



**THE UNINSURED'S HIDDEN TAX ON
HEALTH INSURANCE PREMIUMS IN
CALIFORNIA:
HOW RELIABLE IS THE EVIDENCE?**

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The Uninsured's Hidden Tax on Health Insurance Premiums in California: How Reliable Is the Evidence?

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The basic premise behind many recent California health-care reform plans is that Californians who have health insurance bear a large part of the financial burden of the health-care services provided to the uninsured. Doctors and hospitals, by charging insured persons systematically higher prices for health-care services, shift the costs of treating the uninsured onto the insured. These higher charges cause higher health insurance premiums—California's "hidden tax." According to reform advocates, the hidden tax is so large that the reforms, which include mandates and new taxes, will actually reduce those premiums.

The primary empirical evidence for the large hidden tax in California has been developed by the New America Foundation, which estimates that the uninsured increase health insurance premiums by about 10 percent in California: \$455 per individual or \$1,186 for a typical family health insurance plan in 2006.¹

1. Peter Harbage and Len Nichols, *A Premium Price: The Hidden Costs All Californians Pay in Our Fragmented Health Care System*, New America Foundation (2006).

This paper reviews the New America Foundation study. We find that the study contains several errors that inflate its estimate of the hidden tax. The study overstates the amount of care received by uninsured persons, and understates the revenues currently available to fund that care.

In addition, the foundation implausibly assumes that privately insured persons bear all the costs of the uninsured—that neither doctors, nor hospitals, nor insurance companies, nor self-pay patients, nor the government bear any of that burden. That, of course, is highly unlikely; the widespread concern that uncompensated-care costs are bankrupting hospitals is itself evidence that providers bear part of the costs.

Even under the implausible assumption that all uncompensated-care costs are passed on to the privately insured, we calculate that the total burden of uncompensated care for the uninsured amounts to only 2.8 percent of premiums. Because it is more likely that the costs of the uninsured are shared among all participants in the health-care market, the true magnitude of the hidden tax is likely to be even lower.

This paper contains three parts. In part I, we describe two of the most important errors in the New America Foundation study and how they inflate its estimate of the hidden tax. In part II, we use a back-of-the-envelope calculation to arrive at a reasonable upper bound on the hidden tax. Part III concludes with suggestions for future research into how to calculate correctly the magnitude of the hidden tax in California.

I. Errors in the New America Foundation's Approach

The Foundation makes several errors that inflate its estimate of the hidden tax. (A complete analysis of the Foundation's study is provided in the Appendix.) In this section, we describe two of the study's most important errors.

First, the Foundation has incorrectly calculated the dollar volume of uncompensated care provided to uninsured persons. The Foundation's method is equivalent to multiplying

the number of uninsured *at any point during the year* by care received by people uninsured *for the entire year*. In so doing, the Foundation has mistakenly treated every person who was uninsured *at any point during the year* as if that person were uninsured *for the entire year*.

According to the California Health Interview Survey (CHIS), a typical uninsured person lacks insurance for an average of 9.1 months.² Thus, by assuming that a typical uninsured person is uninsured for 12 months instead of 9.1 months, the Foundation has overstated the dollar volume of care received by the uninsured by 32 percent.

There is nothing inherently incorrect about basing this calculation on the number of people who were uninsured *at any point during the year*. If this number is used, however, it must be multiplied by the annual amount of services received by an *at-any-time* uninsured person *while he or she is uninsured* to arrive at the correct aggregate volume of services to the uninsured. Alternatively, if the annual amount of services received by a full-year uninsured person is used, then it must be multiplied by the number of people who were uninsured *at a point in time*.

