

Planning Professional Education at Schools of Public Health

ABSTRACT

Objectives. Professional education in public health should equip graduates with adequate knowledge and skills to manage diverse and complex problems. How best to address this challenge is widely debated. We describe the Harvard School of Public Health's self-evaluation and development of a practice-oriented program.

Methods. As part of Harvard's schoolwide review of the master of public health (MPH), self-administered questionnaires were distributed to all MPH students, 1987 to 1989, and international and US alumni, 1979 to 1986. Extensive discussions were conducted with relevant student and faculty groups.

Results. Survey results provided a basis for educational policy and curricular changes that culminated in a revised MPH that targets key areas of public health practice. Examples from the Harvard experience are provided.

Conclusions. Information derived from student and alumni surveys can be highly effective in the process of guiding curricular change at schools of public health. This should be coupled with a strategic approach to gain faculty support for proposed innovations. Ongoing monitoring and modification of the new curriculum is essential. (*Am J Public Health*. 1992;82:1653-1657)

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Introduction

Schools of public health have to adapt to the "continuing evolution of public health"¹ and contribute to a radical reduction in international dissatisfaction with current public health policy, practice, and programs.¹⁻³ This paper presents an approach to developing programs to meet some of these demands through small-scale, low-cost, institutionalized educational research and evaluation, leading to improved professional education in schools of public health.

Public Health Education: The Controversy

There are those who believe that the discipline of public health should be taught in the medical school and other university departments.^{4,5} The Milbank Commission for the Study of Higher Education for Public Health would confine a school of public health to specialists, such as epidemiologists, biostatisticians, and research scientists.⁶ Proponents of independent, all-embracing schools of public health base their beliefs on the need to promote public health as a multidisciplinary professional calling.⁷ It should not be demeaned or confined by the patient-centered clinical orientation of medical schools, with their customary restriction of postgraduate students to physicians.⁸

Dual Roles of Schools of Public Health

From its inception in 1913, the Harvard School of Public Health regarded its mission as twofold: to train, first, public health practitioners and, second, academics, educators, and researchers.⁹ A school

fulfilling both roles can facilitate "the movement of new knowledge into the field of practice, [while] sensitivity to the needs of practice can contribute to the relevance of research."¹⁰ This dual role, however, while it produces valuable interrelationships of scholarship and practice, can be difficult to balance. This, then, is the challenge: to simultaneously develop knowledge and produce well-trained professional practitioners.¹

Educational Research: A Strategy for Curriculum Development

To a limited extent, the journal literature discusses recent developments in professional programs in public health.¹¹⁻¹⁹ There is very little discussion, however, of the decision-making process involved. In some cases, views of both faculty and professional bodies or health care agencies are solicited^{11,13,15}; in others, faculty input and feedback alone form the bases for innovations.¹⁶⁻¹⁸ Research that draws on program participants and graduates to inform educational change is largely absent from the literature. Consequently, an account of the recent approach of the Har-

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vard School of Public Health to curriculum development should prove instructive.

The 1980s saw growing pressure for change in Harvard's professionally oriented degree of Master of Public Health (MPH). The pressure flowed from student dissatisfaction, alumni concern, and a strong belief by some faculty that a major review was desirable.

In 1987 and 1988, these concerns culminated in a student-motivated survey of the entire MPH class. In the introduction to the questionnaire, the rationale given was "a feeling among many [students] that aspects of our education, teaching and general environment warranted change and that a necessary component would be to quantify this and try to pinpoint priority areas." The survey was designed to examine a broad range of issues that, at least in the view of students, justified serious attention.

Faculty intention to seriously review the MPH preceded the student survey conducted during 1987 and 1988. However, the survey results catalyzed a series of significant educational discussions involving students, faculty, and senior administration and paved the way for a more extensive series of surveys involving alumni and particular groups of students. Results from these surveys informed or endorsed policy changes that culminated in a revised MPH, introduced during the 1990 through 1991 academic year.

