

ARC and Rand: Group-to-Individual Premium Effects

I. Report Conclusions. The two reports come to virtually the same conclusions: 1) under the Kassebaum-Kennedy bill there would be no immediate effect on other premiums in the individual market because the proposal does not require states to impose rating restrictions; and 2) if it is assumed that states would impose rating restrictions--from limited to full community rating restrictions--in response to the legislation, the effects would range from 1.4-2.8 percent. (By comparison, the HIAA estimate is a 22.1 percent increase, assuming full community rating.)

Premium Effects in Individual Market

Study	Immediate Effects Under Kassebaum-Kennedy	State Enacted: Limited Rating Restriction in Individual Market	State Enacted: Adjusted to Full Community Rating in Individual Market*
ARC (HHS)	0%	1.4% (0.9 - 5.4% range)	2.6-2.8% (1.5-9.2% range)
Rand (DOL)	0%	N/A	2.2% (2.2-6.8% range)

* Because of different assumptions and methodologies, the two studies do not overlap as completely as is suggested by the comparison in this column.

2. Differences in the two studies. Underlying the similar conclusions are significant differences. Although both analyses start from essentially the same population counts (CPS), each uses different data sources to reach its premium effect conclusions.

- o ARC uses morbidity and other assumptions (number exhausting COBRA coverage, duration in the individual market, etc.) based on the Spencer Reports, a firm which compiles information on employers' COBRA experience.
- o Rand bases many of its assumptions on tabulations from SIPP, supplemented by morbidity assumptions from the HIAA and Academy of Actuaries analyses.

The differences, in some cases, are significant. For example, the size of the potential eligibles from small firms (less than 20 employees; not eligible for COBRA) are 18.11 million under ARC analysis and 13.2 million under the Rand analysis (the estimate of the COBRA populations are essentially the same). However, different assumptions about take-up rates, duration of coverage and other assumptions have the net effect of producing estimates of the ultimate effects that are virtually the same.

3. Explaining the differences. The two approaches, though significantly different in important respects, can be explained and defended. The differences, however, may not be readily apparent or comprehensible to people not familiar with the data sources or the type of analysis undertaken.

Although the initial population estimates and the final effects are very similar, the internal assumptions and numbers are very different and not readily comparable. Without a good appreciation of the methodologies employed, it would be relatively easy to misinterpret or improperly juxtapose numbers and assumptions in the two studies, suggesting that the Administration is simply manipulating numbers to produce a desired result.

MEWAs & Association Plans

Overview and Summary

The insurance reform bill passed by the House (H.R. 3103) contains provisions that would make it easier for groups of employers to form Multiple Employer Welfare Arrangements (MEWAs) or association plans that would be exempt from most state laws but subject to ERISA.¹

Unlike the purchasing cooperative provisions of the Kassebaum-Kennedy proposal which build upon the state insurance regulatory structure, the House provisions have the potential of seriously undermining state regulation of insurance and significantly undermining states' ability to provide affordable insurance to small businesses with more sicker workers. In short:

- The House provisions would essentially allow MEWAs and association plans to "cherry-pick"--form plans that generally accept firms with healthier workers.
- Qualifying association plans would be exempt from state mandated benefit laws and could charge premiums based on their own experience.
- Qualifying MEWAs would only be subject to solvency and other requirements under ERISA.
- MEWAs and association plans in existence prior to March 6, 1996, would be exempt from state premium taxes, which are an important source of state revenue.

Background

I. Current law

1. Multiple employer welfare arrangements that exist pursuant to a collectively bargained plan are considered ERISA plans and not subject to state law.

--examples are the Taft-Hartley plans that exist in the mining and construction industries

--in recent years, sham "collectively bargained" arrangements have been established in an attempt to avoid state regulation. The Department of Labor is developing a regulation to define what constitutes a legitimate "collectively bargained" plan. The House bill also defines the term in an attempt to clarify what is legitimate.

2. Multiple employer arrangements that are not established pursuant to a collectively

¹Under current law, self-insured MEWAs, as defined in ERISA, are generally subject to state regulation and state and federal oversight. Fully insured association plans are subject to state law.

bargaining agreement are called Multiple Employer Welfare Arrangements, or MEWAs.

--MEWAs are subject to state regulation, ERISA fiduciary standards, and state and federal oversight.

--MEWAs often claim to be ERISA plans in an attempt to avoid state regulation. ERISA has been amended in the past to clarify state and federal jurisdiction, but problems persist in identifying and prosecuting fraudulent MEWAs.

3. "Association plans" is not a clearly defined concept. Associations that qualify as Internal Revenue Code 501(c)(9) organizations may offer insurance as an ancillary service and receive certain tax benefits as VEBAs (voluntary employee benefit arrangements), and the Department of Labor has guidelines (who controls the association, the health plan, etc.) for determining legitimate associations.

--Fully insured association plans are subject to state regulation.

--Self-insured association plans are treated as MEWAs--i.e., subject to both federal and state oversight.

4. The biggest concern with self-insured MEWAs or association plans is that they are not subject to stringent solvency standards. States can regulate the solvency standards of MEWAs and association plans under ERISA, but few states have done so. (And unlike self-insured employer plans, where a claim could be made against the corporate assets in case of plan insolvency, in a MEWA or an association plan there are no underlying assets that could be reached if a plan gets in serious financial condition or becomes insolvent.)

II. Size of MEWA and association pools

1. Little reliable data exists.

--The only significant study of MEWAs was a March 1992 GAO report, which concluded over 2.5 million participants were enrolled in MEWAs operating in 46 states in 1991. More than 600 MEWAs failed to comply with state insurance laws, and unpaid claims over a four year period totaled over \$123 million.

2. There is no reliable estimate of the size of the association plans.

III. Concerns about association plans and federalized MEWAs under the House bill

1. The Department of Labor would have to promulgate regulations that would permit MEWAs to qualify as ERISA plans, thus avoiding any state regulation (the states could reach an enforcement agreement with the Department for these plans, however).

--state mandated benefit laws would not apply to federalized MEWAs.

--state premium rating restrictions would not apply to federalized MEWAs.

2. The House bill provides a minimum solvency standard for the federalized MEWAs. The concern is that the federal standards would be relatively weak, enabling these plans to gain a competitive edge over insurers subject to stricter state solvency standards.
3. Under ERISA there is no guaranty fund for MEWAs, whereas most states have guaranty funds to protect beneficiaries of licensed state insurance carriers that become insolvent.
4. Federalized MEWAs could easily skim the insurance market in the states. Over time, a state could be left with a relatively smaller and much higher risk pool for its insurance carriers. Carriers, in turn, may leave the state-regulated market entirely and cater to the MEWA pools.
5. The Department of Labor does not have, nor is it likely to receive, the resources to regulate and monitor MEWAs effectively.
6. Although association plans could be fully insured, the concern, as with MEWAs, is that it would be relatively easy to form an association that could select relatively better risks, undermining the remaining state insurance pool.

IV. Purchasing Cooperatives

1. The Kassebaum-Kennedy bill encourages the formation of cooperatives to assist small employers in buying insurance products at a discount. Cooperatives as envisioned under the Senate bill would realize lower costs through administrative efficiencies, but by requiring the cooperatives to buy state regulated insurance plans, the cooperatives would not be undermining the state's risk pool or overall insurance efforts.

Major Issues in MEWA/Association Plan Provisions House Insurance Reform Bill

The House proposal to exempt certain MEWAs and insured association plans from most state regulation would, in a relatively short period of time, substantially undermine state regulation of insurance and the composition of a state's insurance pool. The result could be dramatic increases in insurance rates for those who continue to buy coverage through state regulated health care policies, and a lower level of protection for those covered by the new MEHPs and VHIAs.

1. **Virtually every state has successfully enacted some kind of insurance reform and taken other steps to expand coverage and control costs, and states are continuing to do more.**
 - o 46 states (plus Hawaii, with a unique system) have successfully enacted small group market reforms in the past six years.
 - o 16 states have also moved to reform the individual insurance market.
 - o Over half the states have established high risk pools, and a variety of other approaches are being tried by states to expand coverage.
2. **The number of uninsured could increase significantly within a few years because of an insurance "death spiral" spurred by the MEHPs and VHIAs.¹**
 - o The House bill would significantly undermine the state insurance reform and coverage expansion efforts by allowing MEHPs and VHIAs to siphon a potentially significant percentage of the healthier people in a state's insurance pool.
 - o By allowing these new entities to "cherry-pick"-- to organize in a way that would enable them to select the relatively better health risks -- the relatively poorer health risks are left in the state insurance pool. This, in turn, would start an insurance "death spiral" where state insurance rates would rise significantly, spurring lower income and better risk people left in the state insurance pool to drop their coverage, causing the rates for those who remain to increase even further.

MEHPs are self-insured multiple employer health plans that qualify for an exemption from state regulation under ERISA. VHIAs are fully insured voluntary health insurance associations that are generally exempt from state mandated benefits and rating restrictions. They would generally be under ERISA.

3. Consumers, and perhaps ultimately the federal government, would be potentially at risk for billions of dollars of unprotected benefits.

- o The House bill does not provide for either state or federal guaranty funds in case of insolvency.
- o MEWAs have been a major area of fraud and abuse for years. In a 1992 report, GAO found that unpaid claims by MEWAs totaled over \$123 million, and recent efforts by the Department of Labor have found that MEWAs continue to be a major area of fraud.
- o By encouraging even more MEWAs, the House bill would be creating another situation analogous to the S & L crisis.

4. States have stronger financial and consumer protections than MEHPs and VHIAs would have.

- o States have been regulating group and individual insurance contracts for almost 50 years; the federal government has virtually no experience in these markets.
- o States have extensive, successful experience in establishing and enforcing solvency standards that protect consumers from bankruptcies.
- o Every state has a guaranty fund to protect consumers in cases of insurance company insolvency.
- o Most states have consumer protection laws to provide timely and equitable resolution of health insurance claims disputes.

5. The Federal Government is ill-equipped to assume the large scale migration to MEHPs and VHIAs that would likely occur under the House bill.

- o The Federal government has never had a significant role in regulating and overseeing health insurance policies.
- o Neither ERISA or the House bill provide a strong regulatory framework or guidance in developing good solvency regulations for these new entities.
- o ERISA does not provide strong consumer protections or remedies, as do most state laws.
- o The Department of Labor does not have the staff or expertise to handle a substantial growth in health insurance plans it must regulate and oversee.

6. **Purchasing Cooperatives, as envisioned in the Kassebaum-Kennedy bill, are the best way to enhance the purchasing power of small businesses and individuals in the insurance market while maintaining an effective regulatory structure that protects consumers.**
- o Cooperatives provide small employers the advantages of pooling without adversely affecting the state insurance pool. “Cherry-picking” of healthier groups would be prohibited.
 - o Effective state regulation , including financial and consumer protections, are maintained.
 - o Eleven states have adopted model legislation to encourage cooperatives, and the experience of the cooperatives in effect has generally been positive.
7. **The incremental reform that the President and proponents of Kassebaum-Kennedy advocate recognizes and employs the successful strategies pursued by the states and the private sector.**
- o The Kassebaum-Kennedy bill meets this standard; the House bill, by fragmenting the insurance market through the expansion of federal MEWAs and Medical Savings Accounts contradicts the incremental, consensus-building process inherent in Kassebaum-Kennedy.

D R A F T

RAND

*Conversion Rights and
Premiums in the Individual
Insurance Market*

Jacob Alex Klerman

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Prepared for U.S. Department of Labor

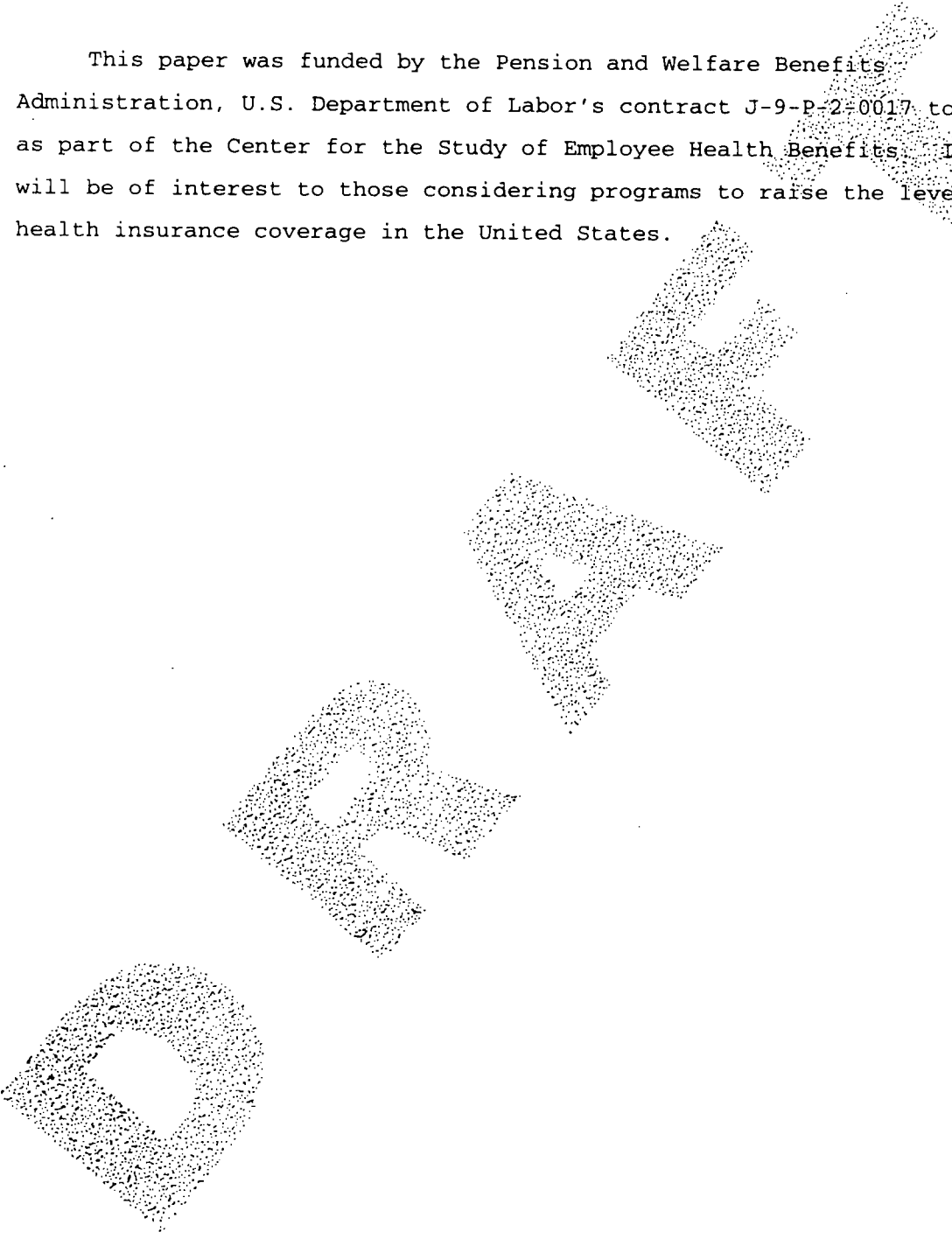
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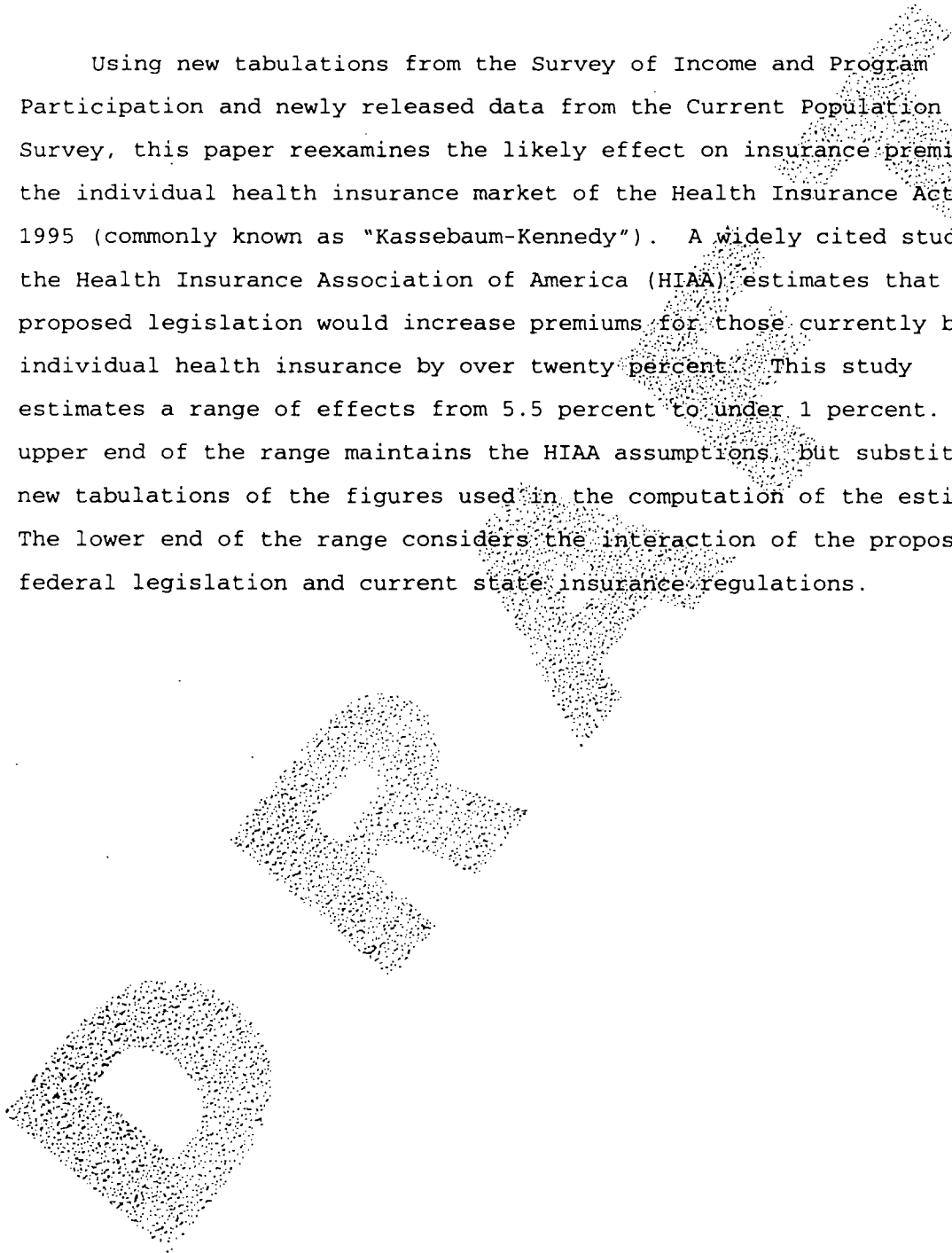
PREFACE

This paper was funded by the Pension and Welfare Benefits Administration, U.S. Department of Labor's contract J-9-P-2-0017 to RAND as part of the Center for the Study of Employee Health Benefits. It will be of interest to those considering programs to raise the level of health insurance coverage in the United States.

