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After Graduation, What? An Analysis of the Job Placements of Graduates of Public Health Maternal and Child Health Training Programs

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Objectives: In 1995, the Association of Teachers of Maternal and Child Health (ATMCH) decided that information about the employment status of program graduates was essential to attempts to improve MCH curricula. *Method*: ATMCH requested information from 13 MCH programs in schools of public health funded by the federal Maternal and Child Health Bureau and 12 provided information about their master's degree graduates in the 1990-1994 period, including the year of graduation, degree, Bureau traineeship support, position held, and employing agency. *Results*: The total number of graduates was 742. Four programs averaged less than 8 graduates per year (small); six, 10–16 (midsize); and two more than 22 (large). More than 90% of graduates received a M.P.H. In the 10 programs that provided data on Bureau support, 46% received traineeship support from the Bureau. Midsize programs had the largest percentage of graduates receiving traineeship support. Overall, 45% of graduates were in administrative positions, 32% were involved in patient care, 20% were in policy-analytic positions, and 3% in other positions. Forty-seven percent of program graduates entered into or continued in community-based agencies, 18% in government agencies, 17% in academic or research agencies, and 18% in other agencies. Program size was significantly associated with both position and the agency in which the graduate was employed. Bureau traineeship support was associated with employing agency. *Conclusions*: The study suggests the need for changes in MCH curricula, enhanced education opportunities in specialty skill areas, and an ongoing survey of graduates of MCH programs.

KEY WORDS: Agencies; administration; child health; curriculum; education; employment; maternal health; positions; survey; traineeship.

INTRODUCTION

If graduates are to find employment and to be successful in the tasks to which they are assigned, the curriculum in professional schools needs to be continually reviewed and revised to anticipate and meet the demands of the field. This is a particular challenge for schools of public health because of the rapid changes currently occurring in health care. Experts have noted that the public health system is now faced with a major training and continuing education challenge as public health agencies move from direct provision of personal health service to underserved populations toward provision of essential health services to entire communities. As a consequence, the public health work force must become knowledgeable about managed care and integrated delivery systems, the changing role of government, building

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community partnerships, and the use of new information technologies (1).

To meet these challenges, maternal and child health (MCH) programs within schools of public health have been modifying their course offerings in ways that emphasize skills, with somewhat less attention to specific content areas. This forward thinking was reflected in "Competencies for Education in Maternal and Child Health," a statement prepared by the Association of Teachers of Maternal and Child Health (ATMCH) and adopted by ATMCH and the Association of Schools of Public Health's MCH Council in November 1993 (2). The Competencies statement listed five basic areas in which graduates of MCH programs should be proficient. In the three years since the adoption of the MCH Competencies statement, the MCH programs have striven individually, and with suggestions from the ATMCH Education Committee, to adapt their curriculum to cover all the areas listed.

In 1995, the Education Committee decided that in order to develop new teaching methods and materials or to recommend additional curriculum changes, it needed to know the employment status of maternal and child health program graduates after they received their degrees. The MCH training program at the University of Alabama at Birmingham (UAB) volunteered to collect and analyze the data.

METHOD

UAB requested information from the 13 MCH programs in schools of public health that had been funded by the federal Maternal and Child Health Bureau in the 1989–1994 period. Very few other schools of public health had major MCH programs during the study period. The information, requested for all master's degree graduates listed in the programs' 1989–1994 Progress Reports, included the year of graduation, degree, whether the graduate had been supported by a Bureau traineeship, position held, and the agency by which the graduate was employed at the time the Progress Report was prepared, unless later information was available. Codes were provided for the latter two items. All but one program responded.

UAB returned to each of the 12 programs a printout showing the information on each graduate in the UAB data file. Programs were asked to complete their lists and to check whether UAB had coded their graduates accurately, since there had been some recoding. UAB also provided an expanded set of code definitions because some programs had experienced difficulties with the original set. All the programs responded to these requests.

The 12 programs provided information on 856 individuals. Ten programs provided information on those who had graduated in the 6-year period, 1989–1994, and two programs provided data only on those who had graduated in the 5-year period, 1990–1994. In order not to bias the findings, UAB analyzed only the 1990–1994 period for which data were available from all 12 programs.

