



The Economics of Dental Practice — Present and Future

H. Barry Waldman, DDS, MPH, PhD, and Steven P. Perlman, DDS, MScD

Abstract

The combination of increased practitioner income, increases in the proportion of the population reporting visits for dental services, decreases in the number of dental school graduates, decreases in the dentist-to-population ratio, and increases in the number of female students and practitioners (many of whom report significantly fewer work hours than their male counterparts), portends favorable economics for dental practices. However, the cost of dental care is “felt” to a greater extent than for other health services. Current and future funding arrangements for dental services could be vulnerable to economic downturns, efforts to control business overhead costs and continued minimal government support. There may need to be concern regarding the infrastructure of economics of dental practice.

A series of favorable developments, including increasing dental practitioner income, an increasing use of dental services, decreasing numbers of graduates and decreasing practitioner-to-population ratios would seem to favor continued encouraging prospects for the future of dental practices. However, compared to other health services, the reliance on 1) out-of-pocket funding for a major share of dental expenditures, and 2) limited government support for dental services raise questions regarding the infrastructure of dental economics. These subjects are reviewed in the following presentation.

The average net income for an independent private dental practitioner who owned all or part of his/her practice in 2002 was more than \$174,000 for a general practitioner, and more than \$291,000 for a specialist.¹ Through 2003, there was a progressive increase in the proportion of the population (ages 2-17, 18-64 and 65 and over) reporting a dental visit in the previous year.² More than \$81 billion were expended for dental services in 2004, with projections for increases to more than \$116 billion in 2010 and \$147 billion in 2014.³⁻⁵ Undeniably, the economics of dental practice have continued to improve since earlier presentations in the *Journal of the California Dental Association* that documented favorable economics during the 1980s and 1990s.⁶⁻⁸

“The demand for oral health care correlates closely to the health of the national economy. At higher income levels, individuals with increased discretionary dollars are better able to pay for their own dental services, even in the absence of dental insurance.”⁹



Authors / H. Barry Waldman, DDS, MPH, PhD, is a distinguished teaching professor, Department of General Dentistry, State University of New York at Stony Brook, N.Y.

Steven P. Perlman, DDS, MScD, is global clinical director, Special Olympics, Special Smiles, associate clinical professor of pediatric dentistry, The Boston University Goldman School of Dental Medicine, and in private pediatric dental practice in Lynn, Mass.



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However, the dynamics of the spending for health services is undergoing dramatic changes as increasing numbers of large and small industries seek the means to reduce overhead costs as they compete in a global economy. Employer negotiations and contractual arrangements are demanding greater employee contributions for health costs. The combination of increased “competition” for out-of-pocket spending for the various health service needs, in particular, dental care, and the continuing minimal level of government spending for dental services, could portend serious potential consequences in the long term for the economics of dentistry. But first the good news about the economics of dental practice.

Dental Practitioners

Numbers of Dental School Graduates

Between 1980 and the early years of the present decade, there was an increase of more than 60 million residents of this country.¹⁰ During the same period, there were dramatic decreases in the number of graduates from schools of dentistry. In some years, a decrease of more than a thousand new dentists as compared to the early 1980s. As a consequence, the number of dental graduates per population decreased from highs in the 1980s of 20 to almost 25 graduates per million U.S. residents, to 14 and 15 graduates per million population in the mid-1990s and early 2000s (Table 1).

Dentist-to-Population Ratios

The ratio of professionally active dentists to 100,000 population peaked in 1994 at 60.2 having risen from a low of about 49 in 1960. This ratio of professional active dentists includes active private practitioners, dental school faculty and staff, armed forces dentists, government-employed dentists, interns, residents and other health or dental

Table 1

Dental School Graduates and Graduates Per Million Population: Selected Years 1980-2003⁹⁻¹¹

| Year | Number of graduates | Graduates per million population |
|------|---------------------|----------------------------------|
| 1980 | 5,256 | 23.1 |
| 1983 | 5,756* | 24.5 |
| 1985 | 5,353 | 21.6 |
| 1990 | 4,233 | 17.0 |
| 1995 | 3,908 | 14.3 |
| 2000 | 4,171 | 14.8 |
| 2003 | 4,443 | 15.2 |

*Greatest annual number of graduates.

