Developing core competencies for the public health workforce in Ethiopia: The way forward

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Abstract

Background: Preparing the public health workforce for the 21st century is a formidable task as public health professionals are expected to address the myriad of political and economic development challenges in the context of limited resources. In spite of achieving most MDGs, the Ethiopian 'health system' continues to face complex and daunting tasks.

Method: Available studies that outlined requirements for *competent,* motivated and empowered workforce in a rapidly evolving global order were reviewed and synthesized without following a formal review procedure.

Result: Although it is not easy, in view of available evidences, this synthesis provided the Way Forward to ascertain competencies of public workforce in Ethiopia. Specific details on adopting and sharing competencies; promoting the development of a philosophy and definition of public health; promoting the development of a public health workforce taxonomy; promoting research to inform the design and implementation of reforms; curriculum development; learning materials development; strengthening continuing professional development (CPD); monitoring and evaluation; and setting up a follow-up mechanism for the long-term were defined.

Conclusion: This synthesis has suggested clear guidance on how and who may have to track, adopt, share and updates public health core competencies in Ethiopia. [*Ethiop.J. Health Dev.* 2020;34(Special issue 1):25-33]

Introduction

We realize that preparing the public health workforce for the 21st century is a formidable task. Public health is eminently political (1,2). The 21st century is full of promises and challenges, and is immersed in transformative changes (3,4). Most nations are confronted with political and economic development challenges; even established world powers must transform or face decline (5). The technological revolution – with its myriad of innovations in information and communication technology (ICT), robotics, artificial intelligence, machine learning, and so on – also promises staggering opportunities but daunting challenges (6-9). There is a tremendous potential at this moment in history, when innovations in public health education can provide current and future leaders with the knowledge and tools needed to dramatically improve population health (10).

Public health professionals are expected to address the myriad of challenges of the 21st century – safeguarding the public health gains already achieved (3); the unfinished agenda of poverty reduction to which public health could contribute tremendously (11); climate change (12,14-16); and the growing burden of non-communicable diseases (NCDs) and the WHO vision to achieve a 25% reduction in premature deaths from NCDs by 2025 (17-19).

All of these challenges need to be addressed in the context of limited resources (20). Notwithstanding the challenges of healthcare resource allocation studies that fail to clearly convey the difference in nature between prevention and cure, only a small fraction of health budget is allocated to preventive services. Even though prevention (unlike curative care) avoids the intangible costs of experiencing ill health, can give rise to substantial externalities, with consequences for both efficiency and equity (e.g., herd immunity through vaccination), and is closely related to social justice (e.g., by adjusting the social determinants of health), only 5% of the health care budget in most countries is allocated to prevention activities, and may be the first to be cut in times of scarcity (24).

In spite of notable achievements in recent years, achieving most of the Millennium Development Goals (MGDs) for example, Ethiopia continues to face many challenges (16). To name just a few, it suffers from: a triple burden of diseases – infectious diseases, NCDs and injuries (21-23); problems in its health system structure and staffing patterns; the exclusion trend of sectors other than health by the sector-wide approach; problems associated with decentralization; increasing disparities/inequities in health care; problems of public-private-NGO partnerships; challenges of health care financing reform; problems in retaining human resources for health; difficulties in improving the quality of services and increasing their utilization; a weak health management information system (HMIS). All of these factors must be seen in the context of the 'constants' of the Ethiopian scene, such as political instability, poverty, drought and demographic pressure (16). Attempting to reshape the public health workforce under these conditions is a daunting task.

We engaged in this task on the premise of the Ethiopian saying '*yalewne yewerewere feri ayebalem*' (roughly translated: 'he who throws what is at hand cannot be considered a coward') and hope it will not be the parable of 'fools and angels'. Public health is a complex task (26); preparing the workforce is therefore an even more complex task (10,25), all the more so as the determinants (27,28) and the environment – demographic (29-31), rapid urbanization (32-35) (even though the majority of the population in Ethiopia will remain rural and difficult to reach), technology (6,10,36-38) – evolve rapidly (39).

