

The Public Health System in Germany and the U.S.

– a Comparison

Verena Schiefelbein

The main goal of public health is to prevent disease and to promote health. To reach this aim, it is important not only to focus on health education, but also implement policies. Although the American and German public health systems are structured in a similar manner (federal, state, and local-components), the American system is unique in that it is particularly fragmented, with many people uninsured and health care costs which are exceptionally high. Prevention is one of the most important aspects of public health as it not only includes measures that reduce risk factors and lower the probability of acquiring a disease, it also stops the progression of a disease or reduces the consequences of the condition once it has occurred. In order to best prevent disease, one must consider the risk factors that cause diseases. This paper focuses on three risks factors: tobacco consumption, alcohol consumption, and obesity. While Germany is burdened with a high prevalence of tobacco and alcohol consumption among adults, the United States faces a serious issue regarding the prevalence of obesity. Both countries have introduced various measures to reduce the prevalence of the risk factors. By curtailing the pervasiveness of risk factors, diseases and chronic diseases, especially, can be prevented thus minimizing health care costs resulting from medical treatment of such conditions.

Contents

1	Introduction	226
2	Introduction to the public health systems of Germany and the U.S.	226
	2.1 Definition of public health	226
	2.2 Organization of the public health systems	229
3	Risk factors.....	236
	3.1 Tobacco use in Germany and the U.S.....	236
	3.2 Alcohol consumption in Germany and the U.S.	237
	3.3 Obesity in Germany and the U.S.	238
4	Comparison	239
5	Conclusion.....	240
	References.....	242

1 Introduction

Today, multiple factors affect health. Besides environmental influences and the consequences of climate change, nutrition and individual lifestyle are also important determinants that may increase the occurrence of diseases. There are two different types of diseases: communicable diseases (like Ebola and HIV/AIDS) and non-communicable diseases (such as diabetes, multiple sclerosis, coronary heart disease, and cancer). In addition to the type of disease, the diverse risk factors are relevant and influence the state of health. Today, many diseases (heart diseases) have epidemiological dimensions and are widespread in populations across the world (Nationale Akademie der Wissenschaften Leopoldina et al., 2015, p. 3).

Epidemiology describes the health status of a population and determines the factors causing disease, their processes, and intervention options. It examines the distribution of outcomes, which are mainly the number of diseases and deaths, as well as risk factors in a population (Egger and Razum, 2014, pp. 23-24). Over the last century, infectious diseases have been treated more effectively and efficiently due to better and newer medications. Current issues in public health are a result of the growing prevalence of chronic diseases and their risk factors, population aging, and widening social inequalities (Gerlinger et al., 2012, p.764). Public health is unique in concentrating not only on the health of individuals, but also on the health of society as a whole (Nationale Akademie der Wissenschaften Leopoldina et al., 2015, p. 3).

The following paper gives a general overview of the German and American public health systems. To begin, it is important to understand how public health is defined and what aspects are included as they will influence the practice of public health institutions. Additionally, an explanation will be provided on how the public health systems in Germany and the United States (U.S.) are organized. Following this, the difference between Germany and the U.S. regarding three main risk factors considered in this essay (tobacco consumption, alcohol consumption, and obesity), will be analyzed. Once these aspects are considered a conclusion will be provided.

2 Introduction to the public health systems of Germany and the U.S.

2.1 Definition of public health

Public health is an expansive, multidisciplinary subject including multidimensional fields such as the promotion of good health or the prevention of non-infectious diseases (Ashton, 1988, p. 232; Committee for the Study of the future of Public Health Division of Health Care Services (Committee), 1988, p. 7). Besides the prevention of diseases, public health is comprised of sectors such as environmental health, nutrition, food and

drug control, sanitation, immunization, traffic laws, firearm control, and health education (Tulchinsky and Varavikova, 2014, p. 536).

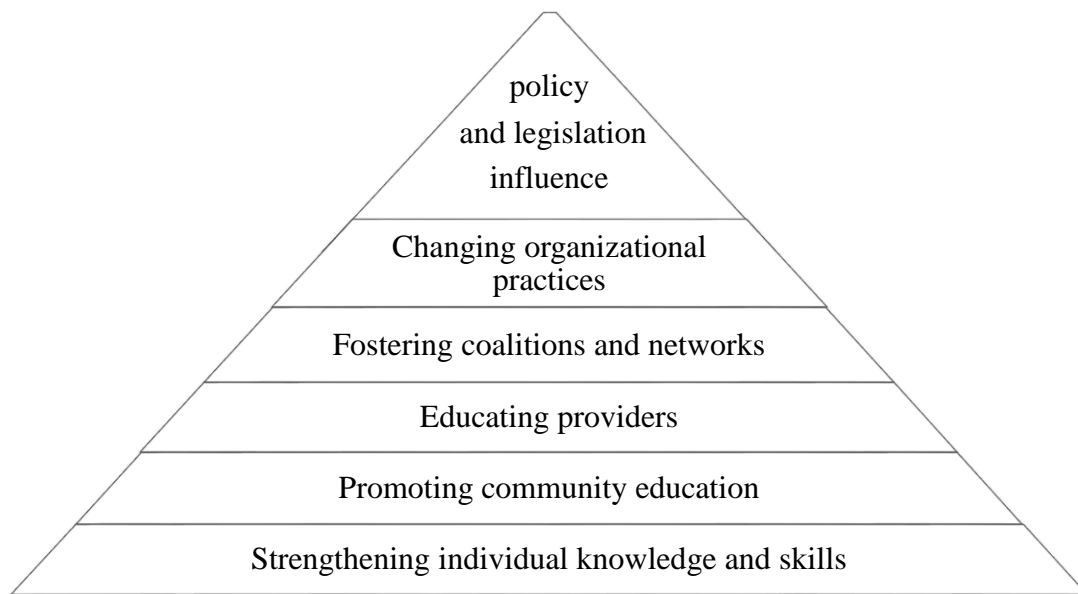
Winslow, who was responsible for encouraging public health at the beginning of the 20th century, defines public health in the following way: “Public health is the science and the art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community efforts [...]“ (Winslow, 1920, p. 30).

Public health should be focused on a clean and healthy environment. This implies protecting the public from pathogens such as waterborne disease (e.g. cholera) that are spread through unsanitary environments and cause illness. The control of community infections that are spread through direct contact from one individual to another is also important. Typical communicable infections which can be monitored and prevented are pneumonia and influenza. It is even more important to educate and support individuals in practicing daily personal hygiene so they remain healthy. Lastly, the organization of health care services for early diagnosis and preventive treatments as well as the development of the social machinery are vital to public health programs as well as through them public health can be improved too (Winslow, 1920, pp. 24-27).

