Workshop on School-Based Dental Delivery Systems—Summary of Proceedings

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MOST SCHOOL-BASED HEALTH CARE DELIVERY SYSTEMS have not provided dental care along with medical services. This omission is unfortunate, since physical and financial access to dental care is substantially more limited than to medical care. In 1976, for example, only 5 percent of dentists' services were reimbursed by the Federal Government as compared with 25 percent of physicians' services (*1*). A much lower percentage of children from minority and low-income families have geographic access to dental services than to medical services. Clearly, new initiatives are needed to ensure that dental care is accessible to those in greatest need. Dental care delivery systems based in schools represent a promising alternative to the present method of dental care delivery for children.

To discuss and evaluate this alternative, the Department of Behavioral Sciences and Community Health of the University of Connecticut School of Dental Medicine hosted a 2-day workshop May 24–25, 1979, that focused on school-based dental delivery systems. The workshop brought together national experts on dental delivery systems and other people interested in school health programs, who examined the feasibility of a national school-based primary dental care program that would focus on the large numbers of dentally underserved children in this country.

Objectives of the Workshop

The specific objectives of the workshop were as follows:

1. To consider the dental health status of poor and minority school children and barriers to their access to dental care
2. To examine the history and present status of school-based dental care delivery systems, both in the United States and other developed countries
3. To explore the political, social, and economic feasibility of a school-based dental delivery system
4. To consider the steps necessary to implement a school-based dental care delivery system, including financing, payment and reimbursement systems, personnel, equipment and facilities, and quality assurance
5. To discuss different models for evaluating the effectiveness and efficiency of school-based dental systems.

With these objectives in mind, those topics deemed to be the most critical in the planning, implementing, and evaluating of school-based dental delivery systems were selected for discussion at the workshop.

Barriers to Use of Dental Services

In reviewing the dental delivery system in the United States, Clifton O. Dummet, DDS, stated:

> The traditional method of dental care delivery via a private solo dental office has proven successful insofar as providing an acceptable high quality of care to a limited segment of the population. It is on account of this fact, namely, that only a fraction of the needs are being met, that it has been necessary to conceive other ways and means whereby more people can procure more oral health services.

Dummet pointed out that more than 20 million indigent people in the United States, 22.9 million elderly people, and a large segment of the working poor have limited access to dental care.

Geographically, dentists are disproportionately distributed. As Max H. Schoen, DDS, reported in a 1978 publication, "In 1972, there were over 550 counties containing a total of over 2.5 million persons that either had no dentist at all or fewer than seventeen per 100,000" (*2*). Barriers other than geographic may also influence Americans' utilization of dental care—limited

Dr. Warren, an assistant professor in the Department of Behavioral Sciences and Community Health, School of Dental Medicine, University of Connecticut, Farmington, Conn. 06032, was director of the Workshop on School-Based Dental Delivery Systems that was held at the school May 24–25, 1979. Dr. Powell, an associate professor in the Department of Behavioral Sciences and Community Health, was a member of the planning committee for the workshop. Ms. Potts, a graduate student in the Department of Sociology, University of Hartford, was the workshop coordinator.

In this report, Dr. Warren, Dr. Powell, and Ms. Potts summarize the papers presented at the workshop (the papers are listed on page 352). Tearsheet requests to Dr. Warren.

information about dental health, psychological factors, age, sex, lifestyle, education, and culture (*3*). However, through the combined efforts of health care providers and consumers, the barriers to care can be lowered. In various parts of the world, those arising from the inaccessibility and unavailability of services have been weakened by the establishment of dental delivery systems within the school setting.

Participants in Workshop and Their Papers

Allukian, Myron, DDS, Assistant Deputy Commissioner, City of Boston Department of Health and Hospitals: Developing facilities, equipment, and staff.

Anderson, Jacqui, BS, Director of Health Care Department, Hartford Hospital, Hartford, Conn.: Consumer perspectives.

Bailit, Howard L., DMD, Professor and Chairman, Department of Behavioral Sciences and Community Health, School of Dental Medicine, University of Connecticut: Quality and cost assurance systems.

Dummett, Clifton, O., DDS, Professor of Dentistry, University of Southern California School of Dentistry, Los Angeles: Oral health and the utilization of dental services by the nation's poor and minority children.

