The role of schools of public health: learning from history, looking to the future

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ABSTRACT

There is a broad consensus on the need for high-quality public health education and research to tackle the world’s many public health challenges. Public health education and research are delivered by a variety of institutions operating very different models, which collectively can be called schools of public health. Given the importance of education and research to public health systems, it is surprising how little research has been done to assess the role of schools of public health in contributing to population health. In particular, it is notable there has been very little research on the strengths and weaknesses of the different models of schools of public health that have evolved over the last 100 years. Thus, a historical perspective is crucial. To date most historical work has focused on US schools of public health. Although the evidence is patchy, a global overview of the history of schools of public health identifies three important themes: capacity building, multidisciplinarity and balancing teaching and research. Newer challenges and opportunities include addressing the impact of climate change and developments in e-learning. Schools of public health have the potential to make a central contribution to progress in public health practice in the twenty-first century.

Keywords education, educational settings, employment and skills, public health

Introduction

Global health is improving, but not nearly as fast as it might, and gross inequalities in health within and between countries are entrenched and resistant to change. Improving public health requires a whole system approach, including tackling poverty, climate change and a host of other key determinants outside the health sector. Addressing such key determinants requires action across the wider public health system. Since the late nineteenth century schools of public health have been key components of such public health systems in developed countries in the global ‘North’ and in some developing countries in the ‘South’.

There is no one definition of the term ‘schools of public health’, and there is a wide variation of models across the globe. Here the term is used loosely to collectively describe all those diverse institutions providing postgraduate public health education (usually in the form of a masters degree in public health or MPH) and/or conducting research in public health, whether they are formally labelled ‘school of public health’ or not. In some jurisdictions, in particular North America, there is a system of formal accreditation of schools of public health. In other global regions there is no accreditation process or it is as yet emergent (e.g. in Europe). In the global ‘South’ where there is arguably the greatest need for public health education (e.g. in Africa), the usual ‘inverse care law’ applies, with relatively few schools of public health, and huge challenges in terms of ensuring the capacity and capability of schools of public health to deliver the necessary public health education and research.

The question this article seeks to address is what we can learn about the role schools of public health should play in tackling global public health challenges, and in particular what the strengths and weaknesses of different models of schools of public health might be. For an evidence-based discipline, it is perhaps surprising that there has been little research or reflection on these questions within the public health literature.

The history of schools of public health

The concept of schools of public health emerged in the early twentieth century. Prior to this period, a number of research institutes concerned with public health had been established in the late nineteenth century (Pasteur Institute, Paris, 1888; Koch’s Institute, Berlin, 1891, etc.) but these
did not necessarily play a central role in educating the wider public health workforce. From 1914 the Rockefeller Foundation promoted and funded a particular model of schools of public health with an emphasis on bio-medical and laboratory sciences and on administrative and organizational methods for public health services. From the Rockefeller Foundation’s first endowment at John Hopkins University in the USA in 1916, there was a tension between the rather narrow technical approach to public health the Foundation promoted, and a more social and environmental approach championed by Charles-Edward Winslow at Yale University among others. The Rockefeller Foundation went on to fund a number of other schools of public health in the USA, and then internationally. Its first international endowment was the London School of Hygiene and Tropical Medicine (LSHTM) in 1922, but it went on to fund schools of public health elsewhere in Europe (Prague, Warsaw, Copenhagen, Budapest, Belgrade and Zagreb), Asia (Calcutta (now Kolkata), Manila and Toyko) and South America (São Paulo).

This creation of an international network of schools of public health was part of a wider Rockefeller Foundation strategy of developing the science of public health. Another key component of the strategy was to initially endow schools of public health, funding buildings and equipment, but to leave responsibility for recurring costs to national or local authorities. Thus schools of public health inevitably began to diverge to a greater or lesser degree from the initial Rockefeller model. After the Second World War the Rockefeller Foundation shifted its resources to different strategic priorities in education, agriculture and development and ceased to seek to shape the development of schools of public health. At the same time there were other currents shaping, emerging public health institutions. A philosophy of ‘social medicine’ concerned with the increasing health gap between rich and poor emerged in the economically divergent Latin America where departments of social medicine became increasingly distinct from Rockefeller-type schools of public health.5

