National Coalition Consensus Conference: Oral Health of Vulnerable Older Adults and Persons with Disabilities
THE ORAL HEALTH OF VULNERABLE OLDER ADULTS AND PERSONS WITH DISABILITIES

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American Dental Association
National Coalition Consensus Conference
Washington, D.C.
November 18, 2010
I. The Disability Status and Demographics of the United States and Population From 2000 to 2050

II. Dental Disease in Older Adults

III. Emerging Living Arrangements

IV. Need for Dental Care

V. Framework for Addressing Access Issues
DEFINITION OF DISABILITY


- Definition: Changes in body function and structure, activity or participation levels that create barriers for people to fully participate in society.
DEFINITION OF DISABILITY Con’t

• Extent: Data from the U.S. Census Bureau's Survey of Income and Program Participation (SIPP) showed that there were 54 million people with a disability and, of those, 35 million (12%) reported having a severe disability.

• Implication: At present there are more than 50 million – which is about 1 in 6 – Americans who report having some level of disability. This amount will grow substantially thru 2050.
TYPES OF DISABILITIES

Three Primary Categories: Physical, Medical, Psychiatric

SPECIAL SUBGROUPS

- Learning Disabilities
- Attention Deficit
- Hyperactivity Disorders
- Vision Impairment/Blind
- Limb Impairment
- Brain Injury
- Developmental Disorder
- Hearing Disorder/Deaf
Disability Status: 2000

Census 2000 Brief

- Census 2000 counted 49.7 million people with some type of long lasting condition or disability. They represented 19.3 percent of the 257.2 million people who were aged 5 and older in the civilian non-institutionalized population — or nearly one person in five.
- 9.3 million (3.6%) – sensory disability – seeing or hearing
- 21.2 million (8.2%) – limits to basic activities – walking, reaching
Disability Status: 2000

Census 2000 Brief

- 12.4 million (4.8%) - physical, mental, or emotional condition causing difficulty in learning, remembering, or concentrating
- 6.8 million (2.6%) - physical, mental, or emotional condition causing difficulty in dressing, bathing, or getting around inside the home
Percentage of the Civilian Noninstitutionalized Population With Any Disability by Age and Sex: 2000

(For more information on confidentiality protection, sampling error, nonsampling error, and definitions, see www.census.gov/prod/cen2000/doc/sf3.pdf)

- 5 to 15: Male 7.2, Female 4.3
- 16 to 64: Male 19.6, Female 17.6
- 65 and older: Male 40.4, Female 43.0

Source: U.S. Census Bureau, Census 2000 Summary File 3.
Percentage of persons age 70 or older who are unable to perform certain physical functions, by sex, 1984 and 1995

Note: The nine physical functioning activities are: walking a quarter mile; walking up ten steps without resting; standing or being on your feet for about two hours; sitting for about two hours; stooping, crouching or kneeling; reaching up over your head; reaching out as if to shake someone's hand; using your fingers to grasp or handle; lifting or carrying something as heavy as ten pounds. A person is considered disabled if he or she is unable to perform an activity alone and without aids. Rates for 1984 are age-adjusted to the 1995 population.
Reference population: These data refer to the civilian noninstitutional population.
Source: Supplement on Aging and Second Supplement on Aging.
- California general – 15.8%
- Department of Developmental Services – 70.6%
Increase in Autism

Time Magazine, May 6, 2002
In 2006 it was estimated that an average of 1 in 110 children in the United States have an Autism Spectrum Disorder.

This is a 57% increase over the prevalence in 2002.

And over 10 times higher than rates reported 50 years ago.
Report to the Legislature on the Principal Findings from The Epidemiology of Autism in California: A Comprehensive Pilot Study

Report to Legislature on Principle Findings from the Epidemiology of Autism in California, 2002

- Conclusion: the reported increase in the number of children represented a real increase and not a shift in diagnostic criteria or misclassification.
FRAMEWORK FOR ANALYZING ACCESS

Need → Demand → Patient Care → Supply

↑
• Demography
• Epidemiology

↑
• Education
• Social
• Economic

Patient Care
• Solo
• Group
• Safety Net

↑
• Dentists
• Allied Care Providers
• Practice Settings
Figure 1: Population Age Structure, 1960

Source: U.S. Census Bureau
Figure 2: Population Age Structure, 1990

Source: U.S. Census Bureau
Figure 3: Population Age Structure, 2020

Source: U.S. Census Bureau
Figure 4: Population 1960-2050

Population: 1960 to 2050
(In millions)

Elderly

1960: 16.6
1970: 20.0
1980: 25.6
1990: 31.1
2000: 34.7
2010: 39.4
2020: 53.2
2030: 69.4
2040: 75.2
2050: 78.9

Oldest Old

1960: 0.9
1970: 1.4
1980: 2.2
1990: 3.0
2000: 4.3
2010: 5.7
2020: 6.5
2030: 8.5
2040: 13.6
2050: 18.2

Source: U.S. Bureau of the Census.
• The size of the population will grow 33% or more in the practice lifetime of the current seniors in dental schools.
• The number of elders will double and 50% of the elders have one or more disabilities.
• The oldest old will grow the most, so the health care needs of the home bound and institutionalized population will increase substantially.
Population

