The Risk of Losing Health Insurance Over a Decade:
New Findings from Longitudinal Data

Executive Summary

It is often assumed that policies to make health insurance more affordable to the uninsured would benefit a relatively small number of Americans. A frequently cited figure is the most recent Census estimate, which indicates that in 2008, 15.4 percent of Americans (46.3 million people) were without health insurance. Yet these figures provide only a snapshot of Americans' health insurance status in a given year and thus do not reflect the number of people who go without insurance over longer periods of time.

The empirical analysis reported in this Treasury Department study indicates that over a ten-year span, nearly half of non-elderly Americans go without coverage at some point and thus would benefit from measures designed to enhance coverage options for the uninsured. The study tracks the insurance status of a representative group of Americans from 1997 to 2006. Given that this period was generally characterized by economic growth and job creation, and that the most recent estimates indicate a positive trend in the number of uninsured Americans, extrapolating our findings into the next decade would likely *underestimate* the number of Americans who will go without insurance absent health insurance reform.

Major Findings on Ten-Year Uninsurance Rates for Non-elderly Americans
- *48 percent are uninsured at some point over a ten-year span*
- *41 percent go without coverage for at least six months over a ten-year span*
- *36 percent go without coverage for at least one year over a ten-year span*
- *32 percent of people who are covered for all 12 months of a given year go without coverage at some point during the following nine years*
- *57 percent of Americans under age 21 are insured at some point over a ten-year span*
- *53 percent of Americans in rural areas go without insurance over a ten-year span*
- *45 percent of Americans with household incomes between $50,000-$100,000 (ten-year average) go without insurance at some point over a ten-year span*

Summary of results:

- **48 percent of non-elderly Americans are uninsured at some point over a ten-year span**. Between 1997 and 2006, 47.7 percent of Americans under age 65 went at least one month without health insurance. As we discuss below, this percentage is likely an underestimate of the share of people who actually spent time without insurance during this period and an even greater underestimate of the share who will spend time without coverage over the next decade absent reform.

- **41 percent of non-elderly Americans go without coverage for at least six months over a ten-year span**. For the vast majority of those who spend time uninsured, it is not

a brief and isolated experience. Between 1997 and 2006, 40.6 percent of non-elderly Americans reported spending at least 6 months without health insurance.

- **32 percent of non-elderly Americans who were covered for all 12 months of 1997 went without insurance at some point the following nine years**. Among non-elderly individuals with no coverage gap in 1997, 32.3 percent lost coverage at some point between 1998 and 2006. Thus, the risk of losing health coverage is not limited to those who are constantly in and out of coverage but affects even those with apparently stable coverage.

- **57 percent of Americans under 30 went without insurance between 1997 and 2006**. Young Americans face an especially large risk of becoming uninsured. Between 1997 and 2006, 57.3 percent of Americans under 30 in 2006 went without insurance at some point during the ten-year span.

- **45 percent of Americans in households making between $50,000 and $100,000 went without health insurance at some point between 1997 and 2006.** Based on data from 1997 to 2006, 45.0 percent of Americans with household incomes between $50,000 and $100,000 (average over the period) spent time without insurance coverage. Thus, the experience of going without insurance is not limited to poor or moderate-income families but touches a significant number of people who are securely in the middle class.

- **53 percent of Americans living in rural areas went without health insurance between 1997 and 2006.** In rural areas, 52.7 percent of people experienced a gap in health insurance coverage between 1997 and 2006 — a larger fraction than in the nation as a whole.

Consequences of Losing Insurance: These lapses of coverage have serious consequences for American families. Extensive research indicates that going without health insurance — even for a limited period of time — reduces access to needed health care, negatively impacts health outcomes, and increases the likelihood of financial devastation. Individuals who lost health insurance within the past year are nearly three times as likely to have forgone a needed physician visit. Women who lost insurance within the past year are about twice as likely to forgo a clinically indicated mammogram,[1] and among women diagnosed with breast cancer, being uninsured increases the risk of death by 49 percent.[2] Children who have spent part of the previous year uninsured were about ten times as likely to have necessary care delayed due to cost.[3] A 2002 study by the Institute of Medicine estimates that individuals without insurance have a mortality rate 25 percent greater than otherwise similar individuals with insurance.[4]

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[1] Ayanian J, et al., 2000, "Unmet Health Needs of Uninsured Adults in the United States," JAMA 284(16):2061-9.

