*chapter* fifteen

# Developing the public health workforce

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## Introduction

Assuring a sufficient and competent public health workforce has been defined by the WHO Regional Office for Europe as one of the essential public health operations (EPHOs; see Chapter 1, "Facets of public health in Europe: an introduction"). Health systems require a sufficient number of well-trained people to deliver high-quality services. This applies equally to public health as to health care. The H1N1 influenza pandemic of 2009, increasing antimicrobial resistance in many countries, the emergence of multidrug-resistant tuberculosis (MDR-TB) in the eastern part of the WHO European Region, the epidemic of non-communicable diseases (NCDs), and widening health inequalities within and across European countries all illustrate the need for effective public health action, based on a strong and sustainable public health workforce (WHO 2000; PAHO/WHO 2002; Tilson and Gebbie 2004; Paccaud 2011).

European health systems are still largely focused on treatment, cure, and care (Beaglehole and Dal Poz 2003), despite the fact that substantial health improvements can be achieved by changes in exposure to the causes of diseases, through health protection, health promotion, and disease prevention (Foldspang 2008). As governments across Europe grapple with the problem of maximizing the return on health spending, there is a strong case for arguing that public health should play a larger role in health systems across Europe. This will require the availability and adequate distribution of a highly skilled public health workforce, but also a clear understanding of existing training capacities, career opportunities, and the role of professional organizations in Europe (Whitfield 2004).

This chapter provides an overview of key issues relevant to the public health workforce in Europe. It starts by exploring existing definitions and common characteristics of the public health workforce in Europe. It then describes the current status of this workforce and argues for the importance of quantifying

it. The chapter concludes by outlining existing systems of education and professional development for public health in Europe and the measures needed for their further development.

## Defining and conceptualizing the public health workforce

Unlike the medical workforce with its clearly established professions and pathways, describing the workforce for public health is more difficult. This is exemplified by the existence of a variety of definitions. For instance, Rotem and colleagues (Rotem, Walters et al. 1995) define the public health workforce as "people who are involved in protecting, promoting and/or restoring the collective health of whole or specific populations (as distinct from activities directed to the care of individuals)". This definition distinguishes between public health and medical practices, and stresses the societal perspective of public health workers. In a similar vein, Beaglehole and Dal Poz (2003) define the public health workforce as "a diverse workforce whose prime responsibility is the provision of core public health activities, irrespective of their organizational base", highlighting that the public health workforce can be located both inside and outside the health sector.

Increasingly, conceptualizations of public health also consider the role of the "wider" workforce, referring to workers who are indirectly involved in public health activities, but whose work can contribute to improving population health (Sim, Lock et al. 2007). Examples of this wider workforce include teachers, welfare workers, fitness instructors, and housing planners (Gebbie, Merrill et al. 2002). However, while this wider workforce has an enormous potential to contribute to positive health outcomes, it remains important to have an education system in place for formally recognized public health professionals, in order to safeguard a scientific and evidence-based approach to public health interventions. This is emphasized by the US Institute of Medicine (2002), which includes an educational component in its definition of the public health workforce, characterizing them as "persons educated in public health or a related discipline who are employed to improve health through a population focus".

In general, the definitions presented, while setting some boundaries and providing some inclusion and exclusion criteria, remain ambiguous about who actually belongs to the public health workforce. This does not make these definitions very useful when it comes to describing in detail the public health workforce of a particular country or region. This task is further complicated by the substantial differences in the terminology and conceptualizations of public health that exist across European countries (see Chapter 14, "Organization and financing of public health"). Differences in culture, language, and the historical developments of health systems have led to variations in the understanding of public health (Kaiser and Mackenbach 2008), which in turn is reflected in the definition and scope of the public health workforce in different countries.

