Dentistry at a Crossroads

A Look Back, A Look Forward

Marko Vujicic, PhD
Managing Vice President
Health Policy Resources Center
A Dynamic Environment

- New Dental Schools
- Rising Student Debt
- Shifts in Dental Care Utilization Patterns
- Change in Oral Health Status
- Shifts in Source of Dental Care Financing
- The Economy
- New Dental Care Delivery Models
- Affordable Care Act

Dentistry
A Dynamic Environment

http://www.ada.org/escan
About Me
A Look Back…
Total Dental Spending

National Dental Expenditure Flat Since 2008, Began to Slow in 2002

Author: Marko Vujicic, Ph.D.

Key Messages
- Adjusting for inflation and population growth, national dental expenditure has been flat since 2008 after decades of steady growth. It has not rebounded since the end of the Great Recession.
- Dental spending began to slow in the early 2000s, well before the onset of the Great Recession.
- While overall health spending also began to slow in the early 2000s, the slowdown in the dental sector was much more pronounced.

Introduction
Dentistry is at a crossroads. Declining dental care utilization among adults, the rapid growth in large group practice and alternative care delivery models, increased financial barriers to care among adults, and improvements in oral health status for most segments of the population are just a few of the factors bringing significant change to the profession. At the same time, the U.S. health care delivery system is on the verge of unprecedented reforms, aimed at reducing costs and improving quality through better coordination of care delivery and significant change in how health care services are paid for.

In this research brief, we analyze national dental expenditure patterns from 1990 to 2011, the most recent year for which data are available. We also discuss the policy implications of our findings and further research.

Per-patient Dental Expenditure Rising, Driven by Baby Boomers

Authors: Tom Wall, MA, MBA; Kamyar Nasseh, Ph.D.; Marko Vujicic, Ph.D.

Key Messages
- From 2000 to 2010, inflation-adjusted per-capita dental expenditure was flat among children but increased among adults, especially among the elderly and higher income adults.
- In 2010, per-capita dental expenditures were higher among the elderly than among those in younger age cohorts, and the highest level of expenditures was among the upper-income elderly.
- Due to the aging of the baby boomers, the percent of the population over the age of 65 will grow and dental expenditures among this segment of the population could buoy the dental economy for years to come.

Introduction
After decades of growth, inflation-adjusted per-capita dental spending has remained flat since 2008, and has not rebounded since the end of the recession in June 2009. The effect of the recession on the health care sector has persisted, and this is typical following economic downturns according to the authors of a recent analysis of Centers for Medicare & Medicaid Services (CMS) national health expenditure data.

However, in the case of dental services, spending began slowing well before the recent economic slowdown. The flat spending since 2008 contrasts with a 3.0 percent annual growth in real per-capita dental expenditures from 1990 through 2002 and the somewhat slower 1.8 percent annual growth from 2002 to 2008. The real net inverse of dentists also has declined sharply in recent years and the decline started well before the recent economic downturn. Many factors contributed to the decline in net income; a very important one being a steady decrease in the utilization of dental care among the population. This decrease in utilization, measured as the proportion of the population with a dental visit...
Total Dental Spending

Figure 2: National Dental Expenditure per Capita (in constant 2011 dollars)

Source: Centers for Medicare and Medicaid Services; U.S. Bureau of Economic Analysis; U.S. Census Bureau. Note: Expenditure adjusted for inflation using the GDP implicit price deflator.

Marko Vujicic, PhD; Vickie Lencer, MA, RD; Thomas P. Vail, MA, MBA; Bradley Manson, CA

The U.S. economy is beginning to recover from the most significant contraction since the Great Depression. Many sectors of the economy still are experiencing reduced consumer demand, increased unemployment, and reduced savings—and this includes dentistry. The most recent data from the American Dental Association’s (ADA) show a significant decline in both gross practice income and economic income levels. These data were the most recent available. Economically, net income levels for dentists have floundered with economic conditions.

Methods. The authors used data from a nationally representative survey of dentists maintained by the American Dental Association (ADA). The data were based on ADA’s member practice, practice profile, and demography survey. The data were based on a sample of 1,000 practicing dentists and were weighted to reflect the characteristics of the entire population of practicing dentists.

Results. The authors found that the recent decrease in dentists’ net income levels was driven primarily by a decrease in utilization of dental care due to the economic downturn. The results indicate that the economic downturn has had a significant impact on the income levels of dentists. The authors conclude that the economic downturn has had a significant impact on the income levels of dentists.

