Universities as Resources to State Health Agencies

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Synopsis

In a survey of the 50 State health agencies in the spring of 1992, officials were asked about their manpower and research needs in the specific areas of administration, behavioral and social science, education and information, environmental health, environmental protection, epidemiology, laboratory, law, occupational health, policy and planning, and statistics. In all, 40 agencies (80 percent) responded.

Indepth telephone interviews to determine whether universities and schools and graduate programs in public health filled these needs completed the data collection process.

Agency officials indicated that their resources were least adequate in environmental protection, behavioral and social science, and occupational health. They did not feel their research needs were being met. There was a general feeling that universities and schools and programs in public health have different agendas than State agencies and that practical solutions to the shortage of research resources are not forthcoming from these sources.

Suggestions are made as to what can be done to improve relationships between those who train public health personnel and those who employ them.

CURRENT AND EMERGING health issues continue to increase the need for both public health manpower and research (*1,2*). An aging population, infant mortality, AIDS, substance abuse, and other modern health problems require additional care and additional personnel, as well as the knowledge upon which both are based (*3*).

Although the need for highly trained health professionals and researchers increases, budgets for these purposes are squeezed at the State level by the sheer growth of service programs. Not only do States have obligations to provide services to people, but they must also support community agencies in their public health efforts (*4*). State governments need assistance. Logically, academic institutions should be able to help. But do they and can they?

Our study had two purposes. The first was to determine whether State universities and colleges are a viable source of technical assistance to State health agencies. The universities and colleges were chosen because they are funded by State tax dollars and should be responsive to the needs of that State.

Our second purpose was to determine whether schools and graduate programs in public health are meeting the manpower needs of State health agencies. Although schools and graduate programs in public health are often located within the confines of a State university or college, they are often considered separate entities. In addition, schools and graduate programs in public health may be attached to private institutions that are not supported by State tax revenues.

After we summarize the relationships between State health programs and universities, we describe a 50-State survey of all State health service agencies.

The Institute of Medicine (IOM) points out in "The Future of Public Health" (*5*) that the knowledge required of public health practitioners has been rapidly increasing. Traditionally, schools of public health met the training needs of this work force. In equal measure, most health research performed in universities has been very theoretical and dissemination of the findings to the field has been slow. For many State agencies, the Public Health Service's Centers for Disease Control and Prevention has provided the link between research

Table 1. The mean and the 95 percent confidence intervals of responses of 40 State health agencies to survey questions on importance of areas of interest and adequacy of resources, 1992

Area	Importance		Adequate resources	
	Mean[1]	Confidence Interval	Mean[1]	Confidence interval
Administration	9.2	8.7, 9.6	6.9	6.2, 7.7
Behavioral and social science	6.3	5.4, 7.1	5.7	4.9, 6.5
Education and information	8.6	8.1, 9.0	6.3	5.7, 6.8
Environmental health	8.9	8.4, 9.4	6.9	6.1, 7.7
Environmental protection	6.6	5.5, 7.5	5.9	4.9, 6.8
Epidemiology	9.5	9.3, 9.8	7.0	6.3, 7.7
Laboratory	9.1	8.6, 9.5	7.0	6.2, 7.7
Law	7.2	6.4, 8.0	6.1	5.2, 7.0
Occupational health	5.9	5.0, 6.7	4.4	3.6, 5.2
Policy and planning	8.8	8.5, 9.2	6.2	5.4, 6.9
Statistics	9.0	8.7, 9.3	6.5	5.8, 7.2

[1] Range of ratings: 1 = not at all to 10 = very much.

Table 2. Mean with 95 percent confidence intervals of State health departments' research needs being met by universities in State and out of State for 40 respondents in 1992 survey

Area	In State		Out of State[1]	
	Mean[2]	Confidence Interval	Mean[2]	Confidence interval
Administration	4.5	3.6, 5.4	4.1	3.2, 5.0
Behavioral and social science	5.2	4.2, 6.1	4.1	3.0, 5.2
Education and information	5.3	4.5, 6.2	4.3	3.4, 5.3
Environmental health	4.4	3.5, 5.3	4.3	3.3, 5.3
Environmental protection	3.9	2.9, 4.9	4.0	2.9, 5.0
Epidemiology	4.4	3.4, 5.5	4.9	3.6, 5.8
Laboratory	4.4	3.4, 5.3	4.7	3.7, 5.6
Law	4.1	3.1, 5.1	3.6	2.7, 4.5
Occupational health	3.7	2.8, 4.5	3.5	2.6, 4.5
Policy and planning	4.7	3.7, 5.6	4.1	3.1, 5.1
Statistics	4.8	3.9, 5.7	4.3	3.4, 5.3

[1] Colleges and universities outside the State, consulting firms, and so on.
[2] Range of ratings: 1 = not at all to 10 = very much.

and practice, and the States provided the link to local agencies. With Federal budget cuts, this service may diminish or disappear.

