

## REVIEW ARTICLE

### What we need to improve the Public Health Workforce in Europe?

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## **Abstract**

With the growth and complexity of current challenges such as globalization, health threats, and ageing society, financial constraints, and social and health inequalities, a multidisciplinary public health workforce is needed, supported by new skills and expertise.

It has been demonstrated that public health education needs to include a wider range of health related professionals including: managers, health promotion specialists, health economists, lawyers and pharmacists. In the future, public health professionals will increasingly require enhanced communication and leadership skills, as well as a broad, interdisciplinary focus, if they are to truly impact upon the health of the population and compete successfully in today's job market. New developments comprise flexible academic programmes, lifelong learning, employability, and accreditation.

In Europe's current climate of extreme funding constraints, the need for upgrading public health training and education is more important than ever. The broad supportive environment and context for change are in place. By focusing on assessment and evaluation of the current context, coordination and joint efforts to promote competency-based education, and support and growth of new developments, a stronger, more versatile and much needed workforce will be developed.

**Keywords:** public health competences, public health education, public health workforce.

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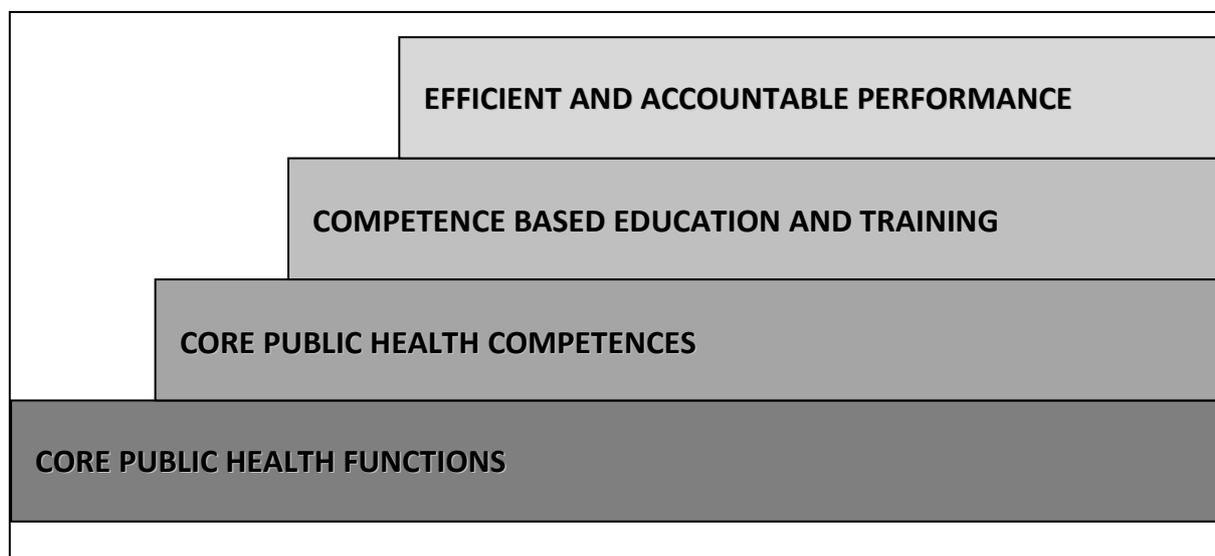
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## Introduction

The Bologna process and the WHO Regional Office for Europe's New European policy for health – Health 2020 – support the apparent move from interest in the traditional public health worker, a specialist physician, to a more generic worker who will be expected to work across organizational boundaries with a vast array of professionals to promote the public health agenda. New emphasis has been put on further developing public health systems, capacities and functions and promoting public health as a key function in society (1). To do this, public health education needs to include a wider range of health related professionals, including managers, health promotion specialists, health economists, lawyers, pharmacists etc. (2). In the future, public health professionals will increasingly require interdisciplinary and interagency team working and communication skills if they are to truly impact upon the health of the population.

But how do we get there? How can this need and the favourable supportive context actually be translated into a better equipped public health workforce? First we need to work together to better understand the current situation. Next we need to develop and agree upon core and emerging competences for a well-equipped work force. Following this, we need to translate those competences into competency based training education. Finally, we need to assess public health performance to determine how we are doing. The steps in Figure 1 summarise this process.

**Figure 1. From core public health functions to core competences, teaching curricula and public health performance**



### Competence based education and training

Public health competences may be defined as a “...unique set of applied knowledge, skills, and other attributes, grounded in theory and evidence for the broad practice of public health” (3). WHO defines competence even more precisely as the combination of technical knowledge, skills and behaviours (4).

There is growing recognition that to adequately prepare public health students to meet the challenges of today, the schools must go beyond training in the traditional areas of biostatistics, epidemiology, environmental health sciences, health policy and management,

and the social and behavioural sciences. These areas provide the student with a specific set of knowledge and and/or skills in a particular content area. While necessary, they are not sufficient for effective public health practice because they do not equip students with the contextual and integrative competences required to adapt to the new challenges that they will face in practice.

