

Followup Study of MCH Trainees in Schools of Public Health

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FORMALLY organized programs in schools of public health in the United States for the preparation of specialists in maternal and child health were first established in 1947 with financial assistance from the U.S. Children's Bureau. By the close of the 1961 academic year, a total of 413 persons had received such training in the six schools of public health with special MCH training programs (California, Harvard, Johns Hopkins, Michigan, North Carolina, and Pittsburgh). Because it is recognized that further progress in maternal and child health is dependent upon those in leadership positions, it is timely to study some aspects of these training programs in an effort to answer certain questions.

1. What are some of the characteristics of the personnel who specialized in maternal and child health? At what age and stage in their careers do individuals receive this specialized training? What proportion of trainees were new recruits to the maternal and child health field and to public health in general?

2. What was the subsequent employment experience of MCH trainees, following their training in schools of public health? How many had been previously employed either in public health or maternal and child health? (Throughout this paper the term maternal and

child health includes personnel engaged in services for crippled children.)

3. What clues for strengthening present maternal and child health training programs in schools of public health can be obtained from those who have undergone such training?

4. How can schools of public health assist MCH trainees after graduation?

Method of Study

This study was conducted under the aegis of the Committee on Child Health of the American Public Health Association and was planned and designed by a subcommittee of that committee. The subcommittee was composed of Dr. Helen M. Wallace, chairman; Elizabeth Edmands, Dr. Paul Harper, Dr. Eleanor Hunt, Dr. Arthur Kraus, Dr. Gerald Rice, Dr. Rowland Rider, and Dr. James Troupin. A study form was designed, and it was pretested during the summer of 1961 by professors of maternal and child health with the special training programs. After each professor pretested the study form with six former trainees in maternal and child health, some revisions were made. During the fall of 1961 and winter of 1962, the professors distributed the form to all former students they judged to have been MCH trainees.

There has been a slow but steady increase in the annual number of health personnel specializing in maternal and child health in the schools of public health. In the initial years, the total number was under 20 per year; in the last 5 years, 30 or more per year (table 1).

Of a total of 413 trainees since 1947, 253, or 61 percent, completed and returned the study

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form. Sixty-eight percent of the U.S. trainees responded in contrast to 51 percent of the foreign trainee group. The largest group of respondents were physicians from the United States, the second largest group, physicians from other countries, including Canada, Central America, Europe, South America, Asia, and Africa (table 2). This report is confined to the information provided by the U.S. physicians.

While it is gratifying that 75 percent of the U.S. physicians answered the questionnaire, it is not known whether or not the respondents are representative of the total group, and most of the interpretations should be considered tentative and provisional.

The Respondent Physicians

Of a total of 163 U.S. physicians trained, 122 completed and returned the study form.

General characteristics. Slightly less than half (55) of the respondents were men. The mean interval between graduation from medical school and admission to a school of public health was 10.6 years, but about 20 percent had been graduated 20 or more years earlier. Following is a breakdown of the physicians ac-

ording to interval between graduation from medical school and admission to a school of public health.

Interval (years)	Number	Percent
1-4	15	13.3
5-9	43	38.0
10-14	27	23.9
15-19	16	14.2
20-24	8	7.1
25-29	4	3.5
Total	¹ 113	100.0

¹ Interval unknown for 9 respondents.

The respondent trainee group could be described as fairly widely distributed over the age range. The mean age was 36.4 years. Following are the number and percentage of physicians in the various age groups at the time of admission to the special training.

Age (years)	Number	Percent
25-29	16	13.3
30-34	44	36.7
35-39	23	19.2
40-44	16	13.3
45-49	18	15.0
50-54	2	1.7
55-59	1	0.8
Total	¹ 120	100.0

¹ Age unknown for 2 respondents.

