Health Transformation, Oral Health, and Older Adults

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The US Health Care System is Undergoing Profound Change

Drivers of the Quality Movement in the U.S. Health Care System
1. the skyrocketing cost of health care unrelated to improvement in health outcomes,
2. increasing understanding of the harm and unwarranted variability our fragmented health care system produces,
3. evidence of the profound health disparities that still exist in the population in spite of scientific advances in care, and
4. increasing awareness of these problems in the age of consumer empowerment.

Health Care Spending 1980-2013

http://www.commonwealthfund.org/publications/issue‐briefs/2015/oct/us‐health‐care‐from‐a‐global‐perspective
Data: OECD Health Data 2015.
Medical costs are the tapeworm of American economic competitiveness


Almost 2x more likely to die from a condition amenable to health care interventions before 75 years old than France

Over 6 times more likely to have lower limb amputations as a consequence of diabetes than UK

Almost 2x more likely to die in a hospital after admission for acute myocardial infarction than Denmark

Almost 3x more likely to have post-operative sepsis during hospital stay than Switzerland

Over 2.5 times more likely to have a foreign object left in the body during a procedure than Denmark

Social Determinants of Health

A Framework for Educating Health Professionals to Address the Social Determinants of Health
National Oral Health Expenses

U.S. National Dental Expenditures 2000 - 2025 ($ Billions)


Health Spending by Condition

Medical Expenditure Panel Survey - Top 25, 2013

Oral Health Expenses

Consumer Price Index (CPI) and CPI for Dental Services (% of 1990 dollars)

Out-of-Pocket Health Expenses

Consumer out-of-pocket health care expenditures in 2008

Out-of-Pocket Health Expenses

In-patient care (8.8%)
Outpatient/emergency room care (6.4%)
Physicians’ services (15.9%)
Dental services $30.7 billion (22.2.0%)
Other professional services (8.1%)
Prescription drugs (31.0%)
Medical supplies (7.6%)

Out-of-pocket health care total $138.5 billion


An analysis of dentists’ incomes, 1996-2009

Figure 1. General practitioners’ (GP) real net income and all exploratory variables index (all variable values indexed to 100 in 2005).
We’re Getting Older!

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 Baby Boomers: Born: 1946-1964

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: Impact on Society

This content integrates visual elements that illustrate the demographic shifts and societal impacts associated with the Baby Boom generation.
The Baby Boomers: Impact on Society

The Baby Boomers: Impact on the Dental Industry

There will be close to 1 Billion Teeth in 65+ year olds in 2030!
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: 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.

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 100% FPL and at the 5% level for adults 65+ above 100% of the FPL.

Dental Care Utilisation Rate Highest Ever among Children, Continues to Decline among Working Age Adults

October 2014

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


Figure 1: U.S. population aged 15 years or older and diversity, 2010-2050

Source: U.S. Census Bureau, 2014.
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 IADLs and ADLs

6/2/2017
Aging and Disability

![Chart showing proportions of people age 70+ with activity limitations]

**FIGURE 1**
Proportion of People Age 70+ with Activity Limitations

<table>
<thead>
<tr>
<th>Activity</th>
<th>ADLs</th>
<th>IADLs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using the toilet</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>Eating</td>
<td>7%</td>
<td>11%</td>
</tr>
<tr>
<td>Getting in/out of bed</td>
<td>12%</td>
<td>18%</td>
</tr>
<tr>
<td>Bathing</td>
<td>18%</td>
<td>15%</td>
</tr>
<tr>
<td>Dressing</td>
<td>5%</td>
<td>15%</td>
</tr>
<tr>
<td>Walking</td>
<td>20%</td>
<td>20%</td>
</tr>
</tbody>
</table>

**SOURCE:** National Academy on an Aging Society analysis of data from the 1992 study of Assets and Health Dynamics Among the Elderly.

Aging and Disability/Dependency

![Chart showing self-reported physical health status]

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

<table>
<thead>
<tr>
<th>Health Status</th>
<th>General Population</th>
<th>Limited in IADLs</th>
<th>Limited in ADLs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good to Excellent</td>
<td>30%</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>Fair to Poor</td>
<td>70%</td>
<td>84%</td>
<td>84%</td>
</tr>
</tbody>
</table>

**SOURCE:** National Academy on an Aging Society analysis of data from the 1992 study of Assets and Health Dynamics Among the Elderly.