Thus, in recent years, growing interest can be observed in competence-based medical education due to its focus on outcomes, an emphasis on abilities, a de-emphasis of time-based training, and the promotion of learner-centeredness (5). This method trains graduates in problem solving skills applied to reality-based situations or real time problems in cooperation with institutions in the field (6). Competency-based education (CBE) is organized around competences, or predefined abilities, as outcomes of the curriculum. “Competences” have become the units of medical educational planning (2). CBE has also been introduced in public health training and education to close the bridge between teaching methods and the competences required in practice. In an era of insecurity, educators should make sure that every graduate is prepared for practice in every domain of their future practice. A first step in CBE is the identification of key competences that graduates need in order to perform adequately when entering the public health labour market. Box 1 below provides recommendations on developing competences.

The professional development of public health leaders requires competence based instruction to increase their ability to address complex and changing demands for critical services (7). Determining necessary competences provides a foundation for standards development that can be used to operationalise teaching objectives and design impact and outcome evaluation methods. Measuring programme outcome and impact satisfies all stakeholders: providers, practitioners, consumers, and other relevant bodies. Clusters of competences, aptitudes, or ability achieved may be indicative of the potential for future achievement. Public health workforce development has resulted in pressure for competence-based programming and performance measurement to demonstrate quality and accountability.

To support competence-based medical education, many frameworks have been developed: CanMEDS (8), and the Outcome Project of the (US) Accreditation Council for Graduate Medical Education (9). These frameworks form the basis of training for the majority of medical learners in the Western world (5). However, based on the results of a systematic literature review, Frank et al. observe that competence-based medical education still needs to identify and clarify controversies, proposing definitions and concepts that could be useful to educators across various educational systems (10). Still little is known about approaches to CBE in public health, its effectiveness and efforts made for educational quality assurance. Therefore, it is important to explore future directions for this approach to prepare health professionals. Among the current challenges facing schools of public health is how best to translate these competences into specific learning objectives with measurable outcomes.

### **The role of employers in determining competences**

In order to assure that the Schools of Public Health adequately address the skill needs of the employment market, close partnerships are needed between employers and educators, both of which are essential components of a ‘knowledge triangle’ based around the interaction of education, research and innovation (11). Many of the competences valued by employers are really enduring qualities, and the need is to find new and better ways for educators to develop them in students, so that they can then be applied in modern workplaces. In fact, the most important skill that Europe’s workers will need in order to adapt to the demands of the future is the ability to be lifelong learners irrespective of the discipline.

To determine competences, it is of utmost importance to ask public health employers. Specifying competences needed by the public health labour market can result in a benchmark approach to competence-based education. The selected competences serving as benchmarks would standardize the criteria for change in education of public health professionals. The benchmarks are relevant, because there is a need for a rapid reform of the educational system as a result of economic and political changes or previous failures to meet employment market needs. Moreover, the benchmarks will provide a framework for evaluating the effects of various educational strategies on competence-based education. Therefore, there is a need to specify competence requirements for different types and levels of Public Health employers. Thus, the question arises: what do employers consider as most important? Some studies suggest that employers value tacit knowledge, generic skills and work-based attitudes more than academic or technical knowledge which they take for granted employing graduates holding an MPH degree (12). They look for employees who are motivated, take responsibility and are willing to learn. In view of the contemporary public health employment market worldwide, it is important to acquire the right mix of general and specific skills that fits a certain job. Further distinction between skills can be made between “hard skills” and “soft skills”. The former refers to rather technical, knowledge-related skills, while the latter includes competences such as communication and team work (13). These “people skills” are essential in order to make the workforce more adaptable. The reason for this might be that these set of competences will not only prepare people for change emotionally and mentally, but they will also have an easier time adapting to a new environment. “People skills” seem to matter in both daily private life and at work. For example, it was found that nurses have higher level of patient satisfaction than doctors because of their better interpersonal skills

### **Identification of competences in the US and Europe**

There is growing consensus in the U.S. and Europe on the key competence areas in academic public health curricula. Influential documents have been produced by the Public Health Foundation, i.e. the Tier 1, Tier 2 and Tier 3 Core Competences for Public Health Professionals (Adopted May 3, 2010) (14). The following key public health competences are stated: epidemiology and biostatistics; environmental health sciences; health policy, management of health services and health economics; health promotion and education; and orientation to public health. Additionally, generic competences, like analytical skills, communication skills, financial planning and management skills, and cultural skills are recognized as important for every academic public health professional. In the United Kingdom, a Public Health Skills and Career Framework (15) was developed, which is an attempt to define competences for seven levels of public health employment.

