Residency Training in Dental Public Health: Assessment of Status, Needs, and Issues

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Abstract

The opportunities for public health training have declined over the years while the need for public health skills is likely to increase. This paper reports the results of a project, sponsored by the Health Resources and Services Administration, which answers the question of "how best to invest in the dental public health education system so as to fulfill the profession's responsibilities to protect and improve the oral health of individuals and society." An information base on dental public health education, practice, and specialization was developed from an extensive review of the literature and a survey of dentists concerning employment and practice requirements for public health dentists. An advisory group considered this information, met to discuss the issues involved in dental public health training, and provided advice to the project staff. Based on the information gathered as part of the project, recommendations were made to: (1) develop a grant program to support advanced education in dental public health; (2) increase the competencies of dentists who are working in public health positions and not eligible for board certification via off-site residencies; (3) develop model programs in areas of great need, such as general public health, management, policy, prevention, environmental health and research, that in conjunction with a basic public health core, could satisfy the eligibility requirements of the American Board of Dental Public Health; (4) develop student loan forgiveness programs for dentists and dental hygienists working in public health; and (5) develop additional credential recognition programs for dental public health workers. [J Public Health Dent 1998;58(Suppl 1):68-74]

Key Words: public health dentistry, dental education, dental public health work force.

Dental public health personnel focus on prevention, the underserved, and other population groups particularly at risk for oral diseases or infirmity. The management, evaluation, and implementation of oral health components in new systems of health care delivery will demand expertise available only from those with training in public health skills centered on groups, populations, and communities.

A serious shortage of trained dental public health specialists exists in the United States. Lack of funding for residents, demonstrated by a significantly greater number entering residencies than completing them, along with a need for accessible training for existing personnel, especially those with incomplete training, are major factors contributing to this shortage. A problem of limited demand for careers in dental public health is related partly to perceptions that public health activities involve only the public sector, and the reality that dental specialists in the public sector earn substantially less income than clinical specialists in dentistry. This perception ignores the growing need for professionals with dental public health skills in the private sector of the economy, intensified by a changing health care system. A major effort is needed to define more broadly dental public health careers and to attract both new professionals and existing practitioners into formal training programs.

Accompanying the growing need for professionals with public health skills is a decrease in available funded opportunities to study and gain qualifications in dental public health. The lack of training funds limits exposure of new professionals to those concerned with dental public health, raising serious questions about maintenance and renewal of public health expertise directed at oral health problems in the United States. This constriction of opportunity exists both at the academic level (specific oral health emphasis in schools of public health) and on the practice level (dental public health residencies). In addition, the deficiency is both in providing professionals needed for emerging population concerns in the public and private sectors, and in providing adequate numbers for the ongoing replacement of current dental public health personnel.

The recognition of specific public health skills needed to address oral problems is rooted in the early epidemiologic studies of dental caries, especially fluoride and nutrition research, and periodontal disease. These epidemiologic studies often related to specific characteristics of these most prevalent oral diseases. The modern view of public health based on assessment, policy development, and assurance includes public health skills for traditional epidemiologic approaches, but extends beyond them to include expertise from a variety of additional disciplines (1,2). Oral health activities using these extended skills and involving groups, populations, and communities are needed in both the public and private sectors.

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It is hoped that any changes occurring in the delivery of health care at the national level over the next several years will increase access to all forms of primary health care, including dental services (3). Undoubtedly, the inclusion of dentistry will necessitate many changes in the way health care is delivered. Some argue that with the changes occurring in the delivery of health care services, health departments will get out of the business of delivering primary health care except in extraordinary circumstances (4). A number of health departments now deliver oral health care, and this change would allow public health officers to undertake the broader objective of facilitating and assuring care for underserved communities. To do so, however, will require a new armamentarium of community skills and experience.

The health care system is already changing. In 1994, over 40 states had health care reform proposals either as bills in their legislatures or Medicaid waiver applications (5). Some proposals are already implemented, and several involve dentistry. At the same time, the fiscal infrastructure of health care is undergoing a major shift. Universal acknowledgment of the need for cost containment and the problems caused by cost shifting are creating a major movement toward vertically organized health care organizations employing "managed care." These organizations are demand sensitive and, as a result, compete vigorously for subscribers. As vertical organizations they are able to acquire health institutions and provider networks that make them more attractive in the marketplace. Dental care is an element that attracts the more affluent and well educated. Therefore, it is an attractive element for these new forms of health organizations to use to help them gain a competitive edge in the subscriber market. The involvement of these new health care organizations in oral health care requires individuals with public health skills and experience.

