Outline

- Oral Health in the US
  - Healthy People Reports
  - Surgeon General’s Oral Health Report

- Social Determinants of Oral Health: Evidence
  - Socioeconomic position (SEP) indicators
  - Neighborhood socioeconomic conditions
  - Race/ethnicity

- Future Directions
Oral Health in the US

Healthy People
- Developed due to two major reports:
  - Secretary's Task Force Report on Black and Minority Health (1985)

http://www.healthypeople.gov/2020/about/history.aspx 03/06/12

Oral Health in the US...

Healthy People...
- Healthy People 1990: Promoting Health/Preventing Disease: Objectives for the Nation
- Healthy People 2000: National Health Promotion and Disease Prevention Objectives
- Healthy People 2010: Objectives for improving health

http://www.healthypeople.gov/2020/about/history.aspx 03/07/12
Oral Health in the US...

Healthy People 2010
- Two overarching goals
  - Increase quality and years of healthy life
  - Eliminate health disparities

Estimated life expectancy at birth by race in the US: 1950-2007

- White: 69.1, 78.4
- Black: 60.8, 73.3

Health, US, 2010
**Infant mortality rates by race/ethnicity in the US: 1983-2006**

- NH White
- NH Black
- American Indian or Alaska Native
- Asian or Pacific Islander
- Hispanic

Deaths per 1,000 live births


**Oral Health in the US...**

**Oral Health in America: A Report of the Surgeon General**

US Department of Health and Human Services and National Institute of Dental and Craniofacial Research, 2000
Oral Health in the US...

- Healthy People 2010
  - Oral Health
    - 26 objectives:
      - Dental caries, untreated tooth decay, tooth loss and periodontal disease
      - Preventive measures such as annual visits, use of dental sealants, fluoridation programs and availability of school and community-based dental services

Dental Caries Experience


Percent (%)

Destructive Periodontal Disease

2010 Target: 14%
Baseline (1988-94): 22%
Final (1999-2004): 16%

Population with Optimally Fluoridated Water

2010 Target: 75%
1992: 62%
2008: 72%

CDC Fluoridation Census, NCCDPHP, CDC
### Oral Health: Progress toward 2010 Targets

#### Target Met

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-13a</td>
<td>School-based health centers with oral health component</td>
</tr>
<tr>
<td>21-14</td>
<td>Community health centers with oral health service component</td>
</tr>
<tr>
<td>21-15</td>
<td>Cleft lip or palate referral</td>
</tr>
<tr>
<td>21-16</td>
<td>Oral and craniofacial state-based surveillance</td>
</tr>
<tr>
<td>21-17a</td>
<td>State and local dental programs</td>
</tr>
<tr>
<td>21-17b</td>
<td>Indian Health Service and Tribal dental programs</td>
</tr>
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</table>

#### Moved Toward Target

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
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<tbody>
<tr>
<td>21-1c</td>
<td>Dental caries, 15 yrs</td>
</tr>
<tr>
<td>21-2c</td>
<td>Untreated dental decay, 15 yrs</td>
</tr>
<tr>
<td>21-3</td>
<td>No permanent tooth loss, 35-44 yrs</td>
</tr>
<tr>
<td>21-4</td>
<td>Complete tooth loss, 65-74 yrs</td>
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</tbody>
</table>

#### Moved Away from Target

<table>
<thead>
<tr>
<th>Target</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21-1a,b</td>
<td>Dental caries, 2-4 and 6-8 yrs</td>
</tr>
<tr>
<td>21-2a,b,d</td>
<td>Untreated dental decay, 2-4, 6-8, and 35-44 yrs</td>
</tr>
<tr>
<td>21-6</td>
<td>Early detection of oral and pharyngeal cancers</td>
</tr>
<tr>
<td>21-10</td>
<td>Dental visits, 2+ yrs</td>
</tr>
</tbody>
</table>

#### Baseline Data Only: 21-5b and 21-11

### Social Determinants of Health

- Social factors and the physical conditions in the environment in which people are born, live, learn, play, work and age
- Economic and social conditions - and their distribution in the population - that influence individual and group differences in health status

[Social Determinants of Health Key Concepts, World Health Organization](#)
Why emphasize the Social Determinants of Health?