Whitfield (2004) presented a theoretical conceptualization of public health activities and the related workforce that can be applied regardless of the national context. According to this concept, the public health workforce can be divided into three groups: (1) "public health s pecialists", (2) "people indirectly involved

**Table 15.1** Three categories of public health workers

| *(1) Public health specialists* | *(2) Partial public health role* | *(3) Awareness of public health issues* |
|---|---|---|
| Health professionals with specialization in public health | Physicians | Police |
| | Nurses | Architects |
| Health policy-makers | Dentists | Urban planners |
| Epidemiologists | Pharmacists | Teachers |
| Environmental health experts | Midwives | Journalists |
| Health economists | Food inspectors | etc. |
| Health promotion specialists | Nutritionists | |
| etc. | Fitness instructors | |
| | Psychologists | |
| | Social workers | |
| | etc, | |

*Source*: Authors' compilation, based on Whitfield (2004)

in public health activities through their work"; and (3) "people who should be aware of public health implications in their professional life" (Table 15.1).

The category of public health specialists has been traditionally involved in public health matters and their public health function is largely undisputed. It includes professionals who are primarily occupied with public health in their daily work, such as public health specialists, epidemiologists, and researchers whose work is primarily focused on public health issues.

The second category includes those professionals whose work is not primarily concerned with public health, but does have an important contribution to public health. It includes, for instance, general practitioners providing counselling on disease prevention, nutritionists giving advice on proper nutrition, and fitness instructors helping people to remain physically active.

The third category refers to professionals who do not work directly on public health issues, but whose awareness of public health in their daily work can contribute to positive population health outcomes. Examples in this category include scientists who design products that are safer, urban planners who take health considerations into account when designing urban environments, and teachers advising pupils on health-related issues as part of their daily work. Professionals in this category tend not to perceive themselves as being part of the public health workforce, but can have a significant impact on health outcomes. They tend to be situated outside the health system as it is traditionally understood.

Distinguishing between these three categories of the public health workforce clarifies the different roles of public health workers and also emphasizes the multidisciplinary and diverse character of public health itself. While countries need a professionalized public health workforce, acknowledging and explicitly addressing the role of the wider workforce for population health is a necessary

step to dealing with the multidisciplinary nature of contemporary public health challenges.

## Differences across countries

All countries in Europe have a public health workforce, albeit of differing degrees of effectiveness and following different organizational patterns (Porter 1994). Despite many differences among countries, medical doctors tend to dominate the professional public health workforce in Europe, although there has been a shift towards more multidisciplinary teams since the 1990s and 2000s, with Finland, Ireland, and the United Kingdom among the first countries in Europe to educate professionals with different backgrounds in public health. However, the delivery of preventive services, health education, and patient counselling is to a large extent still performed by health workers in primary care or hospitals (Vuorenkoski, Mladovsky et al. 2008; McDaid, Wiley et al. 2009; Boyle 2011). In some countries of central and eastern Europe, in particular, public health is still dominated by medical professionals specializing in public health. This is partly a legacy of the sanitary-epidemiological services of the Soviet period, which have been retained in many former Soviet countries, with a strong medical orientation and a focus on just a few public health functions, such as hygiene or immunization programmes (Goodman, Overall et al. 2008; Gotsadze, Chikovani et al. 2010; Maier and Martin-Moreno 2010).

As outlined above, the public health workforce not only comprises individuals who are specialized in the field, but also the large group of workers who deliver public health services but who not specialists and have received only limited or no training in public health. In Kyrgyzstan and Tajikistan, for example, community health workers and health promotion workers with diverse disciplinary backgrounds work in communities on relevant public health issues, such as maternal and child health, education on hygiene and nutrition, and disease prevention (Khodjamurodov and Rechel 2010; Maier and Martin-Moreno 2010; Ibrahimova, Akkazieva et al. 2011). With only minimal training in public health, these people are the front-line public health workers at the community level. In addition to helping to improve the health of the population, their work contributes to raising awareness and competences for public health, health promotion, disease prevention, and health protection at the community level (Ibrahimova, Akkazieva et al. 2011). However, very little is known about the size, scope, and effectiveness of this wider public health workforce across the WHO European Region.

