

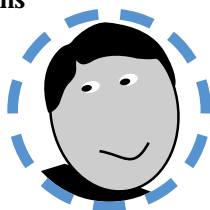
Understanding the Dental Delivery System and How it Differs from the Medical System

Released May 2000

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HealthThink



After studying oral health policy issues for the past few years, I have begun to understand many of the issues related to oral health care for low-income populations. I have learned about the extent of oral health disease, the effects of untreated care, the lack of access to care, the role that providers of care play, and the barriers that limit access to care for low-income and minority children. During this time, however, one question that has come up over and over again in my mind, in meetings, and in conversations related to oral health policy, is “Why are dental health policy issues considered different and separate from the rest of the health care industry?”



The Anthem Blue Cross and Blue Shield Foundation commissioned me to write a paper examining this question. In order to do this, it is necessary to understand dental services and the dental health delivery system in the context of the overall health care system. This paper will examine characteristics of the dental delivery system in contrast to the medical delivery system. This will include a look at the following pieces of the dental delivery system:

- Dental workforce, training, and education;
- Dental delivery system;
- Financing; and
- Other related issues.



Hopefully, this will provide a better understanding of why dental health policy is considered different and will provide a basis so that policy experts and policymakers may begin to:

- Understand the differences between medical and dental delivery systems;
- Become more sensitive to their differing needs; and
- Learn how to successfully integrate oral health services into the existing system, while recognizing and addressing these differences.

A paper commissioned by
Anthem  
FOUNDATION

Background

Approximately \$60 billion is spent annually on dental services in the United States, with nearly 500 million dental visits.¹ This accounts for nearly 5% of total annual health care expenditures² and approximately 25% of total health care expenditures for children.³ About 0.5% of total Medicaid spending is on oral health services⁴ and only 2.3% of Medicaid spending for children.³ State spending on dental services ranged from one percent to 11.8 percent of Medicaid expenditures for children.³ In Colorado, dental care accounted for only 1% of Medicaid spending for children. In the state Children’s Health Insurance Program (CHIP), actuarial studies have looked at how much of program expenditures should be spent on dental services with estimated ranges between 12 and 30% to begin to adequately address the need.⁵ In Colorado, the CHIP program, known locally as the Child Health Plan Plus (CHP+), does not yet include a dental benefit and therefore allocates little or no dollars to children’s dental health needs (except for extreme, medically-related, non-preventive cases).

With 80% of dental decay disproportionately affecting 25% of children – children from low-income families, including those covered by public programs such as Medicaid and CHIP – policymakers need to understand that it is necessary to invest more money into dental care for these populations. In order to improve the oral health, and hence the overall health and well being of Colorado’s low-income children, dental expenditures for these programs need to parallel the dental expenditures of the rest of the health care market (nearly 25% of total health care spending for children). To accomplish this, policymakers and other health policy experts must understand features and differences of the current dental delivery system in the context of the overall health care system.

Dental Health Facts

- ☞ Almost 20% of preschool children have tooth decay; by third grade 50%; by age 17, 86%.¹
- ☞ Nationally, only 1 in 5 Medicaid-eligible children receive preventive dental services annually.¹
- ☞ Nationally, only 1 in 4 adolescents ages 14 years has dental sealants that protect the molars; among African Americans, only 1 in 20 has sealants.¹



Dental Workforce, Training, and Education

Dentists

Before understanding differences between the delivery systems, it is necessary to look at the current dental work force to begin to understand trends that are having an effect on the profession’s ability to provide adequate oral health services to the entire population, let alone the low-income and minority populations.