Conclusions. The authors’ findings suggest that average real net income for dentists may not be sufficient to cover the cost of living in the future. This is in line with the potential implications of the current economic situation on the future of dentistry.

Key Words. Net income, dental practice experience, median, American Dental Association, ADA

Health Policy Resources Center

Despite Economic Recovery, Dentist Earnings Remain Flat

Authors: Marko Vujicic, PhD; Bradley Manson, BA; Kamar Narooz, Ph.D.

Key Messages
- Dentist earnings remain sluggish despite being three years removed from the Great Recession.
- Dentists have been hit hard by the economic downturn, and their earnings have yet to recover.
- Dentists have been hit hard by the economic downturn, and their earnings have yet to recover.

Introduction
- Dentists have been hit hard by the economic downturn, and their earnings have yet to recover.
- Dentists have been hit hard by the economic downturn, and their earnings have yet to recover.
- Dentists have been hit hard by the economic downturn, and their earnings have yet to recover.

Dentist Income Levels Slow to Recover

Authors: Marko Vujicic, PhD, Thomas P. Vail, MA, MBA; Kamar Narooz, Ph.D., Bradley Manson, BA

Key Messages
- Dentists’ incomes have been stagnant since 2009. Average annual GDP dental income was $167,252 in 2011.
- Dentists’ incomes have been stagnant since 2009. Average annual GDP dental income was $167,252 in 2011.
- Dentists’ incomes have been stagnant since 2009. Average annual GDP dental income was $167,252 in 2011.

Dentistry is in a period of transition. Research has shown that a broad set of factors contribute to the decline in income. In the current economic environment, dentists must be more proactive in managing their practices and focusing on maximizing their income.
Dentist Busyness

Mean Wait Time for GP Dentist Appointment

Source: ADA Health Policy Resources Center annual *Survey of Dental Practice.*
Note: Indicates the mean wait time in days for an appointment with a general practice dentist.
Dentist Economic Confidence

Dentist Economic Confidence Index

- How confident are you in overall economic conditions TODAY?
  - 2012Q3: -32
  - 2013Q3: -17

- How confident are you in overall economic conditions SIX MONTHS FROM NOW?
  - 2012Q3: -16
  - 2013Q3: 1

Source: ADA Health Policy Resources Center quarterly Dentist Economic Confidence Survey
Note: Indicates the level of confidence today and six months from now in overall economic conditions in dental practices. Index constructed from responses to several questions related to economic activity.
GP Dentist Earnings and the Economy

Mean Real Annual Net Income

Real GDP per Capita

Source: ADA Health Policy Resources Center; Bureau of Economic Analysis; Bureau of Labor Statistics.
Note: Net income data are based on the ADA Health Policy Resources Center annual Survey of Dental Practice and are weighted to adjust for representativeness. Shaded areas denote recession years according to NBER. GDP is deflated using the GDP deflator. Net income is deflated using the all-item CPI. All values are in constant 2012 dollars.
Dental Care Utilization Continues to Decline among Working-age Adults, Increases among the Elderly, Stable among Children

Key Messages
- From 2000 to 2011, dental care utilization declined steadily among working-age adults. The trend is occurring regardless of dental benefit status and income level.
- For children, dental care utilization remains consistently high in the early 2000s but has been steadily declining since then.
- Among the elderly, dental care utilization has not changed significantly over this period.

Contact Us
Contact Health Policy Resources Center for more information on products and services of ADA.org or call 1(800) 621-8099.

© 2013 American Dental Association. All Rights Reserved

Dental Care Utilization Declined for Adults, Increased for Children During the Past Decade in the United States

Key Messages
- For children, the increase in utilization was driven mainly by growth among lower-income groups. In contrast, utilization decreased for all adult income groups, but this change was more pronounced for the lower-income groups.

Contact Us
Contact Health Policy Resources Center for more information on products and services of ADA.org or call 1(800) 621-8099.

© 2013 American Dental Association. All Rights Reserved

Dental Care Utilization Declined among Low-income Adults, Increased among Low-income Children in Most States from 2000 to 2010

Key Messages
- From 2000 to 2011, dental care utilization among low-income children increased in almost every state.
- In contrast, the decline in adult utilization was more pronounced in low-income states.
- Significant reductions in adult dental benefits in Medicaid programs were a major factor in the decline in adult dental care utilization.

