

New statistics for health insurance from the National Compensation Survey

Integrating compensation programs into the NCS provides new opportunities for calculating the relationships among the percentage of employers offering health insurance, the percentage of employees participating in health insurance plans, and the cost to employers for such plans

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Over the last several years, the Bureau of Labor Statistics has consolidated several of its compensation surveys into the National Compensation Survey (NCS). Combining the separate surveys into one integrated program provides greater efficiency in data collection and processing, and also provides greater flexibility in the calculation of compensation measures. Several new statistics are planned for publication from the NCS, which should give data users a more complete understanding of the compensation package a U.S. worker typically receives.

Data are available from the first collection period of the NCS. It is now possible to calculate trial estimates for the proposed statistics. This article describes the integration of the separate surveys into the NCS and presents trial statistics for health insurance.¹ The calculation of the trial statistics is just the first step in the development of the new measures. It will take some time to incorporate their calculation into the production process for regular release. Nonetheless, the statistics in this article are examples of the types of measures BLS hopes to publish in the future.

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Previous compensation surveys

The NCS combined the Employment Cost Index (ECI) Survey, the Employee Benefits Survey (EBS), and the Occupational Compensation Survey (OCS) Program. The ECI has been the most prominent of the compensation surveys. It shows employers' costs for wage and nonwage compensation relative to a base period using a Laspeyres formula.² Nonwage compensation covers an extensive list of employee benefits, including health insurance, pensions, paid leave, and legally-required benefits. BLS began reporting the ECI for benefits in 1981. From that time until 1995, growth in benefit compensation consistently outpaced growth in wage compensation. Then, during the second half of the 1990s, the trend reversed and benefits grew at a lower rate than wages. Since 2000, benefit costs have accelerated, growing more quickly than wages once again.³

As a measure of total compensation for U.S. workers, the ECI is the chief indicator of compensation inflation for the U.S. labor market. However, it does not provide any detail on the benefit packages workers receive. As a step to

providing such detail, BLS introduced the Employer Costs for Employee Compensation (ECEC) in 1987.⁴ The ECEC is based on the ECI data for the current period. It reports average compensation for wages and salaries and for 19 categories of benefits. In December 2003, the ECEC for total compensation was \$22.92 per hour worked for workers in private industry. Wages and salaries made up 71.9 percent of compensation, with an average of \$16.49. Benefits made up the remaining 28.1 percent, with an average of \$6.43. Of particular interest among the individual benefits, the cost per hour worked for health insurance averaged \$1.50 in December 2003, or 23 percent of total benefit costs.

Although the ECEC provides a good summary of the relative cost for the various pieces of the benefit package a worker typically receives, it does not describe the characteristics of those benefits. Detailed characteristics of plans have historically been the purview of the Employee Benefits Survey (EBS). The EBS reported the proportion of employees who participate in benefit plans with a particular provision or characteristic. The provisions ranged from the very broad, such as whether a health plan included dental coverage, to the very specific, such as whether a medical plan's limit to inpatient alcohol detoxification coverage was measured in days rather than dollars.

The EBS provided rich detail about benefit plans, but its drawback was the lag time between data collection and the published statistics. In contrast, the ECI is reported in the month after its reference period, and the ECEC is reported shortly thereafter, so their information is quite timely. Moreover, statistics from the ECI and the EBS programs did not connect employers' costs for the benefits with the provisions of the benefit plans. The integrated NCS allows both the timelier release of some of the data in plan provisions statistics and the publication of these data that link the costs of plans to their provisions.

The integrated NCS

Some integration of the ECI and EBS predates the introduction of the National Compensation Survey. The EBS sample was made up of establishments in the ECI sample as of the August prior to the EBS reference year. Establishments also needed to satisfy the size and ownership restrictions for the year, as the EBS reported statistics for medium and large private establishments in odd-numbered years, and for small private establishments and State and local government establishments in even-numbered years.⁵ After the ECI determined the composition of the EBS sample, however, their data collection was separate, which precluded combining the cost information with the provision information from the surveys.

