# MEPS HC-051B:
# 2000 Dental Visits

# February 2003

**Agency for Healthcare Research and Quality**
**Center for Cost and Financing Studies**

## Table of Contents

# A. DATA USE AGREEMENT

Individual identifiers have been removed from the micro-data contained in these files. Nevertheless, under sections 308 (d) and 903 (c) of the Public Health Service Act (42 U.S.C. 242m and 42 U.S.C. 299 a-1), data collected by the Agency for Healthcare Research and Quality (AHRQ) and/or the National Center for Health Statistics (NCHS) may not be used for any purpose other than for the purpose for which they were supplied; any effort to determine the identity of any reported cases is prohibited by law.

Therefore in accordance with the above referenced Federal Statute, it is understood that:

1.    No one is to use the data in this data set in any way except for statistical reporting and analysis; and

2.    If the identity of any person or establishment should be discovered inadvertently, then (a) no use will be made of this knowledge, (b) the Director, Office of Management, AHRQ will be advised of this incident, (c) the information that would identify any individual or establishment will be safeguarded or destroyed, as requested by AHRQ, and (d) no one else will be informed of the discovered identity; and

3.    No one will attempt to link this data set with individually identifiable records from any data sets other than the Medical Expenditure Panel Survey or the National Health Interview Survey.

By using these data you signify your agreement to comply with the above stated statutorily based requirements with the knowledge that deliberately making a false statement in any matter within the jurisdiction of any department or agency of the Federal Government violates 18 U.S.C. 1001 and is punishable by a fine of up to $10,000 or up to 5 years in prison.

The Agency for Healthcare Research and Quality requests that users cite AHRQ and the Medical Expenditure Panel Survey as the data source in any publications or research based upon these data.

# B.  BACKGROUND

The Medical Expenditure Panel Survey (MEPS) provides nationally representative estimates of health care use, expenditures, sources of payment, and insurance coverage for the U.S. civilian noninstitutionalized population.  MEPS is cosponsored by the Agency for Healthcare Research and Quality (AHRQ) and the National Center for Health Statistics (NCHS).

MEPS is a family of three surveys.  The Household Component (HC) is the core survey and forms the basis for the Medical Provider Component (MPC) and part of the Insurance Component (IC). Together these surveys yield comprehensive data that provide national estimates of the level and distribution of health care use and expenditures, support health services research, and can be used to assess health care policy implications.

MEPS is the third in a series of national probability surveys conducted by AHRQ on the financing and use of medical care in the United States.  The National Medical Care Expenditure Survey (NMCES, also known as NMES-1) was conducted in 1977 and the National Medical Expenditure Survey (NMES-2) in 1987.  Since 1996, MEPS continues this series with design enhancements and efficiencies that provide a more current data resource to capture the changing dynamics of the health care delivery and insurance systems.

The design efficiencies incorporated into MEPS are in accordance with the Department of Health and Human Services (DHHS) Survey Integration Plan of June 1995, which focused on consolidating DHHS surveys, achieving cost efficiencies, reducing respondent burden, and enhancing analytical capacities.  To advance these goals, MEPS includes linkage with the National Health Interview Survey (NHIS) - a survey conducted by NCHS from which the sample for the MEPS HC is drawn - and enhanced longitudinal data collection for core survey components.  The MEPS HC augments NHIS by selecting a sample of NHIS respondents, collecting additional data on their health care expenditures, and linking these data with additional information collected from the respondents' medical providers, employers, and insurance providers.

## 1.0       Household Component

The MEPS HC, a nationally representative survey of the U.S. civilian noninstitutionalized population, collects medical expenditure data at both the person and household levels. The HC collects detailed data on demographic characteristics, health conditions, health status, use of medical care services, charges and payments, access to care, satisfaction with care, health insurance coverage, income, and employment.

The HC uses an overlapping panel design in which data are collected through a preliminary contact followed by a series of five rounds of interviews over a 2 ½-year period. Using computer-assisted personal interviewing (CAPI) technology, data on medical expenditures and use for two calendar years are collected from each household. This series of data collection rounds is launched each subsequent year on a new sample of households to provide overlapping panels of survey data and, when combined with other ongoing panels, will provide continuous and current estimates of health care expenditures.

The sampling frame for the MEPS HC is drawn from respondents to NHIS. NHIS provides a nationally representative sample of the U.S. civilian noninstitutionalized population, with oversampling of Hispanics and blacks.

## 2.0     Medical Provider Component

The MEPS MPC supplements and/or replaces information on medical care events reported in the MEPS HC by contacting medical providers and pharmacies identified by household respondents. The MPC sample includes all home health agencies and pharmacies reported by HC respondents. Office-based physicians, hospitals, and hospital physicians are also included in the MPC but may be subsampled at various rates, depending on burden and resources, in certain years.

Data are collected on medical and financial characteristics of medical and pharmacy events reported by HC respondents. The MPC is conducted through telephone interviews and record abstraction.

## 3.0     Insurance Component

The MEPS IC collects data on health insurance plans obtained through private and public-sector employers. Data obtained in the IC include the number and types of private insurance plans offered, benefits associated with these plans, premiums, contributions by employers and employees, eligibility requirements, and employer characteristics.

Establishments participating in the MEPS IC are selected through three sampling frames:

- A list of employers or other insurance providers identified by MEPS HC respondents who report having private health insurance at the Round 1 interview.

- A Bureau of the Census list frame of private sector business establishments.

- The Census of Governments from Bureau of the Census.

To provide an integrated picture of health insurance, data collected from the first sampling frame (employers and insurance providers identified by MEPS HC

respondents) are linked back to data provided by those respondents.  Data from the two Census Bureau sampling frames are used to produce annual national and state estimates of the supply and cost of private health insurance available to American workers and to evaluate policy issues pertaining to health insurance.  National estimates of employer contributions to group insurance from the MEPS IC are used in the computation of Gross Domestic Product (GDP) by the Bureau of Economic Analysis.

The MEPS IC is an annual panel survey.  Data are collected from the selected organizations through a prescreening telephone interview, a mailed questionnaire, and a telephone follow-up for nonrespondents.

## 4.0       Survey Management

MEPS data are collected under the authority of the Public Health Service Act. They are edited and published in accordance with the confidentiality provisions of this act and the Privacy Act. NCHS provides consultation and technical assistance.

As soon as data collection and editing are completed, the MEPS survey data are released to the public in staged releases of summary reports, microdata files and compendiums of tables.  Data are released through MEPSnet, an online interactive tool developed to give users the ability to statistically analyze MEPS data in real time.  Summary reports and compendiums of tables are released as printed documents and electronic files. Microdata files are released as electronic files.

Selected printed documents are available through the AHRQ Publications Clearinghouse. Write or call:

> AHRQ Publications Clearinghouse
> Attn: (publication number)
> P.O. Box 8547
> Silver Spring, MD 20907
> 800-358-9295
> 410-381-3150 (callers outside the United States only)
> 888-586-6340 (toll-free TDD service; hearing impaired only)

Be sure to specify the AHRQ number of the document you are requesting.

