Using the Behavioral Risk Factor Surveillance System (BRFSS) for Oral Health Surveillance and Research

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Presentation Overview

- Introduction to BRFSS
- State level data/estimates on BRFSS
- City/county level data/estimates on BRFSS SMART
- BRFSS MAPS (Jim Holt)
BRFSS - Introduction

- Established in 1984 by CDC
- State-based Surveillance System
- Monitor health risk behaviors, preventive health practices, health care access - Chronic diseases and injuries
- Conducted by Health Departments in all 50 states, District of Columbia, Puerto Rico, U.S Virgin Islands and Guam
BRFSS - Introduction

- Telephone health interview survey
- Completed annually
- Information from a representative sample of non-institutionalized adults aged 18 years and older
- BRFSS-SMART now provides data and prevalence estimates for over 120 metropolitan and micropolitan statistical areas, as well as counties within those areas.

(www.cdc.gov/brfss)
BRFSS – Introduction

Questionnaires

Core component
- Fixed core every year
- Rotating core every other year
- Emerging core

Optional modules supported by CDC

State added questions

(www.cdc.gov/brfss/questionnaires)
Examples of Questionnaire Contents

- Health Status
- Demographics
- Pregnancy
- Smoking
- Diabetes
- Health Insurance
- Routine checkup
- Women’s Health
- HIV/AIDS

- Oral health
- Hypertension
- Alcohol
- Injury
- Cholesterol
- Physical activity
- Fruits & vegetables
- Weight control
- Cardiovascular health
Some Uses of BRFSS

- Tracking Health Risk Trends
  - Identify emerging health issues
  - Document health trends
  - Compare health behaviors across states
  - Measure progress towards HP 2010

- Program development
- Policy development
- Program evaluation

1990

1996

2003

No Data        <4%             4%–6%             6%–8%               8%–10%           >10%

Legend:
- No Data
- <4%
- 4%–6%
- 6%–8%
- 8%–10%
- >10%
Prevalence of Women Who Never Had a Mammogram, Ages 40 and Older

BRFSS 1990-2000
Oral Health Questions on BRFSS

- Time since last visit to a dentist or dental clinic
- Time since teeth last cleaned by a dentist or dental hygienist
- Number of permanent teeth removed because of tooth decay or gum disease
- Main reason for no visit to a dentist in last year
- Insurance that pays for some or all of routine dental care
History of Oral Health Questions on BRFSS

- Rotating core – Even years beginning in 06
- Emerging Core – 99, 02, 04
- Optional – 95, 96, 97, 01, 03, 05, (07 ?)
- State - Added
Oral Health Data/Estimates on BRFSS - Website

Prevalence Estimates for Oral Health Indicators
- State estimates for loss of 6 or more teeth
- State estimates for visits to a dentist or dental clinic within the past year
- State estimates for having had teeth cleaned by dentist or dental hygienist within the past year
- **State estimate for loss of 6 or more teeth age > 65 years old***

Others:
- Can download data files directly from website
- Limited to questions surveyed in more than 40 states
- Trend data for 16 selected risk factors (not including oral health)
- No data for state added questions
- Can compare estimates between states, and between years
Oral Health Data on BRFSS – Data file

Variables
- How long since dental visit (actual length of time)
- How long since dental cleaning (actual length of time)
- Number of permanent teeth removed (actual number)
- Having had any permanent teeth extracted (HP 21-3)
- Having had all permanent teeth extracted (HP 21-4)
- Having visited a dentist, dental hygienist or dental clinic within past year (HP 21 – 10)

Others
- Cross tabs/correlations with other variables
- Can pool data from 1999 and 2002 datasets
Loss of 6+ Teeth Due to Decay or Gum Disease
Georgia vs Pennsylvania - 2002

Georgia 20.3 (18.9 – 21.6)         Pennsylvania 21.7 (20.7 – 22.6)
States with > 50% of Adult Population Having Functional Teeth (i.e., Loss of 5 or Fewer Teeth) - BRFSS 2002

Gooch BF, Eke PI, Malvitz DM. Retention of Natural Teeth Among Older Adults - United States, 2000. MMWR December 19, 2003 vol.52 no.50
Dental Visit in the Last 12 months among Adults Reporting to have Diabetes: BRFSS 2002

- States in lowest quartile <56.8%
- States in 2nd and 3rd quartiles
- States in the highest quartile > 67.1%
City/County Level Data on BRFSS

**Background:**
- Prevalence may vary widely within states (e.g., between counties and cities)
- Critical need for local-level surveillance data
- Increase in numbers of local respondents to BRFSS within cities and counties
- In 2003 started **SMART** (Selected Metropolitan /Micropolitan Area Risk Trends) Project

(www.cdc.gov/brfss-smart)
Background cont.

- **MMSA (Metropolitan/Micropolitan Statistical Area)**
  - Metropolitan statistical area: a group of counties that contain at least one urbanized area > 50,000
  - Micropolitan statistical area: group of counties with at least one urban cluster of at least 10,000 to 50,000
  - Metropolitan division: smaller group of counties within a metropolitan statistical area of > 2.5 million

- Estimates based on at least 500 completed interviews per MMSA

- 2002 BRFSS - 98 MMSAs
- 2003 BRFSS – 120 MMSAs
SMART BRFSS
Capabilities on Website

- List of all MMSAs
- Dataset for all MMSAs
- Prevalence data for all MMSAs
  - By year (currently only 2002, 2003)
  - By question category (includes oral health)
  - Generate reports and compare statistics
- Quick view charts
  - Limited to seven selected risk factors
  - Compare county, metro and state data
Loss of 6+ Teeth Due to Decay or Gum Disease
Atlanta-Sandy Springs-Marietta, GA Metropolitan Statistical Area vs Pittsburgh, PA Metropolitan Statistical Area

Graph of SMART Data

Atlanta 16.4 (14.2 – 18.6)     Pittsburgh 23.7 (21.5 – 25.9)
BRFSS - Strengths

- Flexible
- Timely
- Standardized across states
- Local area surveillance data
- Large sample size
- Trend data
- Same weighting methodology for all MMSAs
BRFSS - Limitations

- Self-reported information only
- Telephone under coverage
- Non-institutionalized population
- Cannot further categorize or cross-tab with other variables at MMSA level
Future Plans for Oral Health Questions

- Self-reported measures for periodontal disease
  - CDC/AAP work group setup to develop self-reported measures for periodontitis
  - Evaluated potential self-reported questions from multiple datasets
  - Testing questions versus clinical measures in the Australian National Adult Oral Health Survey
  - Pilot test questions in NHANES
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