

TECHNICAL NOTES AND SURVEY DOCUMENTATION FOR THE MEPS INSURANCE COMPONENT (MEPS IC)

I. OVERVIEW

The MEPS IC is an annual survey of establishments that collects information about employer-sponsored health insurance offerings in the United States.

The MEPS IC sample of employers is actually two different samples:

- The List Sample - a nationally representative sample of employers developed from Census Bureau list frames.
- The Household Link Sample - a sample of employers of persons who respond to the MEPS Household Component (MEPS HC) survey.

Although these two samples are from different sources and the data are collected for different analytical purposes, the questions asked of the respondents are identical. Thus, to save costs and reduce respondent burden by having a single data collection, editing, and imputation process, these two survey collections have been integrated into a single data collection effort. **All of the tables posted on the MEPS IC web site are derived from the List Sample. This technical note focuses exclusively on the data from the List Sample.** [Click here](#) for information about the MEPS-IC Household Link Sample.

MEPS IC tables are available for each year beginning with 1996. The most recently available data are for 2003. Tables for 2004 will be available no later than August 1, 2006.

II. SAMPLE DESIGN OF THE MEPS-IC LIST SAMPLE

The MEPS IC List Sample consists of a random sample of private-sector business establishments with at least one employee and a sample of State and local government employers. In 1996, there was a separate, independent sample of self-employed persons with no employees. This sample was dropped after 1996 due to poor response rates and because many self-employed did not have insurance as self-employed individuals. Instead they obtained insurance through another employer or through their spouse's employment. Federal government employees are not sampled because complete data on Federal government employees and their health insurance are already available directly from the U.S. Office of Personnel Management.

The List Sample is selected from two list frames maintained by the Bureau of the Census:

- The Business Register (formerly referred to as the Standard Statistical Establishment List)
- The Census of Governments (COG)

The Business Register is a list of private-sector establishments with at least one employee that is developed and maintained by the Census Bureau. It is derived from administrative records (Kreps, Slater and Plotkin, 1979). The Business Register is updated on a regular basis as administrative records become available. The MEPS IC sample for each year is drawn from the Business Register available in the Spring of the following year. This frame contains businesses that existed at the beginning of the sample year and is supplemented with business births received through the third quarter of that year.

The Governments Division of the Census Bureau produces the Census of Governments once every 5 years. The MEPS IC survey samples are drawn from the most recently available

version. The 1996 MEPS IC sample was drawn from the 1992 COG; the 1997 through 2001 samples were drawn from the 1997 COG; and the 2002 and 2003 samples were drawn from the 2002 COG.

➤ State samples and estimates

In addition to national estimates, the sample allocation and design of the IC list sample also support reliable State level estimates of:

- establishment characteristics (for example, the percent of establishments that offer health insurance),
- employee characteristics (for example, the percent of employees that enroll in health insurance plans), and
- premiums and employee contributions for those enrolled in employer-sponsored health insurance plans.

Survey cost constraints initially prevented the fielding of a sufficiently large sample to support State estimates for all 50 States and the District of Columbia every year. (For survey purposes, the District of Columbia is treated as a State.) In 1996, estimates were made for the 40 most populous States. From 1997 through 2002, the MEPS IC rotated the samples in the 20 least populated States to insure that every State received an adequate sample size to make State-level estimates at least once every four years. In 2003 and 2004, there was sufficient MEPS-IC sample to support state-level estimates in all 50 States and the District of Columbia.

The twenty-one States that were not allocated sufficient sample for estimates each year during the years 1996 - 2002 are listed in the table on the following page. An "X" indicates the year(s) for which State estimates are available for that State. A blank indicates that estimates are not available for that State in that year. The State rotation schedule was modified in 2001 to reflect changes in State population rankings based on the 2000 Census.

Federal agencies, State governments, and non-profit organizations have occasionally provided additional funding to increase the MEPS-IC samples in selected States. The two most common reasons for funding larger State samples are 1) to improve the accuracy of the State estimates for that year or 2) to provide sufficient sample for production of State estimates in a year where no estimates would have been produced otherwise. In the table below, States that received increased samples are listed by year. In 2001 and 2002, the increased samples resulted in additional States for which estimates could be produced. These additional estimates are provided on the MEPS IC web site to all data users.

