

# School Health Education in Family Medicine and Pediatrics

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This study concerns what is thought appropriate and what is being taught residents in family practice and pediatrics. University based training programs were selected for study and 63 family practice and 125 pediatric programs were surveyed by mail. The response rate for two mailings was 76 percent for pediatric and 81 percent for family practice programs. A larger proportion of pediatric than family practice programs teach diagnosis of mental retardation; educational placement of the mentally retarded; diagnosis of communication defects; trends in special education, and placement in special education; interdisciplinary teaming; and organization of the school system. Family practice programs focus more on the health problems of the school-aged athlete and the teaching of health education. School consultation and the implementation of clinical preventive medicine into care of the school-aged child are evident areas of weakness in current programs. The family physician must become more involved with the school placement of children and be aware of the relationship between school activities and health problems seen in the office setting.

The role of prevention and its effects on the school-aged child is receiving a great deal of attention since the focus for health status improvement is now on accidents, heart disease, stroke,

cancer, alcoholism, and suicide. Improving outcome of these health problems involves lifestyle changes, and value setting and decision making processes. The elementary school years provide a critical time span for the student to make certain health decisions which have potential lifelong effects.

School health has been defined as: "a combination of comprehensive health services, health education, and a healthful environment which services not only children, but also their parents, school staff, and the community at large."<sup>1</sup>

The community looks to the physician for lead-

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ership in questions of school health. Yet, in times of budget restraint, school health programs have often been the first programs cut or eliminated. This should not obscure the fact that the school is one of the most logical places to involve parents and other family members in the evaluation of current lifestyles and methodologies of change.

School health involves more primary and secondary prevention than actual treatment. In order to deal with the problems of the school-aged child, a physician cannot work in isolation, but must work with the school as part of a team. School health involves community referral networks, using a variety of multidisciplinary resources.

Family physicians and pediatricians are assuming pivotal roles in school health. Are the primary care physicians being trained in the special area of school health? The purpose of this study was to determine what educators in family practice and pediatric training programs see as appropriate to teach residents in the area of school health and to assess what is actually being taught.

## Methods

The Physicians Committee of the American School Health Association (ASHA) has become reactivated in recent years due to an increased interest in problems of the school-aged child and in recognition that, in general, much school health has lost its physician input. With this background, an Ad Hoc Committee on Residency Education was formed by the Physicians Committee and a list of topics felt to be appropriate to teach in school health was developed. This topic list was revised after review by members of the ASHA Physicians Committee.

A questionnaire was developed and pretested on a sample of University of Alabama pediatricians and family physicians and subsequently mailed to 63 family practice and 125 pediatric programs identified as located in a university medical center in the continental United States. University based programs in family medicine and pediatrics were selected as the sample because it was felt that these programs would be most likely to have an adequate base of faculty resources to provide

the specialized education necessary for school health problems. A second mailing was carried out three months after the initial survey.

The questionnaire included baseline program information on number of residents and paid faculty. The respondents were asked to report if a particular school health topic was appropriate to teach to residents and if it was being taught in their particular program. Programs were asked about additional resources that would be needed to teach the school health topics deemed appropriate.

Information was gathered regarding number of hours of school health currently taught and whether required or elective curriculum time was available. Because of the importance of the school setting for educational experience, each program was asked about school affiliations.

The Task Force on Pediatric Education states in its report, "Pediatric education should provide residents with experience in diagnosis of educational and learning handicaps, as well as clinical and consultative experience within school systems."<sup>2</sup> Respondents were asked to what degree they agreed with this statement and to what extent the department implemented the statement in its curriculum.

The responses were analyzed using the chi-square test to compare family medicine and pediatric programs on the list of topics taught. The calculations were done on actual numbers, not percentages. A two-independent sample t test was done to compare overall family medicine to pediatric responses. All results were analyzed separately for program size and geographic distribution.

## Results

The overall response rate for two mailings was 95 out of 125, or 76 percent, for pediatric programs, 51 out of 63, or 81 percent, for family practice. Of programs surveyed, the total resident enrollment was 2,891 pediatric residents and 1,451 family medicine residents. The profile of the survey programs is seen in Table 1. The pediatric programs in general are considerably larger, though this is not reflected in the mean numbers of residents because these figures are skewed by a

<b>Table 1. Resident and Faculty Size in the Surveyed Programs</b>			
<b>Mean Number of Residents per Year in Surveyed Programs</b>			
Family Practice		Pediatrics	
1st year residents	8.5	1st year residents	13.1
2nd year residents	12.0	2nd year residents	10.2
3rd year residents	8.0	3rd year residents	8.3
<b>Full-Time Paid Faculty Expressed as Percent of Surveyed Programs</b>			
Number	Family Medicine		Pediatrics
1-5	29.4		3.2
6-10	41.2		9.4
11-15	19.6		14.8
>15	9.8		72.6

few large programs. The number of full-time paid faculty reflects several children's hospitals which were part of the survey, and thus, account for the large number of pediatric programs with over 15 faculty members.