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According to a recent review (40), in the recent Ethiopian context, an accelerated pace of increase in training institutions and enrollment has been accomplished at a high level of compromise in terms of quality and efficiency of training. It was done as 'a one size fits all' approach, to the detriment of quality inputs, leading to a reduced quality of education across the higher education system across the country. This reduction in the quality of education is even greater among the private, continuing and distance education programs, amounting to a waste of precious investment (40).

This has been clearly demonstrated for health care, where "Poor quality of health care [an important factor being poorly trained heath workforce] was a major driver of excess mortality across conditions, from cardiovascular disease and injuries to neonatal and communicable disorders" (41). As underscored by the current WHO Director, "Poor care not only jeopardises the health of individuals; it erodes trust and puts entire health systems and populations at risk" (42).

The challenge is the more apparent in public health, where the complex/multi-disciplinary tasks require evidence-based/informed (43), highly participatory and cost-effective multi-disciplinary mechanisms. Complexity does not imply that policy-makers should not make decisions. Uncertainty about the potential impacts of policy decisions does not mean that decisions and actions can or should not be taken. However, it does suggest the need for carefully planned, high-quality (44) monitoring and evaluation (M&E) when policies are implemented. As Frenk points out: "Both politically, in terms of being accountable to those who fund the system, and also ethically, in terms of making sure that you make the best use possible of available resources, evaluation is absolutely critical"(45). Of course, a high-quality public health workforce is essential for meeting this requirement.

In the last few years, there have been major initiatives to increase the public health workforce in Ethiopia, but an increase in health workers will not be sufficient unless "they possess the required *competency*, and are motivated and empowered to deliver quality care that is appropriate and acceptable to the sociocultural expectations of the population" (13, emphasis by the authors). Ensuring that the health workforce – all workers, and in particular physicians (5) – starts off with the requisite core competencies is essential to ensuring effective universal health coverage, as "Public health workers lacking adequate training can cause immense harm that will be measured in illness or death years later" (46,41,42).

We started off with the premise that "knowledge is always changing but the skills required to apply them are timeless – and essential" (47). We also recognize that "emerging economies [such as Ethiopia's] are undergoing an economic transition that will increase their health resource envelope, and a demographic transition that will see hundreds of millions of potential new entrants into the active workforce. Attaining the necessary quantity, quality and relevance of the health workforce will require that policy and funding decisions on both the education and health labour market are aligned with these evolving needs" (13). The public health workforce – practitioners, managers, leaders and educators – clearly plays a major role in these transformations. After all, "it has been well established that public health's science of prevention and its translation into policies and practice creates 60% to 70% of the health of a population" (10).

In evolving the core competencies and indicating the way forward, an attempt has been made to follow the four steps suggested by Chandler *et al.* (48): "(1) definition of scope, with reference to evaluation possibilities; (2) research to inform design, including evidence and theory reviews and empirical formative research; (3) intervention design, including consideration and selection of approaches and development of activities and materials; (4) refining and finalizing the intervention, incorporating piloting and pretesting." Even though it goes against the usual practice in Ethiopia, where wide scale implementations are, at best, based on expert opinion (49), piloting and pretesting should be emphasized, as pilots "aim to build learning and capacity to inform country-wide implementation" (50).

Thus, the scope of this 'way forward' is to indicate immediate and long-term interventions for implementation of the competencies. In the immediate future, the following will be executed: 1) adoption and sharing of the competencies; 2) promoting the development of a philosophy and definition of public health; 3) promoting the development of a taxonomy of public health workforce; 4) promoting research and improving the evidence base; 5) developing curricula and learning materials; 6) strengthening continuing professional development; and 7) monitoring and evaluation (M&E).

In the long term, a steering committee will be established that creates a system which has structure and well laid out functions.

1. The immediate future

Most activities during this period would be accomplished early on, but some activities – such as monitoring, evaluation and research – could go on until the next review of competencies, i.e., for about five years.

1.1. Adoption and sharing of the competencies

At this stage, the effort would be to answer the question: "How do the core public health competencies translate into effective professional output?"(46). This could include dissemination of the finalized version of the core competencies, including formal submission by the Ethiopian Public Health Association (EPHA) to the Federal Ministry of Health (FMoH), and formal forwarding by the FMoH to the Ministry of Science and Higher Education (MoSHE) and relevant others. Once formal adoption by the relevant authorities is obtained, the core competencies could be disseminated more broadly, by posting them on the EPHA and

FMoH websites, and publishing versions in one or more reputable journals.

