

Education for the Public Health Profession: A New Look at the Roemer Proposal

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SYNOPSIS

Demands for a high level of professionalism in public health practice, and concomitant strengthening of public health education to match 21st-century community challenges provide an opportunity to reconsider the current paradigm for professional degrees in public health. In this article, we consider whether the currently typical public health education meets the requirements of a professional education, examine the current state of public health education, and provide a rationale for renewed emphasis on the doctor of public health (DrPH) degree. We also present one potential three-year DrPH curriculum to stimulate further discussion, while acknowledging the multiple challenges that face any school of public health moving to implement such an education.

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Multiple high-profile reports dating back to the early 20th century (detailed by Fineberg et al.)¹ have advocated for public health education that emphasizes field-based knowledge and a practical orientation. These reports include recommendations to focus on the education of future public health officials,² to provide for regional centers to focus on training field professionals instead of researchers,³ to focus on the education of executives, planners, and policy makers rather than field staff,⁴ and to train health professionals in community-based settings and interdisciplinary teams.⁵

There is little or no systematically acquired and reported information about where graduates of schools of public health (SPHs) accept employment, but state and local health departments (employing at least two-thirds of all governmental public health workers)⁶ are described as having staff educated at the baccalaureate level or below.⁷ For the professional positions that constitute the highest proportions of public health workers (nurses, environmental health specialists, and scientists),⁸ master of public health (MPH) graduates are typically underprepared to be sanitarians (who need engineering backgrounds) or overprepared for the usual jobs of public health nurses.

Some public health practitioners argue that even the highest-quality MPH education is too brief to provide sufficient knowledge and insight into highly complex public health problems.¹ The needed depth and breadth of comprehensive public health education has grown to include at least eight additional interdisciplinary areas: informatics, genomics, communications, cultural competence, community-based participatory research, global health, law and policy, and public health ethics.⁹

Though not all knowledgeable educators have agreed that public health is a distinct profession,² mounting evidence supports that premise. Public health practice has acquired a widely quoted official definition and vision statement,¹⁰ a set of essential services to define professional practice,¹⁰ at least three iterations of professional competency sets,¹¹⁻¹³ a code of ethics,¹⁴ and a credentialing examination.¹⁵ A new generation of practitioner-scholars has produced textbooks for generalist education.¹⁶⁻¹⁸

In this article, we consider whether the currently typical public health education offered by an SPH meets the requirements of a professional education, what the current state of public health education is, a rationale for renewed emphasis on the doctor of public health (DrPH) degree, and specific recommendations for a three-year DrPH curriculum in SPHs. We acknowledge that the MPH degree is offered by programs of public health as well as schools, but these programs

face different challenges and are not the focus of this discussion.

BACKGROUND

In the mid-1980s, Milton Roemer, a professor of public health at the University of California, Los Angeles (UCLA), proposed the establishment of the DrPH as the basic professional degree, equivalent to the doctor of medicine (MD), but for individuals interested in protecting and promoting the health of communities, rather than the diagnosis and treatment of individual patients.¹⁹

His suggestion was that the public health system of the day required professionals broadly prepared in content that included tools of social analysis, health, and disease in populations, protection of health and prevention of disease, and health-care systems and management. The program of study would be five years post-baccalaureate and include supervised practice experience as the fifth year. His description appears to be, in part, presented as an argument with those who believed that the MD was both sufficient and appropriate as preparation for leadership in public health. While some state public health laws had been changed by that time to eliminate the requirement that the state's lead public health official be a physician, that paradigm remained the norm and continues to be the expectation for many state and local public health agencies. As evidenced by subsequent comments in response to letters,²⁰ Roemer had some difficulty clarifying for readers his perspective, differentiating public health from medicine and separating public health leadership from management or administration.

In a reconsideration of the Roemer proposal, we have blended our combined 100-plus years of public health practice and current close association with public health workforce development activities with the deliberations of the Institute of Medicine (IOM) committee on public health education.⁹ We have updated the Roemer proposal and presented it as one way in which the field of public health could reorganize itself to ensure competent leadership, and an SPH could restructure to fully prepare public health professionals for the 21st century. In short, our thesis is as follows: Public health is a vital and vibrant evidence-based profession, the impact of which influences life and death matters for millions of people every day. As such, the leadership of the profession should require of itself no less scholarly credentials than the leadership of other major healing professions, and should require specialty training specific to the field of public health at the doctoral level.