A large, diagonal watermark with the word "DRAFT" in a bold, sans-serif font is overlaid across the lower half of the page, extending from the bottom left towards the top right.

ABSTRACT

Using new tabulations from the Survey of Income and Program Participation and newly released data from the Current Population Survey, this paper reexamines the likely effect on insurance premiums in the individual health insurance market of the Health Insurance Act of 1995 (commonly known as "Kassebaum-Kennedy"). A widely cited study by the Health Insurance Association of America (HIAA) estimates that the proposed legislation would increase premiums for those currently buying individual health insurance by over twenty percent. This study estimates a range of effects from 5.5 percent to under 1 percent. The upper end of the range maintains the HIAA assumptions, but substitutes new tabulations of the figures used in the computation of the estimate. The lower end of the range considers the interaction of the proposed federal legislation and current state insurance regulations.



DRAFT**EXECUTIVE SUMMARY****HOW MUCH WOULD INDIVIDUAL INSURANCE PREMIUMS COST
UNDER THE HEALTH INSURANCE REFORM ACT OF 1995?**

One provision of the Health Insurance Reform Act of 1995 (S. 1028, sponsored by Senators Kassebaum and Kennedy) would guarantee the right to convert a terminating group health insurance policy into an individual health insurance policy. The Health Insurance Association of America (HIAA) has opposed this "conversion" provision, estimating that it would raise health insurance premiums in the individual market by 22.1 percent (HIAA's "most likely" long-term estimate). However, a RAND study has computed new estimates that are much lower, and, therefore imply less reason to oppose the proposed legislation's conversion provision.

In *Conversion Rights and Premiums in the Individual Health Insurance Market*, Jacob Klerman uses the HIAA analysis structure and assumptions, but substitutes new tabulations from the Survey of Income and Program participation (SIPP) and improved estimates based on newly released, improved Current Population Survey (CPS) data. The resulting estimates range from 5.5 percent to under 1 percent. The highest estimate maintains all of the HIAA assumptions, but substitutes improved values for some of the key figures. The lowest estimate, under 1 percent, uses alternative assumptions about how states will regulate these conversion policies and the likely claim costs of those buying the conversion coverage.

WHY THE DIFFERENCE IN ESTIMATES?

Under the proposed Health Insurance Reform Act of 1995, job leavers who have been continuously covered under a group health insurance plan for 18 months--and who do not have access to any other group health insurance--would be guaranteed the right to purchase individual health insurance from any health insurance company offering such insurance in that state. For job leavers from firms with 20 or more employees, this conversion right would take effect after an individual exhausted continuation coverage under the Consolidated Omnibus Budget Reconciliation Act of 1986 (COBRA), usually 18 months after leaving a job. For job leavers from firms with less than 20 employees--who are not eligible for COBRA--the conversion right would take effect when an individual leaves the job.

The HIAA opposes this conversion provision, claiming that over the long term it would raise insurance premiums for people currently in the individual health insurance market by 22.1 percent. This estimate assumes that individuals purchasing conversion policies would have claims double those of individuals currently purchasing individual health insurance policies. Furthermore, it assumes that these higher costs would be spread evenly over all participants in the individual health insurance market, that is to say, it assumes *pure community rating* in the individual insurance market.

Given these assumptions, to project the effect of the conversion policies, the analyst needs estimates of 1) the number of covered lives currently in the individual health insurance market and 2) the number of newly covered lives in that market resulting from conversion policies. The table below shows how the HIAA methodology estimates the number of additional covered lives resulting from the proposed conversion right. The estimate combines separate computations for the COBRA market (firms with 20 or more employees) and the sub-COBRA market (firms with fewer than 20 employees). For each market, the sub-total is the product of the first four rows of the table.

Premium Effects: Original HIAA Estimate and RAND Estimate

	HIAA		HIAA-RAND		RAND-BEST	
	COBRA	Sub-COBRA	COBRA	Sub-COBRA	COBRA	Sub-COBRA
Covered lives (mil.)	120.0	30.0	124.5	13.2	124.5	13.2
% leaving job (per year)	12.0%	20.0%	16.6%	24.6%	16.6%	24.6%
% program eligible	4.0%	100.0%	0.7%	88.3%	0.7%	88.3%
Insured years per eligible	2.00	0.30	2.00	0.12	2.00	0.12
Total insured years (mil.)	1.15	1.80	0.27	0.33	0.27	0.33
Relative claim costs (K-K vs Curr.)	200%	200%	200%	200%	150%	150%
Current insured years (mil.)		10.40		10.40		13.12
Increase in average premium		22.1%		5.5%		2.2%

NOTE: In the full paper, these estimates are referred to as "HIAA I", "RAND A-I", and "RAND B-I". They correspond to HIAA's original estimates (HIAA, 1995).

The "HIAA-RAND" estimate maintains the HIAA analysis structure and assumptions, but uses newly released CPS data and new tabulations from the SIPP. These new figures are preferable to those used by HIAA for several reasons:

- First, our population estimates ("Covered lives") are based on 1995 CPS data that have been released since the original HIAA analysis. Beyond being more current, these new CPS data are based on a new battery of CPS health insurance questions specifically redesigned to improve the measurement of health insurance status.
- Second, while HIAA was forced to use whatever data were available from published sources for job turnover rates (used in the table to estimate "% leaving job"), the SIPP tabulations were computed specifically to analyze the proposed legislation.

As much as possible, the concepts used in these tabulations are the appropriate ones for the analysis of conversion coverage.

- Third, HIAA's estimates for the length of time people currently spend on COBRA and the share of people exhausting COBRA (used in the table to estimate "% program eligible" and "Insured years per eligible" in the table) are based on a small number of survey responses from an unrepresentative sample of employers. The RAND figures are based on the SIPP, a nationally representative probability sample conducted by the U.S. Bureau of the Census.

Using these improved figures, the center panel of the table (labeled "HIAA-RAND") recomputes the HIAA estimate, using only the recomputed table entries from the CPS and the SIPP. This "HIAA-RAND Estimate" implies that premiums in the individual insurance market would rise by 5.5 percent—about a quarter of the HIAA estimate of 22.1 percent.

WHY THE CONVERSION EFFECT MIGHT BE EVEN LOWER

The "HIAA-RAND" estimate of 5.5 percent deliberately follows the HIAA analysis, except where the RAND analysts have new tabulations to suggest more appropriate or more accurate estimates. The right panel of the table (labeled "RAND Best") recomputes the HIAA estimate, adjusting two assumptions about the most likely effects of the proposed legislation;

- First, the "RAND Best" estimate assumes that these new conversion policies will be pooled not only with what is currently regulated as individual policies, but also with policies which are sold like individual policies (even though they may not currently be regulated as such). This increases the estimate of the size of the current insurance market from 10.4 million to 13.2 million.

- Second, while HIAA assumes that claim costs for these conversion policies will be much higher (200 percent) than current group insurance claims, the "RAND Best" estimate assumes that claim costs for conversion policies will be similar to the claim costs of those currently buying COBRA (150 percent of individual rates).

With these two assumptions, the study's best estimate of the effect of the legislation--in states with perfect community rating (the HIAA assumption)--is only 2.2 percent.

However, there is strong reason to believe that even these estimates are much too high. The HIAA methodology estimates the "aggregate additional cost that would be imposed on the individual insurance market." That would be the effect on the premiums for people currently purchasing health insurance in the individual insurance market--but only if conversion coverage policies are priced in a pure community-rated pool together with existing individual policies. Nothing in the proposed legislation prevents insurance companies from treating the new conversion policies as a separate rating pool. If insurance companies did so, there would be *absolutely no premium increase* for those currently buying individual health insurance.

Both the proposed legislation and HIAA's analysis note the crucial role of state regulation in the individual health insurance market.

Many states already provide--either directly or through high-risk pools--some form of guaranteed issue rights similar to the conversion rights guaranteed by the proposed legislation. Because passage of the federal legislation will not increase the number of policies or the cost of policies in these states, the estimates should not be applied to individuals living there. Furthermore, most states currently impose no rate restrictions on individual premiums. In those states, insurance companies could treat conversion policies as a separate rating pool. Thus, in those states, there would also be no effect on insurance rates for those currently buying individual insurance.

Finally, even in those states that now regulate individual health insurance premiums (or those which might chose to do so after the proposed legislation passed), the regulation is in the form of bands on rates in the individual markets. Such bands would also imply an effect on premiums for those currently purchasing individual health insurance considerably smaller than those implied even by the "RAND Best" estimate presented in the table.

Thus, plausible increases in premiums for those currently purchasing individual health insurance would range from 5.5 percent to under 1 percent. The upper end of the range maintains the HIAA assumption of pooling costs between those currently purchasing individual insurance and the new conversion policies. The lower end of the range assumes the continuation of current state insurance regulations. The most plausible estimate is towards that end. Moreover, the phase-in period of this long-run estimate will be several years. In a market with recent premium increases well over 5 percent per year, the long-run effect of this legislation is likely to be undetectable.

Klerman concludes that "while the original HIAA estimate of premium increases of over 20 percent for those currently buying health insurance in the individual health insurance market understandably induced many to reconsider the desirability of such a conversion right; our preferred range of estimates of 5.5 percent to under 1 percent suggest that premium increases for those currently buying health insurance in the individual insurance market provide less of a reason to oppose the proposed legislation."

ACKNOWLEDGMENTS

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The apparently simple tabulations reported here represent major programming efforts of Sally Carson and Roald Euler. Together they have successfully wrestled with the unruly SIPP data. The preparation of the manuscript was ably assisted by J. Natasha Kostan, Edie Nichols, and Jana Otto.

GLOSSARY, LIST OF SYMBOLS, ETC.

Symbol	Definition
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DRAFT

1. INTRODUCTION

To increase the levels of health insurance coverage in the United States, the proposed Health Insurance Reform Act of 1995 (S. 1905; hereafter K-K after its sponsors Senators Kassebaum and Kennedy) would limit the ability of insurers or employers to impose preexisting conditions limitations on health insurance coverage and would require that insurers offer health insurance to anyone who has been continuously enrolled in a group health insurance plan for 18 months or more. This latter "group to individual conversion" provision (hereafter simply "conversion coverage") has been strongly opposed by the health insurance industry's trade organization, the Health Insurance Association of America (HIAA). HIAA claims that passage of the provision will increase health insurance premiums of those currently buying individual insurance by over 20 percent.

This paper reexplores the likely effects of the proposed legislation in three steps:

- The first step notes that the key figures used in the HIAA computations were based on available published statistics. Often the appropriate figures were not available in published sources. Instead, HIAA was forced to use not precisely appropriate figures or figures from selected (non-representative) samples. This first step, maintains the basic HIAA analytic structure and assumptions, but substitutes new figures based on new tabulations from nationally representative data collected by the U.S. Bureau of the Census.

In some cases, we substitute recently released (since the original HIAA analysis) figures from HIAA's original source, the Current Population Survey (CPS). The CPS is a large annual nationally representative survey conducted by the U.S. Bureau of the Census. In addition to being more current, these

recently released data incorporate revised batteries of questions which were explicitly designed to improve the measurement of key quantities in the HIAA analysis.

In other cases, due to the non-availability of appropriate published tabulations, HIAA used tabulations from non-representative insurance industry sources or other published tabulations of related concepts (but not necessarily for a recent period or for the appropriate sub-populations). Our estimates use new appropriately designed tabulations from the Survey of Income and Program Participation (SIPP). The SIPP is a large nationally representative probability sample of the U.S. population conducted by the U.S. Bureau of the Census. It collects extensive information on health insurance coverage and employment status on a sample of people it follows for over two years. Using the individual level data, we have tailored our tabulations as much as possible, to the details of the proposed legislation.

- The second stage maintains the basic structure of the HIAA approach, but alters their assumptions about what will be treated as an "individual policy" and the relative claim costs of these conversion policies.
- The third stage questions the applicability of the HIAA methodology. The proposed federal legislation has no restrictions on premiums. Thus, except for state insurance regulation, insurance companies could set separate premiums for the conversion policies mandated by the proposed federal legislation to cover their own claims. In that case, the proposed legislation would have no effect on the premiums of those currently buying individual insurance.

The HIAA analysis makes the opposite assumption, that insurance companies would increase current individual premiums proportionately to the increase in average claims induced by

the proposed federal legislation. No state's current legislation would require such behavior. Currently most states do not in any way regulate individual health insurance premiums. Among those states which do not already require that insurance companies sell individual insurance to anyone, those that do regulate premiums allow them to vary with the age of the individual and (at least to some extent) with other factors including proxies for likely claims cost.

While HIAA estimates a long-range effects of over 20 percent; our estimate is much lower. Our first step, better estimates of the underlying figures, yields a conservative (probably too high) estimate of only 5.5 percent. Our second step, adjusting two of the assumptions to what we believe are more plausible values, yields an estimate of 2.2 percent. Our third step implies that in most states the effect will be zero, and in those states in which it is not zero it will be only a fraction of even our second step estimate of 2.2 percent.

PLAN OF THE PAPER

The balance of the paper proceeds in five sections. The next section presents a high level discussion of the problems in the health insurance market. It then describes the proposed legislation and the reaction of the health insurance industry.

The third section describes the structure of the HIAA analysis. It then presents a figure-by-figure discussion of the sources for HIAA's figures and the corresponding figures used in our estimates. The end of that section presents a range of estimates based on combinations of assumptions. A long technical appendix to the paper provides considerably more detail about the underlying data sources, how the data was used, and more details from our new tabulations.

The fourth section discusses the interaction of these estimates of the increase in the average claim costs per individual insurance policy with state insurance regulations. The last section summarizes the results of the analysis.

DRAFT

2. POLICY BACKGROUND

This section describes the policy context of the analysis presented below. It begins by describing the generic problem with the health insurance market and previous policy responses. It then describes the proposed legislation and responses to it.

THE MARKET FOR INSURANCE

Unlike the life insurance market, the health insurance market in the United States operates year by year. Having health insurance in one year currently provides little guarantee of the availability of coverage or its price in future years. To some extent, these problems are ameliorated by the fact that health insurance is usually sold to groups. In as much as the groups are large, expensive illnesses to individual group members do not have large effects on the availability or price of insurance. For others, state regulation of health insurance guarantees some form of insurance availability and/or price regulation.

Many people, including many of those working for small employers or changing jobs, are protected neither by group sale, nor by current state insurance regulation. Given the current structure of the market, individuals/firms cannot buy protection against an unexpected and unpredictable increases in expected health care claims (and thus in health insurance premiums). Instead, under the current system, when the current insurance year ends (for small groups) or when they change jobs (for individuals), the insurance company can raise insurance rates to cover the expected cost of insurance claims for the coming year. Thus, an in principle "insurable" risk-expenditures which are not predictable when the insurance was originally purchased and which can be averaged out over many policies-is not insurable under the current institutional

arrangements.¹ Instead, health insurance purchased today covers the unpredictable part of health care this year; but not the changes in our best guess about health care costs in future years.

These aspects of the operation of the health insurance market have produced several problems. First, for some individuals, coverage is simply not available (insurers refuse to sell them insurance) or is available only at very high cost. Second, some individuals are "locked" into their jobs by the fear (often real) that if they leave their job they will be ineligible for health insurance-forever or for some waiting period, or that their "pre-existing conditions" ("pre-existing" with respect to the new job, even if not with respect to the old job) will not be covered forever or for some waiting period.

In the mid-1980s several states and then the federal government (as part of the Consolidated Omnibus Budget Reconciliation Act of 1986, hereafter simply COBRA) enacted legislation to partially ameliorate this situation. The Federal legislation gave terminating employees the right to buy health insurance at 102 percent of the group rate for up to 18 months after leaving a job. The legislation applied both to workers who were fired and to those who quit. The major exceptions were employees terminated for gross malfeasance and employees at firms with fewer than 20 employees. The legislation appears to have had a moderate effect on health insurance coverage of job leavers.²

¹See Cochrane (1995) for a more complete development of this idea about the relationship between insurability and the current structure of health insurance contracts.

²On "job lock" see Madrian (1994) and Holtz-Eakin (1994).

On the effects of COBRA on levels of health insurance coverage see Klerman and Rahman (1992) and Gruber and Madrian (1994, 1995). The more general literature on COBRA also includes Flynn (1992, 1994) and Long and Marquis (1992).

THE HEALTH INSURANCE REFORM ACT OF 1995

The Health Insurance Reform Act of 1995 (S. 1028; hereafter K-K after its sponsor Senators Kassebaum and Kennedy) would address other aspects of this situation. It would limit the length of preexisting conditions clauses, make it illegal to deny coverage to any employer with two or more employees, guarantee the renewability of health insurance coverage, make it easier for employers and individuals to form private voluntary coalitions to purchase health insurance, and extend COBRA protections to disabled workers and newborns.

The legislation, however, has essentially no provisions about the pricing of the guaranteed health insurance package. Thus, while insurers must offer health insurance, they can price it prohibitively high without violating the provisions of the law. The insurance regulations of some states (i.e. "rate bands") would prohibit such behavior in those states.⁴ We return to the effect of state insurance regulations in the fourth section of the paper.

Most of the bill has received broad support. The major exception is a "group-to-individual conversion" provision (hereafter simply conversion coverage). That provision is intended to help individuals who leave a job maintain health insurance. It requires that workers who had been continuously covered by an employer sponsored group health insurance plan for 18 months, but can not now purchase any group health insurance (through a current employer, through a spouse, through a previous employer via COBRA) may convert their group coverage into individual coverage.

This conversion provision of the bill has been opposed by the Health Insurance Association of America (HIAA). In a statement titled

⁴For more discussion of the interaction of state insurance regulation and K-K, see American Academy of Actuaries (1996a,b) and Husted (1996). See also the "Caveat" to HIAA's press-release on K-K (HIAA, 1995) and Gradison (1996).

