

Problem

Dental Public Health (DPH) is one of nine dental specialties recognized by the American Dental Association (ADA); it is the only specialty that prepares dentists to improve the oral health of underserved and vulnerable populations through organized community-based approaches rather than individual patient care. Attaining competency in dental public health principles and practice is one component of a dental student's education. Without this understanding, dentists may be limited in their ability to recognize community/population level challenges to optimum oral health and their potential community-based solutions, as pre-doctoral dental education and other advanced dental specialties traditionally focus on individual patient care.

Dentists who seek specialty certification in DPH must have, in addition to a dental degree and relevant work experience, a Master's degree in Public Health (MPH), or equivalent, and must also have completed a DPH residency of at least one year's duration at a program accredited by the ADA's Commission on Dental Accreditation (CODA).¹

The American Association of Public Health Dentistry (AAPHD) is the sponsoring organization for the specialty of dental public health. Under AAPHD, the American Board of Dental Health (ABDPH) is officially designated by the ADA as the national examining and certifying agency for this specialty.² Board certification is awarded to candidates who fulfill the requirements of the specialty and who successfully challenge a written and oral examination process, along with a project report following the Board's guidelines.³

Dental students obtain some didactic instruction in public health dentistry and behavioral sciences and practical public health experience during extramural rotations at community health centers, school-based oral health promotion programs and other safety-net programs. CODA's Accreditation Standards for Pre-doctoral Dental Education Programs include standards for competencies in public health.⁴ However, the breadth and depth of the curricula in which students learn these competencies vary widely among dental schools, with some dental students receiving little exposure to principles of public health and underserved populations. There is limited literature on community-based dental education (CBDE); it focuses largely on the education of predoctoral dental students and on changes in approaches to dental education.⁵ Dental schools that do not have DPH residencies or faculty with advanced DPH training may face challenges imparting community-based perspectives to dental students. In addition, dental schools without a DPH focus or DPH residencies are less able to contribute to a dental workforce that is prepared to understand and address the significant oral health disparities in specific groups in our society.

Increasingly, dentists are seeking postdoctoral training through residencies; according to the ADA, the American Dental Education Association (ADEA) reported that nearly 37 percent of dental school graduates in 2011 planned to go into advanced dental education.⁶ Enrollment in postdoctoral programs increased from 1,921 in 1975-76 to 3,200 in 2010-11.⁷ At the postdoctoral level, few dental schools offer advanced training in DPH that specifically prepares dentists for careers in the specialty, and only a small

number of dental graduates formally pursue DPH training or careers; in 2015 those with ABDPH certification were reported to be less than 0.1 percent of the dental workforce.⁸

In 2015, only 12 of the 66 U.S. dental schools (18 percent) sponsored ADA accredited DPH residencies.⁹ In 2016, there are 15 accredited DPH residencies in the U.S.,¹⁰ including two non-university-based programs (Centers for Disease Control and Prevention and the National Institute of Dental and Craniofacial Research) and one at the New York State Department of Health, through its association with the School of Public Health, University at Albany, State University of New York. There is one DPH program in Ontario, Canada at the University of Toronto. With or without academic affiliation, opportunities for DPH training are limited.

Funding is an ongoing challenge for many DPH programs. Most dental schools expect that advanced education/residency programs will be self-sufficient. Programs with clinical components generate revenue, but DPH programs may not generate clinical income and need to rely on other sources of funding for survival. The U.S. Health Resources and Services Administration (HRSA) offers financial support to DPH residencies through its grant program: *Postdoctoral Training in General, Pediatric, and Public Health Dentistry*.¹¹ DPH residencies that are sponsored by schools of dentistry may charge tuition and fees that create financial barriers to admission for dentists, particularly when many graduate from dental school with significant debt. A smaller number of DPH residencies do not charge tuition but provide modest stipends that are often made available through HRSA grant funding. It is worth exploring whether other organizations can increase their support and involvement with DPH residency programs and develop other models for training DPH residents.