Additional information on MEPS is available from the MEPS project manager or the MEPS public use data manager at the Center for Cost and Financing Studies, Agency for Healthcare Research and Quality.

# C. TECHNICAL AND PROGRAMMING INFORMATION

## 1.0     General Information

This documentation describes one in a series of public use event files from the 2000 Medical Expenditure Panel Survey (MEPS) Household Component (HC).  Released as an ASCII data file and a SAS transport file, the 2000 Dental public use file provides detailed information on dental events for a nationally representative sample of the civilian noninstitutionalized population of the United States.  Data from the Dental file can be used to make estimates of dental event utilization and expenditures for calendar year 2000. As illustrated below, this file consists of MEPS survey data obtained in the 2000 portion of Round 3 and Rounds 4 and 5 for Panel 4, as well as Rounds 1, 2 and the 2000 portion of Round 3 for Panel 5 (i.e., the rounds for the MEPS panels covering calendar year 2000).
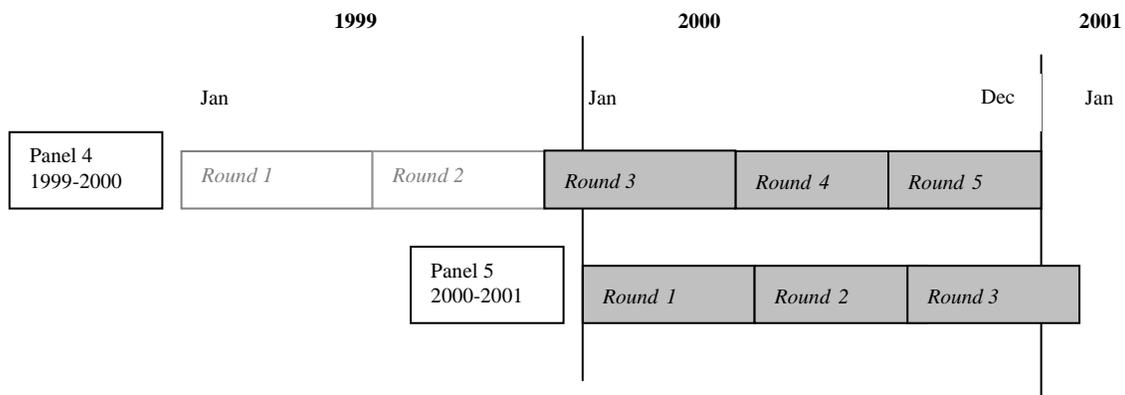


Each record on this event file represents a unique dental event; that is, a dental event reported by the household respondent.  Counts of dental event utilization are based entirely on household reports. Dental events were not included in the Medical Provider Component (MPC); therefore, all expenditure and payment data on the Dental event file are reported by the household.

Data from this event file can be merged with other 2000 MEPS HC data files for the purposes of appending person-level data such as demographic characteristics or health insurance coverage to each Dental record.

This file can also be used to construct summary variables of expenditures, sources of payment, and related aspects of the dental event.  Aggregate annual person-level information on the use of dental events and other health services use is provided on the MEPS 2000 Full Year Consolidated Data File where each record represents a MEPS sampled person.

The following documentation offers a brief overview of the types and levels of data provided, and the content and structure of the file and the codebook. It contains the following sections:

> Data File Information
> Sample Weights
> Strategies for Estimation
> Merging/Linking MEPS Data Files
> References
> Variable - Source Crosswalk

For more information on MEPS HC survey design, see S. Cohen, 1997; J. Cohen, 1997; and S. Cohen, 1996. A copy of the MEPS HC survey instrument used to collect the information on the dental file is available on the MEPS web site at the following address: <http**://**www.meps.ahrq.gov>.

## 2.0 Data File Information

The 2000 Dental public use data set consists of one event-level data file.  The file contains characteristics associated with the dental event and imputed expenditure data. For users wanting to impute expenditures, pre-imputed data are available through the CCFS data center. Please visit the CCFS Data Center web site for details: <http://www.meps.ahrq.gov/>.  The data user/analyst is forewarned that the imputation of expenditures will necessitate a sizable commitment of resources: financial, staff, and time.

The 2000 Dental public use data set contains 22,582 dental event records; of these records, 22,086 are associated with persons having a positive person-level weight (PERWT00F). This file includes dental event records for all household survey respondents who resided in eligible responding households and reported at least one dental event. Each record represents one household-reported dental event that occurred during calendar year 2000.  Dental visits known to have occurred before January 1, 2000 and after December 31, 2000 are not included on this file.  Some household respondents may have multiple dental events and thus will be represented in multiple records on this file.  Other household respondents may have reported no dental events and thus will have no records on this file. These data were collected during the 2000 portion of Round 3, and Rounds 4 and 5 for Panel 4, as well as Rounds 1, 2, and the 2000 portion of Round 3 for Panel 5 of the MEPS HC.  The persons represented on this file had to meet either (a) or (b) below:

> a) Be classified as a key in-scope person who responded for his or her entire period of 2000 eligibility (i.e., persons with a positive 2000 full-year person-level weight (PERWT00F > 0)), or

b) Be an eligible member of a family all of whose key in-scope members have a positive person-level weight (PERWT00F > 0). (Such a family consists of all persons with the same value for FAMIDYR.) That is, the person must have a positive full-year family-level weight (FAMWT00F >0). Note that FAMIDYR and FAMWT00F are variables on the 2000 Population Characteristics file.

Persons with no dental events for 2000 are not included on this file but are represented on the 2000 MEPS person-level files. A codebook for the data file is provided in files H51BCB.PDF and H51BCB.ASP.

Each dental event record includes the following: date of the dental event; type of provider seen; whether or not visit was due to an accident; reason for dental event; procedure(s) associated with the dental event; whether or not medicines were prescribed; flat fee information; imputed sources of payment; total payment and total charge of the dental event expenditure; and a full-year person-level weight.

Data from this file can be merged with the MEPS 2000 Full Year Population Characteristics File using the unique person identifier, DUPERSID, to append person-level information such as demographic or health insurance characteristics to each record. Dental events can also be linked to the MEPS 2000 Prescribed Medicine File. Please see section 5.0 0 and the 2000 Appendix for details on how to merge MEPS data files.

Panel 4 cases (PANEL00 = 4 on the MEPS 2000 person-level file) can also be linked back to the 1999 MEPS HC Public Use Data Files. However, the user should be aware that at this time no weight is being provided to facilitate two-year analysis of Panel 4 data.