One of the main aspects of public health is prevention. This includes measures to hinder the occurrence and spread of diseases. Prevention aims to reduce risk factors, lower the probability of getting a disease, stop the progress of disease and lessen consequences from illness or injury (Walter et al., 2012, p. 196; world health organization, 1984, p. 17). As one of public health’s most important tasks, it is necessary to implement a comprehensive approach including education and the establishment of safety structures to carry out prevention effectively (Cohen and Swift, 1999, p. 204).

In 1983 Larry Cohen, who has been an advocate for public health since 1972, founded *the spectrum of prevention*. He established this system since he believed that prevention was not fully understood by most people and only seen as an educational practice and not as complex process. The tool improves the approach to injury prevention and encourages practitioners to implement various initiatives. Cohen placed the main emphasis on influencing policy and legislation (Cohen and Swift, 1999, p. 203). In the following section the six levels of Cohen’s *spectrum of prevention* will be explained (Cohen and Swift, 1999, pp. 204-206).

Figure 1: The spectrum of prevention



Source: Own graphic based on Cohen, L. and Swift, S. (1999), The spectrum of prevention: developing a comprehensive approach to injury prevention, in: *Injury Prevention*, Vol. 5, No. 3, p. 203.

1) Strengthening individual knowledge and skills

On this level, the focus lies on the transfer of knowledge and skills from physicians, human service professionals, and non-professional workers trained in health or wellness to individuals in order to increase their understanding and capacity for self-prevention.

2) Promoting community education

Community education should reach a broad range of people, a large group or the whole population, and communicate information to improve health. Mass media campaigns are used because they have a further reach than other methods and attract more people. Through mass media, individuals become increasingly aware of public health issues and understand the necessity of finding solutions on a societal level and their responsibility to be part of the solution. If communities are able to use media strategically, this can also attract the attention of legislators who have the power to advocate for policy change. This process is called *media advocacy* and it is a key part of keeping a community educated.

3) Educating providers

Since providers are responsible for transferring their knowledge to the general public, it is necessary that they also improve their understanding of prevention to transmit the best

information that is currently available. This can be accomplished through continuing education for health providers.

4) Fostering coalitions and networks

Coalitions, formed by several participants in the public health system, are crucial to achieve vital public health goals. Only by working together is it possible to ensure success, reduce expenses, and increase the credibility of the participants. Coalitions have a greater impact to achieve a community effort than any individual could have.

5) Changing organizational practices

Key organizations in Germany and the U.S. for health are law enforcement agencies, health departments, and schools. Through examining their practices this can affect the health and safety of the greater community. If these institutions change their internal organization (e.g. regulations and norms) this influences the behavior, the health, and the safety of their members. Changes in legislation often initiate a change in organizational practice as well.

6) Influencing policy and legislation

The enactment of a law is most important because it has the broadest influence and ability to improve health outcomes. Laws may already exist, but in order to make a law more effective, changes or adaptations might need to be made.

2.2 Organization of the public health systems

The Centers for Disease Control and Prevention (CDC) generally defines a public health system as “all public, private, and voluntary entities that contribute to the delivery of essential public health services within a jurisdiction” (CDC, 2013).

Public health’s mission is to guarantee conditions in which people can live a sustainably healthy life. The aim is to achieve an organized community effort which transmits knowledge about how diseases can be prevented and addressed to public agencies, private organizations, and individuals (Committee, 1988, p. 7). Public health participants are the government, nongovernmental organizations (NGO), and community groups (Schneider, 2017, p. 25).

There are three core functions of public health agencies at all levels: assessment, policy development, and assurance. Each public health agency is obligated to collect, analyze, and release community health data (assessment). The aim is to develop public health policies within their jurisdiction to protect the interest of the public. Lastly, they must also assure that all necessary services are provided and accessible for everyone (Committee, 1988, pp. 7-8).

Structure of the public health system in the U.S.

When discussing the U.S. health care system, it is necessary to touch on the legal pre-conditions, which are the basis of the system. Public health is under the purview of the states because it is not specifically delegated to the federal government. Therefore, the responsibility is reserved by the states (Schneider, 2017, p. 26). The public health system in America is divided into several parts. There are governmental public health agencies at the federal, state, and local level, which carry the majority of responsibilities, but there is also an active exchange with private-sector organizations and NGOs (like health care providers, insurers, charities, and other groups) that concentrate on education, lobbying, and research in public health (Salinsky, 2010, p. 5; Schneider, 2017, p. 36). The following section will focus on governmental public health agencies at all levels.

On a federal level, the Department of Health and Human Services (HHS) is responsible for public health activities. Tasks of the federal government include establishing nationwide health objectives, supporting knowledge development, and providing funds and technical assistance to states. HHS is separated into three major agencies: The Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the Food and Drug Administration (FDA). The CDC, also known as the epidemiologic agency for the nation, fights disease no matter how it occurred and supports communities and individuals to do so as well. Its aim is to increase the health security of the nation. The health protection agency provides and analyzes huge amounts of health information, tracks disease to find out where disease occurs and how to prevent it, and brings knowledge to every individual with the mission to protect the citizens against health threats and to respond to them when they arise (CDC, 2014b). The NIH carries out and supports biomedical research and is one of the largest research institutions in the world. The FDA is the organization that evaluates all new drugs entering the market, helps to bring new innovations on the market that improve public health, and provides science-based information to individuals to use drugs in a proper way. The FDA protects the public health as it ensures the safety, efficacy and security of drugs, but also biological products, and medical devices. It further regulates the distribution and manufacturing of tobacco products to reduce tobacco use by children and young adults (Schneider, 2017, pp. 32-35; FDA, 2017).