Dunning, James, DDS, Professor Emeritus, Harvard School of Dental Medicine, Boston, Mass.: National and international models.

Evans, Therman, MD, Assistant Medical Director, Connecticut General Life Insurance Company, Bloomfield, Conn.: Health, health services, and the educational process.

Lewis, Michael H., DDS, Executive Director, Saskatchewan Health Dental Plan, Regina, Canada: Organization and administration.

Powell, Elbert A., DDS, Associate Professor, Department of Behavioral Sciences and Community Health, School of Dental Medicine, University of Connecticut, Farmington: Problems and strategies in gaining the support of school boards, parent-teacher associations, and the general public.

Redig, Dale F., DDS, Executive Director, California Dental Association: Organized dentistry and school dental programs.

Schoen, Max H., DDS, Professor and Chairman, Section of Preventive Dentistry and Public Health, School of Dentistry, University of California, Los Angeles: Financing alternatives.

Silver, George A., MD, Professor of Public Health, Yale School of Medicine, New Haven, Conn.: Coordination and integration of school medical and dental programs.

Sonken, Selven, DDS, Dental Advisor, Health Care Financing Administration, Department of Health, Education, and Welfare: Legislation and school-based programs.

Warren, Rueben C., DDS, Workshop Director and Assistant Professor, Department of Behavioral Sciences and Community Health, School of Dental Medicine, University of Connecticut, Farmington: Health education—a necessary part of school-based dental care programs.

School-Based Models for the Delivery of Care

School-based dental care programs in Scandinavia, Australia, and New Zealand have demonstrated that they can reduce dental caries in children (*4*). James M. Dunning, DDS, outlined the salient issues in dental care for children in the schools in a discussion of national and international models of school-based dental delivery systems:

> The Scandinavian pattern involves school management of scheduling and transporting children to clinics in the neighborhood, or occasionally within the school itself. Treatment is rendered by dentists in public employ for all children up to a certain age, usually sixteen. Fluoride rinse programs and dental health education are arranged *in* the schools. Costs for such service are high; Scandinavian taxation is notably high. The New Zealand-Australian patterns, now spreading to other countries including Canada and Latin America, involve treatment by supervised auxiliaries in the schools themselves. Scheduling is arranged within the school—and transport from outlying schools too small for clinics. Costs are low, methods of supervision vary.
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> The United States offers subsidized dental care for children through a number of channels. Medicaid often helps low-income children in private offices. Neighborhood health centers care for children from neighborhood schools, through funding from a variety of sources, public or private. Only occasionally, however, are these services truly school-based. Those that are have usually involved small clinics with inadequate staffing and equipment. The neighborhood and private-office services usually involve logistic complications, in that excuse from school must be at the family's initiative and transportation to clinic or office involves substantial loss of time, cost, etc. Utilization has usually been low.

The school setting affords exciting opportunities for the combination of various health services. Programs can be adapted to the specific circumstances of the community and the available resources.

Coordination of Medical and Dental Programs

Historically, few attempts have been made in the United States to deliver health care in the school setting, and these few have met with only modest success (*5*). According to George A. Silver, MD, the ineffectiveness of school health programs in the United States may be due partly to the absence of any overall regular organization of medical care in this country. Lack of emphasis on preventive care also has resulted in a limited focus on child health care. School-based health programs need to provide both medical and dental care. Since, however, few comprehensive school health programs in the United States offer both kinds of care, we must use as examples those programs offering only medical care. Silver specified that "If there is to be a successful dental care program, it is most likely to emerge from a successful comprehensive school health

program." Recognition of the relationship between these two health care components could lead, he said, to the organization of a comprehensive preventive service for children, of which school health services would be an integral part. Analysis of European systems of child health care indicates that some of the conditions that make for a successful program are decentralized direction and funding, cooperative public and private responsibility, administration of care by expanded duty auxiliaries with physicians and dentists acting as consultants, and a child health program that is related to and parallel to a comprehensive medical care system.

According to Silver, the traditional role of the visiting nurse in the United States, the current emphasis on prevention, the recognition of the necessity for community involvement and participation of the private sector in health care, and potential national child health insurance all make it likely that a structured plan for comprehensive preventive care for children, with integrated health and dental services, may become a national pattern.

