Chapter 1
What Is Public Health?
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Learning objectives

After reading this chapter you will be able to:

- Discuss the meaning of public health
- Describe the changing approaches to public health over time
- Discuss some of the current debates within public health
- Comment on some of the implications of health practitioners

Introduction

This chapter attempts to answer the question ‘What is public health?’ and at one level, the answer is simple and straightforward: public health aims at preventing health problems before they occur and focuses on populations rather than on individuals. As we will see in the chapter, there are different ways of going about this task. The more convenient linear, two-dimensional way holds that there is a cause and there is a disease, and to address the disease one needs to address the cause. According to this line of thought, disease is brought about by specific aetiological agents which affect the body’s structure and function, with illness a separate ‘subjective experience of dysfunction’ [1]. This biomedical model has been argued as being narrow: the reality is that achieving public health is a complex task with an ill-defined scope. This is not for lack of effort on behalf of public health practitioners. Indeed, as discussed below, an enormous amount of effort and debate and political commitment have converged over time so that the field of public health is a field in its own right, with educational and professional specialisations. The approach to health has shifted from a relatively narrow approach to a broader conception of what health means, as expressed by the World Health Organization (WHO) definition which has not been amended since 1948: ‘Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity’ [2]. Moreover, the understanding of public health and the extent to which governments should intervene to support
public health will vary according to the sociopolitical stance of countries [3, 4].

This chapter introduces the various meanings and applications of public health, placing it in a historical context to help the reader to understand the development of modern public health. We highlight some of the major achievements of the past century, and discuss the current challenges we face. The discussion of these challenges provides an opportunity to understand some of the underlying philosophical and practical debates in public health. Finally, we suggest some of the implications for health practitioners. Although many of these arguments are universal, this chapter mainly draws on European context and highlights the experience and development of public health in Britain.

The development of modern public health

An early definition of public health, variations of which have informed later definitions, is that of Winslow from the 1920s. Winslow proposed that public health was ‘the science and art of preventing disease, prolonging life, and promoting mental and physical health and efficiency through organised community efforts for the sanitation of the environment, the control of communicable infections, the education of the individual in personal hygiene, the organisation of medical and nursing services for the early diagnosis and preventive treatment of disease, and the development of social machinery to ensure to every individual a standard of living adequate for the maintenance of health, so organising these benefits as to enable every citizen to realise his birthright of health and longevity’ [5].

Although the wording is slightly dated, the meaning still holds. Importantly, it demonstrates the many overlapping disciplines comprising public health, adapted according to time and context. The modern field of public health is highly varied and encompasses many academic disciplines including the fundamental tools of epidemiology, biostatistics, health education, advocacy, policy analysis and health services management applied to various fields such as environmental health, food and nutrition, tobacco and alcohol abuse, and the health of different age groups across the life course. Increasingly, a crucial facet of public health research and practice has been to factor in as thoroughly as possible factors such as social, economic, cultural, psychological and political considerations since they characterise the diverse aspects of health risk in different ways and to different degrees of importance according to context [6].

The question of whether public health should confine itself to individual risk factors for disease or rather be increasingly concerned with the more ‘upstream’ sources of health (or ill health) such as employment, housing, transport, food and nutrition and global trade concerns is central to public debates and in many ways defined by the political and economic stance of those on either side of the debate. Beaglehole and Bonita [7] argue that ‘the central
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challenge for public health practitioners is to articulate and act upon a broad definition of public health which incorporates a multidisciplinary and intersectoral approach to the underlying causes of premature death and disability’.

Origins and history of public health

Understanding the historical development of the public health movement provides perspective on current health issues and on the wider significance and impact of health interventions [8]. Writing for the journal *Public Health* in 1928, Wood notes that above and beyond the great achievements of public health in Britain, there were ‘adverse circumstances still requiring attention’, citing, for example, the appalling conditions in newly industrialising cities and stating that ‘in the forefront I would place one of our last remaining problems of environmental hygiene, the smoke pollution of the atmosphere, with its direct and indirect effects on physical well-being’ [9]. Many of the discussions of the past resonate with contemporary ones.