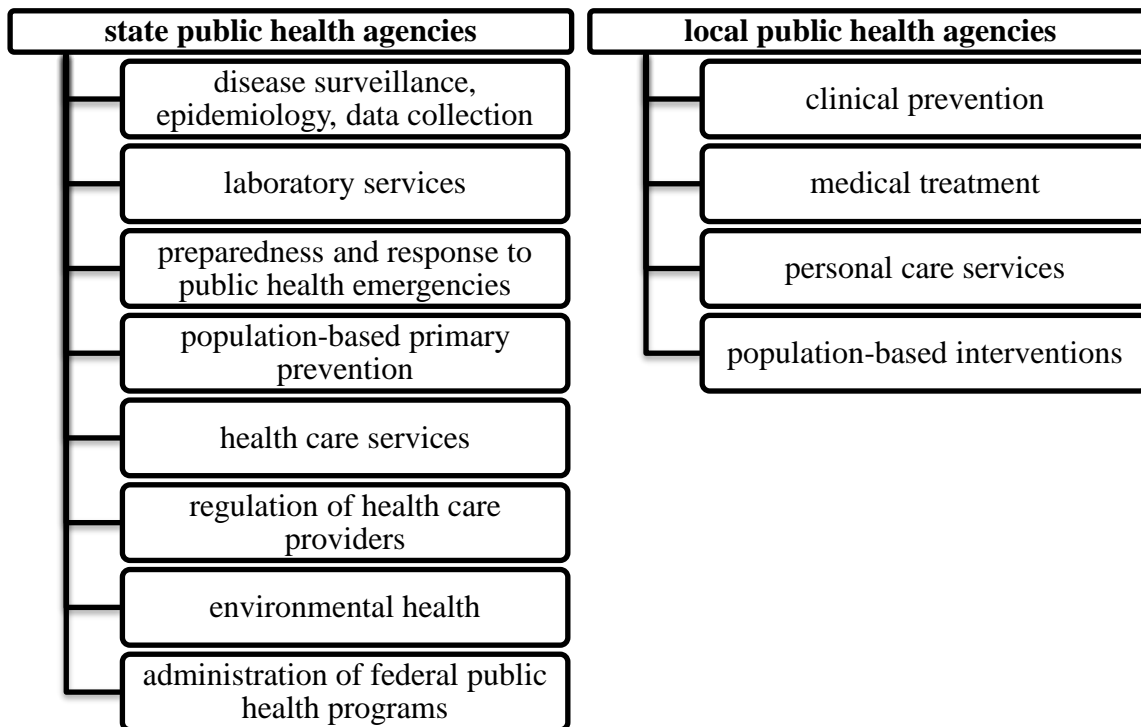
State's public health agencies are responsible for fulfilling the states task to protect health, safety, and the general welfare of the population (Schneider, 2017, p. 30). Due to this responsibility, state are the primary authority for public health in the U.S. (Salinsky, 2010, p. 7). States are autonomous and authoritarian in providing population-based and personal health services through statutes (Lister, 2005, p. 11). Each state has an established state health agency, which assumes governmental public health activities. The state public health systems as a whole are very fragmented because each state has a

high degree of flexibility in choosing how to structure its system (Salinsky, 2010, p. 8). State health department activities are mainly funded by state taxes, federal grants, and fee-for-service payment structures (Schneider, 2017, pp. 30, 32).

At a local level, the extent to which public health agencies have authority is limited by state policy, but local policymakers have the flexibility to determine which activities are provided and how they are provided (Salinsky, 2010, p. 15). Public health organizations differ among states because size, powers, and funds vary. In general, every county must establish a health department that serves cities as well as rural areas. These organizations are responsible for the day-to-day public health matters, such as the surveillance of local health problems and assuring that high-quality services are available in their community. In addition, local health departments are also responsible for tending to the health and well-being of underserved, less privileged persons. Aside from governmental funding, local health departments are typically financed by local property taxes, sales taxes, and fees for provided health services, but this varies from state to state (Schneider, 2017, pp. 29-30; Committee, 1988, p. 9).

Local and state health agencies are strongly connected. State health agencies delegate responsibility to local health agencies, but the authority given differs and depends on the chosen structure (centralized, decentralized, and hybrid approach). Within a centralized approach the control and responsibility for health care services rests with the state health agencies, whereas within a decentralized approach total responsibility for public health services provided in a specific jurisdiction is delegated to local agencies. Within a hybrid approach state and local health agencies both provide services and share responsibility (Lister, 2005, p. 11). State and local health agency activities are shown in the table below.

Figure 2: State and local health agency activities



Source: Own graphic based on Salinsky, E. (2010), *Governmental Public Health: An overview of state and local public health agencies*, No. 77, Washington DC, pp. 11-16.

Different kinds of treatment services are provided through local public health agencies. Some offer primary health care services, but most provide testing and treatment for communicable diseases, such as tuberculosis and sexually transmitted diseases like HIV. Other personal care services are implemented as well, particularly services for maternal and child health such as perinatal home visitation (Salinsky, 2010, p. 15).

Structure of the public health system in Germany

The main tasks of public health services in Germany are the surveillance of communicable diseases, health reporting, supervision of environmental hygiene, and health education as well as promotion (Busse et al., 2013, p. 3).

In the German public health system governmental institutions, public corporations and independent organizations as well as their associated agencies work on federal, state, and local levels (Walter et al., 2012, p. 272). On the federal level, there are ministries and institutions. In 1961 the first self-operating Federal Ministry for Healthcare was established. The ministry was responsible for all questions regarding healthcare, including environmental aspects like sanitation or clean air. It was substituted by the Federal Ministry for Health in 1991. The new ministry is divided in several subdivisions such

as prevention, which deals with health promotion and legal issues of prevention or disease control. Also, general healthcare activities are overseen by the ministry including information and health education as well as early detection and prevention of diseases. Since public health is a widespread field, as previously mentioned, there are various other federal ministries that tackle public health issues like the Federal Ministry of Education and Research, which is responsible for educating the population, or the Federal Ministry of Labour and Social Affairs which is responsible for rehabilitation. A federal institution with resemblance to the American CDC is the Robert-Koch-Institut (RKI). Its task as a federal institution for infectious diseases and non-communicable diseases is to identify, prevent, and combat these diseases. It is also responsible for the Federal Health Monitoring System (Walter et al., 2012, pp. 273-275).