The topics for inclusion in school health curriculum can be seen in Table 2 with the percentages of programs reporting appropriateness and actual teaching of the topics. A significantly larger proportion of pediatric than family medicine programs taught the following topics: diagnosis of mental retardation, educational placement of the mentally retarded, diagnosis of communication defects, trends in special education, placement in special education, interdisciplinary teaming, and organization of the school systems. The two areas in which family medicine taught significantly more than the pediatric programs were: the health problems of student athletes, and the teaching of health education—both areas given high priority in many family practice programs.

Though there was much agreement in the area of what was thought appropriate, pediatric responses differed significantly from those of family medicine regarding: problems of the physically handicapped, trends in special education, placement in special education, interdisciplinary teaming, and organization of school systems. The most significant finding, however, is not the differences but the large areas of agreement as far as appropriateness of what should be presented. The sur-

veyed groups were compared using a two sample t test, and there was no significant difference between family medicine and pediatric programs in either appropriateness or teaching of the topics.

Required time at school sites by residents revealed a gradient from zero percent in the first year for family practice to 12 percent in the third year, and for pediatrics, from 11 percent in the first year to 21 percent in the third year. Both specialties responded that over half offered electives in school health, but most comments revealed that these are rarely taken by residents.

School health education requires that there be some relationship with a local school system in order to provide necessary on-site experience. Family medicine departments reported that 17 percent of programs had a formal school affiliation compared to 39 percent of pediatric departments. In contrast, when asked about institutional school affiliation, positive responses were obtained from 24 percent of family practice programs and 32 percent of pediatric programs. A point of interest here is that, in addition, 27 percent of family practice programs and 21 percent of pediatric programs responded that they did not know if their institution had a formal affiliation with a school or school system.

Mean hours per month devoted to teaching topics related to school health reflected a gradient of curriculum time. The range for family medicine was 1.7 hours per month in the first year to 2.8



**Table 2. Topics in School Health Viewed as Appropriate and Actually Taught Presented as Percent of Programs Responding**

Topic	Program			
	Family Medicine		Pediatrics	
	Appropriate/ %	Taught %	Appropriate/ %	Taught %
Screening Special Problems	98	82	100	83
Hearing and Vision Screening	98	86	97	82
School Phobia	96	71	100	85
Teaching Methods	58	16	61	14
Hyperkinesis	100	90	100	94
Managing Hyperactive Child	84	35	89	58
Learning Disabilities	98	69	100	94
Behavioral Problems	98	90	98	88
Diagnosis of Mental Retardation	94	77**	100	94**
Educational Placement of Mentally Retarded	59*	38**	89*	62**
Communication Defects	84	38**	100	72**
School Problems of Physically Handicapped	80*	30	95*	44
Trends in Special Education	55*	22**	80*	39**
Placement in Special Education	52*	31**	81*	49**
Stages of Cognitive Development	94	78	98	85
Health Problems of Student Athletes	92	75**	95	33**
How to Teach Health Education	74	46**	71	25**
Prevention in School-Aged Child	100	72	96	71
Principles of School Health Consultation	78	21	85	28
Interdisciplinary Teaming	46*	14**	69*	36**
Organization of School Systems	29*	14**	49*	33**

\*Significant at  $\leq .05$  level. Chi-square test for differences in appropriateness  
\*\*Significant at  $\leq .05$  level. Chi-square test for differences in actual teaching of topic

hours per month in the third year, while pediatrics ranged from 4.4 hours per month in the first year to 6.8 hours per month in the third year. Essentially, all programs responded that some additional resources (ie, physicians, psychologists, and paraprofessionals) were needed in order to teach the topics that were thought to be appropriate in school health. More pediatric than family medicine programs thought that additional physicians were needed. This could reflect the increased teaching role of other professionals in existing family medicine programs. Because pediatric programs perceived larger physician manpower needs than family practice, the data were analyzed to see if this was a reflection of heavier teaching loads or the possibility of needed additional manpower.

Subsequent analysis showed that departments perceive a need for more expertise in school health rather than simply additional manpower.

Table 3 shows the response to the pediatric task force report on pediatric education. The data revealed that there is considerable agreement with the statement of the importance of school health, but it should be noted at the same time that six percent of both family medicine and pediatric programs disagree with the statement. The vast majority of programs thought that they were implementing the statement either minimally or moderately.