Disruptive Innovation

- **The Innovator’s Dilemma**
- **The Innovator’s Prescription**

- Clayton M. Christensen

U.S. Automobiles 1960s -> Luxury, Sophistication

- Cadillac
- Buick
- Pontiac
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
• Companies tend to innovate faster than their customers’ needs evolve
• Their products or services become too sophisticated, too expensive, and too complicated for many customers in their market.
• Historically the greatest profitability has been achieved by charging the highest prices to their most demanding and sophisticated customers at the top of the market.

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 Oral Health Industry

- Sophisticated & Complex Products
- Cost/Price
- Affordability, Accessibility
- Utilization

The Oral Health Industry

- Dentist’s Income
- Traditional Practice Models
- New Opportunities
- Disruptive Innovations

The 2011 IOM Reports on Oral Health

- Advancing Oral Health in America
- Improving Access to Oral Health Care for Vulnerable and Underserved Populations

Trends in Oral Health Care Impacting Oral Health for Older Adults

- Oral diseases as chronic diseases
- Integrated care in the community structures
- Daily mouth care
- Telehealth-connected team care
- Care systems based on oral health improvement
Care for Chronic Oral Diseases

Acute Care/Surgical Intervention
- Provider-centric model
- Care delivered in fixed offices and clinics
- “Treatment” based on discrete procedure-based episodes of care
- Payment based on discrete procedure-based episodes of care
- Emphasis on surgical interventions

Chronic Disease Management
- Patient-centric model
- Care delivered where people are to the extent possible
- “Management” based on maintaining health across the life-cycle of a condition
- Payment based on value of health improvement across life-cycle of a condition
- Emphasis on risk assessment, prevention, and early intervention, using biological, medical, behavioral, and social tools

Total Health: How Long and How Well We Live

Behaviors (alcohol, tobacco, diet, exercise, preventive dental procedures?)

- Health Care Delivery (procedures)
- Environment, Public Health
- Genetics

- 40%
- 20%
- 30%
- 10%

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

Dentistry in Long-term Care: Creating Pathways to Success

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Expanding Dental Practices into Long-term Care

Dentistry in Long-term Care is a Team Sport

Dental Care is a Team Sport

The Virtual Dental Home

http://www.virtualdentalhome.org
EHR: Radiographs

EHR: Photographs
Community-based Prevention and Early Intervention Procedures
Oral Health Systems for Underserved Populations
**Hub and Spoke System**

- Community Site → Community Site
- Community Site → Dental Treatment Center
- Community Site

**Virtual Dental Home Timeline**

- 2009: Proof of Concept
- 2015: Legislation/Regulation
- 2016+: Expansion/Research

**Other State Voids:** OR, CO, HI, MN, AZ, MO...
Legal and Regulatory Environment

Ability to use telehealth
- Scope of practice laws, regulation, interpretation
  - Ability of allied personnel to collect diagnostic records prior to a patient being seen by a dentist
  - Ability of allied personnel to perform procedures in locations separate from dentists
  - Understanding that dentists can develop a diagnosis and treatment plan without an in-person visit with the patient

Dentist Examination

ADA CDT 2017 Definitions
- “Clinical Oral Evaluations”
  - “...recognize the cognitive skills necessary for patient evaluation. The collection and recording of some data and components of the dental examination may be delegated; however, the evaluation, which includes diagnosis and treatment planning, is the responsibility of the dentist.”
Legal and Regulatory Environment

Ability to be paid for services performed using telehealth technologies

- Principle: consider telehealth technologies as communication tools, distinct from the health services that are being provided.
- Require payors to pay for covered services whether performed in-person or with the use of telehealth technologies
- Include store-and-forward as well as real time

Suggested language:
- “face-to-face contact between a health care provider and a patient is not required for services performed using real time or store-and-forward teledentistry.”

The Era of Accountability

The Triple Aim

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

http://www.virtualdentalhome.org
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I skate to where the puck is going to be, not where it has been.

Wayne Gretzky