Student-Initiated Survey: 1987 through 1988

The questionnaire, completed by 96 students (response rate of 86%), focused on several areas, including the orientation program, the faculty-student advising system, required courses, and physical facilities. Results were widely distributed to faculty members and formally presented to the Committee on Educational Policy. They contributed to the following changes: (1) a systematic review of teaching in the most heavily subscribed required course in biostatistics (48% of respondents found the quality of teaching poor); (2) reduction by half in the environmental sciences and physiology core requirement, from 5.0 to 2.5 credit units of a minimum 40 credits required to attain the degree (42% of respondents thought the existing requirement excessive); (3) inclusion of a behavioral science component in a new core course—the ethical basis of the practice of public health (34% of respondents felt behavioral sciences should be a core requirement, there being no such requirement at the time); and (4) extension of the school's

1-week orientation program to 3 weeks (88% of respondents recommended 2 weeks to a month).

This experience underlined the value of student participation in educational review and the need for regular and systematic monitoring of program offerings. Also, it provided the justification for a student recommendation that further research be conducted.

MPH Surveys: 1988 through 1989

The study team, under the auspices of the MPH office and with public endorsement by the dean, conducted several "fact-finding" surveys. Informants targeted were the 1988 through 1989 MPH students and MPH alumni from 1979 to 1986. Descriptive surveys were administered to all current MPH students, foreign alumni, and a 1-in-4 sample of US alumni. Student surveys were conducted at the start and end of the academic year, with response rates of 72.5% and 66.4% (n = 149). Response rates from US and international alumni were 39.4% (n = 221) and 20.7% (n = 179), respectively.

The student surveys sought information on student background, program expectations, assessment of required courses, anticipated application of knowledge gained, and overall satisfaction. Alumni evaluated the MPH program according to its usefulness to their current work, as well as assessing its strengths and weaknesses.

Survey Results

The results of the surveys address many aspects of the educational process. Some reveal that important expectations are being reasonably satisfied. More than 85% of student respondents confirm that their overriding need for quantitative skills and "general public health knowledge and strategies" is being adequately met. Two thirds of alumni respondents find the quantitative training directly applicable to their jobs. Other results are pertinent to course modification and program development.

In regard to prior professional training, information on student backgrounds ensures that curriculum planners are aware of the academic status and working experience of a defined student population. A recognizable trend suggests that students with limited professional experience (connected to public health or not) are unsure of their future career direction and emphasizes the need for a well-structured academic program. In contrast, those with more than 3 years of experience demonstrate a far clearer career di-

rection, one that emphasizes professional practice. Correspondingly, their preference is for a highly flexible program. This finding suggests the need for a program with sufficient flexibility to accommodate students with prior professional experience. It also emphasizes the importance of an advising system aimed at students with limited experience. Career counseling emerged as important for those unsure of their future professional direction.

A case-control study, conducted in 1988 at the request of the MPH Committee on Admissions and Degrees, supports the need for effective advising and counseling services. This study reviewed the admission records of consistently poor performers, looking for predictors of academic failure. Some measures, such as academic transcripts and Graduate Record Exam results, were amenable to quantitative assessment; others, such as letters of reference, were more subjective. Of all these predictors, a coherent, well-motivated statement of academic and professional purpose seemed to correlate best with academic success.

A general finding of relevance to the future development of the MPH at Harvard is the proportion of alumni in academic positions—nearly one third (31%) of alumni respondents. This represents an almost threefold increase over the number who were in academic posts prior to completing the MPH program. Similarly, over a quarter of student respondents in 1988 (26%) began the program with the intention of assuming academic positions thereafter. These figures suggest the possible need for a research-oriented track within the MPH program. The relatively high proportion of MPH candidates in "academic" public health positions, or seeking such positions, needs to be addressed as part of the current MPH review and reorganization.

Illuminating contrasts are revealed in distinguishing students with interests in developing countries (41% of respondents) from those with interests in industrialized countries (59%). A higher proportion of the latter (31%) than the former (18%) desire an academic job. Students with interests in developing countries emphasize public health practice and further study, but without stating academic aspirations. Both groups rank the acquisition of quantitative skills as most important but differ in the skills they rank second. Those with an industrialized country focus rank "broad public health knowledge and strategies" next, while those with a developing country focus rank management skills second. This reinforces the oft-cited issue of serious managerial

shortcomings in the health services of developing countries and highlights the importance of appropriate management courses in curricula.