Analytic Plan

The UAB team used its collective knowledge of the MCH field to develop a list of ten possible positions and nine types of agencies that might employ graduates plus an Other category for positions, and both Other and Private Practice categories for agencies. The position list also allowed graduates to be coded as Students (they returned to school after graduation from the MCH program), Residents, Unemployed, Retired, Deceased, or Unknown. Each program was asked to select only one position code and one agency code for each individual. For graduates who had several tasks, the programs were requested to select the primary one, i.e., the area in which the graduate was primarily engaged. A similar approach was used for graduates employed by more than one agency. On the basis of the number of responses in each category in the first set of responses, the position list and the agency list were both condensed to eight plus Other.

The agency in which the graduates were employed was analyzed excluding graduates who were students, residents, retired, deceased, unemployed, or unknown. (Of the 116 graduates whose position was unknown, for 6 their agency was known and they were included in this analysis.)

The analysis was primarily descriptive, i.e., what types of positions and agencies attracted MCH graduates. In addition, UAB determined whether program size, defined as number of graduates per year, was associated with Bureau traineeship support and whether the year of graduation, program size, or Bureau traineeship support was associated with position or agency. There were too few with degrees other than a MPH to use degree as a variable. Statistical significance was checked using the chi-square

Table I. Characteristics of MCH Graduates of 12 Schools of Public Health, 1990–1994

	Number	Percent
Average number of graduates per year (n = 742)		
<8 (small) (n = 4)	133	17.9
10–16 (midsize) (N = 6)	369	49.7
>22 (large) (N = 2)	240	32.3
Degree received (n = 742)		
M.P.H.	687	92.6
M.S.	30	4.0
M.H.S.	25	3.4
Total number of graduates by year (n = 742)		
1990	148	19.9
1991	163	22.0
1992	152	20.5
1993	151	20.4
1994	128	17.3
MCHB[a] support (n = 603)		
Yes	275	45.6
No	328	54.4

[a]Maternal and Child Health Bureau, Department of Health and Human Services.

test with a probability of less than .05 defined as a significant difference.

ANALYSIS AND RESULTS

The total number of graduates of the 12 MCH programs between 1990 and 1994 was 742. The number of graduates per program ranged from 31 to 124. Over this 5-year period, four programs averaged less than 8 graduates per year and were classified as small; six, 10–16 (midsize); and two averaged more than 22 (large) (Table I).

More than 90% of graduates received a MPH; the rest received an MS or an MHS. Program size remained relatively stable, averaging 148 per year and ranging from a high of 163 in 1991 to a low of 128 in 1994. Only 10 programs provided data on Bureau support; 46% of the graduates in those programs received traineeship support from the Bureau (Table I).

Program size was significantly associated with Bureau traineeship support. Midsize programs had the largest percentage of graduates receiving support (70%), followed by small programs (42%). Large programs had the smallest (25%).

Position Held

The largest group of graduates (19%) was in Clinical Practice, i.e., actually engaged in the practice of medicine, nursing, nutrition, psychology, or other professions (Table II). The code specified that graduates in this category had as their primary responsibility directly interacting with patients providing clinical services or therapies, regardless of the type of agency.

The second and third largest groupings were Other Project Manager or Administrator and Program Specialist. The information provided by the programs indicated that, for example, Other Project Managers or Administrators (13%) were responsible for child health or immunization programs or supervised nursing in a local health department; and that Program Specialists (11%) were coordinators of programs such as those for adolescent health or early intervention,

Table II. MCH Graduates by Position, 12 Schools, 1990–1994

Position	Number	Percent
Clinical Practice	144	19.4
Other Project Manager or Administrator	96	12.9
Program Specialist	86	11.3
Student	50	6.7
Director	49	6.6
Researcher	46	6.2
Educator	41	5.5
Resident	37	5.0
Case Manager	21	2.8
Unemployed	18	2.4
Policy/Data Analyst	17	2.3
Other	17	2.3
Retired/Deceased	4	0.5
Unknown	116	15.6
Total	742	100

Table III. MCH Graduates by Type of Employing Agency, 12 Schools, 1990–1994

Position	Number	Percent
Academic	81	15.5
Hospital	67	12.8
Local Government	67	12.7
State Government	65	12.4
Other	55	10.6
Private Practice	46	8.7
Community Health Center	37	7.1
Other Non-government and Consulting	37	7.0
Federal Government	29	5.7
Voluntary Health Agency	29	5.5
Research	10	1.9
Total	523	100

specialists in areas such as school health or early intervention, training coordinators, or planners.