[2] Ayanian JZ, Kohler BA, Abe T, Epstein AM, 1993, "The relation between health insurance coverage and clinical outcomes among women with breast cancer," N Engl J Med. 329:326-331.

[3] Duchon, L et al., 2001, Security Matters: How Instability in Health Insurance Puts U.S Workers at Risk. The Commonwealth Fund.

[4] Institute of Medicine, 2002, *Care Without Coverage: Too Little, Too Late*, The National Academies Press

Methods and Basis for Estimates: The two main data sources relied upon by health researchers to determine insurance status over multi-year spans are the Medical Expenditure Panel Survey (MEPS) and the Survey of Income and Program Participation (SIPP). While these datasets have many strengths, they track individuals for two years (MEPS) or three to four years (SIPP) and thus cannot be used to estimate the number of Americans who go without health insurance coverage over longer periods of time. To address this limitation, the Treasury Department report uses data from the Panel Study of Income Dynamics (PSID), which has tracked the health insurance status of a representative group of Americans from 1997 through 2006. As a result, the PSID allows estimation of the number of Americans who go without coverage at some point over a decade.

If anything, the results we report likely *underestimate* the actual number of Americans who experienced insurance gaps between 1997 and 2006, and further understate the number of people who will go without insurance over the next ten years absent reform. First, research has shown that the PSID tends to classify individuals who spend short spells without insurance as fully insured (Levy 2007). Second, the 1997-2006 period was generally characterized by strong economic growth and job creation. Data from the MEPS and from the Gallup Organization indicate that the number of Americans without insurance has increased sharply in the past two years as the economy has declined, and data from the Census indicate that the share of Americans with employer-provided insurance coverage has declined steadily since 2000. Given current trends and absent reform, insurance coverage over the next decade may not return to the levels seen during the time period covered by the PSID sample we use.

1. Overview

In this report we use the Panel Study of Income Dynamics (PSID) to estimate the number of people who experience periods without health insurance coverage over the course of ten years. Previous work on the number of Americans who go without insurance at some point over multi-year periods have relied on datasets that cover substantially shorter windows of time. The PSID data indicate that between 1997 and 2006, 47.7 percent of individuals under age 65 in 2006 experienced a period without insurance between 1997 and 2006. Moreover, one-third of individuals who were covered during every month of 1997 went without insurance at some point over the following nine years.

Although the PSID data indicate that a substantial number of Americans go without insurance over a ten-year span, it is likely that our results actually *understate* the true number. First, we show that the PSID tends to classify people who spend short spells without insurance as fully covered, as documented in past research. Second, we handle missing data in a manner that tends to overstate the number of people reporting insurance coverage throughout the sample period. Moreover, because our results are based on data from 1997 to 2006—a period of relatively strong economic growth and job creation—it is safe to project that, absent reform, workers and families will face even greater challenges securing stable health insurance over the next decade.

2. Previous research on insurance status over time

Researchers have mainly used two data sources, the Medical Expenditure Panel Survey (MEPS) and the Survey of Income and Program Participation (SIPP), to estimate how many people lack insurance at some point during a given window of time.[5] The MEPS interviews individuals five times over a two-year span. The interviewer asks subjects to account for their health insurance for each specific month, a method believed to reduce the tendency of individuals to forget short spells without coverage. The SIPP interviews subjects every four months and, like the MEPS, asks them to account for each month. The SIPP generally tracks individuals for a period of three to four years.

Several researchers have used these datasets to calculate the number of Americans who go without health insurance for at least one month over a calendar year. Given that essentially all Americans age 65 and over qualify for Medicare, studies have generally focused on the non-elderly population.

