Data Sets Containing Information on Oral Health Professions, the Oral Health Status of the Population, and Access to Oral Health Services in the U.S.

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Summary

This report documents the contents and characteristics of 41 data sets that contain data on oral health professionals and/or oral health status or access to oral health by the public in different geographic jurisdictions across the U.S. Three types of files are described: nationally representative data sets with person-specific data; aggregate data (e.g., counts and averages) for selected geographic jurisdictions (e.g., states or counties); and special data sets not representative of the U.S. as a whole. All of the files are based on surveys.

In addition to a brief description of the data contained in the file, the report also provides a brief statement of the strengths and weaknesses of each file, the years for which the data are available, and a URL at which additional information can be found. These data sets can be used as the basis for a wide range of research studies to understand the oral health workforce and factors related to oral health outcomes and access. Several summary observations about these data sets are provided below.

- Oral health has many more sources of data about access and outcomes than does general health or mental health. This provides a relatively rich environment for research on determinants of oral health access and outcomes.
- Data on the oral health workforce are generally less available than are data for the general health workforce. This is due in part to the fact that much of the workforce data are based on files maintained by the ADA, which generally makes the basic data available only for a fee.
- There is much room for improvement in data related to the oral health workforce. Data collected and published by the ADA and by the Federal government (based on ADA data) are available for only selected historical years.

Part I: Nationally Representative Data Sets

The following data sets are publicly accessible (at no charge). They contain individual-level data elements based on surveys of the U.S. population. They contain one or more dental and/or oral health variables.

1. Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS annually gathers information through telephone surveys conducted by the health departments of all 50 states, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam with assistance from CDC. The BRFSS is the world's largest continuously conducted telephone health surveillance system, designed for both State and national analysis. States use BRFSS data to identify emerging health problems, to establish health objectives and track their progress toward meeting them, and to develop and evaluate public health polices and programs to address identified problems. The BRFSS is the primary source of data for states and the nation on the health-related behaviors of adults in the United States. States collect data through monthly telephone interviews with adults aged 18 or older. Different dental questions are asked in different years, with the exception of 2002 and 2004, in which respondents from *all* States are asked the same three questions: their last dental cleaning, their last dental visit, and the number of permanent teeth removed due to decay or disease. Other years include the above questions plus questions on dental insurance and access to dental care, but are asked for only a minority of States, which vary from year to year. County-level identifiers are currently available for some respondents. Acquisition of county identifiers for all respondents is possible through a special agreement with the CDC.

Strengths: Permits national, regional, state and county level analysis of oral health access, preventive care, and outcomes. Trend analysis over time is possible.

Weaknesses: The size of the sample sometimes requires aggregations across years to get reliable statistics for smaller geographic areas.

Years: Conducted annually; 2005 is most recent year. Dental questions are asked in only some states for all years except 2002 and 2004, when three dental questions were asked for all fifty states and the District of Columbia.

URL: http://www.cdc.gov/brfss

2. **Consumer Expenditure Survey (CES).** This program is conducted by the Bureau of Labor Statistics (BLS) and consists of two surveys—the quarterly Interview survey and the Diary survey—that provide information on the buying habits of American consumers, including data on their expenditures, income, and consumer unit (families and single consumers) characteristics. These data are not designed for state level analyses; they are designed for national analysis only. State identifiers are available only for some States, while for others they are suppressed. Includes questions on dental insurance and dental expense and payment sources.

   Strengths: Permits national level analysis. Permits trend analysis over time

   Weaknesses: Only financial dental questions were asked.

   Years: Conducted and available annually; latest year available is 2004.

   URL: http://www.bls.gov/cex/

3. **Survey of Income and Program Participation (SIPP).** This survey is conducted by the U.S. Census Bureau and appropriate for national-level estimates for the U.S. resident population and subgroups. The sample was not designed to produce State or MSA level estimates. Although the SIPP design allows for both longitudinal and cross-sectional data analysis, SIPP is meant primarily to support longitudinal studies. SIPP's longitudinal features allow the analysis of selected dynamic characteristics of the population, such as changes in income, eligibility for and participation in transfer programs, household and family composition, labor force behavior, and other associated events. Dental questions include the number of dental visits, access to dental care, use of sealants, edentulism, dental insurance, and dental expense and payment source. Dental questions are asked in different modules in different years.

   Strengths: Permits national and regional level analysis. Permits longitudinal analysis of individuals over time.

   Weaknesses: Unable to be utilized for State or county level analysis

Years: Available for 1988, 1990, 1991, 1992, 1993, 1996, 2001, and 2004.

