Engaging Key Stakeholders to Assess and Improve the Professional Preparation of MPH Health Educators

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Objectives. We described the process of engaging key stakeholders in a systematic review of requirements for a master of public health (MPH) degree within the Department of Health Behavior and Health Education, University of North Carolina Gillings School of Global Public Health, and summarized resulting changes.

Methods. A benchmarking study of 11 peer institutions was completed. Key stakeholders (i.e., current students, alumni, faculty, staff, employers, and practicum preceptors) received online or print surveys. A faculty retreat was convened to process results and reach consensus on program revisions.

Results. MPH program changes included (1) improved advising and mentoring program, (2) elimination of research and practice track options, (3) increased elective and decreased required credit hours, (4) replacement of master's paper requirement with ''deliverables'' (written products such as reports, documents, and forms) produced as part of the required ''Capstone'' course, (5) extended community field experience to 2 semesters and moved it to year 2 of the program, and (6) allowed practica of either 200, 300, or 400 hours.

Conclusions. Engaging key stakeholders in the program review process yielded important changes to the MPH degree program requirements. Others may consider this approach when undertaking curriculum reviews. (*Am J Public Health.* 2010;100:1993–1999. doi:10.2105/AJPH.2009.177709)

The health of the public relies, in part, on a well-trained public health workforce.[1] In response to calls for greater standardization of public health training programs, students pursuing a master of public health (MPH) degree from an accredited school of public health must attain both school-wide and discipline-specific competencies and complete a required practicum.[2] Professionals and graduating MPH students who pass a national examination covering school-wide competencies also receive a certificate of public health.[3] Instituting Council on Education for Public Health accreditation of MPH training programs and encouraging receipt of the public health certificate help standardize training of public health professionals, yet few published descriptions of efforts to improve discipline-specific training programs within schools of public health exist.

The University of North Carolina at Chapel Hill (UNC) Gillings School of Global Public Health (Gillings SPH) has a long tradition of preparing public health professionals in biostatistics, epidemiology, nutrition, environmental sciences, health policy and management, maternal and child health, and health behavior and health education. Mindful of national initiatives to standardize public health training programs, the Institute of Medicine report clarifying the needs of the 21st-century public health workforce,[1] and several discipline-specific efforts,[4,5] the Department of Health Behavior and Health Education (HBHE) within the Gillings SPH undertook a systematic assessment of its MPH training program.

The HBHE Department convened a Program Assessment Committee (PAC), comprising faculty, students, and alumni, to lead a program assessment effort that engaged key stakeholders (current students, alumni, faculty, staff, employers, and practicum preceptors) in all aspects of the process. Engaging stakeholders in this process ensured our ability to glean information from people who were (1) most invested in the training enterprise (e.g., faculty, current students, and prospective employers), (2) had most recently experienced the training program (recent graduates and alumni, employers or practicum preceptors), and (3) had insight into the degree to which training matches available job opportunities (e.g., recent alumni). Moreover, the HBHE Department's commitment to collaborative, participatory teaching, research, and practice suggested a methodology that harmonized with the engaged approaches that faculty espoused and students and alumni practiced. The national trend toward engaged teaching and research in higher education, as evidenced by the Carnegie Foundation's addition of a classification for community engagement, further validated this approach.[6,7] We describe the comprehensive, discipline-specific MPH assessment process undertaken by the HBHE Department, the results of that assessment, and changes that were implemented.

Established in 1940 and accredited by the Council on Education for Public Health, the Gillings SPH is currently the second largest school of public health in the country. During the assessment process in 2006, the school had 215 faculty members and 1705 students and offered degrees in 8 academic departments. The school's mission is "to improve public health, promote individual well-being, and eliminate health disparities across North Carolina and around the world."[8] At the time of the assessment, the HBHE Department had 21 full-time tenured faculty members and 86 MPH candidate students (48 in the first year and 38 in the second year of the program). At that time, the department offered MPH and PhD degrees and a dual master's degree (MPH and master of regional planning [MRP]) with UNC's Department of City and Regional Planning. The mission of the MPH program is to prepare students to be (1) successful in a wide range of public health education–related careers and (2) capable of

serving as leaders who can address 21st-century public health priorities.