Following the Second World War, there was a continuing expansion in the number of schools of public health. From 1948 the World Health Organization (WHO) specifically worked to support national governments with the education and training of public health professionals. According to the WHO, the number of schools of public health increased from 100 institutions in 42 countries in 1965 to 121 institutions in 44 countries in 1972, to 216 institutions in 54 countries by 1985 and to 375 institutions by 2006. Schools of public health are not, of course, distributed according to need. There are 112 in the Americas, including the largest and best resourced in the world, but just 50 in Africa, with many institutions small and poorly resourced.6 Twenty-nine African countries currently have no programmes of postgraduate public health training.4

The diversity of schools of public health

The post-war period saw increasing diversity in schools of public health. The increasing wealth of Western European states and the prevailing ‘welfare state’ approach supported investment in public health systems including schools of public health. Western European schools of public health have been historically diverse with some schools of public health within schools of medicine, some attached as training arms of state ministries of health and some more akin to the US model of an independent school of public health within a university. Soviet-dominated Eastern European states experienced much more stagnant economies and relatively under-resourced public health systems. Here the predominant model was separate departments of social hygiene and public health within universities of medicine, although some schools of public health were attached to ministries of health. The implosion of the Soviet state and its satellites in 1989 led to widespread economic dislocation and disruptions to public health systems. Since then the public health systems have been slowly rebuilding, including the support by western public health organizations and institutions for the renewal of schools of public health on quite new models.7 In 1995 de Leeuw8 identified eight possible structural models of schools of public health, with a range of university and ministry of health models as well as a stand alone research institute.

Besides structural differences, there is diversity in terms of a number of other characteristics. We have already noted the significant differences in size between USA and African schools of public health. The John Hopkins Bloomberg School of Public Health has 1129 staff and a budget of $360 million.9 By contrast, 81% of African schools of public health have less than 20 staff.4 There are also differences in accreditation, with formal criteria for accreditation in some regions such as North America, but not in others. Some regions have strong associations of schools of public whereas other regions have weaker or non-existent associations. There are clear differences in the extent and quality of public health research in different schools. This is easiest to illustrate in the UK where the recent 2008 Research Assessment Exercise (RAE) lists the number of research active staff submitted by universities and a peer assessment of the quality of the research submitted.10 Perhaps
What do we know about the effectiveness of different models of schools of public health?

The answer, unfortunately, is very little. As Sadana et al.\textsuperscript{11} have commented “There is almost no evaluation of the degree to which education practices match real-world conditions.” Aside from the formal accreditation process of the North American Association of Schools of Public Health, there are few processes or data for comparing the quality or impact of most schools of public health. In other regions and countries individual universities will have their own quality assurance, validation and assessment processes with some external scrutiny, but there is no easily available data set on which to make comparisons. The reality is that it is difficult to find evidence to make rational assessments of the value of different models of schools of public health. If the health of national populations was a key criterion, then prestigious US schools of public health would rate rather badly despite their accreditation and high levels of internationally renowned research staff and outputs. It hardly needs to be said that there have been no international comparative research studies of the quality or effectiveness of different models of schools of public health.

In African and other low-income countries there have been concerns expressed that schools of public health have been established on inappropriate high-income models, reproducing technocratic models that do not work within local health systems or needs.\textsuperscript{12} But as with other such assessments, we lack the evidence base to come to definitive conclusions on these issues.

The best evidence we have comes from historical case studies. The most in-depth historical research on schools of public health has been Elizabeth Fee’s work in the USA. Fee\textsuperscript{13–15} first conducted a detailed case study of the origins of the John Hopkins School of Hygiene and Public Health before going on to write more general histories of schools of public health in the USA. Fee argues convincingly for the historical origins of a widely observed ‘disconnect’ between public health as it is taught in US schools of public health and public health as it is practiced in state and local public health departments. In the 1930s federal government ‘New Deal’ funding encouraged schools of public health to provide practical training programmes linked to local communities and health departments. From the McCarthy era of the 1950s she argues, schools of public health were generally ignored and began a strategy that continues today of using research grants, primarily from the National Institutes of Health Research to grow their faculties.

