

Assessing the Legal and Ethical Preparedness of Master of Public Health Graduates

Brian Agee, MD, and Ronald W. Gimbel, PhD

Public health practitioners frequently encounter dilemmas, from the HIV epidemic to multidrug-resistant tuberculosis, sexually transmitted infections, and food-borne illnesses. The first decade of this millennium continues to thrust our world into a highly complicated milieu of public health issues. The profession has been challenged by the wrath of nature on a daily basis, concerns about the threat of pandemic influenza dominate the headlines, and the specter of bioterrorism leaves us ever vulnerable. Public health experts at all levels are faced with increasingly difficult, large-scale problems and must have the proper skills to deal with today's ever-changing environment.

All public health dilemmas involve core ethical or legal issues. Strategies designed to deal with these problems are rooted in the study of law and ethics. In fact, there is no issue in public health that does not have roots in law or ethics. The Public Health Leadership Society has developed a list of 12 principles focusing on the ethical practice of public health,¹ the American College of Epidemiology has established ethical practice guidelines,² and the Council on Education for Public Health³ cites the importance of ethical grounding in its mission statement.

In a study conducted in 1996, Coughlin et al. surveyed deans of graduate schools of public health regarding the ethics instruction offered in their institutions.⁴ In that study, only 1 of the 24 accredited schools that responded required a formal instruction in ethics for all master of public health (MPH) students. There have been calls to mandate formal coursework in law and ethics in all MPH programs.^{5,6} Templates for teaching public health ethics are readily available,^{7,8} as are textbooks on public health law.⁹

In an effort to stimulate future applied policy- and practice-related research, we assessed the availability of ethics and law courses in accredited public health graduate schools and programs and the preparedness of MPH graduates in public health law and ethics (the latter

Objectives. We explored the relationship between the preparedness of master of public health (MPH) graduates in public health law and ethics and their completion of courses in these areas.

Methods. We reviewed accredited public health schools and programs to assess the supply of required and elective courses in law and ethics. In addition, we conducted an Internet-based scenario survey of MPH graduates. Survey results were analyzed, and relationships between scenario responses and completion of law and ethics courses were assessed.

Results. Of the 93 programs and schools reviewed, 14% required a course in ethics and 16% required a course in law. The majority (range=55%–76%) of the survey respondents indicated being “prepared” or “very prepared” for each of the 9 public health scenarios. There were no significant relationships between scenario responses and completion of an ethics course. Responses to 2 scenarios (one involving food code violations and one involving a prison population) were significantly related to participants’ completion of a course in law.

Conclusions. Few public health schools and programs require graduate courses in ethics and law. Most MPH graduates report being prepared to address public health challenges. Additional research is necessary to improve techniques for measuring preparedness. (*Am J Public Health*. 2009;99:1505–1509. doi:10.2105/AJPH.2007.133173)

as a proxy measure of demand for training in law and ethics).

METHODS

We conducted this study in 2 distinct phases relating to the measurement of supply and demand for training in law and ethics. In both phases, a cross-sectional approach was used in collecting data.

To assess the supply of required and elective courses in law and ethics, we conducted an Internet-based curriculum review in September 2006 of all accredited MPH schools and programs identified in the Council on Education for Public Health’s listing of accredited schools and programs.¹⁰ We identified required courses and elective courses in law and ethics and noted instances in which no formal coursework was included on a school’s Web site.

Demand for formal training in law and ethics can be conceptualized in terms of whether or not MPH graduates, after completing their studies, are legally and ethically prepared to

deal with real-life public health dilemmas (i.e., lack of such preparation should be a signal to public health schools and programs that there is a demand for training). To assess demand for training, we used a proxy measure of “legal and ethical preparedness.” We believed that graduates’ self-assessed preparedness to deal with real-life public health scenarios would be a satisfactory measure of such demand. Unlike our strategy in assessing supply, we conducted an Internet-based survey of graduates from an accredited MPH program to assess demand.

The study population consisted of MPH alumni from the Uniformed Services University of the Health Sciences (USU) who had graduated between 2000 and 2006. These graduates represented a mix of active-duty military personnel working in the Department of Defense, uniformed public health service officers, and civilians employed by the Centers for Disease Control and Prevention, the Food and Drug Administration, the National Institutes of Health, various state and local health departments, and other employers. We used

Scenarios Used in the Survey of Master of Public Health Graduates

Quarantine: You are tasked with developing a disaster response plan to an eventual avian influenza outbreak for your local community. One of the potential responses includes implementing quarantine as a control measure. How prepared are you to formulate this plan?