The MPH program is a full-time, 21-month program into which students are admitted once per year. At the time of the assessment, all MPH students in the HBHE Department chose between a "research" or "practice" track. The research track included additional methods courses, a research-related master's paper, and a public presentation of research results. The practice track included a required management course and a practice-related master's paper. Additionally, the Gillings SPH offered certificates in global health, health disparities, public health ethics, and health communications.

METHODS

The UNC Graduate School requires that departments offering graduate-level programs undergo a formal review every 7 years, with the department and the graduate school jointly selecting external reviewers. The HBHE Department's MPH program assessment was undertaken just 1 year prior to both the required Graduate School and Council on Education for Public Health review process, adding both insights and rich data to inform these formal review efforts.

Procedures

In August 2006, the HBHE Department convened the MPH program PAC to develop and implement a process for assessing the status, strengths, weaknesses, and future directions and needs of the professional training program. The PAC consisted of 7 members, including faculty, alumni, students, and employers and preceptors. Ad hoc members included the MPH program director's immediate predecessor, the field coordinator, and the student services manager.

Each step of the assessment process solicited input from the following stakeholder groups: students, faculty, alumni, employers, and field preceptors, as summarized in Table 1. The process included a benchmark study of program requirements at 11 peer institutions around the country as well as 6 Web-based survey instruments for collecting information from stakeholders. First, the PAC prepared descriptive summaries of programs most similar to the HBHE Department's MPH program from the 11 peer institutions. Summaries contained information on each program's mission, curriculum, credit hour requirements and competencies, practicum requirements, comprehensive examination requirements, and master's project or paper requirements. After verifying each description by phone, we prepared a report summarizing the program requirements at each peer institution.

After the benchmark review, the PAC developed a core set of questions for online survey instruments for each key stakeholder group. The questions asked about departmental mission and goals, advising and mentoring, overall strengths and limitations, and details about specific MPH degree requirements (i.e., required courses, the 54-credit-hour curriculum, 400-hour practicum, comprehensive exam, and master's paper). Surveys of all stakeholders (students, alumni, field and practicum preceptors, and employers) included the core set of questions so that responses could be compared across groups (field practicum preceptors and employers, however, did not get detailed questions about program requirements).

TABLE 1—Stakeholders' Involvement in the Master of Public Health (MPH) Program Assessment Process: University of North Carolina Gillings School of Global Public Health, Chapel Hill, 2006–2007

Stakeholders (Timing of Review)	Group Composition (No. of Respondents)	Primary Focus of Survey
Peer institutions (Sept–Nov 2006)	Accredited schools of public health with departments similar to HBHE, offering MPH degrees (n = 11)	Benchmark information about behavioral science–based MPH program requirements
HBHE faculty (Dec 2006–Jan 2007)	Full-time faculty members (n = 21)	All major components of the MPH program requirements
HBHE MPH students (Jan–Feb 2007)	Full-time MPH candidates (n = 86)	All major components of the MPH program requirements
HBHE MPH alumni (Feb–Mar 2007)	All MPH graduates from the past 10 years[a] (n = 363)	All major program components, plus experience and opinion of the MPH program
Field preceptors (Mar–Apr 2007)	All persons who served as preceptors for student field assignments[b] (n = 83)	Student field work in required course
Practicum mentors (Mar–Apr 2007)	All persons who served as mentors for student practicum experiences (n = 195)	Student practicum experiences
Employers of HBHE graduates (Mar–Apr 2007)	All persons who employed HBHE graduates, as identified by alumni (n = 108)	Student preparedness for employment

Note. HBHE = Department of Health Behavior and Health Education.
[a]1997–2006.
[b]2000–2007.

Key Stakeholders and Survey Procedures

The following individuals received surveys: all current HBHE full-time faculty (n=21) and students (n=86), HBHE alumni from the past 10 years (1997–2006; n=363), and all preceptors (public health professionals who mentor a student team) for field coursework since 2000 (n=83) or required practicum since 2003 (n=195). Finally, we asked alumni respondents to identify organizations that employ graduates. All stakeholder groups received an initial request via e-mail and a link to the online survey. At least 2 e-mail reminders followed.