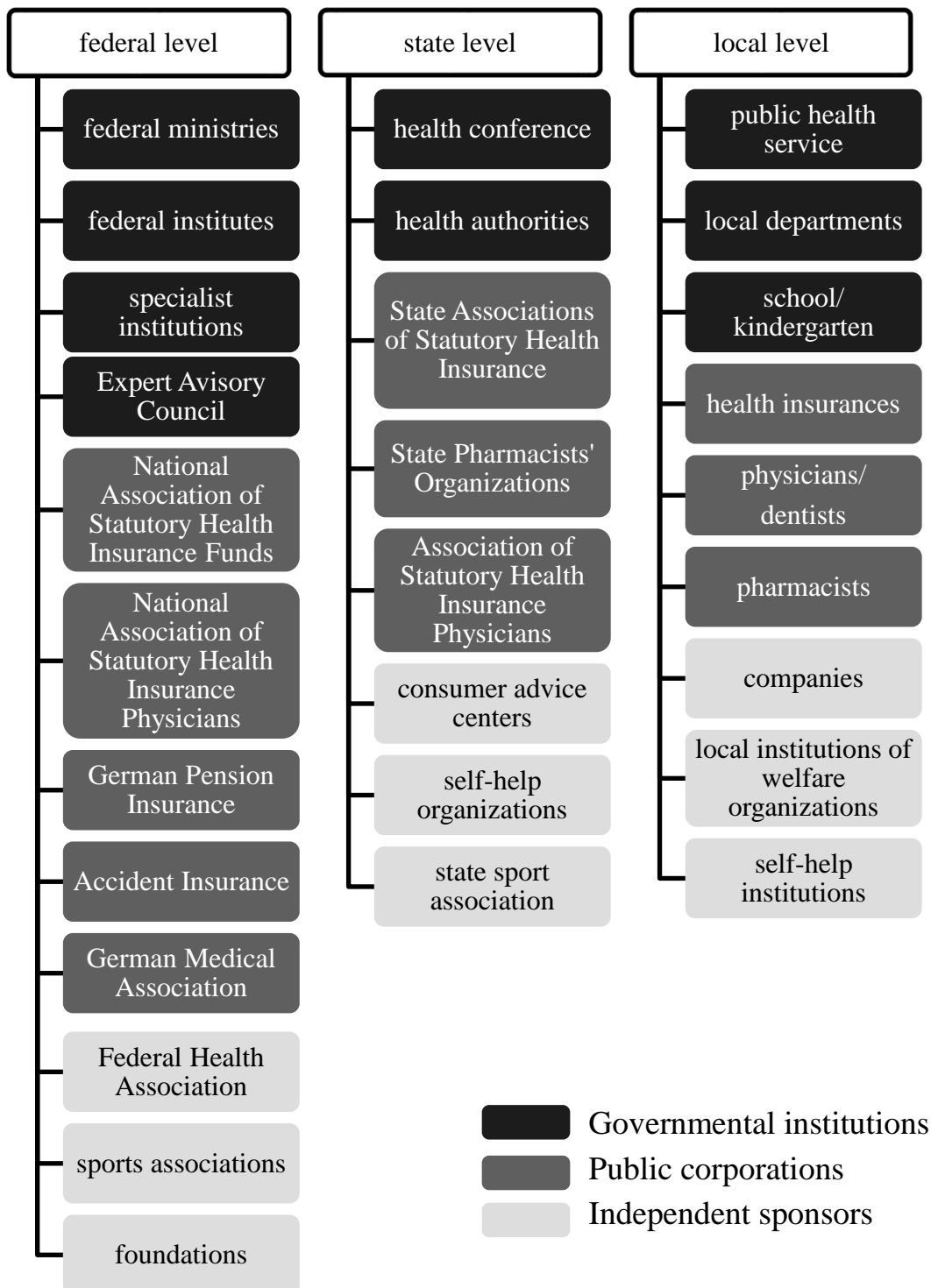
Besides federal ministries and institutions, health insurance companies play an important role as it is their statutory mandate to promote, recover, or improve the health of their policy holders by offering information, consultation, and services. With statutory health insurance reformation in 1989 measures of the health promotion and disease prevention were established for the first time in the healthcare system. In §§20-24i in the German Social Security Code, Book V (SGB V) the main services of health insurance companies are recorded to include services for the prevention of diseases, workplace health promotion, the prevention of work-related risk factors, promotion of self-help, and services during pregnancy and motherhood. Different program offering for prevention and health promotion are a substantial part of health insurance competition and lead to two positive effects. On the one hand, people who want to stay healthy are attracted to join the health insurance and on the other hand already insured people stay healthier and therefore costs stay at lower level, because the insurance risk pool is better. It can be said that promotion and prevention programs are an adjusting screw on the health insurance market, which means that they are an important decisive criterion regarding the decision making of individuals to join an insurance agency (Walter et al., 2012, pp. 279-280).

Although legislation for health prevention is the responsibility of the federal government, states also have a main task regarding health prevention due to constitution. On a state level, ministries with a special department for health are responsible for the implementation of laws and control of public healthcare. The Conference of Health Ministers and the Association of the State Board of Health coordinate activities of national ministries on the federal level. Tasks of state ministries vary and include financially supporting State Associations, National Offices, and State Working Groups for health. They are established in nearly every German State and have the aim of coordinating, promoting, and cooperating within health education and health promotion on a state level to improve the health of the population. Practical examples are information events, work groups or training programs (Walter et al., 2012, p. 281).

With facilities very accessible to and in direct contact with citizens, prevention and health promotion play an important role on local level. Health departments are particularly relevant as they are represented in every district and have the legal responsibility to prevent disease and promote the health of the population. Their tasks include combating communicable diseases, providing vaccines, offering consultancies for different patient groups, and performing check-ups for children. Services for early detection of disease were introduced in 1971 and nowadays include prenatal care, cancer-screening, and screenings for an early detection of heart-diseases, kidney diseases, and diabetes. Although medical consultation is effective, it has only a marginal importance. Other facilities that act on a local level and in direct contact to the citizens are schools, sports clubs, pharmacies, welfare centers, and churches. All of them have the same task: to give health information, health education, and health care provision (Walter et al., 2012, pp. 281-285).

A special governmental institution in the public health system is the public health services (Öffentlicher Gesundheitsdienst=ÖGD), located at the local level, which can be associated with a service-orientated administrative structure. Its main tasks are to create conditions in which people can be healthy, to promote public health needs as an impartial player, to act practical, and to protect the human dignity of every individual. The ÖGD is sometimes called the third pillar of the healthcare system besides ambulatory and stationary medical treatment. Although its percentage of total healthcare expenditures is lower than one percent, this institution has a great importance for the quality of life and the life expectancy which have both increased. Services the ÖGD provides are essentially health protection (reducing infection and improving hygiene), health promotion and prevention (strengthening of resources and boosting health-related opportunities), and healthcare management (developing the healthcare system and improving quality). The ÖGD is regulated differently by every state legislation and therefore has a heterogeneous profile (Wildner et al., 2016, pp. 289-292).

Figure 3: Institutions at all levels in the German public health system



Source: Own graphic based on Walter, U., Schwartz, F. W. and Plaumann, M. (2012), Prävention: Institutionen und Strukturen, in: Schwartz, F. W., Walter, U., Siegrist, J., Kolip, P., Leidl, R., Dierks, M. L., Busse, R. and Schneider, N. (Ed.), Public Health: Gesundheit und Gesundheitswesen, third edition, Urban&Fischer, München, p. 272.