In addition, through a year-long process, the Association of Schools of Public Health in the European Region (ASPHER) developed six main domains of public health competences (16, 17). There are also many other projects worldwide which aim at the development of more specific lists of competences e.g.: Core Competences Framework for Health Promotion (18), Core Competences for Public Health Epidemiologists (19) or competences in the area of public health leadership. The latter are especially of pivotal importance given the repeatedly stated need to develop strong leadership skills in public health professionals (1).

**Box 1. Recommendations on competence development**

1. Agree on common definitions, concepts and approaches related to competences, competence standards and CBE.
2. Review the existing lists of public health competences with the aim of finding synergies, common understanding, universality or individual health care system specificity as well as selecting best practice examples.
3. Agree on the underpinning quality criteria.
4. Develop Public Health Educational Competence Framework comprising core and emerging defined competences (which could be accepted by educators and public health professionals worldwide irrespective of the system they work in), values and convictions.
5. Ensure that adequate training is provided and help to develop the workforce in terms of career progression and staff recruitment and retention through such a framework. This should include quality assurance and solid accreditation mechanisms (16).
6. Carry out studies on CBE (a limitation of these studies thus far is that they mainly use qualitative approaches, like Delphi group rounds, panel studies and focus groups. While these approaches are very useful in identifying the perceptions of key competences, they preclude firm conclusions and have limited representativeness) (12). Based on the developed lists of competences, surveys should be given to public health employers, graduates and educators to prioritize key competences and their level of importance.
7. Use simple and comprehensive language and define competences as measurable units.
8. Make training and research relevant to practice and community service to revitalize the key role of schools of public health in this endeavour (16).
9. Study the effects of CBE on public health practice to make it evidence-based and see whether it makes a difference.

Table 1 illustrates the main emerging competences identified by the European Commission for 19 economic sectors. As can be seen, these represent skills related to innovations (e-skills, green skills), “people skills” (intercultural skills and team work) and management (entrepreneurship, intercultural management). Moreover, it is emphasized that multi skilling and skill-mix of these factors will be common and necessary.

**Table 1. Emerging competences**

<b>Social/cultural</b>	<b>Technical</b>	<b>Managerial</b>
<ul style="list-style-type: none"> <li>• Intercultural skills</li> <li>• Team work</li> <li>• Self management</li> <li>• Entrepreneurship and innovativeness</li> </ul>	<ul style="list-style-type: none"> <li>• ICT and e-skills (both at user and expert level)</li> <li>• Skills/knowledge related to new materials and new processes</li> <li>• Health and green skills (related to health and climate and environmental solutions)</li> </ul>	<ul style="list-style-type: none"> <li>• Intercultural management</li> <li>• International value chain management</li> <li>• International financial management</li> <li>• Green management (implementing and managing climate and environmental friendly policies and solutions).</li> </ul>

Adapted from: European Commission. (2010). *Transversal Analysis on the Evolution of Skills Needs in 19 Economic Sectors* (13)

In addition, a set of “cross-cutting” competences has been developed by the Association of Schools of Public Health (ASPH) in the U.S. These include: 1) Communication and Informatics; 2) Diversity and Culture; 3) Leadership; 4) Professionalism; 5) Programme Planning; and 6) Systems Thinking (20).

In regard to *Communication and Informatics*, it is important that graduates have an understanding of and ability to use the newly emerging information technologies and social media tools (e.g. I-pads, I-phones, Facebook, Twitter, etc.) in designing and implementing health interventions and in communicating messages. These tools will become even more important in developing greater public health preparedness to deal with natural disasters, continuing infectious disease outbreaks, and the ongoing threat of bioterrorism. On a different but related note, they are also central to reaching new groups of potential public health professionals through online and distance learning technologies.

Providing training in the competences associated with *diversity and culture* is particularly germane to addressing the continued inequalities in health by socioeconomic status and race/ethnicity both within and across countries, and for addressing the health issues associated with increased migration. Such skills are essential to understanding and empowering communities to improve health and to adapting public health interventions to local cultures and contexts.

It is becoming increasingly evident that in public health, as in other areas of public service and in the private sector, *leadership* matters (see case study 1 annexed). Little is accomplished without it. The fundamental understanding is that no public health problem in history has been successfully met with technical skills alone. While many public health students may not think of themselves as leaders and may not aspire to leadership positions, they should be exposed to different approaches and skills associated with exerting leadership whenever and wherever their careers may take them. Investment should be made in the development of innovative and creative management and leadership programmes informed by systems thinking, information science and transformational change principles to strengthen public health leadership. Moreover, the particular type of leadership required is not of a traditional command and control variety, but rather akin to what has been termed “adaptive” leadership: leading in contexts where there is considerable uncertainty and ambiguity. These environments often contain imperfect evidence and an absence of agreement about both the precise nature of the problem and the solutions to it. In the future, much of the authority of public health leaders will not come from their position in the health system but rather from their ability to win over and convince others through influence rather than control (21). More schools of public health are placing increased emphasis on the development of leadership competences.