HISTORY AND CURRENT STATE OF PUBLIC HEALTH EDUCATION

For most professions, an educational credential is the prerequisite qualification to practice, but not so for public health. From some perspectives, the label “public health” is more a descriptor of a place of practice than the name of a profession, analogous to the use of the label “hospital” to describe the place in which physicians, nurses, and myriad other professionals and technicians practice. However, many people practicing public health identify themselves as public health professionals, whether they also have preparation in another field such as medicine, dentistry, or pharmacy. Many people practicing public health may have earned a public health degree after a general baccalaureate education. The majority of professionals working in public health have learned public health through a combination of on-the-job experiences and short courses that did not lead to any additional degree.⁹

The lack of a distinctive and inclusive educational credential for all practitioners sets public health apart from most of the career paths described as professions, and sets the SPH or the graduate program in public health in another professional school apart from other professional programs in the modern university. As examples of this difference, the authors of this article represent the many paths to public health practice and public health careers: our earned degrees include two in nursing; one each in medicine and law; one at the master of science level; and public health professional degrees at the master level (one) and doctoral level (two). Further, the context, content, extent, and timing of our collective post-baccalaureate education and training in public health reflect the typical diversity of preparation for a public health leadership role.

When SPHs began in the United States in the early 20th century, they were founded with formal commitment to professional education. The first such school, Johns Hopkins School of Hygiene and Public Health in Baltimore, Maryland, took its dual label in 1916 specifically to emphasize that it would serve both research excellence and practical public health training.¹ When a Rockefeller Foundation study in 1938 found that the 10 then-existing SPHs were favoring biomedical research and the education of scientists and teachers, it recommended the formation of new schools with a stronger focus on practical training.¹ By the late 1930s, federal programs were paying through the states to educate thousands of physicians and other professionals in public health practice.¹

Early schools had departments of public health practice in addition to departments of core disciplines such as epidemiology, biostatistics, health administration,

and environmental health. The Johns Hopkins school, despite its founder’s emphasis on research, nevertheless offered short training courses for health officers as well as curriculum time for public health administration and population-focused health education; subsequent schools and programs followed this pattern.¹ The University of Pittsburgh’s Graduate School of Public Health, founded in 1948 in Pittsburgh, Pennsylvania, had Public Health Practice as its largest department; the name was changed to Health Services Administration in 1967 to reflect a broadened focus that included community-based health programs.⁴ According to a survey of all accredited SPHs in 1950, the largest number of graduate-credit hours of instruction was given to public health administration or practice, followed by biostatistics, environmental sanitation, microbiology, and hospital administration.²¹

CRITIQUE OF THE EARLY MPH CURRICULUM

Drawing from the literature of the sociology of professionalism, it is well established that professional education must include at least three elements: a theoretical foundation, an enculturation to the field and its values, and a closely mentored but increasingly independent, reflective practice experience. Specializations, if any, are acknowledged by brief exposure through elective courses, seminars, and field rotations, but specialization (such as the medical field’s residency training) typically follows after generalist experience and initial credentialing.

The current curricula for most MPH degrees fulfill these requirements, but in less-than-optimal depth and rigor. First, although SPHs must provide a theoretical foundation through courses in the five core disciplines, study time for these subjects is limited. These schools require all MPH students to take introductory survey courses, typically one each in behavioral science, biostatistics, epidemiology, environmental health, and health service administration. But MPH programs are much more focused on educating specialists in such fields as maternal-child and adolescent health, health education, gerontology, evaluation research, and international health, as seen in the numerous areas of concentration listed on schools’ and programs’ websites and in recruiting brochures.

The tension experienced within schools’ curriculum committees about general and specialized courses suggests that an optimal balance among core, specialized, and practical courses continues to elude the current two-year MPH program model. The Council on Education for Public Health (CEPH), which accredits MPH programs, has recently reasserted its emphasis on the

five core courses. Under the 2005 accreditation criteria, all CEPH-accredited MPH programs must offer at least the equivalent of 42 credit hours.²² But with a typical two-year master's program having a required 15 to 20 credit hours in core and integrative courses, roughly half of the total degree credits remain available for specialized courses plus field experience.