## 2.1    Codebook Structure

For each variable on the Dental Events file, both weighted and unweighted frequencies are provided in the codebook files (H51BCB.PDF and H51BCB.ASP). The codebook and data file sequence list variables in the following order:

Unique person identifier
Unique dental event identifier
Dental characteristic variables
Imputed expenditure variables
Weight and variance estimation variables

**2.2     Reserved Codes**

The following reserved code values are used:

| Value | Definition |
|---|---|
| -1 INAPPLICABLE | Question was not asked due to skip pattern. |
| -7 REFUSED | Question was asked and respondent refused to answer question. |
| -8 DK | Question was asked and respondent did not know answer. |
| -9 NOT ASCERTAINED | Interviewer did not record the data. |

Generally, values of -1, -7, -8, and -9 for non-expenditure variables have not been edited on this file.  The values of -1 and -9 can be edited by the data users/analysts by following the skip patterns in the HC survey questionnaire (located on the MEPS web site: <http://www.meps.ahrq.gov/>).

**2.3     Codebook Format**

The codebook describes an ASCII data set (although the data are also being provided in a SAS transport file).  The following codebook items are provided for each variable:

| Identifier | Description |
|---|---|
| Name | Variable name (maximum of 8 characters) |
| Description | Variable descriptor (maximum of 40 characters) |
| Format | Number of bytes |
| Type | Type of data: numeric (indicated by NUM) or character (indicated by CHAR) |
| Start | Beginning column position of variable in record |
| End | Ending column position of variable in record |

**2.4     Variable Source and Naming Conventions**

In general, variable names reflect the content of the variable, with an eight-character limitation. All imputed/edited variables end with an "X."

### 2.4.1 Variable - Source Crosswalk

Variables were derived from the HC survey questionnaire or from the CAPI. The source of each variable is identified in Section D "Variable - Source Crosswalk" in one of four ways:

(1) Variables derived from CAPI or assigned in sampling are so indicated as "Capi derived" or "Assigned in sampling," respectively;

(2) Variables which come from one or more specific questions have those questionnaire sections and question numbers indicated in the "Source" column; questionnaire sections are identified as:
- FF - Flat Fee section
- DN - Dental Event section
- CP - Charge Payment section

(3) Variables constructed from multiple questions using complex algorithms are labeled "Constructed" in the "Source" column; and

(4) Variables that have been edited or imputed are so indicated.

### 2.4.2 Expenditure and Sources of Payment Variables

The names of the expenditure and sources of payment variables follow a standard convention, are seven characters in length, and end in an "X" indicating edited/imputed. Please note that imputed means that a series of logical edits, as well as an imputation process to account for missing data, have been performed on the variable.

The total sum of payments and 12 source of payment are named in the following way:

The first two characters indicate the type of event:

IP - inpatient stay  OB - office-based visit
ER - emergency room visit  OP - outpatient visit
HH - home health visit  DV - dental visit
OM - other medical equipment  RX - prescribed medicine

In the case of the source of payment variables, the third and fourth characters indicate:

| | |
|---|---|
| SF - self or family | OF - other Federal Government |
| MR – Medicare | SL - State/local government |
| MD – Medicaid | WC - Workers' Compensation |
| PV - private insurance | OT - other insurance |
| VA – Veterans Administration | OR - other private |
| TR – TRICARE | OU - other public |
| | XP - sum of payments |

In addition, the total charge variable is indicated by TC in the variable name.

The fifth and sixth characters indicate the year (00). The seventh character, "X," indicates the variable is edited/imputed.

For example, DVSF00X is the edited/imputed amount paid by self or family for 2000 dental expenditures.

## 2.5 File Contents

### 2.5.1 Survey Administration Variables

#### 2.5.1.1 Person Identifiers (DUID, PID, DUPERSID)

The dwelling unit ID (DUID) is a five-digit random number assigned after the case was sampled for MEPS. The three-digit person number (PID) uniquely identifies each person within the dwelling unit. The eight-character variable DUPERSID uniquely identifies each person represented on the file and is the combination of the variables DUID and PID. For detailed information on dwelling units and families, please refer to the documentation for the 2000 Full Year Population Characteristics File.

#### 2.5.1.2 Record Identifiers (EVNTIDX, FFEEIDX)

EVNTIDX uniquely identifies each dental event (i.e., each record on the dental file) and is the variable required to link dental events to data files containing details on prescribed medicines (MEPS 2000 Prescribed Medicines file). For details on linking see Section 5.0 or the MEPS 2000 Appendix File, HC-051I.

FFEEIDX is a constructed variable that uniquely identifies a flat fee group, that is, all events that were part of a flat fee payment situation. For example, a charge for orthodontia is typically covered in a flat fee arrangement where all visits are covered under one flat fee dollar amount. These events would have the same value for FFEEIDX. FFEEIDX identifies a flat fee payment situation that was identified using information from the Household Component.

### 2.5.1.3    Record Indicator (EVENTRN)

EVENTRN indicates the round in which the dental event was reported.  Please note: Rounds 3 (partial), 4, and 5 are associated with MEPS survey data collected from Panel 4.  Likewise, Rounds 1, 2, and 3 (partial) are associated with data collected from Panel 5.

### 2.5.2    Dental Event Variables

This file contains variables describing dental events reported by household respondents in the Dental Section of the MEPS HC survey questionnaire.

### 2.5.2.1    Date of Visit (DVDATEYR – DVDATEDD)

There are three variables which indicate the day, month and year a dental event occurred (DVDATEDD, DVDATEMM, DVDATEYR, respectively). These variables have not been edited or imputed.

### 2.5.2.2    Type of Provider Seen (GENDENT - DENTYPE)

Respondents were asked about the type of provider seen during the dental visit (e.g., general dentist, dental hygienist, or orthodontist).  More than one type of provider may have been identified on an event record.

### 2.5.2.3    Treatment, Procedures, and Services (EXAMINE - DENTMED)

Respondents were asked about the types of services or treatments received during the visit (EXAMINE - TMDTMJ), such as root canal or x-rays, and whether or not the visit was because of an accident (DENTINJ).  More than one type of service or treatment may have been identified on an event record.  Some procedures or services identified in DENTOTHR as "Dental services other specify" have been edited to appropriate procedure and service categories.  Both the edited and unedited versions of these variables are included on the file only if editing was done.  Therefore, the variable list may differ from year to year.  DENTMED indicates whether or not the respondent received a prescription medication, including free samples, during the dental visit.

### 2.5.3    Flat Fee Variables (FFEEIDX, FFDVTYPE, FFBEF00, FFTOT01)

### 2.5.3.1    Definition of Flat Fee Payments

A flat fee is the fixed dollar amount a person is charged for a package of services provided during a defined period of time.  Examples would be an orthodontist's fee, which covers multiple visits; or a dental surgeon's fee, which covers surgical procedure and post-surgical care.  A flat fee group is the set of medical services that are covered under the same flat fee payment situation.  The flat fee groups represented on the dental file include flat fee groups where at least one of the health care events, as reported by the HC respondent, occurred during 2000.  By definition, a flat fee group can span multiple years.  Furthermore, a single person can have multiple flat fee groups.