Postgraduate training. All except 12 physicians had received some clinical training in a

Table 1. Number of trainees specializing in maternal and child health in schools of public health by type of trainee and year, United States, 1947-61

Year	U.S. trainees				Foreign trainees			Total trainees
	Physicians	Nurses	Other ¹	Total	Physicians	Nurses	Total	
1947-48	5	1	0	6	13	0	13	19
1948-49	5	1	0	6	10	0	10	16
1949-50	7	0	0	7	12	0	12	19
1950-51	10	2	2	14	11	1	12	26
1951-52	15	5	3	23	12	0	12	35
1952-53	13	6	3	22	16	1	17	39
1953-54	9	2	0	11	16	0	16	27
1954-55	14	0	2	16	11	0	11	27
1955-56	9	3	0	12	11	1	12	24
1956-57	11	9	1	21	15	0	15	36
1957-58	17	5	3	25	8	1	9	34
1958-59	22	7	5	34	14	1	15	49
1959-60	15	6	2	23	8	1	9	32
1960-61	11	7	2	20	10	0	10	30
Total	163	54	23	240	167	6	173	413
Average annual number	11.6	4.5		17.1	11.9		12.4	29.5

¹ Includes 7 nutritionists, 5 social workers, 3 dentists, and the remaining 8 from a wide variety of professions.

Table 2. Number of trainees responding to questionnaire by type of trainee

Type of trainee	Total trainees	Trainees responding	
		Number	Percent
United States.....	240	164	68.3
Physicians.....	163	122	74.8
Nurses.....	54	31	57.4
Nutritionists.....	7	7	100.0
Social workers.....	5	2	40.0
Dentists.....	3	0	0
Other.....	8	1	25.0
Foreign.....	173	89	51.4
Physicians.....	167	88	52.7
Nurses.....	6	1	16.7
Total.....	413	253	61.3

¹ 1 statistician and 1 educator.

Table 3. Physicians according to clinical training in specialty and medical specialty board certification in 1961

Specialty	Clinical training		Board certification	
	Number	Percent	Number	Percent
Pediatrics.....	93	76.2	48	39.4
Obstetrics and gynecology.....	7	5.7	2	1.6
Pediatrics and obstetrics.....	4	3.3		
Internal medicine.....	3	2.5	0	0
Orthopedic surgery.....	1	2.5	1	1.6
Anesthesiology.....	1		1	
Psychiatry.....	1		0	
Preventive medicine.....			12	9.8
Preventive medicine and pediatrics.....			7	5.7
None.....	12	9.8	¹ 51	41.9
Total.....	122	100.0	122	100.0

¹ No board certification.

medical specialty. The most frequent specialty was pediatrics; 97 physicians had had some pediatric training, and 81 (66 percent of the total respondent group) reported a minimum of 2 years or more, the amount necessary for admission to the examination of the American Board of Pediatrics (table 3). Eleven physicians reported training in obstetrics, of whom 3 had had at least 3 years of training in this

specialty. Four physicians had had some training in both pediatrics and obstetrics.

Medical specialty board certification. Almost 60 percent of the respondent physicians are certified at present by a medical specialty board; 45 percent by the American Board of Pediatrics, and approximately 16 percent by the American Board of Preventive Medicine (table 3).

It is evident that not all physicians eligible for certification by the American Board of Pediatrics or of Obstetrics and Gynecology are certified.

Experience prior to MCH training. Thirty-nine percent of the physicians reporting on

Table 4. Physicians according to public health experience prior to admission to a school of public health

Prior experience in maternal and child health	Prior experience in general public health			
	Total	Some	None	Unknown
Some.....	52	6	46	0
Full time.....	30	0	30	0
Part time.....	12	0	12	0
Time unspecified.....	10	6	4	0
None.....	68	21	47	0
Unknown.....	2	0	0	2
Total.....	122	27	93	2

Table 5. Physicians according to present field of employment, 1961

Field of employment	Number
Maternal and child health.....	¹ 60
Public health.....	35
Pediatrics.....	² 18
Training.....	5
Drug industry.....	1
Not employed.....	3
Total.....	122
Total employed in public health, including maternal and child health.....	98
Total employed in maternal and child health.....	63

¹ 55 of these are full time.

² 8 are in full-time private practice, 2 are doing a combination of pediatrics and MCH, 4 are in pediatrics in a medical school, 1 is employed in a combination of pediatrics and public health in a medical school, 2 are in pediatrics in a hospital, and 1 is in pediatrics in an institution for handicapped children.

prior experience were new to both the fields of general public health and of maternal and child health at the time of admission to a school of public health. Thirty-eight percent had been employed only in maternal and child health previously, and about 70 percent of these, on a full-time basis. Approximately 18 percent of the physicians had been employed in general public health, and only 5 percent in both general public health and in MCH. The group was predominantly new to full-time work in maternal and child health (table 4).

Present employment. Of the total of 122 respondent physicians, 119 are currently employed, approximately 50 percent in MCH and nearly 30 percent in general public health (table 5).