Second, current MPH curricula emphasize research-derived knowledge at the expense of insight derived from mentored professional experience. The time allotted for field experience is brief in relation to coursework. Because such experience is often available only at the very end of the degree program, opportunities for reflection on practice—the *sine qua non* for professional development²³—are limited. Emphasizing research credentials, few schools have previously sought faculty members with expertise derived from senior-level professional experience, although CEPH is newly requiring documentation of faculty members' practice experience.²²

Third, public health's professional values have had more assumed about them than comprehensively described. Several themes recur in numerous contexts. One is that public health practice should be informed by transdisciplinary knowledge.^{9,22,24,25} Another is that it should be motivated by concerns for distributional equity and social justice.^{26,27} Still others believe public health practice should be adapted to political, economic, and cultural circumstances, and oriented to practical outcomes.^{1,2,9,21} The present MPH curricula address these areas as embedded in substantive coursework, but thorough professional enculturation might require more time in both dedicated courses and reflection on professional experience.

The classic framework for professional education can be seen in education for medicine, dentistry, and nursing, the largest of the health professions. All three originated in apprenticeship education, with subsequent moves to more academic models. Perhaps the best-known of these shifts is that which occurred in North American medicine, stimulated by the Carnegie Foundation and the significant 1910 report of Abraham Flexner.²⁸ His detailed critique of each medical school then operating in the United States and Canada led to the closure of many and significant improvements in the remainder. While nursing has never achieved the same level of post-baccalaureate entry to professional practice, it has effectively separated education from service, ended the apprenticeship model, required significant basic science to undergird clinical practice, and developed a substantial cadre of doctoral-level trained nurse leaders. Paradoxically, however, those trained

to the doctorate in nursing tend to be prepared for a research career, not executive practice.

Whether the professional degree granted is the MD, doctor of dental surgery (DDS), or bachelor of science in nursing (BSN), the professional nature of the education is clear: these are not graduate research degrees, preparing people for the academic life. Rather, they are preparation for work in an advanced, highly technical field of professional practice. Other health professions (e.g., pharmacy, physical therapy, and occupational therapy) have recently made a professional doctorate the expected standard for the beginning practitioner. While nursing has continued the confusion of multiple degrees as the prerequisite for a professional license to practice, the professional doctorate has recently been defined as the new standard for all advanced-practice nursing. Similar professional degrees are the standard for law and the clergy, with schools offering a different degree at the graduate level for the academically inclined. Academic health science centers include a great deal of research and research training, but the student intending a research career generally studies toward the classic research doctorate, the doctor of philosophy (PhD). Many medical schools offer integrated programs that can lead to both the PhD and MD.

The evolution of educational priorities is less clear for public health. Public health as a distinct career path is much newer than the other health professions, and SPHs are generally much newer than the other schools of health professions. Further, the student body is much more diverse, with a limited number of students entering directly from undergraduate studies, and many coming at mid-career already trained in medicine, nursing, engineering, or the social sciences. In her paper commissioned for the IOM report, Elizabeth Fee documents an early proposal that there be a limited number of research SPHs, supporting a network of practice-oriented schools similar to the agricultural extension programs, training for and supporting public health practice at the local level.²⁹ Such a clear allocation of mission among existing SPHs has never evolved.

Health science centers are often located at the fringe of the university campus or another location altogether. When issues of curriculum or faculty appointment and tenure come before the broader university community, the standards of scholarship as measured in publications and research funds appear to have much greater weight than the practice and service activities of the health professions (or other professional schools). The recruitment and support of scholars in an SPH tend to favor those with research expertise in

the profession's associated sciences over those whose expertise comes from advanced practice experience. This tendency probably is amplified by the fact that, unlike the medical faculty in hospitals and clinics, public health faculty engaged in practice are not in the position of generating income for the day-to-day practice where teaching occurs.

IS THE SPH A PROFESSIONAL SCHOOL?