Appendix Table 1 reports results from several studies using data from 1998 to 2006. The results across different authors and different datasets appear relatively consistent: between 22 and 26

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[5] In theory, one can use the Census to determine how many people are uninsured during a given calendar year. However, given the way the Census question is generally interpreted by respondents, many experts believe this measure corresponds to health insurance coverage at a given point in time (CBO 2003). Indeed, the CPS estimates of the uninsured have historically tracked the so-called "point-in-time" estimates from other commonly used datasets such as the National Health Interview Survey (NHIS), the Survey of Income and Program Participation (SIPP) and the Medical Expenditure Panel Survey (MEPS). Regardless, one cannot use the Census to address insurance coverage over periods longer than a year, which is the focus of this report.

percent of non-elderly Americans experience at least one month without insurance during a given calendar year, with the exact fraction varying with the year and the exact sample of the population chosen.

3. New results from the PSID

We now turn to the PSID to estimate the number of Americans who experience a period without insurance coverage over a ten year-span. The PSID is a longitudinal dataset that started with a representative sample of 5,000 households in 1968 and continues to interview these households as well as the households created by children moving away from home. Additionally, new households have been added since 1968 to reflect changes in the nation's demographic composition. Our analysis uses data from 1997 (the first year the PSID included questions on insurance status) to 2006 (the most recent year of insurance data) and thus covers a ten-year period.[6]

Unlike the SIPP or MEPS, PSID households are interviewed only once every two years. In further contrast to the SIPP and MEPS, PSID subjects are not asked to account for their insurance status for each specific month, but instead simply report the number of months in a given calendar year that they had health insurance. Researchers believe this methodology, combined with the infrequent interviews, results in the PSID underestimating the number of people who spend time uninsured in a given calendar year as subjects tend to forget or not report short spells without insurance[7].

Additionally, we intentionally chose to treat missing data in a manner that underestimates the number of uninsured individuals. Even though interviewers do their best to track down each survey household every year of data collection, respondents can still slip in and out of longitudinal surveys like the PSID. To calculate the share of people uninsured in any month between 1997 and 2006, we assume that if someone reports being insured for all of the interviews in which they participated, that they were also insured during any missing years. Note that this methodology mechanically decreases the number of people defined as uninsured as individuals may have been uninsured the years they were missing—in fact, individuals are likely to be missing in years when they lose a job or get divorced, two events that often lead to the loss of health insurance.[8][9]

Table 1 reports our findings from the PSID on health insurance status. Before looking at insurance status over the entire ten-year span, we first show estimates for the under-age-65 sample of the PSID from various calendar years to compare with estimates from past research

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[6] The PSID relies mainly on telephone surveys. In most cases, the household head answers questions for all members of the household.

[7] Levy, H, 2007, *Health Insurance Data in the PSID*. Panel Study of Income Dynamics Technical Paper Series #07-05.

[8] See Fitzgerald et al. 1998, which shows that individuals who are divorced or unemployed are more likely to drop out of the PSID.

[9] We weight individuals based on the number of years they were in the survey over the ten-year sample period, which somewhat reduces this bias—as those whose ten-year insurance status we are inferring using fewer than ten years of data receive less weight—though does not eliminate it.

reported in Appendix Table 1. Consistent with the hypothesis that the PSID underreports the number of uninsured individuals, our numbers are always less than those from past studies using the MEPS and SIPP, which found annual estimates between 22 and 26 percent over this period (see Appendix).

Table 1: PSID estimates of percent uninsured for at least one month over various windows of time

	1998	*2000*	*2002*	*2004*	*2006*	***1997-2006***
Full sample	19.6	18.1	19.4	20.4	19.5	**47.7**

Notes: The sample consists of all observations who are (1) younger than 65 at the time of the 2006 PSID and (2) participated in the survey at least one year between 1997 and 2006. Individuals born between 1997 and 2006 are included if they have at least one valid response to the health insurance question. Observations are weighted according to the average of the PSID individual sample weights during this ten-year period.