IOM suggests strengthening the links between schools of public health and public health agencies; it also suggests strengthening the ties with other relevant graduate programs in universities. IOM did not recognize the utility of public health workers being trained at less than a graduate level, although the joint Society for Public Health Education—American Association for Health Education accredits undergraduate health education programs. The Association for University Programs in Health Administration accredits undergraduate programs in public health administration, and the National Environmental Health Association accredits undergraduate programs in environmental health.

Methods

All State health agencies were originally surveyed by mail in February 1992, and a sample of respondents was interviewed by telephone between May and June 1992. A list of State health agency directors with addresses was obtained from the latest edition of "State Agency Officials by Function" published by the Council on State Government (*6*). The secretary or director of each health agency was sent a four-page questionnaire in booklet form. The questionnaire was limited to four pages to increase the likelihood of response (*7*). Agency directors were instructed to respond in their official capacities and to draw on the resources of their agencies to complete portions of the questionnaire.

A reminder postcard was sent to all agencies 3 weeks after the survey was mailed out. Two months after the original survey mailing, a research assistant called each agency that had not responded to inquire as to the disposition of the survey. She also obtained updated addresses and names of newly elected officials. Based upon this information, a second copy of the survey was sent to nonrespondents.

In six of the eight questions on the questionnaire, respondents were asked to estimate how often they seek outside assistance in 11 general areas—1=not at all, 10=very much. The areas were administration, behavioral and social science, education and information, environmental health, environmental protection, epidemiology, laboratory, law, occupational health, policy and planning, and statistics.

Respondents were asked how important each area is as a responsibility of the health agency, how adequate the current resources in each area are within the agency, and how well the universities and colleges in their State meet their research needs. In addition, we asked each State health agency to tell us how well outside resources such as colleges and universities outside the State and consulting firms meet their research needs, how well manpower needs are met by State universities and colleges, and by schools and graduate programs in public health.

In the seventh question, respondents were asked to identify specific programs and schools they had worked with in each area in the last 5 years. In the eighth question, respondents were asked what three significant problems universities could assist the

agencies with. Respondents were encouraged to provide any additional comments or material that they believed would be helpful.

T-tests were run comparing mean responses with the neutral response (5.0). Mean responses that were significantly different from the neutral response ($P < .05$) were noted.

A purposeful sample of the respondents was chosen for indepth telephone interviews. We attempted to balance the sample by selecting respondents who had both good and bad experiences (as determined by survey responses) and who represented a variety of geographic regions. Unlike the mail survey that consisted largely of closed-end questions, the telephone interview consisted of five open-end questions designed to elicit further information and understanding of items from the mail survey. All interviews were performed by one trained interviewer to minimize bias.

Means for all items were computed with 95 percent confidence intervals. To determine whether the presence of a school or graduate program in a State influenced item ratings, a *t*-test of the means of States with and without schools or graduate programs was computed. For the purposes of our study, a State was considered to have a school or graduate program if it had a school of public health or graduate program in public health accredited by the Council on Education for Public Health (CEPH). States with only a CEPH-accredited community health education or no CEPH accredited program of any type were considered to be without a school or graduate program in public health.

Results

The overall response rate was 80 percent (40 of 50 agencies responded). Nonrespondents did not differ significantly from respondents by geographic region or by degree of urbanization. Nine persons were interviewed in the followup telephone survey. As expected, there was variation in responses, reflecting the diversity of State agencies. Agencies found all of the areas of some importance (every mean value exceeded 5.5). Administration, epidemiology, laboratory, and statistics were considered the most important (mean values greater than 8.9). Occupational health, behavioral and social science, and environmental protection were least important (mean values 5.9–6.6) (table 1). There were no significant differences in importance ratings between States with and without schools or graduate programs in public health.

Agencies rated resources in all but three areas as adequate to good (table 1). Environmental protection, behavioral and social science, and occupational health were rated as the least adequate (mean values less than 6.0). States with schools or graduate programs in public health rated their resources in environmental health as better than those in States without schools or graduate programs. This was the only significant difference in resources adequacy ratings between States with and without schools or programs in public health. Interestingly, although most States rated behavioral and social science as unimportant, they also rated the resources in these areas as being inadequate.