In sum, the importance of cross-cutting core and emerging competences for adapting and adequately equipping academic programmes in schools of public health in Europe merits further exploration. Clearly, these competences will need to be adapted to local contexts associated with different historical, cultural, political and economic circumstances. Understanding the different settings involved is of great importance for accountable performance in public health. Public health practitioners are expected to be effective in different environments. Effective public health practitioners have to work with many different partners and paradigms.

Along with determining core and emerging competences to in order to develop competence based education in public health, it is important to make an overall strategic plan for public health training and education.

Box 2 below outlines a strategic framework for capacity building in public health training and education that should be articulated. This should be based on needs, with concrete objectives and targets.

**Box 2. Strategic framework for capacity building in public health education and training**

1. A strategic plan for capacity building in public health education and training in Europe should start from a SWOT analysis and should define specific capacity building objectives and targets (with minimum set of indicators for monitoring and evaluation), which will be linked to European public health needs as well as to the new European policy for health “Health 2020” and European Public Health Operations as a public health framework for action;
2. The targets for a strategy to strengthen public health education and training should cover all areas of current conceptual models of public health capacity building within the Bologna Process as follows: organizational development and resource allocation; degree and curriculum reforms; quality assurance; qualification frameworks; international recognition of degrees and mobility within the European Higher Education Area (EHEA) and the rest of the world; policies on widening access to and increasing participation in higher education; attractiveness of European higher education and the global dimension of the Bologna Process;
3. Workforce development in public health should be considered among the highest priorities at national and European level;
4. Perspectives on public health and expectations in public health from representatives of other sectors and policy areas should be included to enrich capacity building and lay out a basis for health in all policies;
5. “Public Health Identity” needs to be strong, reflecting the diversification of professional functions in public health and reconciling them with a shared identity;
6. both public health generalists and specialists are needed, as well as "horizontal" public health workers who consider health issues in other key sectors policy areas;
  - education and training of public health professionals focuses on health incorporated into development policies and tackling the socioeconomic determinants of health;
  - public health education and training requests to be recognized and developed in other key sectors. Public health topics, views and experiences should be included in medical studies and spread through curriculum from the very beginning, as an example: 10-15% proportion of overall medical teaching should become a target.
7. The strategy for capacity building in public health education and training needs to consider horizontal and vertical aspects: it must address all levels of government and administration (supranational to local), as well as in other domains (private, civil society, public, etc).
8. The pace of strategy development for capacity building in public health education and training must fit with the national and international context. One should proceed in a measurable way.

**New developments in public health education and training**

As we have seen, the articulation of and consensus on core and emerging competences can inform competency based education and training, leading to a better equipped public health workforce.

At the same time, several areas are emerging in the field of public health in Europe:

- Development of broader, more flexible academic public health programmes, based on mobility of students and professionals in the EHEA;
- Expansion of Lifelong Learning (LLL), which involves extending knowledge and gaining skills –acquisition of competences – in the SPHs, and application of innovation in training, particularly with regard to information technology (*Internet and Mobile technologies, OpenCourseWare* on selected topics, and supportive elements of *Distance Learning* in general); and
- Increased potential of higher education programmes, based at all levels on state of the art research fostering changes by innovation and creativity.

Regarding the first area, in this section we discuss the move towards joint degrees and collaborative approaches with other schools. With respect to the second, we describe the importance of lifelong learning for growth and especially, increased employability, a new

development of its own. Finally, we explain the new accreditation agency in Europe, supporting and bringing about increased possibilities, improved accountability and better performance for public health education.

### **Broader, more flexible academic public health programmes**

Although public health has always been “global”, under the rubric of “international health”, recent efforts have been underway to redefine “international” health as “global health” and think of it as a new and somewhat different field. This movement is being led primarily by medical schools, arguing that the new global health challenges require skills and approaches not typically found in “traditional” schools of public health (22), pointing to the need for greater problem solving based field work, leadership development, and exposure to other disciplines such as engineering, business, law, and public policy. While many schools of public health have provided such training for years (23), there is no doubt that more could be done. The challenges of global health concerns could provide an opportunity for closer relationships between schools of public health and schools of medicine in addition to the other health science professional schools.