Current annual salaries are shown in table 6. The mean for full-time employment is \$13,706. Seventy percent of the physicians who reported full-time salaries had annual salaries in the range of \$12,000 to \$17,000 and 8 percent had annual salaries of \$17,000 or more.

There is only a small difference between full-time salaries of physicians employed in MCH and those employed in general public health (table 6). Physicians employed full time in pediatrics reported the lowest average salary of the three groups.

Over half (67) of the respondents have some teaching responsibilities, usually on a part-time basis. As would be expected, the great majority (102) of these physicians had no private practice.

A small percentage (16 of the total of 122) have other responsibilities, divided equally among clinical work, community work, and research.

Twenty-six physicians gave reasons for leaving the maternal and child health field. The most frequent were promotion, salary, dissatisfaction with the nature of the work, and work too remote from patient care.

Employment since MCH training. There were 11 respondents from the group of 27 who graduated from a school of public health dur-

Table 6. Physicians according to present annual salary and employment status, 1961

Annual salary	Full time				Part time	
	Maternal and child health	General public health	Pediatrics	Total		
				Number		Percent
\$25,000-\$25,999		1		1	7.7	
\$21,000-\$21,999	1			1		
\$19,000-\$19,999		1		1		
\$18,000-\$18,999		1		1		
\$17,000-\$17,999	1		2	3	9.8	
\$16,000-\$16,999	8	1		9		
\$15,000-\$15,999	5	3	2	10	10.9	
\$14,000-\$14,999	8	5		13	14.0	
\$13,000-\$13,999	9	5	2	16	17.4	
\$12,000-\$12,999	10	4	3	17	18.5	1
\$11,000-\$11,999	3	1	1	5	5.4	
\$10,000-\$10,999	4	1	1	6	6.5	
\$ 9,000-\$ 9,999	2	2	1	5	5.4	
\$ 8,000-\$ 8,999	1		1	2	4.4	
\$ 7,000-\$ 7,999	1			1		
\$ 6,000-\$ 6,999		1		1		
\$ 5,000-\$ 5,999						4
\$ 4,000-\$ 4,999						2
\$ 1,000-\$ 1,999						2
Total	53	26	13	92	100.0	11
Mean annual salary	\$13,631	\$13,999	\$13,114	\$13,706		\$5,590

NOTE: In addition to the 92 full-time physicians reporting salary data, there were 8 in private practice, 4 undergoing additional residency training, 1 a missionary, 3 not employed, and 1 providing no information. In addition to the 11 part-time physicians reporting salary data, there were 2 who provided no information.

ing the period 1947-51. Of these, eight have been employed only in a public health department. Four have been employed at some time in general public health, and seven in MCH. One respondent has participated in teaching at some time since graduation.

Of the 42 respondents out of 60 physicians graduated during the period 1952-56, 23, or 55 percent, have been employed only in a public health department. Eighteen have been employed in general public health at some time in their employment history since graduation,

Table 7. Physicians according to emphasis suggested in selected areas of training in schools of public health

Area of training	Suggested emphasis			
	Greater	Same	Less	Not answered
Administration, consultation, supervision.....	59	46	4	13
Clinical content:				
Obstetrics.....	22	61	25	14
Pediatrics.....	15	56	40	11
Handicapped children.....	35	53	19	15
Public health content:				
Maternity and newborn.....	25	81	3	13
Infant and preschool.....	19	88	3	12
School health.....	27	75	7	13
Handicapped children.....	35	71	7	9
Child welfare service.....	51	54	5	12
Training in epidemiologic and statistical methods of research.....	50	53	6	13
Program evaluation.....	70	33	5	14

Table 8. Summary of suggestions from 78 physicians concerning assistance desired from a school of public health

Type of assistance suggested	Number of suggestions	Percent
Refresher courses, seminars.....	53	37.6
Research.....	19	13.5
Consultation.....	18	12.8
Preparation and distribution of materials.....	16	11.3
Training.....	8	5.7
Other collaboration between schools and health departments.....	5	3.5
Other.....	22	15.6
Total.....	141	100.0

and 30 in maternal and child health. One-third of the 42 respondents have participated in teaching at some time since graduation.

There were 69 respondents out of 76 graduated during the period 1957-61. Of these, 41, or 59 percent, have been employed only in a public health department. Twenty-nine have been employed in general public health at some time since graduation, and 41, or 59 percent, in maternal and child health. Fourteen of the 69 have participated in teaching at some time since graduation.

