The Burden of Oral Disease
Building A
State Document

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Division of Oral Health

National Oral Health Conference
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The Burden of Disease –

“...total significance for society of a disease beyond the immediate cost of treatment...”

World Health Organization
The Burden of Chronic Diseases and Their Risk Factors

National and State Perspectives 2004

Abstract: The Burden of Chronic Diseases and Their Risk Factors: National and State Perspectives 2004 provides updated information on the burden of chronic diseases and their risk factors in the 50 states and the District of Columbia, including:

- A national perspective on chronic diseases as major causes of death.
- State-specific data on rates of death due to heart disease, cancer, stroke, and diabetes.
- Information on the prevalence of the major risk factors for chronic diseases and on the use of preventive services for chronic diseases, risk factors, and preventive services in each state.
- Information on CDC funding to states for programs that target chronic diseases and their risk factors.

This document is intended to aid policy makers, the public health community, and all others interested in addressing the burden of chronic disease in the United States. Another generation of Americans need not suffer unnecessarily or die prematurely when so much is already known about how to prevent disability and death from chronic diseases.

Chronic Disease Burden

- Heart Disease, Stroke, Cancer and Diabetes in the U.S.
- Risk Factors and Use of Preventive Services:
  - Cigarette Smoking
  - Lack of Physical Activity
  - Poor Nutrition
  - Overweight
  - Lack of Mammography Screening...
  - Lack of Health Insurance
Guidelines

- Based on Chronic Disease Model
- Includes syndemic factors
- Includes national data and text
- Provides context for comparisons of data
Goal: Create Useful State Burden of Oral Disease Documents

A publicly available disease burden document describing oral disease burden, oral disparities, and unmet needs issued in the past 5 years using the most recent data preferably no more than 5 years old and…
Document includes oral health status with indicators consistent with the National Oral Health Surveillance System (NOHSS), Water Fluoridation Reporting System (WFRS), and ASTDD State Synopsis.
## Indicators of Oral Health Status

<table>
<thead>
<tr>
<th>Indicator</th>
<th>NOHSS</th>
<th>CSTE</th>
<th>HP2010</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental visits</td>
<td>✦</td>
<td>✦</td>
<td>21-10</td>
<td>NHIS-BRFSS</td>
</tr>
<tr>
<td>Teeth cleaning</td>
<td>✦</td>
<td>✦</td>
<td></td>
<td>BRFSS</td>
</tr>
<tr>
<td>No tooth loss</td>
<td>✦</td>
<td>✦</td>
<td>21-13</td>
<td>BRFSS</td>
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<tr>
<td>Complete tooth loss</td>
<td>✦</td>
<td>✦</td>
<td>21-4</td>
<td>BRFSS</td>
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<tr>
<td>Fluoridation status</td>
<td>✦</td>
<td>✦</td>
<td>21-9</td>
<td>WFRS</td>
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<tr>
<td>Caries experience</td>
<td>✦</td>
<td>✦</td>
<td>21-1</td>
<td>BSS</td>
</tr>
<tr>
<td>Untreated caries</td>
<td>✦</td>
<td>✦</td>
<td>21-2</td>
<td>BSS</td>
</tr>
<tr>
<td>Sealants</td>
<td>✦</td>
<td>✦</td>
<td>21-8</td>
<td>BSS</td>
</tr>
<tr>
<td>Oral and pharyngeal cancer</td>
<td>✦</td>
<td>✦</td>
<td>3-6</td>
<td>NCHS-Registries</td>
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</tbody>
</table>
Burden of Oral Disease

A Reference and Tool for Creating State Documents
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The Burden of Oral Disease in Nevada-2003

In 1948, the World Health Organization defined health as “a complete state of physical, mental, and social well-being, and not just the absence of infirmity.” As new research continues to discover associations between chronic oral disease with heart and lung diseases, low birth-weight, and diabetes, it is becoming clear that a person cannot attain a complete state of good health without good oral health. Although safe and effective methods exist for preventing disease and improving oral health, when controlled for socioeconomic status, minority children have more untreated decay than their counterparts. There is also a distinction between the oral health of children having dental insurance and those who do not. Compared to children with dental insurance, children without insurance were more likely to have untreated decay (35% vs. 47%) and less likely to have dental sealants (39% vs. 21%).

