

Assessment of the Dental Public Health Infrastructure in the United States

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Table of Contents

Executive Summary.....	3
Background	10
Government	
State Health Departments	13
County and Local Health Departments.....	20
Community and Migrant Health Centers	21
US Public Health Service Commissioned Corps.....	28
Education	
Schools of Dentistry	30
Programs in Dental Hygiene	34
Schools of Public Health	38
Advanced Training Programs in Dental Public Health (Residencies)	39
Prevention Research Centers	43
Workforce	
Board-Certified Public Health Dentists	49
Race/Ethnicity of Dental Workforce and Students	53
National Dental Public Health Organizations	59
Regulatory Issues	
State Boards of Dental Examiners	69
State Practice Acts Regarding Dental Hygiene Practice	73
Discussion	77
Recommendations.....	85
Conclusions.....	87
References.....	89

EXECUTIVE SUMMARY

In its narrowest definition, dental public health is one of the nine specialties of dentistry recognized by the American Dental Association Council on Dental Accreditation. More broadly, dental public health has been defined as the "...science and art of preventing and controlling dental diseases and promoting dental health through organized community efforts. It is that form of dental practice which serves the community as a patient rather than the individual. It is concerned with the dental health education of the public, with applied dental research, and with the administration of group dental care programs as well as the prevention and control of dental diseases on a community basis."

A number of recent initiatives have highlighted the challenges facing oral health in the United States. The Office of the US Surgeon General released its first report on oral health in America several years ago. The major findings of that landmark report were: 1) oral diseases and disorders in and of themselves affect oral health and well-being throughout life; 2) safe and effective measures exist to prevent the most common dental diseases; 3) lifestyle behaviors that affect general health, such as tobacco use, also affect oral health as well; 4) there are profound oral health disparities among the US population; 5) more information is needed to improve America's oral health and eliminate health disparities; 6) the mouth reflects general health and well-being; 7) oral diseases and conditions are associated with other health problems; and 8) scientific research is key to further reduction in the burden of oral diseases and disorders. The "framework for action" spelled out in the Surgeon General's Report on Oral Health highlighted the principal components of a plan to address those issues, which were:

- Change public perceptions regarding oral health and disease so that oral health becomes an accepted component of general health.
- Accelerate the building of the science and evidence base and apply science effectively to improve oral health.
- Build an effective health infrastructure that meets the oral health needs of all Americans and integrates oral health effectively into overall health.
- Remove known barriers between people and oral health services.
- Use public-private partnerships to improve the oral health of those who still suffer disproportionately from oral diseases.

Another major recent initiative was the release of the Healthy People 2010 Objectives for Improving Health. Among the focus areas included in Health People 2010 was oral health, with the overall goal being to prevent and control oral and craniofacial diseases, conditions, and injuries and to improve access to related services. That goal was supported by 17 specific objectives that largely will require concerted dental public health action to achieve and monitor.

In addition, the American Dental Association's Future of Dentistry report adopted a vision of "Improved health and quality of life for all through optimal oral health," and laid out broad recommendations to help achieve that vision. The seven broad recommendations were:

1. Establish and support partnerships and alliances among dental, other health care professional, and public health organizations, as well as business and social service groups, in order to address common goals to improve oral health.
2. Aggressively address the oral health needs of the public.
3. Strengthen and expand dentistry's research and education capabilities.
4. Ensure the development of a responsive, competent, diverse, and "elastic" workforce.
5. Develop strategies to address the fiscal needs of the practice, education and research sectors of dentistry to ensure their viability and vitality.
6. Establish a formal organization with membership consisting of the American Dental Association representing dental practice, the American Dental Education Association representing dental education, and the National Institute of Dental and Craniofacial Research and the American Association of Dental Research representing research.
7. Utilizing the combined resources of the dental profession and dental industry, emphasis should be placed on the development of highly targeted, collaborative marketing and public relations initiatives.

Clearly, implementing the framework outlined in The Surgeon General's Report on Oral Health in America, achieving the Healthy People 2010 Objectives for improving oral health, and realizing the vision of the Future of Dentistry report will require a viable dental public health infrastructure. That infrastructure includes an adequate workforce, a sufficient administrative presence within health departments, adequate financial resources to implement programs, and legal authority to use personnel in an effective and cost-effective manner. To be most effective, that dental public health workforce should be appropriately trained, should represent the diversity of America, and should be sustainable for the foreseeable future.

As a first step toward ensuring the adequacy of the dental public health infrastructure in the United States, this study sought to assess a number of its present elements. Although it is nearly impossible to identify or measure all possible components of that infrastructure, this study did examine a number of the major areas. Where possible, emphasis was placed on infrastructure at the state level. It is hoped the information amassed for this project might provide useful baseline data for new initiative that address elements of the dental public health infrastructure in the United States.