YEAR	STATES WITH ADDITIONAL SAMPLE PURCHASES
1998	Arizona, Massachusetts, Washington
2000	Arkansas, Wisconsin
2001	Delaware*, Vermont*, Kansas**, New Hampshire**, South Dakota**, Wisconsin
2002	Hawaii*, Maine*, Montana*, Maryland, Virgin Islands***
2003	Virginia

* States received an additional sample that supported a full set of State estimates not otherwise possible.

** States received an additional sample that supported estimates for smaller firms only.

*** The U.S. Virgin Islands received a special sample to support a full set of estimates. These data are not included in the calculation of totals for the United States.

States with Smaller Populations for Which MEPS-IC Estimates Are Not Available Each Year; 1996 – 2002.

“X” indicates that State-level estimates ARE available for that year. Blank indicates that there are no estimates for that year.

STATE	1996	1997	1998	1999	2000	2001	2002
Alaska		X				X	
Arkansas	X	X	X	X	X	X	
Delaware			X			X*	X
District of Columbia		X				X	
Hawaii	X	X		X		X	X*
Idaho			X			X	
Kansas	X	X	X	X	X	**	X
Maine	X	X		X		X	X*
Mississippi	X	X		X	X	X	X
Montana				X			X*
Nebraska	X		X	X	X		X
Nevada	X	X		X		X	X
New Hampshire			X		X	**	X
New Mexico	X		X		X		X
North Dakota					X		
Rhode Island		X		X		X	
South Dakota					X	**	
Utah	X	X	X		X	X	X
Vermont				X		X*	
West Virginia	X		X		X		X
Wyoming			X				X

* States received an additional sample that supported a full set of State estimates not otherwise possible.

** States received an additional sample that supported estimates for smaller firms only.

➤ **Sample selection process**

Original List Sample Design (1996 – 2002)

Details on the original list sample design and allocation are available in [MEPS Methodology Report No. 6](#). The original design considered the governments and private sectors together in order to yield allocations which produced estimates with a desired level of error at the state and national level for the entire set of employers, both public and private sectors. The first step was the allocation of sample to each State to meet both the national and state requirements. After this initial allocation took place, the sample was then allocated within each state between the public and private sectors based upon each sector’s proportion of total state employment. Within each sector, these allocations were further allocated to individual strata. This design allowed for sufficient sample in the largest states to support national and state estimates, while smaller states below a certain size had minimum sample sizes assigned. These minimum sample sizes were generally much larger than the sample otherwise required to support reliable national estimates. However, the minimal sample sizes were required to support estimates for the individual states.

Within each state, strata were formed based upon employment sizes and sequential sample selection methods were used to select the final samples. Because the public and private sector lists of employers were maintained on two different lists, sampling for public and private sectors was done separately once allocations were determined.

A unique feature of the MEPS-IC list sample is a restriction on the expected numbers of establishments in the sample for a private sector firm. (A firm is an entity which controls one or more business establishments or locations. For instance, General Motors is a firm and an individual General Motors plant location is an establishment.) The reason for this restriction was to limit the amount of collection burden on an individual firm, since most firms require collection of information for all their establishments at a central location. Because the MEPS-IC required collection of both the household and list samples of establishments and the sample of establishments in the household sample was predetermined, the restriction on firm size took place only on the list sample and was very strict. This restriction significantly raised the design effect of the list sample estimates.

Beginning with the 2000 survey, MEPS IC completed its industry code conversion from SIC codes to NAICS (the North American Industry Classification System) and the frame was sorted by NAICS codes. More information on the conversion from SIC to NAICS is available at the [Census Bureau NAICS web site](#).

Revised List Sample Design (2003 – beyond)

Details on the revised list sample design and allocation are available in [Working Paper #04008 Updates to the Medical Expenditure Panel Survey Insurance Component List Sample Design, 2004](#).

Several major changes were started with the 2003 MEPS-IC sample design and completed with the selection of the 2004 sample.

