Title:
Building health systems capacity in global health graduate programs: reflections from Australian educators

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Abbreviations:
MPH – Masters of Public Health
MIPH – Masters of International Public Health
LMIC – Low and Middle Income Countries
Abstract

**Background:** There has been increasing focus on the role of health systems in improving population health in low and middle-income countries. Along with this has come greater emphasis on building health systems capacity with regard to policy, research, program development and implementation. Despite this, very little evidence exists on how best to build health systems capacity in educational programs and on improving public health education more generally.

**Discussion:** A review of health systems teaching in masters degree programs demonstrates the general adherence to traditional modes of public health teaching which emphasise disease control, epidemiology and health promotion. The current experiences in building capacity in health systems in five of the most prominent global health programs at Australian universities are outlined. Two main approaches to teaching about health systems were observed: teaching focused courses on health systems including those based on WHO building blocks and other components while others have integrated systems thinking across a range of traditional, disease-focused courses. Techniques being used include: problem-based learning, scenario-based workshops and in-depth case studies. The strengths and weaknesses of various approaches to building health systems capacity are provided along with examples of global practice in order to provide a foundation for future discussion and thus improvements in global health systems education.

**Summary:** Educational institutions have a significant role to play in preparing future practitioners to be able to strengthen developing country health systems. Sharing and reflecting on Australian experience in health systems teaching reveals a diversity of perspectives and lessons that deserve further documentation, analysis and evaluation, if teaching and understanding in this complex area is to be enhanced.
Background

The role of health systems in improving population health in less developed countries is increasingly attracting attention [1,2]. Strengthening health systems has come to be seen as a prerequisite to achieving the Millennium Development Goals [3,4]. Most global health agencies, including the World Health Organization [5], USAID [6] and the World Bank [7], now put health systems at the centre of their health strategies. Disease-specific global health initiatives increasingly link their objectives and funding to health system strengthening [8]. This has led to the assertion that: “a consensus is growing about the need for greater global action on health systems, representing a new phase in global health policy” [9].

Health systems research and teaching engage with an array of fields examining issues of cost, quality, accessibility, delivery, organisation and financing and how they interact to improve health outcomes [10]. The WHO health systems building blocks [5] are the most commonly used framework for understanding health systems along with the ‘control knobs’ for health system reform [11] and the Systems Framework [12]. Most frameworks acknowledge the importance of core systems areas including the health workforce, financing, information systems, service delivery and governance which together can lead to the achievement of better health status.

Despite the increasing focus on health systems, there remains considerable debate about what constitutes health systems [13] and health systems strengthening [14,15]. Some advocate viewing health systems as ‘complex adaptive systems’ [16]. Most commentators now call for contributions from disciplines including economics, management, anthropology, sociology and policy analysis [4]. The lack of a common understanding and set of guiding principles remains a challenge leading to warnings that health systems could become a meaningless “buzzword” [8].

Discussion

Public health teaching and health systems

A recent review of health sciences education confirms the paucity of insights on public health education. Frenk et al found that of 11,054 publications on the education of health professionals, 73% were about medical education and only 2% covered public health – much less health systems [17]. Evans asserts that “for an evidence-based discipline, it is surprising that there has been little research or reflection on [the role of schools of public health in tackling global public health challenges] within the public health literature” [18] and Sadana and colleagues confirm that “there is almost no evaluation of the degree to which education practices match real-world dimensions” [19].

National policy makers have a very high demand for health systems experts in financing, policy, and management [20]. Given the importance and complexity of
health systems, teaching about developing country health systems should be widely and rigorously conducted in global health and masters of public health (MPH) programs especially since these programs are often the pathway of training for health professionals moving into health leadership roles. But, as Frenk et al note, the education of health professionals “has not kept pace” with emerging challenges due to “outdated and static curricula” and is not preparing graduates for the broad, multi-context environment in the real world [17]. Capacity development in health systems has been neglected [21] leading to a shortage of people skilled in the area [22]. Most schools of public health adhere to traditional public health education approaches emphasising epidemiology, biostatistics, communicable diseases and health promotion [23]. Despite this, a MPH remains one of the most common qualifications of senior health managers.

At the same time, there has been a marked increase in global health teaching. The number of undergraduate, graduate and doctoral students enrolled in global health programs in the US doubled between 2006 and 2009 [24]. The North America-based Consortium of Universities for Global Health now has 53 members.

With this in mind, Frenk et al call for a redesign of professional health education with a focus on systems-based instruction [17]. From the literature, there is no clear consensus on the competencies needed for global health and for health systems specifically [21]. Merson interviewed policy makers in developing countries to identify the health system competencies in greatest need; these included resource allocation, analysing health systems policy issues, strategic planning, human resource management and conducting cost-effectiveness analyses [20]. More recently, the Association of Schools of Public Health in the US have started developing a set of competencies for global health which include comparative health systems analysis, economic analysis and context-specific policy making processes [25].

