Chapter 1 - Dental Public Health

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Introduction

The format of this chapter differs significantly from other chapters in this document. Chapters providing overviews of clinical dental specialties generally provide technical instruction and descriptions, often detailed and intricate, of clinical procedures and techniques common to the specialty being discussed. The commonly encountered technical procedures and issues germane to dental public health and prevention of oral disease have already been summarized in Chapter Four of the Oral Health Program Guide for the Indian Health Service. The reader seeking technical advice on, for example, the indications for the use of dental sealants, is referred to that document.

Relieved of the necessity to address the clinical preventive procedures and techniques commonly encountered in the Indian Health Service, this chapter provides an introduction to the specialty of Dental Public Health by addressing a series of related questions:

• What is public health?
• What is dental public health?
• What are the similarities and differences between individual health care and community health care, or between the private sector and public health models of care?
• What are the educational requirements leading to specialization in Dental Public Health?
• What are some of the key issues and challenges germane to Oral Health Promotion and Disease Prevention (HP/DP) in IHS?

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Introduction to Public Health

Most people take the tremendous advances in public health for granted. We take it for granted that we can drink a glass of water without worrying about cholera; we can purchase processed food without being concerned about botulism. Thoughts of scarlet fever, smallpox, typhoid, and poliomyelitis rarely enter our consciousness. To most individuals of the younger generations in the middle classes of this country, severe dental caries is almost as obscure a disease as those infectious diseases of the past. This fundamental, positive alteration in the health of the public has not just somehow magically happened; it is the end result of years of public health research and practice.

The low profile of public health has both positive aspects and negative ramifications. While it is understandable that “invisible” innovations such as drains, sewage treatment, fluoridated drinking water, and immunizations against infectious diseases are accepted institutions of modern life, it is not good that most people have so little knowledge of the recent history of public health and so little appreciation of how public health functions. Without a constituency to advocate for them, funding and legislation for public health programs can be eroded, with subsequent threats to health and to quality of life. In contrast, everyone is acutely conscious of issues surrounding access to personal health services; that subject is a constant political issue. It remains to be seen if the newfound interest in health issues on a population level associated with concerns about bioterrorism will result in long-term emphasis on, and advocacy for, public health.

Many definitions of public health have been written over the years. Two of the most useful in gaining an understanding of public health mission, functions and services are reviewed herein.

In 1988 the Institute of Medicine defined the mission of public health as “…fulfilling society’s interest in assuring conditions in which people can be healthy.” The Institute described the basic functions of public health agencies:

- **Assessment:** the regular collection and dissemination of data on health status, community health needs, and epidemiologic studies.
- **Policy Development:** promoting use of the base of scientific knowledge in decision making on policy matters affecting the public health.
- **Assurance:** assurance of the constituents that services necessary to achieve mutually agreed upon goals are provided, either directly, by encouraging other entities, or by regulation. (1)

More recently, the American Public Health Association defined the mission and services of public health:

- **Mission:** promote health and prevent disease (the parallel to the IHS Health Promotion / Disease Prevention program is obvious).
- **Prevent epidemics and the spread of disease.**
* Protect against environmental hazards.
* Prevent injuries.
* Promote and encourage healthy behaviors.
* Respond to disasters and assist communities in recovery.
* Assure the quality and accessibility of health services.

**Essential services:**

* Monitor health status to identify community problems.
* Diagnose and investigate health problems and hazards in the community.
* Inform, educate, and empower people about health issues.
* Mobilize community partnerships and action to solve health problems.
* Develop policies and plans that support individual and community health efforts.
* Enforce laws and regulations that protect health and ensure safety.
* Link people to personal health care services.
* Assure the provision of health care when otherwise unavailable.
* Assure an expert public health work force.
* Evaluate effectiveness, accessibility, and quality of health services.
* Research for new insights and innovative solutions to health problems. (2)

**Introduction to Dental Public Health**

Dental Public Health is one of the nine specialties of dentistry in the United States. Most dentists understand the essential characteristics of eight of the nine dental specialties currently recognized by the American Dental Association (ADA). The specialty of Dental Public Health (DPH) is the exception; most find it relatively difficult to define. The author recently had multiple opportunities to ask a number of General Practice Residents, relatively inexperienced general dentists, and senior dental students to define three selected dental specialties and describe the typical activities of these specialists. Their responses reinforce the impression that a detailed discussion of the specialty of DPH is warranted.

When asked what oral surgeons do, the dentists and dental students listed a series of technical procedures generally associated with surgeons. They noted postdoctoral training, and described procedures and services the specialist is proficient at providing. The specialty was defined by dentists primarily in terms of the types and complexity of services rendered. It was noted repeatedly that while there was some overlap in the procedures typically performed by general dentists and those performed by oral surgeons, the more difficult technical procedures were generally referred to oral surgeons whenever possible.