- The overall sample for the private sector was increased to allow for State level estimates for all 50 States and the District of Columbia. This was an improvement over the original sample design where estimates were produced for 40 States. Due to an overall increase in the sample, this over sampling of 11 more States should not effect the quality of the national estimates.
- An improved stratification and allocation process was implemented for the private sector. This should lead to improved estimates at the State level using the same sample size. Better State estimates will also mean better national estimates.
- A change was made to the process to limit the sample for individual firms. The new process does not limit sample for individual firms as severely and should reduce the error for private sector estimates made for firms with 1000 or more employees. It should also reduce errors for private sector estimates made for the entire population. This should be true for both State and national level estimates.
- Finally, the non certainty government sample was changed to an optimal allocation within each Census Division. This should improve both national and Census Division government estimates. This allocation should also improve estimates for some of the largest States where an estimate can be made.

➤ Imputation of missing data

Individual respondents in the MEPS IC occasionally do not respond to all of the questions presented on the questionnaire. As is the custom for most surveys, important items that are missing are completed for all respondents using a process called imputation. This process provides the same full set of critical items for each respondent to anyone who wants to perform analyses with the data. In the case of the MEPS IC, the core of the imputation process is a form of "hot-deck" imputation, by which information for missing items is derived for an individual

respondent using information from a similar respondent that has provided the necessary information.

The initial imputation process for the MEPS IC can be found in [MEPS Methodology Report No. 10, December 2001](#). A significant expansion of the initial imputation process is documented in the paper [Additional Imputations of Employer Information for the MEPS Insurance Component Since 1996](#).

III. DATA COLLECTION PROCESS

For all sample units except State governments and very large local governments, each sample unit is initially prescreened by telephone. The purpose of this screening is to:

- obtain the name and title of an appropriate person in each establishment to whom a MEPS IC questionnaire will be mailed,
- verify the address and identify any businesses that no longer exist, have closed, or have merged with others, and
- determine whether or not health insurance was offered to employees at this establishment during the prior calendar year. (The MEPS IC survey is a retrospective survey, asking about health insurance offerings during the previous calendar year. This is necessary in order to collect data for both the list sample and the household link sample cases at the same time.)

If the employer did not offer health insurance in the previous year, a brief set of questions about establishment characteristics are asked and the case is considered a complete respondent. This provides a quick and inexpensive method to collect the necessary data from the large number of employers who did not offer health insurance to their employees.

If the employer did offer health insurance in the previous year, several brief questions are asked and the employer is mailed a MEPS IC questionnaire. All establishments not reached during the screening process are also mailed questionnaires. If an establishment fails to return the initial mail questionnaire, a follow-up mailing is sent a few weeks later. Establishments that also fail to respond to the second mailing are contacted by telephone and the survey is conducted using Computer-Assisted Telephone Interviewing technology.

For the purpose of this survey, establishments indicating that they offered health insurance to their employees must answer key information on their health insurance offerings to be considered full respondents. Callbacks are made to respondents not providing all of the key information in order to complete their questionnaires. Respondents that do not provide this key information, but are known to offer insurance, are considered partial respondents. Establishments that were not prescreened, did not return the mail questionnaires and did not respond to follow-up phone calls are classified as non-respondents. For this group, the availability of health insurance for employees at the establishment is unknown.

Data for large governments and large private-sector firms, reporting for multiple establishments, are collected using specialized staff and forms. This is done to make the collection process simple and flexible and to reduce the burden as much as possible for these important respondents. Sometimes multiple telephone contacts and personal visits are needed to collect these data. For some of these collections, survey staff abstract data directly from company records and plan brochures if the firm insists on such methods.