Second, the Foundation failed to take into account any government payments currently paid to health-care providers to defray the costs of uncompensated care for the uninsured. The Foundation recognized that several federal, state, and local government programs provide California hospitals and safety-net clinics with compensation to defray the costs of caring for the uninsured. Indeed, the Foundation's study reports a low (but plausible) estimate of \$2 billion for these payments. *Yet the study ultimately fails to incorporate compensation from any*

2. California Health Interview Survey, 2005. We used the AskCHIS web tool (<http://www.chis.ucla.edu/main/DQ2/default.asp>) to obtain the estimate. The web tool reports estimates of the number of uninsured persons by duration of uninsurance, measured in intervals. We calculate the mean duration by using the midpoint of each interval weighted by the number of persons in that interval.

government programs in its estimate of the hidden tax. Legitimate differences of opinion exist about how much government programs currently provide to defray the costs of care for the uninsured; however, the correct number is clearly not zero. A recent study by the UCLA Center for Health Policy Research reported that government programs made indirect payments of \$3.6 billion in 2005 to providers in California to finance care for the uninsured.³ Taken by itself, the Foundation's omission of this compensation leads it to overstate the hidden tax by 3.6 percentage points, more than doubling the correct value.

II. Calculating the Hidden Tax

We arrive at a back-of-the-envelope estimate of an upper bound for the hidden tax using three steps. The first step calculates the amount that uncompensated care adds to the cost of health services for the insured, ignoring the impact of federal, state, and local government programs that partially compensate health-care providers for caring for the uninsured. The second step accounts for these compensatory payments. The third step calculates the impact of the net cost of uncompensated care on insurance premiums.

Step 1: The Gross Magnitude of Uncompensated Care Costs

Step 1 assumes, as a starting point, that insured and uninsured persons use the same amount of health services and that the uninsured pay for none of the care they receive. According to the California Health Interview Survey, *at a point in time* during 2005, there were 23 nonelderly uninsured persons for each 100

3. Gerald F. Kominski, Dylan H. Roby, and Jennifer R. Kincheloe, "Cost of Insuring California's Uninsured," UCLA Health Policy Research Brief, UCLA Center for Health Policy Research, May 2005.

nonelderly privately insured persons.⁴ Thus, if uncompensated care costs were completely and uniformly shifted to the privately insured, each insured person would have been charged 23 percent more for her or his health services.

The typical nonelderly person who is uninsured for the full year, however, receives less medical care than the typical nonelderly insured person. According to the only published study on this topic, the volume of services consumed by a full-year uninsured person is about half that consumed by a full-year insured person.⁵ This reduces the amount that could be added onto insured persons' costs of services to 11.5 percent (50 percent of 23 percent).

Also, the uninsured pay out of pocket for a significant fraction of their care: about 40 percent for the full-year uninsured, according to the Foundation.⁶ This reduces the amount that could be added onto insured persons' costs of services to 6.9 percent (60 percent of 11.5 percent).

Step 2: Accounting for Federal, State, and Local Payments for the Uninsured

If federal, state, and local governments did not provide any compensation to health-care providers for caring for the unin-

4. We focus on the nonelderly population because virtually all persons age 65 and older have insurance, primarily through Medicare; in conformity with the foundation, we have assumed that uncompensated-care costs are not shifted onto Medicare. According to the web-based AskCHIS web tool, at a point in time in 2005 there were 4,856,000 nonelderly uninsured people as compared with 20,830,000 nonelderly privately insured people: $4,856,000/20,830,000 = 23 / 100$. Since the point in time at which the survey was conducted was random, the survey can be interpreted as finding that there were 23 uninsured per 100 insured at *every point* in time during 2005—put another way, that for every 23 full-year-equivalent uninsured, there were 100 full-year-equivalent insured.

5. Jack Hadley and John Holahan, "How Much Medical Care Do the Uninsured Use and Who Pays for It?" *Health Affairs* (2003).

6. This is similar to other published estimates. See Hadley and Holahan (2003).

sured, the full 6.9 percent would be shifted onto private payers. The dollar volume of the shift would be \$7 billion because health-care spending by the privately insured, excluding the cost shift, was estimated to be \$102 billion in 2006.⁷

Several federal, state, and local government programs, however, partially compensate health-care providers for services to the uninsured. By defraying the costs of uncompensated care, these programs reduce the costs shifted onto private payers.