"The Cost of Ending 'Job Lock' or How Much Would Health Insurance Costs Go Up If 'Portability' of Health Insurance Were Guaranteed? Preliminary Estimates July 26, 1995", they conclude⁵:

Initially, the average premium for people insured through the individual market is likely to increase by between 10% and 19%, with a most likely estimate of 15%. In the longer run, increases of 15% to 31% are likely, with a most likely estimate of 22%. If spread equally across all individual policyholders, increases of this magnitude are likely to cause more than two-thirds of a million relatively healthy policy holders to drop coverage.

This HIAA analysis and these cost estimates have been widely quoted in the general press⁶. In particular, the HIAA opposition to the "guaranteed access provisions" has been cited as the cause of a "hold" on the legislation in the Senate.⁷

More recently, in response to analyses of the bill by the American Academy of Actuaries (AAA, 1996b) and Hay-Higgins (Hustead, 1996), HIAA

⁵As of March 1996, this statement remained HIAA's position on this issue. Furthermore, they continue to stand behind the analysis reported there. See for example the statement quoted in the name of Bill Gradison (HIAA's president) that "the effect of allowing people to purchase the individual coverage 'would be to raise premiums for people who already have individual coverage - by anywhere from 10 to up to 30 percent'" (the full quotes are from *New York Times*, A16, "Actuaries Fault Health Insurers' Stand on Bill", Adam Clymer, the interior quotes appear in Clymer's article as a direct quote from Gradison). Clymer's story continues stating that "Richard Coorsh, a spokesman for the insurance association, said that his organization was seeking to explain to the actuaries why it believed the higher cost estimates."

⁶See for example *New York Times*, February 7, 1996, p. A15, "Critics to Allow Vote on Health Insurance Reform", February 4, 1996, *Chicago Tribune*, p. 1, "Tactic Stalls Popular Health Care Bill; Handful of Senators Bottles Up Measure", Carol Jouzaitis; February 4, 1996, *Los Angeles Times*, p. A1, "Health Care Bill Travels Rugged Road of Reform", Edwin Chen.

⁷See for example Jerry Gray; *Washington Post*, p. A05, "Key GOP Senators Agree to Consider Limited Health Insurance Bill in Spring", Helen Dewar; and the newspaper articles cited in the previous two footnotes.

released an "alternative" analysis (Gradison, 1996; Wildsmith, 1996). (we will refer to the original HIAA estimates as "HIAA I" and the more recent HIAA estimates as "HIAA II"). HIAA explains their reasons for releasing an alternative estimate as follows:

In the interests of defusing unproductive disputes over non-critical assumptions, and to clarify the differences of true significance, this paper recasts the original HIAA cost estimates using those assumptions from the American Academy of Actuaries estimate that we consider non-critical. The purpose is not to suggest that the AAA assumptions are superior to those originally used by HIAA, but merely to focus discussion on the most important differences in assumptions.

The next section reanalyzes both of the HIAA estimates.

3. THE HIAA METHODOLOGY: ORIGINAL AND RAND ESTIMATES

We begin this section by describing the HIAA methodology, its basic assumptions and the required figures to perform the implied calculations. We then provide a figure-by-figure discussion of the sources for the figures used in the two HIAA analyses and the revised figures. A Technical Appendix to the paper provides additional information on HIAA's data sources, as well as the data sources, how they are used, and results underlying our revised figures.

THE HEALTH INSURANCE MARKET.

To understand the HIAA methodology, it is useful to define three groups of people.

- 1) Those with conventional employer sponsored health insurance in firms with more 20 or more employees. Under the COBRA individuals leaving such employers (both the workers and his/her dependents) have the right to purchase continuation coverage when they leave their employer. Under that continuation coverage, they would continue to participate in their previous employer's group health insurance plan. They would pay a premium of up to 102 percent of the employer's cost for the insurance and this continuation coverage is limited to 18 months.
- 2) Those with conventional employer sponsored health insurance in firms with less than 20 employees. COBRA does not guarantee them the right to any continuation coverage when they leave the firm.
- 3) Those currently in the absence of the proposed legislation-- purchasing insurance in the individual health insurance market. We will refer to them as the "current participants in the

individual health insurance market" and sometimes with an "IND" subscript.

The effects of the proposed federal legislation would vary for these different groups and its impact is affected by their relative size in the pre-legislation period.

To be guaranteed the right to the proposed legislation's "Conversion Insurance", the individual must have been continuously enrolled in a group health insurance plan for 18 months and not be eligible for any other group health insurance (through a current employer, through a spouse, or through COBRA). For individuals covered by firms with 20 or more employees, such eligibility would begin at the end of the 18 months of COBRA coverage. For individuals covered by firms with fewer than 20 employees, such eligibility would begin when they leave the job, but only if they have been continuously covered by group health insurance for 18 months (on this or a previous job). We refer to these people as "new participants in the individual health insurance market" (and sometimes with a "K-K" subscript).

THE HEALTH INSURANCE MARKET.

The HIAA methodology computes the average increase in premiums in the individual market⁸. The basic algebra is as follows. Denote

⁸See the HIAA "Summary of Results" quoted in the first section which carefully states "If spread equally across all individual policy holders, . . .". That condition is expanded in a following "Caveat":

The premium rating rules imposed by states will determine how the additional costs of "group-to-individual" portability are spread across the individual market. This distribution, in turn, will have a direct impact on the affordability of coverage and thus on the number and type of purchasers and on the aggregate cost of the portability requirement.

Since it is not known how the various states would choose to regulate premiums for portability coverage, there is a natural limit to the accuracy of any cost estimates. Therefore, this paper assumes that states regulation will

average claims without the proposed legislation (i.e. of those currently in the individual insurance market; "Old Average Claims") as AC_{IND} . Denote average claims among those entering the individual insurance market due to the proposed legislation as AC_{K-K} . Then average claims with the proposed legislation ("New Average Claims") will be a weighted average of the average claims of those currently purchasing individual insurance and the new entrants⁹:

make the coverage relatively affordable (relative to standard coverage in the individual market) and estimate the aggregate cost increases to the individual insurance market. The estimates are not intended to predict how states would regulate rates to spread the additional costs across the market, however, they do assume that liability for any increases is borne only by purchasers of individual policies.

⁹ We note that this analysis framework assumes no price effect. This is true in two senses. First, in as much as the new entrants face higher premiums, there may be fewer of them than is implied by the calculation of N_{K-K} below. This will imply that our estimated effects of the proposed legislation are too low. Second, in as much as the premiums of those currently purchasing health insurance rise because of the proposed legislation, fewer of them will purchase. This will imply that our estimated effects of the proposed legislation are too high.

HIAA includes some estimates of the second effect in a secondary analysis. This effect is, however, not included in their statements about price effects. We ignore it here. We note below that our analysis suggests that premiums for those currently purchasing health insurance will not rise by very much (a few percentage points at most). Given the literature on the price elasticity of health insurance purchase (e.g. Marquis and Long, 1995) which suggests that the elasticities are well below one, the effects on the calculations in the body of the paper will be trivial.

On the other hand, the body of the paper extrapolates likely take-up rates for the conversion coverage based on COBRA continuation coverage (for the sub-COBRA population) and universal take-up (by assumption) for the COBRA population). Since due to higher loading costs in the individual market, conversion coverage is likely to be much more expensive than COBRA continuation coverage, these estimated take-up rates are probably much too high. If so, then our final estimated effects of the legislation are also too large.

Given that our best estimates imply small changes in the price of individual insurance, the total effect of the considerations raised in this footnote is likely to be small (even relative to our small

$$\text{New Average Claims} = \frac{(N_{IND} * AC_{IND}) + (N_{K-K} * AC_{K-K})}{N_{IND} + N_{K-K}}$$

The weights are given by the relative size of the two groups, i.e. the numbers of people currently buying individual health insurance and the number of additional people who would buy due to the proposed legislation (N_{IND} and N_{K-K} respectively).

We can then compute average claims in the individual insurance market with the proposed legislation relative to average claims without the proposed legislation as:

$$\text{Relative Average Claims} = \frac{\text{New Average Claims}}{\text{Old Average Claims}} = \frac{N_{IND} + (N_{K-K} * \left(\frac{AC_{K-K}}{AC_{IND}} \right))}{N_{IND} + N_{K-K}}$$

Defining the relative cost of the new buyers to the current buyers as:

$$RC_{K-K} = \frac{AC_{K-K}}{AC_{IND}}$$

We arrive at the basic relation used in the analysis below:

$$\text{Relative Average Claims} = \frac{\text{New Average Claims}}{\text{Old Average Claims}} = \frac{N_{IND} + (N_{K-K} * RC_{K-K})}{N_{IND} + N_{K-K}}$$

Some HIAA statements use these estimates of the increase in the average claims cost (or in the average premium) in the individual insurance market to estimate the increase in the premiums of those currently purchasing individual health insurance (see Gradison's statement of February 1996, quoted in a footnote to the previous section; and Gradison, 1996). Doing so requires an assumption that insurance companies will charge the same premium for these continuation

estimates). Furthermore, the effects of the second paragraph are likely to dominate. Thus, these considerations are another reason why are final estimates are too large.

policies as for the current individual insurance policies. We return to this use of the estimates in the next section.

To estimate the effect on average premiums in the individual health insurance market (regardless of how insurance companies price the two types of policies), we need three figures: RC_{K-K} , N_{IND} , and N_{K-K} . HIAA's methodology for the estimation of N_{K-K} and the total effect (along with the specific HIAA Estimate and our RAND Estimate) is summarized in Table 1.

Table 1

Premium Effects: Original HIAA Estimate and RAND Estimate

	HIAA I		HIAA-RAND		RAND-BEST	
	COBRA	Sub-COBRA	COBRA	Sub-COBRA	COBRA	Sub-COBRA
Covered lives (mil.)	120.0	30.0	124.5	13.2	124.5	13.2
% leaving job (per year)	12.0%	20.0%	16.6%	24.6%	16.6%	24.6%
% program eligible	4.0%	100.0%	0.7%	88.3%	0.7%	88.3%
Insured years per eligible	2.00	0.30	2.00	0.12	2.00	0.12
Total insured years (mil.)	1.15	1.80	0.27	0.33	0.27	0.33
Relative claim costs (K-K vs Curr.)	200%	200%	200%	200%	150%	150%
Current insured years (mil.)		10.40		10.40		13.12
Increase in claim costs		22.1%		5.5%		2.2%

NOTE: In the full paper, these estimates are referred to as "HIAA I", "RAND A-I", and "RAND B-I". They correspond to HIAA's original estimates (HIAA, 1995).

This table does not appear in the HIAA report. We use it because it provides a useful framework for understanding the HIAA estimates and the methodology for our estimates. The table consists of three pairs of columns. The first pair of columns (from the left) presents the original HIAA analysis ("HIAA I") in terms of this framework. The number on the final line, 22.1 percent, is exactly the original HIAA

estimate ("HIAA I") of the "most likely" "long-run" average premium increase in the individual insurance market due to the proposed legislation. The second pair of columns substitutes the newly computed figure ("HIAA-RAND"), but otherwise maintains the "HIAA I" assumptions. The third pair of columns presents our preferred estimate ("RAND Best"). It alters some of the HIAA assumptions to values which, in our opinion, more closely correspond to the likely outcome of the proposed legislation.

The HIAA methodology computes the number of new participants in the individual market N_{K-K} as the sum of:

- new participants from the COBRA market (the left column of each panel; individuals with insurance from firms with 20 or more employees); and
- new participants from the sub-COBRA market (the right column of each panel; individuals with insurance from firms with less than 20 employees).

Within each column, the number of new participants (the fifth row, labeled "Total insured-years") is computed as the product of the first four rows. To have conversion coverage at a point in time, a covered life at a point in time (the first row) must leave his/her job (the second row) and be eligible for the program (the third row). The fourth row gives the number of insured years per eligible individual (i.e. the product of the first three rows). In principle, computation of the first two rows is straightforward. Estimating the third and fourth rows require additional assumptions which we discuss in detail below.

The last four rows compute the estimate of the effect on average premiums in the individual health insurance market. The fifth row gives the number of new participants, N_{K-K} , for each sector (computed as the product of the first four rows). The sixth row gives the assumed value for relative claim costs, RC_{K-K} . The seventh row gives the number of individuals in the individual market, N_{IND} . The eighth row gives the

implied estimate of the increase in average claim costs per insured life.

DISCUSSION OF TABLE ENTRIES

In this sub-section, we discuss in turn each of the rows of Table 1. For each row, we begin by describing the sources for the HIAA estimates (HIAA I and HIAA II) and where appropriate (i.e. for rows three and four) explaining the logic behind estimating this row in this way. We then briefly discuss our data and methods and compare their suitability and quality to those used by HIAA (used in RAND-HIAA I, RAND-HIAA II, RAND-Best I, and RAND-Best II). A Technical Appendix to the paper discusses in more detail the data and how it was analyzed and presents more complete results.

Population Estimates

We begin by considering the size of the populations: How many people are covered by group health insurance policies from an employer with 20 or more employees (and thus are eligible for COBRA continuation coverage)? How many people are covered by group health insurance policies from an employer with less than 20 employees (and are thus not eligible for COBRA continuation coverage)? and, How many people are currently covered by individual health insurance policies?

The basic data for most of the HIAA population estimates and our reestimates are derived from the March Demographic Supplement to the Current Population Survey (hereafter simply CPS), a large nationally representative annual survey conducted by the U.S. Bureau of the Census. These questions nominally refer to the previous calendar year. Most analysts interpret responses as referring to status as of the interview date (EBRI, 1996).

The original HIAA analyses ("HIAA I") was based on the 1994 CPS. Since HIAA's original analysis, the 1995 CPS data have been released. These data are preferred, not only because they are more recent, but also because they are based on a revised and more detailed set of health

insurance questions which were specifically designed to improve the quality of the data (EBRI, 1996). These questions appear to have had the twin effects of increasing the number of people reporting employer based coverage and lowering the number of people reporting individual coverage. In addition, the new questions appear to have substantially improved the reporting of children's health insurance.

HIAA I estimates the size of the COBRA and Sub-COBRA markets at 120 million and 30 million respectively. As we discuss in detail in the Technical Appendix, these figures are apparently derived based on the 1994 data and the assumption that everyone with employer based coverage who is not known to be in a large firm is in a small firm. HIAA II uses the AAA estimates of 127.5 million and 18.4 million, respectively, based on AAA (1996b) analysis of the 1995 CPS data.

Based on the 1995 CPS data, our preferred figures are 124.5 million and 13.2 million respectively. Consistent with the changes between the 1994 and 1995 CPS, relative to the HIAA I estimates, these figures are slightly higher for the COBRA market and much lower for the sub-COBRA market.

These alternative figures are based on the 1995 data, an allocation of those with unknown firm size (i.e. those who are reported as "Nonworkers" or working in firms with 10-24 employees), and the exclusion of the self-employed. The exclusion of the self-employed explains most of the difference between our figure and the AAA figure (the rest appears to be due to the allocation of the nonworkers; see the Technical Appendix). We exclude the self-employed because many of them are in fact purchasing individual insurance (and are thus ineligible for the proposed legislation's guarantees). Those among the self-employed who are purchasing group coverage have much smaller turnover rates than those implied by our calculations for employees by firm size (see the next section) or the employee turnover rates used by HIAA.

The HIAA methodology also requires an estimate of the number of individuals currently covered by individual health insurance. It is the

base to which the new conversion policies will be added. For this figure, HIAA uses its own estimate of the size of the individual insurance market, 10.4 million cover lives. This estimate is derived from insurance industry sources on the number of covered lives. It is based on a narrow definition of the "individual insurance market" as including only policies currently sold and regulated as "individual insurance".

Our HIAA-RAND estimates maintain this narrow concept of the individual insurance market and the HIAA estimate. Our RAND-Best estimate adopts the broader concept of the individual insurance market proposed by the AAA (1996b). That broader concept includes insurance policies priced on an individual bases (e.g. discretionary group trusts, association group coverage, and list based health insurance provided to small firms). HIAA (Wildsmith, 1996) has criticized this concept noting that

(T)hose other arrangements are not regulated as part of the individual health insurance market. Statutes generally apply to things as they are legally defined. Absent statutory changes at the state level, it seems inappropriate to include these miscellaneous forms of coverage in the individual market.

Because this position has some validity, we use the HIAA estimate in the "HIAA-RAND" estimate. However, as we discuss in detail in the next section, if state regulations do not change (as is implied by the quote from Wildsmith, 1996), the proposed federal legislation will have no effect in all but five states. The HIAA analysis only makes sense if many more states move to regulate individual health insurance premiums. HIAA's efforts (among others) have made/will make states well aware of this issue. For exactly these reasons, when (and if) states adopt rate regulation in response to the proposed federal legislation, they are likely to use a broad conceptualization of the individual market.

Following the AAA (1996b), we conservatively estimate the size of this market as 80 percent of the 1995 CPS figure for all individuals who report private (non-government) insurance, but not through an employer.

Combined with the 1995 CPS figure yields the "RAND BEST" estimate of 13.2 million¹⁰.

Percentage Leaving a Job

To be eligible for the conversion coverage, an employee must first leave his/her job. HIAA I assumes annual turnover rates of 12 percent in the COBRA market and are 20 percent in the sub-COBRA market. Following AAA, HIAA II assumes a 12 percent turnover rate in both markets.

Our estimates are based on new tabulations from the SIPP. They imply higher annual job leaving rates than either HIAA I or AAA/HIAA II (they thus implying larger impacts of the proposed legislation on the individual insurance market); 16.6 and 24.6 respectively.

Percentage Program Eligible

Not all job leavers are eligible for the program and program eligibility computations are quite different for the two groups. For the COBRA population, program eligibility requires both COBRA take-up and continued COBRA coverage for the full 18 months (that they "exhaust" COBRA). HIAA I estimates the COBRA take-up rate at 20 percent and that 20 percent of all people who take-up COBRA exhaust it (the HIAA I figure in the table is computed as $0.2 \times 0.2 = 0.04$). Following AAA, HIAA II estimates the COBRA take-up rate at 20 percent and that 25 percent of those taking up COBRA exhaust it (the HIAA II figure is computed as $0.2 \times 0.25 = 0.05$).

¹⁰ This figure is computed as 80 percent of the 1995 CPS figure of 16.4 million. The assumption that 80 percent of the "Other Private" is truly individual coverage is the lower end of the range given by the American Academy of Actuaries (hereafter AAA, 1996b; the upper end of the range is 90 percent). Our choice of the lower end of the range implies that our final estimates of the effect of the proposed legislation are too large.