When asked what pediatric specialists do, they provided a clear portrait of someone who treats children. The specialty was characterized not by a list of clinical procedures; in fact, the great overlap in procedures performed by general dentists and pediatric dentists was noted. The specialty was defined primarily by the population served.
In contrast, when asked what dental public health specialists do, neither a list of activities or procedures, nor a clearly defined subset of the population served, were consistently identified. A composite portrait slowly emerged, with many misconceptions and inconsistencies among respondents. Specific reference was sometimes made to serving the community and underserved individuals; the acquisition of postdoctoral training aimed at administrative rather than clinical skills was mentioned. Specific misconceptions, directly quoted and often mentioned include:

- “…public health dentists all work for federal agencies…”
- “…they treat patients who can’t afford to see private dentists…”
- “…most work in clinics either in prisons or on reservations…”
- “…most do surveys…”
- “…they work for states and fluoridate cities…”

These findings should not be construed as being critical of the individuals who so graciously volunteered to be questioned about their knowledge of dental specialties. Dentists are a product of an educational system that emphasizes the technical aspects of restorative care while virtually ignoring all but the most basic overview of DPH. Indeed, given the opening assertion of this introduction, it would be surprising to identify a group of dentists capable of providing a reasonably accurate working definition of public health, dental public health, or the DPH specialist.

The American Board of DPH developed a definition of DPH, one subsequently approved by the American Association of Public Health Dentistry, the Oral Health Section of the American Public Health Association, and the American Dental Association (ADA):

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\text{DPH is 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 that 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. (3)}
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This definition implies that the DPH specialist have knowledge and skills in program administration, research methods, the prevention and control of oral diseases, and the methods of financing and providing dental care services. The American Board of Dental Public Health lists ten essential competencies for DPH specialists. These competencies provide further clarification of the knowledge and skills necessary to the practice of DPH, by describing skills or abilities that are measurable or observable. Because of this way they are written, the competencies provide more immediate insight into what DPH specialists actually can do, as opposed to what they should know or understand. Stated in behavioral terms, they serve to further define the specialty.

The competencies:
A specialist in DPH will:

1. Plan oral health programs for populations.
2. Select interventions and strategies for the prevention and control of oral diseases and promotion of oral health.
3. Develop resources, implement and manage 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.
10. Design and conduct population-based studies to answer oral and public health questions. (4)

Dentists become recognized specialists in DPH when they achieve diplomate status with the American Board of DPH. Specialty certification requires satisfying the educational requirements of the Council on Dental Education of the ADA. Briefly, these requirements include:

- Two years of accredited advanced graduate education in the specialty (This requirement is most often satisfied with a Masters in Public Health plus a DPH residency).
- A work experience requirement.
- Completion of the specialty board examination. (3)

Although there are fewer than 150 DPH specialists, their collective influence on dental public health is significantly greater than the numbers might lead one to believe. In addition to the Indian Health Service, DPH specialists are employed by other federal programs, state, and local health departments. They conduct research in universities and government agencies. They are administrators in professional organizations and foundations.

DPH specialists, and those clinicians working in a public health setting, avoid the relative isolation of the dental office; the majority of DPH initiatives require cooperative effort with other professionals. Chief among the long-term rewards is the ability to bring about improvement of the oral health status of populations rather than single patients. The dentists of the Indian Health Service, for example, have demonstrated their ability to increase dental care for hundreds of thousands of Alaska Natives and American Indians from the bare emergency service of a few decades ago to the provision of more thorough dental care delivered in excellent clinical facilities. Similarly, a DPH professional who helps to institute or enhance water fluoridation has done more for the oral health of a community than could be achieved in years of clinical practice.
Achievements of DPH professionals include the epidemiologic studies that established the basis for community water fluoridation, clinical trials to demonstrate the effectiveness of fluoride toothpastes and other preventive products and procedures, and the implementation of caries control programs which have been fundamental to the decline in caries among most children in this country. Oral epidemiologists have charted the natural progression of periodontal diseases, and are beginning to assess other oral conditions and interrelationships of oral to other disease processes about which little is known. Administrators in DPH have demonstrated the increased productivity that efficient use of dental auxiliaries can bring to the delivery of dental care.

Dental hygienists have proven their value in dental public health well beyond their traditional roles as clinicians and oral health educators. Hygienists have served as local, Area, and national coordinators of our IHS Health Promotion / Disease Prevention (HP/DP) program. They frequently act as directors of fluoride mouth rinse programs and sealant programs, members of survey teams, liaisons to local Head Start programs, and in several other capacities within our organization. Within the context of DPH outside of the IHS, dental hygienists act as directors of both local and state oral health programs. A significant number of states have state dental directors who are dental hygienists. Without in any way minimizing the contributions of other dental personnel, the words of one of our IHS Area Dental Officers sum up the central contribution of dental hygienists in our program: “Where there’s a dental hygienist, there’s usually an effective prevention program.”