In comparing the data reported from the three time periods, there is a suggestion that the earlier graduates were more likely to have been employed in a public health department only, and few have taught, while a higher proportion of more recent graduates have participated in teaching.

Respondents' opinions of training. Table 7 summarizes the physicians' opinions of their public health training. While the group was in general satisfied with their training, they expressed the need for greater emphasis particularly on program evaluation, administration, consultation, and supervision. Also often mentioned for greater emphasis were training in epidemiologic and statistical methods in research and in child welfare services. The group suggested more clinical content and more public health content in a variety of subjects. Frequently mentioned were mental health and growth and development.

The group suggested more public health content in a variety of subjects, notably administration, field experience, and child welfare services.

Suggestions for assistance. Two-thirds (78) of the physicians suggested that a school of public health could be of assistance to them (table 8). The most frequent suggestion (53) was for refresher courses, seminars, institutes, or workshops. Specific areas of interest were also mentioned, such as new developments and trends in maternal and child health, practical problems in MCH, program evaluation, and research.

Discussion

Questionnaires were returned by 75 percent of all U.S. physicians trained in MCH in schools

of public health during the period 1947-61. It is not known if the respondent group is representative of all those who received this training. Response from recent graduates was higher than from trainees in earlier years: 90 percent response for trainees of 1956-61, 70 percent for trainees of 1951-56, and 40 percent for the years 1947-51.

One of the significant facts emerging from this study is that the majority of the respondents are currently employed in public health activities, including maternal and child health. If the respondents speak for U.S. physician trainees generally, it may be expected that an individual physician will go into and remain in public health, once he has attended a school of public health.

It is evident from the data that the annual number of trainees specializing in maternal and child health in schools of public health in the United States has not been large. In preparation for the Conference on Maternal and Child Health Teaching in Schools of Public Health, held in March 1962 in Minneapolis, Minn., visits were made to all schools. It was ascertained that the six schools of public health with maternal and child health training programs could increase the number of trainees greatly with a small amount of additional faculty. It was estimated that the annual number could be easily and promptly raised to 60-65, if additional candidates applied who met qualification standards and if fellowships for those who need them were available (1). Intensive recruitment efforts are indicated.

The need to stimulate, organize, and support recruitment efforts to attract more and younger physicians into the MCH field is evident from this study. The number of physician trainees in maternal and child health over this 14-year period, their average age at admission to a school of public health, and the interval between graduation from medical school and admission to a school of public health all substantiate this need. Public health agencies and schools of public health have a joint responsibility in recruitment.

Significantly, the great majority of the respondents have had considerable training in a related clinical specialty, predominantly pediatrics or, to a lesser extent, obstetrics, prior to

admission to a school of public health. For future recruits who have not had this requisite clinical training it is desirable, and in fact essential, that assistance be given them subsequent to their public health training to undergo the necessary clinical training, if maternal and child health specialists in the true sense are to be fully prepared. In spite of the considerable clinical training of the majority of the respondent U.S. physicians, it is curious that such a small percentage of them are certified by the medical specialty board of their clinical area of choice. This gap deserves further exploration to determine the assistance necessary to correct it.

There appears to be consensus that while the respondents were satisfied with their training, strengthening certain aspects would be beneficial to them. These include program evaluation; administration, consultation, and supervision; and epidemiologic and statistical methods of research. In addition, certain other aspects were specifically mentioned. They include child welfare services, mental health, growth and development, and field experience.

The majority of physician trainees felt that a school of public health could be of continuing assistance to them in the provision of refresher courses and institutes; consultation on programs; assistance with research; preparation and distribution of materials particularly on newer trends and studies; and assistance with training. These needs have implications for both the MCH faculties of schools of public health and for the Children's Bureau. Further joint planning is indicated to meet these expressed needs.

Recommendations

As a result of this study, certain recommendations suggest themselves for consideration by the schools of public health and the Children's Bureau. These recommendations require experimentation and evaluation to determine their degree of practicality and productivity.

Recruitment. Methods to promote the increased recruitment of more and younger MCH physicians include the following.

1. Strengthening the teaching of preventive medicine and public health to medical students.

One technique might include the creation and support of professorships of maternal and child health with appointments named jointly by departments of preventive medicine, obstetrics, and pediatrics.