The final column of Table 1 presents the ten-year analysis: we estimate that 47.7 percent of non-elderly Americans were without health insurance at some point between 1997 and 2006. Given the results in the Appendix showing our estimates to, if anything, understate the number of people uninsured in a given calendar year, we feel confident that at least 47.7 percent of non-elderly Americans went without insurance at some point between in this period. Multiplying this figure by the Census population estimate suggests that 107 million Americans under age 65 in 2006 experienced at least one uninsured spell between 1997 and 2006.[10]

Subpopulations. Table 2 reports the main 1997-2006 results for several subpopulations. Column 2 reports that 57 percent of individuals age 30 or younger in 2006 experienced at least one uninsured spell between 1997 and 2006. Similarly, half of adults age 30 to 65 with a high school education or less experienced time without insurance during this period (column 3).

Table 2: Estimates of percent uninsured at least one month from 1997 to 2006, specific subsamples

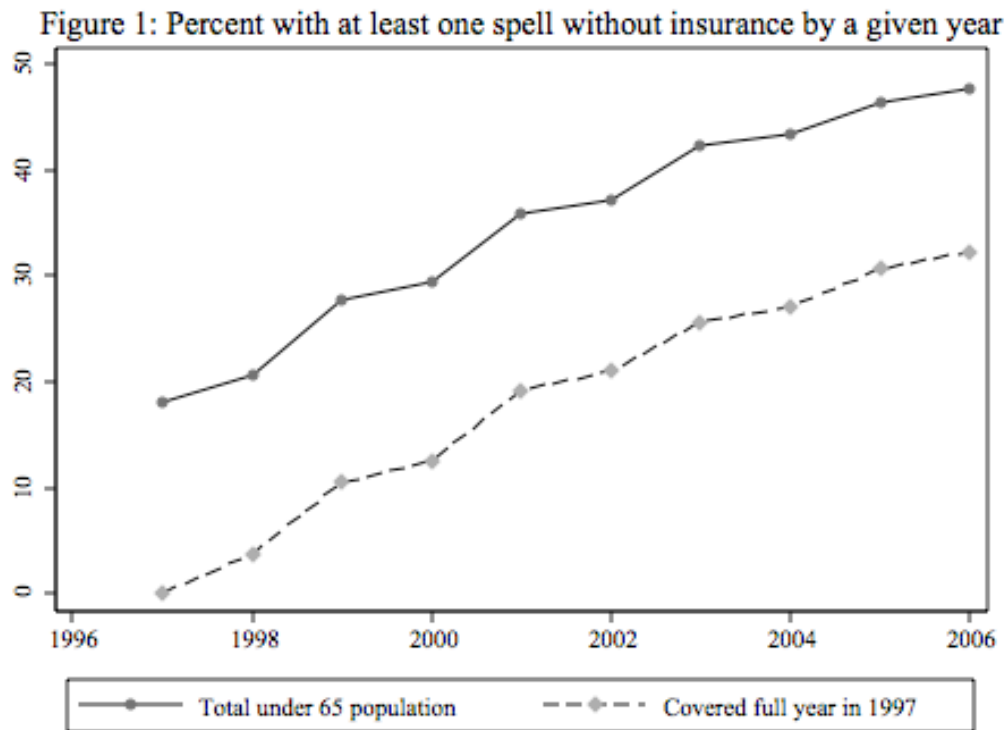|	*Full sample*	*Under 30*	*Age 30-64 with HS education or less*	*Family income $50000-$100000*	*Rural*
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Percent uninsured 1997-2006	47.7	57.3	50.0	44.7	52.7

Notes: See Table 1. Individuals under 30 (col. 3) and 30 or older (col. 3) refer to ages in 2006. Household income refers to the average household income over the sample period (reported in 2009 dollars). Rural refers to households with values greater than four on the Beale Urban/Rural index. For families whose location changed, we take their first reported Urban/Rural index value during the sample period.