Dental assistants, especially within the IHS, have proven their value in DPH well beyond their traditional roles as characterized within the private sector. In an organization where the licensed health care providers enjoy a mobile career marked by numerous moves, it is often the dental assistants who provide the institutional memory and continuity to individual local dental programs. Their collective value, of course, transcends this one important function to sometimes include participation in school based sealant programs, Head Start programs, and in other capacities within the dental program.

To complete this discussion of what DPH is, it is useful to return to those misconceptions of dental students and young dentists mentioned early in this chapter. The misunderstandings surrounding DPH within our profession provide a partial outline of what DPH is not.

- It is not “welfare dentistry,” although the provision of care to individuals who cannot conveniently access private practice for needed care is part of DPH. The practice of DPH goes far beyond “filling the health care gap” for those whom the private sector either cannot or will not treat.
- It is not merely “private practice in unusual settings,” though the provision of clinical care is clearly within the rubric of DPH.
- It is not just the promotion of fluoridation, although from the initial investigations DPH dentists have been at the forefront of the research and subsequent promotion of this measure.
- It is not just conducting surveys, although monitoring disease trends and collecting data for program planning and evaluation is integral to public health practice.
In the final analysis, DPH is concern for, and activity directed toward, the improvement and protection of the oral health of the whole population. Restricting the role of DPH to population groups perceived to be at high risk for disease, or relatively underserved, would obviously exclude such mainstream DPH issues as the effort to reduce tobacco use and exposure, infection control in dental practice, and the promotion of water fluoridation. Both public health programs and the private sector of dentistry aim for the goal of optimum oral health for all; both public and private sectors therefore need to understand each other and work cooperatively to achieve this mutual and worthwhile goal. (5)

Translating the goals of dental public health to the activities of the individual IHS Service Unit or dental clinic can be very difficult. There is often a semantic difficulty: the distinction between the functions and activities of the specialist in DPH and the general dentist performing DPH activities can confuse the discussion. There can be considerable overlap. Just as a general dentist often provides treatment for children and often extracts teeth, even though she may be neither a pediatric specialist nor an oral surgeon, so the general dentist, especially in a DPH program such as the IHS dental program, may perform public health activities without being a specialist in DPH. In this chapter, the term “public health dentist” is used to include general dentists performing their duties in a public health setting or program; “DPH specialist” is reserved for board eligible dentists and board certified specialists in DPH.

Translating the goals of DPH to local activities can be problematic because of more than a mere semantic issue. Individual programs have significantly different local needs and priorities. The goals of one program may be significantly different from those of another, assuming goals, objectives, and program plans that reflect local priorities are even extant. Often local challenges resulting from high levels of disease are complicated by key local personnel ill equipped to address public health issues. The core functions of DPH programs were once addressed by Area Dental Officers, Deputy Area Officers, and HP/DP Officers, all with varying levels of DPH education, training, and experience. More recently, in many Areas these core functions have fallen by default on the shoulders of the Chief Dental Officers of local clinical programs. As more and more DPH responsibilities “trickle down” within the dental program infrastructure to the local Chief Dentists, the distinction between the DPH practitioner and the clinician has further blurred. In essence, in many locales the local clinician out of necessity has become the “DPH dentist” if any flavor of DPH remains in the local clinical dental program.

Six basic guidelines are presented in the “Oral Diagnosis and Treatment Planning” section of this document for the purpose of providing fair and equitable diagnosis and treatment. These overlapping guidelines help to provide that link between the goals and objectives of dental public health, and the pressing needs for care at the local level. They “translate” the goals of DPH to the daily activities within the individual dental program, providing general guidance in keeping with the principles of public health. These guidelines are repeated here:

* Throughout this chapter, the pronouns “he” and “she” are both used in reference to dentists. This usage both acknowledges that females represent a significant proportion of our profession, and avoids the grammatical atrocity “he/she.”
1. **The community is the patient.** Our goal is to provide the highest level of health care to the greatest number of individuals. At times when the demand for care far outweighs existing resources, this implies the high probability of not providing all possible services to every individual patient, so that more patients can receive other more basic services.

2. **Most oral disease only gets worse if left untreated.** Failure to provide basic care results in the need for more complex care.

3. **Emergency care comes first, prevention of disease second, containment of disease third, and restoration of the effects of disease fourth.** In planning clinical programs, priority is given to some services and activities over others. These four IHS care levels can serve as a guide.

4. **Assess both patient and community needs.** Effective program planning requires careful assessment of needs on both the individual patient and the community levels.

5. **The decision to do one thing is usually by default the decision not to do something else.** There are a finite amount of resources; the demand for care generally exceeds them. In this situation, it is impossible to perform all services for all people. Careful prioritization based on sound program planning principles is required.