As we have illustrated, public health is interdisciplinary, drawing on many fields, including biology, mathematics and statistics, law, business, economics and numerous other social science disciplines. However, there is only limited inter-professional education in public health. Despite recent renewed interest in inter-professional training – among medicine, dentistry, pharmacy and public health – relatively little is occurring (2). Among the reasons are protection of professional turf; the lack of top academic leadership and resources; lack of time and alignment of academic calendars; lack of faculty training and incentives; and lack of recognition by accrediting bodies that inter-professional competences are important (24). However, the most limiting factor in the current conception of inter-professional training is the relative exclusion of the major focus of public health; namely, the health of populations and communities. When most people refer to inter-professional education, they are primarily talking about creating effective *patient care* centered teams. For example, a recent influential report defines “inter-professional” as involving “...*continuous interaction and knowledge sharing between professionals, organized to solve or explore a variety of education and care issues all which seek to obtain the patient’s participation.*” (25). Thus, to the extent that inter-professional education gains traction, one of the challenges for schools of public health is to define its role within this area.

Three possible approaches to inter-professional education include concurrent degrees, joint degrees, and “embedded” degrees that could be given by schools of public health and other health science professional schools, such as medicine, nursing, dentistry, and pharmacy. A concurrent degree involves the admission of students to two schools (e.g. medicine and public health) from the start of the programme with a defined sequencing and pathway of interrelated courses. Upon successful completion of requirements, students are simultaneously awarded both degrees.

For example, at the University of California at Berkeley (USA) such programmes exist between public health and business, public policy, social welfare, city and regional planning, and journalism. However, this is not yet offered with the health science professional schools perhaps because they are not located on the Berkeley campus.

A joint degree, on the other hand, consists of students receiving two degrees, but typically not at the same time and with relatively little overlapping course work. Usually the medical or nursing degree is completed first and then students enrol for their MPH degree. In most cases,

the MPH degree is considered “secondary” to the students’ primary clinical degree. Many schools of public health in the United States offer such joint degrees.

Finally, a new and different approach exists which is called an embedded degree. This is offered as an arrangement between The University of California at Berkeley School of Public Health and Stanford University’s School of Medicine. In this arrangement, up to five Stanford medical students interrupt their medical school education during the second year to participate in an intensive one year 42 credit hour set of courses at Berkeley’s School of Public Health. The Stanford students then complete their medical training. Upon completion of a jointly overseen Berkeley-Stanford thesis project, students are awarded both their MD and MPH degrees.

The embedded approach is perhaps the most innovative of the three approaches in that it involves placement of a medical degree programme *inside* a School of Public Health while still in collaboration with a medical school. In addition to the Stanford arrangement UC-Berkeley School of Public Health and UC - San Francisco School of Medicine offer a combined “joint medical programme”, in which students spend their first three years on the Berkeley campus. Instruction focuses on case-based individual and team-based problem solving, assessing patients and their illness within the larger context of the community and the social environment in which patients live. Upon completion of the three years, students complete their medical training and board exams at the UC San Francisco Medical School campus. The extent to which these, and possibly other examples of inter-professional training, might be relevant to Europe and other parts of the world is a topic worthy of further discussion.

### **Lifelong learning and the importance of employability**

We live in the era of learning, witnessing new educational policy discourse with neo-liberal tenets (26). Policies of the EU support the “learning drive”. It can be stated that we are observing a shift from competitiveness, growth and employment to employability – the ability to become employed. Currently, 21st century competences are on the front page of educational reforms in Europe and worldwide. A Green Paper from the EU Commission calls for greater investment in workforce planning, while the EU Council has called for greater priority to be given to Lifelong Learning as ‘a basic component of the European social model’ (27). In line with the establishment of Lifelong Learning Programme (LLP) (Decision No 1720/2006/EC amended by 1357/2008 Decision), and the “New Skills for New Jobs” communication, the need to anticipate and match future skills has been developed.

With regards to knowledge and skills, there are several systems and frameworks set up on the EU level, especially the European Reference Framework that defines the eight main competences needed for any person to be able to function successfully in their job and in society. The advantage of using this reference tool is that it actually reflects on the learning outcome of a person instead of only using length of time in the educational system<sup>2</sup>. A classification structure called ‘European Skills, Competences and Occupations’ (ESCO) is another example of ongoing work from the EU. This system is planning to bring together the most relevant skills and qualifications for numerous jobs into one network<sup>3</sup>.

The European Commission supports the development of lifelong skills and competences both formally and informally and opens many financial instruments aiming to promote the development of European educational know how, including the use of modern technology to

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<sup>2</sup> Information retrieved 16/08/2011 from [http://ec.europa.eu/education/lifelong-learning-policy/doc44\\_en.htm](http://ec.europa.eu/education/lifelong-learning-policy/doc44_en.htm).

<sup>3</sup> Information retrieved 16/08/2011 from <http://www.cedefop.europa.eu/EN/news/16575.aspx>.

support learning.