Several programs in California are specifically intended to finance care for the uninsured. The County Indigent Care financing program provides health-care services to indigent uninsured persons.⁸ A federal grant program enables California community health clinics to provide care to the uninsured.⁹ Other programs, such as Medicaid and Medicare Disproportionate Hospital Share (DSH) Payment and the Emergency Services and Supplemental Payments Programs,¹⁰ serve the dual purpose of subsidizing care for the publicly insured, mainly Medicaid

7. Nonelderly private spending for California is not publicly available, so it must be estimated. According to the CMS, health-care spending in California totaled \$169 billion in 2004 (Source: CMS' National Health Expenditure Data: Health Expenditures by State, state-specific tables 1980–2004, preliminary May 2006. (http://www.cms.hhs.gov/NationalHealthExpendData/05_NationalHealthAccountsStateHealthAccounts.asp#TopOfPage)). To obtain a 2006 estimate of total spending, the 2004 amount is assumed to grow at an annual rate of 8.5 percent. According to the MEPSnet web tool, the ratio of health-care spending by the privately insured to total health care spending is 52.7 percent nationally. Applying this estimate to California produces a 2006 estimate of spending by the privately insured of \$105 billion ($\$169 \times 1.085 \times 1.085 \times .527$). The \$105 billion includes the costs that have been shifted on to privately insured persons. Hence, this number, plus government spending, must be reduced by 6.9 percent to \$102 billion.

8. OSHPD Hospital Financial Data, Fiscal Year 2005 (2007).

9. From Health Resources and Services Administration "HRSA Grant Awards by Major Program or State" at <http://stateprofiles.hrsa.gov/>

10. Background materials, joint hearing, Hospital Financing Waiver, Senate Health Committee (Senator Ortiz, Chair, July 13, 2005).

beneficiaries, and care for the uninsured.¹¹ As discussed above, the UCLA Center for Health Policy Research estimates that compensatory payments for care provided to the uninsured provided through these programs totaled \$3.6 billion in 2005. Adjusting for inflation, this rises to \$3.7 billion for 2006.¹²

Taking into account these federal, state, and local government programs reduces the amount of uncompensated-care costs that could be shifted to private payers from \$7 billion to \$3.3 billion, or 3.3 percent of the cost of health-care services to privately insured persons.

Step 3: The Hidden Tax: Impact of Uncompensated Care on Health Insurance Premiums

If the uncompensated health-care costs of the uninsured were shifted uniformly to privately insured persons' out-of-pocket payments and payments on their behalf by insurance companies for covered services, both amounts would increase by 3.3 percent. Nationally, health insurance premiums, which include administrative expenses and profit, are greater than health insurance payouts by 16 percent.¹³ Assuming the same to be true in California, the cost shift would therefore increase health insurance premiums by 2.8 percent.¹⁴ As we explain

11. See, for example, Barbara Wynn et al., "Analysis of the Joint Distribution of DSH Payments," RAND Corporation (2002); William Huen, "California's DSH Program: Background Paper," MediCal Policy Institute (1999); and Teresa Coughlin and David Lisa, "The Medicaid DSH Program: Background and Issues," Urban Institute (1997).

12. All monetary values in this paper are expressed in 2006 dollars: \$3.6 billion plus 2.5 percent inflation equals \$3.7 billion

13. Premiums were \$694.4 billion in 2005, the last year available, according to CMS' National Health Expenditure Data: Historical, NHE Web Tables, Table 12, available at http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage. Insurance payouts were \$596.7 billion the same year, so premiums are 16.4 percent higher than payouts.

14. 3.3 percent divided by 1.16 = 2.8 percent.

below, this is an upper bound on the true magnitude of the hidden tax.

The 2.8 percent hidden tax estimate is somewhat higher than a comparable national estimate derived from work by Hadley and Holahan (2003), the most systematic study of financing and usage of health care by the uninsured. Hadley and Holahan estimate that throughout the entire United States, the amount of uncompensated care provided to the uninsured was \$35 billion in 2001. They estimate that philanthropic donations, charity care, and payments from federal, state, and local programs to compensate providers for uninsured persons' care total about \$30 billion. The remaining \$5 billion represents approximately 1 percent of private health insurance premiums in 2001, well below the Foundation's 10 percent estimate for California.