The NCS completes the integration of the ECI and EBS. Cost, provision, and participation data will be collected by benefit

plan, which allows the costs of plans to be linked with their provisions. The cost data will be updated every 3 months, as required by the ECI, for the approximate 5 years the establishment is scheduled to remain in the NCS survey. Participation rates in the benefit plans, along with some broad provisions of the plans, will be updated annually to keep the information current. The more detailed characteristics of plans take longer for BLS to collect, compile, and verify; they will be collected exclusively when the establishment initially enters the sample.

Trial statistics for health insurance

Trial statistics for health insurance were calculated based on the integrated NCS data collection. The sample is restricted to private establishments. The reference month for most of the data is June 2003; almost all of the remaining data refer to either May or July 2003. The sample of establishments matches the sample used for the NCS statistics in "Employee Benefits in Private Industry, 2003" News Release USDL: 03-489.

There are four types of trial statistics: cost per employee, access rates, participation rates, and cost per participant. The ECEC has always measured the employer costs per employee, so the cost-per-employee statistics follow the formula used for the ECEC.⁶ The EBS measured participation rates in benefit plans with particular provisions, so the participation-rate statistics follow the formula used historically by the EBS.⁷ Cost-per-participant statistics are new under the NCS; they equal the sum of costs among benefit plans with a particular provision divided by the total number of participants in plans with the provision.

Access-rate statistics are also new under the NCS. To understand their calculation, it is important to become familiar with the sampling scheme used by the NCS. Sampling proceeds as follows:

- Establishments are selected for the sample.
- Within each selected establishment, a small number of individual employees are selected from an employee list.
- For each selected worker, the establishment is asked to define the worker's job according to the establishment's most detailed classification system.
- Data then are collected for all workers who hold the job.

The NCS does not use individual workers as its unit of observation because the ECI needs the unit to remain intact if a worker leaves the establishment or switches to another job.

In the calculation of the access-rate statistics, all workers

in the occupation are assumed to have access to a benefit plan if the establishment offers a plan to at least one of the workers in the occupation. The access rate then equals the number of employees with access to a plan divided by the total number of employees. (See box.)

Shown below is the first set of trial statistics on health insurance for workers in private industries in 2003.⁸ The bold type highlights statistics that are new under the NCS. The statistics are calculated using estimation methods that sometimes differ from the methods used for statistics published from the 2003 NCS. The units for the cost statistics are dollars per hour worked by the employee.

	<i>Employer cost per employee</i>	<i>Access rate</i>	<i>Participation rate</i>	<i>Employer cost per participant</i>
Health insurance plans	\$1.39	—	—	—
Medical	1.25	.69	.51	\$2.44
Stand-alone dental .....	.12	.28	.22	.52
Stand-alone vision .....	.02	.08	.06	.32

As noted, the cost per employee for health insurance is

Example of ncs microdata by benefit plan

Suppose there are 10 workers in an occupation from the NCS sample, each of whom works 2,000 hours per year. Six of the workers participate in medical plan A, two of the workers participate in medical plan B, and the remaining two workers decline medical coverage. The participation rate for the occupation in medical plans equals the sum of 6 and 2 divided by 10, which equals 0.8. Because at least one worker in the occupation participates in a medical plan, all workers in the occupation are assumed to have access to a medical plan, so the access rate equals 1.0.

Suppose the employer pays \$5,000 per year for each of the six participants in plan A, and \$3,000 for each of the two participants in plan B. The employer cost per employee for medical plans equals the sum of $6 \times (\$5,000/2,000)$ for plan A and $2 \times (\$3,000/2,000)$ for plans B divided by the 10 total workers in the occupation, which equals \$1.80 per hour worked for the occupation. The total participants in medical plans for the job is eight, so the employer cost per participant for medical plans equals the same numerator, $6 \times (\$5,000/2,000)$ plus $2 \times (\$3,000/2,000)$, divided by 8 participants, which equals \$2.25 per hour worked.

\$1.39 per hour worked. This statistic corresponds conceptually to the ECEC for health insurance, which is published every 3 months.⁹ Health insurance plans are then divided into three types: medical, stand-alone dental, and stand-alone vision. Medical plans that also have dental or vision coverage are included with medical to eliminate overlap among the categories. Of the employers' average cost of \$1.39 per hour, about 14 cents are for nonmedical health plans.