➤ **Definitions of terms**

- Establishment – A particular workplace or physical location where business is conducted or services or industrial operations are performed.
- Firm – A business entity consisting of one or more business establishments under common ownership or control. Also known as an enterprise. A firm represents the entire organization, including the company headquarters and all divisions, subsidiaries and branches. A firm may consist of a single-location establishment or multiple establishments. In the case of a single-location firm, the firm and establishment are identical.
- Health insurance plan – An insurance contract that provides hospital and/or physician coverage to an employee or retiree for an agreed-upon fee for a defined benefit period, usually a year.
- Offer health insurance – To make available or contribute to the cost of any health insurance plan for current employees and/or retirees.
- Self-insured plan – A plan offered by employers who directly assume the major cost of health insurance for their employees. Some self-insured plans bear the entire risk. Others insure against large claims by purchasing stop-loss coverage. Some self-insured employers contract with an insurance company or third party administrator for claims processing and other administrative services.
- Single coverage – Health insurance that covers the employee only. Also known as employee-only coverage.
- Family coverage – Health insurance that covers the employee and one or more members of their family, as defined by the plan. If a plan offers more than one arrangement for family coverage, the costs for a family of four are collected.
- Employee-plus-one coverage – Health insurance that covers the employee and one other family member at a lower premium than family coverage. If the premiums vary between employee-plus-spouse and employee-plus-child coverage, the costs for employee-plus-child coverage are collected.
- Exclusive-provider plan – A plan in which the covered persons must go to providers associated with the plan for all non-emergency care in order for costs to be covered. Most health maintenance organizations (HMOs), individual practice associations (IPAs), and exclusive provider organizations (EPOs) are exclusive-provider plans.
- Any-provider plan – A plan that allows covered persons to go to the providers of their choice with no cost incentives to use a particular subset of providers. Most conventional-indemnity plans are any-provider plans.
- Mixed-provider plan – A plan that allows covered persons to go to any provider but there is a cost incentive to use a particular subset of providers. Most preferred provider organizations

(PPOs) and point-of-service (POS) plans are mixed-provider plans.

- Managed care plan – Either a mixed provider or exclusive provider plan.
- Employee – A person on the actual payroll. Excludes temporary and contract workers but includes the owner or manager if that person works at the firm.
- Enrollee - An employee that is enrolled in a health insurance plan offered by the employer. Enrollees do NOT include any dependents covered by the plan.
- Covered persons - An enrollee plus any dependents covered by a health insurance plan. The MEPS IC survey has no data on covered persons.
- Low-wage employee – From 1996 through 1999, a low-wage employee was defined as employee making \$6.50 per hour or less and that rate was not adjusted for increasing wage levels. Beginning with 2000, the definition of a low-wage employee was redefined as those earning at or below the 25th percentile for all hourly wages in the United States based on data from the Bureau of Labor Statistics. Using this new criterion, the dollar amount used to define this category will be adjusted each year based on the most recent wage data available so that the wage level will remain constant relative to overall wages from year-to-year. For 2000 through 2003, a low-wage employee was defined as someone who makes \$9.50 per hour or less; in 2004, it was raised to \$10.00 per hour. Making comparisons of changes across the 1999 - 2000 survey years regarding low-wage employees is not recommended.
- Wage quartiles – Four groups of private-sector establishments, each containing 25% of the total U.S. employment. Establishments in the lowest of the four quartiles (1st quartile) have lower average payrolls per employee (compensation excluding fringe benefits) than any establishment in the 2nd quartile. Establishments in the 2nd quartile have lower average payrolls than any establishment in the 3rd quartile, and establishments in the 4th (or highest) quartile have average payrolls greater than any establishment in the other three quartiles.
- Full-time employee – A term defined by the respondent. Generally, a full-time employee works 35 to 40 hours per week.
- Part-time employee – An employee not defined as full-time by the respondent.
- Firm size – The total number of employees for the entire firm as reported on the sample frame.
- Industry categories – The primary business activity as reported by the respondent. Industry categories are sometimes abbreviated in the tables (as shown in parenthesis in the list below) due to space limitations. From 1996 to 1999, the industries were based on SIC (Standard Industrial Classification) codes. Beginning in 2000, the industries were converted to NAICS (the North American Industry Classification System). Even those industry categories that retained the same name may not be comparable due to reclassification of specific businesses from one industry category to another. Making year-to-year comparisons of MEPS data by industries across the 1999 - 2000 boundary is not recommended. For more information on the SIC to NAICS conversion, visit the [Census Bureau NAICS web site](#).

