# Mandated Health Insurance Benefits: A Critical Review of the Literature

## January 2007

**State of New Jersey**
**Department of Human Services**

***In Collaboration with***
**Rutgers Center for State Health Policy**

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# Mandated Health Insurance Benefits: A Critical Review of the Literature

Alan C. Monheit, Ph.D. and Jasmine Rizzo, M.D., M.P.H.

## Executive Summary

State regulations requiring that health plans sold in a state provide coverage for specific health benefits, providers, and population groups have been in place in one form or another since the early 1970's.[1] Over time, the scope of such mandates has grown to include more specialized services and providers, and more segmented populations, and has grown to the point that, in 2004, the Council for Affordable Health Insurance tabulated a combined 1,823 mandates nationally.[3] However, along with their growth has grown the debate regarding their impact on health insurance costs, enrollment, uninsured rates, and availability of coverage at the workplace. Accurate assessment of this impact has become particularly critical in New Jersey, a state in which coverage of a number of high cost services is mandated.

In determining the cost impact of mandated health benefits, it is imperative to take into account employer and employee responses to additional mandates that can make inference of a direct causal relationship between added mandates and increased costs difficult to conclusively establish. Employers may slow or restrict hiring in response to the potential for increased insurance costs that mandates might prompt. Employees may trade off other benefits such as salary or vacation time to compensate financially for any potential added costs. As a result of such variance in these responses, it is difficult to establish a direct causal link from mandates to the costs of health insurance and health care. This has made impact assessment a challenge and also open to subjective interpretation.

Given the complex range of these responses to new mandates, a few key criteria must be met in properly assessing the impact of mandated health insurance benefits. We must be able to identify the incremental effect of the mandated benefit *over and above* what is already present in existing health plans. The aforementioned difficulty in establishing causality must also be appropriately considered. Additionally, factors such as the value of benefit mandates to individuals, their response to benefit mandates in

terms of health care utilization, and the social benefits attributable to mandates must also be considered.

A number of actuarial and econometric studies have been conducted to determine the impact of mandates on actual cost and the results have been inconclusive. Despite exhaustive research, little compelling evidence exists that state health insurance mandates do, in fact, have a significant impact on these outcomes. In addition to the inherent methodological variances found when analyzing actuarial and econometric studies, there are a number of other factors contributing to the lack of a conclusive finding, including potential methodological flaws in some prior research, the potential for the behavioral responses to be at variance to the hypotheses, as well as, in some cases, difficulty in attaining accurate and complete data regarding some mandates and their actual utilization.

While the results presented in this review suggest that the focus on mandates as a primary cause of rising health insurance premiums and declining coverage rates may be misplaced, policymakers still need to be cognizant of the implications of adding additional mandates in an environment of dynamic health care technology diffusion. This lack of definitive evidence requires that policymakers provide careful consideration of both the true incremental costs of mandates as well as to the benefits likely to emerge from their implementation.

# Mandated Health Insurance Benefits: A Critical Review of the Literature

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## Introduction

State regulations requiring health plans sold in a state to provide coverage for specific health benefits, specific health care providers, and specific population groups have been in place since the early 1970s.[1] Such mandated benefit provisions pervade health insurance regulations in all states and range from fewer than 20 mandates in Alabama, Idaho, and the District of Columbia to more than 50 mandates in Connecticut, Florida, Maryland, Minnesota, Texas, and Virginia.[2] Over time, the scope of health insurance mandates have expanded from coverage of basic medical care services, such as ambulatory surgery and alcoholism treatment, to encompass new treatment options made available by advances in medical technologies, such as in vitro fertilization, and screening for cervical and colorectal cancer, and bone density. At the end of 2001, the Blue Cross and Blue Shield Association reported a total of 767 benefit mandates and 704 mandates covering providers and specific population groups, while a 2004 publication by the Council for Affordable Health Insurance tabulated a combined 1,823 mandates covering health benefits, specific providers, and population groups.[3] Coincident with the growth of mandates, assessing their cumulative impact on health insurance costs, health insurance enrollment and uninsured rates, and availability of coverage at the workplace (especially for small firms) has emerged as one of the more contentious issues in health care policy.