In 1998, there were a reported 149,350 active full or part-time private practicing dentists in the U.S., as compared with 777,859 total physicians.^{6, 10} In Colorado, there were approximately 2,715 active practicing licensed dentists in 1999 as compared with approximately 10,875 physicians in 1998.^{7,8,9,10} As a result, nationally and in Colorado, this translates to many more persons and children per dental provider than per medical provider (see Table 1 below).^{6,7,8,9,10}

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	Total # providers	# Persons per provider	# Children per provider
National			
Dentists	149,350	1,800	470
Physicians	777,859	350	90
Colorado			
Dentists	2,715	1,510	440
Physicians	10,875	375	110

Nationally, and in Colorado, approximately 80% of dentists are general dentists who provide the majority of dental services to children and adults.⁶ An additional 2.5% of dentists are trained and practice in the specialty of pediatric dentistry.⁶ This breakdown of specialists is very different than in the medical profession, in which, both in Colorado and nationally, approximately 34% of physicians are in primary care, with the remaining 66% in specialty fields.¹⁰ The lower percentage of primary care physicians compared to primary care dentists helps to level the playing field slightly in terms of patient to provider ratios. However, there are still roughly two primary care physicians for every one primary care dentist nationally, and approximately 1.6 primary care physicians per primary care dentist in Colorado (see Table 2 below).

Table 2. Primary (1st) Care Provider Numbers

	Total # providers	#1 st care providers	# Persons per 1 st care provider	# Children per 1 st care provider
National				
Dentists	149,350	123,200	2,190	570
Physicians	777,859	264,177	1,020	265
Colorado				
Dentists	2,715	2,240	1,830	535
Physicians	10,875	3,670	1,115	325


Over the last few decades, the proportion of women dentists has increased. Since the mid-1980's women have constituted approximately 35% of U.S. dental school graduates and now account for nearly 20% of dentists under the age of 40.⁴ In 1998, there were 21,112 women dentists, which accounted for approximately 14% of all dentists.⁶ Enrollment trends over the past two decades suggest that the proportion of women in dentistry will continue to increase, with projections estimating more than 26,000 women as active practitioners in 2000.¹¹ The same trend has been seen in the proportion of women physicians. In 1997, 42% of graduates from medical school were women; up from 23% in 1979.¹² In 1998, there were 177,030 women physicians, accounting for approximately 23% of all physicians, up from 11% in 1980.¹⁰


The number of minority dentists is also growing. Approximately 11% of first-year enrollees in dental schools are minorities, with Asians accounting for the largest proportion.⁴ However, the proportion of African Americans, Hispanics, and Native Americans in the dental profession has not increased and is much lower than the proportions in the overall population. Approximately 5.7% of incoming students are African American and roughly 4.9% are Hispanic, as compared with 12% African American and 11% Hispanic proportions in the general population.^{11,4} This is similar to the ethnic population in medical schools, in which, in 1997, approximately 11% of medical school graduates were minorities, up from 7% in 1979.¹²

Despite increases in the proportion of women and minority groups over the past few decades, overall, the number of dentists throughout the country is declining. The number of dentists per 100,000 people has been declining since 1990 and is projected to continue to decline through 2020.¹³ This is mostly due to the fact that the number of students graduating from dental schools has declined by nearly 40% over the past 15 years. The number of first year students in dental schools decreased from 6,301 in 1978 to 4,255 in 1996.¹³ This combined with the projected increases in the U.S. population and the significant number of dentists retiring from practice is likely to create a significant provider shortage through 2020.

Further contributing to the provider shortage is the decrease in the numbers of dental school faculty and the closing of several dental schools across the country. Between 1986 and 1993, six dental schools closed, one announced plans to close in 2003, with only two new schools opening. In addition, over the past decade, the average number of faculty per dental school has declined by 18%.¹³ Roughly 5,000 full- and part-time faculty are estimated to retire in the next decade.¹³ This shortage of dentists is unlike the physician population, which has

Dental Provider Shortages

 The Department of Health and Human Services (DHHS) designates 1/3 of U.S. cities and 2/3 of rural areas as Dental Shortage Areas.³

 DHHS has identified 1,171 dental health professional shortage areas, covering an overall population in these areas of over 25,000,000. An estimated 3,650 dentists would be needed to remove the shortage area designation from these regions.¹³

 Over 38% of rural U.S. counties have no dentist.¹⁴

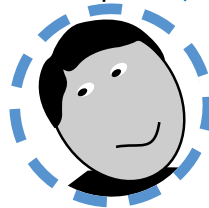
increased nearly 199% from 1960 to 1998, while the total population only increased by 56.3%.¹⁰ Therefore, the physician growth rate has increased nearly four times faster than that of the total population.