Vaccine: The Food and Drug Administration just approved (hypothetically) a new HIV vaccination. You work for the state. Your governor has asked you for advice regarding mandating the vaccine for everyone and, if necessary, determining a distribution plan if the vaccine were in short supply. How prepared are you to give this advice?

Food Code: You work for the county and have noted multiple food code violations at a popular dining facility. You have made weekly inspections for the past month with no improvement. How prepared are you to handle this situation?

Sexually Transmitted Infection: You are working in the county health department. The mayor's 16-year-old child comes in and is diagnosed with chlamydia (a sexually transmitted infection). How prepared are you to trace this child's sexual contacts?

Prison: You are employed in the health clinic at the state penitentiary. Your job includes certifying the proper medical treatment and humane conditions of a local prison population. How prepared are you for this task?

Institutional Review Board: You are chairing the local institutional review board. Your duties include confirming that the researchers provide proper informed consent and determine statistically appropriate alpha values for studies. How prepared are you for this responsibility?

Town Hall: You have been asked to coordinate a series of town hall meetings for your state. One of the topics is a proposal for legislation to restrict direct-to-consumer advertising of dietary supplements. How prepared are you to handle this assignment?

Red Cross: You have volunteered to work for the International Red Cross for 6 months. You may be asked to give advice to a community (in a different region from your own) about how to rebuild its public health care infrastructure after a disaster. How prepared are you for this task?

Teaching: You have been asked to help teach ethics small groups at a local graduate school. The students are expected to be able to identify ethical dilemmas and use a consistent methodology to deal with them. How prepared are you to meet these objectives?

the Web-based PHP Surveyor tool (now LimeSurvey) to anonymously sample the entire population of students who had graduated during the study period (and whose e-mail addresses were known).

We surveyed graduates and assessed their responses to 9 scenarios (see the box on this page) selected on the basis of real-world relevancy and currency. Scenarios were derived from current news headlines, class topics, and public health textbooks on law and ethics. Because many USU alumni and students are civilians, the scenarios were purposefully demilitarized.

Subject matter experts (USU faculty, including affiliate professors with experience in legal and ethical issues) reviewed a draft version of the survey to assess the appropriateness of the scenarios. Then cognitive interviewing

techniques (allowing evaluation of potential survey response errors) were used in pre-testing the survey with 7 MPH students from USU.¹¹ All 7 students read the survey aloud and were asked to provide feedback (e.g., with respect to clarity of the scenarios). This methodology (validation and cognitive interviews)

ensured that our scenarios were timely and relevant.

The survey population size was 137. The target response rate was 50%. In April 2007, alumni were sent an explanatory e-mail (including a hyperlink to the survey) inviting them to take part in the survey. All responses were encrypted and anonymous in nature. Those who did not initially respond to the invitation were sent a follow-up e-mail after both 7 days and 10 days. Participants responded to the scenarios on a Likert-type scale (1=very unprepared, 5=very prepared) similar to that used by the Accreditation Council for Graduate Medical Education to evaluate ethics education.¹²

The first question on the survey provided respondents with an opportunity to opt out of the study. This provision, required by the USU institutional review board, reinforced to respondents the voluntary nature of their participation in the survey.

SPSS version 14.0 (SPSS Inc, Chicago, IL) was used in conducting the statistical analyses, which were primarily descriptive in nature. We used the Mann-Whitney *U* test to assess relationships between participants' scenario responses and their completion of formal instruction in law and ethics.

RESULTS

The results of the Internet-based curriculum assessment showed that, of the 93 accredited public health schools and programs reviewed, 14% required a course in ethics and 16% required a formal course in law. Table 1 outlines these results and compares them with those reported by Coughlin et al. in their study conducted more than a decade ago.⁴

TABLE 1—Availability of Formal Ethics and Law Instruction in Accredited Public Health Schools and Programs

Study	Methodology	Response Rate, %	Ethics Courses, %		Law Courses, %	
			Required	Elective	Required	Elective
Coughlin et al. ⁴	Telephone interviews	86 (schools only; n=24)	4	58
Our study	Review of accredited school and program Web sites	90 (schools and programs; n=93)	14	30	16	39

TABLE 2—Master of Public Health Graduates (n = 84) Responses to Survey Scenarios: Uniformed Services University of the Health Sciences, 2000–2006

Scenario	Prepared or Very Prepared, %	Scale Rating, ^a Mean (SD)
Quarantine	61	3.51 (0.91)
Vaccine	65	3.57 (0.84)
Food code	76	4.00 (0.99)
Sexually transmitted infection	76	3.88 (0.93)
Prison	63	3.62 (0.98)
Institutional review board	70	3.84 (0.92)
Town hall	54	3.42 (0.92)
Red Cross	67	3.73 (0.83)
Teaching	55	3.49 (0.96)

^a1 = very unprepared, 5 = very prepared.