Also shown are the access and participation rates for each type of plan. The EBS always reported participation rates, but under the NCS, the goal is for the data to be timelier, because the participation rates will be kept up-to-date. In September 2003, BLS reported participation rates in health insurance plans for the March 2003 reference date.¹⁰ The reported rate for medical plans was 45 percent for workers in private industry. Note that this is lower than the 51 percent in the trial statistics shown above. However, in the news release, as well as in the articles by Carl Barsky and William Wiatrowski in this issue, the health plan type was not imputed if it could not be determined which type of coverage the plan included (medical, dental, vision, drug, or some combination).¹¹ The 8 percent of participants in a plan type that could not be determined were kept in a separate category. If the plan-type imputations are included, the participation rate in medical plans is raised to 51 percent.

As mentioned earlier, statistics on access to benefit plans are new under the NCS. For medical plans, 69 percent of workers have access to a medical plan through their occupation, which is 18 percentage points higher than the proportion of workers who participate in a medical plan.¹² Twenty-eight percent of workers have access to a stand-alone dental plan, and 8 percent have access to a stand-alone vision plan. However, dental and vision coverage are often included as part of a comprehensive health plan. The access rate to dental plans increases to 45 percent when comprehensive plans that include dental coverage are added to the stand-alone plans, and the access rate to vision plans increases to 28 percent when comprehensive plans that include vision coverage are added to the stand-alone plans.

The employer cost per participant for medical plans and for stand-alone dental and vision plans are also new under the NCS. Cost-per-employee statistics include both participants and nonparticipants, so they do not indicate whether the cost for a benefit is high because it is pervasive among workers or because it is very expensive for the few workers who receive it. This situation is clarified somewhat by the cost-per-participant statistics use of the NCS data collection by plan, as the cost-per-participant formula is compatible with describing employers' costs conditional of a particular plan provision.

Following are the June 2003 participation rates and employers costs per participant by type of medical plan for

workers in all private industries. Again, the statistics are calculated using estimation methods that sometimes differ from the methods used for statistics published from the 2003 NCS. The statistics in bold are new under the NCS. The units for the cost statistics are dollars per hour worked by the employee.

	<i>Participation rate for all employees</i>	<i>Participation rate for medical participants</i>	<i>Employer cost per participant</i>
Medical plans	0.51	1.00	\$2.44
Traditional indemnity .....	.04	.08	2.78
Indemnity in and out of network ....	.29	.56	2.44
Prepaid in and out of network ....	.08	.15	2.50
Prepaid in network only .....	.11	.21	2.28

The above tabulation repeats the cost per participant for medical plans of \$2.44 in table 1. It then shows the cost per participant for four types of medical plans. The estimate of the employer cost per participant is the highest for traditional indemnity plans, averaging \$2.78 per hour worked. Traditional indemnity plans allow the participant the choice of any provider without effect on reimbursement. A possible explanation for this plan having the highest employer cost per participant is that of the other three medical plan types, traditional indemnity plans impose the fewest cost containment measures on health providers. They continue to be relatively rare among the four types. Only 4 percent of workers participate in a traditional indemnity medical plan, which represents 8 percent of all participants in medical plans. The estimate of the employer cost per participant is the lowest for prepaid-in-network-only plans—previously classified under the EBS as a health maintenance organization (HMO)—at \$2.28 on average. Under this type of plan, the enrollee is only provided coverage if he or she stays within the network of providers. The most common type of medical plan, indemnity-in-and-out-of-network—previously classified under the EBS as a preferred provider organization (PPO)—has an average cost per participant of \$2.44, which is the same as the overall average. Under this plan, the enrollee may go outside the network of providers, but at a greater cost.

A recent trend in the provision of health insurance by employers has been toward employees explicitly helping to pay the cost. The following shows employee monthly premiums and employer monthly costs for workers in all private industries for June 2003. The statistics are calculated using estimation methods that sometimes differ from the methods used for statistics published from the 2003 NCS. The statistics in bold are new under NCS. The units for the cost statistics are dollars per month.