Social determinants of health have a direct impact on health by:

- predicting a large proportion of health status variation
- structuring health behaviours
- interacting with each other to produce health

Social Determinants of Oral Health

- Socioeconomic differences in oral health outcomes have been documented in the US

- Area-level socioeconomic (SE) indicators are associated with oral health outcomes independent of individual socioeconomic indicators

- Race/ethnicity precedes both socioeconomic indicators and place of residence
Prevalence of untreated tooth decay in the US by poverty status: 1988-2004

Prevalence of untreated tooth decay in the US by race/ethnicity: 1988-2004
Prevalence of periodontitis by education, income and neighborhood SE conditions: NHANES III

Borrell et al., 2006

Prevalence of periodontitis by education, income and neighborhood SE conditions by race/ethnicity: NHANES III

Borrell et al., 2006
Mean score and proportion of racial/ethnic groups by neighborhood SE score tertile: NHANES III

Prevalence of severe periodontitis by education, income and neighborhood SE conditions by race/ethnicity: The ARIC Dental Study

Borrell et al., 2006
Mean neighborhood SE score by race/ethnic tertiles: The ARIC Dental Study

- NH Black
- NH White


- Non-Black
- Black
- Low Education
- High Education
- Non-Black
- Black
- Low Education
- High Education

Cunha-Cruz et al., 2007

Borrell et al., 2006
Race and Ethnicity

As social determinants, race and ethnicity:
- Are fundamental causes
- Contextualize risk factors

Link & Phelan, 1995; Beck, 1992

Educational attainment of US adults 25 years and older by race/ethnicity: 2009

Ryan & Siebens, 2012
Mean annual earnings of US adults by educational attainment and race/ethnicity: 2009


Massey, 2004; Iceland et al. 2002; Glaeser & Vigitor, 2001
Race and Ethnicity

When thinking of race/ethnicity, we must ask ourselves:

- How “race and/or ethnicity” affects individual’s position within the social structure

- How this position
  - influences what individuals get exposed that may lead to the outcome of interest
  - provides access to resources that may avoid risks or minimize the consequences of disease once occurs

Future Directions

So now we know the problem...then what?
Challenges to address oral health disparities

- Documenting and monitoring inequalities/inequities in oral health status between and within groups of the population over time

- Translating research findings into policy and practice changes

Challenges to address oral health disparities...

- Documenting and monitoring inequalities/inequities in oral health status between and within groups of the population over time

  - Routine and uniform collection and presentation of data
    - Definitions and measurements
    - Groups and subgroups of the population
    - Comparison and reference groups
Challenges to address oral health disparities...

- Routine and uniform collection and presentation of data
  - Definitions and measurements

Data Collection
- NHANES III and 1999-2004: Oral examination for dental caries and periodontal diseases (partial mouth recording)
- NHANES 2005-2008: Visual oral exam
- NHANES 2009-2010: Oral examination with full mouth recording for periodontal disease

Challenges to address oral health disparities...

- Routine and uniform collection and presentation of data...
  - Groups and subgroups of the population

Data Collection
- Race/ethnicity
Challenges to address oral health disparities...

Routine and uniform collection and presentation of data...
- Comparison and reference groups
- Oral health objective 1: Dental caries experience
  - 2010: Age groups: 2-4 (11%), 6-8 (42%) and 15 yrs (51%)
  - 2020: Age groups: 3-5 (30%), 6-9 (49%) and 13-15 yrs (48.3%)
Challenges to address oral health disparities...

- Translating research findings into policy and practice changes
  
  - Really?! What does this mean?
  
  - About 30 to 50% of research findings get translated into practice changes
  
  - Policy development and changes are a different story and the topic of another presentation

Challenges to address oral health disparities...

- The biggest challenge for population oral health is commitment to funding regardless of the issues identified or how they are called:
  
  - Health Disparities
  
  - Social inequalities/inequities
Let's get real

The main funding opportunities in the US for oral health are:

- Research - National Institute for Dental and Craniofacial Research, National Institutes of Health

- Practice and intervention - Centers for Disease Control and Prevention

NIH & CDC Oral Health Funding Commitment: 2010 & 2011
NIH: Five highest and lowest funded institutes, 2011

Social Determinants of Health: Resources
Acknowledgements

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