3 Risk factors

According to the World Health Organization (WHO), a risk factor is “any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury” (WHO, 2017). Through health promotion and prevention, the probability of risk factors occurring and subsequently resulting in disease can be reduced (OECD, 2015a). The effectiveness of the preventive action is proven by a decrease in the prevalence of a disease (Egger and Razum, 2014, pp. 23-24).

The number of possible risk factors is high and includes a large variety of risks from high blood pressure, tobacco use, alcohol use, high blood glucose, high cholesterol, and high body mass index to physical inactivity and low fruit and vegetable intake. These factors can increase the risk for chronic diseases like heart disease, diabetes, and cancer and risk factors affect all income groups of all countries. Unsafe sex, alcohol use, polluted water, poor sanitation, and low hygiene affect the population in different ways, sometimes causing serious issues, especially in low-income countries, for example Ebola in many African countries (WHO, 2009, p.v; Tulchinsky and Varavikova, 2014, p. 243). This paper focuses on the three risk factors mentioned in the OECD report from 2015: smoking, alcohol consumption, and obesity.

3.1 Tobacco use in Germany and the U.S.

Tobacco use affects nearly all organs of the body and causes cardiovascular diseases, several types of cancers, and pulmonary diseases (OECD, 2015a). In Germany, 28.7% of the adult population smoked in 2015, with 26.1% of women and 32.2% of men smoking cigarettes (Piontek et al., 2017, p. 43). It is noticeable that as age increases the number of regular smokers grows, especially for men. Furthermore, the percentage of smokers decreases as social status increases (Pötschke-Langer et al., 2015, pp.39, 44-45). In particular, the highest proportion of smokers among both genders is between the ages of 18 and 44 years (Robert-Koch-Institut, 2014, p. 113). The tobacco-based health expenditure in Germany totaled € 79.09 billion in 2015, of that amount € 25.41 billion (7.4% of total health care expenditures) could be attributed to direct costs for treatment, care, rehabilitation, and costs for secondhand smoke victims. Indirect costs that burdened the economy amounted to two-thirds of tobacco expenditure (€ 53.68 billion) through the loss of resources such as death, permanent disability, care, and unemployment of potential workers (Pötschke-Langer et al., 2015, pp. 66-67).

In the United States, 15.1% of adults smoked cigarettes in 2015, with more men (16.7%) than women (13.6%) having smoked. Most of the smokers were between the ages of 25 and 44 years. Moreover, the prevalence of cigarette smoking is higher in people with lower education or if they live below the federal poverty level (Jamal et al., 2016, pp. 1,207-1,208). The annual costs for lost productivity attributable to death from cigarette

smoking amounted to \$150.7 billion in 2009 (U.S. Department of Health and Human Services, 2014, p.671). Annual health care spending on tobacco-related conditions in 2010 amounted to \$170 billion, which was 8.7% of the total health care expenditures (Xu et al., 2015, p. 326). The economic costs for smoking and exposure to secondhand smoke amount to around \$300 billion annually.

When comparing the direct health care costs in both countries regarding smoking, the percentage of total health care expenditures is 1.3% higher in the U.S. than in Germany, although there are twice as many smokers in Germany.

3.2 Alcohol consumption in Germany and the U.S.

Alcohol use causes diverse illnesses such as liver cirrhosis, strokes, and several cancers, but it also leads to accidents, injuries, and violence (OECD, 2015a). In 2015 the 30-day prevalence of any alcohol consumption among adults amounted to 72.5% in Germany. 77.1% male persons and 67.8% female persons consumed alcohol over a month time period. 21.4% of the population practices risky consumption, meaning that on average more than 12 grams of pure alcohol are consumed daily for women and more than 24 grams for men, whereby more men than women practiced it (Piontek et al., 2017, pp. 67-68). The most at risk consumers are between 18 and 29 years old. Women from the age of 30 onwards and from a higher social and educational status are at a higher risk of harmful alcohol consumption than women with a lower social and educational status (Robert-Koch-Institut, 2014, p. 117). Another alarming aspect of alcohol consumption is binge drinking. This is defined as the consumption of at least five alcoholic drinks a day. 46.5% of males and 21.6% of females were identified as binge drinkers in the 30-day prevalence. Binge drinking is especially pronounced within the 18 to 24-year-old range (Piontek et al., 2017, p. 69). Economic costs were quantified to total € 39.30 billion in 2015. Indirect costs amounted to € 30.15 billion, whereas direct costs totaled € 9.15 billion, which account for 2.7% of total health care expenditures (Effertz, 2015, p. 315).

In America, excessive alcohol use consists of binge drinking, heavy drinking, alcohol consumption by pregnant women, and alcohol use by people younger than 21 years. In contrast to Germany, binge drinking in the U.S. means consuming more than five alcoholic drinks for men and four or more drinks for women on one occasion. Heavy drinking is defined as consuming eight or more drinks per week for women and 15 or more drinks per week for men (National Center for Chronic Disease Prevention and Health Promotion, 2016). In 2015, the 30-day alcohol consumption prevalence among adults in the U.S. was 56%, whereby 61.3% men and 51.1% women consumed alcohol (Center for Behavioral Health Statistics and Quality (CBHSQ), 2016, p. 939). The 30-day binge drinking prevalence in 2015 among adults was 26.9%, with more men binge drinking than women. Persons aged 26 to 29 participated most in binge drinking. 7% practiced

heavy alcohol use, where men consumed twice as much as women. In the U.S., full-time employed people and people with a college degree are more at risk for excessive alcohol consumption than unemployed people with a lower educational status (CBHSQ, 2016, pp. 893, 949). The excessive drinking costs amounted to \$249 billion in 2010. 72% of the total costs are related to losses in workplace productivity and 11% are related to direct health care expenses. The other 17 % made up criminal justice expenses, motor vehicles crash costs, and property damage (CDC, 2017).

Comparing Germany and the U.S., the prevalence of adults consuming alcohol is 15% higher in Germany, but the proportional part of directly related costs on total health care expenditures in the U.S. is 8.3% higher than in Germany.

3.3 Obesity in Germany and the U.S.

Overweight and obese adults and children are at a very high risk of developing many diverse diseases such as hypertension, high cholesterol, diabetes, cardiovascular diseases, respiratory problems (asthma), and musculoskeletal diseases like arthritis (OECD, 2015a). Obesity is an abnormal or excessive fat accumulation that is measured with the body mass index (BMI)¹. A BMI higher or equal to 25 is defined as being overweight, whereas obesity is having a BMI higher than or equal to a BMI of 30 (World Health Organization, 2016).