### 2.5.3.2    Flat Fee Variable Descriptions

### 2.5.3.2.1  Flat Fee ID (FFEEIDX)

As noted earlier in Section 2.5.1.2 "Record Identifiers," the variable FFEEIDX uniquely identifies all events that are part of the same flat fee group for a person. On any 2000 MEPS event file, every event that is part of a specific flat fee group will have the same value for FFEEIDX. Note that prescribed medicine and home health events are never included in a flat fee group and FFEEIDX is not a variable on those event files.

### 2.5.3.2.2  Flat Fee Type (FFDVTYPE)

FFDVTYPE indicates whether the 2000 dental event is the "stem" or "leaf" of a flat fee group.  A stem (records with FFDVTYPE = 1) is the initial dental service (event) which is followed by other dental events that are covered under the same flat fee payment.  The leaves of the flat fee group (records with FFDVTYPE = 2) are those dental events that are tied back to the initial medical event (the stem) in the flat fee group. These "leaf" records have their expenditure variables set to zero. For the dental visits that are not part of a flat fee payment situation, the FFDVTYPE is set to -1, "INAPPLICABLE".

### 2.5.3.2.3  Counts of Flat Fee Events that Cross Years (FFBEF00, FFTOT01)

As described in Section 2.5.3.1, a flat fee payment situation covers multiple events and the multiple events could span multiple years.  For situations where a 2000 dental visit is part of a group of events, and some of the events occurred before or after 2000, counts of the known events are provided on the dental record.  Variables that indicate events occurring before or after 2000 are the following:

> FFBEF00 -- indicates total number of pre-2000 events in the same flat fee group as the 2000 dental event. This count would not include 2000 dental events.

FFTOT01 -- indicates the number of 2001 medical events expected
to be in the same flat fee group as the 2000 dental event record.

### 2.5.3.3    Caveats of Flat Fee Groups

Data users/analysts should note that flat fee payment situations are common on the dental
file.  There are 4,201 dental events that are identified as being part of a flat fee payment
group.  In general, every flat fee group should have an initial visit (stem) and at least one
subsequent visit (leaf).  There are some situations where this is not true. For some of
these flat fee groups, the initial visit reported occurred in 2000, but the remaining visits
that were part of this flat fee group occurred in 2001.  In this case, the 2000 flat fee group
represented on this file would consist of one event (the stem).  The 2001 "leaf" events
that are part of this flat fee group are not represented on the file.  Similarly, the household
respondent may have reported a flat fee group where the initial visit began in 1999 but
subsequent visits occurred during 2000.  In this case, the initial visit would not be
represented on the file.  This 2000 flat fee group would then only consist of one or more
leaf records and no stem.

### 2.5.4    Expenditure Data

### 2.5.4.1    Definition of Expenditures

Expenditures on this file refer to what is paid for dental services.  More specifically,
expenditures in MEPS are defined as the sum of payments for care received, including
out-of-pocket payments and payments made by private insurance, Medicaid, Medicare
and other sources. The definition of expenditures used in MEPS differs slightly from its
predecessors, the 1987 NMES and 1977 NMCES surveys, where "charges" rather than
sum of payments were used to measure expenditures.  This change was adopted because
charges became a less appropriate proxy for medical expenditures during the 1990's due
to the increasingly common practice of discounting.  Although measuring expenditures as
the sum of payments incorporates discounts in the MEPS expenditure estimates, the
estimates do not incorporate any payment not directly tied to specific medical care visits,
such as bonuses or retrospective payment adjustments paid by third party payers. Another
general change from the two prior surveys is that charges associated with uncollected
liability, bad debt, and charitable care (unless provided by a public clinic or hospital) are
not counted as expenditures because there are no payments associated with those
classifications.  While charge data are provided on this file, data users/analysts should
use caution when working with this data because a charge does not typically represent
actual dollars exchanged for services or the resource costs of those services, nor are they
directly comparable to the resource costs of those services, nor are they directly
comparable to the expenditures defined in the 1987 NMES. For details on expenditure
definitions, please reference the following, "Informing American Health Care Policy"
(Monheit et al., 2000).  AHRQ has developed factors to apply to the 1987 NMES

expenditure data to facilitate longitudinal analysis.  These factors can be assessed via the CCFS data center.  For more information see the Data Center section of the MEPS web site at <http://www.meps.ahrq.gov/>.

### 2.5.4.2    Data Editing and Imputation Methodologies of Expenditure Variables

The general methodology used for editing and imputing expenditure data is described below. The MPC did not include either the dental events or other medical expenditures (such as glasses, contact lenses, and hearing devices).  Therefore, although the general procedures remain the same, for dental and other medical expenditures, editing and imputation methodologies were applied only to household-reported data. Please see below for details on the differences between these editing/imputation methodologies.  Separate imputations were performed for flat fee and simple events, as well.

### 2.5.4.2.1  General Data Editing Methodology

Logical edits were used to resolve internal inconsistencies and other problems in the HC survey-reported data.  The edits were designed to preserve partial payment data from households and providers, and to identify actual and potential sources of payment for each household-reported event.  In general, these edits accounted for outliers, copayments or charges reported as total payments, and reimbursed amounts that were reported as out-of-pocket payments.  In addition, edits were implemented to correct for misclassifications between Medicare and Medicaid and between Medicare HMOs and private HMOs as payment sources. These edits produced a complete vector of expenditures for some events, and provided the starting point for imputing missing expenditures in the remaining events.

### 2.5.4.2.2  General Hot-Deck Imputation

A weighted sequential hot-deck procedure was used to impute for missing expenditures as well as total charge.  This procedure uses survey data from respondents to replace missing data, while taking into account the respondents' weighted distribution in the imputation process.  Classification variables vary by event type in the hot-deck imputations, but total charge and insurance coverage are key variables in all of the imputations.  Separate imputations were performed for nine categories of medical provider care: inpatient hospital stays, outpatient hospital department visits, emergency room visits, visits to physicians, visits to non-physician providers, dental services, home health care by certified providers, home health care by paid independents, and other medical expenses. Within each event type file, separate imputations were performed for flat fee and simple events.  After the imputations were finished, visits to physician and non-physician providers were combined into a single medical provider file.  The two categories of home care also were combined into a single home health file.

### 2.5.4.2.3  Dental Data Editing and Imputation

Expenditures on visits to dentists were developed in a sequence of logical edits and imputations.  The household edits were used to correct obvious errors in the reporting of expenditures, and to identify actual and potential sources of payments.  Some of the edits were global (i.e., applied to all events).  Others were hierarchical and mutually exclusive.  One of the more important edits separated flat fee events from simple events.  This edit was necessary because groups of events covered by a flat fee (i.e., a flat fee bundle) were edited and imputed separately from individual events each covered by a single charge (i.e., simple events).  Dental services were imputed as flat fee events if the charges covered a package of health care services (e.g., orthodontia), and all of the services were part of the same event type (i.e., a pure bundle).  If a bundle contained more than one type of event, the services were treated as simple events in the imputations (See Section 2.5.3 for more detail on the definition and imputation of events in flat fee bundles.)