1.2. Promoting the development of a philosophy and definition of public health

As indicated elsewhere (26), there is no philosophy or definition of public health adapted to the Ethiopian context. Even though the complexity of the tasks is well recognized, some effort should be made to ensure that major assumptions are clearly and explicitly stated. Some of the better-developed institutions could be prompted to start reflections on these issues, such as a joint study or reflection between public health and philosophy departments.

1.3. Promoting the development of a public health workforce taxonomy

As underscored in a different context, "Thoroughly characterizing and continuously monitoring the public health workforce is necessary for ensuring capacity to deliver public health services. A prerequisite for this is to develop a standardized methodology for classifying public health workers, permitting valid comparisons across agencies and over time, which does not exist for the public health workforce" (51). This is relevant in the rapidly evolving context of Ethiopia. The potential problems associated with taxonomy could be gleaned from a recent Ministry of Science and Technology publication (52). Issues in the 'Categorization of Public Health Professionals' in the publication include:

- Do biomedical equipment servicing management and health informatics belong to public health?
- What is the difference between general public health and public health? Health education versus public health education? Biostatistics versus health informatics? Epidemiology versus epidemiology and biostatistics? Reproductive health versus maternal and child health? Are they different categories of public health workers?
- Does health services management include emerging categories, such as hospital administration, health extension and health supply chain management (53)?

1.4. Promoting research to inform the design and implementation of reforms

All subsequent interventions, including curriculum development, should be as evidence-based as possible. Ethiopia has made explicit commitments to evidence-informed policy in health (54). We assume that all public health higher education institutions will develop improved capacity for applied public health research required to address contemporary public health problems (55). This will include capacity development in research (56) to address the complex multidisciplinary challenges of developing, implementing and evaluating public health practices, intervention programs, and policies. Effective public health systems require highly trained and competent professionals, a constantly updated knowledge base, and interventions adapted to contemporary challenges. Transdisciplinary (57) approaches, cross-sectoral partnerships (including between academia and public health), and a consideration of context and complexity are key to intervention design, implementation and evaluation (58-60).

All public health higher education institutions would be expected to develop a certain research capacity, in close collaboration with implementing public health departments for the benefit of both (61). Their research undertakings should be of a high standard – hopefully designing for tomorrow's technology, context-specific, and able to impact not only on the learning environment but also on their local and broader communities (62). The new training centers, in particular, will require major and innovative approaches, such as micro research (63), and establishing virtual organizations (64) to rapidly build the research capacities of their young staff. However, the variety and complexity of the public health task will require differentiation, which promotes institutional quality and system competitiveness, accountability, and sustainability (40), including developing research-intensive institutions (65) as hubs for quality-enhancing inputs for evidence-based policy and planning, interventions, management and leadership – a highly needed but relatively neglected competency in the 21st century context (66,67). Some sort of guiding framework could be prepared indicating which universities will focus on which areas and disciplines.

1.5. Curriculum development

Knowledge of the determinants of health and of the impact of sectors other than health is increasing and requires a broader range of information input from areas such as economics, law, human rights and ethics (4,38). Present-day public health students are bound to be leaders in a rapidly evolving public health environment and need an education that prepares them to understand and address the impact of actions in other sectors (such as education, economics, agriculture, environment) and the interrelatedness of global and local systems that drive health inequities (10,26). As indicated by WHO (3), given the increasingly fluid borders between health, biomedical, pharmaceutical, nutrition and agricultural research, the issues and partners public health professionals deal with could change significantly.

A key issue in the curriculum re-design is the need to focus on practical training in the public health system (field work, placement in public health departments etc.), and engaging public health practitioners in teaching. An enabler to this model is a partnership between schools of public health and local public health departments. Curriculum re-design/development should be context-specific and, whatever guiding framework is prepared, should avoid being prescriptive (68). It should promote science-based, problem-based, competency-based and system-based public health education (69).