According to OECD measures, in 2013 the obesity prevalence among adults in Germany was 23.6% (OECD, 2015a). In 2012, 67.1% of men and 53.0% of women between the ages of 18 and 79 years were overweight. The prevalence of obese people amounts to 23.3% of males and 23.9% of females. The percentage of overweight men is higher than the percentage of overweight women, whereas the percentage of obese people is roughly equal in both genders. The number of overweight women increases continuously with increasing age, whereas men have a peak at around 30 to 39 years of age, with the number of overweight men nearly doubling in between these ages. Women with a high social and educational status have a lower prevalence of being overweight or obese than women with a lower social status (Mensink et al., 2013, pp. 791-792). In 2015, € 63.04 billion were spent on obesity related costs. Direct costs including sickness benefit, care, and accident costs amount to € 29.39 billion (6.8% of total health care expenditures) and indirect costs (€ 33.65 billion) covered productivity losses and premature mortality (Erfertz, 2015, p. 316).

In the United States, 35.3% adults suffered from obesity in 2013 (OECD, 2015a). By 2014, the percentage was already over 37%. Women had a higher prevalence of obesity (40.4%) compared with men (35%). Middle-aged individuals of both genders, men and women between the ages of 40 to 59, were especially affected by obesity (Flegal et al.,

¹ BMI = person's weight in kilograms / square of his height in meters [kg/m²]

2016, p. 2,287). In total, 70.7% American adults were overweight or obese (National Center for Health Statistics, 2016, p. 200). The obesity prevalence among men is quite similar on all income levels with the tendency to be higher for people at higher income levels or with higher educational status. Women earning more or having a college degree have a lower prevalence of being obese (Ogden et al., 2010, pp. 1-3). According to Finkelstein, the estimated national medical care costs for obesity-related illnesses amounted to \$147 billion in 2008, which made up 9.1% of national health expenditures (Finkelstein et al., 2009, p. 828). Total annual economic costs amounted to \$215 billion (Hammond and Levine, 2010, p. 294).

The rate of obesity in America is more than 10% higher than in Germany and as a result, the percentage of direct healthcare costs related to total health care expenditure is higher in the U.S.

4 Comparison

In general, the risk factors that occur are similar in Germany and the U.S., but the prevalence and costs to both countries vary. For example, the prevalence rates for tobacco and alcohol use are much lower in the U.S. in comparison to Germany, yet they spend more money due to these risk factors (as a percentage of total health care expenditure). With regards to obesity, the U.S. has a higher prevalence rate and also spends more on this issue. The question that arises out of these results is: Why does the U.S. spend so much money on health care despite limited gains?

Health care expenditures as a share of the GDP amounted to 16.4% in the U.S. and 11.0% in Germany in 2013 (OECD, 2015a, p. 169). The U.S. has worse health outcomes for every condition, except for cancer, when compared to most other developed countries (OECD, 2015a, pp. 45-64). So, the American society is paying more and getting less. The reasons for high health care costs can be attributed to high administrative costs due to a lack of coordinated care in a multi-player system. Higher prices for treatments and pharmaceuticals in addition to investment in new technology increases costs as well. The fact that Americans consume more in the form of treatment, diagnostic tests, prescription drugs and pharmaceuticals than any other developed country also attributes to their significant health expenditures (Cutler, 2013). In addition, Americans pay doctors more than most other countries do (Yglesias, 2013).

Looking at the organizational structures, both have basically equal elements as both countries have entities at the federal, state, and local level with different jurisdictions for each segment. However, the American public health care system is more fragmented and therefore contributes to higher health care costs in addition to many of the other factors already mentioned above. The risk factors Americans are exposed to are mainly responsible for many chronic diseases (diabetes, cancer or heart disease), which are then

the main drivers of high health care expenditures (Sturm, 2002, p. 245). Therefore, it is important to introduce effective preventative measures to contain costs.

The key reasons that the U.S. succeeded in reducing the prevalence of smoking was because their public health policies not only prohibited smoking in indoor public and private workplaces, but also increased the tobacco product excise taxes while implementing mass-media campaigns (CDC, 2014a, p. 133). In comparison, Germany has not implemented any measures over the last seven years aiming to reduce consumption and they are the only country to allow unlimited outdoor advertisement (Deutsches Krebsforschungszentrum, 2017). It is worth mentioning that Germany already implemented a law successfully years ago. The Non-Smoker Protection Law was established in 2007 and includes a smoking ban in public institutions of government, sport, and education institutions as well as a ban in children and youth facilities as well as in restaurant and eateries.

The U.S. was able to decrease the alcoholism and dangerous drinking probability by reducing commercial and social access as well as economic availability ((Hingson et al., 2006, p. 739). This was achieved by setting the minimum legal drinking age to 21 and by prohibiting the consumption of alcohol in public places (Voas and Fell, 2011, p. 225). In addition, the U.S. introduced further strategies, for example, a school-based program to strengthen adolescents' ability to avoid peer pressure and resist alcohol consumption. Extracurricular activities also reduce alcohol use and so does family involvement (Komro and Toomey, 2002, pp. 5-14). Germany sets their focus instead on awareness and information campaigns, for example "Kenn dein Limit".

With regards to obesity, the U.S. has not been as successful. Causes for obesity in America are countless. However, physical inactivity, consumption of high-calorie foods, high stress, and a low-income drastically increase the probability of becoming obese (University of Maryland Medical Center, 2015). Germany guarantees a better work-life-balance, allowing more time for sports and other activities which decrease the risk for becoming overweight or obese (OECD, 2015b).

The U.S. introduced good strategies for reducing alcohol and tobacco consumption, but still has higher health care expenditures. Looking at prevention expenditures as a share of total health expenditures in 2014, Germany spends 3.1% and the U.S. 2.9% (OECD, 2016, p. 134). Higher health care expenditures are not attributable to higher investments in preventative strategies, but to faults in the organizational structure of the health care system. In comparison to Germany, who spent far less, America does not work in an as cost-effective manner.

5 Conclusion

Implementing policies to address public health issues is not always easy. This is particularly a concern in the U.S. To succeed, a problem must be recognized, a solution must

be available, and the political conditions must be right to implement a health policy through an open policy window. In the U.S., the bipartisan structure and disagreements in the Congress often impede the development of new policies (Kingdon, 1993, pp. 41-43). In addition, politicians want to achieve short term solutions to get re-elected. Therefore, big public health solutions that are needed to solve pressing public health issues are rare. It is important to focus on upstream measures as they are more effective than downstream measures. Upstream measures take place on a macro policy level and seek to diminish the cause of the cause, whereas downstream measures act on an individual level and seek to change the effects of the cause (National Collaborating Centre for Determinants of Health, 2014, p. 3). U.S. politicians prefer to focus on downstream measures as opposed to upstream measures because their implementation is easier, faster, and typically costs less (Rutter et al., 2017, p. 61). It is important to consider the imbalance of the U.S. health care system in comparison with the German system when looking at policy solutions and interventions for public health issues. Despite the shortcomings that any health care system may have, the public health agencies in the U.S. and Germany, ultimately serve to reduce the prevalence of risk factors in society. As a result of this reduction, these systems prevent diseases and improve the health status of individuals and reduce health care expenditures, even when combating complex risk factors such as tobacco, alcohol and obesity (Maciosek et al., 2010, p. 1,656).

