

POLICY FORUM

Overcoming Historical Separation between Oral and General Health Care: Interprofessional Collaboration for Promoting Health Equity

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Abstract

Since the founding of dental schools as institutions distinct from medical schools, dentistry—its practice, service delivery, and insurance coverage, for example—and dental care have been kept separate from medical care in the United States. This separation is most detrimental to undeserved groups at highest risk for poor oral health. As awareness grows of the important links between oral and general health, physicians and dentists are collaborating to develop innovative service delivery and payment models that can reintegrate oral health care into medical care. Interprofessional education of medical and dental students can help produce clinicians who work together to the benefit of their patients.

Introduction

Oral health affects a person's overall health, income, and quality of life [1, 2]. Yet, the dental care delivery system remains divorced from the rest of the health care system. The notion of dentistry as a field separate from medicine is a historical phenomenon that has been reinforced through legislation, education, and service delivery. This division places an undue burden of dental disease on the most vulnerable Americans who face barriers to accessing dental care [3, 4].

The Roots of Historical Separation

In the early years of the United States, dentistry was an unregulated trade. It was the medical establishment that helped transform dentistry from a trade to a [profession](#) and brought scientific rigor to dental practice. The nation's earliest dental schools, founded in the mid-1800s, boasted physician leadership and financial and structural support from medical school faculty [5, 6]. In spite of these interdisciplinary underpinnings, however, the creation of a distinct path of education and training for dentists served to definitively sever oral health from the rest of medical education. For example, anatomy classes for medical students do not generally include examining the teeth even when craniofacial anatomy is covered.

The positioning of dentistry as a separate discipline was further strengthened by the development of [medical insurance](#) in the US. The foundations of medical insurance,

originating with a collective of Texan schoolteachers in 1929, lay in group-funded support of individuals in the event of excessive medical expenses rather than in coverage for routine preventive care [7]. As early as 1932, the federal Committee on the Costs of Medical Care, overseen by Secretary of the Interior Ray Lyman Wilbur, published a vision for public funding of comprehensive health services including dentistry. Opposition from organized medicine, however, led to the evolution of modern medical insurance as a private, predominantly employer-sponsored system [7]. Hospitals found that enrolling individuals in insurance plans produced a predictable income stream. Blue Cross Blue Shield plans sponsored by approved hospitals started in 1938 and served as the exemplar of modern indemnity medical plans [8-10].

The concept of insurance for dental expenses arose only decades later, as an appealing benefit for members of labor unions who found themselves in a position of strength following the passage of the Taft-Hartley labor law in 1947 [11]. For a set price, prepaid plans offered members comprehensive dental care for themselves and their families. From the 1950s, however, dental insurance structures were designed to limit the use of expensive services: a mandate required insurance companies to approve treatment plans before treatment commenced, and, when the cost of care exceeded subscription costs, it placed the burden of payment for nonpreventive care on the subscriber [12].

Although both medical and dental insurance in the United States are historically tied to employment, they traditionally served very different functions: medical insurance was designed specifically to cover large, unpredictable expenses, while dental insurance was and is intended to fund predictable and lower-cost preventive care. While protection from catastrophic medical costs was perceived as a necessity, coverage of dental services, from its origin, was conceived as a benefit.

The legacy of these attitudes is evident in the development of the major public payer systems in 1965: [Medicare](#), which funds health insurance for older adults and people with disabilities, and Medicaid, which provides health insurance for low-income people. Just as they had done in 1932, professional organizations fought against government involvement in the funding of health care. Both the American Dental Association (ADA) and the American Medical Association (AMA) were founding members of the Joint Council to Improve the Health Care of the Aged, one of the most powerful voices of opposition to Medicare [13]. The AMA did not achieve its political goals in 1965, but the ADA did, and dental coverage was excluded from Medicare. The cost effectiveness of providing medically necessary dental treatment to certain at-risk groups of Medicare beneficiaries has been recognized today, and an extremely limited set of dental procedures, if provided in the inpatient setting, is funded by Medicare [14]. Still, Americans over 65 remain the age group with the lowest rates of dental insurance coverage [14].

Dental insurance under Medicaid is similarly, though less severely, limited. While dental care must be funded for low-income children as a component of Medicaid's Early and

Periodic Screening, Diagnostic and Treatment (EPSDT) benefit, dental care for adults is considered an optional service administered on a state-by-state basis [15]. Currently, 28 US states fund nonemergency dental treatment for low-income adults enrolled in Medicaid [16]. When states face financial difficulty, this funding is often cut, and emergency department (ED) expenditures for dental conditions rise proportionately [17]. Medicaid beneficiaries with dental benefits still struggle to receive care, as reimbursement rates are less than half that paid by private insurers, and so discourage many dentists from enrolling as Medicaid providers [18].