6. **We are in the business of managed care.** We have the responsibility to ensure that the greatest amount of care is provided to the greatest number of people. The principles of dental public health and sound program planning help us to meet that responsibility.

**Similarities and differences between personal and community health care, between the private sector and public health models of care.**

To illustrate the similarities between the private and public health practice, a way of looking at general procedures in parallel is presented. (6) Briefly, this model proposes an analogy between how a private practitioner treats a patient and how a DPH specialist treats a community. Specific thought processes and activities display a close parallel between the private and public sector dentist. The following list describes the typical stages of treatment in a private practice setting, followed by a public health counterpart:

- Examination of patient / survey of community
- Treatment plan for patient / program plan for community
- Treatment / program operation or activities
- Payment / program funding
- Assessment of completed treatment / program evaluation

Examination / survey.
When a patient first comes to a dental office, the dentist provides a careful examination. This process is extremely important, as all subsequent activities rely on the accuracy of this initial assessment.

The DPH practitioner examines the community by survey or some form of needs assessment. Just as the examination of a patient may be initiated by a chief complaint, so the survey of a community may be initiated by a perceived problem such as lack of access to dental care or high rates of early childhood caries. Just as regular dental attendance is suggested for individual patients, periodic community or population surveys make for efficient public health practice by allowing for continued diagnoses over time.

**Treatment plan / program plan.**
Treatment planning is complicated by the multitude of factors that must be considered. These factors include professional judgment, the patient’s interest, the health of the patient, the cost associated with various procedures, and the relation between patient and provider. Alternative methods of treatment, when there is no one best way to meet the patient’s needs, must be explained. The final outcome, whether acceptance of the dentist’s proposed plan, rejection of the plan, or some compromise, varies among patients and sometimes depends on the balance of a great number of factors.

The DPH professional, like the clinician focused on the individual patient, would like to have the ideal program plan accepted by the community with enthusiasm. However, like the individual patient, the community, following disclosure of the plan, may choose to accept it, reject it, or compromise. Like the patient in the chair, it is ultimately the community and not the practitioner that makes the decision.

**Treatment / program operation.**
A complex treatment plan may require referring the patient to specialist for specific procedures. The responsibility for coordination of these efforts remains with the patient’s primary provider. Similarly, when a community dental public health program has been adopted, a varied group of disciplines constituting a public health team may be called on to perform the activities of program operation. In a typical plan to provide health education and dental treatment for children enrolled in an American Indian Programs Branch Head Start grantee, for example, teachers, grantee administrators such as the Director and the Health Coordinator, dental hygienists, assistants, dentists, parents, and others will play essential roles.

**Payment / program funding.**
Individual patients have a variety of payment options. Cash, credit cards, personal checks, installment payments, and insurance are some ways patients may pay for dental treatment in the private sector. Program funding in dental public health is often a complicated mix of collections from third party payers, payments or co-payments by individual patients, and local, state, and federal funds. In the Indian Health Service, this mixture is often complicated by the necessity to obligate most funds on an annual basis. The DPH professional must know how to secure and manage funds that originate from a wide range of sources with varied regulations that can
sometimes restrict their use. Acceptance of funds may include the responsibility to meet extensive reporting requirements.

**Appraisal of completed treatment / program evaluation.**
The dentist or hygienist begins to evaluate treatment outcomes during the course of treatment. Observations made during the initial examination and subsequent appointments, such as the extent of plaque and calculus deposits, are revisited during recall appointments. Similarly, data collected during the initial needs assessment serve as the baseline against which an appraisal can be made to assess the effectiveness of the public health interventions. Public health providers are accountable to the community for a periodic appraisal of their performance, just as clinicians are accountable to their patients.

There are also some notable differences between private and public health practice. As suggested earlier in this chapter, many clinicians do not understand fully the goals of public health. This is unfortunate, because both private and publicly employed dentists are working toward the same goal: betterment of the oral health of the public.

At the philosophical level, one major difference between the provision of care in the private vs. public sector is that the goals of public health are socially determined, whereas the priorities of private care are only coincidentally related to social goals. Another way of looking at this distinction is to note that private care seeks the very best outcome in each case, often with resources restricted only by the patient’s ability to pay. Public health, on the other hand, often seeks to provide a reasonable level of care for the most people, recognizing resource restraints that preclude the provision of ideal treatment to all individuals.