All the data were analyzed relating program size and geographic location to the responses. There was no significant correlation with the size of the

**Table 3. Response Rate for Agreement with and for Implementation of Statement by the Pediatric Task Force Report on Pediatric Education, Expressed as Percent of Programs Responding**

Agreement Rating	Program	
	Family Medicine	Pediatrics
Strongly Disagree	0	3.2
Disagree	5.9	3.2
Uncertain	3.9	4.2
Agree	60.8	44.7
Strongly Agree	29.4	44.7
<b>Total</b>	100.0%	100.0%
<b>Implementation</b>		
<b>Rating</b>		
None	0	5.3
Minimal	36.7	31.9
Moderate	46.9	35.1
Considerable	16.4	19.2
Full	0	8.5
<b>Total</b>	100.0%	100.0%

program as measured either by residents or faculty, nor was there any geographic differentiation. Thus, the conclusions of the survey should be generally applicable to most programs throughout the country.

## Discussion

This survey points out several issues which are of significance to primary care education. Both family medicine and pediatric training programs view this topic as very important, as shown in the appropriateness portion of the study. The study also points out that in several areas family physicians are taught less than pediatricians about specific topics for which they may be expected to be consultants in their community. Of equal concern is the overall lack of instruction in topics that relate directly to the management of the child in the classroom, such as hyperactivity, which poses a significant learning and behavior problem for schools; in communication defects where there are obvious implications for learning; and in the handling of the mentally retarded child. Both family medicine and pediatrics teach diagnosis of mental retardation, but there is a marked lack of implementation of this information in both spe-

cialties as it applies to educational placement in the school. This compromises the ability of the physician to act as a child advocate for such a handicapped child. It is possible that the physician frequently thinks this educational component is being done by other members of the school health team. It is the experience of practicing school physicians that proper educational placement is often hampered without the expertise of physicians.

Family medicine training programs need to stress the problems of the physically handicapped child in the school setting. In spite of the fact that federal legislation has mandated structural changes to accommodate the physically handicapped, this survey shows that young physicians are not being trained to properly assist in the management of these aspects of the child's life. It is recognized that the severely multiply-handicapped child will be cared for by a pediatrician, but many handicapped children receive their medical care from family physicians.

Special education programs are apparently receiving low priority in training by both specialties, yet, this has been a significant priority for the federal government in educational training institutions. Without understanding the special educational programs themselves and how students are

placed in them, it is impossible for the physician to adequately advise either the child, his parents, or the school on many of the previously mentioned problems.<sup>3</sup>

There is much interest but little valid research on school-aged athletic participation. The survey shows that both types of programs view health problems of the school-aged athlete as important but the amount taught falls short of expectation, especially in pediatric training. Though family physicians are devoting a reasonable amount of time to the handling of the school-aged athlete, many programs need to increase the knowledge and teaching of this important aspect of school health.

One of the main focuses of school health education is that of the physician serving as a consultant to schools. Though this is viewed as appropriate, it is taught very sparingly in training programs. In addition, while school consultation is felt to be appropriate, knowledge of the organization of school systems, which is absolutely essential to school consultation, is not felt to be appropriate by over half of the surveyed programs.<sup>4</sup> This suggests that the principles of consultation to the schools are not well understood and must be more fully explored before changes in school health curriculum can be implemented.

This survey supports the concept that physicians feel that preventive aspects of child health are important, but the implementation of these preventive aspects of child care as they apply to the school setting is less than expected. The physician's contribution to the school must be brought beyond the concept of direct medical care by the family physician and must provide an interpretive medical service.<sup>5</sup> The physician must translate the medical problems of the child into effective actions which can be implemented by the school. In order to do this, communication between the physician, the school, the school team, and the parents is the critical link. This essential role and guidance potential seems ideally suited for the family physician.

The family physician must be more than just a consultant. He/she must work in a collaborative way with other providers of care to children. In order to do this he needs knowledge of a wide range of topics relating to schools and the problems children experience while in the school setting.<sup>6</sup>

Concepts of school health are changing and primary care training for school health must change also. The school health system, if it is to be responsive to the changing health needs of the population, requires that a health information system be developed in order to measure the level of health status. A health management system is needed in order to make proper decisions on the basis of the information. Then, the resources needed to implement those decisions must be identified. Finally, the provision of the services or activities to significantly reduce the health problems in school-aged children must be developed. The well-trained specialist in family medicine should be expert in all four of these systems leading to optimal health for the school-aged child. The areas of curriculum which could lead to the effective implementation of these principles are identified in this survey. The specific topics that should be included in school health training appear to be well delineated in current family practice residencies. The challenge is to develop methods to include this information in the most effective learning setting and to correlate the school milieu with other aspects of child health care. The financial restraints which have often forced physicians out of the school are still a major problem. The importance of the role of the family physician in school health must not be hindered by financial considerations alone.

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