In terms of their training, dental students are required to complete four years of dental school, at which time they may begin to practice as general dentists. Most dentists, including specialists, are not required to be board certified. In addition, post-doctoral training is optional for most dentists, except for those in dental specialties. Though this is beginning to change, this is still quite different from the medical field. Physicians are required to complete four years of medical school, after which time they are required to complete two or more years of post-doctoral residency (depending on the specialty). In addition, in order to practice in their chosen specialty of medicine, they are required to become board certified.

Dental School Graduates

🦷 In 1998, the average graduating debt of dental students who graduated with debt was almost \$98,000 - over 14% greater than the average graduating debt of medical students who graduated with debt.¹³

🦷 Graduating seniors have indicated that debt level does affect their immediate career plans, including the location of their practice and the types of populations they may treat.¹³



Allied dental professionals

In terms of allied dental professionals, there are dental hygienists, dental assistants (or auxiliaries), and dental laboratory technicians. There are approximately 100,000 active dental hygienists in the U.S. and approximately 2,000 licensed in Colorado.¹¹ Because there are no licensing requirements on the other two major categories of allied dental personnel – dental assistants and dental laboratory technicians — it is difficult to know the exact numbers of these providers. However, according to ADA estimates, there are approximately 200,000 dental assistants and 70,000 dental laboratory technicians in the U.S.¹¹

Unlike allied health professionals, such as Physician Assistants, Nurse Practitioners, and Registered Nurses who have substantial flexibility in provision of care to patients, most states allow allied dental professionals to provide a very limited scope of preventive services, usually with the requirement of performing these functions *under the general supervision* of a licensed dentist. This is due to arguments that supervision is necessary to protect the health and safety of the public.¹⁵

Currently, Colorado is the only state that allows *unsupervised practice* for dental hygienists within their scope of practice. Unsupervised practice allows a dental hygienist to perform certain dental procedures without the specific permission of a dentist, either in a separate hygiene practice or another type of setting like a nursing home, school clinic, corporate setting, or a satellite dental hygiene office owned by a dentist. (Administration of anesthesia and sedation are exceptions to unsupervised practice. The Dental Practice Act has specific requirements for supervision and specialized training for these dental procedures.) Other states place restrictions on the types of settings that hygienists may practice unsupervised, such as public health settings or community health clinics.

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As the demand and need for dental services increases, especially for low-income and minority populations, many states are beginning to look at the potential of expanding hygienists ability to practice in other settings as well. Despite arguments to the contrary, two studies examining this issue, found that unsupervised hygienist practices provide safe, high quality services and help increase access to care.^{15,16} These studies found that unsupervised hygienist practices had high percentages of quality care, did not increase the risk to the health and safety of the public, provided increased access to dental hygiene care, and encouraged patient visits to the dentist.^{15,16} Expanding the functions and utilization of allied dental personnel, as is done in the health care field, would help to increase the efficiency and availability of care, decrease some of the costs associated, and perhaps begin to address dental access issues. However, because there is much controversy surrounding this expanded function for hygienists, these regulations will face considerable scrutiny in upcoming years.

Delivery system

Over the past two decades, managed care has changed the face of the medical system, while leaving the dental delivery system relatively untouched. This has resulted in significant differences in the delivery systems of these two professions.

The majority of dental services are provided in small, highly independent, privately owned, freestanding clinics.¹⁷ Ninety percent of all dentists provide care in private practices and 92% of providers practice in privately owned, one- or two-person practices.¹⁷ This is very different than the medical field in which services are mostly provided in larger medical group practices that are often associated with one or more managed care plans. It has been reported that over 92 percent of the physicians in the U.S. participate in one or more managed care plans.¹⁸ In the dental field, there are very few dentists participating in staff model managed care arrangements or Health Maintenance Organizations (HMOs). Rather the majority of the dental market (80%) is comprised of indemnity (fee-for-service) plans and Preferred Provider Organizations (PPOs).⁴ As a result, dentists in smaller practices do not have the same ability to cost-shift as do physicians practicing in multi-provider group practices or hospital based clinical facilities.