Agency by Which Employed

The largest group of graduates (16%) had positions in academic institutions (Table III). The next largest groups were those employed by hospitals (13%) and those who worked for local health or health-related agencies (13%). A total of 12% worked for state agencies: 4% in state MCH agencies, 2% in state agencies for children with special health care needs (CSHCN), and 7% in other state agencies.

Factors Associated with Positions and Agencies

On the basis of the preliminary descriptive analyses, the UAB team further condensed the positions into four categories: Administrative including Directors, Other Managers or Administrators, and Program Specialists; Patient Care including Clinical Practice and Case Managers; Policy-Analytical including Policy and Data Analysts, Epidemiologists, Researchers, and Educators; and Other. Again on the basis of preliminary analyses, the UAB team further condensed the agencies into four categories: Academic-Research; Community-based including Hospitals, Community Health Centers, Local Government, Voluntary Health Agencies, and Private Practice; Government including Federal and State; and Other including Other Non-government and Consulting.

These reduced categories of positions and agencies were run against each other and produced reasonable groupings. For example, the largest single position–agency grouping was patient care in a community-based agency, followed by administrative position in a community-based agency and administrative positions in a government agency. The reduced categories were then used in further analyses to explore the factors (program size, year of graduation, and MCH traineeship support) associated with positions and agencies.

Position

Overall, 45% of graduates were in administrative positions, 32% were involved in patient care, 20% were in policy-analytic positions, and 3% in other positions (Table IV). Only program size was significantly related to position (Table V). Nearly half (49%) of the graduates of midsize programs were in administrative positions, as compared with 41% of graduates of large programs and 39% of graduates of small programs. The small programs had the high-

Table IV. Agency by Position[a]

		Position				
Agency		Administrative	Patient Care	Policy-Analytical	Other	Total
Academic-research	*N*	10	18	61	2	91
	%	11.0	19.8	67.0	2.2	17.6
Community based	*N*	98	118	23	5	244
	%	40.2	48.4	9.4	2.0	47.2
Government	*N*	65	12	9	4	90
	%	72.2	13.3	10.0	4.4	17.4
Other	*N*	58	17	11	6	92
	%	63.0	18.5	12.0	6.5	17.8
Total	*N*	231	165	104	17	517
	%	44.7	31.9	20.1	3.3	100

[a] $\chi^2 = 212.09$; $p < .001$.

Table V. Position by Program Size[a]

Position		Program size: Small	Midsize	Large	Total
Administrative	*N*	36	125	70	231
	%	38.7	49.0	41.4	44.7
Patient Care	*N*	34	85	46	165
	%	36.6	33.3	27.2	31.9
Policy-Analytical	*N*	19	43	42	104
	%	20.4	16.9	24.9	20.1
Other	*N*	4	2	11	17
	%	4.3	0.8	6.5	3.3
Total	*N*	93	255	169	517
	%	18.0	49.3	32.7	100

[a] $\chi^2 = 17.89$; $p < .007$.

est proportion of graduates (37%) in patient care positions. The large programs had the largest proportion (25%) in policy-analytical positions.

Agency

Overall, 47% of program graduates entered into or continued in community-based agencies, 18% in government agencies, 17% in academic or research agencies, and 18% in other agencies. (The percentages are different for Bureau support because not all schools provided information in this area.) Program size and Bureau support were significantly related to the agency in which the graduate was employed (Table VI). Over half (53%) of the graduates of large programs were employed in community-based agencies, as compared with 50% of graduates of small programs and 42% of graduates of midsize programs. The midsize programs had the largest proportion of graduates employed in government agencies (23%). The midsize and large programs had the largest proportion of graduates in academic and research agencies (19% and 17%). Bureau traineeship support was positively associated with entering or continuing in a government agency and, to a lesser extent, a community-based agency.