Contact Us
Contact Health Policy Resources Center for more information on products and services of ADA.org or call 1(800) 621-8099.

© 2013 American Dental Association. All Rights Reserved

© 2013 American Dental Association. All Rights Reserved
Figure 1: Percentage of the Population with a Dental Visit in the Year, 2000-2011

Source: Medical Expenditure Panel Survey, AHRQ. Notes: Changes are statistically significant at the 5% level for children ages 2-18 (2000-2011), at the 1% level for adults ages 19-64 (2003-2011), and at the 1% level for adults ages 65 and over (2000-2011).
Dental Care Use

Figure 3: Percentage of Children Ages 2-18 with a Dental Visit in the Year for Select Income Groups, 2000-2011

Source: Medical Expenditure Panel Survey, AHRQ. Notes: Changes are significant at the 1% level for FPL <100% and at the 5% level for FPL 100-200% (2000-2011).
Figure 4: Percentage of Adults Ages 19-64 with a Dental Visit in the Year for Select Income Groups, 2000-2011

Source: Medical Expenditure Panel Survey, AHRQ. Notes: Changes are significant at the 10% level for FPL <100% (2000-2011), at the 5% level for FPL 200-400% (2003-2011), and at the 1% level for FPL 400%+ (2003-2011).
Note: Data for AR, AZ, CA, CT, MD, OR, SD, TN are through 2011. Data for all other states are through 2012. Data for NE, NM, ME, KY, NY, and CA may not adequately capture dental visits within FQHCs in the calculation of the total number of children on Medicaid with a dental visit. Utilization rate for children with private dental benefits is for the U.S. and is based on most recent data available. CAGR is compound annual growth rate. FPL is federal poverty level.

Source: CMS (Medicaid 416) for state level Medicaid data; MEPS for utilization data for children with private dental benefits.
Dental Care Use

Percent of Low-income Adults With a Dental Visit

<table>
<thead>
<tr>
<th>Year</th>
<th>Virginia</th>
<th>United States</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>46%</td>
<td>54%</td>
</tr>
<tr>
<td>2010</td>
<td>58%</td>
<td>48%</td>
</tr>
</tbody>
</table>

Source: Behavioral Risk Factors Surveillance Survey.
Note: Utilization rates from this survey are known to be inflated. However, the trend over time is statistically robust.
Dental Benefits Continue to Expand for Children, but Remain Stable for Working-age Adults

Key Messages
- More children had dental benefits in 2011 than in 2009. The continued expansion since 2000 was primarily due to Medicaid and SCHIP, which mandate dental benefits for children.
- By contrast, more working-age adults are going without dental benefits compared to 2000, although there was no significant change between 2010 and 2011. More adults are in Medicaid compared to a decade ago, but adult dental benefits within Medicaid programs, on average, have eroded since 2000.
- Among the elderly, the percent with private dental benefits remained steady from 2000 through 2010, but there has been an uptick in 2011, which may reflect the increasing demand for dental care among this age cohort.

Introduction
Since 2000, the dental benefits landscape has changed significantly in the United States among all ages. From 2000 through 2010, the percentage of individuals with private dental benefits declined and adult dental benefits through state Medicaid programs eroded. With the implementation of the Affordable Care Act (ACA), more children will have access to dental benefits through employer-sponsored insurance, the exchanges and Medicaid. However, the law will have a limited impact on the dental benefits for working-age adults.

Dental benefits are a crucial factor enabling access to dental care and good oral health. People with private dental benefits are more than twice as likely to have an annual dental exam than those without benefits. Emerging evidence indicates that many segments of the U.S. population are increasingly experiencing financial barriers to dental care and oral health. Since the early 2000s, the percentage of adults, particularly low-income adults, who visit the dentist has been steadily declining. By contrast, utilization of dental care among children has increased, driven primarily by increased visits by low-income children, many of whom have access to dental benefits through public insurance.
Figure 1: Source of Dental Benefits, Children Ages 2 to 18

Source: Medical Expenditure Panel Survey, AHRQ. Notes: All changes are significant at the 1% level (2000-2011).
Figure 2: Source of Dental Benefits, Adults Ages 19 to 64

Source: Medical Expenditure Panel Survey, AHRQ. Notes: Changes for private and public benefits are significant at the 1% level (2001-2011). Changes for the uninsured are significant at the 5% level (2001-2011).
Financial Barriers to Dental Care Declining after a Decade of Steady Increase