Except for some specialists and specialty care, the hospital is not a common treatment setting for dentistry. Rather, dentists typically own and operate their own surgical suites and are responsible for all facility, personnel, and administrative costs associated with their operative treatments.³ This is very different than the medical field, in which surgeons rely on hospitals to run and bear most of the overhead costs associated with care.³ As a result, dentists have very high fixed overhead costs – with mean overhead costs at 60 to 75 percent of total gross collections.⁴

Furthermore, dentists schedule appointments differently than physicians (especially those physicians in group practice). Most dentists schedule appointments for a specified period of time per individual, rather than scheduling several individuals at the same time as in the medical field.¹⁹ Also, patient visits often require more of the dental providers time than physicians for treatment. All of these factors contribute to the high overhead costs of dental practices, which make missed appointments, low reimbursements, and complicated administrative burdens especially expensive for dentists. Because of this, many dentists normally charge their private pay patients for broken appointments, which is not as common a practice in physician offices.

With 90% of dentists providing care in private practices, it follows that there are few dental safety net facilities. Unlike the medical safety net, which is rather extensive, though still does not meet all of the need, the dental safety net is very limited. The dental safety net is made up of a very limited network of dental school clinics, community based clinics, school-based programs, hospital clinics, mobile van programs, and other indigent care facilities. For example, fewer than half of federally supported community and migrant health centers have dental facilities.⁴ In Colorado, only fourteen of eighty-seven community health center sites (including school based health centers) provide dental services.

Because of this shortage of dental safety net providers, it has become more expensive to provide care for this population. Because many of these children may not have had previous access to care, there is a backlog of unmet treatment needs. These patients are in need of more extensive, higher cost emergency and restorative procedures, than if they had been accessing regular preventive care throughout their lives. Yet, providers are reimbursed less for providing care to these populations than most commercial plans pay for their private pay patients. Dentists who serve low-income populations are required to do more with fewer resources. So the

Dental Care Delivery Facts

-  90% of all dentists provide care in private practices and 92% of providers practice in privately owned, one- or two-person practices.¹⁷
-  Dentists typically own and operate their own surgical suites and are responsible for all facility, personnel, and administrative costs associated with their operative treatments.⁴
-  Over 90% of physicians participate in managed care, as compared with only 20% of dentists participating in some form of capitated plans. The remaining 80% of dentists participate in some form of fee-for-service.¹⁸

problem perpetuates itself. Few dental providers, private or safety net, can provide care to low-income populations because of the financial losses associated and the limited provider base. As a result, the need for services rises, the extent of dental disease increases, and the costs associated with providing care further increase, and the cycle continues.

Financing

As mentioned above, the majority of dentists participate in fee-for-service rather than capitated payment mechanisms. Dentists receive payments for the types and numbers of procedures or services provided. While this used to be the case for physicians, most physicians now participate in comprehensive managed care health plans, in which they are reimbursed a fixed amount per month per patient (called capitation) rather than per service.

As more and more physicians provide care through these group plans, the trend for financing health care changes. Generally for the medical system, benefits are paid for using public or private funds and administered by a third party, such as publicly funded government run programs or commercial health plans. Instead, dental benefits are usually financed and administered separately from these comprehensive medical plans. As a result, many more people have medical than dental coverage. Approximately 85% of Americans have some form of medical insurance as compared with roughly 37% with dental insurance (about 100 million).^{4,20} The majority of people with commercial dental insurance receive coverage through their employers. Unlike other health care services, only a small percentage (4.4%) of dental services are funded through public expenditures.²⁰ The remaining services are paid through private sources – 47.8% paid by private health insurance plans, 47.3% paid out-of-pocket, and the remaining 0.5% paid by other private funds.²¹ This is compared to all health care services in which approximately 45.5% of services are funded by public sources and the remaining 54.5% through private sources.²¹ This lack of public dollars for dental services has resulted in an increase in individual's out-of-pocket costs for dental services, which further limits access to dental services for low-income populations.