Table 2

Population Per Private-practicing Dentists: Selected Years 1993-2003^{5,10}

| Year | Population (in millions) | Dentists | Population per private practitioner |
|------|--------------------------|----------|-------------------------------------|
| 1993 | 260.3 | 142,603 | 1,825 |
| 1995 | 266.6 | 146,089 | 1,824 |
| 2000 | 282.4 | 152,798 | 1,848 |
| 2003 | 291.0 | 160,177 | 1,816 |

organization staff members.

The American Dental Association and federal agencies project a continuing decline through 2020, to about 54 professionally active dentists per 100,000 population.⁹ Limited changes in the population per private practitioner ratio occurred between 1993 and 2003, ranging between 1,816 and 1,848 residents per practitioner (Table 2). Since 1993, the ADA Survey Center has modified its methodology to determine the number of active private practitioners, thereby precluding comparisons with earlier periods. (Personal communication, Survey Center, Jan. 13, 2006.)

Female Dentists

There has been a substantial change, however, in the gender mix of dental students and dentists. The proportion of women dental students increased from 24 percent in 1985 to 40 percent in 2002. Women accounted for fewer than 3 percent of practicing dentists in 1982 and 13 percent in 1997, with projections of 22 percent in 2010 and 28 percent in 2020; with “... suggest(ions) there may be even greater proportions of female dentists in future years.”^{12,13} Repeated studies of the work patterns of male and female dentists indicate, that while there are differences in the various stages in one’s career,

Table 3**Trend in Dental Expenditures Per Private-practicing Dentist: Selected Years 1993-2003^{3-5,10}**

| Year | Expenditures (in billions) | Dentists | Expenditures Per Dentist | | |
|------|-------------------------------|----------|--------------------------|-------|---------------------|
| | | | Current dollars | CPI* | Constant dollars |
| 1993 | \$39.2 | 142,603 | \$274,900 | 144.5 | \$190,200 |
| 1995 | 45.8 | 146,089 | 313,500 | 313.5 | 205,700 |
| 2000 | 60.7 | 152,798 | 397,300 | 172.2 | 230,700 |
| 2003 | 74.3 | 160,177 | 463,900 | 184.0 | 252,000 |

* Dental Services Consumer Price Index, 1982-84=100

Table 4**Current and Constant Dollar Dental Expenditures: Selected Years 1970-2014^{3,10}**

| | Total (in billions) | | | Per capita | |
|------------------|---------------------|-------|---------------------|--------------------|---------------------|
| | Current dollars | CPI* | Constant dollars | Current dollars | Constant dollars |
| 1970 | \$4.7 | 39.2 | \$11.9 | \$22 | \$56 |
| 1980 | 13.3 | 78.9 | 16.8 | 57 | 72 |
| 1990 | 31.6 | 155.8 | 20.2 | 121 | 77 |
| 2000 | 60.7 | 258.5 | 23.5 | 211 | 82 |
| 2003 | 74.3 | 293.1 | 25.3 | 251 | 86 |
| 2004 | 81.5 | 307.2 | 26.5 | 277 | 90 |
| Projected | | | | | |
| 2010 | 116.4 | | | 370 | |
| 2014 | 146.9 | | | 452 | |

* Dental Services Consumer Price Index, 1982-84=100.

Economic realities of spending for dental services*Current and Constant Dollar Expenditures*

For more than 30 years, current and constant dollar national expenditures and spending per capita for dental services has continued to increase. Projections through 2014 continue to anticipate continued current dollar growth in national and per capita expenditures for dental services, \$277 per capita spending in current dollars in 2004 (Table 4). Specific estimated constant dollar deflation multipliers, which would permit projections for future years for dental services are not available. (Personal communication, Centers for Medicare and Medicaid Services, Jan. 16, 2006.)