FINDINGS

The findings from this study were based on original data collection and compilation of existing data. Some of the key findings were:

GOVERNMENT

State Health Departments

- In 2001, 38 states (74.5%) had a full time full-time dental director; that figure dropped slightly to 37 states (72.5%) in 2002. The median number of full-time equivalents employees (FTEs) in state dental programs was 2.0, the mean was 6.9, and the range was 0–80.

- In 2001, about 40% of responding states had annual state dental public health program budgets of \$500,000 or less; 9% had total annual budgets of less than \$100,000.

Community and Migrant Health Centers

- 64.7% of Community Health Centers (CHCs) provided dental care services of some type. The number and proportion of CHCs that provided dental care services varied widely among the states, ranging from 1 to 45, and from 22.2% to 100% of CHCs within each state.
- The Healthy People 2010 target of at 75% of CHCs having a dental component was met by 21 states.
- Of the 121 identified Migrant Health Centers, 103 (85.1%) provided some type of dental care.
- About 1.6 million persons received dental care through Bureau of Primary Health Care grantees in 2002; nationally, there were 2,356 patient encounters per dentist or dental hygienist FTE.

US Public Health Services Commissioned Corps

- As of April 14, 2004, there were 489 Dental Officers in the PHS Commissioned Corps, which constituted 8.2% of all Commissioned Corps officers.
- The large majority of Commissioned Corps dental officers were assigned to the Indian Health Service (51%), the Bureau of Prisons (23%), or the Department of Homeland Security (11%).
- As of April 14, 2004 there were 61 dental hygienists in the PHS Commissioned Corps; about 90% were assigned either to the Indian Health Service (64%) or the Federal Bureau of Prisons (26%).

EDUCATION

Schools of Dentistry

- Of the 44 dental schools that responded to a 2001 survey, 31 schools (68%) had a department or division whose primary focus was public health dentistry, community dental health, or dental ecology.
- Of the 31 departments or divisions of dental public health identified by survey respondents, the median number of faculty members in those academic units was 5.0.
- Five responding schools had no faculty members with an MPH or other public health degree.
- The median number of clock hours for most of the dental public health topics addressed in the survey ranged from 4.0–8.0 hours.

Programs in Dental Hygiene

- Among dental hygiene programs responding to a 2001 survey, 64.3% had no faculty member with a public health degree.

- The median number of hours devoted to dental public health topics in dental hygiene curricula ranged from 3.0 (provision and financing of dental care; dental care need, demand & utilization) to 20.0 hours (extramural field experience in public health settings).
- The large majority of dental hygiene programs (85%) offered an associate degree, so most graduates would require additional undergraduate course work before they would meet the admissions requirements for advanced programs in public health.

Schools of Public Health

- In a 2001 survey of accredited schools of public, only one responding school indicated the existence of a department of dental public health or community dentistry.
- 15% of responding schools indicated they offered a Master of Public Health degree in a dental public health concentration area, and 19% reported offering advanced training in dental public health.
- 60% reported having no faculty members with a dental or dental hygiene degree in addition to a public health degree.

Advanced Training Programs in Dental Public Health (Residencies)

- As of June 2002, there were 18 accredited dental public health residency programs; 9 programs were located in schools of dentistry and 9 were sponsored by other institutions.
- Mean first year stipends for dental public health residents (\$18,418) were about \$6000 less for dental public health residencies than for pediatric dentistry residencies, and were about one-half the mean levels of stipend support for preventive medicine residencies.
- Of the nine dental school-based residency programs, five offered no stipend support for residents and five charged fees and/or tuition, which ranged from \$400 to \$34,200 annually.

Prevention Research Centers

- The Prevention Research Centers (PRCs) are a network of academic centers, public health agencies, and community partners conducting applied research and practice in chronic disease prevention and control; there are currently 28 PRCs situated in academic research centers in 25 states.
- 10 of the 28 PRCs have conducted at least one oral health-related project.

WORKFORCE

Board-Certified Public Health Dentists

- As of February 2001 there were 141 active diplomates of the American Board of Dental Public Health; 125 responded to a survey.
- The two most common employment settings for active diplomates were federal government (28.7%) and schools of dentistry (28.7%). Five diplomates (4.1%) were employed by county or local governments and 14 (11.5%) worked for state governments.
- Nearly 90% of active diplomates had graduated from dental school more than 15 years prior to the survey, and 60% received their MPH degree more than 15 years earlier.

Race/Ethnicity of Dental Workforce and Students

- In 1997, 1.9% of active dentists in the United States identified themselves as black or African American, compared to 12.1% of the US population. Blacks were underrepresented in the dental workforce relative to their proportion in the population in virtually every state.
- Hispanic/Latino dentists comprised 2.7% of dentists in the United States in 1997, compared to 10.9% of the US population, and were underrepresented in nearly all states.
- Overall, black/African American students comprised 5.5% of first-year dental students in 2001, compared to 12.1% of the US population. Fourteen of the 54 dental schools had not a single black/African American first-year student.
- Hispanics/Latinos were similarly underrepresented among dental students, comprising 10.9% of the population but 5.2% of dental students.
- Of the 4203 first-year dental students in 2001, there were just 19 American Indians or Alaskan Natives.