URL: http://www.sipp.census.gov/sipp/sipphome.htm

4. **Current Population Survey (CPS*).*** This survey is conducted annually by the Bureau of the Census for the Bureau of Labor Statistics. This data is representative of and appropriate for both national and state-level analysis. This data collection supplies standard monthly labor force data as well as supplemental data on work experience, income, non-cash benefits, and migration. Comprehensive work experience information is given on the employment status, occupation, and industry of persons 15 years old and older. Additional data for persons 15 years and older are available concerning weeks worked and hours per week worked, reason not working full-time, total income and income components, and residence. Data on employment and income refer to the time of the survey. Demographic information such as age, sex, race, household relationships, and Hispanic origin is available for each person in the household enumerated. Frequency of dental visits and receiving tobacco cessation counseling from dentists are asked. In addition, respondent's occupation (which includes dentist, dental hygienist, dental assistant) is also asked.

   Strengths: Suitable for State, regional, and national analysis. Allows for trend analysis over time. Allows for an analysis of dental practitioners (dentists, dental hygienists, dental assistants)

   Weaknesses: Few dental questions were asked.

   Years: Survey is conducted annually; publicly available for 1998 to 2005.

   URL: http://www.bls.census.gov/cps/cpsmain.htm

5. **Medical Expenditure Panel Survey (MEPS).** This is a set of large-scale surveys of families, households, and individuals, their medical providers, and employers across the United States. The household component collects data on a sample of families and individuals across the Nation, drawn from a nationally representative subsample of households that participated in the prior year's NCHS National Health Interview Survey. Because the data are comparable to those from earlier medical expenditure surveys, it is possible to analyze long-term trends.

This data is publicly accessible at the national and regional (Northeast, South, Midwest, West) level only. MEPS provides detailed questions on the type of dental provider seen (dental hygienist, surgeon, technician, etc…), different types of dental services offered, (use of sealants, root canals, implants, fillings, fluoride treatment, etc…), orthodontia, preventive care, medications prescribed for dental treatment, conditions, oral cancer, edentulism, accident/injury, dental insurance, dental expense and payment source.

Strengths: Extensive and detailed questions regarding oral procedures received and payment method. Representative of national population. Allows for both longitudinal and trend analysis over time at the national or regional level.

Weaknesses: Unable to be used for State- or county-level analysis.

Years: Conducted annually; available for 1996 to 2004.

URL: http://www.meps.ahrq.gov/

6. National Health and Nutrition Examination Survey (NHANES*).* This is a household multistage probability sample, conducted by the Centers for Disease Control, designed to obtain nationally representative information of children and adults on the health and nutritional status of the population of the United States through interviews and direct physical examinations. NHANES is comprised of a home interview and a health examination. A home examination option was employed in order to obtain examination data for very young children and for elderly persons who were unable to visit the mobile examination center (MEC). The home examination included only a subset of the components used in the full MEC examination, since it would have been difficult to collect some types of data in a home setting. Specifically designed for national level analysis. The latest years of the NHANES survey (1999-2004) includes dental questions regarding last dental visit, access to dental care, preventive dental care, assessment of general oral health status, oral cancer, orofacial pain, trouble chewing/eating, and dental insurance.

Strengths: Includes both interviews and direct physical examinations. Nationally representative. Large number of dental variables. Allows for trend analysis over time at the national or regional level.

Weaknesses: Unsuitable for State or county level analyses.

Years: NHANES II 1976-1980; NHANES III 1988-1994, NHANES IV 1999-2004)

URL: http://www.cdc.gov/nchs/nhanes.htm

7. National Health Interview Survey (NHIS). The NHIS uses a stratified multistage probability design. The purpose of the National Health Interview Survey (NHIS) is to obtain information about the amount and distribution of illness, its effects in terms of disability and chronic impairments, and the kinds of health services people receive. The NHIS consists of a basic module, a periodic module, and a topical module, and began in 1997. The 2004 NHIS contains the Household, Family, Person, Sample Adult and Sample Child files from the basic module. The latest year (2004) NHIS includes questions about dental insurance, injury to teeth, access to dental care, and last visit to dentist/dental hygienist.

Strengths: Nationally representative. Permits trend analysis over time at the national or regional level.

Weaknesses: Unsuitable for State- or county-level analysis.

Years: Conducted and available annually, latest available year 2004.

8. National Survey of Ambulatory Surgery (NSAS). This survey meets the need for information about the use of ambulatory surgery services in the United States. Sample of procedures from national hospitals and freestanding ambulatory centers. All procedures are from included ambulatory centers.

Strengths: Provides information about service provided in oral health centers. Nationally representative.

Weaknesses: Limited dental information. Not suited for State- or county-level analysis.

Years: Available 1994, 1995, 1996

URL: http://www.cdc.gov/nchs/about/major/hdasd/nsasdes.htm

9. **PUMS (5% sample).** 5% sample is a survey conducted by the Census Bureau of the occupied and vacant housing units in the United States and the people in the occupied units. Geographic areas are divided into public use microdata areas (PUMA). At least 50% of all PUMAs are counties. Rural PUMAs are more likely to consist of combinations of counties, while highly urban areas may have several PUMAs which comprise a single county. Asks for occupation, work setting, and commuting time to work. Contains a number of demographic variables (race/ethnicity, age, income, marital status, etc…).