III. Concluding Remarks

Assessing how the costs of caring for the uninsured affect the cost of care for the insured is an important policy issue. One basic premise behind health reform efforts in California and elsewhere is that the costs of uncompensated care effectively impose a "hidden tax" on the insured population—and that this hidden tax is large enough that the reforms, which themselves impose costly mandates and new taxes, can actually reduce insurance premiums by reducing the extent of cost shifting.

The leading study that has been used to provide support for these reform efforts, however, suffers from two major errors that result in an overstatement of the hidden tax. The study reports a hidden tax of 10 percent, but when the study's basic mistakes are corrected, a back-of-the-envelope calculation suggests that an upper bound on the hidden tax is 2.8 percent.

Both the Foundation's and our calculation are upper bounds on the hidden tax's true magnitude because both methods make the strong assumption that privately insured

persons bear all of the costs of the uninsured. Once this assumption is replaced by the more plausible one that hidden tax is somehow shared among all market participants, the estimate of the burden borne by the privately insured would necessarily be even lower.

Current estimates of the impact of the uninsured on health insurance premiums and health-care providers, including our back-of-the-envelope calculation, are too preliminary to be a solid basis for health-care policy proposals. More rigorous research needs to be conducted using better data and more plausible assumptions about the incidence of cost shift. In particular, this research should estimate how the private-payer margins of doctors and hospitals respond to changes in the costs of, and revenues from, the rest of their patient population. Indeed, a strand of health services research has used this approach to investigate a related problem: the extent of the cost shift from public programs to private payers.¹⁵ Future work should seek to apply these methods to assess the magnitude of the hidden tax.

15. See, for example, Jack Zwanziger and Anil Bamezai, 2006, "Evidence of Cost-Shifting in California Hospitals," *Health Affairs* 25(1): 197–203.

Technical Appendix

As we remarked in the text, data on the hidden tax's magnitude in California cannot be observed. But by making certain assumptions and applying existing estimates of health-care usage and financing from available data, a reliable back-of-the-envelope estimate can be obtained. The Appendix begins with a formal treatment of how existing data and estimates can be used to determine the hidden costs. We quantify this back-of-the-envelope estimate at 2.8 percent of health insurance premiums paid by privately insured persons under age 65. We then use this framework to identify and quantify errors in the New America Foundation study.

Before we begin, we remind the reader that the Foundation, in developing its estimate, assumed that all uncompensated-care costs are shifted onto the medical expenses of privately insured persons under age 65. Good grounds exist for questioning the plausibility of that assumption. Hospitals, physicians, and other health-care providers certainly bear part of the burden of providing uncompensated care, and uncompensated-care costs are also likely to be shifted to those medical bills paid by persons over age 65. We maintain the Foundation's assumption only to concentrate on assessing the accuracy of its hidden tax estimate. We note, however, that relaxing their assumption would lower the magnitude of the hidden tax.

A Back-of-the-Envelope Calculation

The back-of-the-envelope calculation of the hidden tax proceeds in three steps:

1. Calculate the amount of uncompensated care delivered to the uninsured as a percent of health spending by privately insured persons under age 65.
2. Deduct the amount of federal, state, and local government payments to health-care providers for uncompensated-care services delivered to the uninsured.
3. Express the net amount of uncompensated care as a percentage of private health insurance premiums instead of expenditures by privately insured persons.

Step 1: Calculate uncompensated care to the uninsured as a percent of health spending by privately insured persons under age 65

The existing health-care literature does not provide reliable estimates of uncompensated care for persons during the period in which they lack insurance coverage. The literature does, however, provide estimates of (1) the dollar volume of care received by persons who lack health insurance for an entire year relative to the amount of care received by full-year insured persons under age 65¹⁶ and, (2) the percentage of their own care for which full-year uninsured persons pay. These estimates can be used to compute the amount of uncompensated care delivered to the uninsured as a percentage of health spending by privately insured persons under age 65.