The private practitioner works primarily alone. Decisions the individual private practitioner makes are in the context of her education, the legal framework of the individual practice, and the relation she has with individual patients. The private practitioner remains a relatively independent health care provider, despite insurance regulations, quality assurance efforts, and governmental requirements. By contrast the public health professional works as part of a team; rarely is a major decision in public health made on one’s own. Dental hygienists and assistants often have a broader scope of work and more central role in the provision of care in the public health setting. The health providers are salaried employees who are accountable to both immediate supervisors and to the public, often represented in the Indian Health Service by a tribal council, board of health, or governing body. The public health provider often works in communities or in isolated locales with special characteristics of culture, language, socioeconomic status, and values. The unusual community characteristics often encountered in the IHS represent both the intrigue and charm of public health practice, and the primary challenge. Public health workers often care for those outside the mainstream, where people can be more difficult to reach and more expensive to treat. One central challenge to the public health provider in the Indian Health Service is that patients often do not share the dentist’s middle-class values with regard to brushing their teeth, keeping appointments, or regular dental attendance.

The rewards of public health practice differ from those of individual private practitioners. Public health practitioners report a freedom from “having to sell dentistry.” The regular salary check
frees them from the perceived need to convince recalcitrant patients to accept ideal, and often costly, treatment plans. The benefits such as retirement and ample leave are usually very good. There are other, less tangible rewards. For example, the opportunity to live and work in small towns, on reservations, and in beautiful locales largely inaccessible to private practitioners is difficult to quantify; it’s perceived value differs greatly between individuals. The opportunity to spend time in the rapidly disappearing wilderness areas of our country results in experiences often ineffable in nature. The satisfaction of seeing the benefits of fluoridation come to a community after years of effort is beyond measure. Knowing that one was quietly instrumental in bringing significant change in oral health to an isolated community is one of life’s truly sublime satisfactions.

The competencies and educational requirements of dental public health

The core functions of a public health agency, discussed briefly earlier in this chapter, not only help to define the specialty, but also shed light on the generic duties of a specialist in DPH. Once again, these functions are:

- **Assessment**: the collection and dissemination of data on health status, community health related needs, and epidemiologic research.
- **Policy Development**: the use of scientific knowledge in decision making on policies affecting the health of the public.
- **Assurance**: the verification that services needed to meet program objectives and mutually agreed upon goals are provided (directly, indirectly through others, or by regulation). (1)

Most of the duties of the DPH specialist fall within these broad functions. Within the IHS dental program, the specialists have taken on a number of other administrative and clinical roles as the infrastructure has evolved in recent years.

Dental Public Health is one of nine specialties of dentistry recognized by the American Dental Association (ADA) through its Council on Dental Education and Licensure. The lengthy definition of DPH approved by the ADA and the American Association of Public Health Dentistry (AAPHD) is paraphrased, in part:

“DPH is the science and art of preventing and controlling dental diseases and promoting oral health primarily through organized community efforts. Its primary focus is the community rather than the individual patient. It is focused upon oral health education of the public, applied research, and the administration of dental care programs as well as the prevention and control of oral disease.” (7)

The American Board of Dental Public Health (ABDPH) lists ten general competencies expected of the DPH specialist. (4) These competencies are paraphrased as follows:

A specialist in DPH will:
• Plan oral health programs for communities or populations.
• Select strategies and interventions for oral health promotion and disease prevention and control.
• Plan, implement, and manage oral health programs for populations.
• Incorporate ethical standards in oral health programs.
• Evaluate and monitor oral care delivery systems.
• Design and use surveillance systems effectively to monitor oral health.
• Communicate and collaborate on oral health issues.
• Advocate for, implement, and evaluate DPH policy, legislation, and regulations to protect and promote oral health.
• Critique and synthesize scientific literature.
• Design and conduct epidemiological studies to address DPH questions.

As these competencies form the basis for the certification examination, they also provide the underpinnings of both the MPH curriculum and the DPH residency. Taken together, the definition and competency statements imply the specialist must possess knowledge and skills in administration, research, prevention and control of oral disease, methods of resource allocation and distribution, and the provision of dental services. Recognized specialists must satisfy requirements concerning experience and the educational requirements of the Council on Dental Education of the ADA. The requirement of two years of accredited advanced graduate education can be met in more than one way; the most common pathway is one year of study leading to a Masters of Public Health degree followed by a one year residency in DPH. A useful generalization helpful in understanding the basic thrust of these two one-year programs is that the MPH curriculum provides underlying or background knowledge of public health and related fields, while many residency programs focus upon providing experiential learning aimed more specifically at the competency statements of the ABPDH. Those completing the requirements addressing both experience and education must successfully complete specialty board examinations in order to be certified as recognized DPH specialists and Diplomates of the ABPDH. Complete information including requirements for specialty certification is available at the AAPHD website, www.aaphd.org.

The DPH residency is an integral part of most educational paths leading to specialist certification in DPH. AAPHD currently lists 18 accredited DPH residency programs. While the professional homes of these programs vary, most are housed in academic institutions. Each of these residency programs addresses the ten competencies covered in the specialty board examination, though individual programs go about preparing residents and addressing competencies in different ways.

