridation but is concerned about the many difficulties he may confront (i.e., ethical, legal, political and social challenges). Dr. Papadakis asks you to provide input about what to consider before mandatory water fluoridation is implemented in Greece.

5.10.3 *Discussion Questions*

1. Who are the stakeholders to consider in deciding if this program should be implemented? What are their values, perspectives, and primary interests?
2. How should the relevant values be considered, in particular, scientific evidence, ethical concerns, and economic factors?
3. Do public health institutions have special obligations to protect oral health?
4. When public health interventions are environmental, should public participation and democratic deliberation be considered in the decision-making processes?
5. How important is transparency about the benefits and risks of these interventions, in the light of the rapid progress and the tremendous achievements in life sciences and biotechnologies?
6. How would the rationale for such public health interventions change if the government and individuals were not facing a severe financial crisis?

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5.11 Case 5: The Prohibition of Smoking in Public Places in Bulgaria

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This case is presented for instructional purposes only. The ideas and opinions expressed are the author's own. The case is not meant to reflect the official position, views, or policies of the editors, the editors' host institutions, or the author's host institution.

5.11.1 Background

Chronic noncommunicable diseases, including cardiovascular diseases, malignant neoplasms, and noninfectious pulmonary diseases, are a major cause of the global burden of disease in the European Region³ (86 % of the 9.6 million deaths and 77 % of the 150.3 million disability-adjusted life years (DALYs) (Vassilevsky et al. 2009). Commonly associated risk factors include smoking, alcohol consumption, unhealthy diet, and low physical activity.

Tobacco smoking alone produces 12 % of the global disease burden in the European Region (ranges from 3 to 27 % for the individual countries) and it causes 2–21 % of all deaths. For Bulgaria, these rates are 13.5 % and 12.4 %, respectively (Vassilevsky et al. 2009). Annually, more than four billion people die worldwide from diseases related to tobacco products. By 2030, this number is expected to reach ten million, which will turn tobacco smoking into the biggest single cause of death (World Bank 1999).

Bulgaria is among the countries with the highest level of morbidity and mortality from cardiovascular diseases, especially cerebrovascular disease. Standardized death rates of all smoking-related causes of death for 2011 were estimated to be 318

³As of 2015, the European Region includes 51 countries (see http://www.who.int/choice/demography/euro_region/en/).

per 100,000 people, whereas the average for the European Union (EU)⁴ was 195 per 100,000 people. Standardized death rates of stroke in Bulgaria were about three times higher than the average level for the EU. Only Ukraine, Moldova, Kyrgyzstan, and Russia had higher rates (World Health Organization [WHO] 2012).

At the same time, Bulgaria is a leading country in cigarette use among Central and Eastern European countries (Ministry of Health, Bulgaria 2008). About 40 % of the population are smokers: 47 % of men and 33 % of women (Vassilevsky et al. 2010). Cigarettes smoked per person per year in Bulgaria (2793 cigarettes) is significantly higher than the average for the European Region (1681 cigarettes) (WHO 2012). Smoking among teenagers in Bulgaria is also among the highest in Europe—40 % of teenagers smoke (36 % of boys and 44 % of girls) (Tsolova et al. 2010). A 2011 survey found that Bulgaria was fourth out of 36 countries in teenage smokers (Hibell et al. 2012).

These data are alarming. But additional concern for public health is the effect of secondhand smoking. The risk of death from coronary heart disease increases 30 % from exposure to secondhand smoke (American Heart Association 2013). Secondhand smoke—“passive” smoking—increases a child’s risk of developing pneumonia, asthma, and other allergic conditions (Naydenov et al. 2007). A survey of countrywide integrated noncommunicable disease intervention (CINDI) programme-Bulgaria found more than 80 % of teenagers were exposed to passive smoking daily (20 % of teenagers were exposed for 1–2 h per day; 50 % were exposed for more than 2 h per day). Exposure was higher among girls than boys (43.1 % of boys and 56.7 % of girls were exposed to secondhand smoke for more than 2 h per day) (Tsolova et al. 2010).

As a member of the EU, Bulgaria has had to harmonize its legislation with European legislation. The first smoke free legislation in Europe was adopted in March 2004 in Ireland (Howell 2004). Currently, all EU member countries have some form of regulation aimed at limiting exposure to secondhand smoke. However, the scope of these regulations differs widely within the EU (European Public Health Alliance 2012). First attempts to prohibit smoking in public places in Bulgaria date back to January 2005. Restaurants and other food and drink places were separated into zones for smokers and nonsmokers. The Bulgarian society also split into groups of supporters of the changes and opponents of smoking restrictions.

On November 7, 2005, Bulgaria ratified the World Health Organization Framework Convention on Tobacco Control. Article 8 of the Convention stipulates that “effective legislative, executive, administrative and other measures, providing for protection from exposure to tobacco smoke in indoor workplaces, public transport, indoor public places and, as appropriate, other public places should be taken” (WHO 2003).

On May 17, 2012, the parliament voted to amend the Bulgarian Health Act prohibiting smoking in public places (Republic of Bulgaria Council of Ministers 2012). According to the new regulation, which took effect June 1, 2012, smoking was

⁴As of 2013, the European Union consisted of 28 member countries (see <http://europa.eu/about-eu/countries/member-countries/>).

prohibited in all indoor public places and workplaces including stadiums, children playgrounds, kindergartens, and other schools. Still, Bulgarian society remained conflicted about the issue.

In November 2012, two independent members of the Bulgarian parliament raised the issue of business losses from the smoking ban. They claimed that 10,000 people lost jobs due to fewer patrons of food and drink establishments and pleaded for revision of the law (Todorova 2012). Official data about business losses were not provided, and such surveys have not been done. Nevertheless, these claims increased public debate about the smoking bans. On December 10, 2012, the Bulgarian Hotel and Restaurant Association officially protested the law and insisted it be revised. The prime minister initially agreed that some revision could be possible but later supported the minister of health, who opposed changing the law. The minister of health pointed out that pitting business against health was unacceptable and, instead of discussing business losses, the government should be discussing the cost of treating oncological and cardiovascular diseases (Dimitrova 2012). The minister of economy, energy, and tourism favored a more flexible application of the law. Eventually, decision making was transferred to parliament's Economic Committee with the idea that the ban on smoking could be abolished through the Law of Tourism, particularly if certain amendments were adopted to allow smoking in specific areas of bars and restaurants. On December 18, 2012, the Economic Committee rejected any amendment to the law. Thus, despite the controversy and public debates, the law prohibiting smoking in public places has survived without change as of May 2013.

5.11.2 Case Description

The law prohibiting smoking in public places has been enacted. You are aware of the public debate and tension surrounding the issue. What would you, as a director of the regional health inspectorate, do to guarantee the implementation of the law in the region?

5.11.3 Discussion Questions

1. When is it acceptable to limit personal autonomy to benefit of the health of others?
2. How should economic interests be weighed in public health decision making? Specifically, how should health care expenditures due to smoking-related diseases be weighed against economic losses incurred by the ban on smoking?
3. Law is usually regarded as the strongest measure of public control. Is law the best approach for influencing health behavior in a society where citizens traditionally feel no responsibility for their own health or the health of others?

4. What long-term effects could repealing or revising the smoking ban have on the public's trust and support?
5. In future years, if a new government decides to revisit the law, what would you, as an expert in public health, advise the new minister of health? Who are the relevant stakeholders, and which of their values should the minister of health consider?

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