Denoting the volume of care received by uninsured full-year persons relative to full-year insured persons as $\bar{S}_{U,fullyear}/\bar{S}_{I,fullyear,age<65}$, and denoting the portion of care that full-year uninsured persons don't pay for themselves as U/S_U , we can express the amount of uncompensated care delivered to the uninsured as a percentage of health spending by privately insured persons under age 65 as

16. The Foundation cites as its source Gerald F. Kominski and Dylan H. Roby, *Estimating the Cost of Caring for California's Uninsured*, UCLA Health Policy Brief (2004), for California, 40 percent. This estimate is consistent with national estimates obtained by Hadley and Holahan (2003).

$$\frac{P_{U,singlepoint}}{P_{I,singlepoint,age<65}} \cdot \frac{\bar{S}_{U,fullyear}}{\bar{S}_{I,fullyear,age<65}} \cdot \frac{U}{S_U} = \frac{U}{S_{I,age<65}} \quad (1)$$

where, $P_{U,singlepoint}$ is the number of uninsured at a single point in time, and $P_{I,singlepoint,age<65}$ is the number of insured under age 65 at a single point in time.¹⁷

Estimates of the number of uninsured and insured under age 65 persons for 2005 from the California Health Interview Survey (CHIS) are 4.86 million and 20.83 million, respectively. Estimates of the amount of care received by full-year uninsured Californians relative to the amount received by full-year insured Californians are not available. Hadley and Holahan (2003), however, have estimated this to be 50 percent for the nation as a whole. We adopt this estimate. We also use Hadley and Holahan's estimate that the uninsured pay for 40 percent of the care they receive, leaving 60 percent uncompensated.

Plugging these empirical estimates into equation 1 yields the back-of-the-envelope estimate of uncompensated costs of care received by uninsured persons as a percent of health care expenditures by the privately insured under age 65. $\frac{4.86}{20.83} = .23$ and $.23 \cdot 0.5 \cdot 0.6 = 6.9\%$.

Step 2: Accounting for the existing government programs for the uninsured

As we noted above, Kominiski, Roby and Kincheloe (2005) estimates that federal, state, and local governments provided \$3.6 billion in 2005 (\$3.7 billion in 2006 dollars) to health-care providers, mainly hospitals, to compensate them for care delivered to the uninsured. This compensation reduces the cost shift onto private insurance premiums. Calculating the reduction requires an estimate of the dollar volume of private health insurance spending by insured persons under age 65,

17. Assuming the part-year uninsured during periods of uninsurance have similar spending patterns as the full-year uninsured, then $P_{U,singlepoint} \cdot \bar{S}_{U,fullyear} \approx S_U$ and $P_{I,singlepoint,age<65} \cdot \bar{S}_{I,fullyear,age<65} \approx S_{I,age<65}$.

excluding the costs of the uninsured that have been shifted onto their medical bills. Under the aforementioned assumptions, published data on expenditures by privately insured individuals include these uncompensated costs. Published expenditures, then, must be reduced by 6.9 percent. That is,

$$\begin{aligned}
 S_{I,age<65}^* &= S_{I,age<65} + U - G & (2) \\
 \Rightarrow S_{I,age<65} &= \frac{S_{I,age<65}^* + G}{\frac{U}{S_{I,age<65}} + 1}
 \end{aligned}$$

where $S_{I,age<65}^*$ is the observed level of spending and G is the dollar volume of government payments to compensate health-care providers for care to uninsured persons.