The policy debate regarding state health insurance mandates reflects two distinct points of view related to the benefits and costs of expanded insurance coverage. On the one hand, proponents cite the role of mandates in achieving greater equity in the provision of valued health services among covered populations and in contributing to enhanced social welfare by addressing the underutilization of such services. Alternatively, critics of mandates cite a wide range of potential adverse consequences, most prominently their contribution to rising health insurance costs, to the reluctance of some employers to make coverage available to their workers, and to the rising numbers of uninsured Americans.

The debate over the impact of mandated health insurance benefits has become particularly active in New Jersey. As of 2001, according to data compiled by the Blue Cross and Blue Shield Association, the state ranked eleventh among all states regarding the number of mandates. Perhaps more importantly, New Jersey includes a number of high cost services among its mandated benefits, including in vitro fertilization, infertility treatment, bone marrow transplants, and reconstructive breast surgery, as well as services with potentially high rates of utilization, such as prescription drugs, cervical cancer and prostate screening, dental anesthesia, and wellness exams.[4] At the same time, according to the data on state health accounts compiled by the Centers for Medicare and Medicaid Services, personal health care expenditures in New Jersey for 2000 were 8.6 percent above their 1999 levels, exceeding the growth of such expenditures in contiguous states such as New York (5.1 percent) and Pennsylvania (5.8 percent) as well as nationally (6.6 percent).[5]

Concern over the proliferation of such mandates, and their possible impact on overall health care costs in New Jersey, has resulted in the formation in 2003 of the 17 member Mandated Health Benefits Advisory Commission. The commission has been specifically charged with the responsibility of assessing the social, economic, and medical impact of newly proposed health insurance mandates.[6] To date, the commission has evaluated legislation requiring parity between medical services and mental health, alcoholism, and substance abuse services and the impact of mandates for orthopedic and prosthetic appliances. The parity mandate was estimated by actuaries under contract to the commission to increase health insurance premiums by between 0.3 percent and 0.7 percent and to yield a loss in coverage for about 5,000 enrollees out of a base of 3.2 million insured individuals (or about 0.15 percent of enrollees), while the mandate for orthopedic and prosthetic appliances was estimated to increase premiums by 0.025 percent and result in some 250 individuals losing coverage.[7] While these data suggest that the cost and coverage impacts of such mandates may be small, disagreements of over the potential impacts of mandated benefits have, at times, sparked a passionate debate over the advisability of expanding health insurance benefits through this legislative requirement. The purpose of this paper is to provide a review of empirical research literature on state health insurance benefit mandates. The review focuses on summarizing and evaluating research findings in light of the difficult methodological task of establishing a causal relationship between mandates and outcomes of interest. As the review demonstrates, reaching a consensus on the impact of mandates is a daunting task

given the mixed set of research findings, variety of data used, and alternative empirical approaches that have been applied to identify the effect of such provisions. However, the review concludes that there is not consistent and compelling evidence that mandates have had a major impact on health insurance premiums, coverage, and employer decisions to offer health insurance. In this regard, the empirical evidence is far less convincing than one might expect based on the claims made from the more normative pronouncements regarding mandates.

The paper is organized as follows. First, we develop a framework for assessing the impact of mandated benefits on outcomes noted above. We then provide an assessment of empirical work on key outcome measures, differentiating among peer-reviewed literature and unpublished reports, and drawing a distinction between actuarial and econometric studies of the impact of mandates. Section IV provides a summary of the lessons to be learned from this review.

## A Framework for Assessing the Impact of Mandates

Must mandates necessarily lead to rising health insurance costs and thus, to decisions by employers not to offer or to discontinue health insurance benefits, by employees to turn down or drop offered coverage, and ultimately, to rising uninsured rates? Concluding in the affirmative would appear to follow logically from the inclusion of additional benefits in an insurance plan which increases the scope, generosity, and actuarial value (i.e., the expected health plan payout) of coverage. However, while few would dispute that mandates can raise the *value* of coverage to an individual, additional conditions are required for the new benefits to raise the *costs* of coverage. Unfortunately, such conditions are rarely acknowledged or directly evaluated in the existing research literature on mandated benefits.