## Quantifying the public health workforce in Europe

It is common wisdom that what you can't measure, you can't change. Determining the quantity and quality of the public health workforce in the countries of the WHO European Region is of vital importance for the planning and governance of health systems. While this has been acknowledged widely among policy-makers and health professionals, factual knowledge about the public health workforce in Europe is, at best, limited. Unlike the generally

well-established data on medical personnel, registries of public health specialists and practitioners are rare, and subject to definitional issues (a rare example is the United Kingdom voluntary register of those who have completed an appropriate course of training; see Sim, Lock et al. 2007). This creates gaps in information on the number and distribution of the public health workforce in a given country, ultimately limiting the ability of policy-makers to address shortages. As the previous sections of this chapter have shown, assessing the size of the public health workforce is complicated by the fact that it is neither homogeneous nor an entirely regulated profession; the public health workforce is highly diverse in terms of educational background and training, areas of work, job positions, and qualifications.

One of the most elaborate attempts to quantify the public health workforce for planning purposes was undertaken in the United Kingdom, where in 2001 the Department of Health acknowledged that "public health workforce development can only be achieved on the basis of good knowledge of how many public health workers are out there, what they are doing, and where they were located" (Department of Health 2001). Walters and colleagues tried to obtain data on the available public health workforce in the area of Greater London, distinguishing between similar categories of professionals as described in Whitfield's model outlined above, with the goal of quantifying these groups and performing an analysis of supply and demand (Walters, Sim et al. 2002). In total, the public health workforce was estimated to comprise at least 250,000 people, of which 98% belonged in the "wider workforce" category (Sim, Schiller et al. 2002). This large number of potential advocates for public health offers much potential for improving population health, if properly trained and empowered (Sim, Lock et al. 2007).

Other examples to map or quantify the workforce for public health in European countries can be found at the national and sub-national level, including in Switzerland (Frank, Weihofen et al. 2013), the Netherlands (Jambroes, Essink-Bot et al. 2012), and Wales (Barley 2010). Mapping initiatives outside Europe can be found in the United States, Australia, and Canada. Increased communication between researchers and institutes of different countries could help in the sharing of knowledge and experiences, possibly leading to the identification of best practices and ultimately benefiting public health workforce planning.

One potential way forward might be to quantify not all three categories of public health workers identified above (see Table 15.1), but only those in the first two categories. This could then be complemented through a mapping of available positions, in order to determine whether employment opportunities match the current and future supply of public health workers. In addition to absolute numbers of workers in each category, an appropriate mix will be needed, allowing the collaboration of "generalists" (such as policy-makers and health planners) and "specialists" (such as nutritionists and experts in anti-smoking measures).

## Developing the public health workforce in Europe

Ensuring the existence of a well-trained workforce for public health has been identified as one of ten essential public health functions or "operations", as

proposed by the Pan American Health Organization (PAHO/WHO 2002) and later by the WHO Regional Office for Europe (2011). Developing and strengthening the public health workforce requires not only a clear understanding of public health, but also adequate educational facilities and a clear set of competencies for public health workers. However, in a project assessing the public health capacities of EU member states (EAHC 2009), 14 countries reported not having a strategy to develop the public health workforce and ten countries reported only having one partially in place, mostly as part of general health workforce strategies (Aluttis, Chiotan et al., 2013).

### *Education of the public health workforce in Europe*

Across the WHO European Region, the training and education of health professionals is still strongly focused on medical and clinical aspects, with medical schools dominating the field. While the availability of a sufficiently large and well-trained medical workforce is crucial for the effective functioning of health systems, it has been argued that there is a risk of an "over-medicalization" of health (Tulchinsky and Varavikova 2009). In many European countries, the imbalance between the medical field and public health is also reflected in salary differentials and vastly diverging training and research agendas.