Logical edits were also used to sort each event into a specific category for the imputations.  Events with complete expenditures were flagged as potential donors for the hot-deck imputations, while events with missing expenditure data were assigned to various recipient categories.  Each event was assigned to a recipient category based on the extent of its missing charge and expenditure data.  For example, an event with a known total charge but no expenditure information was assigned to one category, while an event with a known total charge and partial expenditure information was assigned to a different category.  Similarly, events without a known total charge and no or partial expenditure information were assigned to various recipient categories.

The logical edits produced nine recipient categories for events with missing data.  Eight of the categories were for events with a common pattern of missing data and a primary payer other than Medicaid.  Medicaid events were imputed separately because persons on Medicaid rarely know the provider's charge for services or the amount paid by the state Medicaid program.  As a result, the total charge for Medicaid-covered services was imputed and discounted to reflect the amount that a state program would pay for the care.

Separate hot-deck imputations were used to impute missing data in each of the other eight recipient categories.  The donor pool included "free events" because, in some instances, providers are not paid for their services.  These events represent charity care, bad debt, provider failure to bill, and third party payer restrictions on reimbursement in certain circumstances.  If free events were excluded from the donor pool, total expenditures would be over-counted because the distribution of free event among complete events (donors) is not represented among incomplete events (recipients).

### 2.5.4.4 Imputation Flag Variable (IMPFLAG)

Only one imputation flag was created for 2000 event files. This flag, IMPFLAG, is a six-category variable that indicates if the event contains complete Household Component (HC) or Medical Provider Component (MPC) data, was fully or partially imputed, or was imputed in the capitated imputation process (for OP and MV events only). The following list identifies how the imputation flag is coded; the categories are mutually exclusive.

> IMPFLAG=0 not eligible for imputation (includes zeroed out and leaf events)
>
> IMPFLAG=1 complete HC data
>
> IMPFLAG=2 complete MPC data (not applicable to DV events)
>
> IMPFLAG=3 fully imputed
>
> IMPFLAG=4 partially imputed
>
> IMPFLAG=5 complete MPC data through capitation imputation (not applicable to DV events)

### 2.5.4.5 Flat Fee Expenditures

The approach used to count expenditures for flat fees was to place the expenditure on the first visit of the flat fee group. The remaining visits have zero payments. Thus, if the first visit in the flat fee group occurred prior to 2000, all of the events that occurred in 2000 will have zero payments. Conversely, if the first event in the flat fee group occurred at the end of 2000, the total expenditure for the entire flat fee group will be on that event, regardless of the number of events it covered after 2000. See Section 2.5.3 for details on the flat fee variables.

### 2.5.4.6 Zero Expenditures

As noted above, there are some dental events reported by respondents where the payments were zero. This could occur for several reasons including (1) free care was provided, (2) bad debt was incurred, (3) care was covered under a flat fee arrangement beginning in an earlier year, or (4) follow-up visits were provided without a separate charge (e.g., after a surgical procedure). If all of the medical events for a person fell into one of these categories, then the total annual expenditures for that person would be zero.

### 2.5.4.7    Sources of Payment

In addition to total expenditures, variables are provided which itemize expenditures according to major source of payment categories. These categories are:

1.    Out-of-pocket by user or family,
2.    Medicare,
3.    Medicaid,
4.    Private Insurance,
5.    Veterans Administration, excluding TRICARE,
6.    TRICARE, formerly CHAMPUS/CHAMPVA,
7.    Other Federal sources - includes Indian Health Service, Military Treatment Facilities, and other care by the Federal government,
8.    Other State and Local Source - includes community and neighborhood clinics, State and local health departments, and State programs other than Medicaid,
9.    Workers' Compensation, and
10.   Other Unclassified Sources - includes sources such as automobile, homeowner's, liability, and other miscellaneous or unknown sources.

Two additional source of payment variables were created to classify payments for events with apparent inconsistencies between insurance coverage and sources of payment based on data collected in the survey. These variables include:

11.   Other Private - any type of private insurance payments reported for persons not reported to have any private health insurance coverage during the year as defined in MEPS, and
12.   Other Public - Medicare/Medicaid payments reported for persons who were not reported to be enrolled in the Medicare/Medicaid program at any time during the year.

Though relatively small in magnitude, data users/analysts should exercise caution when interpreting the expenditures associated with these two additional sources of payment. While these payments stem from apparent inconsistent responses to health insurance and source of payment questions in the survey, some of these inconsistencies may have logical explanations. For example, private insurance coverage in MEPS is defined as having a major medical plan covering hospital and physician services. If a MEPS sampled person did not have such coverage but had a single service type insurance plan (e.g., dental insurance) that paid for a particular episode of care, those payments may be classified as "other private." Some of the "other public" payments may stem from confusion between Medicaid and other state and local programs or may be from persons who were not enrolled in Medicaid, but were presumed eligible by a provider who ultimately received payments from the program.

### 2.5.4.8    Dental Expenditure Variables (DVSF00X- DVTC00X)

DVSF00X - DVOT00X are the 12 sources of payment.  DVTC00X is the total charge, and DVXP00X is the sum of the 12 sources of payment for the Dental expenditures. The 12 source of payment are: self/family (DVSF00X), Medicare (DVMR00X), Medicaid (DVMD00X), private insurance (DVPV00X), Veterans Administration (DVVA00X), TRICARE (DVTR00X), other Federal sources (DVOF00X), State and Local (non-federal) government sources (DVSL00X), Worker's Compensation (DVWC00X), other private insurance (DVOR00X), other public insurance (DVOU00X), and other insurance (DVOT00X).

### 2.5.4.9    Rounding

Expenditure variables on the 2000 dental file have been rounded to the nearest penny. Person-level expenditure information to be released on the MEPS 2000 Person-Level Expenditure File will be rounded to the nearest dollar. It should be noted that using the MEPS event files to create person-level totals will yield slightly different totals than those found on the person-level expenditure file.  These differences are due to rounding only.  Moreover, in some instances, the number of persons having expenditures on the event files for a particular source of payment may differ from the number of persons with expenditures on the person-level expenditure file for that source of payment.  This difference is also an artifact of rounding only.  Please see the MEPS 2000 Appendix File, HC-051I, for details on such rounding differences.

### 3.0      Sample Weight (PERWT00F)

### 3.1      Overview

There is a single full year person-level weight (PERWT00F) assigned to each record for each key, in-scope person who responded to MEPS for the full period of time that he or she was in-scope during 2000. A key person either was a member of an NHIS household at the time of the NHIS interview, or became a member of such a household after being out-of-scope at the time of the NHIS (examples of the latter situation include newborns and persons returning from military service, an institution, or living outside the United States).  A person is in-scope whenever he or she is a member of the civilian noninstitutionalized portion of the U.S. population.