Table 1 presents further survey findings. Some contributed directly to specific changes, and others lent impetus and needed detail to innovations already identified through repeated student-faculty and faculty-faculty exchanges. This was critical in the series of facultywide debates that preceded refinement and acceptance of the revised program.

Innovations

Two major innovations were introduced as part of the review. They originated with several faculty, some with years of experience, who argued that the MPH should equip graduates more directly for roles in public health practice. This view reflects that of the Institute of Medicine Committee for the Study of the Future of Public Health, which recommends that schools of public health establish firm practice links with state and/or local public health agencies in order to foster responsibility to the needs of practice among both faculty and students.¹

Although credit for the impetus behind these innovations goes to faculty, certain of the survey findings discussed above endorsed their views and helped promote their efforts to restructure the MPH. Other relevant findings included the widely expressed need for a less general curriculum and greater practical application in several courses. The changes introduced attempt to address the problem of insufficient program depth and to provide a more career-oriented master's degree.

Previously, nearly half the MPH students subscribed to a "general MPH program" in which, core requirements aside, they were at liberty to choose from a wide selection of courses spanning all disciplines of public health. Students with extensive work experience benefited from this system. However, many students chose the general program for the very reason that they lacked a specific career direction and, therefore, educational goals. The result was often a patchwork program, lacking coherence, from which a student would graduate dissatisfied with the level of skills and knowledge gained.

The remaining students took a departmental MPH (e.g., in maternal and child health or health policy and management). Although this provided greater depth, the field selected might be so nar-

TABLE 1—Master of Public Health Program Educational Innovations Based on Survey Results: 1987 to 1989

Student/Alumni Responses	Change Implemented
Course Content	
Required courses too elementary	Two levels of epidemiology and biostatistics introduced: introductory and advanced
Inappropriate self-selection into introductory and advanced biostatistics courses	Screening examination instituted for more appropriate placement
Environmental sciences requirement considered excessive by nearly one half of students and a third of alumni	Requirement decreased by half
Students' initial computing skills are deficient	Training offered during orientation
Insufficient emphasis on behavioral sciences	"Ethical Basis for the Practice of Public Health" course includes behavioral component and becomes required for all
Practical Orientation	
Greater practical orientation necessary	Expansion of use of case method of teaching and development of public health cases
More extensive practice in designing investigative protocols and intervention programs required	Practice included or expanded in several courses
Teaching/Student Support	
Widespread criticism of faculty teaching	Educational advisor hired on a part-time basis; faculty participation in case-teaching seminars is encouraged
Limited career guidance offered	Counseling services (seminars, career day) are expanded

rowly focused as to preclude graduates from engaging meaningfully in public health practice.

To address these limitations, five defined, multidisciplinary "areas of concentration" have been developed: quantitative methods, occupational and environmental health, health care management, international health, and public management and community health. All students are obliged to choose one of these areas of concentration; a general program is no longer offered. Each area of concentration is designed to provide the knowledge and skills for a defined professional role. Courses from a variety of departments are included in a concentration. Within each concentration, different tracks are offered that further focus the learning. For example, the public management and community health concentration offers five tracks: maternal and child health, finance and regulation, mental health and substance abuse, health promotion and disease prevention, and public health law. Required courses constitute approximately half of the credit units, the remainder allowing flexibility to meet individual interests and needs.

A second innovation is the de novo development of a yearlong required

course. The first part, the ethical basis of the practice of public health, is taken by all students and aims to address the absence of any course on the history and philosophy of public health. The second part is based on the professional training needs of particular areas of concentration and provides a practical, problem-solving approach to a range of authentic managerial, fiscal, personnel, ethical, and delivery-related problems in public health, with field exposures as appropriate.

The overall approach of the new MPH curriculum stresses active, student-directed learning through problem solving. This is achieved, in part, through the case method of teaching, which can effectively integrate theory and practice. Development of public health cases is under way, as is faculty education in the techniques of active learning.²⁰

Process of Change: A Discussion

The Harvard School of Public Health has used student and alumni surveys not only to identify improvements to the MPH program but also as evidence to faculty of the need for particular changes. The question remains, however, what balance of

factors and interplay between groups and individuals leads to key decisions being reached—in particular, decisions that may run counter to the prevailing ethos or reward system of an institution.