Need for Change

Recent developments have hastened shifts to reunite dentistry and medicine. Central to this movement is the acknowledgement that continued separation of these two fields disproportionately burdens [vulnerable populations](#) of patients. Low-income people, people of color, people with disabilities, rural-dwellers, and formerly incarcerated people are all more likely to suffer from dental disease and pain and to report difficulty gaining access to care [19-23]. In 2000, the Surgeon General of the United States released a report that shone a light on oral health disparities in the US and the importance of improved medical-dental integration to address this inequality [1]. Fifteen years later, the current Surgeon General, Dr. Vivek Murthy, reiterated the Department of Health and Human Service's commitment to integration of oral health into medicine as a primary strategy for reducing oral health disparities. His commitment included the adoption of an agency-wide Oral Health Strategic Framework, which will seek to integrate oral health across federal agencies in the form of funding priorities and workforce development [24]. The framework aims to reduce oral health disparities by integrating oral health into primary care and improving dissemination of oral health information and to increase oral health care services research [24]. Already, the framework has led to increased funding for oral health care delivery in community health centers and grants to support the integration of oral health into primary care training at the medical school, advanced graduate education, and practitioner levels [16].

A mounting body of evidence further suggests that improved funding for dental care could result in reduced overall [health care costs](#) [25-27]. Roughly \$1 billion is spent annually palliating preventable dental pain in hospital EDs, yet in spite of these costs, patients do not receive dental treatment in this setting [25]. Patients unable to access dental care also seek assistance in primary care offices that are not equipped or staffed to respond to patients' dental needs; twenty percent of patients experiencing dental pain report seeking temporary relief within medical primary care settings [28]. Moreover, annual health care savings of more than \$1,000 per capita have been realized when preventive dental treatment is provided to high-risk groups, such as people with diabetes, cardiovascular disease, or a history of stroke [26, 27]. As health insurance payment shifts towards [value-based care](#), the impact of oral health integration into [accountable care organizations](#) (ACOs) and other bundled payment models is being

piloted and studied [29, 30]. These systems would encourage and reward preventive oral care and improved collaboration and role sharing among physicians, dentists, and auxiliaries, who would be paid based on health outcomes rather than services rendered.

The Role of Education

As the importance of oral health is increasingly recognized and practice patterns evolve to integrate oral health care into general health care, future generations of physicians and dentists can assume innovative oral health leadership roles. Medical and dental education will need to address the distinct needs of these future clinicians.

Models from outside the US present one possibility for integrated education. In some parts of Europe, dentists graduate from medical school prior to training in the specialty of dentistry [31]. One study suggests that these dual-degree graduates of the “stomatological model” perform better than single-degree colleagues, even after decades of dental practice [32]. In the US, students from several dental schools complete portions of medical school curricula, ranging from some portions of physiology or anatomy classes to one or more years of medical training. More medically knowledgeable dentists might be better able to manage the growing population of patients with multiple health conditions [33]. On some estimates, screening by dentists for chronic disease could save the health care system more than \$20 per patient screened [34], with dental practice-based screening systems currently in place for conditions such as cardiovascular disease, eating disorders, HIV, diabetes mellitus, and alcoholism [34-41]. These efforts could be especially powerful for the estimated 23.1 percent of adults who do not visit a physician each year but who see a dentist [42]. Increased medical education can also encourage dentists to work in less conventional practice settings where their skills are most needed, such as within hospitals, where fewer than one percent of dentists currently work [43].

Academic medicine has also grown increasingly aware of the need to produce oral health-competent physicians, especially since patients at highest risk of poor oral health are more likely to visit a physician than a dentist annually [44]. Although 69.3 percent of surveyed medical schools provide fewer than five hours of oral health curricula to their graduates [45], the Association of American Medical Colleges has developed Oral Health in Medicine modules in partnership with the American Dental Education Association, and oral health content is present on Step 1 and Step 2 of the United States Medical Licensing Examinations and on board examinations in family medicine and pediatrics [45, 46]. Physicians can be trained to conduct oral examinations and oral cancer screenings, provide dental anesthesia to patients in acute pain, and apply fluoride varnish to patients’ teeth [47-50]. Physicians could even be taught to extract teeth, a skill which the Society of Teachers of Family Medicine has determined to be within the scope of training for residents in family medicine [51]. Oral health electives and rotations exist at several medical schools; broader adoption of oral health training in medical education could dramatically improve oral health for the highest-risk groups [52, 53].

[Interprofessional education](#)—beyond providing future professionals with specific clinical skills—presents promising opportunities to re-envision oral and general health care. The importance of preparing for [team-based practice](#) is reflected in accreditation requirements for nursing, medical, and dental education, all of which mandate inclusion of interprofessional experiences during training [54]. Students can directly observe the value of their colleagues' skill sets and contributions to patient care, and peer teaching can improve both learners' and teachers' confidence and knowledge [55]. Future dentists and physicians trained in the importance of integrating oral health into our conceptions of overall health can be powerful advocates for eliminating barriers to such integration; some of the most important barriers to address include a lack of interoperable electronic health records, differing reimbursement structures, and persistent health disparities. Interprofessional education models lead to knowledge sharing, improved understanding and communication and, most importantly, better patient care [56].

Conclusion

As awareness of inequality in access to oral health and its importance in overall health grows, dentists, physicians, and other health professionals have begun to take up the mantle of oral health integration. Such efforts can take the form of novel insurance structures, practice models, or other innovations. Above all, both dental and medical education will play critical roles in preparing future practitioners for these changes. Working and training together, trainees in medicine and dentistry can unify oral and general health care.

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