If dental health services become a major part of health care reorganization that stresses managed care, difficulties may arise because sufficient personnel currently are not available to provide expertise to organizations that are including dentistry in managed care, either at the operational or policy level. The great challenge is to keep managed care consonant with protecting and improving health, in this case oral health. Professional personnel qualified to assess effects, outcomes, and quality on groups, populations, and communities need to be public health trained and qualified.

If dentistry is not included in new national health schemes in an organized way, resources now available for oral health care may be diverted to other insured areas, thus increasing the number of under- and unserved people. The traditional roles of the dental public health officer that include advocacy and delivering care for these populations also are likely to change dramatically under this assumption.

For MPH students from public health schools without specific dental public health programs, the residency experience in a dental setting provides the application of skills to dentistry. Unfortunately, many dentists who complete the MPH degree do not have the opportunity or funds to pursue a residency in a dental setting. Without this experience, they are unlikely to be able to assume mature responsibilities in operating public health programs right away, and they may be denied the flexibility derived from a formal experience that will allow them to find new outlets for their talents and skills as programs and priorities change.

A case has been made to expand the areas of expertise of the American Board of Dental Public Health to parallel more closely those of the American Board of Preventive Medicine (6,7). Qualification could be granted in public health, preventive dentistry, managerial dentistry, and environmental problems and oral health. Residencies could be created in all of these areas. This expansion of interest areas could provide the opportunity to recruit dental personnel more effectively into public health education and training by overcoming some of the perceptions of the discipline. For example, some of the administrative and other positions in the private sector—managed care industry—are among the most lucrative in the dental profession. Attention to both incentives and support mechanisms coupled with an expansion of interests considered by members of the American Board of Dental Public Health should increase substantially the number of public health-qualified dentists in the United States.

Finally, it is important to note that many observers see the shortage of dental public health specialists as an image problem. Dental public health jobs that are recognized easily by those outside of public health dentistry do not exist. Many of the existing jobs in the public sector are at risk of being eliminated because of decreasing public funding at the state and local levels. These observers feel that the declining opportunities for education in dental public health simply reflect the current market, raising the important issue of how to convert societal need to demand.

In summary, while opportunities for public health education and residency training are declining, the need for public health skills is likely to increase. This scenario seems valid regardless of whether dentistry is included in any changes in the delivery of health care. This report attempts to answer the question: "How best to invest in the dental public health education system so as to fulfill the profession's responsibility to protect and improve the oral health of individuals and society?"

We thought this question was best answered by an advisory committee of individuals currently involved in the various areas of the health care system. A committee was constituted consisting of individuals currently active in dental public health training and practice, dental education, preventive medicine, and general public health administration. (See Appendix for list of committee members.) The committee met once to discuss the issues involved in dental public health training and to provide advice on existing careers in dental public health, potential careers, and pathways and opportunities for dental public health professionals to achieve these careers. In preparation for the meeting, the advisory group considered an extensive literature review prepared by the project team, and the results of a survey of dentists concerning employment and practice requirements for public health dentists.

This paper provides a brief review of the current status of existing training opportunities in dental public health, trends in postdoctoral training in dental public health, and trends in membership in the American Board of Dental Public Health. The delibera-

tions of the advisory group are reported as a series of specific statements. Based on the information gathered as part of the project, specific recommendations are provided to help address current challenges faced by dental public health training in meeting future societal needs in oral health, along with a strategy for implementing these recommendations.

Information Base for Project

Dental public health has a continuing history of accomplishment. Significant contributions to oral disease prevention and health promotion have been made in the United States and abroad. Despite the obvious gains, changing patterns of disease along with population changes have induced new societal perceptions of oral health resulting in federal policy changes, as well as funding changes for educational programs in dental public health.

To provide the advisory group with a perspective of these contributions and their impact, a literature review that included the following areas was carried out: (1) dental public health development and training, (2) general topics concerning the future of public health, (3) medicine's perspective on future training in public health, and (4) the implied impact of health care system reform in this country on public health theory and practice.