Higher education institutions will also be at various stages of curriculum development, with some probably recently completed and others at an advanced stage. Curriculum development and revision for health

professions is centrally coordinated by the FMoH in collaboration with MoSHE. This has been done for medicine (undergraduate and residency training), midwifery, anesthesia, and nurse specialists, in the past few years. Thus, what could be proposed is a flexible guideline, which could include: 1) suggesting a design framework for the preparation of curricula (67,70,71); 2) preparing model curricula by selected institutions for Master of Public Health (MPH), Doctor of Public Health (DrPH), Master of Science in Public Health (MSPH), and PhD in public health degrees, as well as selected bachelor programs (73,74); 3) imparting rigorous scientific knowledge, but also teaching students to think like scientists, as one cannot teach for the future using the tools of the past (47); 4) designing ways for highly participatory review and approval of curriculum frameworks; and 5) piloting curricula in selected institutions, and monitoring and evaluating outcomes for scaling-up.

1.6. Learning materials development

The new curricula should be supported by appropriate learning materials adapted to the ever-evolving knowledge economy (75,76). While all learning institutions should be expected to develop their own context-specific learning materials, it might be worth considering the preparation of a textbook of public health for Ethiopia, in line with experiences elsewhere, such as *The New Public Health*, *Public Health and Preventive Medicine, Oxford Textbook of Public Health,Public Health in the Arab World*, *Short Textbook of Public Health Medicine for the Tropics* or review and update previous landmark compilations such as *Epidemiology and Ecology of Health and Disease in Ethiopia* (2006). These should include write-ups of local case studies, examples and program experiences that would help learners to deepen their understanding of local public health challenges.

1.7. Strengthening continuing professional development (CPD)

The Ethiopian education system has major problems in relation to quality and efficiency (40). It also faces great pressures to increase numbers to meet the requirements of universal health coverage and the anticipated deficits in human resources for health (89). The preparation and implementation of competency-based curricula and learning materials will require major efforts in the pre-service and in-service training of the workforce at various levels. The FMoH has developed guidelines and directives for CPD, and the EPHA and schools of public health are expected to play a critical role in the accreditation and provision of CPD for public health professionals. Mechanisms should be developed to assess current potentials and future development of all relevant institutions (universities, professional associations, etc.) and educational platforms such as mediums, digital and blended education. Hence, we learn better on how to institutionalize and make CPD cost-effective.

1.8. Monitoring and evaluation

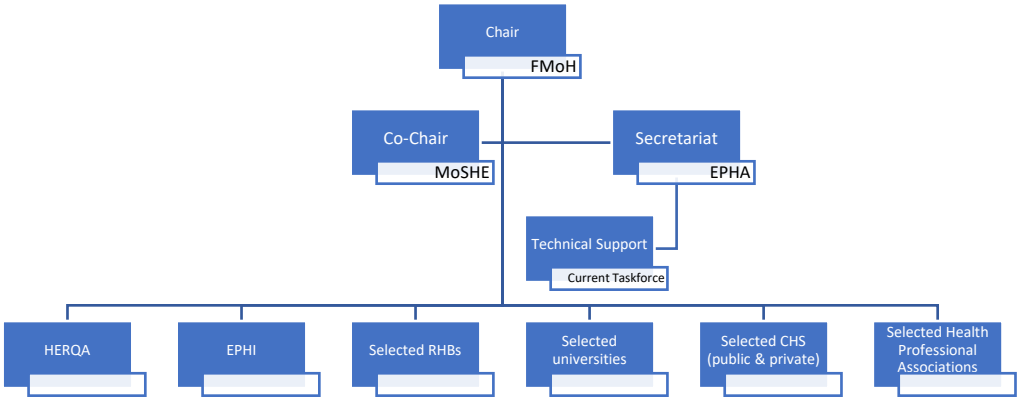
The complexity of the task and the urgency of the situation mean that policy decisions will have to be made before all policy issues are adequately clarified. Therefore, M&E that is as close and rigorous as possible should be attempted to facilitate adaptive and collaborative learning, including the development (and circulation) of an M&E format and guideline/manual (77). This might include clear guidelines on frequent and transparent institutional multi-disciplinary/multi-departmental supportive supervision/monitoring, rapid mid-term review and final, external/multi-institutional evaluation.