There have also been efforts to identify competencies for Australian health professionals working in global health [26]. This predated the current emphasis on systems, but nevertheless highlighted basic public health skills such as disease control and prevention alongside communication and cross-cultural skills, management and planning competencies. The ability to analyse or plan health systems did not receive deeper attention although the paper noted that the “increased emphasis on health sector reforms placed new demands” on public health practitioners. The authors argued that “a better understanding of health sectors” was needed, but little was done to address this gap [26].

**The Australian experience in teaching health systems**

A number of Australian public health programs have taken steps to address the shortfall in health systems teaching. We describe and analyse the Australian
experience of teaching about health systems focused on developing countries in a representative sample of prominent public health academic programs.

In 2009, the University of Sydney’s Masters of International Public Health (MIPH) program offered, for the first time, a course called “Health Systems in Developing Countries.” This course is structured around the WHO building blocks and endeavours to move beyond diagnoses of challenges to identify evidence-based solutions and to prepare students to analyse, evaluate and implement health system interventions. Students are asked to develop their own health systems research questions for a developing country context and to propose a methodology for answering that question. Guest lectures are provided by World Bank and AusAID representatives and by practitioners. About half of all students enrolled in the University’s Masters of International Public Health program opted to take the course as an elective, more than 60% of whom are from low and middle income countries. In addition, the University of Sydney offers a Masters of Health Policy that focuses on domestic health reform issues but includes international examples and a course on “Global Health Policy.” This program emphasises political science, policy processes and economic evaluation.

The University of Queensland (UQ) offers, through its School of Population Health, a postgraduate course on ‘Health Systems’ which is compulsory for all students studying for a Masters of Public Health. The content encompasses most aspects of health systems but does not have a global health focus. Lectures on health systems topics including financing and human resources, address issues that are directly relevant to less developed countries whereas other lectures focus on domestic challenges. The UQ MIPH, aimed directly at students interested in global health, does not have a specific course on health systems but the topic is touched on in several courses.

Beyond the School of Population Health, the UQ Faculty of Business, Economics and Law offers a Masters of Health Economics program with an option to specialise in ‘Health and Development’. While the program draws heavily on Population Health courses, it also includes courses on ‘Globalisation and Economic Development’ and ‘Health & Economic Development’. To the extent that such a course might be considered as relevant to health systems it raises questions about the natural academic ‘home’ for such teaching.

At Monash University, health systems are taught in a cross-cutting manner. MPH subjects integrate global health systems concepts appropriate to LMICs and relate these to the technical focus of the subject. The core global health subject, “Primary Health Care in Developing Countries”, is also offered to University of Melbourne students in collaboration with the Burnet Institute (which conducts much of Monash’s global health teaching). This subject acts as a primer on global health issues and incorporates health system frameworks, global health actors, health system
strengthening approaches, and health financing options. From 2011, the subject “Health Policy and Prevention in a Global World” includes global health system perspectives using frameworks promoted by the World Bank and Harvard University. All these subjects attract a sizable cohort of international students and are among the most popular course offerings.

The University of Melbourne’s masters level global health systems teaching is integrated within other global health subjects such as ‘Primary Health Care in Developing Countries’ and ‘Public Health Leadership Management’. Other health systems or policy electives are oriented to students studying the Australian health system and do not address global health systems specifically. The University’s Nossal Institute of Global Health is scheduled to introduce a new postgraduate subject in 2012 titled “Systems for Global Health” focusing on LMICs’ health and development context, health systems, health financing, use of financing to improve equity, and modes of influencing health policy.

The University of New South Wales School of Public Health and Community Medicine offers a Masters of Public Health, Masters of International Public Health and Masters of Health Management. Health systems are integrated within many of the course units but are brought to the fore, for example, in the course on International Health. This course integrates health systems thinking and approaches, and highlights not only the policy dimensions, but the importance of equitable, responsive and efficient health systems. The course explores the use of evidence and the sensitivity of context, and considers also the different interests which operate within health systems and service delivery environments. Short courses on human resources, health and social aspects of disasters, and on maternal, neonatal and child health also highlight systems issues.

Global practice in teaching health systems

The Australian experience is in keeping with international efforts to improve understanding and teaching of health systems. The London School of Hygiene and Tropical Medicine and Johns Hopkins Bloomberg School of Public Health each offer multiple courses in health systems focused on developing countries. The Harvard School of Public Health’s offerings focus on health sector reform and Columbia University’s Mailman School of Public Health recently added “Health and Health Systems in Low Income Countries” to their course offerings. Despite these examples, many public health programs do not have an explicit focus on global health systems.