National Oral Health Organizations

- The largest major national dental public health organization in the United States is the American Association of Public Health Dentistry (AAPHD). As of May 2003, AAPHD had 640 US members and 78 members living in other countries.
- As of April, 2003 there were 290 members of the American Public Health Association who listed Oral Health Section as their primary section.
- In 2002, ADA had 544 members who reported their specialty as Dental Public Health; of those, 79 were members of the Federal Service. Overall, there was 0.17 ADA-member public health dentist per 100,000 population; no state exceeded 1 public health dentist per 100,000 population.

REGULATORY ISSUES

State Boards of Dental Examiners

- All states and the District of Columbia have a board of dentistry, a board of dental examiners, or a state dental commission. In general, those boards have the power to adopt rules and regulations regarding the practice of dentistry and dental hygiene and to issue, suspend, or revoke state licenses for the practice of those professions.
- All but two states (Connecticut and Washington) included at least one dental hygienist on the state board of dental examiners, although Washington State has a separate Dental Hygiene Examining Committee composed of three practicing dental hygienists and one public member that oversees clinical examination and certifies competency in dental hygiene practice.
- All but seven states included at least one public member with no financial connection to dentistry.
- A public health dentist was identified for just two state boards of dental examiners.

State Practice Acts Regarding Dental Hygiene Practice

- Only one state, Colorado, allows unrestricted, unsupervised practice by a dental hygienist when performing basic prophylaxis.
- Eight states require direct or indirect supervision of dental hygienists working in institutional settings. The distinguishing feature of these levels of supervision is that the supervising dentist must be physically present in the facility when patient care is provided.
- Forty-three states and the District of Columbia permit general supervision in institutional settings. The distinguishing feature of general supervision is that the dentist need not be present when patient care is provided. Most of these jurisdictions require that the supervising dentist examine the patient first to develop a treatment plan, issue a written work order, and / or evaluate the dental hygienist's work within a fixed period of time.

RECOMMENDATIONS

After weighing the findings from this assessment, the following recommendations are offered to enhance the effectiveness of the dental public health infrastructure in the United States.

Government

1. Develop state health department standards that require an adequately trained and credentialed state dental director in all states and the District of Columbia.
2. Provide adequate funding to permit all state health departments to conduct the core public health activities in oral health.
3. Ensure that all county health departments have an appropriately trained county dental director.
4. Include dental services in the scope of services of all county health departments that provide direct clinical care and all federally-funded Community and Migrant Health Centers.
5. Examine the activities and responsibilities of all US Public Health Service Commissioned Corps dental officers to better characterize their scope of activities.

Education

1. Develop model dental public health curricula for schools of dentistry and dental hygiene programs and work with the American Dental Education Association to disseminate and promote the curricula.
2. Recruit dental public health faculty to schools of public health.
3. Develop core courses in dental public health within schools of public health.
4. Increase service learning opportunities for students in dental and dental hygiene programs in diverse, community-based settings.
5. Develop competencies for dental and dental hygiene education that include cultural competence, patient- and community-based prevention, and distributive justice.
6. Develop new models of specialty training in dental public health that ensure adequate coverage of dental public health topics, relevant experience, and financial support for graduate education.

7. Develop dental public health specialty training and credentialing for graduates of accredited dental hygiene programs.
8. Increase the number of dental public health researchers and oral health-related projects in Prevention Research Centers.

Workforce

1. Develop a set of incentives for pursuing dental public health board certification for state, county, and local dental personnel.
2. Ensure that the American Dental Association requires documentation of credentials for dentists who report their specialty as Public Health Dentistry.
3. Enhance outreach by schools of dentistry to increase number of dental and dental hygiene students from underrepresented minority groups.

Regulatory Issues

1. Require dental public health representation on state boards of dental examiners.
2. Increase dental hygiene representation on state boards of dental examiners.
3. Develop evidence-based recommendations for level of dental supervision and scope of permitted dental hygiene services in underserved settings and communities.

CONCLUSIONS

In summary, this report suggests that the dental public health infrastructure in state government and dental educational programs is small in size and has little funding. It is unclear whether the full range of dental public health core functions are provided at county and local levels, but there are indications that generally they are not. Trends in the number of board-certified public health dentists, dental public health residency programs, and dental public health presence in schools of public health suggest that the situation will not likely change appreciably in the near future. Dental public health essentially has no presence or representation on state licensing boards, despite the public health impact of those regulatory bodies. Efforts to improve access to dental preventive services for underserved populations may be hampered by restrictive state practice acts and lack of autonomy of the dental hygiene profession. Substantial proactive efforts may be needed to create a more racially and ethnically diverse dental workforce, which may be critical in helping to achieve the Surgeon General's vision of improved oral health for all and elimination of disparities in our society. There is no single organization or agency that has the ability to bring about the numerous changes that would need to occur to substantially enhance the dental public health infrastructure in the United States, so successful efforts will require substantial collaboration among many diverse partners.