A series of documents generated over the five years before this project by both nondental groups and those within the profession was relied upon heavily. These documents included: a study of the oral health activities of the Department of Health and Human Services and the final report to the House of Representatives Appropriations Committee on Oral Health Activities (8); Healthy People 2000 (9); Healthy America: Practitioners for 2005 (10); goals and objectives for specialists of dental public health (2); "A Research Agenda for Dental Public Health" (11); the Institute of Medicine's Committee on the Future of Dental Education proceedings and related testimonies (12); and the "Future of Dental Public Health" paper of the American Association of Public Health Dentistry and the Oral Health Section of the American Public Health Association (6). In general, these documents cite the need for remodeling (dental) public health's scope, image, training, and perspective. Beyond that, they provide evidence that planning activities addressing a framework for future needs has already begun.

Availability of Education and Training

Of the four major areas included in the literature review, this paper concentrates on education and certification in the specialty. Advanced education and training for dental public health occurs in academic degree programs in schools of public health and dentistry, and in dental public health residency certificate programs located in academic institutions as well as government agencies. The minimum of two years of training required to become educationally qualified for specialty status can involve either a public health master's degree followed by a residency certificate program or a two-year master's degree program in dental public health. Accreditation for the master's of public health degree is by the Council on Education for Public Health. Two-year master's degrees and certificate residency programs are accredited by the Commission on Dental Accreditation housed at the American Dental Association in Chicago. In 1994, 39 persons were enrolled in 17 accredited dental public health specialty programs (Table 1). The number of students enrolled has remained relatively stable over the last five years.

In addition to those dentists in designated specialty training programs, dentists and dental hygienists can earn academic qualifications in a variety of public health disciplines. These disciplines—a number of which have subsidized training programs in universities—include epidemiology, biostatistics, environmental sciences, health administration, health policy, health services research, and the sociomedical sciences. Individuals with master's or doctoral degrees in these disciplines are often found in both public and private sector organizations concerned with dental health. It is not possible to estimate the number of graduates with master's or doctoral degrees who have dental backgrounds, experiences, or interests. The last attempt to estimate the number of students in MPH degree programs was by Lotzkar (13). His effort was hampered by the inability of schools of public health to provide data concerning dental personnel in their programs.

Specialty certification in dental public health is provided by the American Board of Dental Public Health. In 1994 there were 115 board-certified specialists, slightly more than two per state, although the number is not distributed equally (Table 2). The number of diplomates of the board has been relatively constant since 1978. The number applying for diplomate status during the five-year period between 1989 and 1994 was 41. During this same period, 30 candidates were examined and 23 admitted as diplomates.

TABLE 1
Dental Public Health Enrollment in Accredited Education Programs*

Year	First Year	Total	Grads
1990	22	37	11
1991	14	38	12
1992	20	42	12
1993	24	43	13
1994	17	39	18

*Source: Judy Nix, American Dental Association.

Advisory Group Discussion

The advisory group reviewed information gathered for this project; defined the issues and concerns; and made recommendations for developing guidance and definitions for a grant program that could support the implementation, maintenance, and improvement of dental public health education and residency programs. At its meeting, the committee held a wide-ranging discussion concerning the future functions of dental public health professionals, recognizing current data concerning the education and training of dental public health professionals and the state of flux of health policy in the United States. This discussion advanced the following views:

- Functions of dental public health professionals in the future will be primarily population based and less oriented toward the delivery of care to individuals.
- Policy issues will be a primary concern of dental public health professionals. Of special concern will be the

TABLE 2
Membership History for the American Board of Dental Public Health*

Year	Total	Applied	Examined	Admitted
1978	103	—	4	4
1985	103	14	10	8
1989	109	5	6	5
1990	110	4	4	2
1991	108	9	1	1
1992	110	9	11	11
1993	116	10	8	4
1994	115	4	—	—

*Source: Stanley Lotzkar, American Board of Dental Public Health, June 1994.

roles of oral health and dental care in primary health care, especially as specified in federal, state, and local health care initiatives.