In contrast to most of those residency programs found in academic institutions, the IHS DPH residency displays a number of contrasts:

• There is no academic or annual cycle for the residency program. There are no deadlines based on academic or calendar years. Individuals are able to apply for admission anytime, and begin the residency at a time convenient to their needs.
• The faculty is employed full-time in federal, state, and local public health programs rather than academic settings.
• The resident who chooses a part-time residency is able to interweave residency experiences and projects with the challenges of their job. As most of the IHS residents come from within the IHS dental program, this match of residency and job activities is naturally quite tight, as the experiences and challenges can be closely integrated.

The IHS DPH residency program emphasizes the residents’ participation in the formulation and implementation of their own course of study, experiential more than didactic investigation whenever appropriate, and a customized, student driven approach to mastery of the DPH competencies. As one might expect from a federal program focused on the delivery of health care, activities, learning experiences, and projects of the residents often emphasize the first eight competencies while relying on a more didactic approach to the last two competencies.

Information concerning the specialty of Dental Public Health, educational opportunities leading to an MPH degree, and the IHS DPH residency program can be obtained from Dr. Patrick Blahut, Division of Oral Health, Suite 300, IHS Headquarters, 801 Thompson Ave, Rockville, MD 20852. E-mail address: pblahut@hqe.ihs.gov. Telephone: 301-443-1106.

**Oral health promotion / disease prevention in the IHS: key issues and challenges.**

Oral health care providers in the Indian Health Service possess varying levels of training with respect to the prevention of oral disease. “Technical fixes” such as the appropriate uses for materials like fluoride varnishes and sealants are learned very quickly in clinical settings throughout our organization. The appreciation for and emphasis upon these primary preventive measures grow in direct proportion to the realization of the enormous nature of the challenge posed by oral disease to the Indian Health Service dental program.

An appreciation of health promotion rather than technical procedures may be slower to come; the effective integration of oral health promotion into a comprehensive preventive program can represent a formidable challenge. Most people with the cultural background of the typical IHS health care provider have high expectations of education. In general, whatever the perceived problem, whether oral disease, drunk drivers, teenage pregnancies, or other issues, part of the proposed solution is inevitably education. Reliance upon health promotion and a basic faith in it’s outcome generally lead to teaching people how to act and what to do to avoid or minimize disease. This teaching can be done on an individual or one-on-one level, and on a community basis.

**Health promotion on the level of the individual patient.**

Taught on an individual basis, one might think that health promotion would be especially effective in decreasing oral disease, since oral disease is chronic, for the most part irreversible, and often associated with strong negative feedback in the form of localized acute pain and loss of
teeth. One would quite naturally think most people would strive diligently to avoid oral disease. Prevention of disease based on oral health promotion is especially attractive to dental public health practitioners, given the expensive, resource intensive treatment necessary to repair temporarily the existing damage to the dentition caused by disease. Thus, one might reasonably expect a fortuitous match of highly motivated patients and providers with respect to oral health promotion. The collective experience of new IHS dentists quickly illustrates this seemingly fortuitous match of interests does not, for the most part, exist. This experiential message forms the underlying basis for much frustration on the part of the dentists.

Studies of traditional health promotion activities such as patient education in a variety of settings have shown, for the most part, minimal and short-term success. Both studies within IHS and the individual experiences of many IHS dentists are in accord with this general finding of brief and transient success. Studies of health promotion focused on tooth brushing and oral hygiene, for example, conclude that the desired behavior decreases in frequency or stops altogether when external reinforcement is withdrawn. Without the resources to continue persistent, frequent reinforcement, the significant effects of sporadic health promotion appear to be minimal and transitory at best.

The lack of strong evidence supporting oral health promotion, combined with the experience of clinicians, provide the primary basis for the often quoted advice concerning preventive interventions within IHS: “go with what we know works.” Generally, this advice is followed by encouragement to utilize topical fluorides and dental sealants. While it is difficult to argue with this advice, as far as it goes, in that we do indeed know that both topical fluoride and sealants are effective at preventing decay, the reliance upon technical solutions for behavioral problems, and the underlying assumptions concerning the efficacy and proper role within DPH of health promotion activities deserve closer scrutiny. The fact that desired behavior tends to cease as external reinforcement is withdrawn can be taken either as evidence that oral health promotion doesn’t work, or it simply is not effective when practiced in a sporadic, hit and miss basis.

The promotion of oral health on an individual, patient-by-patient basis depends not only upon sufficient resources to continue periodically the external reinforcement, but also upon our patients’ knowledge and attitudes about both general and oral health. With respect to general health, we have seen a surge in interest throughout this country. Self-destructive behaviors such as drunk driving and smoking are much less socially acceptable than they were only a few years ago. It is important to note, however, that while positive attitudes toward healthy behaviors predominate in the milieu of the upper middle-classes, these attitudes have not permeated other strata of society to the same extent.