Figure 1. Oral Health of 3rd Grade Students by Eligibility for the Free/Reduced Lunch Program

- Eligible
- Not Eligible

<table>
<thead>
<tr>
<th>Caries History</th>
<th>Untreated Decay</th>
<th>Dental Sealants</th>
</tr>
</thead>
<tbody>
<tr>
<td>73.5%</td>
<td>61.3%</td>
<td>29.2%</td>
</tr>
<tr>
<td>49.3%</td>
<td>43.0%</td>
<td>23.8%</td>
</tr>
</tbody>
</table>

Figure 2. Oral Health of 3rd Grade Students by Race/Ethnicity

- Caries History
- Untreated Decay
- Dental Sealants

<table>
<thead>
<tr>
<th>Region</th>
<th>Sealed Teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reno Metro</td>
<td>67</td>
</tr>
<tr>
<td>Las Vegas Metro</td>
<td>55</td>
</tr>
<tr>
<td>Rural</td>
<td>32</td>
</tr>
<tr>
<td>Greater than 10</td>
<td>30</td>
</tr>
</tbody>
</table>

*adjusted for non-response
*bars of the same color add up to 100%
Goal:
Prevent and control oral and craniofacial diseases, conditions, and injuries and improve access to related services.
The 2002-2003
Key Findings, Vermont

Vermont compared to Other States

Survey Method

The survey method used was an epidemiologic survey utilizing standardized criteria and equipment necessary for conducting oral screenings of Vermont children in grades 1-3. The screenings were conducted by a licensed dental hygienist using gloves mask, eye protection, portable headlight, and disposable mirror.

The screening criteria included:
- Age group (1-3 years)
- Presence of decay
- Size of decay
- Color of decay

Data Items: Objectives
- Caries Experience: Reduce the proportion of children aged 6-8 years with dental caries experience in their primary and permanent teeth.
- Untreated Decay: Reduce the proportion of children aged 6-8 years with untreated decay in their primary and permanent teeth.
- Sealants present: Increase the proportion of children aged 8 years who have received dental sealants on their primary teeth.

Parental/guardian reported information from the survey:
- Regular dental visit by the parent/guardian, 73 percent.
- Most important reason that the child was not taken to the dental in the last year: No reason to go and Cost.
- Highest level of education completed by the parent/guardian: College graduate (12%), Some college (17%), High school/GED (38%), Less than high school (9%), and No response (5%).

Vermont Department of Health
Dental Health Services
Figure X: Percentage of Adults That Visited the Dentist Within the Last Year by Education Level, 2002


Individuals with chronic diseases are at increased risk for oral disease. Many systemic diseases and conditions have oral manifestations and result in greater oral disease burden. The 2002 BFRSS estimated that 59% of diabetics and 44% of smokers in Colorado have lost at least one tooth (Figure X) compared to 35% in the general adult population.10

Figure X: Percentage of Adults with Chronic Disease Who Have Lost Teeth Due to Decay or Gum Disease - BRFSS 2002
The importance of good oral health is not being discussed with pregnant women. While 69.8% of pregnant women were counseled by their prenatal provider on smoking and 72.4% were counseled on alcohol use, less than 40% received counseling on dental care.9

Figure X: Counseling Received by a Health Care Professional During Pregnancy

<table>
<thead>
<tr>
<th></th>
<th>Spoken to about smoking</th>
<th>Spoken to about drinking</th>
<th>Spoken to about how to care for teeth and gums</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>69.8%</td>
<td>72.4%</td>
<td>38.1%</td>
</tr>
</tbody>
</table>


The PRAMS analysis also revealed that privately insured pregnant women accessed dental care more frequently than Medicaid eligible women, and over 40% of Medicaid eligible women had not received dental care in more than 24 months.9 Additionally, mothers who received their prenatal care from a community health center were 60% less likely than women in a HMO or private physician to seek dental care; this is likely due to the exclusively poor population served by community health centers, a group at higher risk for not accessing dental services.9

Additional maternal risk factors for not seeking dental care that the PRAMS analysis revealed were: mothers between the ages of 20-29 years old, mothers with incomes less than $40,000/year, women that had two or more offspring at one birth (twins, triplets), and those who initiated prenatal care late (after the third trimester).9

Adults

Many adults do not understand that good oral health is essential to general health and well-being. Good oral health means being free of chronic oral-facial pain, oral and pharyngeal (throat) cancers, oral soft tissue lesions, birth defects such as cleft lip and palate, and conditions that affect the oral, dental, and craniofacial tissues. Safe and effective preventive strategies for maintaining oral health has lead to marked improvements in the oral health of Americans in the past 50 years, and as a result, most middle-aged and younger Americans can expect to retain
Community water fluoridation

“...one of the great public health achievements of the twentieth century.”