A central element of education and training, and thus the supply of the public health workforce in Europe, is the Schools of Public Health. While the same definitional issues that beset workforce planning preclude specifying the number of educational institutes providing public health training in Europe, the Association of Schools of Public Health in the European Region (ASPHER) currently counts over 80 institutional members, located throughout 42 member states of the WHO European Region (ASPHER 2011). In addition, other academic institutions dealing with hygiene, epidemiology, social medicine, and other related disciplines contribute to education and training of the public health workforce in Europe.

In western Europe, the United Kingdom and the Nordic countries were among the first to introduce education in public health based on a broad curriculum, covering essential public health areas and core competences, and following a multidisciplinary approach (Johnsen 2006; Strandberg-Larsen, Nielsen et al. 2007; Boyle 2011). In other countries, both in western and eastern Europe, education and training for public health continues to evolve, with the Schools of Public Health in the United Kingdom and the United States often serving as role models. For instance, France has set up the French School of Advanced Studies in Public Health, which includes an English-taught Master of Public Health, based on the "Anglo-Saxon" model of public health education (Enserink 2008).

Other countries are following this example, and there are an increasing number of programmes that apply a multidisciplinary lens to their public health education. Despite these developments, education for public health still differs widely across Europe. A medical orientation of public health can still be observed in many countries of the former Soviet Union, such as Azerbaijan, Belarus, Kyrgyzstan, Tajikistan, and Georgia (Goodman, Overall

et al. 2008; Richardson, Malakhova et al. 2008; Ibraimov, Ibrahimova et al. 2010; Khodjamurodov and Rechel 2010; Ibrahimova, Akkazieva et al., 2011). Recognizing this, a public health workforce capacity-building project under the leadership of ASPHER has been implemented in 20 countries of central and eastern Europe, with the aim of supporting capacity building and improving public health education through new training models, updated curricula, and the introduction of educational standards and quality criteria (Goodman, Overall et al. 2008). Since many post-Soviet countries face high mortality rates from preventable diseases, as well as underperforming health systems (Tulchinsky 2002), strengthening public health research and education will be crucial to address these challenges.

One challenge is that, in central and eastern European countries, the training of public health professionals has been traditionally divided into social medicine, hygiene, and epidemiology, which has affected the organization of public health and the professional development of the public health workforce. However, there is a move towards a unified specialty of public health, facilitated by institutions such as the Andrija Štampar School of Public Health in Croatia. Accession to the European Union has also given rise to increased international cooperation in the new EU member states, increasing demand for a well-educated public health workforce, and improving exchange of knowledge and access to renowned Schools of Public Health in western European countries. However, there is still a challenge to recruit highly skilled professionals and a shortage of well-paid positions once they graduate (Müller-Nordhorn, Holmberg et al. 2012).

It is not only the availability of public health education that is important; it is also its quality. Until recently, no widely accepted quality assurance mechanism or accreditation system was in place for public health training programmes in Europe. Recognizing this, and in light of the Bologna process which aims to harmonize higher education in Europe, a consortium of European organizations involved in public health, including ASPHER, the European Public Health Association (EUPHA), the European Public Health Alliance (EPHA), the European Health Management Association (EHMA), and EuroHealthNet, has established the Agency for Accreditation of Public Health Education in Europe (APHEA), which has started to accredit Master of Public Health programmes or their equivalent (Otok, Levin et al. 2011). The creation of this agency represents an important milestone for developing public health education in Europe, as it aims to facilitate quality improvements and help institutions to raise their profile (Otok, Levin et al. 2011).

Other important areas include the increasing information exchange across borders, the internationalization of public health, and the emergence of new technologies, allowing distance learning and new forms of networking for public health professionals.

### *Core competencies for public health*

Public health is an evolving subject, requiring public health professionals constantly to acquire new competencies over their entire working life (Biesma,

Pavlova et al. 2008). A list of core competencies for public health has been developed by ASPHER, setting out what should be attained by graduates from European Schools of Public Health. The list is comprehensive, including skills in scientific methods for public health, knowledge on the social, biological, chemical, and physical environments and health, skills related to health policy, organization, management, economics, health promotion, and disease prevention, as well as further cross-disciplinary themes, such as strategy development or ethics for public health (Birt and Foldspang 2011).