   Strengths: Huge number of cases, for maximum validity. Allows for analysis of the dental workforce at the city/town, county, MSA, State, or national level.

   Weaknesses: Only conducted once every ten years.

   Years: Available 1990 and 2000.

   URL: http://www.census.gov/Press-Release/www/2003/PUMS5.html

10. **Health and Retirement Study** Survey of U.S. population for those 50 years of age or older. Objectives of the HRS are to explain the antecedents and consequences of retirement; examine the relationship between health, income, and wealth over time; examine life cycle patterns of wealth accumulation and consumption; monitor work disability; provide rich source of interdisciplinary data, including linkages with administrative data; examine how the mix and distribution of economic, family, and program resources affect key outcomes, including retirement, health declines, and institutionalization. Between 10,000-12,000 persons surveyed depending upon the year. Variables include dental care expenses, dental insurance, denture ownership and use, last dental visit, smoking and tobacco use.

    Strengths: Nationally representative snapshot of an older population

    Weaknesses: Unsuitable for State or county level analysis.

    Years: 2002, 2000, 1998, 1996

    URL: http://hrsonline.isr.umich.edu

11. **National Survey of Children's Health (NSCH)** conducted by the State and Local Area Integrated Telephone Survey **(SLAITS)** from the Centers for Disease Control. Survey of children aged 0-17 years of age; questions asked to parents about their children. Designed for both State and national level analyses. Dental questions include the number of dental visits within the past 12 months, preventive dental care, access to dental care, dental caries, orofacial pain, perceived treatment needs, parental rating of children's oral health, dental insurance, and specific dental problem (asked only if parental rating of child's oral health is "fair" or "poor).

    Strengths: Appropriate for both State, regional, and national analysis. Provides a snapshot of a specific population (children).

    Weaknesses: Only asks for specific/detailed dental problems experienced by children whose overall oral health status was described as "fair" or "poor" by the parent/guardian. Asks the parent or guardian about oral health status and/or oral health problems, not the youth (i.e., a pre-teen or teen-ager may be more aware of problems with his/her own teeth than the parent or guardian).

    Years: Data collected 2003-2004.

    URL: http://www.cdc.gov/nchs/about/major/slaits/nsch.htm

12. **Youth Risk Behavior Surveillance System (YRBSS***).* This survey includes a national school-based survey conducted by CDC and state and local school-based surveys conducted by state and local education and health agencies which targets youths ages 12-18. It is ideally suited to trend analysis over time; however, six States do not participate. The data set contains only one dental question (When was the last time you saw a dentist for a check-up, exam, teeth cleaning, or other dental work?)

    Strengths: Targets and directly asks a specific population (youths 12-18). Allows for trend analysis over time.

    Weaknesses: Contains only one dental question. Unsuitable for county level analysis. Lack of participation among all fifty States makes it unsuitable for comprehensive state, regional, or county level analysis.

Years: Available 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005.

URL: http://www.cdc.gov/HealthyYouth/yrbs/

13. **National Survey of America's Families (NSAF).** The NSAF is part of the Assessing the New Federalism project at the Urban Institute. The focus of the survey is to provide quantitative measures of the quality of life in America. Areas covered are economics, health, and the social characteristics of children, adults under 65 years old, and their families. It pays particular attention to low-income families.

    1997: 44,461 households (42,973 with telephones, 1,488 without telephones), over 100,000 people 1998: over 48,000 households. Geographic Region United States (nationally representative), also representative of the following states: Alabama, California, Colorado, Florida, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, Texas, Washington, Wisconsin. Questions include access to dental care, dental care utilization, frequency of dental visits, and last dental visit.

    Strengths: National representative

    Weaknesses: Unsuitable for comprehensive analysis of all 50 States; unsuitable for county level analysis.

    Years: Available 1997, 1999, 2002.

    URL:
    http://www.urban.org/Content/Research/NewFederalism/NSAF/Overview/NSAFOverview.htm

14. **Early Childhood Longitudinal Study - Birth Cohort** The ECLS-B is a longitudinal nationally representative study of children ages 9 months through first grade which provides detailed information on children's development, health, early care and education. Variables include: dental care utilization, dental insurance, dental services offered, smoking.

    Strengths: Longitudinal, nationally representative study of a specific population (children 9 months through 1st grade)

Weaknesses: Nationally designed only - unsuitable for state or local analysis.