An outside observer might well raise this question, as a very high proportion of faculty teaching in SPHs has followed a classic academic career, earning a research doctorate and then joining a faculty to continue research while teaching the next generation of students. Nearly 90% of professional degrees granted are at the MPH level,³⁰ which has been seen as the entry-to-practice degree in public health. The majority of doctorates granted are PhDs, the classic academic degree, with only 2% of degrees granted being the DrPH. In at least some universities, the PhD is granted by a university-wide graduate school (e.g., Columbia University's Graduate School of Arts and Sciences in New York City, and the Graduate Faculty of the University of Pittsburgh)—not by the school of public health. While the DrPH degree is offered in one or more departments of SPHs, the degree requirements may look remarkably like those of the PhD.

Schools of most health professions complement classroom work with many hours of clinical experience, during which students learn how to apply science and theory in the face of real-world challenges. For clinical professions such as medicine, dentistry, and nursing, the clinical sequence is carefully staged to begin with practice of basic physical examination and communication and move to experiential rotations through major practice settings or population groups. This is in marked contrast to many MPH programs in which the student's required field experience stands apart from classroom work, and may well come as a single, brief experience at the completion of all other coursework. Developing maturity in a field of practice involves mastering individual skills, gaining confidence in the application of those skills under various circumstances, and then assuming ever-greater independence in making judgments about when and how to intervene and to assess the impact of actions taken. Some MPH programs are a single academic year in length, further curtailing the opportunity for practice experience. The IOM report highlighted the challenges in this model, which also include the concern that in some schools, the faculty coordinating the field experiences themselves have no public health practice experience.⁹

SPHs differ from the other health science schools in another way. In most programs, specialization begins at admission or shortly thereafter. Even when the professional degree has been identified clearly as preparation for practice rather than the scholarly life, students are pointed toward individual departments, as illustrated by the UCLA School of Public Health website, which describes its MPH and DrPH degrees as being "administered on a school-wide basis with specialization in a particular department."³¹ Some elective experiences that move toward an eventual practice specialty may be available toward the end of the educational experience in other health profession schools. However, true specialization is possible only after the first generalist professional degree has been earned, as in the extensive program of postgraduate residencies in medicine or advanced practice specialties in nursing. In another example, public health itself could be seen as a specialty available to those who already have other degrees or experiences. The University of North Carolina at Chapel Hill School of Public Health has indicated that the MPH is a professional degree "intended for those students who hold a doctoral-level professional degree (JD [juris doctor], MD, DDS, etc.) or a PhD."³²

In fields other than public health, educators guard their curricula against erosion or dilution by discouraging course substitution or waiver. For students who wish to combine professions or change from one profession to another (adding law to nursing, or moving from medicine to theology or from law to dentistry), most educational programs give little or no credit for the first professional degree. Some exposures to core science requirements acquired in the related prior education might be acknowledged and further training waived, assuming this information is relatively recent, but the "second profession" student is expected to complete the full program of education and socialization required of the typical student. In contrast, many SPHs offer abbreviated MPH programs for students with previous clinical doctorates such as an MD, DDS, or doctor of pharmacy on the apparent theory that clinical training or experiences constitute a fair approximation of public health training. The challenge, if public health is indeed a profession as well as a place of practice, is whether such allowances leave the student grounded in the science base particular to public health and able to function as a generalist in the public health practice setting.

Fundamental to any considerations of this sort is an understanding of the delivery system into which such trained executive leaders would be entering or eventually placed. The IOM 2002 report³³ observed, much as

its predecessor report of 1988,²¹ that the public health system is in disarray, and there is no standard agreed approach to its infrastructure, much less the proper staffing of that infrastructure with qualified, competent leaders. The report called for a reform of this system, in many ways now underway. Powering that reform is a recognition of the realities of mass destruction in the face of devastating natural disasters, the cruel truths of possible population-level bioterror attacks, and the realization that we are an obese nation in urgent need of population-based interventions. The recent progress toward funding and standards-setting has included movement toward agency accreditation led by the Association of State and Territorial Health Officials and the National Association of County and City Health Officials.³⁴ Civil-service requirement reform will be a necessary component of such a move toward a more rigorous competency-based leadership staffing required by such accredited agencies.