Other competency systems are also being developed, often with a view of facilitating the accreditation of the public health workforce. For instance, for health promotion, the CompHP project funded by the European Commission developed competency-based standards, as well as an accreditation system for health promotion practice, education, and training. It is hoped that these will strengthen the capacity of the workforce to deliver public health improvements in Europe (Dempsey, Battel-Kirk et al. 2011). Another example is the "Public Health Skills and Career Framework" that has been developed in the United Kingdom, defining competencies at nine levels of the public health career (Rao 2008). This framework serves as a tool for describing the skills and knowledge the workforce should acquire at different career levels.

While required competencies are often related specifically to public health, more generic competencies (i.e. related to negotiating, policy-making, and governance) should not be disregarded. In their study on what competencies employers would like to see public health graduates attain, Biesma and colleagues (Biesma, Pavlova et al. 2007) found that generic competencies (e.g. teamwork and communication skills) were often valued as more important than competencies specific to public health. The inclusion of generic competencies should therefore be considered in the design and implementation of competency frameworks.

## Conclusion

Despite the fact that specification of the boundaries and quantity of the workforce for public health in Europe is difficult, its importance to society is clear to see. Public health professionals, as well as the wider public health workforce, contribute significantly to the functioning of health systems and to population health. Their role should therefore be more formally acknowledged and supported by decision-makers in the governance of health systems. Since most European countries still follow a medical paradigm, focusing on treating rather than preventing diseases, health systems would benefit from a stronger public health focus and a better-developed public health workforce, which could advocate for a shift in thinking towards tackling the causes of the causes of disease. Particularly with regard to the social determinants of health (see Chapter 11, "Tackling the social determinants of health"), there is a need for a multidisciplinary approach to population health that acknowledges the role of the wider workforce for public health.

To be able to include the public health workforce effectively in future strategies for health (such as the Health 2020 strategy of the WHO Regional

Office for Europe), several key questions need to be addressed by the European public health community. These include: Who belongs to the public health workforce? How do these people contribute to health outcomes? Where are they located and do they have the relevant resources and competencies to perform in an effective manner? The European public health community has so far struggled to find satisfactory answers to these and related questions. Attempts to enumerate the public health workforce in Europe have faced a series of methodological difficulties in providing reliable estimates of size and scope. Furthermore, different understandings and terminologies across Europe with regard to the role and meaning of "public health" create ambiguities, making it difficult to establish a European consensus.

Despite these difficulties in conceptualizing the public health workforce, Europe has also seen encouraging developments in this field. Education for public health has been further institutionalized, with Schools of Public Health being established across the WHO European Region, open to non-medical personnel and following a multidisciplinary approach in their research and educational activities. In addition, the creation of the Agency for Accreditation of Public Health Education in Europe can be expected to lead to a further professionalization of public health institutions (www.aphea.net). This can help the public health profession as a whole to strengthen its visibility and credibility. Furthermore, various processes have been initiated to develop formal sets of competencies for professionals in public health and health promotion, with the aim not only to strengthen the skills of public health workers, but also to improve their chances on the labour market. There seems to be a growing consensus among the public health community that public health workforce mapping and development should become a more central element in health policy and planning. What is needed is an increased focus on developing the capacities of public health workers at the national and supranational level. The new European health policy of the WHO Regional Office for Europe, "Health 2020", has already taken up this challenge, arguing that it is necessary to strengthen the capacity of the public health workforce in order to strengthen public health as a whole. This could serve as a stimulus for member states and the public health community to focus more prominently on the prerequisites and methodologies for the effective appraisal and development of the public health workforce in Europe. The next step could be a mapping exercise of the existing public health workforce in the WHO European Region, including an appraisal of such issues as skills mix, training capacities, job positions, and current and future need.

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