1.9. Setting up a follow-up mechanism

All the above steps will require a flexible follow-up and support mechanism. In the interim, the current taskforce could continue as a catalyzer, calling on diverse institutions and groups for support, as appropriate, through the auspices of FMoH and EPHA. Once the core competencies have been circulated, it might be useful to establish a steering committee to oversee the tasks enumerated above, in addition to developing the format for long-term development.

The steering committee should be as multi-sectoral and participatory as possible, with FMoH as Chair, EPHA as Secretariat, and technical support from the current taskforce. It can be organized as follows (Figure 1).

Figure 1: Organization of Steering Committee



2. The long-term future

As predicted by WHO (3), the 21st century holds a lot of opportunities and challenges for public health. Whatever their limitations, the MDGs have galvanized global attention and achieved considerable gains (78,79). The SDGs promise even better gains (3). Public health evolves in a very dynamic and challenging environment – demographic and epidemiologic transitions, climate change, globalization (80), the technological revolution (6,8), economic crises (6,81), and epidemic crises (82). Primary health care coupled with universal health coverage promise a lot, but also face several challenges (83). In other words: "The changing world is experiencing changing patterns of health. Influences include: rapid modernization; an everyday life dependent on technological advances; changing behavior – sedentary living, excessive or ill-balanced diets and smoking; and a deteriorating environment – air pollution, exposure to chemicals, contamination of soil and water, and hazards to food safety" (3). Thus, improving the health of the people requires addressing factors outside of health care and the social determinants of health (85,86).

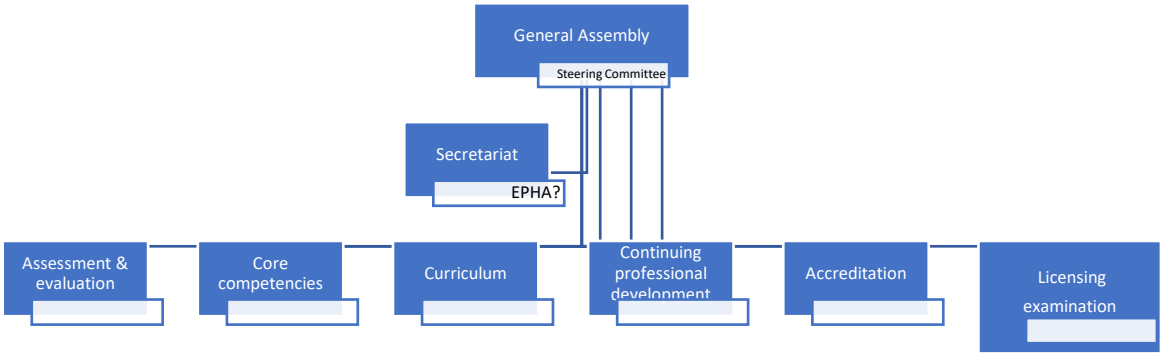
Public health is highly dynamic and, as seen from experiences elsewhere (73,84,87), there will be a need to review and update the domains and competencies in about five years, as "the average shelf-life of a health fact is currently five years" (3). The mechanism for this should be as inclusive as possible, and one of the major tasks of the steering committee will be to establish such a mechanism. The mechanism/forum could have the following broad objectives:

- Assessment and evaluation of the public health workforce situation, including activities related to implementing the core competencies, as the large number of institutions are bound to face several challenges and evolve rapidly.
- Review of competencies.
- Support the development of appropriate curricula and learning materials.

The mechanism/forum could be organized as follows (see Figure 2):

- A General Assembly – as inclusive as possible of all relevant stakeholders.
- A steering committee – appropriately modified based on lessons from the transition period (see 2.7).
- Various technical working groups.
- Secretariat (possibly EPHA).

Figure 2: Forum for Public Health Workforce



3. Conclusions and recommendations

Preparing the public health workforce for the rapidly evolving 21st century will require a highly participatory and sustained multi-sectoral and trans-disciplinary effort. In view of the rapid growth in the number of training and service institutions, the challenges to ensure the competence of the public health workforce should not be underestimated. The process to date, with the close collaboration of FMoH and EPHA, could be considered exemplary. Establishing an effective capacity- and confidence-building transition process in the next five years is crucial. To this end, it is recommended to establish a steering committee to oversee the implementation of immediate tasks and prepare the ground for the establishment of a forum/mechanism for long-term developments.

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