Certain conditions, key to the progress made at the Harvard School of Public Health, may also prove a prerequisite for change at other institutions. The timing of the reform process at Harvard was favorable. The past several years had seen a buildup of pressure for change within the institution itself, coincident with Harvard University—the wider institutional base for the school—making educational review and reform a priority.

The process itself developed out of the sometimes conflictive and sometimes cooperative interaction of certain faculty members and the senior administration with successive groups of students. From each of these groups, key players provided a combination of qualities necessary to the success of the reform initiative. The students, who were from both industrialized and developing countries, formed a critical mass of high-achieving, motivated professionals, well respected by the faculty and administration. All their recommendations were accompanied by carefully documented supporting information gathered under the auspices of the MPH office. Their efforts were fully backed by the MPH coordinators, who were key faculty players. The direction of reform they proposed stemmed from their experience as public health practitioners and was buttressed by consultation with professional educationalists. Their drive and motivation were essential for the gaining of faculty approval. This depended, too, on the role of the dean, who in many ways contributed to the initiation of the reform moves and continued to encourage and support them actively, notwithstanding occasional strong opposition. This support from the senior administration included the salary for a full-time research officer exclusively employed to research and promote the reform initiative.

In essence, the process of change required two sustained and simultaneous thrusts: the development of a program aimed at practitioner training and the procurement of broad faculty endorsement. Anticipating resistance, the MPH coordinators canvassed opinion and sought allies from among the research faculty, a slow process involving many individual and small-group discussions. The skill and commitment of the coordinators in negotiation and persuasion was fortified

by the knowledge that they enjoyed the full backing of the dean. The initial skepticism of some regarding the viability of sweeping changes to so old and established a program was assuaged as this phase of the reform process proceeded. Finally, a meeting of influential faculty and those directly involved with the MPH program was convened by the chief program coordinator. Refinement of ideas occurred at this forum; more important, however, faculty acceptance with a sense of ownership for the new program was won.

Proposals that elicited strong faculty resistance, particularly where student views were divergent, were cast aside in favor of the status quo. A stepwise approach, with a gradual phasing in of innovations, was accepted as strategically preferable. Thus, proposals for a longer course overall and for a compulsory field practicum have not been pursued for the time being.

Conclusion

This paper emphasizes the value of educational research in curriculum review and development, necessary in a dynamic field such as that of public health. Student and alumni perceptions are elicited to guide faculty in changes to the curriculum. In professional public health programs, this input is invaluable; faculty are often removed from the actual practice of public health, while many students and alumni are directly involved. They can therefore contribute usefully on the relevance of an educational program to the problems and constraints encountered in the field.

No matter how carefully those responsible for change have gone about their task, there is no assurance that their intended objectives will, in fact, be attained. A new curriculum has to be evaluated constantly, and always with an eye to changing circumstances and new needs. Assessment of the revised curriculum will be facilitated by the MPH program office on an ongoing basis over the next several years and will continue to involve students as well as faculty. Already, assessment of the new ethical basis of the practice of public health course has led to improvements that have been incorporated for the second year of the revised program. In addition, plans to survey MPH graduates are being formulated.²⁰ The resources required for program evaluation of this nature are well spent, for a curriculum is a delicate plant; it will thrive only with con-

stant attention, proper nourishment, and periodic trimming and shaping. □

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NATO Workshop on the Research Evaluation of Community Psychiatric Services

The North Atlantic Treaty Organization (NATO) is sponsoring a NATO Advanced Research Workshop on "Research Evaluation of Community Psychiatric Services," to be held September 3 through 7, 1993, in Il Ciocco, Castelvecchio Pascoli, Italy. The objective of the workshop is to bring together researchers from a variety of relevant disciplines to contribute to the development of new methods of evaluating mental

health services, including health economic considerations.

Participation is by application (including brief C.V.) before January 15, 1993. For further information on the workshop, please contact Dr. Helle Charlotte Knudsen, Institute of Preventive Medicine, Copenhagen Health Services, Kommunehospitalet, DK-1399 Copenhagen K, Denmark; tel. +45 33 38 38 80; fax +45 33 32 42 40.