Legislation for School-Based Dental Programs

Selvin Sonken, DDS, stated that Federal support for school-based programs has been very limited. Project Head Start has supported the provision of some dental services for children aged 3–5 years for the past 13 years. Also, limited Federal support for school-based programs has been provided under title 1 of the Elementary and Secondary Education Act. Other potential sources of Federal and State funds, he said, may be the National Health Service Corps and the proposed Child Health Assurance Program (S. 1204, 96th Congress, 1st Session, 125th Congressional Record, S6406–S6408, May 22, 1979).

The Federal Government has also encouraged administrators of school health programs to explore funding opportunities among the 106 federally approved child health related programs, Sonken said. He pointed out as examples the Maternal and Child Health Program (title 5), the Grants to States for Services Program (title 19), all of the titles within the Social Securities Act, Health and Nutrition Grants (title 4), Education and Training of the Handicapped (title 10), and Financial Assistance to Local Education Agencies for the Education of Low-Income Families (title 1) under the Elementary and Secondary Education Act of 1965.

The Federal Government has specific interest in programs concerned with:

- State and local school health planning and program development workshops
- Exploration of expanded roles for school nurses through additional training (school nurse practitioner training)
- Expansion of health education training for teachers and other professionals as well as for parents in the community
- Identification of specific approaches to be implemented by schools to meet the pressing health needs of the medically underserved school-age child
- Improvement of the evaluation of school health programs.

The active involvement of the Federal Government in school-based dental delivery systems will depend largely upon appropriate health planning by Federal, State, and local agencies. Health Systems Agencies (HSAs) and State Health Planning and Development Agencies (SHPDAs) are examples of agencies that need to be involved in school health initiatives.

Commenting on the Federal Government's potential involvement in school-based delivery systems, Sonken stated:

> While relatively little Federal support for such programs has been available in the past and to my knowledge no specific legislation enhancing such programs is actively considered at this time, should the proposals I have discussed . . . demonstrate the acceptability and feasibility of school-based dental delivery systems, then perhaps, just perhaps, such legislation may develop later.

Although Sonken's comments are not particularly encouraging, there are current indicators that the Federal Government is addressing such methods for making dental care accessible to more children in this country as Project Head Start, the Child Health Assessment Program, and the National Health Service Corps.

Financing School-Based Programs

Schoen, commenting on the term "national school-based dental delivery system," noted that it implies that the Federal Government would largely assume financial responsibility for the children involved. Most financing of federally supported dental programs has been restricted to temporary programs for children from low-income families. Because of the programs' temporary nature, determination of their contribution to the participating children's oral health has not been possible, but any contribution the programs made would have been short term at best. Schoen pointed out that mechanisms must be found by which funds for the poor can be mixed with funds for other children. Further demonstration projects to document the efficacy of school-based programs are not needed, he said. He added that experience in Scandinavia, Canada, and other parts of the world has shown that such programs can be effective in improving children's health. Finally, Schoen recommended that the Federal Government

authorize and appropriate adequate funds on the national level to implement school-based dental programs.

If dental disease is to be effectively reduced among school-age children, the Federal Government will have to play a major role in the financing of, and legislation for, school health programs. Fortunately lessons can be learned from examples of government-sponsored school-based delivery systems in other parts of the world (*6*).

In describing the Saskatchewan (Canada) Health Dental Plan, its executive director, Michael H. Lewis, DDS, outlined the difficulties in organizing and administering school health programs. He stressed that the focus of a school-based dental program must be improvement of the dental health of the children. He pointed out that five major groups of people are involved in the program, each with its own objectives to meet, namely, politicians, school board, health department administration, school teachers and their supervisors, and the clinical staff of the dental program. The school-based program must be a facilitator, helping all these groups to meet their own objectives while ensuring that its own overall objective is achieved.