A few schools of public health in middle-income countries have relatively substantial teaching on health systems. Programs in Brazil, Mexico, Bangladesh and South Africa in particular focus on health systems in their teaching programs. The Escola Nacional de Saúde Pública Sergio Arouca in Rio de Janeiro, Brazil for example, offer
courses in health systems topics addressing building blocks such as management, service delivery, health information, and policy. The BRAC University School of Public Health in Bangladesh includes health system management and health care financing as core courses. South African schools of public health have also shown leadership in health systems education. The University of Pretoria, for example, demonstrates the importance it places on health systems by its name: the School of Health Systems and Public Health. Many others highlight strong areas of engagement with systems such as the University of the Western Cape with its strong human resources in systems orientation, as well as the Universities of Cape Town and Witwatersrand emphases on equity, resource allocation, policy analysis and evidence-informed decision-making.

Lessons Learned

Numerous Australian Universities have updated their educational offerings to include health systems in LMIC and to better prepare their students for a global health career. These experiences highlight the challenges for programs interested in improving their health systems capacity development.

Whether health systems are better suited to be taught as a cross-cutting theme or as focused course(s) of its own, or both, is an important discussion point for educators. The cross-cutting approach might expose a wider range of students to health systems thinking while a specific course can provide additional depth and analytic tools. As the field of health systems matures, a corpus of frameworks and tools that cannot easily be taught in the limited time available to cross-cutting approaches is apparent. Indeed, it may well be that the use of such tools is better learned through workplace practice or other apprenticeship models, rather than in post-graduate educational programs.

The experience and skills needed to expertly teach health systems is another challenge for Australian Universities. Whereas capacity to teach other public health skills such as biostatistics and disease control currently exist in most public health schools, deep experience within developing country health systems is not as common. Given that the intense focus on health systems is relatively new, there is a limited cadre of experts in Australian educational institutions able to teach about health systems in developing countries. This highlights the likely value of interfacing with governments, civil society and international agencies, as this is where much of the experience resides.

Another dilemma is whether or not health systems in developing countries should be taught separately from domestic systems. While health systems frameworks endeavour to be universal, a number of the health systems bottlenecks and challenges in low and middle-income developing countries might be different from those of developed countries. Our review and experience shows that the conceptual
frameworks and terminologies used by prominent global actors to describe health systems in LMICs vary significantly from those used to describe Australia’s health system. Health system issues such as financing, health workforce, and the role of external actors are likely to be distinct between developing and developed countries even if some lessons have value for both settings [27]. This is especially obvious in countries where overseas development assistance is a prominent source of health funding, such as the small island states neighbouring Australia.

This paper has focused on teaching of health systems in MPH and similar programs within Schools of Public Health. Given the emphasis on policy, management, cost analysis, information technology, and workforce within health systems, it is important to note that non-health specific programs teaching business administration or public policy provide complementary skills that are important to global health delivery. Perhaps health systems are so complex and diverse that the topic cannot – and perhaps should not – be fully taught within MPH curricula. The need for insights from international relations, finance, public administration and complex reform suggests that health systems could be promoted as an area of study and that it is worth considering building health systems capacity coursework within masters of business administration programs or Schools of Government [28]. Certainly, as a start, schools of public health should draw on expertise located in a much wider array of disciplines.

Whether a successful leader in managing a health system requires a medical or MPH qualification at all remains a pertinent question.

Summary

Bennett and colleagues cite “an urgent need” to build the health policy and systems field [22]. The need to integrate teaching on health systems into training programs is clear, yet the evidence on how this is being done, or should be done, is scarce. Sharing of global experience on health systems teaching will strengthen the field, recognising the limitations of small programs and strengths of larger, more experienced programs. As “health systems” is entrenched in global health jargon, a risk remains that imprecise definition and a lack of consensus will constrain efforts to build the skills necessary to improve public health delivery [22].

Frenk et al called “on the most important constituencies to embrace the imperative for reform through dialogue, open exchange, discussion, and debate” [17]. The international public health community in Australia is responding to this call and cross-university dialogue to enhance health systems education is underway. Sharing and reflecting on Australian experience reveals a diversity of perspectives and lessons that deserve further documentation, analysis and evaluation, if teaching and understanding in this complex area is to be enhanced.

Competing Interests
There are no financial conflicts of interest. The authors have drawn upon examples from the institutions in which they are based and from courses which they teach.

Authors’ Contributions

JN and AM conceived of the paper and wrote the first draft. All authors provided input into content and edited the draft. All authors read and approved the final manuscript.

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