The COBRA take-up rate figures are based on a survey of employer's experiences as reported in *Spencer's Reports*. As we discuss in the technical appendix, the Spencer data over-represent large firms and because of this and other issues about the selectivity of firms responding to such surveys, this estimate is likely to be higher than the true take-up rates.

HIAA's COBRA exhaustion figure of 20 percent is apparently based on unpublished tabulations of the time not employed and health insurance status (currently and on the previous job) of the currently unemployed. These tabulations were compiled by Klerman (the author of this report) and Rahman for HIAA in the early 1990s. Related tabulations were published in Klerman and Rahman (1992). The tabulations were based on the 1984, 1985, and 1986 panels of the SIPP. Since the interviews for those panels did not distinguish health insurance provided by a current employer from health insurance provided by a previous employer, those tabulations can not be used to explore COBRA coverage (some of which is used after the individual is reemployed). Thus, the applicability of those tabulations to the percentage of COBRA participants who exhaust COBRA coverage is not clear.

Our revised figures are based on new tabulations from the SIPP. While other analyses (HIAA, 1995, 1996; AAA, 1996b) have used a two-step computation, given data issues related to the SIPP (which we discuss in detail below), it is easier to use a one-step procedure. Instead of estimating separately the COBRA take-up rate and then the average duration on COBRA or the exhaustion rate among those who take-up, we attempt to directly estimate the number of months on COBRA per job leaver (i.e. among all job leavers, whether or not they ever use COBRA) and the percentage of all job leavers who exhaust COBRA.

The exact data and analysis is described in detail in the Technical Appendix. The basic idea is a statistical generalization of following a group of COBRA eligible covered lives forward from job leaving. We can then estimate the proportion exhausting COBRA as the fraction of all job leavers who report health insurance from a previous

employer in the 18th month after job leaving, but not in the 19th month. Our procedure yields a figure of 0.7 percent; only 7 covered lives per thousand job leavers actually exhaust COBRA coverage.

This RAND Estimate deliberately errs on the side of being too high (making our estimates of the effects of the proposed legislation on the individual insurance market too large). Because of data limitations, it is computed under the assumption that all workers reporting health insurance coverage through a previous employer were COBRA-eligible and that everyone who stops being covered by a previous employer in months 17, 18, 19, or 20 has exhausted COBRA. Both of these assumptions are conservative. It appears that a considerable number of individuals from small firms (less than 25 employees) also report health insurance coverage through a previous employer. In addition, some of the people who end "previous employer" coverage during months 17, 18, 19, and 20 do so, not because they have exhausted COBRA coverage, but because they have acquired some other source of coverage (Medicare, Medicaid, another employer, a spouse's employer, etc.).

Both HIAA analyses assume that everyone in the sub-COBRA market would be eligible for the conversion option. This appears to be an overestimate. The proposed legislation requires 18 continuous months of group health insurance coverage in order to be eligible for conversion. For individuals in the COBRA market, these 18 months could all be acquired through COBRA. For individuals in the sub-COBRA market, these 18 months must be acquired before leaving the job. Based on the SIPP, we estimate that 77 percent of those currently employed in a sub-COBRA firm have job tenure of more than 18 months. All of them would be eligible for conversion. The other 23 percent would not be eligible for conversion coverage based solely on insurance at the current job. Some of them will have been continuously insured (e.g. they came directly to this job from a job from which they had had health insurance for 18 months). From the SIPP, we are unable to estimate how common this is. We have arbitrarily assumed that half of the 23 percent with job tenure of under 18 months gain eligibility in this way (through a previous job). Thus, we estimate that 88 percent of those leaving sub-COBRA jobs

will be eligible for the Conversion coverage. The estimate that half of the those without sufficient job tenure nevertheless had 18 continuous months of health insurance is likely to be too high, and thus the final estimates of the effect of the proposed legislation too high.

Insured Years per Program Eligible

Given that we know how many covered lives there are, what share of them leave a job in a year, and what share of them would be eligible for conversion coverage, we need to know the number of years covered by the conversion policy per program eligible individual. Again, the results differ by market. We maintain the HIAA assumption that all of those exhausting COBRA would use conversion coverage. We also maintain the HIAA assumptions of the average length of time that those exhausting COBRA would buy conversion coverage; 2 years in HIAA I and 3 years in HIAA II.

For the sub-COBRA market, HIAA I assumed that 20 percent of those leaving sub-COBRA jobs would take the conversion coverage and that they would stay on conversion coverage an average of 18 months (1.5 years). The figure in the table for years of conversion coverage per eligible individual is $0.20 \times 1.5 = 0.30$ (i.e. percentage of those ever using continuation coverage times the percentage of those ever using conversion coverage who exhaust it). HIAA II follows the AAA figure for the average duration of conversion coverage, 2.25 years¹¹.

Our estimate of the average time per eligible follows the HIAA I assumption that when offered conversion coverage, individuals in the Sub-COBRA market will use it the way individuals in the COBRA market use COBRA. Our estimate of the way individuals in the COBRA market use

¹¹ It should be noted that HIAA II does not accept the AAA assumption that the take-up rate in the sub-COBRA market will be "6% to 10%" (AAA, 1996b, p. A-2, note 9). Doing so would cut their estimate by nearly 3 percentage points. AAA also notes that the percentage would be even lower if conversion policy premiums are much higher than standard individual insurance premiums.

COBRA is based on our tabulations from the SIPP. Unlike HIAA who computes the probability of ever using continuation coverage (COBRA) and then the average duration of people who ever use coverage, using our SIPP data it is more appropriate to tabulate the average number of years of continuation coverage per each job leaver (see the Technical Appendix for our exact methods and the appropriate caveats).

To this estimate of years on COBRA per eligible job leaver from the SIPP, we add the appropriate HIAA estimate of the average duration of conversion coverage among COBRA eligibles who exhaust the COBRA coverage; 2 years in HIAA I/SIPP I and 3 years in HIAA II/SIPP II (based on AAA, 1996b). From our SIPP tabulations plus the assumed time after COBRA exhaustion (among those who exhaust COBRA), we estimate time using conversion coverage per job leaver at about a month (0.118 years and 0.125 years under for SIPP I and SIPP II).

This estimate is, for two reasons, likely to be too high (and therefore our estimates of the effect on the individual health insurance market too high). First, this estimate assumes that all of the observed "previous employer" coverage is from the COBRA market. In fact some of the current "previous employer" is probably from the sub-COBRA market. If so, we have over-estimated the amount of COBRA coverage. In addition, in as much as some individuals in the sub-COBRA market already get continuation coverage (even though it is not required by statute i.e., by COBRA), we should probably net out this coverage from the total effect on the individual market. Our estimates do not take such considerations into account and are thus likely to be too large.

Second, COBRA is available at group rates. The conversion coverage will be at the higher individual rates (due to higher loading factors in the individual market). These higher prices are likely to discourage some people (who would have participated at COBRA rates) from participating. We have ignored both of these considerations.

Our estimates differ considerably from those in the published literature (e.g., Flynn, 1992). As we discuss in the Technical

Appendix, the results in the published literature are based on either surveys of firms or records of intermediaries which process COBRA plans. Neither of these sources is nationally representative. Large firms are heavily over-represented. We suspect that firm size and the types of firms using intermediaries/responding to surveys causes an overestimate of COBRA take-up rates and COBRA elections. On the other hand, if individuals report COBRA coverage as private insurance not through an employer (as opposed to private insurance through a previous employer), then the SIPP-based estimates will be too low. As we discuss in the appendix, the nature of COBRA coverage suggests that this mis-reporting is unlikely to be large.

Relative Claims Cost

The final figure for the HIAA methodology is the claim costs of conversion coverage relative to those currently buying individual insurance, RC_{K-K} . The required figures are a classical actuarial computation of expected claim costs.

The HIAA I estimate assumes that the relative claim cost of the conversion policies will be twice that of current individual insurance policies. They explain this figure as "Intermediate between estimates of COBRA experience and individual high risk pool experience" (HIAA, 1995). The COBRA experience is that claims are about 150 percent of the relevant group claim cost. Since the average COBRA enrollee is older than the average group insured individual (see Flynn, 1992), not all of this difference is a pure morbidity effect. Since most current states allow premiums to vary with age (see the next section), even this estimate of 150 percent is higher than the relevant concept.

Furthermore, this 150 percent figure refers to the COBRA period. Presumably, HIAA uses a higher figure (200 percent) because people who exhaust COBRA are presumably sicker than those who have relatively short COBRA experiences. Note, however, that the COBRA cost estimate of 150 percent is likely to mix three groups of people. A group of normal risks who want to maintain coverage. A second group of people who know

they have upcoming expenses (e.g. planned surgery, pregnancy, etc...). They will have high costs in the months immediately after take-up, but over the longer term will be closer to normal risks. Finally, there will be a group of people with chronically higher costs. They are likely to exhaust COBRA and to take-up the conversion coverage. These are the people who might push up the cost of continuation coverage. As we discuss in detail in the next section, in many states these people are likely to be shifted to the high risk pool (almost all states have such a pool and it is intended to subsidize the insurance of people with chronically high costs).

The "RAND-Best" estimate uses a 150 percent relative claim cost estimate in both markets (rather than the HIAA I estimate of 200 percent). In as much as take-up of continuation coverage in the sub-COBRA market is like take-up in the current COBRA market (as HIAA assumes), it seems more reasonable to assume that their relative costs will be similar to current COBRA costs. In the COBRA market after exhaustion, it seems more plausible to assume that the 150 percent figure is driven up by those who expect expensive procedures shortly after take-up, so that the 150 percent figure would also be a good estimate of the relative cost of those with chronically higher costs. Because this is a matter of judgment we report both the "RAND-Best" estimate based on this lower value and the RAND-HIAA estimate based on the original HIAA assumption of 200 percent.

COMPARING THE HIAA ESTIMATES AND THE RAND ESTIMATES

Table 1 presented three estimates of the increase in average costs per individual insurance policy. The original HIAA estimate (HIAA I) was 22.1 percent. Using the same methodology, but our better figures, our corresponding RAND Estimate (HIAA-RAND) is 4.6 percent, less than a quarter of the original HIAA estimate.

Our preferred estimate, however, ("RAND Best") alters two of the HIAA assumptions. It uses the broader concept of the size of the individual market over which claims will be pooled (13.2 million vs.

10.4 million) and it uses the COBRA relative claims cost for conversion coverage in both sectors (150 percent vs. 200 percent). This estimate is 2.2 percent, one-tenth the original HIAA estimate.

In both of their analyses, HIAA also explored the sensitivity of their estimates to the cost of claims in both the COBRA and sub-COBRA sectors. Table 2 and Table 3 report the results of those sensitivity analyses for all three assumptions (HIAA, HIAA-RAND, and RAND BEST). Table 2 maintains the HIAA I assumptions (for length of time after COBRA exhaustion). Table 3 maintains the HIAA II assumptions.

Table 2
Sensitivity of Estimates to Cost Assumptions,
Given HIAA I Assumptions

RC-COBRA	RC-Sub-COBRA	HIAA I	HIAA-RAND	RAND BEST
200%	200%	22.1%	5.5%	4.4%
150%	150%	11.1%	2.7%	2.2%
200%	150%	15.4%	4.0%	3.2%
300%	200%	30.7%	8.0%	6.4%
250%	200%	26.4%	6.7%	5.4%

NOTE: RC-Relative Cost. Entries in italics appear in the HIAA reports (see the text).

Table 3
Sensitivity of Estimates to Cost Assumptions,
Given HIAA II Assumptions

RC-COBRA	RC-Sub-COBRA	HIAA I	HIAA-RAND	RAND BEST
200%	200%	24.0%	6.6%	5.3%
150%	150%	12.0%	3.3%	2.7%
200%	150%	20.4%	5.2%	4.1%
300%	200%	40.8%	10.3%	8.3%
250%	200%	32.4%	8.5%	6.8%

NOTE: RC-Relative Cost. Entries in italics appear in the HIAA reports (see the text).

The base case (the first row) maintains the HIAA assumption that the claims under conversion policies will be twice those under existing individual policies. The first alternative (the second row) corresponds to the "RAND BEST" assumption that all conversion policies will have claims similar to the COBRA Rate (150 percent of the current individual

rate). The second alternative considers the possibility that claims for those in the sub-COBRA market will be similar to claims in the current COBRA market, approximately one and a half times those in the current individual market, but maintains the assumption that claims in the COBRA market after COBRA exhaustion will be twice those in the individual market. The third and fourth alternative (the fourth and fifth rows) consider increasing the average claims cost in the COBRA market under the assumption that only people with very high claims costs (sicker or older) would buy conversion coverage after the full 18 months of COBRA coverage. HIAA I uses a high estimate of three times individual claims costs. That 300 percent figure also appears in the equation for the higher estimate in HIAA II. The text in HIAA II, however, reads "250%" and the final number is correct for two and a half times the cost of individual claims (but not for three times the cost of individual claims). We present the full range of estimates for reference.

Our estimates are always less than a quarter the corresponding HIAA estimates. While the HIAA estimates reach 32.4 percent (or 40.8 percent in the number they do not report), the highest "RAND BEST" highest estimate is only 6.8 percent (8.3 percent). As is discussed below, even these numbers are much too high.

Finally, it should be noted that even this "HIAA-RAND" estimate of 5.5 and this "RAND Best" estimate of 2.2 percent are conservative. At several places, the figures were deliberately computed using the more conservative (implying larger effect of the law) estimate from among a range or in interpreting our tabulations. In particular, our analysis assumes that all of the observed insurance through a previous employer is from COBRA eligible individuals. Limited tabulations suggest that, in fact, there is considerable coverage from a previous employer even among individuals in the sub-COBRA market (the HIAA methodology essentially implies that no such coverage occurs). If so, our figures for COBRA take-up rates are too high and our figures for COBRA durations are too long. For similar reasons, the number of new entrants to the individual insurance market should be computed netting out those with coverage from a previous employer. Our figures do not do so.

In addition, we have not considered the effect of the high cost of health insurance in the individual market (relative to the COBRA market). Following HIAA, we have assumed that, despite being faced with the higher individual market premiums, individuals will purchase conversion coverage at the same rate that individuals in the COBRA market purchase COBRA. Due to larger loading factors, premiums in the individual market are much higher than in the large group market (on which COBRA premiums are based). Similarly, COBRA premiums are based on the health insurance premium across all employees. In as much as individuals on COBRA tend to be older than the average employee (see Flynn, 1992), their premiums in the individual market—where premiums vary with age—will be even higher. Thus for several reasons, the revised HIAA methodology based estimates of the effect of the proposed federal legislation on average premiums in the individual insurance market presented in this section should be considered an upper bound; the true estimate is probably lower.

4. THE EFFECTS OF STATE REGULATION

The previous section used the HIAA methodology and new and improved estimates of the underlying figures. As HIAA notes (see the "Caveat" quoted in a footnote to Section 2), this methodology estimates the increase in the average individual health insurance premium due to the proposed legislation as a weighted average of the projected per-person claims of those currently purchasing individual health insurance and the new entrants--those exercising their rights under the proposed legislation to purchase conversion coverage in the individual health insurance market, where the weights are given by the relative size of the two groups. For the later group - those purchasing conversion coverage, the availability of such health insurance is clearly an advantage over the current situation. For the former group - those who currently purchase health insurance in the individual market, HIAA claims that the proposed legislation will make their situation worse.

In particular, using their estimates based on the methodology of the previous section, HIAA has claimed that premiums for those currently purchasing individual health insurance will rise by the percentage implied by their methodology for computing the average increase individual premiums (22.1 percent using their underlying figures; 5.5 percent using HIAA's methodology, but our new and improved figures). This claim involves a crucial additional analytic assumption. The premiums for those currently purchasing individual health insurance will only rise by the percentages implied by the analysis of the previous section if insurance companies selling individual health insurance policies treat those exercising the conversion rights guaranteed by the proposed legislation the same as they treat those currently purchasing health insurance.

Nothing in the proposed federal legislation would require them to do so. The proposed legislation merely requires that those insurance

companies that sell health insurance to any individuals (in a state) also offer to sell health insurance to those who meet the proposed legislation's requirements—that they have been continuous insured as part of a group health insurance plan for 18 months and that they have no other potential source of group health insurance (e.g. the employer of another family member or COBRA continuation coverage). The proposed legislation has no requirement about the premium at which the insurance must be offered. Thus according to the proposed federal legislation, insurance companies could price such conversion coverage separately from their current individual insurance policies. In particular, they could set premiums for their conversion policies to cover all of the claims (and other costs, plus normal operating profits) of the conversion policies. Alternatively, they could set premiums for conversion coverage based on pre-existing conditions and current health status. In either case, there would be no effect on the premiums of those currently buying individual health insurance.

Thus, under the federal legislation, insurance companies could simply price the conversion policies at twice (HIAA's assumed relative claim costs) the premium for current individual insurance policies. Under this scenario the proposed legislation would have no effect on the premiums of those currently buying health insurance in the individual market. As HIAA states (Wildsmith, 1996):

Clearly, if you assume carriers will be able to charge substantially higher premiums for this population, then you have succeeded in guaranteeing access to a policy that is unaffordable to most consumers. This is a rather hollow guarantee.

This scenario is, however, not the correct one for evaluating the likely effects of the proposed legislation. Both the proposed legislation and the HIAA analysis¹² assign to the states the role of regulating the premiums for the new conversion policies.

¹²HIAA (1995) states: "The proposal would not specify the rating rules applicable to premiums for coverage obtained under the new

When considering the effect of state regulation, it is useful to consider three cases (see Table 3 for a state-by-state analysis)¹³:

- 1) Twelve states themselves require guaranteed issue in the individual insurance market (or some regulation such as guaranteed issue with similar effect).¹⁴ For individuals in those states, the proposed federal legislation conversion requirement is redundant and would have no effect on premiums.
- 2) Five states do not currently require guaranteed issue, but have some rate regulation (limit the variability rates in the individual insurance market)¹⁵. If states requiring complete community rating (no variation in plan cost), then the HIAA estimate would be the effect on current purchasers of individual insurance. All of these states at least allow some variation in premiums with the age of the individual, and all but one of these states allows some additional variation (rate bands). The footnote discusses the nature of rate regulation in each of these states. The more variation that is allowed

portability rules, leaving such regulation to the states."

¹³Other analyses of the impact of state regulation on the effects of the proposed legislation on the premiums of those currently purchasing individual insurance include AAA (1996b) and Hustead (1996). General discussions of state regulation of insurance markets include GAO (1995), Mollica (1995), Findlay and Loranger (1995), BlueCross-BlueShield (1995), Communications on Agriculture (1995).