Years: 2001 to 2007

URL: **http://nces.ed.gov/ecls/birth.asp**

15. **National Home and Hospice Care Survey (NHHCS).** The NHHCS collects information about the agencies that provide hospice and home health care services, their current patients, their discharges, and the services provided. 1996: 1,200 agencies, 59,000 persons 1998: 1,088 agencies. Dental variables include; dental services offered, dental services received, denture ownership and use, edentulism, and preventive care/oral hygiene

    Strengths: Provides agency-level information on dental health for a specific population. Large sample. Nationally representative

    Weaknesses: Unsuitable for State or county level analysis

    Years: Available 1996, 1998, 2000.

    URL: http://www.cdc.gov/nchs/nhhcs.htm

16. **National Hospital Ambulatory Medical Care Survey (NHAMCS).** NHAMCS is one of two surveys that make up the Ambulatory Medical Care Surveys. The National Ambulatory Medical Care Survey (NAMCS) is the other. NHAMCS was initiated to learn more about the ambulatory care rendered in hospital emergency and outpatient departments in the U.S. The NHAMCS is designed to collect data on the utilization and provision of ambulatory care services in hospital emergency and outpatient departments. Visits to the emergency and outpatient departments of noninstitutional general and short-stay hospitals within the 50 states and the District of Columbia, which had an average length of stay of less than 30 days, or to hospitals whose specialty was general (medical or surgical) or children's general. Excluded were federal hospitals, hospital units within institutions, and hospitals with less than six beds staffed for patient use.

    Variables include: dental care satisfaction, dental services received, emergency dental care, traumatic injuries, and types of health care providers seen.

Years: Available 1995-1996, 1997-1998, 1999-2000, 2001, 2002, 2003, 2004, 2005.

URL: http://www.cdc.gov/nchs/about/major/ahcd/nhamcsds.htm

Strengths: Provides institutional level (hospital), nationally representative information on dental health in the U.S. Useful for analysis of national trends.

Weaknesses: Analyses limited to emergency dental situations

17. **National Long Term Care Survey (NLTCS).** The 1982, 1984, 1989, and 1994 NLTCS are designed to measure the point prevalence of chronic (90 days or more) disability in the U.S. elderly Medicare enrolled population and changes (both improvement and incidence) in chronic disability (and institutionalization) over time. 1982: 35,008 persons over age 65 1984: A new sample of 4,916 persons, who became age 65 between 1982 and 1984, and who survived to 1984 1989: An "aged-in" sample of 4,907 persons who became 65 between 1984 and 1989, and who survived to 1989, was selected and screened for disability. In addition, 5,000 persons who were over 65 and had "screened-out" as not chronically disabled in 1984 were rescreened. All nondisabled persons over age 75 (in 1989) from the 1984 survey were automatically screened in 1989. 1994: An "aged-in" sample of approximately 4,500 persons who became 65 in the 1989-1994 interval, and who survived to 1994, were selected and screened for disability. Further, a supplementary group of about 1,000 community interviews were conducted with nondisabled persons (the healthy supplement). These persons augment the approximately 900 persons already in the 1994 detailed survey who reported no disability as a result of the longitudinal data collection goals. Further, a group of 540 persons, age 95 and over, were also drawn in 1994. Variables include dental care utilization, frequency of dental visits, and last dental visit.

    Strengths: Useful for long-term trend analysis at the national level

    Weaknesses: Only three dental variables; unsuitable for state or local analysis

    Years: Available 1982, 1984, 1989, 1994, 1999, and 2004.

    URL: http://nltcs.cds.duke.edu/index.htm

18. **National Nursing Home Survey.** NNHS is a continuing series of national sample surveys of nursing homes, their residents, and their staff. Data about the facilities include characteristics such as size, ownership, Medicare/Medicaid certification, occupancy rate, days of the care provided, and expenses. For recipients, data are obtained on demographic characteristics, health status, and services received. The survey consists of three questionnaires: Facility Questionnaire, Discharged Resident Questionnaire, and Current Resident Questionnaire. The survey sampled about 1,500 facilities. The design selected no more than six current residents per facility. In facilities with six or fewer residents, all residents were selected. Variables include; dental care utilization, dental services offered, dental services received, denture ownership and use, eating, edentulism, and perceived oral health status.

    Strengths: Contains characteristics of facilities, discharged residents, and current residents. Examines a specific population

    Weaknesses: Unsuitable for state or county level analysis

    Years: Available 1995, 1997, 1999

    URL: **http://www.cdc.gov/nchs/nnhs.htm**

19. **New Beneficiary Follow-up (NBF).** This survey is a follow up on the new beneficiaries from the 1982 New Beneficiary Survey who were still alive at the time of the NBF, or spouses of the New Beneficiary Survey decedents. The NBF contains data on the dynamics of disability and aging and measuring changes over time. It updates the New Beneficiary Survey (NBS) information on marital status, household composition and economic profile, effects of widowhood and divorce, and health status. 12,128 interviews were completed by surviving NBS respondents and 1,834 were completed by surviving spouses.