In the text, we estimated 2006 personal health-care spending by privately insured under age 65 persons at approximately \$105 billion, including the cost shift. Therefore, personal health-care spending excluding the cost shift is

$$S_{I,age<65} \approx \frac{\$105b + \$3.7b}{6.9\% + 1} = \$102 \text{ billion}$$

Combining this result, our estimate is that government payments to compensate providers for uncompensated care total \$3.7 billion; the results of equation 1 yield an estimate of net uncompensated-care costs as a percent of health expenditures by insured persons under age 65 (excluding the cost shift).

$$\frac{U_{\text{paid by private}}}{S_{I,age<65}} = \frac{U}{S_{I,age<65}} - \frac{U_{\text{paid by government}}}{S_{I,age<65}} \quad (4)$$

Applying our values, we obtain

$$\frac{U_{\text{paid by private}}}{S_{I,age<65}} = 6.9\% - \frac{\$3.7 \text{ billion}}{\$102 \text{ billion}} = 3.3\%$$

Step 3: Convert health expenditures by privately insured persons into health insurance premiums

As we noted in the text, if the uncompensated health-care costs were shifted uniformly to privately insured persons' out-

of-pocket payments and payments covered by insurance, both amounts would be increased by 3.3 percent. The impact on insurance premiums would be somewhat smaller because premiums include administrative expenses and profits. An upper bound on the hidden tax, t , can therefore be expressed as

$$t = \frac{U_{\text{paid by private}}}{\hat{S}_{\text{I,age}<65}} = \frac{U_{\text{paid by private}}}{S_{\text{I,age}<65}} \cdot \frac{S_{\text{I,age}<65}}{\hat{S}_{\text{I,age}<65}} \quad (5)$$

Nationally, health insurance premiums are greater than health insurance payouts by 16 percent.¹⁸ Therefore,

$$\frac{U_{\text{paid by private}}}{\hat{S}_{\text{I,age}<65}} = \frac{3.3\%}{1.16} = 2.8\% = t$$

Assessing the New America Foundation Study

The New America Foundation estimated the hidden tax in two steps. First, the foundation estimated the volume of uncompensated care as 4.8 percent of total personal health-care spending among all persons in California. Second, the Foundation converted that number into an estimate of uncompensated care as a percentage of spending by privately insured persons, excluding the costs that are assumed to be shifted onto their medical bills. According to the Foundation, spending by privately insured persons accounts for 55 percent of total personal health-care spending. Excluding the 4.8 percent cost shift, this amounts to 50.2 percent. To obtain its hidden tax, the Foundation divided the 4.8 percent by 50.2 percent and rounded the result to 10 percent.

The Foundation study computed the hidden tax's magnitude by using a method similar to our back-of-the-envelope

18. Premiums were \$694.4 billion in 2005, the last year available, according to CMS' National Health Expenditure Data: Historical, NHE Web Tables, Table 12, available at http://www.cms.hhs.gov/NationalHealthExpendData/02_NationalHealthAccountsHistorical.asp#TopOfPage. Insurance payouts were \$596.7 billion the same year, so premiums are 16.4 percent higher than payouts.

calculation. But it applied different empirical estimates, often inappropriately, and therein is the study’s problem.

The Foundation estimated that the dollar volume of care received by the uninsured relative to insured is 40 percent, citing Kominiski and Roby (2004) as the source for its estimate. Although Kominski and Roby’s (2004) estimates cannot be used for this purpose, a 40 percent estimate is not unreasonable for the dollar volume of care received by full-year uninsured persons relative to full-year insured persons.¹⁹ The foundation also uses the Hadley and Holahan estimate that the uninsured pay for 40 percent of the care they receive, leaving 60 percent uncompensated. The foundation used 6.5 million as its estimate of the number of uninsured persons in 2003, asserting that this number represents 20 percent of California’s population.

The Foundation’s hidden tax calculations can be summarized by two equations:

$$\frac{P_{U,ANY}}{P_{California}} \cdot \frac{\bar{S}_{U,fullyear}}{\bar{S}_{I,fullyear,age<65}} \cdot \frac{U}{S_U} = X \tag{A}$$

$$\frac{X}{\frac{S_{private}}{S} - X} = t \tag{B}$$

where $\frac{S_{private}}{S}$ is spending by private sources in California as a percentage of all personal health-care spending, $P_{U,ANY}$ is the population in California that is uninsured during any part of the year, and $P_{California}$ is the California population. All other terms have been previously defined.