There has been no similar critical assessment of schools of public health in the UK, Europe or the global South. A few studies of specific schools have been published, for example Wilkinson and Hardy have written the history of the LSHTM.\textsuperscript{16} This limited historical evidence suggests that some schools of public health have made important contributions to public health systems and to population health. Wilkinson and Hardy, for example, note the significant roles played by LSHTM alumni in international organizations and ministries of health throughout the world. Balinska\textsuperscript{17} has argued the contribution of the National Institute of Hygiene, Poland, in training public health personnel for the Polish health service which had previously lacked a public health infrastructure. But schools of public health are only one part of a wider public health system and cannot make much impact on population health if the wider system is not functioning. Thus countries in the former USSR and Eastern Europe saw catastrophic falls in public health in the 1990s due to the social and economic dislocation following the fall of communism despite the continuing existence of schools of public health in the region. Equally, there are examples of major improvements in public health pre-dating
the establishment of schools of public health, as in nineteenth century Britain.

**Learning from history, looking to the future**

What does history tell us about current challenges and opportunities facing schools of public health, and the public health movement more widely? Although the evidence is patchy, I would suggest three key areas of learning: capacity building, multidisciplinarity and balancing teaching and research.

**Capacity building**

One clear lesson is the need for global partnership and collaboration in developing public health education and research. Both the Rockefeller Foundation before the Second World War and the WHO after the War played crucial roles in the global development of schools of public health. The greatest public health challenges are in the poorest developing countries that have the fewest and least well-resourced schools of public health. Some countries, especially in Africa, have no schools of public health within their borders. At the same time there is a brain drain of some of their ablest students to schools of public health in the developed world. With the current economic crisis hitting universities in the North, there is increasing competition for international students and a risk that students will be recruited for primarily financial reasons without consideration of the best strategies for building public health capacity in the developing world. Alternative strategies include franchising relationships between Northern schools of public health and institutions in the South, distance learning programmes and Schools of Public Health without Walls.1,18

**Multidisciplinarity**

Throughout the history of schools of public health, there has been a tension between narrower medical and wider multidisciplinary approaches. Over the last two decades there has been a decisive shift towards recognizing the vital importance of a multidisciplinary basis for public health education and research. In the UK this has been exemplified by the LSHTM that in 1992 opened its MSc Public Health for the first time to students from disciplines other than medicine. The LSHTM remains the pre-eminent UK school of public health, certainly in terms of its international research standing as measured by the RAE but also in terms of the reputation of its MSc. But another significant development over the last 20 years has been the growth in the number of Masters programmes, particularly in the newer universities. These new courses are often more focused on the wider social context of health and are intentionally more multidisciplinary in nature, reflecting a wider movement towards a more multidisciplinary public health field in the UK.19 There are of course both benefits and risks with these developments. The benefits include widening access to public health education and the training of many more public health practitioners. The risks include the potential for more variable quality. In particular, teaching contact time in many newer MSc programmes appears significantly less than in traditional full-time MPHs and international students are increasingly being recruited by such institutions without necessarily having the infrastructure to fully support them.

**Balancing teaching and research**

Fie’s historical work on US schools of public health alerts us to the risks of research funding negatively affecting schools of public health delivery of appropriate education and training to the public health service workforce. Similar tensions can be seen in other countries. In the UK the RAE has been a major driver of university decision-making and schools or departments that do badly in the RAE (or the Research Excellence Framework which is replacing it) risk losing funding or being closed entirely. More broadly, the emphasis on peer reviewed publication as a key criterion of academic success encourages promising young academics to prioritize research over teaching. Some schools of public health in the UK do have historical links with service public health in the National Health Service in terms of joint appointments, honorary contracts and supervision arrangements for NHS public health trainees, which may serve to some extent to mitigate the priority given to research over teaching.

**Conclusions**

Historically, schools of public health have been very good at public health research, whereas some have also focused on training the (usually medical) public health elite. The challenge now is to build public health capacity much more widely both in the developed and the developing world. Schools of public health need to embrace more flexible modes of programme delivery, e-learning, distance learning and life-long learning. Such developments are crucial if we train more of the wider public health workforce that is so desperately needed in both the developed and the developing world. Schools of public health—and the wider public health movement—need to critically reflect on and challenge
where necessary the priority often given to research over education and training. At the same time we need to build a knowledge base about the strengths and weaknesses of different models of schools of public health, critically evaluating both our traditional modes of delivery and the newer e-learning approaches in ways that allow some comparative judgements. Finally, schools of public health need to be scanning the horizon for the new public health challenges, in particular those relating to the impact of climate change on health and its implications for public health policy and practice, and build these into their education and research programmes.

References