Distribution of Expenditures

Between 1970 and 1990 there were dramatic changes in the source of funds for dental services; primarily an increase in private health insurance and a decrease in out-of-pocket spending. During this period, government dollar support essentially remained almost insignificant, and proportionately actually decreased. By 2004,

“... women (dentists) worked significantly fewer hours than men (dentists).”¹² As such, “... work capacity could impact on dentist supply projections.”¹²

National Dental Expenditures Per Private Practicing Dentist

Between 1993 and 2003, based upon national expenditure data, there was almost a 70 percent increase in the current dollar and almost a one-third

increase in constant dollar, removing the effects of inflation, spending for dental services per private practicing dentist (Table 3). National expenditure figures include spending for dental services in nonprivate practice arrangements, e.g., hospitals, government institutions. Therefore, these expenditure figures would be greater than actual spending per private practitioner and should be used only as trend indicators.



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Table 5

Dental Expenditures by Source of Funds: Selected Calendar Year 1970-2014^{3,4,14}

| | Total | Total private | Out-of pocket (in billions) | Private Health Ins. | Total Public | Medicaid |
|---------------------------|-------|---------------|-----------------------------|---------------------|--------------|----------|
| 1970 | \$4.7 | \$4.5 | \$4.2 | \$0.2 | \$0.2 | \$0.2 |
| 1990 | 31.6 | 30.6 | 15.4 | 15.1 | 0.9 | 0.8 |
| 2000 | 60.7 | 57.6 | 27.0 | 30.5 | 3.1 | 2.6 |
| 2004 | 81.5 | 76.1 | 36.1 | 40.5 | 4.9 | 4.2 |
| Projections | | | | | | |
| 2010 | 116.4 | 105.2 | 51.0 | 54.1 | 11.2 | 10.2 |
| 2014 | 146.9 | 129.7 | 63.1 | 66.6 | 17.1 | 16.0 |
| (Percent distribution) | | | | | | |
| 1970 | 100% | 95.4% | 90.8% | 4.5% | 4.6% | 3.5% |
| 1990 | 100 | 96.8 | 48.7 | 47.8 | 2.8 | 2.5 |
| 2000 | 100 | 94.6 | 44.4 | 50.2 | 5.1 | 4.3 |
| 2004 | 100 | 93.4 | 44.3 | 49.7 | 6.0 | 5.1 |
| Projections | | | | | | |
| 2010 | 100 | 90.3 | 43.8 | 46.5 | 9.6 | 8.8 |
| 2014 | 100 | 88.4 | 43.0 | 45.4 | 11.6 | 10.9 |
| (Per-capita expenditures) | | | | | | |
| 1970 | \$22 | \$21 | \$20 | \$1 | \$1 | |
| 2000 | 211 | 200 | 94 | 106 | 11 | |
| 2003 | 251 | 234 | 111 | 123 | 17 | |
| Projections | | | | | | |
| 2010 | 370 | 334 | 162 | 172 | 36 | |
| 2014 | 452 | 399 | 194 | 205 | 53 | |

Note: Numbers and percentages have been rounded.
* Subset of public funds.

less than \$5 billion, 6 percent of the total national expenditure of \$81.5 billion, was spent by various government agencies for dental services. Since 2000, approximately half of dental costs have been covered by private health insurance arrangements; with out-of-pocket spending accounting for about 44 percent of the total cost for dental care.

Limited changes in the proportion of dental care costs covered by out-of-pocket spending are projected through 2014. Private insurance coverage is anticipated to decrease to about 45 percent during this period. Government coverage is projected to increase to almost 11 percent; primarily as a result of increased spending under the Medicaid program (Table 5).

Spending Comparisons

Dental care costs are “felt” to a far greater extent than all other major health services. Although approximately half of dental costs are covered by private insurance arrangements, compared to other health services, a far greater proportion of dental costs — 44 percent — are required from out-of-pocket sources. By comparison out-of-pocket

spending for other major health services range from 3 percent for hospital services to 30 percent for prescription drugs (Table 6).