¹⁴Hawaii has a universal system. The following 11 states have "guaranteed issue": Idaho, Iowa, Kentucky, Maine, New Hampshire, New Jersey, New York, Ohio, Utah, Vermont, and Washington. With the exception of Ohio, all of these states also have rate regulation. Even among these states, only New Jersey and New York do not allow at least some adjustments for age. Even when fully phased in, the allowable bands for age are quite wide: Kentucky 3:1, Maine 1.5:1, New Hampshire 3:1, North Dakota 5:1, Vermont 1.5:1, and Washington 3.75:1.

¹⁵Louisiana (1.2:1 for factors other than demographics), Minnesota (1.2:1 for factors other than age; 1.4:1 for age), North Dakota (5:1 for age and industry), South Carolina (1.4:1 for factors other than demographics), and West Virginia (no more than 30 percent above current rates).

(i.e. the wider is the rate band), the smaller will be the effect on current purchases of individual insurance.

- 3) Most states place no limitations on individual rates. BCBS (1996) places 35 states in this category.) In those states, competition will be expected to force insurance companies to treat conversion policies separately from current individual insurance policies. Again, the premium for those currently purchasing individual insurance would not be affected by the proposed federal legislation.

Reinforcing this conclusion that state regulation implies that the legislation will have little effect is the likely effect of the waiver provision of the proposed legislation. The Committee Report (October 12, 1995, p. 34) on the bill states: "State reforms of the individual market will apply(, i.e. satisfy the waiver requirement) ... if they achieve the objectives of the legislation." That report continues stating that it is the intention of this waiver provision "to provide substantial leeway for States to craft individualized solutions." Among the provisions listed as potentially satisfying the waiver requirements are high risk pools and in several states Blue Cross-Blue Shield is an insurer of last resort.

Table 4
State Insurance Regulation, High Risk Pools,
and BC/BS Open Enrollment

		GI-yes RR-yes	GI-yes RR-no	GI-no RR-yes	GI-no RR-no	BC/BS	HRP W	r Waive	Waiver or GI
Alabama	4.3			1		1		1	1
Alaska	0.6			1			1	1	1
Arizona	4.2			1				0	0
Arkansas	2.5			1			1	1	1
California	31.6			1			1	1	1
Colorado	3.7			1			1	1	1
Connecticut	3.3			1			1	1	1
Delaware	0.7			1				0	0
District of Columbia	0.6			1		1		1	1
Florida	14.2			1			1	0	0
Georgia	7.2			1				0	0
Hawaii	1.2			1			1	1	1
Idaho	1.2	1		0				0	1
Illinois	11.8			1			1	1	1
Indiana	5.8			1			1	1	1
Iowa	2.8	1		0			1	1	1
Kansas	2.6			1			1	1	1
Kentucky	3.9	1		0				0	1
Louisiana	4.3			1			1	1	1
Maine	1.2	1		0				0	1
Maryland	5.0			1		1		1	1
Massachusetts	6.1			1		1		1	1
Michigan	9.5			1		1		1	1
Minnesota	4.6			1			1	1	1
Mississippi	2.7			1			1	1	1
Missouri	5.3			1			1	1	1
Montana	0.9			1			1	1	1
Nebraska	1.6			1			1	1	1
Nevada	1.5			1				0	0
New Hampshire	1.1	1		0		1		1	1
New Jersey	7.9	1		0		1		1	1
New Mexico	1.7			1			1	1	1
New York	18.1	1		0				0	1
North Carolina	7.2			1				0	0
North Dakota	0.6			1			1	1	1
Ohio	11.2		1	0				0	1
Oklahoma	3.3			1			1	1	1
Oregon	3.1			1			1	1	1
Pennsylvania	12.1			1		1		1	1
Rhode Island	1.0			1		1		1	1
South Carolina	3.7			1			1	1	1
South Dakota	0.7			1				0	0
Tennessee	5.3			1			1	1	1
Texas	18.7			1				0	0

Utah	2.0	1		0		1	1	1
Vermont	0.6	1		0	1		1	1
Virginia	6.6			1	1		1	1
Washington	5.4	1		0		1	1	1
West Virginia	1.8		<u>1</u>	0			0	0
Wisconsin	5.1			1		1	1	1
Wyoming	0.5			1		1	1	1
Totals		10	1	5	35	11	27	42

Sources: BCBS (1995), Communications on Agriculture (1995), Hustead (1995).

GI: Guaranteed issue (in the individual insurance market)

RR-Any rate regulation (in the individual insurance market)

BC-BS: State's BlueCross-BlueShield program has open enrollment for individual insurance policies

HRP: State has a high risk pool (which is active and not closed to new entrants; some such pools would probably need to offer a wider range of health plans and/or ease their pre-existing condition rules in order to qualify for a waiver)

Waiver: State has a policy (BC-BS or HRP) such that it could qualify for a waiver from the proposed federal legislation (if it applied for the waiver and perhaps if it changed its HRP rules).

Waiver or GI: State has a policy (BC-BS or HRP) such that it could qualify for a waiver from the proposed federal legislation (if it applied for the waiver and perhaps if it changed its HRP rules) or it already has GI in the individual insurance market such that the proposed federal legislation is redundant..

Together, state guaranteed issue regulations, high risk pools, or open-enrollment into Blue Cross/Blue Shield would include all but seven states: Arizona, Delaware, Georgia, Nevada, North Carolina, Texas, and West Virginia. Thus, almost every state could get a waiver if it wanted to. For nine states, getting that waiver might require changing the details of the operation of the high risk pool (mostly including credit for previous insurance in applying waiting periods; Hustead, 1996): Arkansas, Colorado, Florida, Mississippi, North Dakota, South Carolina, South Dakota, Wisconsin, and Wyoming.

This consideration of state regulations suggests that the effect of the proposed federal legislation on the premiums of those currently purchasing individual insurance would be—for four reasons—considerably smaller than that implied by the HIAA methodology for the change in

average premium in the individual insurance market (i.e. our smaller "RAND Estimates").

- 1) Currently, in only five states is the expected effect not zero—i.e. there is rate regulation, but not guaranteed issue.
- 2) Even in these five states (and presumably in any other states which might adopt rate regulation, in response to the proposed federal legislation), the effect is likely to be smaller than implied by even our best estimates. Our best estimates would only be appropriate in a state with pure community rating. Currently all five of the states with rate regulation but not guaranteed issue in the individual market do not have pure community rating. They each allow some variation with the age of the insured individual¹⁶. All but North Dakota allow at least some rate banding for health status. The larger are these rate bands, the smaller is the appropriate estimated effect relative to our revised estimate based on the HIAA methodology.
- 3) The interaction of the proposed federal legislation with the state high risk pools may further lower the effects. If states allow expensive conversion policies to be shifted to the high risk pool, then the average claims cost will be even lower.
- 4) Since most states have high risk pools, including four of the five states with rate regulation but not guaranteed issue, they could apply for waivers from the proposed federal legislation. Thus, even in those states there would be absolutely no effect.

¹⁶ The current COBRA population appears to be disproportionately older (see Flynn, 1992). This age selection probably explains some of the higher cost of COBRA coverage relative to either the health insurance groups which they left (i.e. their previous employer) or those currently purchasing individual health insurance. In as much as states allow age rating of individual insurance premiums, the relevant relative claims cost is within age groups.

Thus, even in states with binding rate regulation, our revised estimate using the HIAA methodology is likely to overestimate the increase in premiums for those currently buying health insurance.

Finally, the correct effect on the national average premium in the individual insurance market is even smaller. It is the weighted average of this effect in states with binding rate regulation and zero. Since less than six percent of the nation's population lives in states with a non-zero effect, the national effect will be much smaller than that implied by our estimates using the HIAA methodology. Simply weighting by the share of the population in states without binding rate regulation and down weighting the HIAA methodology estimates for less than pure community rating implies a national estimate of under 0.2 percent.

The exact results will depend on state reactions. It seems likely (see for example AAA, 1996b; Wildsmith, 1996) that not all states that could apply for waivers would (nor would all states with preexisting conditions limitations on their current high risk pools remove them). Furthermore, it seems likely that in response to the proposed federal legislation and on-going initiatives of the National Association of Insurance Commissioners (NAIC) more states will adopt some form of rate regulation for the individual health insurance market (Findlay and Loranger, 1995; Mollica, 1995; AAA, 1996b). Again, much of the resulting state regulation is likely to impose rate bands (not a single premium) and/or allow age rating. Depending on how many states do not apply for waivers, how many states adopt rate regulation, and the details of the rate regulation, the total effects could be larger than the under one percent estimate implied by the current regulatory environment, but effects on national average premiums of even half that implied by our revised estimates based on the HIAA methodology seem unlikely.

5. CONCLUSION

This paper has recalculated the effect of the proposed federal Health Insurance Reform Act of 1995 (S.1028). The recalculations maintain the basic HIAA methodology but substituted newly computed estimates of the key figures used therein. While due to the lack of appropriate data HIAA was forced to use non-representative data from health insurance industry sources, our newly computed estimates are based on specially designed tabulations of nationally representative panel data from the U.S. Bureau of the Census sponsored.

While HIAA's estimates were over 20 percent (22.1 percent in HIAA I), our recalculations imply estimates a quarter of that size (5.5 percent for RAND I corresponding to HIAA I). Alternative, and we think more plausible assumptions, yield an estimate of 2.2 percent. Both of these figure are too high due to several conservative assumptions in generating the underlying tabulations and figures.

Consideration of the nature of state regulation implies that even this lower more plausible estimate is too high. The proposed federal legislation has no rate regulation. Even in states with rate regulation (or which will adopt rate regulation in response to the proposed federal legislation), the HIAA methodology would only be appropriate with pure community rating; i.e. under regulation which allows for no adjustments for age or other factors. No state which does not also require guaranteed issue currently has such stringent rate regulation. Instead, those states that have rate regulation allow adjustments for age and usually for other factors. As the number and range (i.e. the rate bands) of such adjustments increases, the effect on the premium of those currently purchasing health insurance declines from the one implied by the HIAA methodology (e.g. "HIAA-RAND" or "RAND Best").

Finally, even these effects are applicable only in a small minority of the states (under current state regulations only five).

There will be no effect in states without rate regulation, or in states which already have guaranteed issue in the individual insurance market. Most of the remaining states could apply for a waiver based on their already having either a high risk pool or an insurer of last resort (i.e. the state's BlueCross-BlueShield offers open enrollment for its individual insurance).

The phase-in period of this long-run estimate will be several years. In a market with recent premium increases of well over five percent per year, the long-run effect of this legislation - a few percentage points at most - is likely to be undetectable. Thus, while the original HIAA estimate of premium increases of over 20 percent for those currently buying health insurance in the individual health insurance market understandably induced many to reconsider the desirability of such a conversion right; our preferred range of estimates of 5.5 percent to under 1 percent suggest that premium increases for those currently buying health insurance in the individual insurance market provide less of a reason to oppose the proposed legislation.

APPENDIX: TECHNICAL ISSUES IN THE ESTIMATION OF KEY FIGURES

This technical appendix provides more details on the assumptions, computations, and results underlying the estimates discussed in the body of the paper. It begins with an overview of the Current Population Survey (CPS) database and the derivation of the Population Estimates from the *EBRI Databook* (EBRI, 1995). It then provides an overview of the main SIPP database, followed by detailed descriptions of the overall "previous insurance" rates and results stratified by firm size and job tenure.

The Current Population Survey (CPS)

The basic data for both the original estimates and our reestimates of the total populations (in the individual health insurance market and in the COBRA and sub-COBRA components of the employer-sponsored market) are derived from the March Demographic Supplement to the Current Population Survey (hereafter simply CPS). This component of the CPS is a large (55,000 households) nationally representative annual survey conducted by the U.S. Bureau of the Census. These questions nominally refer to the previous calendar year. Most analysts interpret responses as referring to status as of the interview date (EBRI, 1996).

The HIAA I analysis was based on the 1994 CPS. Since their analysis, the 1995 CPS data have been released. These data are preferred not only because they are more recent, but also because they are based on a revised and more detailed set of health insurance questions (EBRI, 1996). These questions appear to have had the twin effects of increasing the number of people reporting employer based coverage and lowering the number of people reporting individual coverage. In addition, the new questions appear to have substantially improved the reporting of children's health insurance.

Size of the Individual Market

The size of the individual market is traditionally computed from the CPS totals for the private (non-governmental) insurance not provided through an employer. EBRI (1996) refers to this as "Other private" health insurance coverage and defines it as "Individual or group coverage not offered through an individual's current or former employer or union. This category consists primarily of individual purchased health insurance."

Some of these individuals, however, are not covered through the individual market. HIAA (1995) states:

Note that published estimates of the size of the individual market are generally estimates of non-governmental, non-employer based coverage. Such estimates include association group policies, specified disease policies, hospital indemnity policies, etc.

Using HIAA estimates based on insurance industry sources, their computations use an estimate of 10.4 million lives in the individual market (both the name on the policy and his/her dependents).

Our estimate of 13.2 million lives covered in the individual insurance market is computed using the more recent CPS data and an alternative partitioning of the "Other Private Coverage" group between true individual insurance and other policies. In particular, our figure is computed as 80 percent of the 16.4 million "Other Private Coverage" in the more recent 1995 CPS (EBRI, 1996; calculated from the March 1995 Current Population Survey). The eighty percent figure is the most conservative (implying the largest effect) estimate from the American Academy of Actuaries range of values (AAA, 1996b)¹⁷.

¹⁷ We use the word 'individual' in this context to refer not only to the true legal definition of a policy owned by an insured individual (and his or her family), but also to those individuals who are insured through identical criteria, such as loosely defined discretionary group trusts and associations. For this estimate, we assumed that between 80%

Size of the COBRA and Sub-COBRA Markets

The HIAA I figures for the number of covered lives in the COBRA and sub-COBRA markets are derived from EBRI estimates based on the 1994 CPS (EBRI, 1995). The relevant table is reproduced below:

Table A.1**Health Insurance by Firm Size (EBRI Data Book, Table 8.13)****Based on 1994 CPS****Nonelderly Population with Selected Sources of Health Insurance, by Work Status and Firm Size of Family Head's Employer, 1993**

Firm Size of Family Head's Employer	Total	Total Privat e	Employer Coverage			Other Privat e	Total Public	Medicai d	No Health Insuranc e Coverage
			Total	Direct	Indirec t				
Total	226.2	157.7	137.4	72.0	65.4	20.8	36.3	28.9	40.9
Self-Employed	17.8	12.1	7.4	3.3	4.1	4.8	1.2	0.8	4.9
Wage and Salary Workers	181.1	138.7	125.7	65.8	60.0	13.4	19.7	14.7	29.7
Public sector	32.8	28.3	26.3	14.0	12.4	2.1	3.1	1.6	3.0
Private sector	148.3	110.3	99.4	51.8	47.6	11.3	16.5	13.1	26.7
fewer than 10	19.1	9.8	7.3	3.8	3.6	2.5	3.3	2.8	6.5
10-24	14.8	9.0	7.5	3.9	3.6	1.6	2.2	1.7	4.3
25-99	22.5	15.8	14.2	7.5	6.7	1.6	2.6	2.2	4.9
100-499	25.5	19.8	18.2	9.4	8.8	1.7	2.6	2.0	4.0
500-999	9.6	8.0	7.4	3.8	3.6	0.6	0.8	0.7	1.2
1,000 or more	56.8	48.1	44.9	23.4	21.4	3.3	5.0	3.7	5.8
Nonworker	27.3	6.9	4.3	2.9	1.4	2.6	15.4	13.4	6.3
(percentage within coverage categories)									
Total	100.0	100.0	100.0%	100.0	100.0%	100.0	100.0	100.0%	100.0%
	%	%		%		%	%		

Source: Sarah C. Snider and Paul Fronstin, "Sources of Health Insurance and Characteristics of the Uninsured, Analysis of the March 1994 Current Population Survey," EBRI Issue Brief no. 158 (Employee Benefit Research Institute, February 1995).

Note: Details may not add to totals because individuals may receive coverage from more than one source. See Appendix B for a technical explanation of this source.

and 90% of those privately insured in the U.S. by means other than through the employer would fall into this category. We assumed that S.1028 would apply to both the true legal definition of private individual health insurance and the looser definition as we define it" (AAA, 1996, A-3, not 10).

^aFamily head is defined as the family member with the greatest earnings; all other family members with earnings are designated as secondary workers.

The HIAA I figures are 110 million and 30 million covered lives in the COBRA and sub-COBRA markets respectively. It is not clear how they derived their figures. The total of 140 million (=110 million + 30 million) is close to the "Total Employer Coverage" figure. To get close to the 30 million figure for the Sub-COBRA market, however, we must add all of the "Self-Employed", all of the "Nonworker", and all of the "Private Sector", "fewer than 10" and "20-24" covered lives ($26.5 = 7.4 + 4.3 + 7.3 + 7.5$).

Even ignoring the rounding to the closest 10 million (an increase of 13 percent), this calculation does not seem to estimate the right concept. First, some portion of covered lives in the 10-24 employees category actually have 20-24 employees and are thus COBRA eligible. Second, the "Self-Employed" are probably not appropriately treated as part of the population at risk. Many of them are in fact buying individual insurance through their self-employed firm (we do not add them back into our estimates of the size of the individual insurance market; doing so would further lower our estimate). They presumably have lower turnover than the employees (for whom we quote turnover rates below). If health insurance was crucial to them (and unless they go bankrupt), they could stay in their current "self-employed" status.

Finally, note that these estimates of the sub-COBRA market are themselves probably too high. Because of data limitations in the CPS, the classification is by the "Firm Size of Family Head's Employer." The appropriate concept for the COBRA/Sub-COBRA distinction is the firm size of the individual providing the health insurance. This explains the anomalous last row "Nonworker" (who is nevertheless receiving insurance from an employer). These are households in which someone other than the household head (e.g. a spouse or adult child of the head) is providing health insurance to some (perhaps) all household members. Rather than treating all of these individuals as being in the sub-COBRA market (as the HIAA estimate appears to do), it is probably preferable at least to

spread these "Nonworkers" according to the shares of those individuals for whom we have a firm size (at least of the household head). Our preferred estimate (see below), implies that this would put less than 10 percent of these "Nonworkers" into the Sub-COBRA market.

