CHAPTER 4. IMPLICATIONS FOR HEALTH RESOURCE CAPACITY AND COSTS OF NATIONAL REFORM

PREDICTING AGGREGATE CURRENT AND INCREASED USE BY THE UNINSURED

We simulate aggregate use by the currently uninsured and the increased demand that would result under universal coverage using the estimates of health care utilization described in the preceding section. The NMES population weighted[20] sample of all persons who had some spell of uninsurance during the survey year is used to make the predictions. However, to account for some changes in the size and mix of the uninsured population since 1987, we adjust (multiply) the NMES population weights by the rate of growth in the number of uninsured to 1992 as measured from the March Current Population Survey in the two years; separate growth factors were applied to adults and children.[21] We also adjust the NMES population weights to reflect the age and sex composition of the uninsured population in the 1992 Current Population Survey. The adjusted estimates of the number of adults and children with some spell of uninsurance during 1992 are shown in Table 20.[22]

For each of the NMES sample persons with some spell of uninsurance during the year, we simulate what their use of ambulatory care and of inpatient care would be if uninsured for the full year and what their use would be if insured for the full year. For those individuals with a full year spell of uninsurance, the predicted annual uninsurance use rate represents their use while uninsured, and the difference between the predicted uninsured and insured use rate is the increased demand.

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[20]The population weights assign to each individual in the sample a weight that reflects the number of persons in the population that the sample individual represents. Thus the population weights sum to the national population.

[21]Most analysts believe the CPS figure represents the number of uninsured at a point in time. We apply the CPS estimates of growth rate in the number uninsured at one point in time to both those uninsured all year and the part year uninsured.

[22]Our estimate of 57 million persons with a spell of uninsurance exceeds the number of 37 million often cited because the latter refers to one point in time and our 57 million refers to persons with some period of uninsurance during a year. We used NMES data to estimate the uninsured because our SIPP dataset does not include children. However, we obtained similar estimates of uninsured adults using the SIPP. Applying the methods described to SIPP, we estimate 40.0 million adults with a spell of uninsurance, of whom 25.8 million are uninsured a part of the year and 14.2 million are full year uninsured.

TABLE 20. Number of Uninsured Used in Aggregate Predictions
(millions)

	Adults	Children	Total
Full year uninsured	16.3	5.1	21.4
Part year uninsured	25.9	9.8	35.7
Total with spell of uninsurance	42.2	14.9	57.1

For those individuals with a part year spell of uninsurance, we need to adjust the annual uninsured rate and the annual increased demand rate to account for their part year experience. Our adjustment is based on the SIPP data which showed that those with a part year of uninsurance were uninsured for an average of 43 percent of the year; therefore we multiply the predicted annual uninsured use and the predicted annual rate of increased demand by 0.43 for each individual in our simulation sample who had less than a full year of uninsurance. [23] We then multiply each individual's predicted use during their period of uninsurance and the additional care they would demand if insured during that period by their sample weight, and aggregate across all sample persons to estimate aggregate uninsured use and induced demand. Our procedure assumes that the access gap for the part year uninsured is in proportion to the length of their spell of uninsurance. Other research has suggested that people who move from being uninsured to insured use health care in each state at the rate they would if continuously in that state (Long and Rodgers, 1990; Keeler, et al., 1988). This evidence indicates that the part year uninsured do not or cannot schedule care to coincide with their insured state. If they did so, then the annual access gap would be smaller than we assume and these individuals would not be expected to consume many additional services with a continuous year of insurance. But the research evidence supports our assumption and estimation procedure.

We make predictions in this way using the estimated utilization models from each of our three data sources, and average the resulting estimates.

MEASURES OF HEALTH SYSTEM CAPACITY

The discussion of aggregate use in Chapter 2 placed our measures of aggregate increased demand by the uninsured in the context of various measures of the capacity of the U.S. health system. To evaluate the percent of aggregate utilization represented by the increased ambulatory contacts and inpatient hospital days, we used estimates from the 1991 Health Interview Survey, the most recent available (National Center for Health Statistics, 1992a). There are several alternative sources of aggregate use data. We judged the HIS data to be most comparable to sources used in calculating our numerator, thereby best reflecting the relative increase in aggregate demand for health care. The projections of growth in the number of active physicians are from the Bureau of Health Manpower (National Center for Health Statistics, 1992b). The calculations of the impact of increased

[23] By applying the average length of a spell of uninsurance for those with a part year spell of uninsurance to all sample persons with part year spell. we assume that the length of the spell is no! correlated with demographic characteristics that are important determinants of health care use.

demand on hospital capacity and occupancy rates were based on American Hospital Association data from its 1991 annual survey (American Hospital Association, 1992).