Analysis

Data analysis was conducted in several steps. First, data collected with Qualtrics survey software (Qualtrics, Inc, Provo, UT) was transferred into SAS version 9.1 (SAS Institute Inc, Cary, NC). Frequencies of responses to all close-ended questions were summarized. For each open-ended question, responses were summarized in a list by question. All PAC members reviewed the close- and open-ended summaries, with each member assigned to review specific questions from the core

questions to analyze in greater depth. PAC members completed analyses across all survey groups and presented summaries to other PAC members for discussion. An iterative process of discussion and feedback led to consensus on summary themes and initial recommendations for changes to program requirements.

We presented a draft report with results and initial recommendations at a full-day faculty retreat and posted it on the public departmental Web site. All stakeholders were invited to review the report and provide feedback. In summer 2007, PAC members finalized recommendations based on all feedback and presented revised recommendations to faculty for approval and implementation later that fall. The August 2008 incoming MPH class was the first to participate in the new curriculum.

RESULTS

Among the HBHE faculty, 20 of 21 (95%) completed the assessment survey. Among HBHE MPH students, 40 of 48 first-year students (83%) and 29 of 38 second-year students (76%) completed the survey, resulting in an overall response rate among current students of 80% (69 of 86). Among alumni across a 10-year period (with working e-mail addresses), 226 of 363 (62%) completed the survey. Among preceptors from the required field practice course and practicum preceptors, 23 of 83 (28%) and 61 of 195 (31%) completed a survey, respectively. Finally, 50 of 108 employers (46%) completed the survey.

Benchmarking Results

At the time of the study, the MPH program had 4 major requirements: a 54-credit-hour curriculum, comprehensive exam, 400-hour practicum, and master's paper (Table 2). In addition, students selected a "research" or "practice" track. We asked each of 11 peer institutions about their program requirements. No other institution offered a research and practice track option for MPH students, nor did any require the combination of the practicum, a master's paper or thesis, and the comprehensive exams, as UNC's program did. As with UNC, all 11 programs required a practicum, although the number of hours required ranged from 25 (for students who already had 2 or more years experience) to 400. Most practica were 200 to 300 hours. Credit hours are not easily comparable across institutions, but the 54 required credit hours at UNC seemed similar to those required by peer institutions (36 to 80 academic credits or units). Three other peer institutions required a master's paper or thesis. The majority of peer institutions required students to complete a final practice-oriented project or a master's paper or thesis, but not both. Two other institutions required a comprehensive exam; neither of those required an additional master's paper or a final practice-oriented project (e.g., a "capstone" or culminating field experience).

TABLE 2—Master of Public Health (MPH) Program Requirements Before the Assessment: University of North Carolina Gillings School of Global Public Health, Chapel Hill, 2006–2007

Topic	Courses
Theory	Social and Behavioral Foundations of Health Education (4 credits)
	Advanced theory course[a] (3 credits)
Practice	Foundations of Health Behavior and Health Education Practice (2 credits)
	Action-Oriented Community Diagnosis (4 credits)
	Health Education Practicum[b] (2 credits)
	Management Principles (3 credits)
	Planning Health Promotion (4 credits)
	Intervention Methods (4 credits)
Applied research	Applied Research Methods (4 credits)
	Research Practicum[a] (2 credits)
	Two advanced research methods courses[a]
Public health requirements	Epidemiology
	Biostatistics
	Health Policy
	Environmental Science
Electives	Practice track students (9 credits)
	Research track student (3 credits)
Comprehensive exam	All MPH students must take and pass a comprehensive exam
Master's paper	All students (research or practice track) must complete a master's paper focused on practice or research

Note. The program course requirements before the assessment totaled 54 credit hours.
[a]Research track students only.
[b]Practice track students only.

Course-Related Assessment Results

Table 2 summarizes the course requirements of the preassessment MPH program. As part of the 54-credit program, practice track students could choose 3 electives over the 2-year program; research track students could choose 1 elective. Overall, most faculty and students (84% and 89%, respectively) agreed that the research track offered insufficient elective opportunities; 42% of faculty and 52% of students agreed that the practice track offered insufficient elective opportunities.