Introduction

Studies have reported that dental care utilization declined for adults and increased for children from 2000 to 2010. In these studies, utilization of dental care was based on whether a person reported a dental visit during the past year. Because oral diseases are common and can be resolved over time in absence of intervention, the lack of dental visits has been considered an indicator of unmet oral health needs. Researchers have also attempted to document the extent of unmet dental care needs or needs. According to the National Access to Care Survey, while the vast majority of population believed that they were receiving the dental care they wanted, a significant segment (35.6 percent) reported that they wanted but could not obtain dental care in 1994. In contrast, only 5.6 percent reported unmet medical or surgical needs. The reasons given by people with unmet dental care...
Figure 3: Dental Emergency Department Visits as a Percent of Total Dental Visits by Age in the United States, 2000 to 2010

Sources: National Hospital Ambulatory Medical Care Survey, NCHS; Medical Expenditure Panel Survey, AHRQ.
Access to Care

Figure 1: Percentage of the Population Who Needed But Did Not Obtain Select Health Services during the Previous 12 Months Due to Cost as a Barrier

Source: National Health Interview Survey, National Center of Health Statistics. Notes: Changes from 2000 to 2010 for Prescription Drugs, Dental Care, Mental Health Services and Eyeglasses are statistically significant at the 1 percent level. Changes from 2010 to 2012 for Prescription Drugs, Dental Care and Eyeglasses are statistically significant at the 1 percent level. Change from 2010 to 2012 for Mental Health Services is significant at the 5% level.
Figure 2: Percentage of the Population Indicating Cost as a Barrier to Receiving Needed Dental Care by Age

Source: National Health Interview Survey, AHRQ. Notes: Changes from 2000 to 2010 for age groups 21 to 34, 35 to 49, 50 to 64 and 65 + are statistically significant at the 1 percent level. Changes from 2010 to 2012 for age groups 2 to 20, 21 to 34, 35 to 49 and 50 to 64 are statistically significant at the 1 percent level. Change from 2010 to 2012 for age group 65+ is significant at the 10% level.
A Look Forward…
Dental Spending – a ‘New Normal’

Historical Annual Per Capita Dental Spending Growth Rates

- 1996-2002: 3.9%
- 2002-2007: 1.8%
- 2007-2010: -0.3%

Source: Centers for Medicare and Medicaid Services; U.S. Bureau of Economic Analysis; U.S. Census Bureau.

Projected Future Annual Per Capita Dental Spending Growth Rates (HPRC Analysis)

- 2010-2020: 0.2%
- 2020-2030: 0.1%
- 2030-2040: 0.0%

Impact of ACA

© 2013 American Dental Association, All Rights Reserved
Impact of ACA

Figure 1: Number of Children and Adults Gaining Benefits through the ACA, by Source of Dental Benefits (millions)

Total: 17.7

- Children:
  - Medicaid Dental Benefits Eliminated Since 2010: 2.5
  - Private Dental Benefits Gained Through HIXs: 3.0
  - Medicaid Dental Benefits Gained - Extensive: 3.2
  - Total: 8.7

- Adults:
  - Private Dental Benefits Gained Through ESI: 4.5
  - Medicaid Dental Benefits Gained - Extensive: 4.9
  - Medicaid Dental Benefits Gained - Limited: 8.8
  - Medicaid Dental Benefits Gained - Emergency Only: -1.4
  - Total: 5.3

Source: Milliman, Inc. analysis commissioned by the ADA; Analysis by the ADA Health Policy Resources Center.
Impact of ACA

55%  5%

Decline in the # of children without dental benefits
Decline in the # of adults without dental benefits
Health Reform In Massachusetts Increased Adult Dental Care Use, Particularly Among The Poor

ABSTRACT States frequently expand or limit dental benefits for adults covered by Medicaid. As part of statewide health reform in 2006, Massachusetts expanded dental benefits to all adults ages 19–64 whose annual income was at or below 100 percent of the federal poverty level. We examined the impact of this reform and found that it led to an increase in dental care use among the Massachusetts adult population, driven by gains among poor adults. Compared to the prereform period, dental care use increased by 2.9 percentage points among all nonelderly adults in Massachusetts, relative to all nonelderly adults in eight control states. For poor Massachusetts adults, the effect was larger—an eleven-percentage-point increase in dental care use above the increase among the state’s nonpoor residents. The Massachusetts experience provides evidence that providing dental benefits to poor adults through Medicaid can improve dental care access and use. Our results imply that the lack of expanded dental coverage for low-income adults under the Affordable Care Act is a missed opportunity to improve access to oral care.
‘Romneycare’