RESOURCE COSTS AND PREMIUMS

Resource Costs

The resource costs shown in Table 4 in Chapter 2 are the product of aggregate demand from Table 3 and unit costs of each service calculated from the Health Care Financing Administration's estimates of National Health Expenditures (Letsch et al., 1992) and the Health Interview Survey estimates of aggregate use discussed above. The National Health Expenditures' (NHE) estimates' service definitions are not consistent with those used in our underlying utilization estimates. Specifically, hospital spending for inpatient care and outpatient care are combined in the NHE; the latter is included in our measure of ambulatory services. Physician services at all other sites, including inpatient services billed by physicians, comprise another category in the NHE. We used data from the 1991 NHE, the latest available, to calculate aggregate spending for a) inpatient hospital services and b) ambulatory care services and inpatient physician services by reallocating an estimate of outpatient hospital spending from the hospital to the ambulatory care category. This calculation was based on estimates of the proportions of spending that were for inpatient versus outpatient care in community hospitals, combined with information on the shares of total hospital spending that are attributable to community, to Federal, and to non-community, non-Federal hospitals. Dividing by the 1991 HIS aggregate use estimates yielded cost per unit estimates of $1,320 in inpatient hospital spending per inpatient day and $153 in spending for ambulatory care and inpatient physician services per ambulatory contact. These were inflated to represent 1993 dollars using annual rates of growth for hospital and physician spending from recent years based on the NHE estimates, less one percentage point for population growth, because it is already accounted for in the population weights underlying the aggregate utilization estimates.

Our procedure allocates some share of the cost of each inpatient physician service that is billed to patients to the ambulatory contacts they have during the year. This procedure is necessitated by lack of aggregate expenditure data to allow us to separate these costs. However, when we multiply this unit cost by the increased number of ambulatory contacts that the uninsured will make once insured, we implicitly assume that inpatient physician contacts increase proportionately to ambulatory contacts. But, we found that the access gap in inpatient care (measured in length of stay) is slightly less than the gap in ambulatory contacts (see Figures 1 and 2). Therefore, our methods for estimating costs may somewhat overstate the increased resource costs of covering the uninsured.

We considered the sensitivity of our estimates to the calculated unit costs of service. Our ultimate objective is to assess the effect on national health spending of covering the uninsured. Therefore, we have more confidence in the numerator for each unit cost calculation, because it is derived from reports of aggregate health spending. In contrast, the denominators are subject to greater error because they are based on household surveys. Specifically, the aggregate inpatient hospital days estimated from the HIS (167 million) fall considerably short of totals estimated by surveys of hospitals by the American Hospital Association (200 to 300 million depending on the breadth with which "hospital" is

defined). This is because the HIS excludes the institutionalized population, the military, and those who died during the year, As a result of using considerably larger denominators, estimates of health spending per inpatient day from other sources can be as much as 40 percent lower than ours, When averaged with ambulatory care, which would not be nearly as sensitive to these exclusions, the effect on our estimate of increased health spending would be to reduce it from $19.9 billion to $15.9 billion.

We also examined the sensitivity of our estimates to the possibility that the uninsured would use a different intensity of services once they become insured, compared to the intensity of services for the currently insured. Physicians have an incentive to minimize the time they now spend with the uninsured because they often are unable to collect their full fees from this group, and so we might expect that the intensity of treatment of the previously uninsured might rise after health reform. If so, then our cost estimates should be adjusted upwards. To test this for ambulatory care, the best measure of intensity would be relative value units, such as the schedule used in setting Medicare fees. But there are no good sources of such data for the uninsured, of course, because they file no claims, A cruder measure is the time spent by the physician during the visit. Examining data from the 1985 National Ambulatory Medical Care Survey, we found that over all doctor visits, the uninsured were seen for 3.6 percent more minutes than the insured after adjusting for demographic characteristics. One interpretation of this information is that those uninsured who are currently seen are sicker than the mix of patients that will be presenting themselves once the uninsured have coverage, This would call for a small reduction in our resource cost estimate, since it was based on the average intensity of all visits currently, nearly all of which are for the uninsured; that is contrary to our intuitive argument, the data suggest our estimate overstates the added resource costs. In either case, however, an adjustment for intensity would have essentially no effect on our conclusion that incremental resource demands and health care spending will be a very small proportion of current levels.