The ideology and concept of public health and how it is organised and implemented have undergone important changes over time. The history of public health stretches back to ‘remote times’ [10], by some accounts as far as the ancient Greeks [11]. The growing involvement of ‘authorities’ in addressing the health problems of citizens progressively increased with the approach of the modern era [10], many examples of which have been documented (read, for example, *Occupational Health and Public Health: Lessons from the Past – Challenges for the Future* [4] and *Public Health at the Crossroads: Achievements and Prospects* [11]). George Rosen’s *A History of Public Health* [12] provides an in-depth account of the development of public health over time and throughout the world. For the purposes of this chapter, we focus on developments in Europe and particularly Britain and step into the history of public health at the time of industrialisation, particularly its consequences on the health of urban populations, and the debates and policy decisions it engendered.

The nineteenth century saw an increasingly systematic approach to public health, taking root throughout European countries, with considerable scientific advances and a growing consciousness of the impact of life in industrial cities on the health of populations.

In Britain the sanitary movement was launched in the 1820s, emphasising the need for government-level expertise in health [13]. It is argued that the sanitary movement was motivated and led by the work of social reformers rather than medical practitioners [11]. During his travels through Britain in the 1830s, the French political thinker Alexis de Tocqueville commented on the abject conditions of urban centres, noting that here ‘...humanity attains its most complete development and its most brutal; here civilization works its miracles, and here civilized man is turned back almost into a savage’ [14].

During the 1840s, public health emerged as a field in its own right in Britain. A key player in the ‘meshing of medicine with the moral and political economy’ [15] was Edwin Chadwick. His seminal 1842 report on the sanitary conditions
of the working class revealed the dangerous conditions in which labourers lived and worked [11]. This report was the first such national investigation and pointed to a number of now widely accepted phenomena about economic development, urbanisation and health within industrial urban areas [15]. Chadwick supported the principle that the people’s health was a matter of public concern and thus one of the responsibilities of the state [16]. He highlighted through his report how modern circumstances could contribute to a health schism between social groups [15]. One of the conclusions of this report was that ‘…the various forms of epidemic, endemic, and other disease caused, or aggravated, or propagated chiefly amongst the labouring classes by atmospheric impurities produced by decomposing animal and vegetable substances, by damp and filth, and close and overcrowded dwellings prevail amongst the population in every part of the kingdom, whether dwelling in separate houses, in rural villages, in small towns, in the larger towns – as they have been found to prevail in the lowest districts of the metropolis’ [17]. This document was not only a survey of the social and environmental condition of towns and cities, but in effect an act to bring together formerly isolated health and sanitary domains, and to create public health policy [15]. The subsequent Public Health Act of 1848 was a legislative attempt to impart social and health equity in Britain [11]. It was built upon the assumption that implementation of the sanitary reform would address and remove causes of illness and early death, and allow labourers to live longer and healthier lives and thus contribute to the economy [18]. Then, as now, however, the battle was to convince government that these ideas were viable, particularly in the light of the great costs related to sanitary measures [18]. It saw the establishment of the Board of Health, though reportedly unpopular and short-lived because it challenged powerful vested interests: it faced strong opposition from the medical profession and local government officials reluctant to yield to a central authority. It is reported that by the 1870s the medical profession dominated public health in Britain; this dominance continues in most European countries including the United Kingdom [11, 19].

The Public Health Act was shaped by the prevailing miasmic medical notions, or the idea that disease is associated with noxious odours, impure air and poor sanitation [15] (miasma translates as ‘bad air’ in Greek). This was of course subsequently refuted, as described below. But by the 1850s, as a result of the Public Health Act there were better sewers, cleaner water and streets less polluted with decaying animals and human excrement. Disease did in fact decline, providing empirical evidence for these disease theories [18]. However, at this time great scientific advances contributed to the understanding of how disease was caused and spread. It was the French microbiologist Louis Pasteur who ‘dealt the final blow to […] miasma as the cause of infectious diseases’ [18]. In short, Pasteur is credited with reframing disease by demonstrating what eventually came to be known as the ‘germ theory’, namely, that specific microbes caused specific diseases, an unthinkable concept until then. Towards the end of the nineteenth century, the German scientist Robert Koch devised a series of proofs or criteria to establish a causal relationship between a microbe
and a disease, now referred to as ‘Koch’s postulates’, and these supported the germ theory [11, 13]. One of Chadwick’s contemporaries, John Snow, was a strong supporter of the germ theory. He is credited with carrying out one of the first epidemiological study in 1854, now commonly referred to as the study of the Broad Street Pump: while investigating a local cholera epidemic in London, Snow linked all cases to a single contaminated well. He convinced authorities to remove the pump handle and the spread of the disease was rapidly reduced. Snow isolated what would eventually be identified as the bacterium responsible for cholera.