    Weaknesses: Not representative at state or county level. Dental information limited to dental care expenses and dental insurance

    Years: 1991

    URL: **http://www.ssa.gov/policy/docs/microdata/nbds**

20. **Employee Benefits Survey (EBS*).*** The EBS covers the incidence and characteristics of employee benefit plans. Approximately 6,000 private sector and state and local government establishments are surveyed regarding dental insurance in the employee benefits plan.

    Strengths: Good for national trend analysis of dental insurance over time.

    Weaknesses: Only dental data is on dental insurance

    Years: Conducted annually from 1979 to 2005.

    URL: http://www.bls.gov/ncs/ebs/home.htm

21. **Employer Health Insurance Survey.** The survey collected data on characteristics of employers and workers in establishments offering and not offering health insurance. It also collected information about the characteristics of plans offered. The survey also elicited information from employers not offering health insurance as to other forms of compensation for medical expenses they provided to employees. There are three data files in the collection. Part 1, Firms Data, contains information on the surveyed firms. Part 2, Plans Data, has data on each insurance plan offered by these firms. Part 3, State and County Codes for Firms Data, identifies the State and county of each firm. Parts 1 and 3 are comprised of one case per firm; Part 2 is comprised of one case per insurance plan.

    Sample Size: 2000 private employment establishments per state; 42-262 employers were sampled in each state.

    States covered: Colorado, Florida, Minnesota, New Mexico, New York, North Dakota, Oklahoma, Oregon, Vermont, Washington

    Strengths: Nationally representative

    Weaknesses: Dental insurance is sole dental variable; only select States in the dataset

    Years: 1993-1994.

    URL: http://webapp.icpsr.umich.edu/cocoon/ICPSR-STUDY/06908.xml

22. **Survey of Consumer Attitudes and Behaviors Regarding Dental Issues.** This survey gathers information related to adult consumer attitudes and behaviors relative to various dental issues. This survey is continued by the Consumer Issues and Public Opinion Surveys. About 1000 adults surveyed. Includes questions on Access to dental care, Cleaning, Dental care satisfaction, Dental care utilization, Dental insurance, Dental services received, Extraction, Fluoride treatments, Frequency of dental visits, Periodontal disease/examination, Preventive care/oral hygiene, Restorations, Sealants

    Strengths: Contains a number of dental questions. Nationally representative

    Weaknesses: Comparatively small number of cases – not specifically designed for analysis which is representative of the state or local geographical levels

    Years: Last year accessible is 1997.

    URL: http://webapp.icpsr.umich.edu/cocoon/ICPSR-STUDY/04395.xml

Part II: Aggregate Data

The following datasets are publicly accessible (at no charge). They contain aggregate data representative of the U.S. population at either the national, State, county, or census tract level. They contain one or more dental and/or oral health variables.

1. **Synopses of State and Territorial Dental Public Health Programs.** This file is from the Centers for Disease Control and Prevention. The Association of State and Territorial Dental Directors (ASTDD, an affiliate of the Association of State and Territorial Health Officers, ASTHO) originated the annual *Synopses of Dental Programs* as a way to share information among dental directors and partners. ASTDD's Data Committee developed and pilot-tested the questionnaire each year. The Synopses questionnaire was sent to the directors of dental programs in all 50 states, the District of Columbia, and to U.S.-associated jurisdictions, which include American Samoa, Guam, the Commonwealth of Northern Mariana Islands, the Commonwealth of Puerto Rico, the Federated States of Micronesia (2002 only), the Republic of Palau, and the U.S. Virgin Islands. All are state-level variables, which include:

    - # Children eligible for SCHIP (State Children's Health Insurance Program)
    - % Children (K–12) on free/reduced-cost school lunch program
    - # people on public water system
    - % population on fluoridated public water system
    - # of dental schools
    - # of dental hygiene schools
    - # of dental assisting schools
    - # of community based low income dental clinics
    - # of school based or school linked dental clinics
    - # of local health departments with a dental program
    - # of agencies with a dental program
    - # of dental programs directed by a dental professional
    - # of local health departments that had a dental program for education services only
    - # of local health departments that had a dental program for preventive services only
    - # of local health departments with a dental program for preventive & restorative services

- # of school-based dental clinics that had a dental program for education services only
- # of school-based dental clinics that had a dental program for preventive services only
- # of school-based dental clinics with a dental program for preventive & restorative services
- # of mobile dental clinic programs that had a program for education services only
- # of mobile dental clinic programs that had a program for preventive services only
- # of mobile dental clinic programs with a program for preventive & restorative services
- # of dentists in the state
- # of dental hygienists in the state
- # of dentists enrolled in Medicaid
- # of dentists enrolled in SCHIP
- # of dentists enrolled as Medicaid providers – Combined only
- # of counties without a dentist
- Total of county population without a dentist
- State dental director devotes full-time to his/her duties
- # FTEs
- # Contracted FTEs
- % of time dental director spends on Medicaid/SCHIP issues
- % of time dental director spends on Medicaid/SCHIP issues paid for by Medicaid/SCHIP
- # of people served by dental screenings
- # of children served by dental sealants
- # served by early childhood caries/baby bottle tooth decay prevention
- # of children served by fluoride mouth rinse
- # of children served by fluoride supplements (tablets/drops)
- # served by needs assessment/oral health surveys
- # of people served by oral health education/promotion

Strengths: Large number of state-level dental workforce and oral health variables

Years: Years available: 1998 to 2005, annually.