### 3.2      Details on Person Weight Construction

The person-level weight PERWT00F was developed in several stages. Person level weights for Panels 4 and 5 were created separately.  The weighting process for each panel included an adjustment for nonresponse over time and poststratification. Poststratification was achieved by controlling to Current Population Survey (CPS)

population estimates based on five variables. Variables used in the establishment of person-level poststratification control figures included: census region (Northeast, Midwest, South, West); MSA status (MSA, non-MSA); race/ethnicity (Hispanic, black but non-Hispanic, and other); sex; and age.   A 2000 composite weight was then formed by multiplying each panel weight by .5 and then poststratifying the resulting weight to the same set of CPS-based control totals.  When poverty status information derived from income variables became available, a final poststratification was done on the resulting weight variable, including poverty status (below poverty, from 100 to 125 percent of poverty, from 125 to 200 percent of poverty, from 200 to 400 percent of poverty, at least 400 percent of poverty) as well as the original five poststratification variables in the establishment of control totals.

### 3.2.1      MEPS Panel 4 Weight

The person-level weight for MEPS Panel 4 was developed using the 1999 full year weight for an individual as a "base" weight for survey participants present in 1999.  For key, in-scope respondents who joined an RU some time in 2000 after being out of scope in 1999, the 1999 family weight associated with the family the person joined served as a "base" weight.  The weighting process included an adjustment for nonresponse over Rounds 4 and 5 as well as poststratification to population control figures for December 2000.   These control figures were derived by scaling back the population totals obtained from the March 2000 CPS to reflect the December 2000 CPS estimated population distribution across age and sex categories as of December 2000. Variables used in the establishment of person-level poststratification control figures included: census region (Northeast, Midwest, South, West); MSA status (MSA, non-MSA); race/ethnicity (Hispanic, black but non-Hispanic, and other); sex, and age. Overall, the weighted population estimate for the civilian noninstitutionalized population on December 31, 2000 is 275,158,755.  Key, responding persons not in-scope on December 31, 2000 but in-scope earlier in the year retained, as their final Panel 4 weight, the weight after the nonresponse adjustment.

### 3.2.2      MEPS Panel 5 Weight

The person-level weight for MEPS Panel 5 was developed using the MEPS Round 1 person-level weight as a "base" weight.  For key, in-scope respondents who joined an RU after Round 1, the Round 1 family weight served as a "base" weight.  The weighting process included an adjustment for nonresponse over Round 2 and the 2000 portion of Round 3 as well as poststratification to the same population control figures for December 2000 used for the MEPS Panel 4 weights.  The same five variables employed for Panel 4 poststratification (census region, MSA status, race/ethnicity, sex, and age) were used for Panel 5 poststratification.  Similarly, for Panel 5, key, responding persons not in-scope on December 31, 2000 but in-scope earlier in the year retained, as their final Panel 5 weight, the weight after the nonresponse adjustment.

Note that the MEPS round 1 weights (for both panels with one exception as noted below) incorporated the following components: the original household probability of selection for the NHIS; ratio-adjustment to NHIS-based national population estimates at the household (occupied dwelling unit) level; adjustment for nonresponse at the dwelling unit-level for Round 1; and poststratification to figures at the family and person-level obtained from the March 2000 CPS data base.

### 3.2.3    The Final Weight for 2000

Variables used in the establishment of person-level poststratification control figures included: poverty status (below poverty, from 100 to 125 percent of poverty, from 125 to 200 percent of poverty, from 200 to 400 percent of poverty, at least 400 percent of poverty); census region (Northeast, Midwest, South, West); MSA status (MSA, non-MSA); race/ethnicity (Hispanic, black but non-Hispanic, and other); sex; and age. Overall, the weighted population estimate for the civilian noninstitutionalized population for December 31, 2000 is 275,158,755 (PERWT00F>0 and INSC1231=1). The weights of some persons out-of-scope on December 31, 2000 were also poststratified. Specifically, the weights of persons out-of-scope on December 31, 2000 who were inscope some time during the year and also entered a nursing home during the year were poststratified to a corresponding control total obtained from the 1996 MEPS Nursing Home Component. The weights of persons who died while inscope during 2000 were poststratified to corresponding estimates derived using data obtained from the Medicare Current Beneficiary Survey (MCBS) and Vital Statistics information provided by the National Center for Health Statistics (NCHS). Separate control totals were developed for the "65 and older" and "under 65" civilian, noninstitutionalized populations.

### 3.2.4    Coverage

The target population for MEPS in this file is the 2000 U.S. civilian noninstitutionalized population. However, the MEPS sampled households are a subsample of the NHIS households interviewed in 1998 (Panel 4) and 1999 (Panel 5). New households created after the NHIS interviews for the respective Panels and consisting exclusively of persons who entered the target population after 1998 (Panel 4) or after 1999 (Panel 5) are not covered by MEPS. Neither is previously out of scope persons who join an existing household but are unrelated to the current household residents. Persons not covered by a given MEPS panel thus include some members of the following groups: immigrants; persons leaving the military; U.S. citizens returning from residence in another country; and persons leaving institutions. The set of uncovered persons constitutes only a small proportion of the MEPS target population.

## 4.0    Strategies for Estimation

This file is constructed for efficient estimation of utilization, expenditures, and sources of payment for dental events and to allow for estimates of number of persons with dental utilization in 2000.

## 4.1    Variables with Missing Values

It is essential that the analyst examine all variables for the presence of negative values used to represent missing values. For continuous or discrete variables, where means or totals may be taken, it may be necessary to set minus values to values appropriate to the analytic needs.  That is, the analyst should either impute a value or set the value to one that will be interpreted as missing by the computing language used.  For categorical and dichotomous variables, the analyst may want to consider whether to recode or impute a value for cases with negative values or whether to exclude or include such cases in the numerator and/or denominator when calculating proportions.

Methodologies used for the editing/imputation of expenditure variables (e.g., sources of payment, flat fee, and zero expenditures) are described in Section 2.5.4.

## 4.2    Basic Estimates of Utilization, Expenditures, and Sources of Payment

While the examples described below illustrate the use of event-level data in constructing person-level total expenditures, these estimates can also be derived from the person-level expenditure file unless the characteristic of interest is event specific.

In order to produce national estimates related to dental visits utilization, expenditures, and sources of payment, the value in each record contributing to the estimates must be multiplied by the weight (PERWT00F) contained on that record.

**Example 1**

For example, the total number of dental visits, for the civilian noninstitutionalized population of the U.S. in 2000 is estimated as the sum of the weight (PERWT00F) across all dental visit event records. That is,

$$\Sigma \, W_j = 287{,}430{,}258 \qquad\qquad (1)$$

**Example 2**

Subsetting to records based on characteristics of interest expands the scope of potential estimates. For example, the estimate for the mean out-of-pocket payment per dental visit (for those who had such expenses greater than 0) should be calculated as the weighted mean of amount paid by self/family. That is,

$$(\sum W_j X_j)/(\sum W_j) = \$118.54 \tag{2}$$

where
$$\sum W_j = 231,195,283 \text{ and } X_j = DVSF00X_j$$

for all records with $DVXP00X_j > 0$.