By the turn of the century there was no longer any question that certain microbes caused specific diseases, and slowly but surely major cities were building sewages systems and providing cleaner water for their inhabitants. These advances provided a solid foundation for contemporary measures for communicable diseases control and laid the scientific basis for vaccination [18, 20].

The early twentieth century saw the rise of preventive medicine, characterised by its focus on the concept of hygiene, supporting the previous developments in several ways [20]: it took into account the concept of disease vectors; it highlighted the importance of nutrition and the role of nutrient deficiencies in impairing optimal health (thus leading to the development of vitamins); and it emphasised the particular needs of ‘high-risk’ population groups such as schoolchildren, pregnant women and older people [21]. Advances in housing, education, road and other infrastructure enabled rapid economic progress to take place across Europe during this period and this undoubtedly did much to improve the health of those populations.

The assumption of scientific rationality where disease aetiology follows a relatively linear pathway [1] was increasingly challenged by many as failing to capture all factors pertinent to disease: broad social conditions must be addressed by all relevant sectors to bring about long-term and meaningful improvements in population health [22, 23]. These principles were supported and developed by a series of important policy commitments at the national and international level. The 1974 Lalonde Report by the Canadian Government proposed the health field concept wherein genetic predisposition, individual behaviour and lifestyle, health services and environmental circumstances all contribute to population health [24]. A focus on healthy public policy and intersectoral action was then laid out in 1978 by the WHO’s ‘Health for All by the Year 2000’ movement [25], the key principles of which were (1) global cooperation and peace as important aspects of primary health care; (2) recognition that primary health care should be adapted to the particular circumstances of a country and the communities within it; (3) recognition that health care reflects broader social and economic development; (4) primary health care as the backbone of a nation’s health strategy, with an emphasis on health promotion and disease prevention strategies; (5) achievement of equity in health status; and (6) involvement of all sectors in the promotion of health [26].

These principles were enshrined in the 1986 Ottawa Charter for Health Promotion which called for building healthy public policy, creating supportive
environments, strengthening community actions, developing personal skills, reorienting health services and demonstrating commitment to health promotion [24]. The conference participants challenged the WHO and other international organisations ‘to advocate the promotion of health in all appropriate forums and to support countries in setting up strategies and programmes for health promotion’ [27]. These commitments continue to be renewed by WHO and are increasingly cross-disciplinary to ensure a broad enough scope of action and influence.

Moreover, the ecological approach to public health is increasingly accepted. In public health, an ecological model refers to people’s interactions with their physical and sociocultural surroundings [28], incorporating many influences at multiple levels [29, 30] including biological, psychological, cultural, physical (built and natural environment) and policy [31]. Although there are ongoing debates about whether this is an appropriate approach or not, the ecological approach is supported by influential public health publications such as the WHO/FAO report Diet, Nutrition and the Prevention of Chronic Disease [32] and by the WHO Global Strategy for Diet and Physical Activity [33].