Column 4 considers all individuals under age 65 whose average household income over the sample period was between $50,000 and $100,000 (in 2009 dollars). Over 44 percent of these individuals go without insurance at some point during the sample period, a similar estimate to that for the full under-age-65 population. Finally, column 5 considers the under-age-65 population who live in rural areas; 52.7 percent of this population experienced an uninsured spell during the sample period.

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[10] To calculate the 107 million figure, we multiply 47 percent by the 2000 Census estimate for the under-age-55 population of 225 million—a lower bound for the under-age-65 population in 2006.

Probability over Time of Losing Insurance. Figure 1 shows how the probability of being uninsured at some point since 1997 increases over time. For example, for the entire under-65 population, the probability of being uninsured by 1997 is only 19.2 percent; the probability of having been uninsured at some point by 2002 is 34.1 percent; and by 2006 it reaches the full 47.7 percent.

Figure 1 also plots this measure for a specific population: individuals who had health insurance for all twelve months of 1997. By construction, none of these individuals have been uninsured by 1997 and very few (3.7 percent) lost their insurance in the following year. However, as time passes, even this group begins to experience spells without coverage: by 2002, 21.0 percent had gone without coverage; and by the end of the sample period in 2006, 32.3 percent of those insured throughout every month of 1997 reported at least one spell without insurance. Thus, the experience of lacking health coverage is not limited to those who are frequently moving in and out of coverage but affects even those who begin with stable insurance.
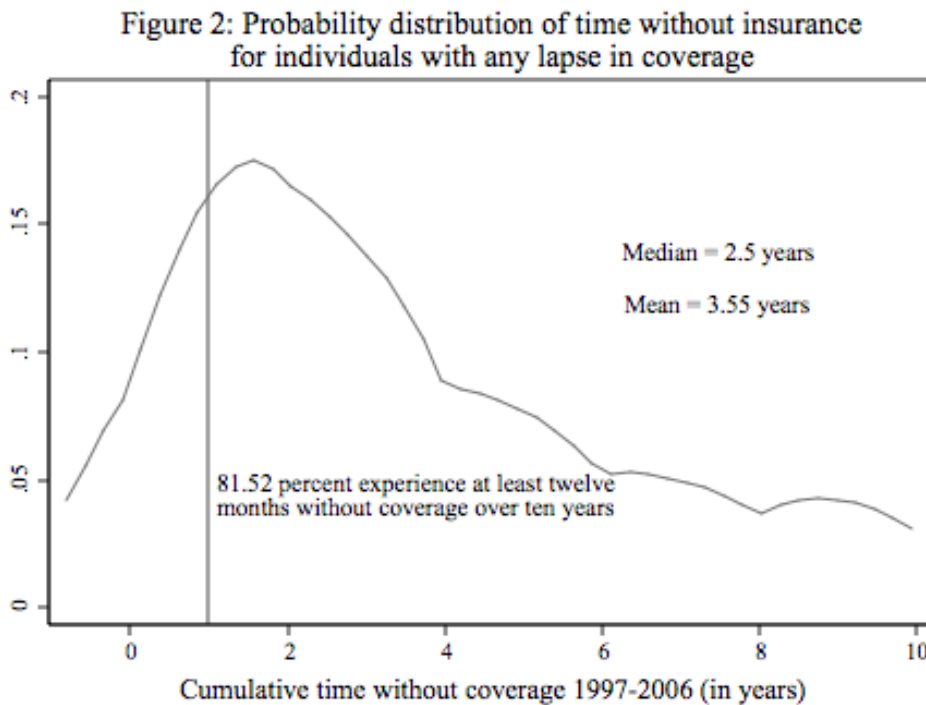

Figure 1: Percent with at least one spell without insurance by a given year

| Total under 65 population | Covered full year in 1997 |

4. How much time do individuals spend without insurance?

The analysis so far has shown that over a ten-year window, the experience of going without health insurance touches nearly half of the non-elderly population. Now we analyze how long individuals typically remain without coverage.