Table 3 summarizes results from 2 survey questions posed to faculty, students, and alumni: (1) To what extent does each required course prepare students for their professional careers? (1=not at all, 10=to a great extent); and (2) Should this course be required for all HBHE MPH students (research track, practice track, both tracks, or neither)? All 3 respondent groups strongly endorsed the "Planning" and "Research Methods" courses for career preparation. Students perceived the "Theory" and "Action-Oriented Community Diagnosis" courses as less central to professional preparation than did faculty and alumni. Students rated the "Foundations of Practice" course lowest, with only slightly higher ratings by alumni and faculty. Alumni rated "Intervention Methods" lowest in terms of importance for professional

TABLE 3—Summary of Feedback From Faculty, Students, and Alumni on Preassessment Curriculum Requirements: University of North Carolina Gillings School of Global Public Health, Chapel Hill, 2006–2007

	Extent to Which This Course Prepares Students for Profession[a]			Believes Course Should Be Required of MPH Students		
Course	Faculty, Mean (SD)	Students, Mean (SD)	Alumni, Mean (SD)	Faculty, %	Students, %	Alumni, %
Social and Behavioral Foundations of Health Education (Theory)	7.1 (2.6)	5.5 (2.8)	7.9 (1.9)	89	95	97
Foundations of Health Behavior and Health Education Practice	7.4 (2.4)	4.4 (2.4)	6.9 (2.4)	74	73	82
Action-Oriented Community Diagnosis	7.5 (2.5)	6.7 (2.4)	7.7 (2.4)	47	75	83
Planning	9.4 (1.2)	8.5 (1.6)	8.0 (2.2)	89	100	94
Intervention Methods	8.4 (1.7)	6.8 (2.2)	5.7 (2.7)	84	66	77
Research Methods	8.6 (1.7)	8.2 (1.6)	8.6 (1.6)	94	99	99

Note. MPH = master of public health. The sample size for faculty was n = 21; for students, n = 69; for alumni, n = 225.
[a]Scale was not at all (1) to completely (10).

preparation, whereas students and faculty were more enthusiastic.

Next, we asked whether each core course should be required of MPH students. Respondents universally endorsed "Theory," "Planning," and "Research Methods" as required courses. Respondents also endorsed "Intervention Methods," with faculty expressing more enthusiasm than did alumni or students. "Foundations of Practice" received less endorsement as a requirement, and "Action-Oriented Community Diagnosis" received mixed reviews. Only 42% of faculty believed that "Action-Oriented Community Diagnosis" should be required for all students (32% endorsed it for practice track only); by contrast, the overwhelming majority of alumni and students (83% and 75%, respectively) believed it should be required.

Non–Course-Related Assessment Results

Advising and mentoring. Whereas almost 60% of faculty and alumni believed that academic advising was satisfactory, only 39% of current students felt similarly. Moreover, only 43% of faculty and 36% of students believed that mentoring efforts were satisfactory. Students' concerns about academic advising and mentoring focused on variation in the quality of mentoring, perceptions that faculty were extremely busy, and that even when students reached out to faculty, advisors did not always meet students' requests for assistance satisfactorily. Alumni additionally cited a lack of career guidance as a concern. With regard to academic advising and mentoring, faculty expressed a desire for a better set of protocols, clear norms, and training. Students also emphasized the need for greater consistency in expectations. All 3 groups offered suggestions for improvement, with faculty and alumni suggesting the following: group advising rather than individual advising in year 1 of the program (i.e., conducting small meetings with all advisees); more student and faculty social events to facilitate informal mentoring; and increasing skills-based mentoring (preparing conference abstracts, networking at professional meetings, etc.).

Comprehensive written exam. Survey results revealed strong faculty, student, and alumni support for comprehensive exams (89%, 82%, and 82%, respectively), with many indicating that exams helped students "pull everything together."