It is noteworthy that our methodology differed from that of Coughlin et al. in that we included a sample of both schools and programs of public health (n=24), whereas Coughlin et al. limited their study to a sample of schools (n=24). Thus, it is possible that the percentage of schools and programs offering elective courses in ethics did not decline, as might be inferred from Table 1; rather, our percentage and that of Coughlin et al. may have differed as a result of these sampling issues. In

any case, there does not appear to have been an increase in the number of ethics courses offered. The Coughlin et al. study did not address courses in law, so direct comparisons in that area are not possible.⁴

Eighty-four of the 137 USU alumni contacted (61%) participated in our anonymous survey, of whom 81 (96.4%) answered all of the survey questions. Responses to the 9 scenarios were normally distributed, with a mean rating of 3.6 on the 5-point scale (range=2.1–4.8). Table 2 provides descriptive statistics on scenario survey responses.

When asked whether they had encountered ethical or legal issues for which they were not adequately prepared, 14% of the respondents answered yes. Twenty-four percent of the participants had completed a graduate ethics course and 32% a graduate law course while pursuing their MPH degree. The Mann–Whitney *U* test to assess relationships between scenario responses and self-declared completion of formal graduate coursework in ethics revealed no statistically significant results. Similar tests focusing on graduate courses in law revealed statistically significant results for 2 of the scenarios: the food code scenario (*P*=.046) and the prison population scenario (*P*=.019). Table 3 provides details on these analyses.

DISCUSSION

Our results suggest that the vast majority of accredited public health schools and programs do not require students to complete graduate

courses in ethics or law to obtain an MPH degree. In the case of ethics, it appears that little has changed during the past decade despite the escalating number of natural and human-made disasters that drive many ethical dilemmas.

Preparation of Master of Public Health Graduates

MPH graduates’ responses to our scenarios were encouraging. The majority of the participants believed that they were prepared to deal with the challenges thrust upon them. Although responses varied among the scenarios, more than half of the participants indicated that they were prepared or very prepared for each scenario. (It is important to note that although respondents were USU alumni, they were not necessarily affiliated with the US military.)

It is noteworthy that there were no statistically significant relationships between scenario responses and completion of a formal graduate course in ethics. One broad explanation could be that the ethics courses at USU have historically focused on “medical ethics” as opposed to specifically “public health ethics.” The primary ethics course, an elective, shifted in 2004 to a broad public health ethics course. Another explanation for the lack of significant findings could be the small number (n=20) of individuals who had completed a formal ethics course.

There were a pair of significant relationships between scenario responses and completion of a graduate course in law. It is unclear why these 2 scenarios—one involving

TABLE 3—Relationships Between Scenario Responses of Master of Public Health Graduates (n = 84) and Completion of Formal Graduate Courses in Law and Ethics: Uniformed Services University of the Health Sciences, 2000–2006

Measure	Quarantine	Vaccine	Food Code	Sexually Transmitted Infection	Prison	Institutional Review Board	Town Hall	Red Cross	Teaching
Students completing formal course in ethics									
Mann-Whitney <i>U</i>	554.0	592.5	571.5	587.5	591.5	493.5	578.0	491.5	575.0
<i>z</i> score	-0.68	-0.22	-0.45	-0.28	-0.22	-1.38	-0.38	-1.44	-0.41
Asymptotic significance (2-tailed)	.49	.82	.65	.78	.83	.17	.71	.15	.69
Students completing formal course in law									
Mann-Whitney <i>U</i>	725.0	597.0	544.0	643.5	510.5	587.0	564.0	592.5	688.5
<i>z</i> score	-0.05	-1.54	-1.99	-0.96	-2.35	-1.54	-1.79	-1.52	-0.66
Asymptotic significance (2-tailed)	.96	.13	.05	.34	.02	.12	.07	.13	.51

food code violations and one involving a prison population—produced significant results whereas the others did not. One possible explanation for the significant prison scenario results is that respondents had been influenced by recent news media coverage of scandals involving prisons and detainee camps.