**Successes and challenges in public health**

The advances in public health over the past century, due in part to the convergence of scientific progress and political commitment, have improved our quality of life [34]. In 1999, the US Centre for Communicable Disease Control published a list of the twentieth century’s ten greatest public health achievements [35]. These are summarised below. As noted in an article by Gray et al., these achievements are all applicable to the United Kingdom where they have significantly contributed to considerable, long-term increases in life expectancy [36, 37]:

1. Vaccination resulted in the eradication of smallpox; elimination of polio (in the Americas); and control of measles, rubella, tetanus, diphtheria and *Haemophilus influenzae* type b
2. Motor-vehicle safety led to substantial reductions in motor vehicle-related deaths due to engineering improvements in vehicles and highways, and changes in personal behaviours such as using seat belts and other safety devices, and reductions in drinking and driving
3. Safer workplaces due to a focus on occupational health and environments led to, e.g., the control of pneumoconiosis and silicosis and a reduction in fatal occupational injuries
4. Reduction of infectious diseases was achieved through the control of typhoid and cholera by focusing on improving water and sanitation, and the control of tuberculosis and sexually transmitted diseases (STDs) by education and the advent of antibiotics
5. A decline in deaths from coronary heart disease and stroke was attained from changing high-risk behaviours, such as smoking cessation and blood pressure control, and improved access to early detection and treatment
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(6) Safer and healthier foods contributed to nearly eliminating nutritional deficiency diseases such as rickets, goitre and pellagra, and were achieved by decreasing microbial contamination and increasing nutritional content.

(7) Advances in maternal and child health came about through better hygiene and nutrition, availability of antibiotics, access to health care and technological advances in neonatal and maternal medicine.

(8) Family planning contributed to improved maternal and child health and supported a more important socioeconomic role of women, reduced family size, and increased birth intervals; barrier contraceptives also reduced unwanted pregnancies and transmission of STDs.

(9) Fluoridation of drinking water contributed to reducing tooth decay and tooth loss.

(10) Recognition of tobacco use as a health hazard resulted in changes in social norms, reduced prevalence of tobacco smoking and mortality and morbidity from smoking-related diseases.

Although these have certainly been important successes in population health due to public health strategies and the role of public health is increasingly recognised, implementation is more often than not difficult to achieve [38]. Philosophical debates continue on who holds the responsibility for action in health, as well as how best to translate scientifically independent and comparable data into effective public health policy. The following section addresses some of these challenges.

The responsibility for health

Individuals and nation states will have different understandings of how to achieve a population which benefits from 'a state of complete physical, mental and social well-being'. These differences are grounded in sociocultural and political stance. Traditionally, a more liberal group will support minimal government intervention, whereas a more socialist group may have more faith in the effects of policy. This debate is important as it is a decisive factor in the direction a government will take in addressing public health at the national level. The health status of a population will be affected by its culture, economy and social norms [3, 4]. These factors will often dictate or at least influence the extent to which public health practitioners will be successful in convincing policy- and decision-makers of the need for addressing particular determinants of ill health as broadly and comprehensively as possible.

This debate has taken several forms and has been expressed in social and political philosophies. The eighteenth- and nineteenth-century responses to this question were most powerfully formulated by philosophers and political economists who held that the free functioning of individual choice and freedom would be the best way to work in the interest of public good. The utilitarian criterion for deciding where to set the boundary between the private and the public was the notion of harm; the private was the realm in which action did not harm others [39]: 'The only purpose for which power
can be rightfully exercised over any number of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant […] The only part of the conduct of anyone, for which that concerns others […] over himself, over his own body and mind, the individual is sovereign’ [40]. The notion of what constituted harm has, however, expanded, as it became increasingly clear that private actions could have public consequences. Thus, in the late nineteenth century, certain kinds of problems such as housing, health and education were no longer considered private matters and were taken into the public sphere of interest.

By the early twentieth century, proponents of a ‘new liberalism’ had emerged, as expressed by writers such as J. M. Keynes in Britain, to argue that a more knowledgeable form of governance was required to balance public and private claims and interests. Thus, the role of the state should be to manage the public sphere and its problems so as to address aspects of social and economic life that markets were no longer capable of solving.

The 1970s saw a revival of libertarianism with, for example, Friedrich Hayek and Milton Friedman, who argued that the attempt to use public policy to promote the public interest was flawed [41]; rather the relationship between private and public was best defined by the market and freedom of choice. John Rawls provided a strong counter-argument by considering public interests in terms of fairness and equality of opportunity, arguing that justice has to do with the distribution of outcomes in a fair way, where differences could be accepted if social and economic inequalities maximised benefits to the least advantaged [42]. Those that supported his approach considered it a key philosophical underpinning of public policy, yet those that critiqued his approach, such as Robert Nozick, suggested that justice does not have to do with fairness but with what people are entitled to [43], maintaining, as did the early libertarians, that the organisation of society through the forces of individuals and markets is the only way forward for the attainment of justice [39].