Quality- and Cost-Assurance Systems

In reviewing quality- and cost-assurance systems for school-based dental care systems, Howard L. Bailit, DMD, concluded that school-based programs should include formal evaluations to monitor the cost and quality of services. Evaluative data are needed to provide program administrators and external review bodies with information on the clinical and administrative efficiency of the program. The primary areas that require quality review are oral health outcomes and the performance of dentists and other providers, Bailit said. Oral health status can be measured in terms of decayed, missing, and filled teeth, of time lost from school because of dental problems, and of patient satisfaction with the care received. The long-term attitudes and behavior of children in respect to oral hygiene practices and utilization of dental services are also important outcomes to measure in school-based dental programs. Provider performance can be monitored by a combination of established quality assessment methods, including institutional and patient profiles, record audits, and the observation and examination of the patient. In addition to internally sponsored quality reviews, a formal evaluation of the program needs to be done by external review agencies. With increased use of public funds to pay for dental services, the public will demand more and more accountability in the operation of school-based dental programs.

Lewis pointed out that the professional staff needs to be able to exercise clinical judgment and a degree of personal autonomy while at the same time ensuring that the program offers uniform services and operates under uniform standards. Achievement of the appropriate balance between these elements requires a careful mix of administrators, supervising dentists, dental hygienists, and dental assistants. A management team with representation from all levels of administrative and clinical staff must be established.

A major problem in setting up dental care delivery systems, said Myron Allukian, DDS, is that the costs of equipment and of the acquisition or renovation of facilities can be tremendous. These costs can be kept down only by focusing on predetermined goals and objectives that are based on community needs and resources. The target population has to be identified. Decisions relating to the groups to be treated, scheduling, the scope of services, and reimbursement mechanisms should precede finalization of the facility's location, purchase of equipment, and hiring of staff.

Ideally, the dental program should be in the school setting, near the health room and accessible to the school nurse and physician. Allukian stressed that the clinic's environment should be pleasant and culturally oriented to the population being served. If these factors are not considered in the initial planning stages of the program, the clinic's environment may adversely affect dentist-patient relations.

Even though external components of school-based dental delivery systems such as their facilities and equipment are important, internal variables such as the sensitivity of the dental team to the children's psychosocial needs and to their past dental experiences are at least equally important.

Provider Versus Consumer Concerns

Organized dentistry in the United States is concerned with the appropriate use of the dental care delivery systems that we already have. Its members advocate careful study of the most feasible alternatives to these current systems before new and different modes of dental care delivery systems are implemented. Dale F. Redig, DDS, pointed out that although school dental service programs offer exciting possibilities, firm data on which to implement them are not available. Since the many children in dire need of dental care are not being appropriately channeled into the present dental care delivery system, he said that development of a new mode of delivery may prove costly and ineffective and may duplicate services already in existence.

Denti-Cal, the largest private dental prepayment agent in California, is developing administrative and financial incentives, Redig reported, that are improving the dental delivery system in that State and have encouraging implications for other parts of the country.

Paramount in the success of any school health pro-

gram is the active involvement and participation of parents and other health care consumers. According to Jacqui Anderson, "too often do professionals in their special places make a mystery of health care, and yet complain because the patient won't behave and stay well." Some consumers are now demanding more information and input into their health care. Perhaps, Anderson said, it is the very nature of the word "consumer" that isolates people. She suggested a reorientation from "consumer" to "participant."

If any school-based health program is to be successful, said Anderson, there must be real community input into the decisions related not only to the school-based health program but also to health education. The parents of the children receiving the services must become a viable part of the program, including its planning.

Winning Support for School-Based Programs

Elbert A. Powell, DDS, noted that little has been reported in the literature on methods to gain support of the school administration and local community for school-based dental programs. Thus, the strategies that are being used by health professionals are based on professional judgment and personal experiences.

A working relationship needs to be developed, Powell said, with school officials and teachers, school boards members—and most important—parents of the students. The scope of services, the payment mechanisms, the scheduling of patients, and eligibility requirements must be determined before such a program is implemented. And careful planning is needed to gain community and political support, to develop a realistic implementation process, and to inform individuals and organizations about the activities that will be included in the program before the program is implemented.

Many barriers to health services have prevented consumers from receiving the maximum benefits available. These barriers have also caused them to become more involved in the health care process and related decision making.