Equation A and B are useful in understanding where the New America Foundation’s errors occur. Suppose for the moment that, in equation A, the foundation had separate estimates of each variable (instead of ratios) and obtained its result

19. The Kominski and Roby (2004) study reports estimates of average health-care spending levels that *exclude uncompensated care costs*.

first by multiplying the respective numerators of each ratio together; second, multiplying the denominators of each ratio together; and third, dividing the two results. The product of the first two numerators is

$$P_{U,ANY} \cdot \bar{S}_{U,fullyear}$$

This reveals the first error: a mismatch between the numerators of the two ratios. According to CHIS, the 6.5 million estimate of the number of uninsured is the number of persons who were uninsured during *any part of the year* in 2003. Hence, it includes both persons who were uninsured for the entire year and those who were uninsured for only part of the year. As we noted above, the proper definition of $\bar{S}_{U,fullyear}$ from Kominiski and Roby (2004) and Hadley and Holahan (2003) is an estimate of the average volume of spending by persons who are *uninsured for a full-year*. The conceptual mismatch amounts to treating any person who experiences a period of time without insurance as if he or she were uninsured for an entire year.

The magnitude of the Foundation's error can be readily calculated. As previously discussed, one way to avoid the mismatch is to use the number of uninsured at any single point in time: $P_{U,singlepoint}$. According to CHIS, that number in 2003 was 4.9. Thus, using the incorrect number of uninsured persons overstates the uncompensated-care cost by $\frac{P_{U,ANY}}{P_{U,singlepoint}} - 1 = \frac{6.5 \text{ million}}{4.9 \text{ million}} - 1 = 33\%$.

The Foundation also made errors in interpreting the denominators of the two ratios in equation 1, both of which cause its implied estimate to understate personal health-care expenditures in California. This total is properly calculated as the product of the California population and the average, or per capita, level of personal health-care spending. The Foundation's equation (A) incorrectly calculates this total as the product of the first two denominators. The numbers the Foundation

uses produce a population estimate well below the official total and an estimate of average spending by insured persons under age 65, instead of an average among all California residents regardless of age. By not including the spending of Californians age 65 and older, a group that is highly expensive, the desired number is understated. Let us explain:

The foundation's assertion that 6.5 million uninsured persons represented 20 percent of California's population in 2003 implies that California's 2003 population was 32.5 million. In 2003, however, the official California population count was 35.5 million, meaning that the Foundation understated personal health-care spending by 9.2 percent.

The second error in the denominator—the underestimate of per capita spending by all California residents—occurs because the foundation improperly used Kominski and Roby (2004) and Hadley and Holahan (2003) estimates. As we noted earlier, these estimates are based on health-care spending by persons *under age 65 who have full-year health insurance coverage*. Because this average excludes Medicare and Medicaid recipients over age 65, it understates the average spending level by all Californians.

The error's magnitude can be approximated by the amount by which the average spending among insured persons under age 65, excluding uncompensated-care costs shifted onto their medical bills, understates the level of per capita personal health-care spending among all California residents.²⁰ Earlier we estimated total personal health-care spending in California at \$199 billion in 2006. California's 2006 population was 36.5 million. Thus, per capita personal health-care spending amounted to \$5,452. Earlier, we estimated that privately insured Californians under age 65 spent \$102 billion on personal health-care services, excluding the cost shift. Assuming that the privately

20. This approximation assumes that the average spending level by persons insured for the full year is approximately equal to the average level of spending by all persons.

insured under age 65 represented the same percentage of the population in 2006 as they did in 2005, the number of insured under age 65 persons in 2006 was 21 million. Therefore, total personal health-care spending by privately insured persons under age 65 was \$4,857, making the Foundation's underestimate 12 percent.

After accounting for all the aforementioned errors, in addition to the Foundation's omission of payments from existing public programs to health-care providers to compensate for the uncompensated costs of the uninsured, as well as its failure to convert privately insured health-care payments into health insurance premiums, its hidden tax estimate falls to 2.8 percent from 9.6 percent.