'For many State agencies, the Public Health Service's Centers for Disease Control and Prevention has provided the link between research and practice, and the States provided the link to local agencies. With Federal budget cuts, this service may diminish or disappear.'

Research needs were not well met by State colleges and universities in 9 of the 11 subject areas (table 2). Only education and information and behavioral and social science had mean values exceeding 5.0. Outside resources were even less useful in 8 of 10 categories. The most assistance from outside agencies was in the field of epidemiology (mean of 4.9) (table 2). In other words, State health agencies are not having their research needs met.

One respondent from a western State wrote, "I have been singularly impressed with how little universities and schools of public health know about practical matters in public health. Their main concerns seem to be obtaining funding for their institutions and maintaining their status. Solving practical public problems is of minor concern."

Yet, survey responses showed that State colleges and universities do a significantly better job of meeting research needs for all areas except law if their State has a school or graduate program in public health ($P < .05$). One southern respondent stated their "long term relationship with the university medical schools and department of public health attests to that."

Outside resources did not follow this pattern. They met research needs poorly, regardless of whether or not their State had a school or graduate program in

Table 3. Mean manpower needs met by State universities and colleges versus those met by public health schools and programs in and out of State with 95 percent confidence intervals for 40 State health agencies in 1992 survey

Area	State universities and colleges		Public health schools and programs	
	Mean[1]	Confidence Interval	Mean[1]	Confidence interval
Administration	5.8	4.9, 6.8	5.1	4.1, 6.0
Behavioral and social science	4.9	4.1, 5.8	4.4	3.6, 5.3
Education and information	5.2	4.2, 6.2	5.0	4.1, 6.0
Environmental health	4.9	4.1, 5.8	5.0	4.3, 5.8
Environmental protection	4.3	3.4, 5.2	4.4	3.6, 5.3
Epidemiology	4.5	3.6, 5.3	6.0	5.1, 6.8
Laboratory	5.1	4.1, 6.0	4.5	3.6, 5.4
Law	5.4	4.3, 6.5	3.4	2.5, 4.3
Occupational health	3.6	2.7, 4.4	4.2	3.3, 5.2
Policy and planning	5.8	4.9, 6.6	5.6	4.7, 6.6
Statistics	4.8	3.9, 5.7	5.1	4.3, 5.9

[1] Range of ratings: 1 = not at all to 10 = very much.

public health. Outside resources did, however, have slightly higher mean ratings in States with these programs.

State colleges and universities were not filling health agency manpower needs in most areas. None of the average values were greater than 6.0. They best filled manpower needs in the areas of administration and policy and planning (mean value 5.8 in both categories) (table 3).

Not unexpectedly, State colleges and universities in States with schools or graduate programs in public health did a significantly better job of providing manpower in the areas of administration, education and information, environmental health, epidemiology, occupational health, policy and planning, and statistics than State colleges and universities without such programs ($P < .05$).

Schools and graduate programs in public health met manpower needs in epidemiology (mean value 6.0) and to a lesser extent in policy and planning (mean value 5.6). But they did not meet these needs in other areas (average values less than 5.1). Schools and graduate programs in public health did not do a significantly better job of meeting manpower needs in States with or without schools or graduate programs in public health, although the mean rating was consistently higher in States with schools or programs.

The schools and graduate programs did not do as well as State universities and colleges in providing manpower in the areas of administration, behavioral and social science, education and information, laboratory, law, and policy and planning. They did a better job of providing manpower in areas such as epidemiology and occupational health, disciplines that are not usually covered by State college and university programs (table 3).

Comments and qualitative interviews. With regard to research needs, State agencies seem to have either very good working relationships with their State universities and colleges or very poor or nonexistent ones. Those States with very good relationships receive funding from outside sources and have internal funds devoted to research. Many of the States with very good working relationships also have developed a research plan that they have disseminated to the State universities. Several agencies fund faculty positions or have agency personnel with faculty appointments.

Those agencies with poor relationships cite an inability to fund university research. State agencies and universities also have poor working relationships because they have different goals and different calendars. For example, one southern State official replied that "A lot of university work is esoteric. Universities are looking for indepth research projects. Government agencies look for efficient ways, for example, to distribute health care."