SIC industry categories
(1996 - 1999 MEPS IC)

agriculture	(agric.)
fishing	(fish.)
forestry	(forest.)
mining	
manufacturing	
construction	
retail trade	
wholesale trade	
transportation	(transp.)
utilities	(util.)
communications	(commu.)
finance	(fin.)
insurance	(ins.)
real estate	(real est.)
services	

NAICS industry categories
(2000 + MEPS IC)

agriculture	(agric.)
fishing	(fish.)
forestry	(forest.)
mining	
manufacturing	
construction	
retail trade	
wholesale trade	
transportation	(transp.)
utilities	(util.)
financial services	(fin. svs.)
real estate	(real est.)
professional services	
other services	

- Industry group (groupings) – A set of one or more industry categories combined for data estimation and reporting purposes.
- Division (Census division) – The States are grouped in the tables by the following Census divisions:

New England :

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Middle Atlantic:

New Jersey
New York
Pennsylvania

East North Central:

Illinois
Indiana
Michigan
Ohio
Wisconsin

West North Central:

Iowa
Kansas
Minnesota
Missouri
Nebraska
North Dakota
South Dakota

South Atlantic:

Delaware
District of Columbia
Florida
Georgia
Maryland
North Carolina
South Carolina
Virginia
West Virginia

East South Central:

Alabama
Kentucky
Mississippi
Tennessee

West South Central:

Arkansas
Louisiana
Oklahoma
Texas

Mountain:

Arizona
Colorado
Idaho
Montana
Nevada
New Mexico
Utah
Wyoming

Pacific:

Alaska
California
Hawaii
Oregon
Washington

IV. ESTIMATION

In sample surveys like the MEPS IC, non-certainty sample establishments represent not only themselves but also other similar establishments in the survey population. Therefore, in order to produce the survey estimates and standard errors presented in the MEPS IC tables, weights must be created for all responding establishments. A brief description of this process is provided here.

During the sample design and selection process, each establishment on the frame is given a probability of selection that is dependent on its stratum. These probabilities vary among establishments and assure that the sample sizes in each stratum are equal to that required by the allocation scheme. The inverse of this probability of selection is the establishment's base weight. The use of the base weight and the formula

$$T = \sum_i weight_i X_i$$

provides an unbiased estimate of a total T, if there is no non-response.

Because there is non-response, respondents' weights are adjusted to account for non-response so that these weights, when used with responding establishment data, will reduce the bias attributable to survey non-response. To accomplish this, the sample is divided into cells similar to the original sampling strata and the weights for each respondent in a specific cell are adjusted upward by the same percentage. The sum of the adjusted weights for respondents in these cells is equal to the sum of the base weights for all in-scope sampled establishments in the cell. Because it is assumed that the expected value of all responding establishments in each individual cell defined is equal to that of all the eligible respondents, use of the adjusted weights with respondents should produce the desired unbiased estimates of totals. Additional details on the enrollment and expenditure estimation process are available in [MEPS Methodology Report No. 14, June 2003](#).

After adjustment for non-response, weights are post-stratified (Madow, Olkin, and Rubin, 1983.) using the frame of establishments in business during the last quarter of the year for which estimates would be made to produce control totals. For detailed information concerning construction of weights, see [MEPS Methodology Report No. 8, November 1999](#).

Although railroads are included in the sample, the 13 largest railroads are not included in the MEPS IC tables. Employment for these railroads can not be broken down by State so their inclusion would distort results for States in which the headquarters of these railroads are located.

➤ Reliability of estimates

For each table of estimates, a corresponding table of standard errors is provided. Standard errors are produced using the method of random groups. (Skinner, Holt and Smith, 1989.) The method is as follows:

- During the sequential sample selection process, each establishment selected is assigned a number corresponding to its place in the order of selection. These selection numbers are converted to 10 groups numbered 0 to 9 by assigning an establishment to the group determined by the last digit in its selection number. Thus, if the selection number were 73,

the establishment would be assigned to group 3. Each group can then be thought of as a subsample similar to the full sample with each unit with a chance of selection into the subsample that was one-tenth its chance of selection into the full sample.

- Using subsample weights that are 10 times the nonresponse adjusted weights of the full sample, ten subsample estimates, E_i , $i = 1, \dots, 10$ are made in addition to the full sample estimate, E .
- The standard error is calculated as:

$$Std\ Err = \left[\sqrt{\frac{(E_i - E)^2}{90}} \right]$$

➤ Table numbering system

The MEPS IC tables are numbered in a hierarchical structure that facilitates locating estimates, helps clarify specifically what the estimates are measuring, and provides a mechanism for calculating count estimates for tables where percentages are provided. The numbering structure also serves as the framework for the MEPSnet/IC interactive search tool.