	<i>Conditional participation rate</i>	<i>Employee monthly premium</i>	<i>Employer monthly cost per participant</i>
Single coverage	1.00	\$48	–
Not required .....	.26	0	–
Required .....	.74	65	–
Family coverage	1.00	209	–
Not required .....	.14	0	–
Required .....	.86	242	–
Selected coverage	1.00	108	\$381

Almost three-quarters of participants are now required to contribute for single coverage, and 86 percent of participants are required to contribute for family coverage. For the average monthly premium for employees, the NCS survey considers the premiums for single and family coverage as separate provisions of a single health insurance plan, so both the single and family premiums contribute to the respective averages, regardless of which coverage the participants choose. The premiums for employees are then combined based on their choice between single and family coverage to show an average monthly premium for employees of \$108.¹³ This compares to the average employer cost per month of \$381 for medical plans, which is also based on the choice of employees between single and family coverage. From the monthly averages, employees pay about 22 percent of the costs, while employers pay about 78 percent.¹⁴

Several years ago, BLS did a special tabulation of the share of expenditures for health insurance.¹⁵ For 1992, employees paid 14 percent, and employers paid 86 percent. The current estimates therefore provide further evidence for the trend of employees paying more of the premiums for their insurance. The special tabulation for 1992 also showed almost no difference between small establishments and medium and large establishments in the employee share for health insurance expenditures. The June 2003 NCS data continue to show only a modest difference in the share by establishment size. The employee share for medical plans is just more than 23 percent in small establishments, and just more than 21 percent in medium and large establishments.

The ECI has always collected employer costs for an extensive list of benefits. However, the published statistics have rarely focused on the relationship among the various forms of compensation, such as how the benefit package differs for workers from different points of the wage distribution.¹⁶ Shown below are the cost per employee, access rate, participation rate, and cost per participant for medical plans by wage quartile for workers in all private industries for June 2003. The dividing points for the quartiles are \$8.49, \$12.47, and \$19.90.¹⁷ The statistics are calculated using estimation methods that sometimes differ from the methods used for statistics published from the 2003 NCS. The statistics in bold are new under the NCS. The units for the cost statistics are dollars per hour worked by the employee.

	<i>Employer cost per employee</i>	<i>Access rate</i>	<i>Participation rate</i>	<i>Employer cost per employee</i>
1st quartile	\$0.29	0.35	0.19	\$1.54
2nd quartile .....	.93	.70	.49	1.91
3rd quartile	1.49	.85	.65	2.28
4th quartile	2.28	.88	.72	3.18

As might be expected, both the access and participation rates in medical plans increase with the wage level of the worker. However, the difference between the access rate and participation rate decreases with the wage level of the worker. About 82 percent of workers from the highest quartile with access to a medical plan participate—commonly called “take-up rate”—while only about 54 percent of workers from the lowest quartile with access to a medical plan participate. Take-up rates are the participation rates divided by the access rates.

The lower cost per employee among workers with a lower wage level is obviously due in part to their lower participation rate. Perhaps more surprising is the added role of a lower

average cost for the low-wage workers who do participate in a medical plan. The estimate of the employer cost per participant more than doubles from \$1.54 for workers in the first wage quartile to \$3.18 for workers in the fourth wage quartile.

It is important to keep in mind that, for the classification of the wage quartiles, wage levels of workers are ranked among of all private workers, not just among workers from the same firm. It is therefore not correct to interpret differences in the participation rates and average costs as necessarily representing the discrepancy between high and low-wage workers who work for the same employer.

THE CONSOLIDATION of the separate compensation surveys into the National Compensation Survey gives BLS an opportunity to expand the number and type of compensation measures it reports. This paper uses NCS data collected on or around June 2003 to illustrate some of the new statistics planned for publication in the future. These statistics and others like them should give data users a more complete picture of the compensation package a U.S. worker typically receives. □

Notes

¹ The statistics are described as trial estimates because, as mentioned throughout the article, they use experimental calculation methods that sometimes differ from the procedures used for the statistics published from the 2003 National Compensation Survey.