This gives \$118.54 as the estimated mean amount of out-of-pocket payment of expenditures associated with dental visits and 231,195,283 as an estimate of the total number of dental visits with expenditures. Both of these estimates are for the civilian noninstitutionalized population of the U.S. in 2000.

**Example 3**

Another example would be to estimate the average proportion of total expenditures (where event expense is greater than 0) paid by private insurance per dental visit. This should be calculated as the weighted mean of the proportion of the total dental visit expenditures paid by private insurance at the dental visit-level. That is,

$$(\sum W_j Y_j)/(\sum W_j) = 0.4506 \tag{3}$$

where

$$\sum W_j = 231,195,283 \text{ and } Y_j = DVPV00X_j / DVXP00X_j$$

for all records with $DVXP00X_j > 0$.

This gives 0.4506 as the estimated mean proportion of total expenditures paid by private insurance for dental visits with expenditures for the civilian noninstitutionalized population of the U.S. in 2000.

**4.3    Estimates of the Number of Persons with Dental Visits**

When calculating an estimate of the total number of persons with dental visits, users can use a person-level file or this event file. However, this event file must be used when the measure of interest is defined at the event-level. For example, to estimate the number of

persons in the civilian noninstitutionalized population of the U.S. with a dental visit in 2000 because of accident or injury, this event file must be used.  This would be estimated as

$$\sum W_i X_i \qquad \text{across all unique persons i on this file} \qquad (4)$$

where
  $W_i$ is the sampling weight (PERWT00F) for person i
and
  $X_i \quad = 1 \qquad$ if $\text{DENTINJ}_j = 1$ for any dental visit record of person i
  $\quad\ \ = 0 \qquad$ otherwise.

## 4.4       Person-Based Ratio Estimates

### 4.4.1       Person-Based Ratio Estimates Relative to Persons with Dental Visits

This file may be used to derive person-based ratio estimates. However, when calculating ratio estimates where the denominator is persons, care should be taken to properly define and estimate the unit of analysis up to person-level. For example, the mean expense for persons with dental visits is estimated as,

$$(\sum W_i Z_i)/(\sum W_i) \qquad \text{across all unique persons i on this file} \qquad (5)$$

where
  $W_i$ is the sampling weight (PERWT00F) for person i
and
  $Z_i \quad = \sum \text{DVXP00X}_j \qquad$ across all dental visit events of person i.

### 4.4.2       Person-Based Ratio Estimates Relative to the Entire Population

If the ratio relates to the entire population, this file cannot be used to calculate the denominator, as only those persons with at least one dental visit are represented on this data file.  In this case, the Full Year Consolidated File, which has data for all sampled persons, must be used to estimate the total number of persons (i.e., those with events and those without events).

For example, to estimate the proportion of civilian noninstitutionalized population of the U.S. with at least one dental visit due to accident or injury, the numerator would be derived from data on this event file, and the denominator would be derived from data on the person-level file. That is,

$$(\sum W_i Z_i)/(\sum W_i) \text{ across all unique persons i on the MEPS HC-person-level file (6)}$$

where

$W_i$ is the sampling weight (PERWT00F) for person i

and

$Z_i$  = 1      if $DENTINJ_j$ = 1 for any dental visit record of person i

      = 0      otherwise.

## 4.5      Sampling Weights for Merging Previous Releases of MEPS Household Data with this Event File

There have been several previous releases of MEPS Household Survey public use data. Unless a variable name common to several files is provided, the sampling weights contained on these data files are file-specific. The file-specific weights reflect minor adjustments to eligibility and response indicators due to birth, death, or institutionalization among respondents.

For estimates from a MEPS data file that do not require merging with variables from other MEPS data files, the sampling weight(s) provided on that data file are the appropriate weight(s). When merging one MEPS Household data file to another, the major analytical variable (i.e., the dependent variable) determines the correct sampling weight to use.

## 4.6      Variance Estimation (VARPSU00, VARSTR00)

To obtain estimates of variability (such as the standard error of sample estimates or corresponding confidence intervals) for estimates based on MEPS survey data, one needs to take into account the complex sample design of MEPS. Various approaches can be used to develop such estimates of variance including use of the Taylor Series or various replication methodologies. Replicate weights have not been developed for the MEPS 2000 data. Variables needed to implement a Taylor Series estimation approach are provided in the file and are described in the paragraph below.

Using a Taylor Series approach, variance estimation strata and the variance estimation PSUs within these strata must be specified. The corresponding variables on the MEPS full year utilization database are VARSTR00 and VARPSU00, respectively. Specifying a "with replacement" design in a computer software package such as SUDAAN (Shah, 1996) should provide standard errors appropriate for assessing the variability of MEPS survey estimates. It should be noted that the number of degrees of freedom associated with estimates of variability indicated by such a package may not appropriately reflect the actual number available. For MEPS sample estimates for characteristics generally distributed throughout the country (and thus the sample PSUs), there are over 100 degrees of freedom associated with the corresponding estimates of variance. The following illustrates these concepts using two examples from section 4.2.

**Examples 2 and 3 from Section 4.2**

Using a Taylor Series approach, specifying VARSTR00 and VARPSU00 as the variance estimation strata and PSUs (within these strata) respectively and specifying a "with replacement" design in a computer software package (i.e., SUDAAN) will yield standard error estimate of $3.90 and 0.0097 for the estimated mean of out-of-pocket payment and the estimated mean proportion of total expenditures paid by private insurance respectively.

**5.0      Merging/Linking MEPS Data Files**

Data from this file can be used alone or in conjunction with other files.  This section provides instructions for linking the 2000 dental file with other 2000 MEPS public use files, including the 2000 prescribed medicines file and a 2000 person-level file.

**5.1      Linking a 2000 Person-Level File to the 2000 Dental File**

Merging characteristics of interest from other MEPS files (e.g., 2000 Full Year Population Characteristics File or 2000 Prescribed Medicines File) expands the scope of potential estimates. For example, to estimate the total number of dental events of persons with specific demographic characteristics (such as age, race, and sex), population characteristics from a person-level file need to be merged onto the dental file. This procedure is shown below.  The MEPS 2000 Appendix File, HC-051I, provides additional details of how to merge other MEPS data files.

> 1)  Create data set PERSX by sorting the 2000 Full Year Population Characteristics File, by the person identifier, DUPERSID.  Keep only variables to be merged onto the dental file and DUPERSID.
>
> 2)  Create data set DENT by sorting the dental event file by person identifier, DUPERSID.
>
> 3)  Create final data set NEWDENT by merging these two files by DUPERSID, keeping only records on the dental event file.