Practicum. The recent American Schools of Public Health guidelines stipulate that MPH students in all Council on Education for Public Health–accredited schools of public health must complete a practicum prior to graduation.[2] The HBHE Department has long supported extensive field experiences, having required a 400-hour practicum of its MPH students. Faculty (84%), students (92%), and alumni (91%) expressed strong support for the practicum requirements, with alumni reporting that practica helped with both skill development and resume building. Ideas for improving the practicum experience included the following: establishing written guidelines for students and faculty; increasing flexibility in the type and amount of time spent on practica; and adding more support for students in finding practica, a labor-intensive process at a time when students are completing rigorous core courses.

Master's paper. A master's thesis or equivalent is required by UNC's Graduate School. Students (92%) and alumni (94%) believed that the HBHE master's paper should be required, whereas somewhat fewer faculty (78%) did. Among faculty, 50% supported requiring a master's paper for both research and practice tracks; 28% wanted it required for research-track students only. Concerns articulated about the master's paper process included (1) wide variation in master's paper mentoring and expectations; (2) faculty concern that the quality of the master's papers had diminished over time; and (3) the belief that faculty and student time investments in this requirement were enormous. Suggested alternatives to the required master's paper included a capstone experience, a community project, or a poster or presentation at a professional meeting.

Master of Public Health Program Revisions

Non–course-related revisions. A summary of non–course-related revisions to the MPH program is presented in Table 4. Non–course-related revisions to program requirements included improving advising and mentoring, eliminating the research and practice track options, and

TABLE 4—Non–Course-Related Revisions Made to the Master of Public Health Program: University of North Carolina (UNC) Gillings School of Global Public Health, Chapel Hill, 2006–2007

Program Requirement	Preassessment Requirement	Assessment Results and Rationale	Revisions
Practicum	400 hr research or practice	UNC had the highest number of required practicum hours.	Reduce required number of hours to at least 200.
Comprehensive exam	Closed-book exam; 3 questions, 2 hr each	Assessment results revealed that faculty, students, and alumni believed that the comprehensive exams bring the entire required course learning together.	Keep comprehensive exams but streamline the process.
Master's paper	Required master's paper that was specific to either practice or research track.	While most students and alumni believed the master's paper was an excellent learning experience, faculty were less convinced of the quality of these papers. Further, UNC was the only institution to require both a master's paper and comprehensive exams.	The new capstone deliverable replaces the master's paper requirement.

revising the required practicum, comprehensive written exam, and master's paper. First, the HBHE Department recommitted itself to providing high-quality advising and mentoring for all students by instituting a new advising and mentoring program with several components: (1) an advising and mentoring guidebook created by students with input from the PAC and an orientation to its use for both students and faculty; (2) a faculty advisor, matched to the student upon enrollment, who meets advisees at least once per semester; (3) a student-planned 2-day orientation (extended from 1 day), with more opportunities for informal engagement with faculty (luncheon, picnic, summer reading or book discussions); and (4) group advising sessions led by the MPH program director at least once per semester.

Second, we dropped the practice and research track distinctions in the curriculum. When reviewing all data at the retreat, faculty recommitted to our departmental mission that all students should be trained as "analytic practitioners" capable of producing and using research to inform evidence-based practice. Distinct tracks for research and practice in this context seemed unnecessary. Given more flexibility in the curriculum, any student wanting to pursue additional research or practice opportunities could do so through independent study with a faculty member based on his or her interests and through a practicum experience geared toward research- or practice-based work. Moreover, HBHE students interested in pursuing independent research careers could pursue the department's newly established MSPH-to-PhD degree program.

Third, we reduced the number of required hours for the practicum from 400 to 200. Thus, students must do at least 200 hours, but most continue to select a 300- or 400-hour practicum. This revision provides students greater flexibility (e.g., they have more options for doing both paid and unpaid practica, and have more opportunity to complete international placements). Students may do less work with a 200-hour practicum, but to maintain or enhance the quality of the experience, we (1) improved the matching process by creating a Web site for all available practica, (2) added new school-wide practicum guidelines and new departmental practicum guidelines for practicum preceptors and students (including a vetting process to ensure that the proposed practicum is mentored well), (3) streamlined paperwork, and (4) added a Practicum Day in the fall during which all students present posters about their experience with community partners, faculty, and students.