- The first level of the table numbering system is by the following categories and by year:
 - I. Private-sector data by firm size and selected characteristics
 - II. Private-sector data by firm size and State
 - III. Public-sector data by government type, government size, and census division
 - IV. National totals for enrollees and cost of health insurance coverage for the private and public sectors
 - V. Private-sector data by industry groupings and State
 - VI. Private-sector data by ownership type and age of firm and State
 - VII. Private-sector data by proportion of employees who are full-time or low-wage and State
 - VIII. Private-sector data by average wage quartiles and State
- Within each of these table series, the tables are subsequently grouped into:
 - A. Establishment-level tables
 - B. Employee-level tables
 - C. Premiums, employee contributions, and enrollment tables for single coverage plans
 - D. Premiums, employee contributions, and enrollment tables for family coverage plans
 - E. Premiums, employee contributions, and enrollment tables for employee-plus-one coverage plans
- Tables within each of these categories are ordered based on their inter-relationships.

To clarify what each MEPS IC table is measuring, it will be helpful to use the table (Table 1) provided on the next page. For each of the MEPS IC table series (excluding Table IV), Table 1 identifies the denominator table of that table.

Examples of how to use this table to calculate approximate counts from the percentage estimates in the MEPS IC tables are provided in the next section.

Table 1 - Listing of MEPS IC Table Numbers and Denominators for Tables

Table Number	Denominator for Table		Table Number	Denominator for Table
A.1.				
A.1.a.	A.1.		C.1.	
A.2.	A.1.		C.1.a.	
A.2.a.	A.2.		C.1.b.	
A.2.b.	A.2.		C.1.c.	
A.2.b.(1).	A.2.		C.2.	
A.2.b.(2).	A.2.		C.2.a.	
A.2.b.(3).	A.2.		C.2.b.	
A.2.c.	A.2.		C.2.c.	
A.2.c.(1).	A.2.		C.3.	C.1.
A.2.c.(2).	A.2.		C.3.a.	C.1.a.
A.2.c.(3).	A.2.		C.3.b.	C.1.b.
A.2.d.	A.2.		C.3.c.	C.1.c.
A.2.e.	A.2.		C.4.	B.2.b.
A.2.f.	A.2		C.4.a.	C.4.
A.2.g.				
B.1.			D.1.	
B.1.a.	B.1.		D.1.a.	
B.2.	B.1.		D.1.b.	
B.2.a.	B.2.		D.1.c.	
B.2.a.(1).	B.2.a.		D.2.	
B.2.b.	B.2.		D.2.a.	
	B.2.b.		D.2.b.	
B.2.c.	B.2.		D.2.c.	
B.3.			D.3.	D.1.
B.3.a.	B.3.		D.3.a.	D.1.a.
B.3.b.	B.3.		D.3.b.	D.1.b.
B.3.b.(1).	B.3.b.		D.3.c.	D.1.c.
B.3.b.(1).(a).	B.3.b.(1).		D.4.	B.2.b.
B.3.b.(2).	B.3.b.		D.4.a.	D.4.
B.4.				
B.4.a.	B.4.		E.1.	
B.4.b.	B.4.		E.2.	
B.4.b.(1).	B.4.b.		E.3.	E.1.
B.4.b.(1).(a).	B.4.b.(1).		E.4.	B.2.b.
B.4.b.(2).	B.4.b.		E.4.a.	E.4.

Note: Denominators are available only for tables that provide percentage estimates.

➤ Calculation of approximate counts and their standard errors

Many of the MEPS IC tables contain percentage estimates instead of count estimates. For instance, Table I.B.2 gives the percentage of employees who work in establishments that offer health insurance. Table I.B.2.a gives the percentage of employees who work at establishments that offer health insurance and who are eligible for health insurance. For most tables of percentages, a count of the number of employees or establishments in any cell in the table can be calculated using data, for that cell, from the current table and one or more tables containing the denominator(s) for that cell.

To produce count estimates, one simply multiplies the cell values from the selected table and all of the denominators for that cell. For example, if one desired an estimate of total establishments that offer health insurance, one can find the percentage of these establishments in Table I.A.2 and determine from Table 1 on the previous page that Table I.A.1 contains the value in the denominator of this percentage.