RECONSIDERING ROEMER

As mentioned previously, Roemer suggested that doctoral preparation for public health leadership practice should be focused on four areas of knowledge: basic tools of social analysis, health and disease in population, protection of health and prevention of disease, and health-care systems and their management.¹⁹ He further identified a number of courses in each of these areas, and suggested a four- or five-year curriculum that mixed practice with required and elective coursework.

The content areas that have been required for an SPH to achieve academic accreditation have been biostatistics, epidemiology, environmental health, management and policy, and social/behavioral sciences. Some MPH programs have an array of five introductory courses, one for each area. Others allow students some choice as long as there is at least one course in each of the five areas. Still others aim to incorporate relevant content from these five areas into a more comprehensive overview course or program. When there is no required sequence, a student who is focused on epidemiology may not take the required introductory course in environmental health until the final semester of study.

Many of the present DrPH degree programs follow the five-year model of study proposed in the 1980s by Roemer. Since historically a fairly high percentage of public health school students possess a doctoral degree (typically the MD),¹ they might perceive that a DrPH is an unnecessary investment of time and expense. Furthermore, the typical DrPH model tends

to deemphasize the intensive practical experience that would set it apart from other clinical and scientific doctoral degrees. Roemer called for field placement (along with essay writing, review, and final examinations) only in year five of the curriculum. The three-year curriculum at the University of Kentucky's College of Public Health in Lexington, Kentucky, includes a two-credit practicum in year two and a four-credit practicum in year three.³⁵

It is not reasonable to think of each of the eight newly identified content areas as an individual required course, as is often the case for the currently recognized five core areas. One reason is the magnitude of credit hours involved. The other and more critical objection is that these topics do not stand alone, either from each other or from the five basic areas already included in curricula. Rather, the need to address these cross-cutting subjects calls for new, creative options for course design and learning experiences.

DISCUSSION

The authors invite schools to consider the possibility of asserting that the DrPH should be the entry-level professional practice degree, with a curriculum to match. For a student entering with at least a bachelor of arts or bachelor of science degree with basic sciences (social and physical) and numeracy skills, the curriculum might look something like the sequence of courses and experience outlined in the Figure.

The sequence begins with a semester of primarily classroom education designed to ground the individual in the conceptual models essential to modern public health practice: an ecologic model of health and basic human biology, including genomics. The three subsequent semesters match each classroom experience with practice relevant to what is being learned, such as a series of environmental health program experiences matched to coursework on interpretation of environmental laboratory data, risk assessment and management, communication, regulation, and emergency response. The student would be expected to be actively engaged in practice and to move to more responsible levels of work. For the course(s) on policy, law, and management, the field assignment(s) would be as a junior manager under the guidance of an assigned mentor. The final year of practice could be in one of the specialized areas of public health, though that would not be necessary. The demonstration of readiness to be granted the DrPH would be documentation of a project or series of projects that demonstrate competency in all core public health professional domains.

Figure. Proposed doctor of public health curriculum

<i>Year/semester</i>	<i>Courses</i>	<i>Fieldwork</i>
First semester	<ul style="list-style-type: none"> • Introduction to the history and practice of public health • Introduction to the ecologic model of population health • Basic human biology/biochemistry/physiology/psychology relevant to public health, including genomics 	None or occasional observational visits
Semesters two through four	Epidemiology and biostatistics (including integration of laboratory data)	1–2 days per week in an epidemiology or health statistics office
	Social/behavioral sciences (including cultural competency, community-based participatory research, and communication)	1–2 days per week in a rotating variety of health programs in public health and community settings
	Environmental health (including interpretation of laboratory data, communication, risk assessment, risk management, regulation, and emergency response)	1–2 days per week rotating in environmental health programs
	Policy/law/management (including emergency management, public health law, organizational development, and leadership)	1–2 days per week in an agency/organization at a junior manager level with a mentor
Final year	Specialization or advanced practice development with a capstone project or a portfolio documenting competency in all essential public health competencies	

CHALLENGES

Moving from the current approaches to public health education to a curriculum such as the one detailed in the Figure would require extensive work on the part of any SPH. Among issues to be considered, apart from the curriculum committee challenge of developing and approving course objectives and syllabi for all of these new courses, are faculty qualification and the availability of practice sites. Current faculty might even need counseling programs to support them through a redevelopment in which they would be encouraged to become practitioners of public health as well as researchers and scholars. At the same time, expert practitioners from the community could be developed as faculty, preceptors, mentors, or tutors.