Turning to inpatient hospital care, we compared measures of charges per inpatient day for privately insured patients to those for patients who either self-paid or were not charged. Unfortunately, there was no single source of this measure. We calculated it based on data from the 1987 file of the Hospital Cost and Utilization Project on charges per discharge by payer, adjusted by data on days per discharge from the 1990 National Hospital Discharge Survey. Although there are a number of reasons for concern about charge data as a measure of intensity, the results of our calculations are that hospital spending on account of the uninsured might be as much as 28 percent (about $9 billion) more than the total resource use shown in Table 4. Nonetheless, as a proportion of total hospital capacity and spending, national health reform would imply a small increase, even under this assumption.

Health Insurance Premiums

To estimate aggregate premium costs of insuring the uninsured, the resource cost estimates from Table 4 had to be adjusted in several ways. First, premiums would be lower than resource costs to the extent that cost sharing is used in a plan. This reflects both the transfer of liabilities from the insurer to the consumer and the reduction of consumption due to the economic incentives from cost sharing, We estimated this effect

by calculating out-of-pocket payments as a percentage of both out-of-pocket and private insurance payments for hospital and physician services in the NHE estimates. The resulting figure is 17.5[24] percent. On the other hand, premiums would be *higher* than resource costs because of the administrative costs of private insurance. Again, from the NHE, we estimated that insurance administration accounted for 16.8 percent of private insurance spending for all personal health services. The net of the two effects on premiums for the uninsured is to make them only $0.4 billion higher than the $60.5 billion shown in Table 4, or $60.9 billion. Finally, the health reform benefit package might include services in addition to all inpatient hospital care and all physician services. If payments for the newly insured for these services remain the same proportion as they are under current private insurance plans, then including drugs and other professional services in the benefit package would raise the $60 billion by 13 percent, or to about $70 billion.

As a validity check on our NHE-based estimates, which rely largely on aggregate data from the health sector, we performed an independent calculation using premiums from the current employer group insurance market. We used two premium estimates. The 1991 HIAA survey of employer-sponsored health insurance found a mean annual family premium rate of $4,260, or about $5,150 when expressed in 1993 dollars. Unpublished preliminary and partial data from a Robert Wood Johnson Foundation survey of employer provided health insurance in ten states suggests that annual family premiums are about $4,900 in 1993. Assuming 2.5 people per covered family yields a per person premium of about $2,000, near the midpoint of the two family rates.[25]

To convert these annual premiums to an estimate of the aggregate cost of covering the uninsured, we need to multiply by the number of uninsured person years annually. Our estimates in Table 20 show that 57 million persons are uninsured at some point during a year, however only 21.4 million of these persons experience a full year of uninsurance. The remaining 35,7 million persons have 0.43 years of uninsurance annually, so the number of person years of uninsurance (or the number of full-year equivalent uninsured persons) is 37 million (21.4 + [0.43 x 35.7] =36.8). This figure is consistent with the March 1993 CPS data which put the number of uninsured at any point in time at 37 million. Since in any month there are 37 million uninsured persons, there will be 37 million uninsured person years annually even though some of the uninsured at one point in time will move into the insured state and others insured at that time will become uninsured over the year. Multiplying the 37 million uninsured person years by the per person premium given above, the aggregate annual premium cost would be $74.5 billion, a figure that falls very close to the $70 billion figure for all covered services above.

24%HE accounts do not permit an estimate specific to the privately insured. Our estimate includes out-of-pocket costs for the uninsured and the Medicare population in its numerator, as well as supplementary private insurance for the Medicare population in its denominator. This may impart a small bias. but its direction is not known.

[25]The average family size in the NMES sample we studied was 2.4,