Health Transformation and Older Adults: Opportunities for the Oral Health Industry

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We’re Getting Older!

Figure 2.
Population 65 Years and Older by Size and Percent of Total Population:
1900 to 2010
(For more information on confidentiality protection, nonsampling error, and definitions, see www.census.gov/prod/cen2010/doc/sf1.pdf)

- Number (in millions)
- Percentage (of total population)

Sources: U.S. Census Bureau, decennial census of population, 1900 to 2000; 2010 Census Summary File 1.

Facts About an Aging America

- Life expectancy from birth\(^1\)
  - 1900 – 47.3 years (46.3 for males and 48.3 for females)
  - 2010 – 78.7 years (76.2 for Males and 81.0 for females)
- Life expectancy at age 65\(^1\)
  - 1950 – 13.9 years (12.8 for males and 15.0 for females)
  - 2010 – 19.1 years (17.7 for males and 20.3 for females)
- 42% of babies born in 1920 were expected to live past age 65. In 2000, that number was 83%.

1. CDC. Health United States, 2012
The State of Aging & Health in America 2013 is the sixth volume of a series that presents a snapshot of the health and aging landscape in the United States or another region of the world. This series presents the most current information and statistics, often specifically commissioned for the report, on the health of older adults. The State of Aging and Health in America 2013 focuses on the health of adults aged 65 years or older in the United States and was supported by the Centers for Disease Control and Prevention.

Suggested Citations:

PDF and interactive version available at www.cdc.gov/aging.

Web site addresses of nonfederal organizations are provided solely as a service to our readers. Provision of an address does not constitute endorsement by the Centers for Disease Control and Prevention (CDC) or the federal government, and users should be informed CDC is not responsible for the content of other organizations' Web pages.
“Almost exactly nine months after World War II ended, “the cry of the baby was heard across the land,” as historian Landon Jones later described the trend. More babies were born in 1946 than ever before: 3.4 million, 20 percent more than in 1945.”

This was the beginning of the so-called “baby boom.”

In 1947, another 3.8 million babies were born; 3.9 million were born in 1952; and more than 4 million were born every year from 1954 until 1964, when the boom finally tapered off. By then, there were 76.4 million “baby boomers” in the United States. They made up almost 40 percent of the nation’s population.
The Baby Boomers, Born: 1946-1964

United States birth rate (births per 1000 population). The red segment from 1946 to 1964 is the postwar baby boom. [1]

The Baby Boomers:
Impact on Society

CDC. National Center for Chronic Disease Prevention and Health Promotion. The State of Aging & Health in America 2013
The Baby Boomers: 
Impact on Society

CDC. National Center for Chronic Disease Prevention and Health Promotion. The State of Aging & Health in America 2013
The Baby Boomers: Impact on the Dental Industry
National Oral Health Expenses

U.S. National Dental Expenditures 2000 - 2022 ($ Billions)

Source: CMS National Health Expenditure NHE Historical and projections, 1965-2022
Health Spending by Condition

Medical Expenditure Panel Survey  Top 25, 2011

http://meps.ahrq.gov/mepsweb/data_stats/tables_compendia_hh_interactive.jsp?_SERVICE=MEPSSocket0&_PROGRAM=MEPSPGM.TC.SAS&File=HCFY2011&Table=HCFY2011%5FPLEXP%5FBB&VAR1=AGE&VAR2=SEX&VAR3=RACETH5C&VAR4=INSURCOV&VAR5=POVCAT11&VAR6=MSA&VAR7=REGION&VAR8=HEALTH&VAR01=4+17+44+64&VAR02 =1&VAR03=1&VAR04=1&VAR05=1&VAR06=1&VAR07=1&VAR08=1&_Debug=
Oral Health Expenses

Consumer Price Index (CPI) and CPI for Dental Services (% of 2000 dollars)

Out-of-Pocket Health Expenses

Fewer Americans Forgoing Dental Care Due to Cost

Authors: Thomas Wall, M.A., M.B.A.; Kamyar Nasseh, Ph.D.; Marko Vujicic, Ph.D.

Figure 1: Percentage of the Population Who Needed But Did Not Obtain Select Health Care Services during the Previous 12 Months Due to Cost, 2000-2013

Source: National Health Interview Survey, National Center of Health Statistics. Notes: Changes from 2000 to 2010 for all services were statistically significant at the 1% level. Changes from 2010 to 2013 for all services were statistically significant at the 1% level. Changes from 2012 to 2013 were not statistically significant.
Dentist Earnings Not Recovering with Economic Growth

Authors: Bradley Munson, B.A.; Marko Vujicic, Ph.D.