These philosophical arguments continue and are well represented within the field of public health. Where does the onus for action in population health lie? Environmental and policy changes are at the centre of the ecological approach and have been identified as the most promising strategy for bringing about population-wide improvements in diet, physical activity and other key determinants of health [31, 44–46]. Critics argue that taking an ecological approach to address disease prevention and health promotion threatens ‘informed choice’ through societal paternalism or ‘nanny-statism’. Moreover, factors dictating the health of populations include not only behaviours and attitudes but also genetic profile and family history, factors that are not necessarily subject to modification. The example of obesity challenges this argument: the rapidity with which rates of obesity are growing in virtually all countries of Europe and the rest of the world far exceeds the speed with which genetic mutations develop. Proponents of the ecological approach to disease prevention might respond that the development of policies and regulations is not a question of challenging informed choice; rather it is a question of creating an environment
conducive to increased physical activity (e.g. urban planning policies that help to increase access to parks and playgrounds) and healthy diet (e.g. food and nutrition policies that help to make fruit and vegetables affordable and available); legislating corporate conduct where there is clear conflict of interest and ethical issues (e.g. advertising soft drinks in the classroom) and a reasonable probability of negative impact on children's behaviour; and learning how to disseminate the public health message in a more sustainable, effective way. An individual who is deemed competent is ultimately responsible for his or her actions; however, these actions occur within a specific context which inevitably imparts a positive or negative influence. Vulnerable groups, such as the unborn child, children and young people, the elderly or disabled, and those with mental incapacity may need additional protections. Behavioural change is notoriously difficult to bring about in isolation from the context from which it emerges, thus making preventive strategies targeting individual change often ineffective [47, 48]. In reality, those most likely to become ill are those with the least ability to make healthy choices because of the structural, social, organisational, financial and other constraints they face, and fundamentally, behaviour is directly related to and perhaps even a result of the conditions in which they live [47, 49, 50]. Eisenberg wrote in 1977 that “the new converts to prevention, having discovered that behaviour affects health, focus on the responsibility of the individual for illness prevention by eating and drinking in moderation, exercising properly, not smoking and the like. Surely, in the final analysis, it is the individual who carries out these actions. But what does it mean to hold the individual responsible for smoking when the government subsidizes tobacco farming, permits tax deductions for cigarette advertising and fails to use its taxing power as a disincentive to smoking? What does it mean to castigate the individual for poor eating habits when the public is inundated by advertisements for “empty-calorie” fast foods and is reinforced in present patterns of consumption by federal farm policy?” [51].

Using evidence

Scientific evidence has an incontestable role in public health in that it is essential to inform effective and appropriate actions, programmes and policies. However, there are serious challenges to acquiring good data [52], and when they do exist, they are not always independent and are seldom comparable, and merely having a set of data does not guarantee action on the part of decision makers. This makes it all the more difficult for the public health community to communicate risk clearly.

Understanding where data come from, and striving to base actions and initiatives on scientifically independent data, will be essential for public health practitioners. There is already substantial evidence from the literature on the health impact of tobacco that articles produced by the tobacco industry or by scientists supported by the tobacco industry are less objective. This is equally true in other areas such as food and nutrition. For example, Vartanian et al. carried out a systematic review of the effects of soft drink consumption
on nutrition and health. They analysed the effect size as reported by industry-funded versus non-industry-funded studies on soft drinks and health and found that the average overall effect size for industry-funded studies was significantly smaller than the average effect size for non-industry-funded studies. When examining studies on the effects of soft drink consumption on energy intake, effect sizes were moderate for non-industry-funded studies and essentially non-existent for industry-funded studies [53]. It is the responsibility of the public health community to critically consider where the evidence comes from.