State agencies have a need to solve specific problems, whereas university faculty are trying to gather information that can be used to provide knowledge to solve multiple problems. State agencies work on a fiscal year calendar, State universities work on an academic calendar. In addition, sometimes there seems to be a lack of communication between the two as to what and how they are trying to solve problems. For example, one northeastern respondent stated, "A lot of contracts do not work out well. Sometimes they (the university) get what they want and sometimes we get what we want. A lot has to do with funding, especially at present."

Several State agencies said they are unaware of what the universities can offer and who they should contact. State contract protocols are also a barrier, since in most States the universities and colleges are considered to be outside consultants for the purposes of contracting for services. One respondent claimed, "The collaboration between State and academic institutions has a lot to do with individuals, their commitment and level of respect for each other. However, nonexistent resources temper their efforts."

Manpower needs are not well met by State universities and colleges or by schools and graduate programs in public health. In some cases, State officials feel appropriate training is not being

provided. Sometimes the State agency was unaware of the training provided. In other cases, collaboration is excellent. For instance, one State claims to provide public health summer projects for students, and their staff members act as faculty advisors. In other States, health department staff members lecture in public health classes, especially in epidemiology.

Recommendations

The IOM report notes several ways linkages between schools of public health and State and local agencies can be improved. Yet lack of access to a school or graduate program in public health should not be a barrier to a State health agency meeting its research and manpower needs.

There are a number of ways universities and State agencies can enhance their relationships. First, universities should market their capabilities in both research and manpower training to State health agencies. In light of declining budgets for many universities and State health agencies, universities should have an incentive for increasing their visibility and service to their States, and States should approach university administrations for assistance.

Second, State contract protocols should be revised to make it easier for State agencies to contract with universities. The university protocols for accepting contracts must be revised to allow faculty members to accept contracts with limited or no indirect costs and to be given credit for such contracts in tenure and promotion equal to that obtained for contracts with larger overhead payments.

Third, university faculty members should take sabbatical leaves to work in State agencies. They would be a source of technical assistance during this period and would have a better understanding of State research needs. The faculty would also gain a better understanding of the manpower needs of the agency. Faculty teaching would be enhanced by bringing this experience to the classroom.

Fourth, agency personnel should serve as active adjunct faculty in university public health programs. They should be involved both in teaching courses and in curriculum design. Likewise, State agency officials should be on program advisory boards and senior university and college officials should serve on State health agency advisory boards. This interweaving of personnel will inject academic rigor and resources into solving public health problems and lend an air of practicality to academic programs.

Fifth, the needs of States that have no schools of public health or major graduate programs in public health must be addressed. State health agencies should contact public health schools or programs in nearby States and their universities to try to find a process whereby their needs can be met. Alternatively, university-based administrations could reach out to State health agencies and other nearby universities to construct new programs to fill voids. In some instances, State agencies are simply too far from the nearest school or program in public health to have a practical working relationship. Other times, the nearest school or program in public health may have an international focus or may not have the resources needed by State agencies. In these cases, States will need to be clear that their needs are not being met. They can continue on their current path of muddling through, or they can offer to collaborate on new research directions more in line with their needs, cultivate relationships with other, more distant schools or programs in public health, or obtain resources from outside agencies.

'A most useful step would be for the American Public Health Association, the Association of University Programs in Health Administration, or the Federal Government to initiate a study that would lead to model processes for establishing State-university consortiums that address the research and personnel needs of State public health agencies.'

Universities should be encouraged to use modern technology (such as computer-mediated communication, correspondence courses, cable or satellite television seminars, teleconferencing, and videotapes) for training of public health personnel at a distance. Upgrading the skills of current workers, meeting the continuing education requirements of credentialed employees, and training new personnel are likely to become increasingly important under health care reform.

A most useful step would be for the American Public Health Association, the Association of University Programs in Health Administration, or the Federal Government to initiate a study that would lead to model processes for establishing State-university consortiums that address the research and personnel needs of State public health agencies. Such a model has been tried before, but it has not been inclusive, that is, it addressed only executive training and research needs (*8,2*).

We suggest a panel that includes administrators of university-based health services programs and schools of public health and administrators of universities from States that do not have schools or programs of public health. These universities may have programs in allied disciplines such as business, economics, or sociology that could be part of a consortium for fulfilling future manpower and research needs. We foresee this model addressing special causes and including intensive seminars offered by public health programs from out of State for State public health officials. The model could be truly visionary, including an interactive process that could fill current voids. If we do not address ways to fill these voids, the future for public health training is bleak.

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