More generally, these EBRI tabulations probably overstate the number of covered lives in the sub-COBRA market. Larger employers are more likely to offer insurance. Even among employers offering group health insurance, on average smaller firms are charged higher health insurance premiums (due to the higher costs of selling to smaller firms) and pay a smaller share of the premium (for the individual or for dependents) themselves (i.e. they require larger contributions from the employee). Thus, when there are two working individuals in the household, it will be more likely that the individual working at the larger firm will provide the insurance. This will not always be the head of household. These considerations imply that simply tabulating the size of the employer of the head of household is likely to overstate the size of the Sub-COBRA market (again implying that our estimated effects are too large)¹⁸. Further research on the size of this bias is indicated.

The HIAA II figures for employment based insurance are drawn from the AAA (1996b), which are based on the 1995 CPS. The HIAA II estimate continue to use the HIAA estimate of 10.4 million.

Our estimates of the number of covered lives in the COBRA and sub-COBRA markets are derived from the 1995 CPS (a year later than the HIAA I estimates and using the improved question wording). The relevant table from EBRI (1996) is reproduced below:

¹⁸ The American Academy of Actuaries (1996b, p. A-2, note 7) states: "It is assumed that between 40% and 60% of dependents of those family head small employer health insured lives are covered by large employer plan elsewhere, because, in general, a third or more of those who are offered a small employer insurance plan, opt not to participate."

Table A.2

Health Insurance by Firm Size (EBRI, 1996, Table 12)
Nonelderly Population with Selected Sources of Health Insurance,
by Work Status and Firm Size of Family Head's Employer, 1994

Firm Size of Family Head's Employer	Total	Total Private	Employer Coverage			Other Private	Total Public	Medicaid	No Health Insurance Coverage
			Total	Direct	Indirect				
Total	228.1	162.3	145.9	75.1	70.8	16.4	37.2	28.7	39.4
Self-Employed	17.3	12.5	8.2	3.7	4.5	4.4	1.3	0.8	4.0
Wage and Salary Workers	185.0	143.0	133.4	68.4	64.9	9.6	21.4	15.4	29.4
Public sector	33.3	29.0	27.8	14.5	13.3	1.3	3.7	1.7	2.8
Private sector	151.7	114.0	105.6	53.9	51.7	8.4	17.7	13.7	26.6
fewer than 10	20.1	10.7	8.4	4.1	4.2	2.4	3.4	2.8	6.7
10-24	14.8	9.0	7.7	3.9	3.8	1.3	2.2	1.8	4.2
25-99	23.1	16.3	15.1	7.8	7.3	1.2	3.0	2.5	4.8
100-499	25.6	20.2	19.1	9.8	9.3	1.1	2.7	2.2	3.7
500-999	10.0	8.2	7.9	4.1	3.9	0.3	1.0	0.7	1.2
1,000 or more	58.1	49.4	47.4	24.2	23.2	2.0	5.4	3.7	5.9
Nonworker	25.8	6.7	4.3	3.0	1.4	2.4	14.5	12.4	6.0
(percentage within coverage categories)									
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

We begin with a side-computation. We need to allocate the people in the "10-24 workers" group. Those in firms of size 10-19 are not COBRA eligible. Those in firms of size 20-24 are COBRA eligible. Assuming a uniform distribution of firm sizes between 10 and 24 employees, we compute that the shares of people in the 10-24 category who are actually in firms of size 10-19 and 20-24 are respectively:

$$56.9\% = \frac{145}{255} = \frac{10+11+\dots+18+19}{10+11+\dots+23+24}$$

$$43.1\% = \frac{110}{255} = \frac{20+21+\dots+23+24}{10+11+\dots+23+24}$$

Using this approximation, we derive a rough approximation to the size of the sub-COBRA market as 10 percent of the wage and salary market (9.6 percent = 8.4 million covered lives in firms of less than 10 employees + 56.9 percent of the 7.7 million covered lives in firms of 10-24 employees / 133.5 million covered lives among wage and salary workers).

Our computations assume ignore the self-employed. Many of them purchase individual insurance such that they would not be eligible for the conversion rights of the proposed federal legislation. Those that due purchase group insurance which would be covered by the proposed federal legislation have turnover rates sufficiently lower than that used in the computations (which is for employees) that the effect on the final estimate is likely to be negligible. We have also assumed that all of the "Public Sector" workers are in firms of 20 or more. We use this rough approximation to allocate the Nonworkers among the COBRA and Sub COBRA markets.

Given these side computations, our figure for the total number of people in the 2-19 employees group (COBRA ineligible) is 13.2 million. They are made up of the 8.4 million in the "fewer than 10" group, the 4.4 million from the "10-24" group who are actually in firms of size 10-19 (i.e., 56.9 percent of 7.7 million), and 0.4 million of the "Nonworker" group (i.e. 9.6 percent for 4.3 million). The COBRA market is then the complement of this group, 124.5 million (the 133.4 million Wage and Salary Workers, less the Sub-COBRA market, plus the remaining share of the "Nonworker" group).

These estimates are likely to be too conservative (implying an effect on premiums which is too large). We have excluded all of the Self-Employed from the individual insurance market and the only correction for the recording of firm size by household head rather than source of employment is for the "Nonworkers". Correcting both of these problems with the figure would yield a smaller estimate.

These estimates are lower than those of the American Academy of Actuaries (1996a). They estimate that there are 18.4 million (including 9 million dependents) individuals who "can claim that the head of their household works in employer sized programs of 20 or less-those not subject to COBRA" (n.b. this appears to be an error, COBRA does apply to groups of size 20). Their estimate is higher because they include the self-employed in the risk set (we exclude them). Note, however, that they do make a correction for the CPS's reporting of firm size of the

household head, not the source of insurance. Using the AAA figure of 18.4 would raise our HIAA-RAND estimate to 6.6 percent.

SIPP Database

The rest of the new figures reported in this paper are derived from new tabulations from the Survey of Income and Program Participation (SIPP) conducted by the U.S. Bureau of the Census. The SIPP is a panel survey based on a nationally representative sample of the U.S. population. Individuals are interviewed every four months, covering an interval of 24 to 36 months. A new panel is started approximately annually and includes about 20,000 households.

At each interview the SIPP asks about employment and health insurance status at each of the four preceding months. The structure of the questions also makes it possible to identify individuals who have changed jobs, even when there is no intervening period without a job. Finally, the more recent waves used here specifically distinguish health insurance from a current vs. health insurance from a previous employer.

These SIPP based estimates are, of course, only as good as the quality of the interviewing and the quality of the responses. In particular, our analyses assume that all COBRA coverage is reported as through a previous employer. In as much as individuals do not treat COBRA coverage as through a previous employer, our estimates of the average COBRA duration per job leaver and the percentage of all job leavers exhausting COBRA will be too small. Among the things that might cause individuals to mis-report COBRA coverage are the fact that the employer does not contribute towards the COBRA premium and that sometimes the employer will instruct the former employee to make the COBRA payments to some third-party COBRA servicing agent (e.g. CobraServ, see below). Such mis-responses are always possible in survey data. Note, however, that COBRA coverage is not like regular individual insurance. It has a clear statutorily determined limit, usually 18 months. Furthermore, the terms of the coverage are identical to those applying to employees (except that the former employee pays the entire

cost). Thus, COBRA coverage does maintain a strong connection to the previous employer. This similarity should mitigate the under-reporting due to mis-classification of the source of insurance coverage.

The SIPP data are attractive for this analysis because they explicitly identify both the person in whose name the health insurance coverage is received and all individuals in the household covered by that policy. Unless otherwise noted, the tabulations which follow consider not simply the worker/job leaver (in whose name the policy is/was), but all "covered lives" (e.g. spouse and children).

The analyses reported here use the most recent available SIPP data. They analyze a dataset constructed by pooling data from the 1990 and the 1991 panels of the SIPP. The 1990 panel covers the period October 1989 to August 1992. The 1991 panel covers the period October 1990 to August 1993. These are the most recent available SIPP panels. This was a period of recession and recovery from a recession. This business cycle phase should be kept in mind when interpreting the results.

Our sample includes individuals 16 to 64 years old at the time of the interview. The lower boundary is set by the youngest age at which individuals are asked the labor force questions. The upper boundary excludes retirees, who are eligible for Medicare. We also drop individuals once they miss an interview, even if they are again interviewed at a subsequent date; but interviews before the missed interview are retained in the analysis file. Klerman (1992) shows that the bias in overall levels of health insurance coverage due to excluding those who missed interviews is negligible. The hazard models used below should also minimize the magnitude of any attrition bias.

Klerman (1992; see also Young, 1989) shows that the seam bias problem in the SIPP data is severe. Almost all transitions in employment and insurance status are reported to occur between the last period reported on in one interview and the first period reported on at the next interview. From the structure of the SIPP, we know that this

is an artifact of reporting not a strange periodicity of the true behavior. What appears to happen is that individuals propagate their current status back over all of the periods reported on at the interview. Below, we discuss how we adjust our analysis to account for this seam bias.

Computing Average COBRA Duration and Percentage of Job Leavers Exhausting COBRA

HIAA I bases their estimates of COBRA take-up on Spencer's Research Reports: "Consistent with historic election percentage since 1990. Spencer's Research Reports: 329.04-01, 8/19/94." Presumably this is the information in the EBRI Databook Table 8.17 (p. 277; reproduced below. The source note there states "The total of employees counted in 1993 survey was 3.1 million. A total of 204 companies responded to the survey."

Table A.3

COBRA Coverage (EBRI Databook, Table 8.17, p. 277)

Entitlement and Elections of Consolidated Omnibus Budget Reconciliation Act (COBRA), Plan Years 1988-1992

Plan Year	Employees Entitled to Coverage (as a % of Active Employees)	Employees Electing Coverage (as a % of Active Employees)	Employees Electing Coverage (as a % of Those Entitled)
1988	16.0%	1.7%	11.2%
1989	9.2%	2.6%	28.5%
1990	10.6%	2.2%	20.5%
1991	12.1%	1.6%	13.2%
1992	8.7%	1.7%	19.3%

Source: Employee Benefit Research tabulations of data from Charles D. Spencer & Associates, Inc. "1993 COBRA Survey: One in Five Eligible Elect Coverage; Employers Subsidize One-Third of Cost" Spencer's Research Reports (August 6, 1993): 329.04.-1. The total number of employees counted in the 1993 survey was 3.1 million. A total of 204 companies responded to the survey.

HIAA I explains the source of their estimate that 20 percent of people who ever use COBRA who exhaust it (use all 18 months) as follows: "10% of the unemployed have not had a job in the last 18 months (The Dynamics of Employment and Insurance, by Klerman and Rahman, RAND

Corporation). We have assumed that those who expect only short-term unemployment are less likely to elect COBRA coverage." This statement appears to refer to unpublished tabulations by Klerman (the author of this report) and Rahman for HIAA in the early 1990s. Those tabulations explored time not employed and health insurance status (currently and on the previous job) of the currently unemployed. Related tabulations were published in Klerman and Rahman (1992). The tabulations were based on the 1984, 1985, and 1986 panels of the SIPP. Since the interviews for those panels did not distinguish health insurance provided by a current employer from health insurance provided by a previous employer, those tabulations can not be used to explore COBRA coverage (some of which is used after the individual is reemployed). Thus, the applicability of those tabulations to the percentage of COBRA participants who exhaust COBRA coverage is not clear.

For these figures, HIAA II uses the AAA assumptions. AAA (1996b, p. A-2, notes 2 and 3) explain these figures as: "20% of lives becoming eligible for COBRA in any one year will elect the COBRA coverage (Generalized average of proportions reported over several years in surveys conducted by Spencer's Research Reports)." and "22% to 28% of those individuals covered as a result of COBRA will continue until they exhaust the maximum benefit period of time allowed (18, 30, or 36 months)." No source is given for the later statement.

We reestimate these figures directly from nationally representative individual data from the SIPP collected by the U.S. Bureau of the Census. While from other data sources it appears to be easier to compute the COBRA take-up rate (among job leavers) and then to compute the number of months per person taking-up COBRA or the percentage of those taking up COBRA who exhaust it, given data issues related to the SIPP (which we discuss in detail below), it is easier to not use this conditional computation structure. Instead, we attempt to estimate the number of months on COBRA per job leaver (i.e. among all job leavers, whether or not they ever use COBRA) and the percentage of all job leavers who exhaust COBRA.

The idea underlying our estimate of the average COBRA duration and the percentage of job leavers exhausting COBRA is straightforward. Ideally, with panel data we would simply follow all COBRA-eligible job leavers forward. To compute average COBRA durations per eligible, we would simply count total years on COBRA *per job leaver*. To compute the percentage of all job leavers exhausting COBRA, we would use the fraction of all job leavers having COBRA coverage in month 18, but not in month 19.

Unfortunately, for several reasons, the estimation problem is considerably more complicated than that. The issues and our solutions are as follows:

- 1) The SIPP panels are short (under three years) relative to the COBRA exhaustion time (a year and a half). Thus, for anyone leaving their job after about the middle of the panel, we will not observe their behavior for the entire period for which they are eligible for COBRA (nor the point of time at which they would exhaust COBRA).

This problem suggests a hazard model. For every pair of months we observe, we could compute the probability of having COBRA in the second month of the pair, given that the person had COBRA in the first month of the pair. Such a hazard model uses the information on every pair of observed months to estimate the overall probability of a spell of COBRA lasting exactly M months. We then use these transition probabilities to simulate the probability of any history. This procedure is formally equivalent to a time-inhomogeneous first-order Markov transition model, where the time-inhomogeneity is in terms of months since leaving the job. We will see that most spells of "previous employer" are quite short; thus, this information is quite important in properly estimating time on COBRA. These hazard-based estimates will thus be more precise than those using only individuals observed for 18 months after leaving their job.

- 2) A person can go onto COBRA up to several months after leaving the job. Thus, we can not simply follow all the people who have COBRA one month after leaving this job. Instead, we need a multi-state hazard model. Throughout, we measure time in terms of duration since job leaving (not time in each state).

Specifically, we follow a person forward in the months after they leave a job (from which they received health insurance), until they next enter a job providing health insurance (once they enter a job providing health insurance, they become eligible for COBRA from the new employer). We consider four mutually exclusive and exhaustive states:

E-since leaving the job, has been employed, health insurance from current employer

and, among those who have not yet (through the reference month) held a job providing health insurance since leaving the reference job, there are three possible combinations of ever and current COBRA status:

N-never covered by COBRA

O-once covered, but not now covered, by COBRA

C-now covered by COBRA,

E, ever having held a job providing health insurance, is an absorbing status. For the purposes of the model, once a job leaver has ever become employed with health insurance from the current employer they are always in that status. When they leave this job providing health insurance, the model has a new job leaving event (and another observation at one month after job leaving).

For this state space, for each month after leaving a job, we estimate the probability of changing from one of these four states to another state (based on all available pairs of

months). We then use the estimates to simulate the probability of being in each state in each month.

- 3) The SIPP does not directly identify those on COBRA. The interview collects the information that someone in the household had health insurance from a "previous employer" through a pair of questions. The first question asks about the source of health insurance and they would respond "Current or previous employer". The second question, added to the SIPP questionnaire with the 1990 wave (and determining which part of the SIPP we use), specifically asks "current" or "previous" employer. The interviewer would then get a list of the individuals covered through this relationship with a previous employer.

However, not everyone responding "previous employer" is in fact on COBRA. Some firms offer at least short-term coverage for those terminating employment. Furthermore, as part of early retirement or severance plans, other firms offer long-term health insurance (often until Medicare eligibility at age 65). We can not distinguish the COBRA policies from other previous employer coverage. We will proxy for COBRA exhaustion by all people who stop reporting COBRA coverage about the point of COBRA exhaustion (see below). Again, this will be a conservative estimate (resulting in an overestimate of the effect of the proposed legislation).

- 4) In most months of the SIPP (see below), we can not identify firm size and thus can not distinguish COBRA eligibility from non-eligibility. Again proceeding conservatively (leading to an over-estimate of the effect of the proposed legislation), we assume that all "previous employer" is from COBRA eligible individuals. Specifically, from tabulations below, we estimate that 80 percent of job leaving events from insured jobs are to firms of size 25 or more. Thus, we divide the estimates of average COBRA duration and percentage exhausting COBRA by 0.8.

Below, we will show limited evidence that in fact a considerable amount of "previous employer" is from small firms (less than 25 employees). If so, then our estimates of time on COBRA are too large. Below, we discuss other implications of this finding.

- 5) The problem of "seam bias" noted above implies that we would not expect all COBRA exhaustions to be reported as occurring exactly between month 18 and month 19. Seam bias suggests that many COBRA exhaustions would, in fact, be recorded between month 16 and month 17. We conservatively treat everyone who reports insurance from a "previous employer" at month 16, but not at month 20 as a COBRA exhaustion. Of course, some of these people would have dropped COBRA even if COBRA lasted forever, so this method is conservative (and leads to overestimates of the effect).

Table 3.2 presents the results of this procedure. Among individuals leaving a job which provided employment based group health insurance (by months since leaving the job), the second column gives the percentage of individuals reporting health insurance from a "previous employer". That percentage is highest in the month immediately after leaving the job, 25.7 percent. It falls quickly to 7.9 percent six months after leaving the job. Note also that two years later (after COBRA coverage for employment related reasons is no longer available), 3.37 percent of job leavers still report health insurance from a "previous employer." This later group is probably early retirees and others with coverage from a "previous employer" due to rights other than COBRA (e.g. as part of an early retirement offer, etc.; Madrian, 1994; Rogowski and Karoly, 1996).

Table A.4

Estimating COBRA Spell Length						
Column	A	B	C	D	E	F
Months	All Prev	Emp 20 +	p.d.f	adjust. p.d.f	Avg dur.	Total months
1	25.71%	32.14%	8.75%	8.75%	1.5	0.1313
2	18.71%	23.39%	5.33%	5.33%	2.5	0.1331
3	14.45%	18.06%	2.63%	2.63%	3.5	0.0919
4	12.35%	15.44%	4.64%	4.64%	4.5	0.2087
5	8.64%	10.80%	0.96%	0.96%	5.5	0.0529
6	7.87%	9.84%	0.98%	0.98%	6.5	0.0634
7	7.09%	8.86%	0.30%	0.30%	7.5	0.0225
8	6.85%	8.56%	1.10%	1.10%	8.5	0.0935
9	5.97%	7.46%	0.39%	0.39%	9.5	0.0368
10	5.66%	7.08%	0.30%	0.30%	10.5	0.0315
11	5.42%	6.78%	-0.08%	-0.08%	11.5	-0.0086
12	5.48%	6.85%	0.78%	0.78%	12.5	0.0969
13	4.86%	6.08%	0.01%	0.01%	13.5	0.0017
14	4.85%	6.06%	0.06%	0.06%	14.5	0.0091
15	4.80%	6.00%	0.38%	0.38%	15.5	0.0581
16	4.50%	5.63%	0.55%	0.55%	16.5	0.0908
17	4.06%	5.08%	0.04%	0.66%	42	0.2783
18	4.03%	5.04%	0.05%			
19	3.99%	4.99%	0.07%		Months	1.3917
20	3.93%	4.91%	0.50%		Years	0.1160
21	3.53%	4.41%	0.10%			
22	3.45%	4.31%	0.04%			
23	3.42%	4.28%	0.10%			
24	3.34%	4.18%	4.18%			

Note: Columns are:

Months: Months since leaving job.