Method

If the DPH workforce is to increase, more DPH residency programs need to be developed and supported in the United States. One solution to increase relevant exposure to public health concepts, community-based strategies and related experiential learning activities for residents, as well as for pre-doctoral dental students, could be through expansion of CBDE programs. In fact, CBDE programs during predoctoral dental education may encourage more graduating dentists to seek further DPH experience and training. The aim of CBDE programs, some of which may include residents, has been to provide experiences that allow participants “to explore less common dental practice settings.”¹² A review of one CBDE program indicated that when students (and residents) are placed in community settings, particularly in underserved areas, access to dental care increases while students learn patient management and clinical technical skills.¹³

The competencies taught in DPH residencies help dentists to further understand community-based prevention strategies and programs and also emphasize administrative and management skills useful for various public health, research and educational settings. They are incorporated into accreditation standards promulgated by CODA.¹⁴ Based on current competencies for an approved DPH residency (revised in 2015 and expected to be updated formally in 2016), the dentist must receive instruction in and perform skills to demonstrate the ability to:

1. Plan oral health programs for populations;
2. Select interventions and strategies for the prevention and control of oral diseases and the promotion of oral health;
3. Implement, manage and develop resources for oral health programs for populations;

4. Incorporate ethical standards in oral health programs and activities;
5. Evaluate and monitor dental care delivery systems;
6. Design and understand the use of surveillance systems to monitor oral health;
7. Communicate and collaborate with groups and individuals on oral health issues;
8. Advocate for, implement and evaluate public health policy legislation and regulations to protect and promote the public's oral health;
9. Critique and synthesize scientific literature; and
10. Design and conduct population-based studies to answer oral and public health questions.

The following list shows the broad range of settings and organizations that benefit from a dental workforce with advanced DPH specialty training. These include but are not necessarily limited to:

- State, territorial and city/county oral health programs in health departments;
- State Medicaid agencies;
- State primary care associations;
- Federal agencies;
- National and state dental professional associations;
- Other national and state health/public health professional associations;
- Community health centers, other safety-net programs and hospitals;
- Schools of dentistry and public health;
- Oral health/public health advocacy groups;
- Health/public policy/research institutes;
- Philanthropic groups or foundations; and
- Medical and dental insurance companies and managed care plans.

The DPH competencies are congruent with the competencies identified by ASTDD as being necessary for success in state and territorial oral health programs.¹⁵ The ASTDD competencies are grouped into seven domains:

- Domain 1. Build Support: State oral health programs establish strong working relationships with stakeholders to build support for oral health through promotion, disease prevention and control.
- Domain 2. Plan and Evaluate Programs: State oral health programs develop and implement evidence-based interventions and conduct evaluations to ensure ongoing feedback and program effectiveness.
- Domain 3. Influence Policies and Systems Change: State oral health programs promote and implement strategies to inform, enhance or change the health-related policies of organizations or governmental entities capable of affecting the health of populations.
- Domain 4. Manage People: State oral health programs oversee and support the optimal performance and growth of team members.
- Domain 5. Manage Programs and Resources: State oral health programs ensure the administrative, financial and staff support necessary to sustain activities and to build opportunities.
- Domain 6. Use Public Health Science: State oral health programs gather, analyze, interpret and disseminate data and research findings to assure that oral disease prevention and control approaches are evidence-based.
- Domain 7. Lead Strategically: State oral health programs create strategic vision, serve as a catalyst for change and demonstrate program accomplishments.

A comparison of the competencies taught in DPH residencies and the competencies required for successful state and local oral health programs demonstrates a significant overlap. For example, competencies 1 and 2,

the ability to plan oral health programs for populations and to select interventions and strategies for the prevention and control of oral diseases and the promotion of oral health, are consistent with ASTDD's Domain 2, which describes competencies needed to "develop and implement evidence-based interventions." Similar comparisons can be made between and among the other identified competencies.

DPH residency programs can help prepare residents for a career in dental public health by partnering with the organizations previously identified through projects, field experiences, staff shadowing or other activities. Opportunities for collaboration with ASTDD, AAPHD and or other dental and public health organizations might include:

- Developing website content;
- Participating in webinars as presenters/co-presenters;
- Participating on committees or workgroups;
- Assisting with dental public health projects through mentoring relationships;
- Attending the annual National Oral Health Conference (NOHC) co-sponsored by ASTDD and the AAPHD and participation in conference programs, including as presenters;
- Assisting in reviewing abstracts submitted to NOHC;
- Developing materials to present to dental students;
- Promoting interest in careers in the previously listed settings by helping ASTDD, AAPHD and other organizations' members speak to undergraduate dentists and other DPH residents about potential opportunities;
- Identifying opportunities for involving residents in research;
- Developing options for field experiences for dental students or future residents;
- Assisting with surveillance activities such as a statewide survey using Basic Screening Survey protocols;
- Performing literature reviews and writing white papers, issue briefs or best practice approach reports;
- Helping to write grant proposals for project or program funding; and
- Participating in fluoridation campaigns.