It has to be noted that effective use of the EC financial instruments contributes to the development of collaborative learning, exchange of good practices and rise of new forms of teaching and learning, ranging from problem-based, active, self-directed, student-centred approaches to blended or hybrid learning, which is a combination of face to face and online learning. A broad range of options exist, such as the principle of mutual recognition of programmes and diplomas through the Erasmus Mundus grant or simply individual mobility throughout Europe. These programmes are not only restricted to European countries, but allow for wider global participation, an important factor to be considered by public health educators. Moreover, programmes offered by the European Commission support the learning of foreign languages, increasing intercultural understanding, raising awareness of the potential of languages, and calling on decision makers to ensure efficient language education. It should be recognized that public health does not have specific a continuing professional development programme, unlike other health professions, and uses courses from other health care fields. However, as has been illustrated, many possibilities exist that can support the development of continuing education in public health and can help give rise to the still underdeveloped area of lifelong learning in the field.

### **European accreditation**

Accreditation is an important step to help ensure or enhance the level and quality of public health curricula and improve the standardization of a core curriculum in public health education. Recently, along with developing lists of competences for public health professionals and for Master education, ASPHER has taken the initiative, together with partners – EUPHA, the European Public Health Alliance (EPHA), the European Health Management Association (EHMA), and EuroHealthNet – and in consultation with WHO Europe and the EU Commission, to establish a European Agency for Accreditation of public health educational programmes and schools of public health.

The accreditation agency has become an independent body, the *Agency for Public Health Education Accreditation (APHEA)*, assuring its credibility and gaining approval by international agencies in charge of accrediting bodies and entry into international quality assurance registers.

The European accreditation process for Master of Public Health (MPH) programmes is now under way. All participant organizations and individuals who contributed to this process are confident that this process will set new and improved standards for MPH training in Europe. This will ultimately help to improve the competences and employability of those graduating from public health programmes and entering the workforce, thereby contributing to the advancement of the field of public health across the vast European region.

Membership in the APHEA Board of Directors includes representatives from all five partner organizations, while guidelines require that the chair of the Board of Accreditation is an individual highly distinguished in the field, but not directly associated with any of the organizations in the consortium.

The curriculum required by APHEA is based on the core subject domains from the list developed in the European Public Health Core Competences Programme, although slightly regrouped (Table 2). The agency adopted a “fitness for purpose” approach to assess an academic institution based on the premise that an academic institution will set its mission for education and research within the context of a specific regional or national environment. This approach requires institutions to be orderly in developing programme aims, in carrying out ongoing assessments, and in using this information to direct and revise final qualifications,

curriculum modules, strategies and operations. Ongoing assessment is intended to lead to programme improvement as part of this approach. For purposes of determining conformity with APHEA accreditation criteria, the Board of Accreditation will consider current developments and planned changes as they relate to the “fitness for purpose” process. This approach takes into account the diversity of the European schools of public health, but simultaneously sets certain curriculum standards for high quality education and training in public health in Europe.

The Call for Commitment circulated to ASPHER members in October of 2010 indicates that there is great interest among ASPHER member institutions to undergo accreditation of their public health or equivalent programmes at the European level. The agency started with three accreditations in 2011 and hopes to reach a capacity of ten per year by 2015.

**Table 2. APHEA core subject domains for MPH curricula**

<b>Core subject areas</b>	<b>Curriculum content</b>	<b>ECTS *</b>
<b>Credit ranges**</b>		
Introduction	Introduction to public health	2
Methods in public health	Epidemiological methods, biostatistical methods, qualitative research methods, survey methods	18-20
Population health and its determinants	Environmental sciences (including physical, chemical and biological factors), communicable and noncommunicable disease, occupational health, social and behavioural sciences, health risk assessment, health inequalities along social gradient	18-20
Health policy, economics, and management	Economics, healthcare systems planning, organization and management, health policy, financing health services, health programme evaluation, health targets	16-18
Health education and Promotion	Health promotion, health education, health protection and regulation, disease prevention	16-18
Cross-disciplinary themes (mandatory and/or elective courses)	Biology for public health, law, ethics, ageing, nutrition, maternal and child health, mental health, demography, IT use, health informatics, leadership and decision-making, social psychology, global public health, marketing, communication and advocacy, health anthropology, human rights, programme planning and development, public health genomics, technology assessment	21-23
Internship/final project resulting in thesis/ dissertation/memoire	Supervised by faculty (full time and/or adjunct)	24-26
*	European Credit Transfer and Accumulation System (or equivalent).	
**	The subject areas and credit ranges above are recommended; the accreditation process will assess the credit division among subject areas for a given programme.	
APHEA – <a href="http://www.aphea.net">http://www.aphea.net</a>		
CEPH - <a href="http://ceph.org/pg_about.htm">http://ceph.org/pg_about.htm</a>		

## **Conclusions**

Public health is rapidly gaining prominence in the various public policy domains in Europe. The increasing importance of preparedness towards major health threats, the growing recognition of the fact that health is an important resource for economic growth and sustainability, and the heightened awareness of important health inequalities in Europe are powerful driving forces in this regard. However, many EU Member States and Candidate Countries have insufficient institutional and professional capacity for public health and the process of reforming the relevant services is slow. Compared to the United States and other industrialized countries, as well as some emerging economies (e.g., Brazil), the relative lack of public health capacity in the EU is striking (28). In addition, the situations within countries differ a great deal.