December 2014

**Figure 1:** General Practitioner Dentist Earnings, 1981 to 2013

**Source:** ADA Health Policy Institute; Bureau of Economic Analysis; Bureau of Labor Statistics. **Note:** Net income data are based on the ADA Health Policy Institute annual Survey of Dental Practice with years 2000-2013 weighted to adjust for nonresponse bias. 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 2013 dollars.
Dental Care Utilization Rate Highest Ever among Children, Continues to Decline among Working-Age Adults

Authors: Kamyar Nasseri, Ph.D., Marko Vujicic, Ph.D.

**Figure 1:** Percentage of the Population with a Dental Visit in the Year, 2000-2012

Source: Medical Expenditure Panel Survey, AHRQ. Notes: For children ages 2-18, changes were statistically significant at the 1% level (2000-2012) and at the 10% level (2011-2012). Among adults ages 19-64, changes were statistically significant at the 1% level (2003-2011). For adults 65 and older, changes were significant at the 5% level (2000-2012). Changes from 2011 to 2012 among adults 19-64 and the elderly 65 and above were not statistically significant.
Figure 3: Percentage of Children Ages 2-18 with a Dental Visit in the Year for Select Income Groups, 2000-2012

Source: Medical Expenditure Panel Survey, AHRQ. Notes: Changes were significant at the 1% level for FPL<100% and FPL 100-200% (2000-2012) and at the 5% level for FPL 400+ (2000-2012). Changes from 2011 to 2012 were not statistically significant.
Dental Care Utilization Rate Highest Ever among Children, Continues to Decline among Working-Age Adults

Authors: Kamyar Nasseh, Ph.D.; Marko Vujicic, Ph.D.

Figure 4: Percentage of Adults Ages 19-64 with a Dental Visit in the Year for Select Income Groups, 2000-2012

Source: Medical Expenditure Panel Survey, AHRQ. Notes: Changes were significant at the 5% level for FPL 200-400% and at the 1% level for FPL 100-200% and FPL 400% + (2002-2012). Changes from 2011 to 2012 were not statistically significant.
Figure 5: Percentage of Adults 65 and Older with a Dental Visit in the Year for Select Income Groups, 2000-2012

Source: Medical Expenditure Panel Survey, AHRQ. Notes: Changes were significant at the 5% level for FPL 100-200% (2011-2012). Changes for FPL<100%, FPL 200-400% and FPL 400%+ from 2011 to 2012 were not statistically significant.
Functional Teeth Per Individual by Age Group 65, 85+

There will be close to 1 Billion Teeth in 65+ year olds in 2030!
## Dental Expenditures by Income Strata - 2010

<table>
<thead>
<tr>
<th>Family Income</th>
<th>Number (000,000)</th>
<th>% of Population</th>
<th>% with Visit</th>
<th>Expenditures (000,000)</th>
<th>% of Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>46.8</td>
<td>15%</td>
<td>24%</td>
<td>$4,232</td>
<td>7%</td>
</tr>
<tr>
<td>Near Poor</td>
<td>14.5</td>
<td>5%</td>
<td>27%</td>
<td>$1,612</td>
<td>3%</td>
</tr>
<tr>
<td>Low</td>
<td>42.7</td>
<td>14%</td>
<td>28%</td>
<td>$5,468</td>
<td>9%</td>
</tr>
<tr>
<td>Middle</td>
<td>93.0</td>
<td>30%</td>
<td>35%</td>
<td>$17,302</td>
<td>29%</td>
</tr>
<tr>
<td>High</td>
<td>111.7</td>
<td>36%</td>
<td>51%</td>
<td>$31,111</td>
<td>52%</td>
</tr>
</tbody>
</table>

Definitions: Poor = < FPL; Near poor = >FPL-125% FPL; Low = >125%-200% FPL; Middle = >over 200%-400% FPL; high = >400% FPL.