URL: http://apps.nccd.cdc.gov/synopses/

2. **Bureau of Labor Statistics (BLS).** Contains national and state level counts for dentists, dental hygienists, and dental assistants. Uses two surveys – the Occupational Employment Statistics (OES) survey (www.bls.gov/oes) and the Current Population Survey (CPS). In the OES survey, the self-employed are not included in the estimates, as the universe for these surveys are based on unemployment insurance tax records, which the self-employed do not pay; therefore they are not captured by the OES survey.

   Weaknesses: The BLS does not break CPS data down by state by occupation; therefore it is preferable to use CPS data directly rather than CPS data as filtered through the BLS. Additionally, the OES survey is severely limited for dental workforce research purposes, since so many dentists are self-employed and therefore not included in the counts

   Years: Annually; latest year 2005.

   URL: www.bls.gov

3. **Area Resource File (ARF).** A county-level data file whose data is derived from existing data sources and consolidated. It has counts for dentists, dental hygienists, and dental assistants. Dental counts are based upon ADA licensure data from 1991-1998; however, the latest year listed for dental counts is 2000 from the Census EEO file, which surveys employers only. Counts for dental hygienists and dental assistants are only available from the 2000 Census EEO file. The ARF file also has an exhaustive list of demographic variables, including income, age groups, race/ethnicity, rural/urban status, etc. The ARF is only available by purchase; however, the Center possesses ARF files for the past few years, starting with 2005.

   Weaknesses: Latest year for *reliable* number of dentists is 1998. The 2000 Census EEO file omits any self-employed dentists and dental hygienists and so is inadequate for workforce research.

   Years: CHWS possesses files for 2001, 2002, 2003, 2004, and 2005.

   URL: http://www.arfsys.com/

4. **American Dental Education Association (ADEA***).* The ADEA files contain a list of all current dental schools and allied health dental education programs across the country.

Years: This file contains the current list of schools and programs.

URL: http://www.adea.org/

5. **Integrated Postsecondary Education Data System (IPEDS).** The IPEDS system collects and maintains data on enrollments, completions, and other statistics on all postsecondary education institutions in the U.S. IPEDS contains the number, the race/ethnicity, and gender of graduating dentists, dental assistants, dental hygienists (as an aggregate number for each graduating class) by program of study and by level of study (Associate's, Bachelor's, Masters, Doctorate). Additionally, it includes college size (total number of students enrolled in the college), and the location of the college (address and zip code).

   Strengths: This system provides counts and demographic characteristics for each year of graduation by field of study and level of program. Data are currently available for most years from 1990 to 2003 for many fields of study, so one can track trends over time. One can aggregate graduates or programs at the zip code, county, city/town, state, or national level.

   Weaknesses: Missing institution-level data not uncommon.

   Years: Available annually; latest year 2004.

   URL: http://nces.ed.gov/ipeds/

6. **American Dental Association (ADA).** Currently awaiting purchase by the Center: data on professionally active dentists, especially the numbers of dentists in active private practice at the county level for all counties in the United States for the years 2002, 2003 and 2004.

   Years: Selected years.

   URL: www.ada.org

7. **American Dental Hygienist Association (ADHA).** Selected data elements for ADHA members are available for selected research purposes.

   Weaknesses: ADHA data are generally limited to only their current members.

   Years:

URL: www.adha.net

8. **Center for Health Workforce Studies.** CHWS collects and compiles data on a number of health professions across the U.S. based on research grants and contracts negotiated with public and private organizations.

   The only original data set related to oral health that the Center currently has in its files is based on a Dental Hygiene Professional Practice Index, This is a statistical measure of the extent to which each of the 50 states achieved an "ideal" legal scope of practice in 2002.

   Year: 2002

   URL: http://chws.albany.edu

9. **Health Resources and Services Administration (HRSA*)*** HRSA has developed criteria to designate areas of the country as health professional shortage areas, or HPSAs. Information included in the HPSA database include county or service area, designation status (active, rejected, withdrawn), date of original designation, number of health care providers, and population. The HPSA database identifies areas in the U.S. that qualify either as geographic areas or population groups having a shortage of primary health care providers. HPSAs are designated as either primary medical care HPSAs, dental HPSAs, or mental health HPSAs.