A: All Prev. Emp.: Percentage of all job leavers reporting continuation coverage (i.e. health insurance from a previous employer).

B: Emp. 25+: Same concept as "All Prev. Emp." for workers in the COBRA market under the assumption that all reported Continuation coverage was from employers with 20 or more employees (i.e. the COBRA market).

C: p.d.f.: Probability that a continuation coverage will end in month M (using "Emp. 25+" estimates).

D: Adjusted p.d.f.: Adjust p.d.f. to assume that anyone reporting a spell length of 17 to 20 months, actually exhausted COBRA, but anyone with spell lengths longer than 20 months was not on COBRA.

E: Avg. dur.: Adjust duration for total length of those exhausting COBRA in presence of the proposed legislation ($42=18+24$ months).

F: Total months: Product of columns D and E. Summing down the column gives the average duration per COBRA market job leaver (under the assumption that all reported continuation coverage is in the COBRA market and that all continuation spells lasting 20 months or less were actually COBRA)..

Simply from this Column B, we can see that COBRA exhaustion is not that common. As noted earlier, because of concerns about seam bias, it is not appropriate to compare "previous employer" coverage in month 18 (the last month in which COBRA coverage should have been available) with "previous employer" coverage in month 19 (the first month in which COBRA coverage would not have been available due to COBRA exhaustion).

Instead, seam bias concerns suggest comparing coverage levels at the two seam months spanning the exhaustion point, 16 and 20 months. This difference 0.57 percent ($0.57=4.50-3.93$) is an approximate (see below) upper bound on people who exhaust COBRA coverage (and might therefore be eligible and interested in purchasing conversion coverage). This is an overestimate because some of these people terminated continuation coverage for other reasons: they got a job offering health insurance, a spouse did, etc.

Furthermore, some of these people were not continuously covered by continuation coverage. Under COBRA, individuals can retroactively choose to buy COBRA coverage; even several months after leaving the job. These individuals, however, would not be eligible for the conversion policy. The proposed legislation requires continuous coverage in a group health plan. Some of the people without continuous coverage would have been induced by the proposed legislation to make their coverage continuous (so our estimates are slightly too low), others would not (so our estimates are too high).

The next several columns present refinements of these simple calculations. The numbers in the Column B are too low. They assume that everyone was eligible for COBRA. In fact, individuals in firms with under 20 employees are not eligible for COBRA. Such individuals

represent about 20 percent of all job leavers (see below). Column C adjusts the column B numbers to compute average months per COBRA eligible (not for all job leavers). It does so assuming that all "previous employer" coverage is from COBRA eligible firms. Clearly this is an overestimate (see below). Nevertheless, it gives us an upper bound. To do the adjustment (and given the assumption), Column C is computed by dividing Column B by the share of job leavers who are from COBRA eligible firms; below we estimate that share at about 0.80. Dividing by 0.80 gives the third column; i.e. the percentage of individuals with COBRA spells lasting exactly M months. Thus, our preferred estimate (knowingly erring on the side of being too large) for the number of people exhausting COBRA coverage is 0.71 percent of all individuals leaving COBRA market employment ($0.71 = 5.62 - 4.91$).

We now turn to trying to estimate the mean duration collecting COBRA per eligible. Column D (labeled "p.d.f.") computes the probability of a job leaver reporting "previous employer" for exactly N months. The computation is performed by subtracting the percentage of people with "previous employer" coverage in month $N-1$, from the number in month N .

Following our concerns about seam bias, Column E computes the duration of continuation/conversion coverage given the reported duration of continuation coverage. It assumes that anyone reporting the last month of previous employer coverage was M , in fact was covered (on average for $M+1$ months (assuming that half of the people actually found the job in the last month in which they reported "previous employer" and the other half paid for COBRA coverage for an additional month and were covered by some other source by the end of the month (again this will over-estimate the effect)). Finally, we assume that all individuals who report leaving at 17, 18, 19 or 20 months exhausted COBRA and would have taken up conversion coverage for an average of 24/36 months (the HIAA I/HIAA II assumption), for a total for 42/54 months (42 months = 18 months + 24 months; or 54 months = 18 months + 36 months).

Summing down Column F gives our estimate of continuation months per job leaver. Our estimate is that there are 0.1177/0.1248 years (a little over a month; SIPP I/SIPP II) of health insurance from a "previous employer" for every covered life associated with a job leaver. Given our take-up rate of any previous employer coverage of 32.14 percent, this implies an average duration on previous employer of 3.87 months (SIPP I, the SIPP II estimates are similar). If the take-up rate among COBRA eligibles is 20 percent, this implies an average COBRA duration of 6.19 months ($= 0.1176 \text{ year} * 12 \text{ months per year} / 0.20 \text{ take-up rate}$).

Both the overall levels (per eligible individual) and the individual components (the take-up rates, time on COBRA per take-up, and exhaustion rates per take-up) can be compared to industry sources. Our estimate that 32.14 percent of COBRA eligibles take-up the coverage is well above that reported by *Spencer's Reports* (see *EBRI Databook*, p. 277, Table 8.17). For 1988 to 1992, they estimate 11.2, 28.5, 20.5, 13.2, and 19.3 respectively. Our estimates correspond primarily to 1991, 1992, and 1993. The figure is also above the CobraServ estimate of 21 percent for work-related qualifying events for the period 1990-1991 (Flynn, 1993).

Note, however, that this number is too high because it assumes that all "previous employer", except that which lasts more than 20 months, is due to COBRA. In fact, some of it was offered for other reasons. In addition, it assumes that there is no "previous employer" among those previously employed in the sub-COBRA market.

Our SIPP based estimates for the duration of COBRA exhaustion and the duration of COBRA coverage are lower than those used in the other analyses of the proposed legislation (e.g. HIAA, 1995, 1996; AAA, 1996b). Note that the final column of Table A.4 computes the average duration on "previous employer", taking as a base those who were covered by "previous employer" in the month after leaving the job. This method yields an estimate of 3.70 months. This estimate is well below the

CobraServ estimate of 7 months for "Work-related qualifying events" (see Flynn, 1993).

Similarly, our estimate that only 0.66 percent (less than 1 percent) of those leaving a COBRA eligible job exhaust COBRA, is higher than the CobraServ estimate of 2.01 percent (we compute this estimate as the product of the 19 percent take up rate among those with a "Work Qualifying Event" from Table 11 and the 11 percent exhaustion rate given at on p. 113; Flynn, 1992). This estimate is well below the 4 percent figure used by HIAA (the product of a 20 percent take-up rate and a 20 percent exhaustion rate) or the 5 percent figure used by AAA (the product of a 20 percent take-up rate and a 25 percent exhaustion rate).

At least two considerations could explain this divergence. First, the *Spencer's Reports* estimates are based on a small and selected sample. The Source note in the *EBRI Databook* notes that these estimates are based on 204 responses to a mail survey representing 3.1 million covered lives. While this is a large number of covered lives, there is reason to believe that this is not a representative sample. In particular, large employers are more likely to be mailed such surveys and more likely to respond.

Similarly, the CobraServ results are likely to be unrepresentative. The CobraServ data represent the experiences of 6,625 firms with 1,344,461 employees. Employees tend to be from large firms. For example, 78 percent of CobraServ's data refers to individuals from firms of 401 or more employees. The comparable figures for all employer provided insurance from the *EBRI Databook* (for a slightly different time-period and including those in firms below 20, who are not eligible for COBRA, so the comparison is not exact) is only 38 percent.

Second, our estimates include all "previous employer" coverage which ends at or before 20 months. Much of that coverage would not have been mandated by COBRA. In particular, while COBRA requires no contribution from the previous employer, some employers pay some part of the premium as part of a severance package or early retirement package.

In addition, many insurance policies always cover some small number of months after an employee leaves a job. Such a policy would explain the sharp drop-off in coverage over the first six months. Presumably such coverage is not reported by *Spencer's Reports* or CobraServ as COBRA Coverage. Nevertheless, here we would consider it as COBRA coverage.

Together, these considerations imply that our estimated percentage of months on COBRA and our estimate of the percentage of individuals exhausting COBRA are too large. If these estimates are too large, then our final computations over-estimate the true effect on the individual market.

This estimate would be biased down if some of the short durations are "previous employer", but not COBRA. Note, however, that our computations in the main analysis are based on months of continuation coverage among program eligibles. Thus while spuriously including short "previous employer" spells which are not COBRA will bias down the estimate of the average duration among those who use "previous employer" it will bias up (i.e. too high) our estimates of months on "previous employer"/COBRA per job leaver.

The SIPP data, however, are likely to be closer to the true values. They are based on nationally representative; though, as noted above, there is likely to be some reporting of COBRA coverage as other private coverage. This under-reporting of COBRA is likely to be counter-balanced by the fact that we assume that all coverage through a previous employer is from COBRA eligible firms (20 or more employees) and due to COBRA itself.

The computations behind this calculation also allow us to describe what happens to job leavers. Among all individuals who leave an insured job, about half of them go immediately to another insured job (461 percent). A year after leaving a job, 70 percent of them have held a job offering health insurance; by two years, the comparable figure is 76 percent.

Differential Results by Firm Size

The basic SIPP interview does not include information on either firm size or job tenure. For the 1990 and 1991 panels, such information is available in a supplement to the second interview. In this subsection, we report results stratifying by firm size.

Unless otherwise noted, all of the results refer to individuals covered by employer-based group health insurance (in month 8, the last month reported on at interview 2). Job transitions and job tenure refer to the reference person supplying the insurance. That information is propagated to other individuals covered through him/her. The SIPP breaks firm size at 25 workers (rather than the 20 employee cutoff in the COBRA legislation). Nevertheless, in what follows, we identify the "under 25 employees" group with the sub-COBRA market, and the 25 or more employees group with the COBRA market. In all of these tabulations (and those of the previous section), we exclude the self-employed.

We begin by considering job transition rates. The HIAA I estimates are for the COBRA market cite the non-nationally representative data from *Spencer's Research Reports*: "Consistent with historic percentages over the last six years. *Spencer's Research Reports*: 329.04-01, 8/19/94." The HIAA I estimate for COBRA market is by assumption (without citation): "(R)effecting higher turnover rates among smaller employers."

The HIAA II figures for job turnover are chosen to be identical to the AAA figures. AAA's (1996b, p. A-1, note 1) figures appear to be based on insurance industry estimates: "12% of lives (workers and dependents) insured with large employers who are required to offer COBRA will become eligible for COBRA as a result of group coverage expiring on those lives." and (p. A-2, note 7) "12% of those insured by small employers (less than 20 employees) will terminate or change employment. (It is assumed that the turnover rate is similar to that of large employer groups.)"

Mindful of seam bias, we compute turnover rates from the SIPP by considering the employment status at month 12 of those same individuals

for whom we knew their firm size at month 8 (i.e. the last month reported on at the next interview). Four months later in the COBRA market, 94.48 percent of all covered lives are still associated with the same employer; 3.35 are with a different job, and 2.17 are not employed. We convert this four month turn-over rate to an annual turnover rate by multiplying by three, yielding an annual turnover rate of 16.56 percent ($16.56 = 3 * (100.00 - 94.48)$).

These estimates are higher than GAO's (1995, p. 4) estimates based on the CPS. GAO estimates that in 1993 11.5 million people with health insurance changed jobs; and that these individuals had 6.7 million dependents; for a total of 18.2 million. Our SIPP based estimate of the equivalent numbers is 21.99 million. The SIPP estimate counts the number of job changes, the CPS counts the number of people who changed jobs. The former is the appropriate concept for the HIAA calculations. In particular, our estimate of 3.10 covered lives is higher than the GAO (1995, p. 4.1) estimate of 2 million individuals (it is not clear whether the GAO estimate refers only to workers, or also to their dependents; if the former, then the GAO and our SIPP estimates are close). Finally, note that this estimate is lower than those used by the American Academy of Actuaries (1996a,b). They estimates 12 percent turnover rates for both the COBRA and the sub-COBRA markets. Thus, there estimates are too low.

Similarly in the sub-COBRA market, four months later, 91.80 percent of covered lives are still associated with the same employer; 5.28 are at a different job, and 2.92 are not employed. We convert this four month turn-over rate to an annual turnover rate by multiplying by three, yielding an annual turnover rate of 24.60 percent ($24.60 = 3 * (100.00 - 91.80)$). The associated annual turnover rate is higher than both the HIAA I estimate of 20 percent and the HIAA II/AAA estimate of 12 percent.

Only individuals with 18 months of continuous group health insurance coverage will be eligible for the conversion coverage. To get a rough estimate of how many people such a requirement will exclude, we

computed the fraction of employees (and their covered lives) with 18 or more months of tenure. In the COBRA market, that figure is 83.53 percent. In the sub-COBRA market, that figure is 76.94 percent. There is considerable job turnover in the United States, even among individuals in jobs covered by health.

The previous paragraphs describe the figures we use in our computations. Again, they are likely to imply too high a turnover rate and too large an impact on the individual insurance market. The reason is that individuals with 18 months or more of job tenure have lower job turnover rates than those with less than 18 months of job tenure. Our sample sizes get quite small for computing the stratified figures. Here we provide the weighted counts, but we do not use them in the final calculations. Among individuals in firms with less than 25 employees, the overall four-month same-job rate is 91.80. The rate for those with more than 18 months of job tenure is 93.55; the rate for those with less than 18 months of job tenure is 85.92. The corresponding annual turnover rates are overall 24.60 (as above), 19.35 for those with 18 or more months of tenure, and 42.24 for those with less than 18 months of job tenure¹⁹. Thus, the estimates in the body of the paper are too high because they give everyone in small firms the small firm turnover rate. However, many of the people with the higher turnover rates will not have 18 continuous months of group health insurance and will therefore be ineligible for the conversion benefit.

In closing, we note "previous employer" rates in the month after job leaving for different subsets of the population. These tabulations are limited to those who left a job between month 8 and month 9 (for which we know firm size). In the COBRA market, overall 24.96; in the sub-COBRA market 21.33 (85 percent of the COBRA-market figure). Thus, the assumption that everyone reporting previous employer coverage is

¹⁹ These numbers will not agree with those reported earlier. The earlier ones are estimated on all individuals with reported firm size. These estimates drop a small number of people who do not report job tenure, but do report firm size.

COBRA eligible is clearly in error. Again, this will make our estimates of the effects of the proposed legislation too large.

DRAFT

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Technical Note: S.1028 Impact Analysis: Group to Individual Provisions

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Introduction

The insurance reform legislation introduced by Senators Kassebaum and Kennedy in the Senate (S.1028) and the companion bill introduced in the House of Representatives by Representative Roukema (H.R.2893) contain a provision that would guarantee access to the individual health insurance market in certain circumstances. To be eligible, individuals must: 1) have lost group coverage; 2) not be eligible for other group coverage (through another job or a spouse's employer); and 3) have exhausted COBRA eligibility (generally 18 months in these cases), if offered (firms with fewer than 20 employees do not have to provide COBRA coverage).

Last year the Health Insurance Association of America (HIAA) released an analysis of the potential effect of a guaranteed group-to-individual transfer on the overall cost of individual health insurance. An update of their estimates from February, 1996, concluded that increases in the long run would be 15% to 31%, with a most-likely estimate of 22%. These estimates were based on states requiring community rating of the coverage sold to the new enrollees.

Also in February, the American Academy of Actuaries (AAA) released an analysis of the expected impact of S.1028 on individual health insurance premiums. The AAA analysis suggests average premium increases of 2% to 5% in states which restrict the premiums which can be charged the new enrollees. In the absence of state restriction, they note that there should be no premium impact. Using less restrictive premium bands, the Congressional Research Service (CRS) (working with their actuarial consultants, the Hay Group, Inc.) concluded that long term premium increases should be no more than 3%. They also noted that S.1028 does not force premium limits, so no increases are required by the bill directly.

This analysis explores four scenarios. The first, no rate restrictions, is technically the one showing the effect of the proposal, as CRS explains. The second, broad rate bands, reflects state actions discussed by AAA and CRS. While beyond any

requirement of S.1028, the use of rate bands (or high risk pools, or a guaranteed issue carrier) would be consistent with making the group to individual transfer provisions helpful to larger numbers of people. These strategies tend to reduce premiums for the highest risk individuals. Thus, examining the costs and how these could be spread is important. The other two scenarios examine tighter restrictions on the premiums charged new enrollees. Even though few states have implemented such restrictions in the individual market, these scenarios were included to provide points of comparison with the HIAA analysis.

For each scenario, the impact of alternative assumptions on key variables is examined. Beyond a "most likely" estimate, two other estimates are generated suggestive of plausible lower and upper bounds. The key variables considered are eligible population size, take-up rates, average expense levels of enrollees, and (for scenarios 2-4) the size of the currently insured population across which extra costs would be spread.

Part One: Group to Individual Provisions, Most Likely Impact

The group to individual analysis is based on the format used by the HIAA in their analysis of S.1028. Briefly, counts of affected persons and their relative expense level are compared to persons with current non employer sponsored insurance, and the impact on the non employer sponsored market is assessed. This market includes most individual insurance, but not that which is provided through employment, as well as other non employer sponsored group insurance (such as association and discretionary group trusts).

We have looked at the impact in four different scenarios: (1) no restrictions on premiums in the individual market, (2) individual premiums banded at 200% of average, (3) individual premiums with adjusted community rating, and (4) individual premiums with pure community rating. This last case compares to the scenario the HIAA used, while in fact S.1028 does not impose any federal restrictions on individual rating practices.

Our analysis is for S.1028 as fully implemented (e.g., 3 years after enactment). Our estimates include lower and upper bounds, as well as this middle 'Best' estimate. The discussion below is for this 'Best' estimate, and the alternate assumptions used for the other two estimates are explained in a subsequent section of this memo.