The strong association between socioeconomic strata (SES) and good health has been studied at length. Of the three commonly accepted measures of SES (education, income, and occupation), it is generally accepted that education has the strongest association with health. It is understandable that this is the case. Education results in greater access to knowledge and information; it also develops information seeking attitudes and skills. In addition, better-educated people often lead lives that afford more opportunities for healthy lifestyles than do those who have to spend more time and energy just making ends meet.
Everyone should have the right to the best available knowledge about caring for his or her own health. However, it is crucial to recognize that knowledge itself does not lead to action. Attitudes and individual values may be far more important to determining action than education alone. Individuals demonstrate a wide variety of attitudes toward teeth, dental care, and dentists, just as they do toward other health related issues. These attitudes naturally reflect their own experiences, cultural perceptions and expectations, and familial and tribal beliefs; they strongly influence oral health behavior and the value placed upon a healthy dentition. These attitudes are generally much more influential than any educational efforts imposed by health care providers at brief and infrequent appointments. In the IHS, the influence of tribal members, community norms, and trusted friends, including dental assistants, often far outweigh the advice of the dentist. It comes as no surprise that dentists are unable to significantly alter long-standing beliefs and attitudes through brief messages delivered sporadically to their patients.

When dealing with some health related issues such as tobacco use, IHS clinicians are careful to assess patients’ attitudes by asking questions such as “Do you use tobacco, and if so, would you like to quit?” Subsequent counsel or treatment is predicated on the responses to these questions. Yet when addressing other oral health issues such as tooth decay or periodontal disease, the assumption is often made that our patients share our attitudes and beliefs with respect to the value of a healthy dentition. The questions analogous to our approach with respect to tobacco use are rarely if ever asked: “Are you decaying, and if so, would you like to quit?” The seemingly whimsical nature of these questions is based on the strong internalization of beliefs we have that everyone values oral health to the degree we do; it is simply taken for granted that “everyone wants to quit” when it comes to dental decay or periodontal disease. It is a common source of frustration among clinicians new to IHS to learn that not all patients share their exceedingly high regard for a healthy and white dentition.

Negative attitudes are an important underlying influence on the loss of teeth. Studies have shown that the decision for full mouth extractions is often made by the patient rather than the dentist. These studies are in accord with the experiences of IHS dentists who have formulated and explained to patients treatment plans ideal in the perception of the provider, only to be told by the patient “Just take them out.” Studies have associated total tooth loss with negative attitudes about dental care and passivity or casual acceptance about tooth loss. The sight of a grandparent’s dentures residing in a glass of water at bedside may be rapidly disappearing throughout middle class America, but it remains a social norm based on the perceived inevitability of tooth loss in many subcultures. To take this casual acceptance one step further, even the passive approval of inevitable dentures presumes a health care delivery system capable of meeting the demands for the fabrication of dentures. The resignation with which the sight of an oral cavity ravaged by disease and displaying only a few rotting teeth is viewed is clear evidence that even this assumption is not always valid.

It is possible these negative attitudes might be unconsciously encouraged by health care providers if the patient does not fit the “good patient” profile. It is no surprise that dentists’ profile of a “good patient” often is one who shares the dentist’s values on oral health, complies with advice, accepts treatment plans, expresses great concern about oral health, and arrives for
appointments on time. Sometimes this “good patient” is said to have a “high dental I.Q.” This assessment erroneously equates a specific personal value system with respect to oral health to a positive measure or score with respect to basic intelligence. The extent to which individual patients deviate from this perceived “ideal” may be associated with the degree to which negative attitudes are unconsciously reinforced by the health care provider. Furthermore, studies have concluded that dentists and other health care providers value “personal warmth” in their patients. It is likely that many dentists have trouble relating to patients who are perceived to lack this attribute. Above and beyond the significant challenges represented by the high prevalence and severity of oral disease, IHS health care providers face different value systems and sources of influence when attempting to engage in oral health promotion on an individual basis.

**Health promotion on the community level.**

Different challenges await the health care practitioner when addressing oral health promotion on a community level. Community level health care promotion is often equated with participation at local health fairs. Health fairs, in fact, straddle the sometimes artificial boundary between individual health education and educational efforts aimed at the community. The health fair occurs in the environment of a festive or at least utilitarian community event, but the essential interaction of provider with participant usually consists of a one-time, brief individual conversation. Regardless of which convenient category of interventions health fairs reside in, the essential conclusion that research has shown is that little if any lasting education or significant behavioral change can be attributed to these brief, one-time interactions. The decision to participate in health fairs, however, may be based on reasons other than the desire to change behavior. Maintaining a visible profile in the community, increasing good public relations, and being viewed as a contributing member of the health care team are but three possible motivations for participation at a local health fair. However, dental programs should plan very carefully before committing significant resources to participation in health fairs, as the primary public health goals of most dental prevention programs are not effectively addressed through these activities.