Fourth, we retained comprehensive exams as a program requirement, given the enthusiasm for how they help students synthesize first-year subject matter. We will modify exams to reflect changes in course requirements and sequencing, but students will continue to complete a closed-book, 6-hour, written exam requiring them to think critically and apply knowledge of theory, practice, and research and evaluation methods to a specified public health problem for a defined population.

Fifth, we replaced the master's paper with written "deliverables" that are produced for community partners as part of the new "Capstone" course and related field experience (see new "Capstone" course description in next subsection).

Course revisions. The new course requirements after the assessment are shown in Table 5. The HBHE Department maintained its 54-hour required credits, but introduced greater flexibility into the curriculum by reducing the number of credit hours for each required course from 4 to 3. This modification has increased the number of electives for all MPH students to 14 credit hours. Moreover, students are now better able to complete available certificate programs and take additional courses of interest.

Second, courses were re-sequenced. For example, we honored student requests to move epidemiology and biostatistics courses to the first semester in the curriculum. We also extended and moved the field experience from the first year into the new "Capstone" course, which spans both semesters during year 2 of the program. We believe these changes will improve students' ability to perform well in the field and work more collaboratively with community partners.

In addition to re-sequencing courses, we dropped 2 required courses ("Intervention Methods" and "Action-Oriented Community Diagnosis") while creating several new requirements. Specifically, the new "Introduction to Public Health and Health Education" course (2 credits) orients students to the profession and the role of public health education in the context of public health. To round out the skills of students in both qualitative and quantitative methods, we now require a three-credit "Qualitative Methods" course. Content from "Intervention Methods" was spread throughout various courses in the curriculum. The new "Professional Development Series" covers project management and leadership, budgeting,

TABLE 5—Master of Public Health Program Course Requirements After the Assessment: University of North Carolina Gillings School of Global Public Health, Chapel Hill, 2006–2007

Topic	Courses
Theory	Social and Behavioral Foundations of Health Education[a]
Practice	Introduction to Public Health and Health Education (new course)
	Professional Development Series (new course)
	Program Planning[a]
	Practicum (200 hr minimum)
	Capstone[b] (new course)
Applied research	Applied Research Methods[a], Qualitative Methods
Public health requirements	Epidemiology, Biostatistics, Health Policy, Environmental Science
Electives	3–4 courses

Note. The program course requirements after the assessment totaled 54 credit hours.
[a]Reduced from 4 to 3 credit hours.
[b]Includes engagement, assessment, intervention development, evaluation and dissemination. Students work in teams on a project with a community partner.

and grant writing. Alumni and students both requested more training in these skills.

The new 2-semester "Capstone" course absorbed content from the original "Action-Oriented Community Diagnosis" course and extended students' mentored field experience over 2 semesters during year 2. Potential capstone partners are solicited from the community in the spring semester of year 1. Once capstone partners are selected, student teams are assigned to work with the community partners. Together, they draft a work plan and set of deliverables. Actual field work begins in year 2 of the program (in the fall) and continues through the spring semester. Each team has a faculty adviser. Other faculty, alumni, and staff also serve as "consultants on call."

The new "Capstone" course has generated strong enthusiasm from community partners. An initial informational meeting attracted 54 community representatives, and more than half of those who attended the meeting decided to submit proposals requesting a capstone team. From that pool, we asked potential partners to pitch their project ideas to students. Students ranked their top 5 choices. Each faculty member selected and rank-ordered 3 teams that they would agree to advise. In the end, we selected 10 capstone teams (4–6 students, a faculty adviser, and a capstone partner) for the first year, with teams working on adolescent health, aging and health, low-income housing, campus student health, Latina health issues, and others. Most students got their first choice on public health "match day." We anticipate that student teams will make important contributions to the public health community as a result of these capstone projects.

A classroom component complements field work associated with the capstone experience. The "Capstone" course follows a modular teaching approach that includes (1) engagement and assessment; (2) intervention selection, adaptation, and development; (3) evaluation; and (4) sustainability, translation, and dissemination. The capstone experience culminates with a celebration, during which community partners, faculty, and students present the results of work accomplished and lessons learned.