2. Provision of summer fellowships for medical students after their second and third years of medical school, for a period of 2 to 3 months, for properly planned and well-supervised experience in MCH field activities, including studies. It is suggested that these fellowships be granted primarily to schools of public health for use in programs jointly planned with public health agencies.

3. Provision of support to schools of public health with MCH training programs for combined pediatric-public health or combined obstetric-public health training. The purpose of this would be to recruit young well-trained pediatricians or obstetricians into full-time maternal and child health work. This training, as envisioned, would consist of a 3- to 4-year program with continuing support of the trainee during this period.

4. For physician trainees who express an interest in becoming a maternal and child health specialist but lack training in a related clinical area, provision of opportunity and fellowship support for training in pediatrics or obstetrics subsequent to their MCH training in a school of public health.

5. Recruitment efforts directed towards physicians currently employed part time in maternal and child health services. These might consist of steps to make their part-time employment as satisfying as possible, and the offer of an opportunity for public health training in a school of public health with a "major" in maternal and child health.

Training. Methods to strengthen the training of MCH physicians include these steps.

1. Increasing the emphasis on program evaluation; administration, consultation, and supervision; epidemiologic and statistical methods of research; field experience; and certain other areas, such as growth and development, mental health, and child welfare.

2. For physicians eligible for medical specialty board certification, assistance to those interested in achieving such certification.

Assistance from schools. Methods to pro-

vide continuing assistance to maternal and child health trainees after graduation from a school of public health and to other MCH workers include these.

1. Refresher courses, institutes, and seminars. One device deserving exploration is the provision of a summer institute or course to be planned and conducted jointly by all schools of public health, rotating geographically among all schools, similar to that currently conducted annually for biostatisticians. Another mechanism is that of holding regional or biregional institutes.

2. Consultation by MCH and biostatistical faculty members of schools of public health to maternal and child health personnel upon request, particularly in such areas as program planning and evaluation.

3. Assistance by MCH and biostatistical faculty members of schools of public health to MCH personnel upon request in the design and conduct of research.

4. Preparation and distribution of materials to maternal and child health personnel, particularly information on new trends and bibliographies and reprints. All schools of public health might jointly plan and use a common method of accomplishing this.

5. Experimentation with methods to further improve field training of maternal and child health trainees, as joint projects of schools of public health and public health agencies.

Finally, it is recommended that this type of followup study of MCH trainees be periodically repeated, in order to provide baseline data on trends and background for further steps necessary in the recruitment and training of maternal and child health personnel.

Summary

A followup study of 214 U.S. health workers who received training in maternal and child health in six schools of public health during a 14-year period was conducted by means of questionnaires. Of the largest group, 163 physicians, 122 replied.

The average age of the respondents at the time of admission to the school of public health was 36.4 years, and 11 years was the mean interval that had elapsed since their graduation

from medical school. About 39 percent were new both to general public health work and to maternal and child health. Ninety percent had had some clinical training in a medical specialty, most in pediatrics, and 58 percent were certified by a medical specialty board.

One-half of the group were currently employed in maternal and child health work and an additional one-fourth in general public health, a total of 98 of the 122. Their mean annual salary for full-time employment was \$13,706. More than half of the group also had additional teaching responsibilities. Most frequent reasons for leaving the maternal and child health field were promotions, salary, and type of work.

The respondents suggested that training in the schools of public health might give greater

emphasis to program evaluation, administration, consultation and supervision, epidemiologic and statistical methods in research, and to child welfare services. Nearly two-thirds suggested that a school of public health could assist them in such areas as refresher courses, research, consultation, preparation and distribution of materials, training, and greater collaboration with public health agencies.

REFERENCE

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Study on Effects of Natural Radiation

To determine effects of long-term exposure to natural radiation, the Public Health Service will study about 50,000 residents in certain communities in Illinois, Iowa, Minnesota, and Wisconsin having higher than usual amounts of natural radiation in the water supply.

The project will include analyses of bones and "baby" teeth to determine radium uptake and retention. Complete histories of radiation exposure will be sought for all bone and tooth samples examined.

The PHS study is one of several being conducted or supported by PHS and the Atomic Energy Commission on the health effects of radiation at low levels. The communities were selected for study on the basis of reports from the AEC's Argonne National Laboratory that deep wells in these areas contained somewhat more than usual amounts of radium.

Health departments of the four States, as well as the Iowa State Hygiene Laboratory and the Argonne National Laboratory, are co-operating in the study, which will probably take about 5 years.