The involvement of residents in projects and/or other national, state and local program initiatives may help residents to meet the requirements for DPH certification and provide a value-added, qualitative dimension to their training. The experience gained can contribute to the development of a skilled and competent workforce. ASTDD has previously noted that "successful SOHPs have a continuous, strong, credible leader who is a dental professional with public health training."¹⁶ A workforce with more dentists with advanced DPH training would greatly enhance the capacity of state, territorial and local oral health programs, their partners and stakeholders to promote oral health equity and reduce oral health disparities.

Concluding Statement:

ASTDD encourages the ongoing development and continued support of dental public health residency programs in the United States to increase the dental public health workforce. More residency programs, expanding when and where it is possible to provide as broad a training experience as possible, in a variety of public health settings, will increase the number of dentists with advanced education in dental public health and population-based approaches. This improved capacity can contribute to improving oral health equity and reducing oral health disparities in the United States.

¹ American Board of Dental Public Health. ABDPH Information Brochure; Accessed December 5, 2015. <http://www.aaphd.org/assets/ABDPH/abdph-informational-brochure-2016-fin.pdf>.

² <https://aaphd.memberclicks.net/assets/education/abdph-informational-brochure%201.pdf>. Accessed June 27, 2016.

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- ³ <https://aaphd.memberclicks.net/assets/Education/abdph%20certification-%20examination%20information%201.pdf>. Accessed June 27, 2016.
- ⁴ Commission on Dental Accreditation. Accreditation Standards for Dental Education Programs. Accessed May 11, 2016. http://www.ada.org/~media/CODA/Files/2016_predoc.pdf?la=en
- ⁵ Formicola AJ, Bailit HL. Community-based dental education: History, current status, and future. *Journal of Dental Education*; 71(1); 98-106. 2012.
- ⁶ American Dental Association. Understanding Advanced Dental Education. www.ada.org/en/education-careers/dental-student-resources/career-options-after-dental-school/understanding-advanced-dental-education. Accessed July 30, 2016.
- ⁷ American Dental Education Association. U.S. Postdoctoral Dental Education First-Year Enrollment, 1976 – 2011. www.adea.org/uploadedFiles/ADEA/Content_Conversion/publications/TrendsInDentalEducation2009/TDEStudents/Documents/Graduates_Postdoctoral_files/PostdoctoralFirstYearEnrollment.pdf. Accessed July 30, 2016.
- ⁸ Dolan, T. Preparing the oral health workforce to effectively address public health challenges. *Journal of Public Health Dentistry* 75 (2015) S1–S3.
- ⁹ American Dental Education Association. Directory of Institutional Members; Accessed December 5, 2015. <http://www.adea.org/dim/>
- ¹⁰ Accredited Dental Public Health Residencies, American Association of Public Health Dentistry website www.aaphd.org/dph-residency-programs. Accessed March 28, 2016.
- ¹¹ HRSA. Postdoctoral Training in General, Pediatric and Public Health Dentistry. Accessed December 5, 2015. http://bhpr.hrsa.gov/grants/dentistry/post_td.html.
- ¹² Atchison KA, Thind A, Nakazono TT, et al. Community-based clinical dental education: Effects of the pipeline program. *Journal of Dental Education*; 72(2) Supplement. S270-82; 2009.
- ¹³ Mascarenhas AK. Community-based dental education at Boston University. *Journal of Dental Education*; 75(10) supplement. S21-24. 2011.
- ¹⁴ Commission on Dental Accreditation. Accreditation Standards for Advanced Specialty Education Programs in Dental Public Health. Accessed December 5, 2015. <http://www.ada.org/~media/CODA/Files/dph>
- ¹⁵ Association of State and Territorial Dental Directors. ASTDD Competencies for State Oral Health Programs. Accessed December 5, 2015. www.astdd.org/docs/CompetenciesandLevelsforStateOralHealthProgramsfinal.pdf
- ¹⁶ Association of State and Territorial Dental Directors. State Oral Health Program Infrastructure and Capacity Policy Statement, Accessed July 31, 2016. www.astdd.org/docs/sohp-infrastructure-and-capacity-policy-statement-may-17-2013.pdf