   The Center for Health Workforce has dental HPSA data at the census tract level for the year 2000, which can easily be aggregated up to the city, county, or state level.

   Strengths: Information about dental shortage areas at the census tract, county, metropolitan area, state, regional, or local level for 2000.

   Years: Currently, 2000 dental HPSA data available at Center for Health Workforce Studies.

10. **National Practitioner Data Bank (NPDB)**. The NPDB was established as an information clearinghouse to collect and release certain information related to the professional competence and conduct of physicians, dentists, and other health care practitioners. The information contained in the NPDB is intended to direct discrete inquiry into, and scrutiny of,

specific areas of a practitioner's licensure, professional society memberships, medical malpractice payment history, and record of clinical privileges. It is intended to augment traditional forms of credentials review. The NPDB contains information on adverse licensure actions, clinical privileges actions, and professional society membership actions taken against physicians and dentists. It also collects reports of medical malpractice payments made on behalf of health care practitioners. Samples medical malpractice payers, hospitals, professional societies, state and medical dental boards

Strengths: Specific information (malpractice) available at the State level on the amount of malpractice monies awarded

Weaknesses: Only able to ascertain the number of suits that were settled, not total number.

Years: available annually 1990 to 2006.

URL: http://www.npdb-hipdb.com

11. **National Vital Statistics System (NVSS).** The National Vital Statistics System is responsible for the nation's official vital statistics. These vital statistics are provided through state-operated registration systems. NVSS includes births, deaths, marriages, divorces, and fetal deaths. Information on oral malformations is included.

    Strengths: Total national counts for national or state level analysis

    Weaknesses: Only dental variable is oral malformations

    Years: Available annually for 1968 to 2000.

    URL: http://www.cdc.gov/nchs/nvss.htm

Part III: Special Datasets Not Representative of the U.S. as a Whole

The following represents a sample of datasets which are not representative of the U.S. population as a whole.

1. **California Health Interview Survey (CHIS) .** CHIS provides statewide estimates for California's overall population including major racial and ethnic groups as well as some smaller ethnic groups. Local-level estimates are provided, too. The survey is conducted every two years on public health topics and access to health care including oral health and dental care utilization. CHIS provides information on where and how people get health care as well as the number of adults and children without health insurance. It collects information on health topics such as cancer, diabetes, asthma and oral health. 2003: 42,000 households 2001: 55,428 households; 55,428 adults; 5,801 adolescents; 12,592 parents about a child; 73,821 total. Dental variables include cigarette use, dental care utilization, dental insurance, fluoride supplements, last dental visit, oral cancer, preventive care/oral hygiene, reason for last dental visit, and smoking.

   Strengths: Contains a number of dental variables; large sample size; can look at changes between 2001 and 2003

   Weaknesses: Limited to a single state analysis

   Years: 2001, 2003; 2005 data will be available in 2007.

   URL: http://www.chis.ucla.edu

2. **California Oral Health Needs Assessment of Children.** Within State of California: 84 preschools, 2520 children 32 elementary schools, 3225 children 40 high schools and continuation high schools combined, 898 children 156 schools total, 6643 children total. Preschool children ages 2-5 years Elementary children grades K-3 in public schools High school and Continuation students grade 10; Asian, black/African American, Latino/Hispanic, white/Caucasian. Selected variables include: access to dental care, dental caries, clinical treatment needs, dental care utilization, dental insurance, early childhood caries, extraction,

fluoride supplements, fluorosis, last dental visit, oral health knowledge, oral lesions, orthodontal treatment needs, orthodonture, periodontal disease/examination, permanent dentition, preventive care/oral hygiene, primary dentition, restorations, sealants, traumatic injuries, untreated dental decay.

Strengths: Contains a number of dental variables. Focus on a specific population (children)

Weaknesses: Limited to single state analysis (California)

Years: 1993-1994, 2005

URL: http://www.dentalhealthfoundation.org/topics/public/

3. Established Populations for Epidemiologic Studies of the Elderly. The EPESE studies were developed to provide an epidemiologic resource for the conduct of a broad range of studies in four representative samples of community-dwelling persons age 65 years and older. Each location established a unique study name: East Boston, Senior Health Project; Iowa, Iowa 65+ Rural Health Study; New Haven, Yale Health and Aging Project; North Carolina, Piedmont Health Survey of the Elderly. The goal of these studies is to investigate the association of numerous health factors with important outcomes in aging populations.