References

Ashton, J. (1988), 'Acheson: A Missed Opportunity for the New Public Health', *British Medical Journal (Clinical Research Edition)*, vol. 296, no. 6617, pp. 231–232.

Busse, R., Blümel, M., Rice, T., Rosenau, P., Unruh, L. Y. and Barnes A. J. (2013), *Public Health: The Health Systems and Policy Monitor*, European Observatory on Health Systems and Policies.

Center for Behavioral Health Statistics and Quality (2016), *2015 National Survey on Drug Use and Health: Detailed Tables, Substance Abuse and Mental Health Services Administration*.

Centers for Disease Control and Prevention (2013), *The Public Health System and the 10 Essential Public Health Services* [Online], U.S. Department of Health and Human Services. Available at: <https://www.cdc.gov/nphpsp/essentialservices.html> (Accessed May 17, 2017).

Centers for Disease Control and Prevention (2014), *Best Practices for Comprehensive Tobacco Control Programs - 2014*, U.S. Department of Health and Human Services.

Centers for Disease Control and Prevention (2014), *Mission, Role and Pledge* [Online], U.S. Department of Health and Human Services. Available at: <https://www.cdc.gov/about/organization/mission.htm> (Accessed September 14, 2017).

Centers for Disease Control and Prevention (2017), *Economic Costs* [Online], U.S. Department of Health and Human Services. Available at: <https://www.cdc.gov/alcohol/data-stats.htm> (Accessed May 17, 2017).

Cohen, L. and Swift, S. (1999), 'The Spectrum of Prevention: Developing a Comprehensive Approach to Injury Prevention', *Injury Prevention*, vol. 5, no. 3, pp. 203–207.

Committee for the Study of the future of Public Health Division of Health Care Services (1988), *The Future of Public Health*, 11th edn, Washington, D.C., National Academy Press.

Cutler, D. (2013), *Why Does Health Care Cost So Much in America? Ask Harvard's David Cutler*, PBS Newshour [Online]. Available at: <http://www.pbs.org/newshour/run-down/why-does-health-care-cost-so-much-in-america-ask-harvards-david-cutler/> (Accessed May 17, 2017).

Deutsches Krebsforschungszentrum (2017), *Raucherparadies Deutschland*, Deutsches Krebsforschungszentrum no. 15.

Effertz, T. (2015), *Die volkswirtschaftlichen Kosten gefährlichen Konsums: Eine theoretische und empirische Analyse für Deutschland am Beispiel Alkohol, Tabak und Adipositas*, Frankfurt am Main, Wien, PL Academic Research Imprint der Peter Lang GmbH.

Egger, M. and Razum, O. (2014), 'Public Health: Konzepte, Disziplinen und Handlungsfelder', in Egger, M. and Razum, O. (eds.) *Public Health: Sozial- und Präventivmedizin Kompakt*, Berlin, De Gruyter, pp. 1–26.

Finkelstein, E. A., Trogon, J. G., Cohen, J. W. and Dietz, W. (2009), 'Annual Medical Spending Attributable to Obesity: Payer- and Service-Specific Estimates', *Health Affairs*, no. 5, pp. 822–831.

Flegal, K. M., Kruszon-Moran, D., Carroll, M. D., Fryar, C. D. and Ogden, C. L. (2016), 'Trends in Obesity Among Adults in the United States, 2005 to 2014', *JAMA*, vol. 315, no. 21, pp. 2284–2291.

Gerlinger, T., Babitsch, B., Blättner, B., Bolte, G., Brandes, I., Dierks, M.-L., Faller, G., Gerhardus, A. and Gusy, B. (2012), 'Situation und Perspektiven von Public Health in Deutschland-Forschung und Lehre: Positionspapier der Deutschen Gesellschaft für Public Health e. V', *Gesundheitswesen (Bundesverband der Ärzte des Öffentlichen Gesundheitsdienstes (Germany))*, vol. 74, no. 11, pp. 762–766.

Hammond, R. A. and Levine, R. (2010), 'The Economic Impact of Obesity in the United States', *Diabetes, Metabolic Syndrome and Obesity : Targets and Therapy*, vol. 3, pp. 285–295.

Happe, K., ed. (2015), *Public Health in Deutschland: Strukturen, Entwicklungen und globale Herausforderungen*, Halle (Saale),.

Hingson, R. W., Heeren, T. and Winter, M. R. (2006), 'Age at Drinking Onset and Alcohol Dependence: Age at Onset, Duration, and Severity', *Archives of Pediatrics & Adolescent Medicine*, vol. 160, no. 7, pp. 739–746.

Jamal, A., King, B. A., Neff, L. J., Whitmill, J., Babb, S. D. and Graffunder, C. M. (2016), 'Current Cigarette Smoking Among Adults - United States, 2005-2015', *MMWR. Morbidity and Mortality Weekly Report*, vol. 65, no. 44, pp. 1205–1211.

Kingdon, J. W. (1993), 'How do Issues Get on Public Policy Agendas?', in Wilson, W. J. (ed.) *Sociology and the Public Agenda*, Newbury Park, SAGE Publications, pp. 40–51.

Komro, K. A. and Toomey, T. L. (2002), 'Strategies to Prevent Underage Drinking', *Alcohol Research & Health*, vol. 26, no. 1, pp. 5–14.

Lister, S. A. (2005), *An Overview of the U.S. Public Health System in the Context of Emergency Preparedness*, United States Congressional Research Service.

Mensink, G. B. M., Schienkiewitz, A., Haftenberger, M., Lampert, T., Ziese, T. and Scheidt-Nave, C. (2013), 'Übergewicht und Adipositas in Deutschland: Ergebnisse der Studie zur Gesundheit Erwachsener in Deutschland (DEGS1)', *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz*, 5/6, pp. 786–794.

National Center for Chronic Disease Prevention and Health Promotion (2016), *Alcohol Use and Your Health* [Online], U.S. Department of Health and Human Services. Available at: <http://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm> (Accessed May 17, 2017).

National Center for Health Statistics (2016), *Health, United States, 2015: With Special Feature on Racial and Ethnic Health Disparities*, U.S. Department of Health and Human Services.