Strengths and Limitations

Our scenario-based survey measuring MPH graduates' preparedness in facing real-world ethical and legal public health challenges was validated and pretested through cognitive interviews, and it included an opt-out provision to reduce the risk of coercion or response bias. The response rate was a healthy 61%, which exceeded our initial expectations.

Our Web-based survey application was user friendly, and the development of the survey instrument was straightforward. The software tracked survey completion via unique identifiers, automatically sent reminders to those who had not responded, and ensured that all encrypted responses remained anonymous.

We recognize that some might view the proxy relationship between "preparedness of MPH graduates" and "demand for training" as a stretch. We believe that a lack of preparedness does reflect, or should reflect, a need for instruction. Conversely, however, we are not comfortable suggesting that MPH graduates who believe that they are "very prepared" to deal with real-life public health scenarios might not need formal instruction in ethics and law. There is a need for further research (e.g., involving expert panel reviews) in this area.

Some readers might cite lack of generalizability as a weakness of our study. However, although only graduates from one accredited MPH program were surveyed, and the program is administered through a federal medical school, USU alumni are employed in diverse settings without regard to military affiliation. In addition, recent increases in natural and human-made disasters have forced public health officials (regardless of affiliation or program) into environments once frequented only by military personnel. In this study, we sought to provide preliminary evidence on the preparedness of MPH graduates to face real-world scenarios requiring ethical

and legal interpretations. As such, our study provides a baseline for broader replication by others.

There are also limitations inherent to using self-report assessment tools in collecting data.^{13–16} Our Likert-type response scale was limited to capturing respondents' self-perceptions regarding their preparedness for the scenarios, and self-perceived preparedness in a hypothetical situation may differ from observed preparedness in a real-life situation. Variations in possible outcomes and the need to reduce methodological biases are challenges in investigations of ethical and legal issues. We accept the limitations of our exploratory self-report assessment and encourage other investigators to examine alternative approaches, perhaps multi-method in nature, to measuring MPH graduates' ethical and legal preparedness.

A final limitation, one stemming from the cross-sectional nature of our survey, was our inability to establish a temporal relationship between scenario preparedness and formal class instruction. Participants' real-world experiences may have confounded their scenario responses.

Conclusions

We offer this study as a starting point for informed dialogue and further applied research to assess the preparedness of public health practitioners to deal with contemporary issues involving ethical and legal implications. Our evidence regarding the "supply" of ethical and legal training in public health graduate schools and programs is disheartening. Despite several calls for additional training in ethics and law, most schools and programs do not require formal coursework in these critical subjects. In fact, a substantial number do not offer elective courses in public health law and ethics. This finding and its implications are worthy of spirited debates among schools and programs as well as attention by the Council on Education for Public Health. In addition, such discussions should include law schools that have revamped their curriculums to offer courses focusing on public health.^{17–20}

Measuring MPH graduates' preparedness to address ethical and legal issues is a challenging endeavor. Whereas in some disciplines and fields assessment of preparedness is

straightforward (e.g., via multiple-choice tests), comprehension and application of ethics and law in public health are more a matter of understanding decisionmaking frameworks. For this study, we developed a self-assessment instrument in which MPH graduates could provide feedback with respect to real-life scenarios. Future scholars can expand on this approach to measuring graduates' preparedness and build an outcomes-based framework that schools and programs can apply in measuring the strengths and weaknesses of their curriculums. Public health departments, non-profit organizations, and other employers of MPH graduates may welcome such a framework. ■

About the Authors

At the time of the study, Brian Agee and Ronald W. Gimbel were with the Preventive Medicine and Biometrics Department, Uniformed Services University of the Health Sciences, Bethesda, MD.

Requests for reprints should be sent to Ronald W. Gimbel, PhD, Department of Biomedical Informatics, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Rd, Bethesda, MD 20814 (e-mail: rgimbel@usuhs.mil).

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Contributors

B. Agee originated the study, led the development of the survey, and conducted the initial data analysis. R. W. Gimbel assisted in designing the study and refining the survey instrument, supervised the data collection and analysis, and contributed to revising the article.

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Human Participant Protection

This study was approved by the institutional review board of the Uniformed Services University of the Health Sciences.

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