- Research will include (at least) issues concerning the identification of those at risk for dental injury, disease, or malformation; incidence studies to determine causality and relative risk; prevalence studies to estimate the burden of disease, injury, and abnormality; approaches to health care reform; and behavioral studies concerning effects and interventions to promote healthy behaviors for oral health.
- Disease prevention and health promotion for groups, populations, and communities will remain an important function of the dental public health professional. These activities will include not just primary prevention aimed at the initiation of disease, but also secondary and tertiary prevention aimed at prevention of disease extension and prevention of death and disability. Standards for preventive dentistry practice were also a concern.
- Organization of public health and health care efforts is a major concern. Noted were the problems with development of managed care organizations and the effects of these developments on oral health care efforts. The need for expertise was underscored by a dental dean who wished to develop a managed care clinical program for his university and was unable to find expertise to do so, even from diplomates of dental public health.
- Financing both dental public health efforts and dental public health education is a major problem. The shrinking local and state health budgets for public health are forcing health department cutbacks. One of the first functions considered for reduction or elimination is the dental program. Shrinking public sector job availability contributes to the small numbers of dentists attracted to public health efforts.
- The financing of dental public health education programs is also a major concern. The number of residency positions is very small. All programs have experienced some interruption of funding and are concerned about stability. Stipends and tuition credit for dental public health residents are few and far between, thus decreasing incentives for this education when compared to other residency programs.
- The efficiency and effectiveness of personnel use were identified as a major issue. The significant number of dentists with public health experiences and with master's degrees in public health who do not continue their education so as to become educationally qualified for specialty boards in dental public health were discussed. Concerns were expressed that these individuals develop expertise for a specific job based on their experience and, when need for the position no longer exists, they are unable to find new employment in public health because of the limited range of their skills. They are then lost to the dental public health effort, often opting for clinical practice instead. This group of dentists is an important cadre of interested and partially trained individuals for whom there is no present mechanism to broaden their credentials and knowledge while still performing their job responsibilities.
- Evaluation both of the health care system affecting oral health (continuous quality improvement, quality assurance) and dental interventions were seen as important functions of dental public health professionals.
- Program development also is seen as an important endeavor of dental public health professionals. This area is an important one for the private sector, as well, and the community organization skills of public health professionals are seen as being important resources for the private sector.
- The distribution and dynamics of disease and injury relating to oral health are of primary concern to dental public health professionals. The rigorous skills demanded by the public health basic sciences of epidemiology and biostatistics bring professional competence to estimates and findings concerning health of populations that then result in policy, product development, decisions to expand or abandon programs, causes of disease, and a variety of other issues. The application of epidemiologic skills is a primary professional function.
- Social marketing and education in the interest of health were terms used to indicate the need for the dental public health professional to utilize basic social science tools in designing, applying, and evaluating interventions directed toward changing behavior and oral health. These discussions referred to sophisticated knowledge and techniques available to measure the effects of health promotion, life events, and quality of life.
- Educational needs and groups who have existing skills and training were also a major area of discussion. Sixteen groups of professional individuals were identified who can be considered resources for dental public health activities. Under educational needs and credentialing, some mechanisms for gaining supervised practical public health experience (formal mentoring programs, mini-residencies) and alternative academic pathways were suggested.

Recommendations

Based on the foregoing information and discussions, the advisory committee along with project staff arrived at the following recommendations. The underlying rationale for these recommendations is the need for replacement of persons lost to the dental public health effort and the expansion of the total numbers of personnel devoted to the organization, assessment,

assurance, and policy development for the nation's oral health. Efforts in both profit and nonprofit health sectors are directed at protecting and improving the oral health of groups, populations, and communities. The skills and experiences of public health dentists are especially important for the changing health care system with its emphasis on managed care. Priority in implementing these recommendations is to be given to incentives for training individuals who will be involved in applying these efforts to those populations most at risk for dental disease and infirmity, and/or those who are not receiving routine acute and primary dental health care.

1. Advanced Education: Programs, Master's Degree Students, and Residents

Funds should be provided to support advanced education in dental public health both at the master's and residency levels. This recommendation suggests the need for program support and direct support for trainees in both new and existing programs. Maximum linkage with state and local health departments is encouraged to provide a broad spectrum of experiences. These efforts are aimed at providing replacement and new personnel.

2. Model Educational Programs

Funds should be provided, utilizing mechanisms described in the section on implementation strategies, to develop model education programs aimed at increasing the competencies of those individuals in "public health jobs" in the private and public sectors and who are not currently eligible for board certification These models should aim at the more effective use of existing personnel, as well as providing for the ongoing replacement of the work force with new personnel.

Dental Professionals with Existing Master's Degrees. Model programs aimed at individuals already having degrees in public health disciplines should be designed and implemented. These "off-site" programs are to be geared toward broadening experiences under a mentor's supervision. They are to include educational contracts and evidence of accomplishment.

Areas of Need. Model programs should be designed and implemented in the areas of greatest need for the oral health of the public. These areas for education and training presuppose a common core of public health education and experience augmented by special capability in the areas indicated in the following below. These programs could be enhanced by the ability to influence credentialing criteria to include these options. This approach is analogous to that in use by the American Board of Preventive Medicine. These specialty areas include:

Public Health: The traditional training of public health dentists broadly aimed at public programs continues to be essential.