• Older women outnumber older men 2 to 1.
• 5% of the entire population will be 85 or older.
• 20% will be 65 or older.
• The structure of the population is changing radically from a pyramid to a rectangle.
• The health care needs of this change are far reaching.
**Figure 5: Gender Composition of Older Workers is Changing**

Gender Composition of Older Workers Is Changing

Labor Force Participation Rates for Persons Age 55 and Over: 1950 to 1995

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>86.9</td>
<td>9.7</td>
</tr>
<tr>
<td>1970</td>
<td>83.0</td>
<td>9.7</td>
</tr>
<tr>
<td>1990</td>
<td>67.7</td>
<td>8.7</td>
</tr>
<tr>
<td>1995</td>
<td>66.0</td>
<td>8.8</td>
</tr>
</tbody>
</table>

SOCIAL TRENDS

- The gender composition of older workers is changing
- Older women will soon equal older men in the workforce
- Elderly poverty rates have declined
- Elderly women are more likely to live alone
- The educational attainment of the elderly will continue to improve as baby boomers age
- The elderly have a strong national political presence in the AARP
- The ratio of elderly to the working age population will nearly double
- The percentage of elderly who were foreign-born is declining
### Table 5: US Adult Population and Number of Teeth at Risk, 1972

<table>
<thead>
<tr>
<th>AGE</th>
<th>Functional Teeth per Individual</th>
<th>Estimated 1972 Population</th>
<th>Teeth at Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>30.1</td>
<td>25,901,000</td>
<td>779,620,100</td>
</tr>
<tr>
<td>25-34</td>
<td>26.6</td>
<td>27,397,000</td>
<td>728,760,200</td>
</tr>
<tr>
<td>35-44</td>
<td>50.8</td>
<td>22,853,000</td>
<td>475,342,400</td>
</tr>
<tr>
<td>45-64</td>
<td>15.5*</td>
<td>42,789,000</td>
<td>663,229,500</td>
</tr>
<tr>
<td>65-84</td>
<td>7.0**</td>
<td>19,324,000</td>
<td>135,268,000</td>
</tr>
<tr>
<td>85+</td>
<td>3.5**</td>
<td>1,559,000</td>
<td>5,456,500</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>139,823,000</strong></td>
<td><strong>2,787,676,700</strong></td>
</tr>
</tbody>
</table>

* Mean of 45-54 and 55-64 categories
### Table 6: Cohort-Specific Projections of Adult Teeth at Risk in the US, 1990 (Middle Series Population Projections)

<table>
<thead>
<tr>
<th>AGE</th>
<th>Functional Teeth per Individual</th>
<th>Estimated 1972 Population</th>
<th>Teeth at Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>28.4</td>
<td>25,794,000</td>
<td>732,549,600</td>
</tr>
<tr>
<td>25-34</td>
<td>26.7</td>
<td>43,529,000</td>
<td>1,162,224,300</td>
</tr>
<tr>
<td>35-44</td>
<td>23.4</td>
<td>37,847,000</td>
<td>885,619,800</td>
</tr>
<tr>
<td>45-64</td>
<td>18.3*</td>
<td>46,453,000</td>
<td>850,089,900</td>
</tr>
<tr>
<td>65-84</td>
<td>12.1*</td>
<td>28,384,000</td>
<td>342,027,200</td>
</tr>
<tr>
<td>85+</td>
<td>8.2**</td>
<td>3,313,000</td>
<td>27,166,600</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>185,320,000</strong></td>
<td><strong>3,999,677,400</strong></td>
</tr>
</tbody>
</table>

*Mean of adjacent categories
** Assumed no difference than projected for year 2000

Source: Reinhardt/Douglass: Future Need for Dentistry
### Table 7: Cohort-Specific Projections of Adult Teeth at Risk in the US, 2030 (Middle Series Population Projections)

<table>
<thead>
<tr>
<th>AGE</th>
<th>Functional Teeth per Individual</th>
<th>Estimated 1972 Population</th>
<th>Teeth at Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td>28.4</td>
<td>26,226,000</td>
<td>744,818,400</td>
</tr>
<tr>
<td>25-34</td>
<td>26.7</td>
<td>37,158,000</td>
<td>992,118,600</td>
</tr>
<tr>
<td>35-44</td>
<td>23.5</td>
<td>40,168,000</td>
<td>943,948,000</td>
</tr>
<tr>
<td>45-64</td>
<td>19.5*</td>
<td>70,810,000</td>
<td>1,380,795,000</td>
</tr>
<tr>
<td>65-84</td>
<td>15.0*</td>
<td>55,969,000</td>
<td>839,535,000</td>
</tr>
<tr>
<td>85+</td>
<td>10.9*</td>
<td>8,611,000</td>
<td>93,859,900</td>
</tr>
</tbody>
</table>