Even with the provision of robust independent data, action does not always follow evidence. Stone et al. propose several explanations as to why this might be [54]. There can be an inadequate supply of policy-relevant research, a lack of access to research for both researchers and policy makers; poor policy comprehension by researchers concerning both the policy process and how research might be relevant to this process; ineffective communication by researchers of their work; a societal disconnection of both researchers and decision makers from those whom the research is about or intended for, to the extent that effective implementation is undermined; ignorance by policy makers about the existence of policy-relevant research, or incapacity of overstretched bureaucrats to absorb research; poor governmental capacity to recognise and absorb research; power relations generating concerns about the contested validity of knowledge(s), issues of censorship and control and the question of ideology [54].

Policy-making is not a rational process, but rather messy and highly political; rarely is there a direct causal chain between the production of scientific evidence (or even the acknowledgement that there is a problem) and the development and implementation of relevant policies. As public health practitioners we need to understand the dynamic process and players in much greater depth.

**Implications for public health practitioners**

What are the specific actions that public health practitioners should initiate or continue to develop, in light of the current application of and debates within public health? Gray et al. [36] suggest that if there are still challenges in public health, and indeed where public health indices are worsening, this is due to an over-reliance on education and personal choice, and ‘a failure to consider, or implement, other pivotal public health strategies such as regulation and fiscal intervention’. What are some of the ways forward for public health practitioners?

**Be public health advocates**

In light of some of the issues raised here, namely, that even solid evidence of a public health risk may not elicit adequate response from decision makers, and
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that some of the evidence generated may be coloured by vested interests, there is an important case to be made for public health advocacy [24]. As argued in a recent paper on public health advocacy [55], most fields of public health have objectives that can be strongly opposed by governments, industry, community and various interest groups, and even from within the public health field itself and so developing public health advocacy skills is crucial.

The disclosure of public health risks may cause some to lose significantly, either financially or in terms of social considerations [56]. Whose role is it to sound the alarm about the discovery or presumption of risk and to act upon it? This is exemplified in Henrik Ibsen’s 1882 play ‘An Enemy of the People’ wherein the local doctor suggests that the town’s lucrative spa be closed down because the surrounding waters are contaminated from nearby tanneries (‘That source is poisoned […] The whole of the town’s prosperity is rooted in a lie!’) and is met by angry opposition by local authorities: ‘The matter in this instance is by no means a purely scientific one; it is a combination of technical and economic factors. […] Any man who can cast such aspersions against his own birthplace is nothing but a public enemy’ [57]. Practitioners and decision makers face a messy problem when confronting risk where the problem itself is ill-defined (or there is disagreement about how it should be defined). Some have particular interests in the problem, though the problem is often characterised by scientific uncertainty as noted above, and existing processes for solving the problem have, up to that point, proven insufficient. Significantly, while the problem in question may touch on health effects, inevitably it also touches upon social, political and economic issues [56]. Chapman proposes ten key questions to ask oneself as part of strategic planning for public health advocacy [55]:

1. What are your public health objectives with this issue?
2. Can a ‘win-win’ outcome be first engineered with decision makers?
3. Who do the key decision makers answer to, and how can these people be influenced?
4. What are the strengths and weaknesses of your and your opposition’s position?
5. What are your media advocacy objectives?
6. How will you frame what is at issue here?
7. What symbols or word pictures can be brought into this frame?
8. What sound bites can be used to convey 6 and 7?
9. Can the issue be personalised?
10. How can large numbers of people be quickly organised to express their concerns?

Communicate public health risks effectively and to all stakeholders

A key element of public health advocacy is communication: in order to improve disease risk understanding across the board, one must address the many ‘publics’ in the real world [58]. Risk communication should keep in mind the
particular positions of interested parties and be communicated without being prescriptive but by explaining the risks according to the priorities of each type of stakeholder. An important but often ignored fact is that there is no single ‘public’, particularly when it comes to communicating the health risks faced by individuals and communities at large: there are many different publics, not only in terms of sex, age and geography, but also in terms of individual risk susceptibility, exposure and risk literacy [58]. Those at greatest potential risk are often least likely to be well informed about the risks they face or be able to understand the complex, changing information about health hazards. On the other hand, those who actively seek out health information through the traditional mass media channels are a more literate audience and are often at lower risk because they are already taking good care of themselves and have access to healthier lifestyles and behaviours [58]. The European Food Information Council [59] suggests key pointers at getting the message across, including:

- **Know your target**: It is vital to be clear about their target audience. Is it the citizen, a stakeholder group, regulators, other trade bodies, or a combination of these actors?
- **Craft an appropriate message**: Know the nature of the risks to be communicated. Are they technical or naturally occurring, are they voluntary or involuntary, are they familiar or unfamiliar? The message can then be crafted accordingly. It is also important to pick the most appropriate communication tool for disseminating the message. In doing so, one must also carefully weigh the costs (public concern), and benefits (public reassurance) associated with each communication method.
- **Do not amplify risks or events**: By amplifying risks that are by their nature perceived as attenuated (most food risks fall in this category), a communication strategy is bound to fail; the audience will eventually see through any amplification and discard the message. Unnecessarily amplifying risks will be viewed as scare mongering and lead to public distrust in the source of the information.
- **Do not involve too many authorities**: Having two many groups involved increases the chance of having conflicting messages. This can lead to inflexibility, leaks and miscommunication, all contributing to public misunderstanding.
- **Proactive communication is best**: Proactive and transparent communication increases public trust and retroactive risk communication decreases it. On the other hand, communicating uncertainties when it is not necessary increases public confusion.

*Source: Adapted from The European Food Information Council [59].*

The current obesity epidemic exemplifies the challenge of effectively communicating the risk of not acting to prevent this disease. The literature and data have established obesity as a major public health issue, and one that is escalating in most countries of the world. They demonstrate how its origins
extend beyond individual behaviour to encompass the ‘obesogenic’ environments that increasingly characterise modern societies. Britain is no exception; indeed, government figures suggest that two-thirds of adults and a third of children are either overweight or obese. These figures could rise to almost nine in ten adults and two-thirds of children by 2050, putting them at serious risk of heart disease, diabetes and cancer [60, 61]. However, in Britain as in other countries, information on the health impact of obesity has not in itself been sufficient to adequately move government to action, often because there are other, more urgent and more visible priorities on the agenda. Here, the cost argument may carry more weight with policy makers [62]: it is estimated that the pressure obesity and its associated illnesses and conditions put on families, the NHS and society more broadly with overall costs to society forecast to reach £50 billion per year by 2050 on current trends [63]. Preventing obesity leads to cost saving. An American study showed that a sustained 10% weight loss among obese people would translate into a lifetime saving of US $2200 to $5300 per person (1999 prices) depending on age, gender and starting body mass index, and an increase in life expectancy of 2–7 months. The study also found that lifetime incidence of coronary heart disease could be reduced from 12 to 1 case per 1000, and the incidence of stroke from 38 to 13 cases per 1000 [64].

Information is not enough

Merely providing information to consumers, patients and, as discussed above, government will not be enough to bring about changes in behaviour conducive to disease prevention and health promotion. Preventing disease risk is certainly not only a question of health education: effective action should engage with areas such as education, information, culture, trade, transport, distribution, industry and social services [65].

The tendency to understand the contexts within which populations live and work by involving different sectors and fields illustrates the fact that the scope and purpose of public health are still very political. As in the nineteenth century when public health actors and approaches were being formalised, there continues to be difficult debates because public health touches on areas with high stakes for different stakeholders at the local, national and international levels, such as tobacco, food and climate change. These three examples on their own comprise a series of important determinants of health (such as diet and nutrition, food-borne pathogens, the use of tobacco products, the impact of environmental deterioration on water and food sources and so forth) and their role in health (or lack thereof) of populations is for the most part grounded in robust scientific bases. However, they are particularly political subjects in part because the economic stakes are extremely high. Thus, simply imparting knowledge about these public health risks does not necessarily translate into action (arguably more often not). For example, narrow nutritional education has, on the whole, failed to change diet since it has focused traditionally on reducing risky behaviour through improving knowledge of individuals. Reviews
of nutrition education interventions (see Box 1.1, for an example) find that while a focus on individual behavioural change may be effective in the short term, the factors influencing long-term changes are environmental, i.e. broad-based involvement of the school and the community [66, 74, 75].