DISCUSSION

Limitations of the Study

This study has several limitations. The data were provided by the programs rather than by the graduates, and the information on positions and agencies was usually at the time of graduation rather than at the time of the study. Moreover, there appears to be

Table VI. Agency by Program Size and MCHB Support

Agency		Program size[a]: Small	Midsize	Large	Total	MCHB Support[b]: Yes	No	Total
Academic research	N	13	49	29	91	28	50	78
	%	14.0	18.8	17.2	17.4	13.0	21.5	17.4
Community based	N	46	110	90	246	113	112	225
	%	49.5	42.1	53.3	47.0	52.3	48.1	50.1
Government	N	13	60	21	94	46	28	74
	%	14.0	23.0	12.4	18.0	21.3	12.0	16.5
Other	N	21	42	29	92	29	43	72
	%	22.6	16.1	17.2	17.6	13.4	18.5	16.0
Total	N	93	261	169	523	216	233	449
	%	17.8	49.9	32.3	100	48.1	51.9	100

[a] $\chi^2 = 12.79$; $p < .047$.
[b] $\chi^2 = 12.68$; $p < .005$.

no widely agreed upon way to classify positions and agencies. The investigators based the original classification system on their knowledge of the MCH field and condensed the data again on the basis of their knowledge and what the raw data suggested.

Discussion

This study provides important information to MCH programs in schools of public health and to the federal Maternal and Child Health Bureau, which funds MCH training programs in many schools.

In the curriculum area, the study underscores the need for education in management techniques, since many graduates assume or continue in administrative positions, often in community-based or state or local governmental agencies. The large percentage of individuals who enter or continue in clinical practice, particularly in community-based agencies, is surprising. MCH educators have always strongly supported the public health training of clinicians, but it is possible that these individuals need a different type of education than others seeking a master's degree in MCH. For example, clinicians may need advocacy training with a focus on the local level. This finding also suggests the need for continuing education aimed at clinicians.

Clearly, the medical care and public health fields are undergoing considerable change. These changes affect the nature and scope of employment opportunities for graduates of MCH programs, which should suggest changes in curricula. The type of educational experience appropriate for the clinician who plans to remain in clinical practice is vastly different from that of the individual who desires and succeeds in securing a position within a governmental or community-based agency. Moreover, given the amount and speed of change in the health care market and health policy arenas, the programs should consider professional development and continuing education in those areas unique to various employment sectors. For example, the need for management skills among graduates who enter management positions may not be met by the usual professional degree curriculum. Similarly, MCH graduates in position requiring sophisticated data and/or policy analyses may require extended programs in advanced data management such as those offered by some MCH programs.

This study provides information only about the employment of MCH graduates after they receive their degrees. Programs might consider whether their curricula should be based on students' initial plans or on likely place of employment and whether the programs affect employment opportunities. Are the programs maximally preparing students for the positions now available? This period of public health reform requires thoughtful discussion about the role of the new MCH professionals and the type of formal and continuing education that is most appropriate to their needs.

In terms of Maternal and Child Health Bureau training grant support, it is noteworthy that over half of the graduates of the programs responding to this questions were *not* supported by Bureau traineeships, per se, although the programs from which they graduated received training grant support. Overall, almost a third of the graduates included in this study, all of whom were graduates of Bureau-supported programs, are employed by federal, state, or local government health or health-related organizations. Moreover, graduates with Bureau traineeship support are more likely to enter or continue in administrative and managerial positions. Both of these facts probably reflect the objectives of the Bureau's training program in schools of public health. However, the number of graduates in education and research (almost 20%) suggests that those entering MCH programs may have a broader array of career paths than traditionally thought.

Conclusions

These data should suggest to the Maternal and Child Health Bureau a need not only for solid educational preparation in public health theory and practice, but also for enhanced education opportunities in specialty skill areas that can be applied in various settings to improve the health of women, children, and families. The field may need both more comprehensive and more specialized degree programs, as well as certificate programs and continuing education including leadership institutes. Such programs must be included in the portfolio of MCH training if the field is to meet the challenges of the next decade and the new century.

In addition, the Association of Teachers of Maternal and Child Health believes that the educational efforts of its members and the training mission of the Maternal and Child Health Bureau could be improved by developing an ongoing survey of graduates and that supplemental questions, such as ones for the

graduates in clinical practice, should be added when needed. ATMCH agrees with a recent Public Health Service report that recommended that "the Public Health Service should increase its investment in research and tracking of the public health workforce and in evaluation of its considerable investment in training and education in public health programs" (3). Surveys of graduates of MCH programs, many of whom are supported by the Public Health Service through the Bureau traineeships, would enable MCH educators better to prepare their students for the positions that they hold and would assist the Bureau in setting its policies with regard to education and professional training.

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