**EXHIBIT 2**

Proportion Of Poor And Nonpoor Adults With A Dental Visit In The Past Twelve Months, Massachusetts And Comparison States, Before And After Massachusetts Health Reform, Selected Years 2003–10

<table>
<thead>
<tr>
<th>Year</th>
<th>Mass., poor</th>
<th>Comparison states, poor</th>
<th>Mass., nonpoor</th>
<th>Comparison states, nonpoor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003–04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007–08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009–10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

“Providers should be required to measure...improvements in quality of life, functioning and longevity.

After a patient has a knee replaced, can she walk normally? When a child has asthma can he play school sports? Unfortunately, the measurements we use today leaves us unable to make many of these vital judgments about the quality of doctors, hospitals or health care organizations.

Congress should direct CMS to identify and adopt useful standardized measures that address consumer and purchaser concerns.”

David Lansky, CEO, Pacific Business Group on Health, speaking on behalf of Boeing, Target, Disney, Wal-Mart, Intel, GE, Wells Fargo and the California Public Employees Retirement System.
Opportunity
Support Dentists & Influence Behavior

Help Dentists Improve Efficiency

- Identify, understand, and educate dentists about the various practice models that are emerging
- Seek out and share “best practices” among the industry to improve efficiency of dental offices
- ADA’s Center for Professional Success

Better Understand Behavior

- Dig deeper into why adults – especially young adults – are less likely to go to the dentist
  - Cost? Lack of insurance?
  - Changing values?
- Explore ways to influence behavior
  - Oral Literacy Campaign
  - DR 2.0
Support Dentists & Influence Behavior

Figure 1: Percent of Children with a Dental Visit in the Past Year, Commercially Insured (2009-2010 Average)

Source: 2009-2010 Truven Health MarketScan® Research Databases. Note: Population is based on children ages 0-20 continuously enrolled in a dental plan for 90 days.
Increased Care Coordination

Visiting the Dentist and the Physician

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Have a Physician Visit and no Dentist Visit</th>
<th>Have a Dentist Visit and no Physician Visit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-4</td>
<td>5-20</td>
</tr>
<tr>
<td></td>
<td>65.4%</td>
<td>24.8%</td>
</tr>
<tr>
<td></td>
<td>3.3%</td>
<td>14.0%</td>
</tr>
</tbody>
</table>

The Strategy That Will Fix Health Care

Organizations that progress rapidly in adopting the value agenda will reap huge benefits
Can oral health professionals save healthcare dollars through chairside chronic disease screenings?

### Table 2. Main results and sensitivity analysis. Estimated savings at different referral completion rates

<table>
<thead>
<tr>
<th>Exam administrator</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Assistant and GP dentist</td>
<td>$65.3 million ($20.82)</td>
<td>$46.5 million ($14.84)</td>
<td>$5.1 million ($1.61)</td>
</tr>
<tr>
<td>Referral Completion Rate</td>
<td>83%</td>
<td>77%</td>
<td>63%</td>
</tr>
</tbody>
</table>

**Notes:** Savings are calculated after labor costs are accounted for. Savings per person screened in parenthesis. Labor costs estimated from 2012 ADA Survey of Dental Practice. GP-General Practice. All estimates in 2011 dollars. Jontell and Glick (2009) and Forrest et al. (2007) estimated an 83% referral completion rate.

**Undiagnosed Prevalence Rates:**
- 7.35% has only undiagnosed hypercholesterolemia,
- 19.31% has only undiagnosed hypertension,
- 3.70% has only undiagnosed diabetes,
- 4.26% have undiagnosed hypertension and hypercholesterolemia,
- 0.51% have undiagnosed diabetes and hypercholesterolemia,
- 2.13% have undiagnosed diabetes and hypertension,
- 0.51% have all three conditions that are undiagnosed.
Opportunities Await
Additional Resources from the ADA

To access the groundbreaking report *A Profession in Transition* visit:

http://www.ada.org/escan

To access reports and data from the ADA Health Policy Resources Center visit:

http://www.ada.org/1442.aspx

To access a new CE course on the implications of the ACA on the dental care system look under ‘Free Courses’ at:

http://www.adaceonline.org/

To contact the Health Policy Resources Center please email: hprc@ada.org

Thank You!