■ Much of the difference in out-of-pocket spending for dental care is a reflection of the significant differences in government support for health services. Government agencies provide about 6 percent of the costs for dental care. By contrast, support by these agencies range from 24 percent for prescription drugs to 60 percent for nursing home care (Table 6).

Concern Regarding the Infrastructure of Dental Economics

The continued positive direction of dental economics in the future will be dependent upon the ability and willingness of individuals and their employers to finance 90 percent or more of dental cost, a combination of out-of-pocket spending and dental insurance. Almost all government disbursements for dental services are within the boundaries of the Medicaid program (\$4.2 billion of the total \$4.9 billion of government support in 2004 for personal dental health services), thereby limiting assistance primarily to individuals and families below the poverty level (Table 5).

Dental costs will increasingly be "felt" as employers seek to reduce overhead health insurance expenses (for current and past employees). Employers progressively will need to deal with the impact of global economics and the related issues of out-sourcing to lower salaried work forces in other countries. Management-union negotiators could readily overlook dental services as they seek to insure the greater expenses of hospital and physician services. Similarly, federal government attempts to place limits on fringe benefits, could place dental costs beyond the caps set for these tax-free benefits.^{15,16}

Table 6
Proportion of Out-of-Pocket and Government Spending for Health Services: Selected Years 2000-2014³

| | 2000 | 2003 | 2010* | 2014* |
|------------------------------------|-------------|-------------|-------------|-------------|
| Percent out-of-pocket | | | | |
| All personal health care | 17.0% | 16.0% | 14.4% | 14.0% |
| Dental care | 44.4 | 44.2 | 43.8 | 43.0 |
| Hospital services | 3.1 | 3.2 | 3.3 | 3.4 |
| Physician care | 11.1 | 10.2 | 9.7 | 9.4 |
| Prescription drugs | 31.5 | 29.7 | 20.2 | 19.8 |
| Nursing Home services | 28.0 | 27.9 | 27.5 | 27.0 |
| Percent government spending | | | | |
| All personal health care | 43.1% | 43.1% | 46.8% | 47.7% |
| Dental care | 5.1 | 6.6 | 9.6 | 11.6 |
| Hospital services | 58.6 | 58.3 | 59.0 | 59.1 |
| Physician care | 27.4 | 27.4 | 32.7 | 32.8 |
| Prescription drugs | 21.9 | 24.1 | 43.0 | 46.0 |
| Nursing Home services | 58.9 | 60.7 | 62.2 | 63.7 |
| *Projected | | | | |

It is all well and good to counter these concerns with the fact that practitioner income continues to improve, even exceeding that of some physicians, e.g., "The net hourly income of dentists now exceeds that of family physicians, general internists and pediatricians."⁹ Or that "For 2000, national expenditures attributable to the provision of dental services were calculated at \$203.6 billion."¹⁷ Indeed, the economics of practice are increasingly so satisfying that shortages exist in the recruitment of clinical faculty for schools of dentistry. "The greatest factor influencing faculty separations and recruitment is retirement, followed by faculty leaving to enter private practice."⁹ But there is also the dilemma that, "In the next 20 years, (written in 2000) the number of (dentist) retirees will grow faster than the number of graduates, exerting a

downward pressure on the value of dental practices."¹⁸

At some point, the increasing expenditures for general medical services resulting from 1) the need of employers to control health insurance benefits in order to maintain a competitive stance with national and global competitors; 2) government efforts to place a cap on non-taxable fringe benefits; and 3) health care demands of the aging baby boomer generation, which, in the not too distant future, will represent 20 percent of the population.¹⁹ Based upon the presented information, the profession should be concerned about the underpinnings of the economics of dental practice. ■■■■

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To request a printed copy of this article, please contact / H. Barry Waldman, DDS, MPH, PhD, Department of General Dentistry, School of Dental Medicine, Stony Brook University, Stony Brook, N.Y., 11794-8706.