As stated in the European Action Plan:

*Current public health capacities and arrangements of public health services vary considerably across the WHO European Region. These differences reflect variations in political prioritization and organizational models of public health services, as well as the distribution of functions and responsibilities across different administrative levels. However, there are many similarities across the European Region, mainly in basic needs for public health information, knowledge and competences. There are often continuing problems of under-resourcing, skill shortages, insufficient capacity, poor morale and low pay. Competency frameworks for a public health workforce, as well as career pathways, remain under-developed. Public health functions are fragmented and sections of the workforce may work in an isolated way. While research capacity is well established in some countries, effective facilitation of research capacities to support policy development and programmes still lags behind (21).*

As an essential element of good governance, the European Ministers of Health in the Council of Europe request that a competent post-graduate training institution is available at national level, as well as in large regions, with links to both academic and health administrations (29). The Schools and Departments of Public Health are the main structure to provide education and training for public health professionals, as well as consultation and applied research for health administrations. The public health services, comprised of qualified and certified public health professionals, have to address the four main deficits of information, prevention, social equity and a weak regulatory framework. It is estimated that an additional 22,000 public health professionals are required per year for the European Union alone to maintain an appropriate level of services. Almost three times the present educational capacity is needed to provide these numbers.

However, in order to meet population health needs, significant efforts are required not only to increase the number of public health professionals, but also their quality and relevance to public health (21). Traditional disciplinary, sectoral approaches are no longer sufficient to resolve complex health problems and provide different perspectives (30). Investing in a multidisciplinary public health workforce is a prerequisite for current challenges. In fact, as stated in the European Action Plan for Strengthening Public Health Capacities and Services “*a sufficient and competent public health workforce constitutes the most important resource in delivering public health services.*” (21).

The European Schools and Departments of Public Health have widely adopted the Bologna format of teaching, as 47 countries are committed to joint action for strengthening a European Higher Education Area (EHEA). In spite of this, and as we have indicated, inequalities and the need for harmonization still exist. Therefore, agreement is sought especially on

standardized lists of competences required in order to perform specified service functions. The education and training of public health professionals in Europe has to be interdisciplinary and multi-professional, comprising the medical as well as the social sciences. In addition to core competences, cross-cutting competences are important to consider, including broader, multidimensional areas, such as leadership and diversity and culture. These competences should inform and shape public health education and training programmes, leading to competence-based education. This approach closes the bridge between traditional teaching methods and the competences actually required in practice. Moreover, it is recognized that education and training for public health should be continuously evaluated and updated by use of performance measurement in everyday public health practice.

Employability is one of the key criteria for successful training of public health professionals. Therefore, two key questions have to be answered: 1) Who employs the public health professionals and what are their agendas? 2) What is the performance of public health professionals? It is of utmost importance to measure preferences of public health employers with respect to the competences required by graduates of public health studies at Bachelor and Master degree levels. Specifying competences required by the public health labour market can result in a benchmark approach to competence-based education. The selected competences serving as benchmarks would standardize the criteria for change in education of public health professionals (31).

The European Union has recognized the importance of developing the field of public health with its ET2020 strategy and both the EU and WHO (Health 2020) are cooperating. However, each country should develop a strategic plan for capacity building in public health education and training, starting from a SWOT analysis and defining specific capacity building objectives and targets with a minimum set of indicators for monitoring and evaluation (see case study 2 annexed).

New developments are heading in the direction of broader approaches to training, employability, and better performance of public health professionals. The focus is on defining the underlying competences needed for students to become effective global health professionals and leaders. In the age of innovation, the most valuable knowledge will be tacit, and universities and business must create environments that promote imagination, inspiration, intuition, ingenuity, initiative, a sense-of-self, self-assurance, self-confidence and self-knowledge. In the future, the public health professional will increasingly require skills such as interdisciplinary and interagency team working and communication skills.

To the extent that inter-professional education gains traction, one of the challenges for schools of public health is to define its role. Three possible approaches include development of concurrent degrees, joint degrees, and “embedded” degrees that could be implemented between schools of public health and other health science professional schools such as medicine, nursing, dentistry, and pharmacy.

During recent years, the relevance of a concept of Lifelong Learning has been recognized by all actors, particularly the European Union. Supported by blended or hybrid learning and employing online technology, these developments will change the educational landscape for all professionals and help make professionals more employable.

In addition, accreditation agencies can help raise the quality and standardization of a core curriculum in public health education. The recent development of the Agency for Public Health Education Accreditation (APHEA) in Europe will support and promote improvements in training.