Source = AHRQ MEPS Dental Services Expenses General Dentist Visits 2010

http://meps.ahrq.gov/mepsweb/data_stats/tables_compendia_hh_interactive.jsp?_SERVICE=MEPSSocket0&_PROGRAM=MEPSPGM.TC.SAS&File=HCFY2010&Table=HCFY2010%5FPLEXP%5FB&VAR1=AGE&VAR2=SEX&VAR3=RACETH5C&VAR4=INSURCOV&VAR5=POVCAT10&VAR6=MSA&VAR7=REGION&VAR8=HEALTH&VARO1=4+17+44+64&VARO2=1&VARO3=1&VARO4=1&VARO5=1&VARO6=1&VARO7=1&VARO8=1&TCOPT1=GEN&_Debug=
Per-patient Dental Expenditure Rising, Driven by Baby Boomers

March 2013

Figure 2: Annual Real (2010 dollars) Per-patient Dental Expenditures by Patient Age, 2000 to 2010

Source: Medical Expenditure Panel Survey, AHRQ. Note: Increases from 2000 to 2010 are statistically significant at the 1% level for age group 21 to 64 and at the 5% level for age group 65+.
Per-patient Dental Expenditure Rising, Driven by Baby Boomers

Figure 3: Annual Real (2010 dollars) Per-patient Dental Expenditures by Patient Income Level, 2000 to 2010

Source: Medical Expenditure Panel Survey, AHRQ. Note: Increases from 2000 to 2010 are statistically significant at the 1% level for adults 21 to 64 above 200% FPL and significant at the 1% level for adults 65+ above 200% of the FPL.
Dental Care Utilization Rate Highest Ever among Children, Continues to Decline among Working-Age Adults

Authors: Kamyar Nasseh, Ph.D.; Marko Vujicic, Ph.D.

Figure 1: Percentage of the Population with a Dental Visit in the Year, 2000-2012

Source: Medical Expenditure Panel Survey, AHRQ. Notes: For children ages 2-18, changes were statistically significant at the 1% level (2000-2012) and at the 10% level (2011-2012). Among adults ages 19-64, changes were statistically significant at the 1% level (2003-2011). For adults 65 and older, changes were significant at the 5% level (2000-2012). Changes from 2011 to 2012 among adults 19-64 and the elderly 65 and above were not statistically significant.
Figure 1. U.S. population aged 65 years or older and diversity, 2010–2050

Source: U.S. Census Bureau, 2008.
Aging America and Oral Health

Common in Total Population

• Oral Health Conditions
  – Chronic oral diseases
    • Caries
    • Periodontal disease

• Income/oral health benefit coverage
• Nearly one-third of persons 65 years of age and older have untreated dental caries.

• 7 percent of adults 65 years and older reported having tooth pain at least twice during the past 6 months.
Aging America and Oral Health

Common in Total Population
- Oral Health Conditions
  - Chronic oral diseases
  - Caries
  - Periodontal disease
- Income/oral health benefit coverage

Common in Older Adults
- General Health Conditions
  - Physical health
  - Mental health
  - Mobility
- Dependency
  - Range from partial to deficits in ADLs
Aging and Disability

Figure 1: Proportion of People Age 70+ with Activity Limitations

<table>
<thead>
<tr>
<th>ADLs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using the toilet</td>
<td>5</td>
</tr>
<tr>
<td>Eating</td>
<td>6</td>
</tr>
<tr>
<td>Getting in/out of bed</td>
<td>10</td>
</tr>
<tr>
<td>Bathing</td>
<td>13</td>
</tr>
<tr>
<td>Dressing</td>
<td>14</td>
</tr>
<tr>
<td>Walking</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IADLs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taking medications</td>
<td>5</td>
</tr>
<tr>
<td>Making phone calls</td>
<td>6</td>
</tr>
<tr>
<td>Preparing meals</td>
<td>10</td>
</tr>
<tr>
<td>Managing money</td>
<td>18</td>
</tr>
<tr>
<td>Grocery shopping</td>
<td>19</td>
</tr>
</tbody>
</table>

Source: National Academy on an Aging Society analysis of data from the 1993 study of Assets and Health Dynamics Among the Oldest Old.
Aging and Disability

**Figure 2**
Self-Reported Physical Health Status, People Age 70+

- **General Population**
  - Fair to Poor: 37%
  - Very Good to Excellent: 33%

- **Limited in IADLs**
  - Fair to Poor: 16%
  - Very Good to Excellent: 60%

- **Limited in ADLs**
  - Fair to Poor: 14%
  - Very Good to Excellent: 63%

**Source:** National Academy on an Aging Society analysis of data from the 1993 study of Assets and Health Dynamics Among the Oldest Old.
The 2011 IOM Reports on Oral Health
Care for Chronic Oral Diseases

Acute Care/ Surgical Intervention

Chronic Disease Management
Total Health: How Long and How Well We Live

- 40% Behaviors (alcohol, tobacco, diet, exercise, preventive dental procedures?)
- 30% Genetics
- 20% Environment, Public Health
- 10% Health Care Delivery (procedures)

Chronic Disease Management in Oral Health

- Emphasis on risk assessment, prevention, and early intervention
- Use of biological, medical, behavioral, and social tools
- Payment based on Oral health outcomes
American Dental Association
Action for Dental Health

Goal: Through ADA continuing education, train at least 1,000 dentists to provide care in nursing homes by 2020, and increase the number of dentists serving on advisory boards or as dental directors of long-term care facilities.