The following is an example of SAS code which completes these steps:

```
PROC SORT DATA=HCXXX (KEEP=DUPERSID AGE31X AGE42X
AGE53X SEX RACEX EDUCYR) OUT=PERSX;
 BY DUPERSID;
RUN;
```

```
PROC SORT DATA=DENT;
  BY DUPERSID;
RUN;

DATA NEWDENT;
  MERGE DENT (IN=A) PERSX(IN=B);
  BY DUPERSID;
  IF A;
RUN;
```

The MEPS 2000 Appendix File, HC-051I, provides examples of how to merge other MEPS data files.

## 5.2 Linking the 2000 Dental File to the 2000 Prescribed Medicines File

Due to survey design issues, there are limitations/caveats that data users/analysts must keep in mind when linking the different files.  These limitations/caveats are listed below. For detailed linking examples, including SAS code, data users/analysts should refer to the MEPS 2000 Appendix File, HC-051I.

## 5.2.1 Limitations/Caveats of RXLK (the Prescribed Medicine Link File)

The RXLK file provides a link from the MEPS event files to the 2000 Prescribed Medicine Event File.  When using RXLK, data users/analysts should keep in mind that one dental visit can link to more than one prescribed medicine record. Conversely, a prescribed medicine event may link to more than one dental visit or different types of events. When this occurs, it is up to the data user/analyst to determine how the prescribed medicine expenditures should be allocated among those medical events.

# REFERENCES

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# D.  VARIABLE-SOURCE CROSSWALK

# VARIABLE-SOURCE CROSSWALK

# FOR MEPS HC-051B: 2000 DENTAL VISITS

## Survey Administration Variables

| Variable | Description | Source |
|----------|-------------|--------|
| DUID | Dwelling unit ID | Assigned in sampling |
| PID | Person number | Assigned in sampling |
| DUPERSID | Person ID (DUID + PID) | Assigned in sampling |
| EVNTIDX | Event ID | Assigned in Sampling |
| EVENTRN | Event round number | CAPI derived |
| FFEEIDX | Flat fee ID | CAPI derived |

## Dental Events Variables

| Variable | Description | Source |
|----------|-------------|--------|
| DVDATEYR | Event date – year | CAPI derived |
| DVDATEMM | Event date – month | CAPI derived |
| DVDATEDD | Event date – day | CAPI derived |
| GENDENT | General dentist seen | DN03 |
| DENTHYG | Dental hygienist seen | DN03 |
| DENTTECH | Dental technician seen | DN03 |
| DENTSURG | Dental surgeon seen | DN03 |
| ORTHODNT | Orthodontist seen | DN03 |
| ENDODENT | Endodontist seen | DN03 |
| PERIODNT | Periodontist seen | DN03 |
| DENTYPE | Other dental specialist seen | DN03 |
| EXAMINE | General exam or consultation | DN04 |
| CLENTETX | Edited CLENTETH | DN04 (Edited) |
| CLENTETH | Cleaning, prophylaxis, or polishing | DN04 |

| Variable | Description | Source |
|---|---|---|
| JUSTXRAY | X-rays, radiographs or bitewings | DN04 |
| FLUORIDE | Fluoride treatment | DN04 |
| SEALANT | Sealant application | DN04 |
| FILLINGX | Edited FILLING | DN04 (Edited) |
| FILLING | Fillings | DN04 |
| INLAY | Inlays | DN04 |
| CROWNSX | Edited CROWNS | DN04 (Edited) |
| CROWNS | Crowns or caps | DN04 |
| ROOTCANX | Edited ROOTCANL | DN04 (Edited) |
| ROOTCANL | Root canal | DN04 |
| GUMSURGX | Edited GUMSURG | DN04 (Edited) |
| GUMSURG | Periodontal scaling, root planing or gum | DN04 |
| RECLIVIS | Periodontal recall visit | DN04 |
| EXTRACT | Extraction, tooth pulled | DN04 |
| IMPLANT | Implants | DN04 |
| ABSCESS | Abscess or infection treatment | DN04 |
| ORALSURX | Edited ORALSURG | DN04 (Edited) |
| ORALSURG | Oral surgery | DN04 |
| BRIDGESX | Edited BRIDGES | DN04 (Edited) |
| BRIDGES | Bridges | DN04 |
| DENTUREX | Edited DENTURES | DN04 (Edited) |
| DENTURES | Dentures or partial dentures | DN04 |
| REPAIR | Repair of bridges/dentures or relining | DN04 |
| ORTHDONX | Edited ORTHDONT | DN04 (Edited) |
| ORTHDONT | Orthodontia, braces or retainers | DN04 |
| WHITEN | Bonding, whitening or bleaching | DN04 |
| TMDTMJ | Treatment for TMD or TMJ | DN04 |
| DENTPROX | Edited DENTPROC | DN04OV (Edited) |

| Variable | Description | Source |
|---|---|---|
| DENTPROC | Other dental procedures | DN04OV |
| DENTOTHX | Edited DENTOTHR | DN04 (Edited) |
| DENTOTHR | Other specified dental procedures | DN04 |
| DENTINJ | Visit because of accident or injury | DN01 |
| DENTMED | Received medicine including free sample | DN05 |

## Flat Fee Variables

| Variable | Description | Source |
|---|---|---|
| FFDVTYPE | Flat fee bundle | Constructed |
| FFBEF00 | Total # of visits in FF before 2000 | FF05 |
| FFTOT01 | Total # of visits in FF after 2000 | FF10 |

## Imputed Expenditure Variables

| Variable | Description | Source |
|---|---|---|
| DVSF00X | Amount paid, self/family (Imputed) | CP Section (Edited) |
| DVMR00X | Amount paid, Medicare (Imputed) | CP Section (Edited) |
| DVMD00X | Amount paid, Medicaid (Imputed) | CP Section (Edited) |
| DVPV00X | Amount paid, private insurance (Imputed) | CP Section (Edited) |
| DVVA00X | Amount paid, Veterans Administration (Imputed) | CP Section (Edited) |
| DVTR00X | Amount paid, TRICARE (Imputed) | CP Section (Edited) |
| DVOF00X | Amount paid, other federal (Imputed) | CP Section (Edited) |
| DVSL00X | Amount paid, state & local government (Imputed) | CP Section (Edited) |
| DVWC00X | Amount paid, workers' compensation (Imputed) | CP Section (Edited) |
| DVOR00X | Amount paid, other private insurance (Imputed) | Constructed |
| DVOU00X | Amount paid, other public (Imputed) | Constructed |
| DVOT00X | Amount paid, other insurance (Imputed) | CP Section (Edited) |
| DVXP00X | Sum of DVSF00X – DVOT00X (Imputed) | Constructed |

| Variable | Description | Source |
|---|---|---|
| DVTC00X | Household reported total charge (Imputed) | CP Section (Edited) |
| IMPFLAG | Imputation status | Constructed |

## Weights

| Variable | Description | Source |
|---|---|---|
| PERWT00F | Final Person Level Weight, 2000 | Constructed |
| VARSTR00 | Variance estimation stratum, 2000 | Constructed |
| VARPSU00 | Variance estimation PSU, 2000 | Constructed |