Thus, the estimated total number of establishments that offer health insurance in 2002 is:

$$.572(\text{percentages must be converted to decimals}) \times 6,138,063 = 3,510,972.$$

The first number (.572) is from Table I.A.2 and the second (6,138,063) is from Table I.A.

An approximate standard error for this count estimate can be computed using this formula:

$$Err(Est(1) * Est(2)) = Est(1) * Est(2) \sqrt{\frac{Err(1)^2}{Est(1)^2} + \frac{Err(2)^2}{Est(2)^2}}$$

where Est(1) and Est(2) are the estimates from the two tables and Err(1) and Err(2) are the standard errors for those estimates.

$$Std. Err = (.572) * (6,138,063) \sqrt{\frac{(.003)^2}{(.572)^2} + \frac{(22,695)^2}{(6,138,063)^2}} = 22,530$$

For some tables, a hierarchical structure exists so more than two tables are needed to derive an approximate count. For example, look at Table I.B.2.a, the percentage of employees eligible for health insurance. Table I.B.2 is listed as its denominator for Table I.B.2.a and Table I.B.1 is the denominator for Table I.B.2. The values from all three tables, I.B.1, I.B.2, and I.B.2.a must be used to derive an estimate of the count. Thus, the estimated total number of employees eligible for health insurance in 2002 is .771 x .883 x 111,437,203 = 75,865,668, with the three values coming from Tables I.B.2.a, I.B.2, and I.B.1 respectively. Basically, one must multiply by a series of denominators until one reaches a table with numbers instead of percents (the shaded areas of the Table 1 on the previous page). The standard error for this count estimate can be computed by using a logical expansion of the standard error formula provided above.

V. Major changes to the MEPS-IC survey by year

Each year the MEPS-IC survey undergoes a number of changes in an effort to improve the existing survey while maintaining continuity from one year to the next. Listed below are the most significant changes that occurred in each year. In addition to the changes listed here, there were also changes to the wording and question order based on feedback from survey respondents.

Survey Year	Major Changes
1996	Initial year of the survey.
1997	- Retiree health insurance questions were dropped at the establishment-level and revised for collection at the company-level. - A rotation schedule to produce estimates for the 20 States with the smallest populations at least once every four years was introduced. - A significant expansion of the number of tables was made, a new table-numbering system (previously described) was introduced, and revised 1996 tables (using improved imputation and weighting methods) were reissued. The 1996 tables posted on the MEPS-IC website reflect these changes. - Company-level forms (15 and 15 S) were added for cases where data collection at the establishment-level was not feasible. - The sample of Self Employed with No Employees sample was dropped.
1998	- MEPSnet/IC – an interactive search mechanism that produces trend output for all available years was introduced. - Follow-up questionnaires (10M and 10MS) were added for interviews of multi-establishment respondents where the Computer Assisted Telephone Instrument was not functioning. - The “first” plan-level questionnaire was removed from the establishment and government questionnaires.
1999	- State-level estimates were expanded by providing three new sets of tables with estimates by industry groupings, ownership type, age of firm, and percent of full-time and low-wage employees. - The government questionnaire was split into front and rear parts – based on feedback from government respondents. - Attempts to collect both current year data in addition to retrospective data were dropped.
2000	- Retiree health insurance questions and estimates were significantly expanded. - The industry categories were changed to conform to the change from SIC codes to NAICS codes. Comparisons between 1999 and 2000 are not recommended. - The definition of a low-wage employee was changed so it would be automatically updated each year as wages increase or decrease. Comparisons by low-wage employees between 1999 and 2000 are not

	recommended.
Survey Year	Major Changes (Continued)
2001	- Employee-plus-one premiums and employee contributions were collected and new tables with these estimates were produced. - New State-level estimate tables by average wage quartiles were produced.
2002	- Post-data collection processes were changed to reduce the time it takes to post estimates on the MEPS Web site. - Additional sample was added and separate estimates were produced for the Virgin Islands.
2003	- First major change in the MEPS-IC list sample design since the beginning of the survey in 1996. See Working Paper #04008 Updates to the Medical Expenditure Panel Survey Insurance Component List Sample Design, 2004 for details. - First year that State estimates were produced for all 50 States and the District of Columbia. - More detailed questions were asked about the Prescription Drug benefits within the plans.

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