Goal: At least ten state dental associations committed to implementing a long-term care program to improve the oral health of nursing home residents by 2015.
Topics:
• Organizations of long-term care facilities, who works there?
• Getting involved: choosing a delivery model that works for you
• Regulatory and legal compliance
• Creating and organizing an oral health program
• Working with complex patients
• Financial considerations in LTC
• Establishing an environment for effective daily mouth care
• Staying current: accessing the scientific literature
OVERCOMING OBSTACLES
TO ORAL HEALTH

A training program for caregivers
of people with disabilities and frail elders

UNIVERSITY OF THE PACIFIC
Arthur A. Dugoni
School of Dentistry

5th edition
OVERCOMING OBSTACLES TO ORAL HEALTH
A Training Program for Caregivers of People with Disabilities and Frail Elders

The DVD contains:
- The Direct Caregiver Video with three choices:
  1) Part I—Direct Caregiver Workbook, Chapters 1-6
  2) Part II—Direct Caregiver Workbook, Chapters 7-13
  3) The entire video
- MDS Oral Health Compliance Video for nursing staff working in health licensed long-term care facilities.

Insert DVD into a DVD player and click on the menu item for the video option of your choice.

The CD contains:
- The Direct Caregiver Workbook (PDF)
- The Daily Mouth Care Plan (PDF)
- The Administrators and Trainers Manual (PDF)
- The Pre- and Post Tests (PDF)
- PowerPoint presentation (overview of Direct Caregiver workbook)
- Direct Caregiver Video (for playback on computer)
- MDS Oral Health Compliance Video (for playback on computer)

Insert CD in a computer and open “ReadMe” file for contents and instructions.

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See “ReadMe” file on CD for details.
The Virtual Dental Home

http://www.virtualdentalhome.org
EHR: Photographs
Community-based Prevention and Early Intervention Procedures
The Virtual Dental Home Sites

[Map of California showing major cities and points of interest]
Oral Health Systems for Underserved Populations

Telehealth-Connected Teams
California To Launch Medicaid-Funded Teledentistry
Hub and Spoke System
Disruptive Innovation
Disruptive Innovation

• Disruptive innovation, describes a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors.
Disruptive Innovation

- As companies tend to innovate faster than their customers’ needs evolve, most organizations eventually end up producing products or services that are actually too sophisticated, too expensive, and too complicated for many customers in their market. Companies pursue these “sustaining innovations” at the higher tiers of their markets because this is what has historically helped them succeed: by charging the highest prices to their most demanding and sophisticated customers at the top of the market, companies will achieve the greatest profitability.
Disruptive Innovation

• However, by doing so, companies unwittingly open the door to “disruptive innovations” at the bottom of the market. An innovation that is disruptive allows a whole new population of consumers at the bottom of a market access to a product or service that was historically only accessible to consumers with a lot of money or a lot of skill.
The Disruptive Innovation Model

Performance

Incumbents nearly always win

Sustaining Innovations

Pace of Technological Progress

Performance that Customers can utilize or absorb

Disruptive Innovations

Entrants nearly always win

Time
The Triple Aim

- improving the experience of care
- improving the health of populations
- reducing per capita costs of health care
The Era of Accountability

The Urban Institute

Moving Payment from Volume to Value: What Role for Performance Measurement?

Timely Analysis of Immediate Health Policy Issues
December 2010
Robert A. Berenson
Health Care Transformation and Older Adults

- Dental Practice =
  - Geographically distributed
  - Telehealth enabled
  - Oral health teams
- Chronic disease management
  - Using biological, medical, behavioral, and social tools
- Integrated with general health, educational, and social service systems
- Interacting with the majority of the population
- Focused on oral health outcomes in the Era of Accountability
Health Transformation and Older Adults: Opportunities for the Oral Health Industry

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