Geographic coverage: East Boston, Massachusetts; Iowa and Washington Counties, Iowa; New Haven, Connecticut; five North Carolina counties (Durham, Warren, Franklin, Granville, and Vance). East Boston=3,809; Iowa=3,673; New Haven=2,811; North Carolina=4,165

Populations covered: Individuals over 65 years; Aleutian, Eskimo or American Indian, Asian or Pacific Islander, black non-Hispanic, Hispanic, white non-Hispanic. Variables include: cigarettes, dental cleaning, denture ownership and use, dry mouth, eating, edentulism, extraction, gingival bleeding, last dental visit, missing teeth, mouth pain, mouth sores, orofacial pain, perceived treatment needs, reason for dental visit, restorations, smoking TMD, tobacco usage, tooth count.

Strengths: Contains a number of dental variables; study of a specific population

Weaknesses: Not representative of national, state, or local geographic areas. Data is 13+ years old.

Years: 1981 to 1993

URL: http://webapp.icpsr.umich.edu/cocoon/ICPSR-STUDY/09915.xml

4. Family Health Insurance Survey. This survey examined family health insurance coverage in Colorado, Florida, Minnesota, New Mexico, New York, North Dakota, Oklahoma, Oregon, Vermont, and Washington. Various factors of health insurance and utilization were examined, including insurance coverage, Medicare, Medicaid, perceived health status, and hospital utilization. Survey of 25,674 families with telephones, 1463 in person without telephones. Variables include access to dental care, dental care expenses, and dental insurance

Weaknesses: Limited number of States; data is 13 years old

Year: 1993

URL: http://webapp.icpsr.umich.edu/cocoon/ICPSR-STUDY/06894.xml

5. Surveillance, Epidemiology, and End Results (SEER) The SEER program currently collects and publishes cancer incidence and survival data from 11 population-based cancer registries and 3 supplemental registries covering approximately 14 percent of the U.S. population. Information on more than 2.5 million in situ and invasive cancer cases is included in the SEER database, and approximately 160,000 new cases are accessioned each year within the SEER catchment areas. The SEER registries routinely collect data on patient demographics, primary tumor site, morphology, stage at diagnosis, first course of treatment, and follow-up for vital status**.** Over 2.5 million in situ and invasive cancer cases. Alaska, Atlanta, rural Georgia, Arizona, Connecticut, Detroit, Hawaii, Iowa, Kentucky, Louisiana, New Jersey, New Mexico, San Francisco-Oakland, San Jose-Monterey, Los Angeles, remainder of California, Seattle-Puget Sound, Utah**.** The population covered by SEER is comparable to the general U.S. population with regard to measures of poverty and education; however, it tends

to be somewhat more urban and has a higher proportion of foreign-born persons than the general U.S. population.

Weaknesses: Not representative of national or state population. Dental variables limited to oral cancer.

Years: Available 1973 to 2002.

URL: http://seer.cancer.gov

6. Water Fluoridation Reporting System (WFRS) The Water Fluoridation Reporting System was launched on the Internet in January 2000. It was developed by the Centers for Disease Control and Prevention (CDC) in collaboration with the Association of State and Territorial Dental Directors (ASTDD) to monitor water fluoridation in the U.S. WFRS allows State and tribal fluoridation managers to update information on characteristics of water systems and quality of water fluoridation (training, testing, whether system met daily testing requirements), fluoridation method (chemical), optimal fluoridation range which varies by State) for more than 56,000 community water systems over the Internet. For each system, WFRS includes such data as population served, fluoridation status (fluoridated, not fluoridated), contact information for the water system, relationships between water systems (some buy and sell water from/to others), quality data (monthly high, low and average concentrations, split sample analysis). 27 states actively participate, including Arizona, Arkansas, Colorado, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Nebraska, Nevada, New Hampshire, North Dakota, Oklahoma, Pennsylvania, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin

Weaknesses: Unsuitable for national or comprehensive State level analysis.

Years: Available 1998 to 2004.

URL: http://www.cdc.gov/nohss/dsmain.htm

7. Pregnancy Risk Assessment Monitoring System (PRAMS*)* is a surveillance project of the Centers for Disease Control and Prevention (CDC) and state health departments**.** Designed to

assess maternal attitudes and experiences before, during, and shortly after pregnancy. While this contains state level indicators, only 29 States currently participate. Contains questions on dental cleaning and recent dental visits.

Strengths: Targets and asks state specific, population-based data.

Weaknesses: Few dental variables. Unsuitable for local level analysis. Participation of only 57% of all States makes this unsuitable for any analysis requiring all States (i.e., comprehensive State analysis or national analysis). Years prior to 2002 survey contain *progressively* fewer States

Years: Survey is conducted and available annually; last available year 2003.

URL: http://www.cdc.gov/prams/

8. State Oral Health Surveys. State level data reporting the percentage of sealants, dental caries, and untreated decay for grades 1, 2, or 3. Only 14 States have made their data available to the public.

Weaknesses: Limited number of States. Variability of year in which survey occurred makes comparability among those 14 States even more limited.

Years: Latest year available varies by State, from early 1990s to 2002.

URL: http://www.cdc.gov/nohss/sealants/surveys.htm