Total: 238,942,000 | 4,995,074,900

*Mean of adjacent categories
Source: Reinhardt/Douglass: Future Need for Dentistry
**Table 8: Number US Adults Who Need One or Two Dentures (in thousands)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>858</td>
<td>670</td>
<td>613</td>
<td>601</td>
</tr>
<tr>
<td>35-44</td>
<td>3,770</td>
<td>3,841</td>
<td>2,928</td>
<td>2,614</td>
</tr>
<tr>
<td>45-54</td>
<td>5,612</td>
<td>7,332</td>
<td>7,711</td>
<td>5,850</td>
</tr>
<tr>
<td>55-64</td>
<td>7,667</td>
<td>7,836</td>
<td>10,232</td>
<td>10,595</td>
</tr>
<tr>
<td>65-74</td>
<td>7,675</td>
<td>6,837</td>
<td>7,054</td>
<td>9,164</td>
</tr>
<tr>
<td>75-84</td>
<td>6,166</td>
<td>6,613</td>
<td>5,934</td>
<td>6,381</td>
</tr>
<tr>
<td>85+</td>
<td>1,900</td>
<td>2,287</td>
<td>2,654</td>
<td>2,681</td>
</tr>
<tr>
<td>TOTAL</td>
<td>33,648</td>
<td>35,416</td>
<td>37,126</td>
<td>37,886</td>
</tr>
<tr>
<td>DEMAND AT 90% UTILIZATION</td>
<td>30,283</td>
<td>31,874</td>
<td>33,413</td>
<td>34,097</td>
</tr>
<tr>
<td>TOTAL NUMBER OF EDENTULOUS ARCHES</td>
<td>53,839</td>
<td>56,493</td>
<td>59,265</td>
<td>61,043</td>
</tr>
</tbody>
</table>
# Table 9: Projected Amount of Need for FPD’s and RPD’s by Year (in Millions of Hours)

<table>
<thead>
<tr>
<th>YEAR NEED</th>
<th>FPD’S +</th>
<th>RPD’S =</th>
<th>TOTAL NEED -</th>
<th>ANNUAL SUPPLY =</th>
<th>PROJECTED UNMET</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>363.1</td>
<td>172.3</td>
<td>535.4</td>
<td>46.7</td>
<td>488.7</td>
</tr>
<tr>
<td>2010</td>
<td>378.2</td>
<td>185.3</td>
<td>563.5</td>
<td>47.8</td>
<td>516.7</td>
</tr>
<tr>
<td>2020</td>
<td>402.5</td>
<td>207.0</td>
<td>609.4</td>
<td>49.2</td>
<td>560.2</td>
</tr>
</tbody>
</table>
EPIDEMIOLOGY FINDINGS/TRENDS

• Teeth per person has increased
• The number of teeth per person in the elderly population has increased substantially
• The number of teeth in the U.S. Population will increase from 4.5 Billion in 2010 to 5.5 Billion in 2050
• The need for dentures will NOT decline nationally; it will continue to rise slightly
• With greater retention of posterior teeth, periodontal disease will increase
• The need for lower cost RPDs will increase dramatically
• If oral cancer rates per 100,000 stay the same, the number of elderly with oral cancer will increase
LIVING ARRANGEMENTS

A. **STAYING IN HOME**

**HOME CARE FOR ADULTS**

- Based on ADLs
- Nursing Care
- Physical Therapy
- Primary Care
- Pharmaceutical Care

B. **ADULT DAY CARE**
C. Institutional Care

- Assisted Living
- Hospital
- Nursing Home Levels
- Intensive Care Facility
- Hospice
LIVING ARRANGEMENTS

- The number of elders living in their private houses will increase
- The population living in Assisted Living Facilities will increase
- 1.5 million currently live in ALFs
- The need for home care will increase
- Adult day care programs will expand
- The need for nursing home services will increase in the oldest old
- 1.5 million residents live in nursing homes
<table>
<thead>
<tr>
<th>Table 10: ADLS – Activities of Daily Living</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Walking</td>
</tr>
<tr>
<td>- Climbing into bed</td>
</tr>
<tr>
<td>- Taking a bath</td>
</tr>
<tr>
<td>- Dressing</td>
</tr>
<tr>
<td>- Eating</td>
</tr>
<tr>
<td>- Toileting</td>
</tr>
</tbody>
</table>
Figure 6: Disability Prevalence and the Need for Assistance by Age: 2005

DISABILITY

- Disability increases by age
- Women have slightly more disability than men
- 52% of elders (>65) have disabilities
- 37% of elders have a severe disability
- 75% of persons >80 have disabilities
- Nearly 5 million working adults (21-64) need assistance
- The greatest medical disability is back and spine problems – 7.6 million
Oral Health in America:
A Report of the Surgeon General

EXECUTIVE SUMMARY
The Surgeon General’s Report

• “Although there have been gains in oral health status for the population as a whole, they have not been evenly distributed across subpopulations.”

• Profound health disparities exist among populations including:
  • Racial and ethnic minorities
  • Individuals with disabilities
  • Elderly individuals
  • Individuals with complicated medical and social conditions and situations
STRATEGIES FOR IMPROVING ACCESS TO DENTAL CARE FOR PERSONS WITH DISABILITIES

1. **Need** is high and rising

2. **Demand** will increase dramatically

3. **Supply** of services is already inadequate and we are falling further behind