Management and Administration (also Planning and Policy): Programs focused especially on managed care delivery models are needed. The emerging emphasis on managed care is going to require substantial numbers of personnel who can use public health skills. These skills are especially important as outcome studies become the basis for reimbursement norms. Monitoring the effects of managed care developments and modifying programs to guarantee continued quality of care are important emerging areas along with traditional managerial skills.

Prevention: Increasingly, some dental practices are devoted exclusively to prevention. The development and monitoring of prevention standards for those practitioners involved in efforts both for individuals and communities deserve special training and emphasis.

Environmental: The identification of health risks for individuals as a result of behaviors and dental disease and for health care personnel as a result of professional practices is another special area of competence.

Research: An essential requirement for maintenance of the oral health of the public is that a cadre of individuals interested in dental problems receive sophisticated training in basic public health disciplines (e.g., epidemiology, biostatistics, the social sciences). Once trained, these individuals often feel divorced from the enterprise of dental public health. They often have only a narrow frame of reference concerning oral health and oral health problems of groups, populations, and communities. They also miss exposure to the public health "ethos." Public health experiences need to be provided to broaden the appreciation and contact of these public health basic science individuals.

Mini-residencies. "Mini-residencies" for dental health professionals unable to be part of full-time residency programs should be developed. A number of national and international models exist for this concept both in preventive medicine in this country and in the public health efforts of developing countries.

3. Loan Forgiveness

It is recommended that policy incentives be developed to attract dental professionals into dental public health training and activities. These incentives could be made part of existing loan forgiveness programs under the National Health Service Corp. Dental school and/or public health education student loans would be forgiven in exchange for a fixed period of service in dental public health at the federal, state, or local level (time and population served). Student indebtedness is a major factor in dentists' career selection and this approach will make it possible for more individuals to choose public health as a career. Even a small number of individuals involved each year would make a large difference in the dental public health capability of the nation.

4. Professional Credentials

Assistance should be provided as soon as possible to facilitate the development of additional recognition of dental public health practitioners, and to reexamine the mechanisms for obtaining credentials to provide individuals with additional capability to improve the oral health of the public. Professional dental public health organizations should be involved in developing criteria for alternative pathways for obtaining credentials using the models described in this report.

5. Undergraduate, Graduate, and Continuing Education

Funds should be provided to help develop model programs for undergraduate and nonpublic health dental residency instruction in public health skills and concomitant experiences utilizing public health credentialed mentors. These programs should facilitate the use of dental school and hospital delivery systems as laboratories for the use of public health descriptive, analytic, and evaluation skills as well as the definition and design of interventions aimed at improving oral health outcomes. State and

local health departments also should be involved as experience sites. Eligible entities should include dental schools, community and preventive dentistry departments, preventive medicine departments, and AHECs.

Operational Strategy

Much of the answer to how these recommendations can be implemented depends on the amount of funding available and the level of activity and interest in both federal agencies and the dental public health community. However, an operational strategy was developed and is included here. Key elements of this strategy include the following recommendations:

- A grant program should be constructed that: (1) supports residents in dental public health; (2) explores the feasibility of mechanisms to stabilize funding for dental public health programs (e.g., contract service capability to health departments, legislatures, hospitals, HMOs, primary care plans); (3) funds model programs that involve all or some of the innovative approaches indicated in the recommendations above; and (4) considers combining these elements to create "centers of excellence" for dental public health education and training.
- Funds should be allocated to facilitate the reexamination of credentialing for dental public health, the definition of specialists in dental public health, and the organization(s) of dental public health personnel to facilitate effectiveness, breadth of competence, and efficiency of effort.
- Federal mechanisms should be employed to assure: (1) that oral health care is included in all measures to provide primary care; and (2) that proposals be made to include loan forgiveness for public health activities in National Health Service Corps legislation as an incentive for young professionals to gain additional training, experience, and employment using public health skills. Since most medical personnel coming into public health residencies are funded in a medical specialty or the public health discipline, the area of greatest need is in dental public health. A model program should be tried for dental public health.
- Funds should be sought to assist dental schools in strengthening the public health skills and experiences of students during their initial dental training. These funds need to be provided in a way that requires schools to utilize their existing resources, building on efforts in community dentistry that were initiated in the 1960s using federal funds, now expanded to use the schools' delivery systems to provide hands-on experiences in instruction concerning health care delivery systems. With the implementation of universal health insurance, ties to academic health center HMOs might be required to make these efforts eventually self-funding.

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