² See Appendix A of *Employment Cost Indexes, 1975–99*, Bulletin 2532 (Bureau of Labor Statistics, September 2000).

³ See the BLS Compensation Cost Trends website, <http://www.bls.gov/ncs/ect/home.htm>, for historical trends in the ECI.

⁴ For a description of the calculation of the ECEC, see Appendix A of *Employer Costs for Employee Compensation, 1986–99*, Bulletin 2526 (Bureau of Labor Statistics, March 2000).

⁵ The EBS defined establishments with fewer than 100 employees as small, and establishments with at least 100 employees as medium or large.

⁶ See Appendix A of *Employer Costs for Employee Compensation, 1986–99*, Bulletin 2526 (Bureau of Labor Statistics, March 2000).

⁷ See Appendix A of *National Compensation Survey: Employee Benefits in Private Industry in the United States, 2000*, Bulletin 2555 (Bureau of Labor Statistics, January 2003).

⁸ Standard errors have not been calculated for the trial statistics. Consequently, none of the statistical inferences made in this article have been verified by a statistical test.

⁹ The published ECEC for health insurance among private industry workers equals \$1.45 for June 2003. The sample used for the statistics in this paper is a subset of the ECEC sample, consisting of the more recent entrants into the NCS survey. The restriction on the sample appears to cause the slightly lower average cost. It does not appear to result from procedural differences in the estimation, such as the changed procedure for imputing missing cost information.

¹⁰ See *Employee Benefits in Private Industry, 2003*, USDL: 03–489 (Bureau of Labor Statistics) Sept. 17, 2003.

¹¹ See the articles by Carl B. Barsky, “Incidence benefits measures in the National Compensation Survey” and by William J. Wiatrowski, “Medical and retirement plan coverage: exploring the decline in recent years” in this issue.

Imputation refers to the process of filling in values when an establishment provides only partial information about the compensation packages

their employees receive. The statistics in this article are calculated using an experimental procedure for imputing a missing plan type and other missing data elements.

¹² BLS reported the access rate to medical plans as 60 percent for March 2003, but again the plans for which the type could not be determined were kept as a separate category, which explains the lower rate. See *National Compensation Survey: Employee Benefits in Private Industry in the United States, March 2003*, Summary 04–02 (Bureau of Labor Statistics, April 2004).

¹³ The NCS collects data on employees’ selection of the coverage option for some, but not all, health insurance plans. Ideally, BLS field economists collect the employer and employee premiums and the number of participants for each coverage option of a health insurance plan. However, if the establishment is unable or unwilling to provide such detailed information, the fallback is to collect the establishment’s expenditure on health insurance for the relevant group of workers. When expenditure data are collected, the split between single and family coverage will not be available. Therefore, the available data are used to impute the single/family split.

¹⁴ The share from table 3 is based on the employer and employee costs for medical insurance, rather than employer and employee premiums. The article by Jordan Pfuntner, “New benefits data from the National Compensation Survey” in this issue discusses the difference between costs and premiums. See *National Compensation Survey: Employee Benefits in Private Industry in the United States, March 2003*, Summary 04–02 (Bureau of Labor Statistics, April 2004) for estimates of the employee and employer shares based on single and family premiums.

¹⁵ See *Expenditures for Health Care Plans by Employers and Employees, 1992*, USDL: 93–560 (Bureau of Labor Statistics) Dec. 20, 1993.

¹⁶ For the first time, the news releases for the 2003 National Compensation Survey reported the provisions of benefit plans for workers from an occupation within an establishment with an average wage rate above and below \$15.

¹⁷ The dividing points between the wage quartiles are generally lower than those reported in the supplemental tables to the July 2002 NCS bulletin for national wage rates. This is due in part to the NCS statistics in the supplemental tables being weighted by weekly hours, so the wage rates for full-time workers receive more weight than the wage rates for part-time workers. The supplemental tables for July 2002 are on the Internet at <http://www.bls.gov/ncs/ocs/sp/ncbl0540.pdf>