What is the Public Health Issue?
Oral health is integral to general health. Although preventable, tooth decay is a chronic disease affecting all age groups.

In the U.S., tooth decay affects:
- 1 in 4 elementary school children
- 2 out of 3 adolescents

Children with Special Health Needs

Children with special health needs are at the greatest risk of inadequate access and poor oral health.

Who has special needs?
Oral health is integral to general health. Children with special health needs are defined as those “who have or are at increased risk for a chronic physical, developmental, behavioral, or emotional condition who require health and health-related services of a type or amount beyond that required by children generally.” Conditions which engender special needs include, but are not limited to, Down syndrome, craniofacial defects (cleft lip/palate), cerebral palsy, developmental disabilities, autism, vision or hearing deficits, diabetes, asthma, and HIV. It has been reported that the number one unmet need for children with special needs is dental care.

What are the oral health issues for children with special needs?
1. Children with developmental disabilities: enamel irregularities, gum and oral infections, delayed tooth eruption, bite irregularities
2. Children with Down syndrome: gum disease, dry mouth, fissures of tongue and lip, and bite irregularities

Facts at a glance:
- 1 in 8 children between 6 and 14 years old have some sort of disability
- Number one unmet need for children with special needs: dental care
- One in four parents of children with special needs report their child has unmet dental need
Community Water Fluoridation

"...one of the 10 great public health achievements of the twentieth century."

Oral Health in Your State: A Fact Sheet

Sealants

"...effective in the primary prevention of tooth decay."¹

What is the public health issue?

Oral health is integral to general health.² Although preventable, tooth decay is a chronic disease affecting all age groups. In fact, it is the most common chronic disease of childhood.² The burden of disease is far worse for those who have restricted access to prevention and treatment services. Tooth decay, left untreated, can cause pain and tooth loss. Untreated tooth decay is associated with difficulty in eating and with being underweight.³ Untreated decay and tooth loss can have negative effects on an individual’s self-esteem and employability.

What is the impact of sealants?

Sealants are a plastic material placed on the pits and fissures of the chewing surfaces of teeth where up to 90 percent of decay occurs in school children.⁴ Sealants prevent tooth decay by creating a barrier

In the U.S., tooth decay² affects:

- 18 percent of children 2–4 years
- 52 percent of children 6–8 years
- 61 percent of teenagers age 15
A NATIONAL CALL TO ACTION

The first ever Report on Oral Health in America (2000), issued by U.S. Surgeon General Dr. David Satcher, served as a platform to increase public awareness on the importance of oral health. Among the major themes of the report are that oral health is essential to general health and well-being and that profound and consequential oral health disparities exist in the United States. Dr. Satcher stated that what amounts to a silent epidemic of dental and oral diseases is affecting some population groups—restricting activities at schools, work, and home—and often significantly diminishing the quality of life. U.S. Surgeon General Dr. Richard Carmona issued a National Call to Action to Promote Oral Health (2003) as a wake-up call to community and industry leaders, policymakers, health professionals, the media, and the public on issues regarding the nation's oral health.

So what are the major concerns that inspired this national call to action?

The U.S. Surgeon General (2000) reported that:

- Oral diseases are progressive and cumulative and become more complex and costly to treat over time. Therefore, problems that were preventable in early childhood can escalate to irreversible damage over one’s lifespan.

CAUSES OF CHILDHOOD DENTAL CAVITIES, OR "TOOTH DECAY"

Dental caries (tooth decay) is an infectious and transmissible, yet preventable, disease. Among infants and toddlers, the newer term "early childhood caries" (ECC) has also been used interchangeably with "baby bottle tooth decay," "bottle mouth," and other similar names; however, research demonstrates that ECC also occurs when bottles are not used (Platt & Cabezas, 2000). Tooth decay is initiated by the bacteria Streptococcus mutans. Because ECC is infectious, it can be easily spread to infants through mothers’ or caregivers’ saliva during nurturing activities such as feeding and using a pacifier (Etlinger, 1999). As the bacteria accumulate in dental plaque over time and are nourished by sugar-laden foods or drinks, tooth enamel deteriorates and cavities form. Since tooth decay can be prevented even prior to the formation of cavities, the American Academy of Pediatrics, American Academy of Pediatric Dentistry, and American Public Health Association all advise that children should receive a dental check-up before their first birthday. Effective measures for preventing and treating childhood caries include fluoridating water supplies, appropriately using fluoridated toothpaste...
Relate Data to People

Contact: Beth Hines: bua5@cdc.gov