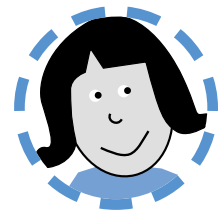
Other

In addition to some of the more quantifiable differences between the medical and dental delivery systems, there are several other measures that differentiate the two practices. This includes care protocols and quality assurance and the public perception of the need for dental services as compared with medical services.

One striking difference between the two systems is that the dental system has few established standards. While the medical field has developed protocols for treating diseases with guides on standard medical therapeutics in clinical practice, the dental profession has developed few standardized protocols. This extends to the arena of quality assurance, as well. The medical field has developed many different formal evaluation and accreditation programs such as the National Committee for Quality Assurance (NCQA). The dental industry has yet to develop similar mechanisms for evaluating quality and assessing knowledge. Though there have been some attempts to establish these criteria and guidelines, the dental field is somewhat reluctant to create evaluation tools and standardized protocols based on evidence-based practice. As such, no protocols have become widely accepted or implemented. This ultimately makes it difficult for the dental industry to participate in managed care arrangements because of the emphasis this industry places on protocols and evaluation. Health Maintenance Organizations (HMOs) aim to improve quality and service while cutting costs

Dental Care Financing Facts

-  Just over one third of the U.S. population is covered by dental insurance, most of which is employer-based, as compared with roughly 85% of Americans with medical insurance.^{4,20}
-  Only 4.4% of dental services are funded through public expenditures, as compared with approximately 45.5% of health care services that are funded by public sources.²¹



by following protocols, evaluating quality, and achieving accreditation. Although dental plans do not yet have a similar accreditation tool, they have temporarily adopted NCQA credentialing standards until efforts to develop an accreditation standard for the dental industry have been completed by the National Association of Dental Plans (NADP).¹⁸

Finally, one of the biggest differences lies in the public's perception of oral health as compared with overall health. Oral health needs are seldom considered life threatening, though failure to prevent dental disease or provide timely and appropriate treatment can result in both long-term social impacts and systemic health complications. As a result, people see oral health services and care as "elective," unlike medical services, which generally receive higher priority.²² Therefore, people must struggle with whether they perceive the services are worth the cost or not. For most low-income families with competing daily living costs and without dental insurance coverage, the costs associated with maintaining oral health and going to the dentist take a back seat to daily living expenses, such as food, shelter, and clothing. As dental care is neglected, the extent of dental disease and the need for services becomes greater and the associated costs go up, further pushing dental services to the bottom of the priority list. Yet, because oral health diseases are generally not self-resolving, they lead to many long-term negative health consequences that can affect an individual's ability to function normally in society. As such, it is necessary to find ways to change the public's perception by facilitating increased access to and affordability of quality dental care and integrating oral health into the overall health care system.

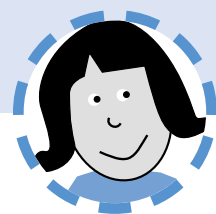
Conclusions

The points highlighted in this paper outline how the dental delivery system is different from the medical care system. The paper illustrates the differences in dentists' workforce, training, and education with issues related to the declining numbers of dentists due to decreased numbers of students graduating from dental schools and increased numbers of retiring dentists. The paper examines the differences in how dentists deliver services, manage patient care, and minimize financial losses. Finally, the paper highlights the public's perception of the need for dental services relative to other competing daily needs.

As a result of all of these differences, dentistry has become separate from the rest of the health care industry and dentists "are not recognized as part of the primary care setting in a health policy context," even though they are a critical part.⁴ As such, dental health policy has become separate. Despite these differences, dentists need to be integrated into the primary care network so that they can:

- Serve as a first point of contact,
- Provide continuity of care,
- Emphasize prevention,
- Provide coordinated comprehensive services that other primary care health providers cannot provide."⁴

Understanding these differences will make it possible to find ways to better coordinate oral health services with other health and human services to improve the oral health, and hence overall health, of at-risk, low-income populations.



*References provided upon request.
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