(A) Counts

Persons affected by S.1028 are comprised of three groups: covered workers and their dependents in firms subject to COBRA (size 20 and up), covered workers and their dependents in firms not subject to COBRA (under size 20), and persons currently

covered by non employer sponsored health insurance. The Current Population Survey (March 1995) was used to estimate these counts, and the definitions used are explained in detail later in this memo. The counts for these three groups are as follows:

COBRA Covered Workers & Dependents	125.33 million
Non-COBRA Covered Workers & Dependents	18.11 million
Other Private Health Insurance Covered	16.18 million

Persons exhausting COBRA coverage were obtained by starting with the count of covered workers and dependents in firms of size 20+. Data from the Spencer Report's COBRA surveys was used to adjust this count down to persons who actually elected COBRA coverage. There does not seem to be much data on the percent of COBRA covered likely to exhaust their coverage. We used some data from the SIPP (as presented in a Rand/DoL analysis) as a basis for reducing the assumptions made by the HIAA and the AAA (although not reducing the percent the full amount suggested in that analysis). Our estimate of 10% is consistent with findings from CobraServe, as reported in "Employment-Based Health Insurance: Coverage Under COBRA Continuation Rules", by Patrice Flynn. Finally, three sets of assumptions were used to estimate the persons likely to purchase S.1028. These assumptions correspond to assumptions on how the coverage would be priced: unrestricted rating (low take up), banded rating (medium take up), or pure or adjusted community rated (high take up).

The Spencer data on who would purchase COBRA was also used to estimate who would purchase S.1028 coverage if the product was priced similarly for persons not eligible for COBRA due to firm size (fewer than 20 employees). The take up rates were reduced if pricing was either banded (medium take up) or unrestricted (low take up).

An assumed average duration of coverage of two years was used to obtain the total number of covered lives due to S.1028 in a single year. This is consistent with the assumption made by the HIAA with respect to the COBRA population, and is a longer assumed duration for the non-COBRA population.

(B) Relative Morbidity

Once the counts have been obtained, the next step was to determine the relative morbidities for the different populations. A standard employer-sponsored insurance population is defined as having a morbidity of 1.000. Using data from the 1987 National Medical Expenditure Survey (NMES), we estimated that benefit costs (unloaded

premiums) for persons under age 65 with non-employer sponsored private health insurance were 1.152 times as much as those for persons with employer sponsored health insurance. This figure is also consistent with cost differentials between individuals and small groups mentioned in memos from Coopers & Lybrand.

Two specific pieces of information were used along with the ARC Small Group Model (a data set based on two years of claims experience) to estimate the morbidities of persons buying coverage under S.1028. The first was from the Spencer Report's survey, which stated that COBRA participants on the whole cost 1.55 times as much as covered employees. The second was from the American Academy of Actuaries' analysis of S.1028, which assumed that if 6% of COBRA exhaustees enrolled in S.1028 insurance, they would have a morbidity of 2 to 3 times that of the employer sponsored insurance (ESI) population. Using the more conservative factor of 3.000, and comparing these 6% who enrolled in S.1028 to the COBRA universe as a whole gives a morbidity of 1.935 relative to COBRA.

By looking at distributions of prior-use based expected expenses from the ARC Small Group Model, we were able to determine that in order to get a morbidity of 1.935, the 6% participation resulted in the most costly 0.6% participating, and 5.4% randomly taken from the remaining population. Using this relationship, we were able to determine consistent morbidities for participation rates of 17.5% (unrestricted pricing assumption), 35% (banded pricing), and 70% (community rating). The relative morbidities were as follows:

Assumption	Participation In S.1028	Morbidity Relative to COBRA	Morbidity Relative to ESI
AAA	6.0%	1.935	3.000
Unrestricted Pricing	17.5%	1.540	2.386
Banded Pricing	35.0%	1.273	1.973
Community Rating	70.0%	1.085	1.681

(C) Impact - Unrestricted Pricing

Given that S.1028 does not restrict pricing in the individual market, one could assume that all purchasers of insurance under S.1028 would "pay their own way". If this were the case, we assume a fairly low amount of participation. This would result in no rate change to the pre-S.1028 market, but would have the newcomers paying rates at an average of just over twice the amount for those currently there ($2.386 / 1.152 = 2.0706$).

(D) Impact - Banded Pricing

The American Academy of Actuaries noted that some states already have restrictions on individual insurance rates. They also stated that other states might implement restrictions (i.e., rate bands) after S.1028 were enacted. For illustrative purposes, we have included a scenario where the states would enact a rate band at 200% of the mean. We assumed a moderate amount of participation if there were rate bands at this level. Data from the ARC Small Group Model were used to look at what percent of newly covered would be past a rate band of 200%, and what the premium shortfall would be due to bringing them down to 200% of average. The impact of 200% rate bands on the pre-S.1028 market would be an increase of just under 1.5%.

(E) Impact - Adjusted Community Rating (Health Status Prohibited as a Rating Parameter)

There has been discussion of prohibiting health status as a rating parameter for persons gaining coverage under S.1028. We assume that this would be equivalent to having a rate band at approximately 105% of average (very close to community rating). The calculations are similar to those in (D) above, and result in a 2.6% increase in premiums for the pre-S.1028 market.

(F) Impact - Pure Community Rating

The HIAA analysis assumed that the cost of the new entrants into the individual market due to S.1028 would be spread evenly across all purchasers. This is closest to a pure community rate, where rates may only vary by geographic area. We assumed that if the rating were restricted in this manner (and S.1028 does not restrict rating practices in any manner), then participation would be fairly high. Under our assumptions, the entire market would be faced with an increase of just under 3%.

Part Two: Low and High Estimates of the S.1028 Group to Individual Provisions

Upper and lower bounds of our estimates of the group to individual provisions of S.1028 were generated to reflect plausible ranges of outcomes based on the data available. To do this, we changed our underlying assumptions in the following four areas: (1) the morbidity of the COBRA population as a whole, (2) the percent of persons likely to purchase S.1028 insurance, (3), the morbidity of those purchasing S.1028 insurance, and (4) the size of the non employer sponsored private health insurance market.

Each item is explained below, and the explanations are followed by a table

showing the values used.

(A) The Morbidity of the COBRA Population

While the 'best estimate' analysis uses the relative morbidity of 1.55 from the Spencer Report's surveys, the upper bound analysis assumes a higher morbidity. We have chosen the factor of 2.00 (relative to ESI) for this; the 1.55 factor was retained in the lower bound analysis.

(B) The Percent of Persons Likely to Purchase S.1028 Insurance

Lower bound estimates use percentages half that of the 'best' estimates for each of the four scenarios. Upper bound estimates use the same percentages as the 'best' estimate for each scenario.

(C) The Morbidity of Those Purchasing S.1028 Insurance

In a world of unrestricted premium rates, the lower bound estimate uses the same morbidity as the 'best' estimate (although for fewer persons). The upper bound estimate uses a much higher (double) morbidity than the 'best' estimate. The ARC Small Group Model was then used to determine what the relative morbidities would be when participation was increased for banded and community rated environments (higher levels of participation), consistent with the starting point of the unrestricted scenario.

(D) The Size of the Non Employer Sponsored Private Health Insurance Market

For our lower bound estimate, all self employed persons under age 65 in the non employer sponsored private health insurance market were included (even though many of them were also included in the groups likely to be helped by S.1028). Technically, some of these self employed individuals would have employer sponsored coverage. This is used as a proxy for other fully insured products which state regulation could plausibly include in the pool of premium dollars from which subsidies would be drawn to cover the newly covered populations.

For the upper bound estimate, the size of the non employer sponsored PHI market has been reduced to that mentioned by the HIAA as being true 'individual' coverage: 10.4 million covered persons.

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	Lower Bound	Best Estimate	Upper Bound
Morbidity of the COBRA population	1.55	1.55	2.00
Percent likely to purchase S.1028 insurance	8.75% unrestricted 17.0% banded 35.0% comm rated	17.5% unrestricted 35.0% banded 70.0% comm rated	17.5% unrestricted 25.0% banded 70.0% comm rated
Morbidity of those purchasing S.1028 insurance	2.386 unrestricted 2.273 banded 1.926 comm rated	2.386 unrestricted 1.973 banded 1.681 comm rated	3.773 unrestricted 2.991 banded 2.328 comm rated
Size of the Non Employer Sponsored PHI market	22.75 million (includes self employed)	16.81 million (includes size 1 self employed)	10.40 million (HIAA estimate for true individual coverage)

Part Three: Using the Current Population Survey to Obtain Counts of Affected Persons

The March 1995 CPS was used to estimate counts of persons for the group to individual provisions of S.1028.

Persons were put into 'insurance families', and were assigned 'claimant categories' of either 'head', 'spouse', or 'dependent child'. If there were two ESI policy holders in an insurance family, then the one with the higher earnings was designated 'head' of the family. If there was only one ESI policy holder, then that person was designated 'head' of the family. Once persons were placed into families, those persons who were working and had ESI in own name (policy holders) were counted by their own work-force characteristics (size, self-employed or not). Persons who had ESI as a dependent were counted based on the characteristics of the head of their insurance family. If the head was working, then the covered dependents were included in the analysis.

If persons were linked to an employer of size 20 or greater (based on interpolating in the size 10-24 interval), then they were included in the 'COBRA' category. If they were linked to an employer of size under 20, and not self-employed, then they were included in the 'Non-COBRA' category. If they were self employed under 20, we estimated the amount likely to be at size 2+, and also included them in the Non-COBRA category.

Persons with non employer sponsored private health insurance were included in the analysis if their age was under 65. Those covered persons and dependents who were self-employed, size 1 and under age 65 were included in the counts of persons with non employer sponsored private health insurance as well.

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**ARC Analysis of S.1028 Group to Individual Provisions
Premium Effects on Person Currently in the Individual Health Insurance Market
Summary Table**

	Lower Bound	Best Estimate	Upper Bound
Rating Restriction In State:			
<i>I) No Restrictions on Premiums</i>			
Percent Change in Premiums	0.0%	0.0%	0.0%
S.1028 Cost Relative to Pre-S.1028 Market	207.1%	207.1%	327.3%
<i>II) Premiums Banded at 200% Average</i>			
Percent Change in Premiums	0.9%	1.4%	5.4%
<i>III) Premiums with Adjusted Community Rating</i>			
Percent Change in Premiums	1.4%	2.6%	8.9%
<i>IV) Premiums with Pure Community Rating</i>			
Percent Change in Premiums	1.5%	2.8%	9.2%

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**ARC Analysis of S.1028 Group to Individual Provisions
Premium Effects on Person Currently in the Individual Health Insurance Market
Summary Table**

	Lower Bound	Best Estimate	Upper Bound
Rating Restriction in State:			
<i>I) No Restrictions on Premiums</i>			
Percent Change in Premiums	0.0%	0.0%	0.0%
<i>II) Premiums Banded at 200% Average</i>			
Percent Change in Premiums	0.9%	1.4%	5.4%
<i>III) Premiums with Adjusted Community Rating</i>			
Percent Change in Premiums	1.4%	2.6%	8.9%
<i>IV) Premiums with Pure Community Rating</i>			
Percent Change in Premiums	1.5%	2.8%	9.2%

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ARC Analysis of S.1028 Group to Individual Provisions
(Fully Implemented: Assumptions that Differ are in Shaded Cells)

	<u>Lower Bound</u>	<u>Most Likely</u>	<u>Upper Bound</u>
I NO RESTRICTIONS ON PREMIUMS			
COBRA Workers (thousands)	125,333	125,333	125,333
% Eligib/Year	10.62%	10.62%	10.62%
% Electing COBRA	18.16%	18.16%	18.16%
% Exhausting COBRA	10.00%	10.00%	10.00%
% Purchasing S 1028 Ins	8.75%	17.50%	17.50%
Purchasers of S1028 Ins (thousands)	21	42	42
Non COBRA Workers (thousands)	18,107	18,107	18,107
% Losing Covg	10.62%	10.62%	10.62%
% Purchasing Covg	2.27%	4.54%	4.54%
Purchasers of S1028 Ins (thousands)	44	87	87
Total Purchasers of S1028 Ins (thousands)	65	130	130
Average Duration of Coverage (years)	2	2	2
Point in Time S.1028 Covered Lives (thousands)	130	259	259
Persons with Other (Individual) PHI <65	22,755	16,176	10,400
Indices of Avg Costs/Person			
COBRA Workers	1.000	1.000	1.000
Those Purchasing	2.386	2.386	3.773
Non COBRA Workers	1.000	1.000	1.000
Those Purchasing	2.386	2.386	3.773
Other PHI	1.152	1.152	1.152
S.1028 Cost Relative to Pre-S.1028 Market	207.06%	207.06%	327.35%
Impact on Pre-S.1028 Market	0.00%	0.00%	0.00%

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ARC Analysis of S.1028 Group to Individual Provisions
(Fully Implemented: Assumptions that Differ are in Shaded Cells)

	<u>Lower Bound</u>	<u>Most Likely</u>	<u>Upper Bound</u>
II PREMIUMS BANDED AT 200% OF AVERAGE			
COBRA Workers (thousands)	125,333	125,333	125,333
% Eligible for S.1028 Insurance (from above)	0.19%	0.19%	0.19%
% Purchasing S 1028 Ins	17.50%	35.00%	35.00%
Purchasers of S1028 Ins (thousands)	42	85	85
Non-COBRA Workers (thousands)	18,107	18,107	18,107
% Losing Coverage (from above)	10.62%	10.62%	10.62%
% Purchasing S 1028 Ins	4.54%	9.08%	9.08%
Purchasers of S1028 Ins (thousands)	87	175	175
Total Purchasers of S1028 Ins (thousands)	130	259	259
Average Duration of Coverage (years)	2	2	2
Point In Time S.1028 Covered Lives (thousands)	259	518	518
Indices of Avg Costs/Person			
COBRA Workers	1.000	1.000	1.000
Those Purchasing	2.273	1.973	2.991
Non COBRA Workers	1.000	1.000	1.000
Those Purchasing	2.273	1.973	2.991
Other PHI	1.152	1.152	1.152
Amount to be Collected (aggregate index)	26813.794	19665.220	13536.349
Max Index Value Allowed (200*Avg)	2.330	2.356	2.480
% S.1028 Entrants Past Max	15.15%	25.36%	42.04%
% S.1028 Cost Collected	59.05%	72.69%	74.30%
Banded Amt Collected (agg. index)	91.516	309.698	540.344
UnBanded Amt Collected from S.1028 Persons (agg. index)	256.403	433.738	611.708
Shortfall from Banding (agg. index)	241.261	279.311	398.529
Persons Unaffected by Band (thousands)	22,975	16,563	10,700
OPHI for Persons Unaffected (agg. index)	26722.278	19355.522	12996.005
New OPHI per Unbanded Person (index)	1.163	1.169	1.215
Impact on Pre-S.1028 Market	0.92%	1.40%	5.38%

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ARC Analysis of S.1028 Group to Individual Provisions
(Fully Implemented: Assumptions that Differ are in Shaded Cells)

	<u>Lower Bound</u>	<u>Most Likely</u>	<u>Upper Bound</u>
III PREMIUMS WITH ADJUSTED COMMUNITY RATING (akin to a 105% band)			
COBRA Workers (thousands)	125,333	125,333	125,333
% Eligible for S.1028 Insurance (from above)	0.19%	0.19%	0.19%
% Purchasing S 1028 Ins	35.00%	70.00%	70.00%
Purchasers of S1028 Ins (thousands)	85	169	169
Non-COBRA Workers (thousands)	18,107	18,107	18,107
% Losing Coverage (from above)	10.62%	10.62%	10.62%
% Purchasing S 1028 Ins	9.08%	18.16%	18.16%
Purchasers of S1028 Ins (thousands)	175	349	349
Total Purchasers of S1028 Ins (thousands)	259	518	518
Average Duration of Coverage (years)	<u>2</u>	<u>2</u>	<u>2</u>
Point in Time S.1028 Covered Lives (thousands)	518	1,037	1,037
Indices of Avg Costs/Person			
COBRA Workers	1.000	1.000	1.000
Those Purchasing	1.926	1.681	2.328
Non COBRA Workers	1.000	1.000	1.000
Those Purchasing	1.926	1.681	2.328
Other PHI	1.152	1.152	1.152
Amount to be Collected (aggregate index)	27223.083	20385.869	14399.511
Max Index Value Allowed (105*Avg)	1.228	1.244	1.322
% S.1028 Entrants Past Max	45.41%	50.83%	67.33%
% S.1028 Cost Collected	51.32%	57.32%	58.03%
Banded Amt Collected (agg. index)	289.125	655.368	922.853
UnBanded Amt Collected from S.1028 Persons (agg. index)	223.294	343.883	477.791
Shortfall from Banding (agg. index)	486.049	744.146	1013.098
Persons Unaffected by Band (thousands)	23,038	16,686	10,739
OPHI for Persons Unaffected (agg. index)	26933.958	19730.502	13476.658
New OPHI per Unbanded Person (index)	1.169	1.182	1.255
Impact on Pre-S.1028 Market	1.44%	2.60%	8.89%

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ARC Analysis of S.1028 Group to Individual Provisions
(Fully Implemented: Assumptions that Differ are in Shaded Cells)

	<u>Lower Bound</u>	<u>Most Likely</u>	<u>Upper Bound</u>
IV PREMIUMS WITH PURE COMMUNITY RATING			
COBRA Workers (thousands)	125,333	125,333	125,333
% Eligible for S.1028 Insurance (from above)	0.19%	0.19%	0.19%
% Purchasing S 1028 Ins	35.00%	70.00%	70.00%
Purchasers of S1028 Ins (thousands)	85	169	169
Non-COBRA Workers (thousands)	18,107	18,107	18,107
% Losing Coverage (from above)	10.62%	10.62%	10.62%
% Purchasing S 1028 Ins	9.08%	18.16%	18.16%
Purchasers of S1028 Ins (thousands)	175	349	349
Total Purchasers of S1028 Ins (thousands)	259	518	518
Average Duration of Coverage (years)	2	2	2
Point in Time S.1028 Covered Lives (thousands)	518	1,037	1,037
Indices of Avg Costs/Person			
COBRA Workers	1.000	1.000	1.000
Those Purchasing	1.926	1.681	2.328
Non COBRA Workers	1.000	1.000	1.000
Those Purchasing	1.926	1.681	2.328
Other PHI	1.152	1.152	1.152
Effect on Entire Individual Market			
Final Persons Covered (thousands)	23,273	17,213	11,437
Persons * Index	27223.083	20385.869	14399.511
Index Value / Person	1.170	1.184	1.259
Impact on Pre-S.1028 Market	1.50%	2.76%	9.25%