National Collaborating Centre for Determinants of Health (2017), *Let's Talk: Moving Upstream*, National Collaborating Centre for Determinants of Health.

OECD (2015), *Health at a Glance 2015: OECD Indicators*, OECD Publishing.

OECD (2015), *Work-Life-Balance* [Online], OECD. Available at: <http://www.oecdbetterlifeindex.org/de/topics/work-life-balance-de/> (Accessed May 17, 2017).

OECD (2016), *Government at a Glance: How Korea Compares*, OECD Publishing.

Ogden, C. L., Lamb, M. M., Carroll, M. D. and Flegal, K. M. (2010), 'Obesity and Socioeconomic Status in Adults: United States, 2005-2008', *NCHS Data Brief*, no. 50, pp. 1–8.

Piontek, D., Gomes de Matos, E., Atzendorf, J. and Kraus, L. (2017), *Substanzkonsum und Hinweise auf klinisch relevanten Konsum in Bayern, Hamburg, Hessen, Nordrhein-Westfalen, Sachsen und Thüringen: Ergebnisse des Epidemiologischen Suchtsurvey 2015*, IFT Institut für Therapieforschung No. 189.

Pötschke-Langer, M., Kahnert, S., Schaller, K., Viarisio, V., Heidt, C., Schunk, S., Mons, U. and Fode, K. (2015), *Tabakatlas Deutschland 2015*, Papst Science Publishers.

Robert-Koch-Institut (2014), Daten und Fakten: Ergebnisse der Studie „Gesundheit in Deutschland aktuell 2012“: Beiträge zur Gesundheitsberichterstattung des Bundes, RKI.

Rutter, H., Bes-Rastrollo, M., Henauw, S. de, Lahti-Koski, M., Lehtinen-Jacks, S., Mullerova, D., Rasmussen, F., Rissanen, A., Visscher, T. L. S. and Lissner, L. (2017), ‘Balancing Upstream and Downstream Measures to Tackle the Obesity Epidemic: A Position Statement from the European Association for the Study of Obesity’, *Obesity Facts*, vol. 10, no. 1, pp. 61–63.

Salinsky, E. (2010), *Governmental Public Health: An Overview of State and Local Public Health Agencies*, National Health Policy Forum No. 77.

Schneider, M.-J. (2017), *Introduction to Public Health*, Burlington, MA, Burlington, MA, Jones & Bartlett Learning.

Sozialgesetzbuch, Fünftes Buch (1998), Gesetzliche Krankenversicherung, zuletzt geändert durch Art. 1 G v. 4.4.2017 I 778 (SGB V).

Sturm, R. (2002), ‘The Effects of Obesity, Smoking, and Drinking on Medical Problems and Costs’, *Health Affairs*, vol. 21, no. 2, pp. 245–253.

Tulchinsky, T. H., Varavikova, E. and Bickford, J. D. (2014), *The New Public Health*, San Diego, Elsevier.

U.S. Department of Health and Human Services (2014), *The Health Consequences of Smoking: 50 Years of Progress: A Report of the Surgeon General*, Centers for Disease Control and Prevention.

U.S. Food and Drug Administration (2017), *What We Do* [Online], U.S. Food and Drug Administration. Available at: <https://www.fda.gov/AboutFDA/WhatWeDo/default.htm> (Accessed September 17, 2017).

University of Maryland Medical Center (2015), *Obesity*, University of Maryland Medical Center [Online]. Available at: <http://www.umm.edu/health/medical/altmed/condition/obesity> (Accessed May 17, 2017).

Voas, R. B. and Fell, J. C. (2011), ‘Preventing Impaired Driving: Opportunities and Problems’, *Alcohol Research & Health*, vol. 34, no. 2, pp. 225–235.

Walter, U., Robra, B.-P. and Schwartz, F. W. (2012), ‘Prävention’, in Schwartz, F. W., Walter, U., Siegrist, J., Kolip, P., Leidl, R., Dierks, M.-L., Busse, R. and Schneider, N. (eds.) *Public Health: Gesundheit und Gesundheitswesen*, 3rd edn, München, Urban&Fischer, pp. 196–223.

Walter, U., Schwartz, F. W. and Plaumann, M. (2012), 'Prävention: Institutionen und Strukturen', in Schwartz, F. W., Walter, U., Siegrist, J., Kolip, P., Leidl, R., Dierks, M.-L., Busse, R. and Schneider, N. (eds.) *Public Health: Gesundheit und Gesundheitswesen*, 3rd edn, München, Urban&Fischer, pp. 271–287.

Wildner, M., Müller, W., Jaeschke, B. and Zapf, A. (2012), 'Der Öffentliche Gesundheitsdienst', in Schwartz, F. W., Walter, U., Siegrist, J., Kolip, P., Leidl, R., Dierks, M.-L., Busse, R. and Schneider, N. (eds.) *Public Health: Gesundheit und Gesundheitswesen*, 3rd edn, München, Urban&Fischer, pp. 289–294.

Wildner, M., Niehoff, J.-U. and Hoffmann, W. (2016), 'Entwicklungslinien der Sozialmedizin und Öffentlichen Gesundheit in Deutschland', *Gesundheitswesen*, vol. 78, no. 2, pp. 113–119.

Winslow, C. E. (1920), 'The Untilled Fields of Public Health', *Science* (New York, N.Y.), vol. 51, no. 1306, pp. 23–33.

World Health Organization (1984), *Glossary of Terms: Used in the "Health for all" Series No. 1-8*, WHO Press, Health for all.

World Health Organization (2009), *Global Health Risks: Mortality and Burden of Disease Attributable to Selected Major Risks*, WHO Press.

World Health Organization (2016), *Obesity and Overweight* [Online], WHO. Available at: www.who.int/mediacentre/factsheets/fs311/en/ (Accessed May 17, 2017).

World Health Organization (2017), *Risk Factors* [Online], WHO. Available at: http://www.who.int/topics/risk_factors/en/ (Accessed May 17, 2017).

Xu, X., Bishop, E. E., Kennedy, S. M., Simpson, S. A. and Pechacek, T. F. (2015), 'Annual Healthcare Spending Attributable to Cigarette Smoking: An Update', *American Journal of Preventive Medicine*, vol. 48, no. 3, pp. 326–333.

Yglesias, M. (2013), *America's Overpaid Doctors*, *Moneybox* [Online]. Available at: http://www.slate.com/articles/business/moneybox/2013/02/americanDoctors_are_overpaid_medicare_is_cheaper_than_private_insurance.html (Accessed May 29, 2017).