**Box 1.1  Factors of success in most effective interventions for fruit and vegetable consumption**

A systematic review of the evidence of interventions to promote children’s fruit and vegetable consumption found that the evidence is strongest in favour of multifaceted interventions [66].

A closer look at the three most effective reviewed studies [67–69] suggests that the more students are exposed to fruit and vegetables, the more the consumption patterns improve. Fruit and vegetable intake increases were highest with the most intensive exposure such as independent work in classrooms, canteens and with families, community youth organisation activities, point-of-purchase education and promotion in produce markets, public service announcements on local television stations, fruit and vegetable promotion competitions sponsored by the local fruit and vegetable industry, and providing links with local organisations in the community which offered low-cost nutrition and physical activity programmes for the parents.

Lessons learned from other areas of public health point to the importance of creating an enabling environment within which public health can be promoted [70]. It is important that an enabling environment for fruit and vegetable consumption by children be generated. This might include a range of macro-level interventions such as increasing access to fruit and vegetables through targeted government subsidies of production; agricultural policies that support healthy diets [71]; adequate funding and policies for schools to provide adequate school food services including local fresh fruit and vegetables [72], reduced access to junk food in schools to make the ‘healthier choice’ easier for children [73], and consistent practice (at least in the school) of nutrition education lessons.

Source: Adapted from Knai et al. [66].

**Facilitating the participation of all stakeholders**

Actors in public health include a series of stakeholders at the local, regional, national and international level. International organisations and agencies such as the European Commission and United Nations have a crucial role in raising public health issues on the political agenda. They can help coordinate, share good practice and monitor progress in countries and support national-level
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actions to reduce the ill health. Government ministries and agencies have a primary steering and stewardship role where they can build on existing structures and processes that address all aspects of public health, e.g. diet, nutrition and physical activity [76]. This stewardship role may be interpreted in many ways but the primary responsibility of governments for safeguarding public health is fundamental. The health sector often relies on conventional approaches involving health promotion programmes that have been found to achieve little success unless supported by regulation; it should rather call attention to the importance of public health as a key compound in overall strategic planning.

The academic and research institutions, from schools to universities and research centres, have a central role in knowledge generation and dissemination. They have a responsibility to produce independent research and inform evidence-based policy by working with other sectors, stakeholders and national/international health authorities such as the WHO.

Non-governmental organisations are key players particularly in monitoring the activities of organisations and institutions involved in public health activities and research. They can also help to ensure governments provide support for healthy lifestyles, and the food industry to provide more healthy products and services [76]. These organisations tend to still be traditionally 'low-influence' stakeholder groups, along with other civil society organisations, teachers and parents; they will need to develop their skills to ensure that they can contribute constructive and participatory responses to risk communication processes. If all stakeholders are to participate constructively, decision-making processes in public health need to better accommodate and formalise interactions with these groups [77]. How can this be done? Parents, teachers and school administrations can be unexpectedly influential at raising awareness and bringing about change, and this process should as far as possible be documented and analysed. Initiatives to support empowerment – enabling people to mobilise social forces and create conditions that are conducive to health living – are essential in making all voices heard and taken into account [65].

Summary

This chapter traces some of the various incarnations of public health since its inception as a field of study and practice, and highlights important milestones in our understanding of contemporary public health. The political commitments that have been taken during this time underscore the growing recognition that disease aetiology is more often than not complex and therefore warrants a multifaceted, comprehensive approach, with a focus on behaviour change and supportive environments and policies. The challenges, discussed in this chapter, are by no means exhaustive, but on their own they point to an increasing imperative for public health practitioners and governments to use the existing independent evidence and to act. This
can be facilitated by building effective coalitions across relevant sectors and getting public support for appropriate, effective action in the promotion of healthy environments [36]. This is not an easy task, and as history reminds us, requires courage of conviction and political backing: ‘from the early days of sanitary reform and slum clearance, there has always been opposition to public health action in one form or another. We need to recognise that the new public health challenges may bring us into conflict with different groups, which will include those with powerful vested interests. Building a robust consensus from across the political spectrum to support public health action where needed will be a key skill for the public health advocates of tomorrow’ [36].

References

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