To examine how much time during the ten-year window people spend without insurance, we are forced to use a more restricted sample of the PSID and consider only respondents who

participated in the survey *every* year between 1997 and 2007.[11]   Including only those who participated each year selects for the most stable and well-off households, households which are most likely to have insurance coverage.[12]   Such selection suggests that this group would enjoy higher rates of insurance than the general population. Indeed, 44.8 percent of this smaller sample experienced an uninsured spell during the ten-year window (compared with 47.7 for the larger sample, as reported in Tables 1 and 2).   To the extent that this more stable group also experienced shorter uninsured spells, our results, again, will underestimate the total amount of time Americans spend without health insurance.

We now analyze individuals in this smaller sample who experience some period without insurance and sum the number of months they reported being uninsured. Figure 2 displays the kernel density distribution of total time without insurance.   The median individual spent 2.5 cumulative years without insurance over the ten-year period, and the mean individual spent 3.55 years.

Figure 2: Probability distribution of time without insurance
for individuals with any lapse in coverage

Median = 2.5 years

Mean = 3.55 years

81.52 percent experience at least twelve months without coverage over ten years

Cumulative time without coverage 1997-2006 (in years)

The vast majority—over 81 percent—of people who experienced some time without insurance accumulated more than one year without insurance over the ten-year span. Though not depicted directly on the graph, over 40 percent of non-elderly Americans reported spending at least 6 months cumulatively without health insurance between 1997 and 2006. Thus, for those who go without health insurance over a ten-year span, the experience is rarely brief or isolated.

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[11] Our original sample includes 17,123 individual observations (or 143,756 person-year observations, as each individual participated in the survey an average of 8.34 years of the ten-year sample period. The restricted sample includes 10,939 individual observations (or 109,390 person-year observations, as this group participated each year).

[12] See Fitzgerald et al. 1998, which shows that divorced or separated individuals, blacks, renters, and those with a high school education or less are more likely to drop out of the PSID.

5. Looking ahead

By necessity, our work has been retrospective, documenting the extent that the under-65 population experienced lapses in coverage between 1997 and 2006, the most recent year of survey data available from the PSID. There are reasons to suspect, however, that the number of people who will go without health insurance is likely to be even higher over the next ten years. Unlike today, the period from 1996 to 2006 was a time of strong economic growth and job creation, a key determinant of health coverage given the importance of employer-sponsored insurance.

In addition, recent releases of the MEPS provide some indication of insurance coverage since 2006. Based on these data, HHS estimates that 19.4 percent of the under 65 population spent at least one month without insurance during the first half of 2006, 20.6 percent during the first half of 2007, and 22.0 percent during the first half of 2008. No government agency has yet released data from 2009, but survey data from the Gallup Organization suggest that the number of uninsured adults has increased by over 5.7 million between when the recession intensified in September 2008 and July 2009, the most recent month of Gallup data.

Although our results indicate that nearly half of the non-elderly population went without health insurance at some point between 1997 and 2006, if current trends continue, the experience is likely to become even more prevalent over the next ten years absent health insurance reform.

Appendix

Appendix Table 1: Estimates of non-elderly population without insurance at least one month in a calendar year

Study	Dataset	Year(s)	Estimate	
			Number	Percent
CBO (2003)	MEPS	1998	59.0 million	25.3
CBO (2003)	SIPP	1998	56.8 million	24.5
Cutler Gelber (2009)	SIPP	2001-2004	--	21.8
HHS (2009)	MEPS	2006	68.3 million	26.1

Notes: Note that these estimates differ from the familiar "45 million" number often cited from Census data. As explained in CBO (2003), the Census numbers have traditionally corresponded to the number of people who report being uninsured at the moment they are asked the survey question, whereas the above numbers refer to the number of people who report being insured over at least one month of the calendar.

The Cutler-Gelber estimate refers to the number of people who are uninsured for at least one month in any 12-month period between 2001 and 2004. They do not provide an estimate of the absolute number of uninsured, but the percentage they find would imply about 49 million. While they find lower rates relative to the earlier work of the CBO and the later work of HHS, they did sample a period that had slightly higher insurance coverage according to annual CPS measures (Census 2009).

Sources

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