DISCUSSION

Recognizing the importance of the well-trained public health workforce, the HBHE Department in the UNC Gillings SPH undertook a comprehensive assessment of the MPH degree requirements.[1] We engaged key stakeholders both in the assessment effort and in decisions about how to use results to revise program requirements. We believe this participatory approach helped faculty, students, alumni, and community collaborators to gain ownership of the program improvement effort and helped build support for program changes.

The curriculum changes were consistent with the recommendations of the Institute of Medicine report for preparing a 21st-century workforce, and they meet all competencies of the Association of Schools of Public Health.[1] The changes also meet the competencies for international public health education espoused by the Galway Consensus Conference.[9] Students who complete this training program will be prepared to complete the accreditation exams for the National Board of Public Health Examiners and National Commission for Health Education Credentialing.[2,4]

A number of strengths and limitations to the program evaluation effort were identified. Strengths included a participatory, engaged process with representation from many key stakeholders; a mix of qualitative and quantitative data that yielded rich, detailed information from multiple sources; extensive pretesting of core questions and all survey instruments with intended audiences; relatively high response rates from most constituent groups; and adequate time to fully process data with stakeholders as initial and final recommendations were made. Limitations included a convenience sample approach for the benchmarking survey; a relatively low response rate from employers and preceptors; the possibility of unmeasured (and important) variables; an inability to gather more in-depth information from respondents via focus groups or interviews (versus written surveys); new measures that lack extensive reliability and validity data; and lack of program impact measures (e.g., number of students employed, number of students who pass credentialing exams). Finally, a constant challenge was the need to balance proposed program revisions against the need to introduce more flexibility for students, maintain program quality, and avoid increases in faculty workload.

We are now developing a comprehensive evaluation of program changes to assess the impact of the HBHE Department's MPH program requirements. We will use an engaged approach similar to that used for the program assessment process. Consistent with Patton's utilization-focused evaluation efforts, we will consider process, impact, and outcome evaluation from the perspective of multiple stakeholders: faculty, students, and alumni.[10] We anticipate using course evaluations and brief online surveys to gather data from key stakeholders within the next several years as a means

of continuous quality improvement. We will summarize these results, discuss their implications, and use them for the continuous improvement of our program requirements. ■

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Human Participant Protection

No protocol approval was needed for this study.

References

1. Institute of Medicine. *Who Will Keep the Public Healthy? Educating Public Health Professionals for the 21st Century.* Washington, DC: National Academies Press; 2002.

2. Council on Education for Public Health. Schools of public health accreditation criteria—amended June 2005. Available at: http://www.ceph.org/i4a/pages/index.cfm?pageid=3352. Accessed May 29, 2009.

3. National Board of Public Health Examiners Web site. Available at: http://www.publichealthexam.org/about.cfm. Accessed June 29, 2009.

4. National Commission for Health Education Credentialing Inc. Health education credentialing. Available at: http://www.nchec.org/credentialing/credential. Accessed May 29, 2009.

5. Society of Public Health Education Web site. Available at: http://www.sophe.org. Accessed May 29, 2009

6. Driscoll A. Carnegie's Community Classification: intentions and insight. *Change.* 2008;40(1):38–41.

7. Chavez V, Turalba RA, Malik S. Teaching public health through pedagogy of collegiality. *Am J Public Health.* 2006;96(7):1175–1180.

8. University of North Carolina Gillings School of Global Public Health mission statement. 2010. Available at: http://www.sph.unc.edu/school/school_of_public_health_mission_statement_119_6048.html. Accessed April 8, 2010.

9. Barry MM, Allegrante JP, Lamarre MC, Auld ME, Taub A. The Galway Consensus Conference: international collaboration on the development of core competencies for health promotion and health education. *Glob Health Promot.* 2009;16(2):5–11.

10. Patton MQ. *Utilization Focused Evaluation: The New Century Text.* 3rd ed. Thousand Oaks, CA: Sage; 2008.