Finally, it should be recognized that for the public health workforce to truly be equipped to tackle current public health challenges, genuine leadership should exist at all levels.

Leadership that is transformational and collaborative, not top-down, needs to be in place at the policy level, to bring about educational reform; at the teaching level, to implement change; and at the level of public health professionals, to put into practice the new skills.

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## ANNEX

### **Case Study 1: Public health leadership in Europe (Katarzyna Czabanowska)**

In October 2010, ‘Leaders for European Public Health’ (LEPHIE) was developed, a European Erasmus Multilateral, Curriculum Development project in the lifelong learning (LLL) format. This is a collaborative effort between Maastricht University (NL), the Sheffield Hallam University (UK), Lithuanian University of Health Sciences (LT), Medical University of Graz (AT) and the Association of Schools of Public Health in the European Region (ASPHER), and resulted from an ASPHER and EUPHA on-line survey<sup>4</sup> that highlighted the need for online, problem-based leadership courses.

This module aims to develop leadership competences through the following:

- Examining the key debates around leadership in public health.
- Introducing key theoretical frameworks that underpin leadership learning, and applying theory to actual practice.
- Developing the ability to analyse the public health leadership role and development needs of individuals.
- Stimulating self-assessment of leadership competences to identify knowledge gaps and further training needs.

The competence-based programme focuses on a variety of situations related to public health risks with special attention paid to ageing and chronic diseases, as reflected by identified priorities. The public health leadership content is aimed to be applicable to performance in diverse European public health practices and contexts, and reflects the priorities and objectives of the European Health Programme.<sup>5</sup> Based on an extensive literature review and expert review panels, a framework was developed to support the curriculum and facilitate self-assessment.

The module uses innovative training methods, such as problem-based and blended learning formats (a combination of face-to-face and online learning), and students are active participants in the process. Thus, students have a common goal, share responsibilities, are mutually dependent on each other for their learning needs, and are able to reach agreement through open interaction (Suzuki et al. 2007). Such an educational approach proves to be successful in the LLL context. The participants are offered interactive lectures, tutorial group meetings and other collaborative sessions at a distance. The course is delivered via an intranet, such as Blackboard or Moodle, and course material can be directly downloaded.

After being successfully piloted in the UK, a mutually recognized international blended learning leadership course worth seven ECTS will be delivered by the international consortium. It is believed that the integration of modern learning technology with collaborative learning techniques, supported by interdisciplinary competence-based education transcending institutional boundaries, will result in transformative learning, which is about developing leadership attributes (Frenk et al. 2010). This constitutes a small step towards inter-professional and trans-professional education.

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<sup>4</sup> Available from: [http://www.old.aspher.org/pliki/pdf/LLL\\_Liane.pdf](http://www.old.aspher.org/pliki/pdf/LLL_Liane.pdf).

<sup>5</sup> [http://ec.europa.eu/health/programme/policy/2008-2013/index\\_en.htm](http://ec.europa.eu/health/programme/policy/2008-2013/index_en.htm).

## **Case study 2: Regional cooperation – the development of a regional public health strategy in South Eastern Europe (Vesna Bjegovic-Mikanovic)**

A regional public health strategy for South Eastern Europe was developed during a public health expert seminar in August 2004, Belgrade, organised in the framework of the Forum for Public Health in South Eastern Europe (FPH-SEE). Strengths, weaknesses, opportunities, threats and their interactions were defined based on a SWOT analysis. Within this, a framework for a regional public health strategy, including strategic goals and objectives, was determined based on priorities identified by nominal group techniques.

One of the identified goals was “Strengthening human resources in public health”, and, within this was the objective of “Ensuring sustainable development of human resources.”

### ***Activities included:***

- Developing common curricula for public health on different academic levels.
- Providing a common glossary and terminology in public health.

Based on this process, there are the following proposed exercises:

**Task 1:** Students split up into groups to discuss the draft strategic framework. They analyse strengths and weaknesses, considering a) the development process; b) the draft framework with its goals and objectives; and c) recommendations for improvement. Each group prepares a summary report on strengths, weaknesses and their recommendations, and presents them in plenary.

**Task 2:** Students compare the national public health strategy of their own country (or health policy if no specific public health strategy exists) with the draft framework for a regional strategy and compare them by highlighting similarities and differences.

**Task 3:** Students experience participatory and consensus building methods: A SWOT analysis on the public health situation in their country (or province, district, community, or city) is conducted and subsequently, a priority setting method is applied so that a list of public health priorities can be identified in the selected setting.

**Source:** Public Health Strategies: A Tool For Regional Development. A Handbook for Teachers, Researchers and Health Professionals. ISBN 3-89918-145-X, Lage, Germany: Hans Jacobs, 2005: 583-647.