Health Education in School-Based Programs

Health education is a critical component of any school-based dental care delivery system, stressed Rueben C. Warren, DDS, in a paper he presented to the workshop. Even though no consensus has been reached on its definition and scope, he noted that there is agreement that health education should focus on those experiences of an individual or of a group that influence their beliefs, attitudes, and behavior in respect to health. Most health education has been geared toward increasing knowledge, but only limited health improvements have resulted from this approach. Health education needs to be more than the mere dissemination of

Analogies Between Practice of Dentistry and Health Education

Underlying sciences	Physiology, anatomy, biology, physics, chemistry (to a lesser degree, behavioral sciences)	Behavioral sciences, psychology, sociology, anthropology (to a lesser degree, natural sciences)
The problems	Periodontal symptoms, toothaches, caries, malocclusions, buccal and gingival conditions, dento-facial abnormalities,	Education symptoms, e.g., need for regular dental care, failure to practice proper oral hygiene, poor nutritional practices, etc.
Possible action for treating symptoms	Shotgun prescription or crisis treatment	Intensive information program
Diagnosis based on	History, X-rays, dental examinations, biopsy, etc.	A person's or group's history of past experiences; information or knowledge levels; culture and traditions; personal or group goals; perceptions of dentist, dental health practice, etc.
Treatment	What shall it be? Who shall give it? When? Where? How?	Ibid.
Pharmacopeia	Drugs, radiation, prostheses, diet, etc.	Community organization, films, group discussions, individual education, lectures, news releases, pamphlets, TV, etc.
Follow-up	Periodic observation of symptoms, conditions, and progress	Periodic evaluation of changes in knowledge, attitudes, and behavior

SOURCE: Derryberry, M.: Health education: its objectives and methods. Health Ed Monog 8. Society of Public Health Education, Inc., New York, 1960.

accurate scientific knowledge. To influence health, greater emphasis has to be directed toward the specific activities that will affect behavior. Dental students, as well as practicing dentists, therefore, are going to need to become more familiar with basic concepts in the social and behavioral sciences.

Dental health is one of the subjects most frequently taught in school health education programs, but Warren pointed out that the overall effectiveness of these courses has not been demonstrated. He concluded that extensive evaluative research is needed to determine the principles upon which health education programs in the schools should be based. Until these data are available, he said that such programs will have to be designed and implemented on the basis of the best current information.

Health, Health Services, and Education

Finally, we need to recognize that health care does not exist in a vacuum. Therman Evans, MD, commented that "the American Medical Association tells us that the primary role of physicians is to concentrate on the physical well-being of young people. But we know that you cannot separate one's health status from one's educational status, from one's housing status, or from one's nutritional status. They are inseparable and I believe that we should approach it that way."

Health, in fact, is far more than the absence of disease and is therefore controlled by more than the availability of health services. Warren told the workshop participants that lifestyles and nutritional habits are emerging as major contributors to health status and are demanding more of the attention of the people and agencies engaged in health-related activities. Unfortunately, health providers have heretofore had little training related to people's lifestyle and nutritional habits and therefore are often limited in their understanding of the relationship between health and these two behavioral determinants. Warren presented "Analogies Between Practice of Dentistry and Health Education" (see page 355) to demonstrate the difference between a biological science (dentistry) and a social and behavioral science (health education). Dental providers must ultimately familiarize themselves with health determinants such as culture and personal and group goals or perceptions if they expect to influence positively the oral health of their patients, he said.

As one attempts to promote oral health by influencing health behavior (such as lifestyle and nutritional habits), several concepts emerge that must be understood by health care providers: values and value systems, learning theory, motivation, personality formation, perception, and communication. Unless health care providers have a basic understanding of these concepts, health improvement will be, at best, temporary.

The school setting is an ideal place to establish programs that will influence the health attitudes and behavior of children. The former Secretary of Health, Education, and Welfare Joseph A. Califano, Jr., in addressing the American School Health Association (7), stated: "Perhaps the single most important contribution school health programs can make to promote health is to emphasize the importance of lifestyle and the environment and to teach children how to use the health system."

The Federal Government has recognized the tremendous potential of the school setting in health promotion. New emphasis is now being placed on school health programs in order to increase the number of children receiving preventive health care services (including health education).

An obvious reason for providing child health services in the schools is that children spend an average of 7 hours a day there, 185 days per year, for 12 years. Since children attend school to learn, what more conducive atmosphere could be found for teaching them the importance of preventive health care and proper health behavior?

Clearly the school setting offers an environment for effective health service delivery and health education activities. What is needed now is evaluative research that addresses the appropriateness and effectiveness of dental health care delivery through the schools.

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