The development of practice sites is at least as challenging as the faculty issue. New information suggests that the median size of a local public health agency is a staff of 19 and that unless the agency is serving a population larger than 100,000, there may be no full-time staff other than nurses, sanitarians, and office staff.⁸ For SPHs not adjacent to large communities, finding public health agencies able to absorb students for the needed practice time could be an obstacle. Further, health departments are not used to classes of students coming together to practice a single competency area for a limited time before moving on.

Based upon the authors' experience with and observation of nursing education in which this practice is the norm, public health placements for groups of begin-

ning nursing students are among the most difficult to negotiate. The concentration of patients in hospitals seems to lend itself to student experiences for medical students; dental students are given much experience in teaching clinics serving patients at reduced cost. The more diffuse relationship of fewer public health workers to larger groups of individuals at the community level has different challenges, but ones that can be overcome. Perhaps the experience of the academic health department program funded by the Centers for Disease Control and Prevention through the Association of Schools of Public Health can inform the process of building the needed practice relationships and sites. For example, even early in their master's-level public health education, students have qualifications that match those of the typical entry-level field staff in a public health agency. DrPH students could supplement the eroding number of public health workers in the programs where they do internships.

The authors recognize that any school deciding to pursue the concepts described in this article would have several challenges, including what to do with the existing MPH, which might be phased out (as other health professions have done) or continued as a specialized short alternative for some students, such as those with an existing degree in a related profession that includes some public health education. Parenthetically, that raises the parallel question: could we conceive of a doctorally prepared nurse receiving certification to practice dentistry through a master's degree from a school of dentistry, which would be the educational equivalent?

CONCLUSION

Many readers may conclude that from a practical standpoint, intensive professional preparation at the doctoral level may be beyond the resources of most SPHs. Unless and until their faculties include significant numbers of senior practitioners and applied researchers with practical knowledge, it is difficult to see how they could teach and mentor doctoral-level professionals. This characteristic of present public health faculties distinguishes them quite sharply from their counterparts in medicine, nursing, law, dentistry, and other fields. We believe, however, that the approach suggested in this article is achievable if undertaken systematically and in thoughtful partnership with the practice community.

This approach also opens the door for several other challenges and considerations. One is the question of the program of public health outside of an SPH. If the DrPH became the standard for professional education, the MPH programs could be seen as feeder schools, but alternately could define their mission quite differently. There is also the question of a complete career ladder in public health that could begin with community college preparation for frontline workers or “healthers,” a new answer to the community health worker, extensively and effectively used in many other countries. To this preparation, the individual could add courses leading to the baccalaureate degree in public health, as now offered by a number of schools and programs in public health to prepare entry-level program staff. This ladder of education could then proceed to the master and doctoral level, with those individuals having extensive experience or education in health fields being able to enter at different points or challenge some courses. Added to this is the question of how to give appropriate recognition for the many currently available certificate programs that add program- or area-specific skills, including the issues of what level of specialization should be incorporated, and whether certificate training accrues toward higher degrees.

If programs leading to a fully formed professional DrPH were instituted, where would we be in 10 years? Making the decision to pursue a professional education in public health would not be something easily added to another professional education, as in some current MD/MPH or JD/MPH programs. Medical schools now following the IOM report recommendations and encouraging the MPH as a degree to be earned concurrently or during elective periods during medical studies would encounter serious challenges. The expansion of undergraduate programs might prepare more individuals to seek a DrPH as a primary professional education. In addition, some campuses might,

however, develop the MD/DrPH curriculum with the same level of rigor now used for MD/PhD work. The cost of a public health education would increase, making a shift such as this difficult if not impossible with the current nonexistent level of federal support. But if the support of the public’s health is at least as important as the response to illness once it occurs, to which we give much lip service, then an experiment such as this updated version of Milton Roemer’s brainchild may have a role to play.

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