Community based health education efforts in other settings can be of potential value. Sound educational principles should be adhered to when designing and conducting health education efforts. Educational efforts aimed at audiences other than patients or parents of patients, such as Head Start or medical personnel, can serve to amplify the influence of dental personnel by spreading the key messages of prevention to other influential individuals.

The promotion and the maintenance of water fluoridation represent oral health promotion on the community level in the purest sense. The promotion of water fluoridation represents an opportunity to participate in a community oral health promotion of widely studied and proven efficacy. Water fluoridation is the very cornerstone of a community oral health promotion and disease prevention effort. Successful fluoridation of local drinking water has the potential to provide more benefit than any other preventive measure. The American Dental Association has a long-standing policy that dentists should work to promote fluoridation in their communities. Dentists and hygienists, however, are generally accustomed to life outside the public spotlight,
and are often uncomfortable in a political arena. There are key roles as low-profile resource persons for these individuals.

Dentists and hygienists should, at the very least, educate their patients about fluoridation. This is especially true when patients include influential members of the community such as tribal health council members and Service Unit Directors. Patients in the dental chair are a “captive audience;” influence through health promotion at such a “teachable moment” is probably underutilized.

Dental professionals should know the concentration of fluoride in the drinking water consumed by their patients. This knowledge is necessary in order to prescribe correctly and safely fluoride supplements, as well as being needed as an initial assessment of the potential need for promotion of fluoridation. At the local level, a recommendation to fluoridate by a tribal council or health council has far more chance to succeed than public decision reached by discussion or vote. Lobbying of tribal councilors and key utilities personnel hold significantly greater chance for success than entering into debate in a public forum. Political efforts of dental personnel in local fluoridation campaigns often get unfavorable reactions for two reasons:

(1) Communities expect partisans in a political campaign to be motivated by self-interest, and to conduct a propaganda campaign to further those interests. Because health professionals supporting fluoridation are seen as political partisans, their endorsement of fluoridation is not accepted as dispassionate expert testimony.

(2) Efforts to maintain professional decorum and to avoid the emotionally charged atmosphere of open controversy and confrontation are interpreted as arrogance. Veterans of fluoridation campaigns on the local, state, and national level, observe that health professionals who choose to enter into open, public debate with antifluoridationists generally come across to the uninformed public quite poorly. The primary reason for this is that many of those opposed to fluoridation see no reason to play by any rules, such as the basic need to judge evidence by its scientific merit.

Successful campaigns of the Indian Health Service have been characterized as the results of prolonged hard work behind the scenes, with influence focused upon the key decision makers within the community. Successful referendum campaigns have been reported in the dental literature, as well as strategies for dealing with fluoridation in the political arena. One consistent message concerning this particular form of community based health promotion is that it takes carefully planned hard work over a long period, and it starts with solid preparation.

Health promotion / disease prevention: concluding remarks.

The tools of clinical preventive dentistry, such as topical fluorides and sealants, give the clinician effective interventions and treatment options unavailable only a few decades ago. Used correctly, such interventions are of proven effectiveness for the prevention or remineralization of carious lesions.
The promotion of water fluoridation represents community based health promotion and disease prevention at its best. The effectiveness of water fluoridation cannot be seriously contested on scientific grounds.

Many health care professionals have enormous faith in the value of dental health education. Often this faith is based on their own cultural attitudes and beliefs, and their own experience of successfully incorporating health care information into the behavioral habits of their daily life. Educational programs are rarely opposed on the grounds that the resources might better be utilized elsewhere. Educational programs, and especially health fairs, are effective at producing a transient feeling of mild euphoria among all involved, both providers and participants. There is no question that everyone has a right to the best available knowledge about how to care for their health, even though they will act on this knowledge in many different ways.

Health promotion and disease prevention through efforts to promote health education is without doubt a most intriguing area of DPH. At a very practical level, the principles of oral health education that emerge from the dental literature and from IHS studies of health education outcomes are summarized:

- People interpret the messages of health education efforts through the “filter” of their own values and attitudes. These need to be understood, as is possible, if the educational process is to have any chance of success. Identification of key problems and issues as perceived by the patients are essential to success.
- The most successful educational efforts are those that maximize self-involvement of the participants.
- Mass media are effective in transmitting simple and consistent messages, although their value in influencing health behavior seems limited.
- Health professionals should accept that not all people share their values about the importance of general physical or oral health. This acceptance will help in dealing with the wide variety of human beliefs concerning health.
- Dental health education programs can improve knowledge and temporarily improve behaviors such as oral hygiene practices; they have failed to demonstrate any direct and long-term effect on dental caries experience.