Consider a situation in which an additional benefit is required to be included in a health plan purchased by an employer. Assuming no other changes take place, the inclusion of this additional benefit is certainly a *necessary* condition for health insurance costs to rise, but it may not be a *sufficient* condition. For example, the mandated benefits may simply mimic or add in a very marginal way to benefits already contained in the health plan.[8] Should this be the case, we should not expect health insurance premiums to rise at all, and if they do, any increase would be quite small. When mandated benefits are identical to those already included in the health plan, there is no reason for health

insurance premiums to rise since the actuarial value of the health plan has remained precisely the same as before the mandate.

Next, consider a situation in which adjustments to a benefit mandate are possible. For example, suppose employees are willing to trade other work-related benefits of equivalent value for a new benefit imposed by the mandate, either by adjusting other features of the health plan or other elements of compensation. For example, adding a new mandated benefit might be accompanied by an offsetting increase in the health plan deductible, by a reduction in wages, or by a change in the value of other fringe benefits. Since employees have sacrificed other compensation of equivalent value, total employee compensation will remain the same and the employer's labor costs will not changed. In this situation, the mandate has not affected the employer's financial situation and hence, there is no reason for mandated benefits to have an inimical effect on the total value of worker compensation and hence, on employers' decisions to make health insurance available.

Implicit in such an adjustment is the notion that employees value the mandated benefit and are willing to sacrifice other forms of compensations to "pay" for the mandate.[9] Additionally, as Summers[10] has suggested, employees may alter their *behavior* in response to a valued benefit mandate. For example, assuming no other changes, inclusion of the new benefit mandate (previously absent from the health plan) will raise health insurance costs and thus, overall worker compensation. In response, employers will reduce their demand for labor, leading to reduced market wages and employment to offset the costs of the mandate. However, if employees *fully value* the mandate (i.e., the new benefit is worth at least what it costs), they will respond over time by increasing their labor supply at the reduced wage and thereby eliminate the loss of employment. Once again, workers maintain their original level of total compensation, although its composition is altered as wage income is sacrificed for additional health insurance benefits. Note that in this context, health insurance premiums may increase but without consequences for labor costs or for employment.

Given this complex range of possible employee and employer responses to new mandates, a final issue to consider is the nature of the association between the rise in mandated benefits and overall health care costs. In this regard, it is quite natural to view the association between the presence of mandates and rising health care or health insurance costs as a *causal* relationship. However, identifying causality can be a daunting task and cannot be established merely by the presence of an observed empirical

correlation. For example, one cannot reject out-of-hand the possibility that mandates do not cause rising health insurance costs, but instead, that the presence of mandated benefits reflects the *response* of government seeking to shield individuals from past or anticipated increases in the health care costs. Such *policy endogeneity* violates an important assumption necessary to establish causality: that there are no external factors related to both the desire for new mandates and rising health care costs.[11] If such external factors exist, studies that simply compare health insurance costs between states with and without new mandates may erroneously conclude that mandates have caused the higher premiums. It is plausible that the diffusion of new medical technology is such an external factor, leading both to higher health insurance premiums and the desire by policymakers to provide access to those new services through mandates.

Finally, it is also important to recognize that benefit mandates provide enrolled populations with access to new technology and that such technological innovations may confer significant private and social benefits. While the private benefit or valuation of the mandate would be reflected in the willingness of employees to give up other benefits as noted above (e.g., through a reduction in wages or other benefits), Cutler[12] has noted that discussions of technological innovation in health care too frequently focus on costs without recognizing the substantial benefits that may be forthcoming. Thus, a fair assessment of mandates should acknowledge *both* the potential benefits and costs associated with mandates.

The prior discussion raises the following considerations in any evaluation of the impact of mandated health insurance benefits:

- To assess the impact of mandates on health insurance costs, we must be able to identify the incremental effect of the mandated benefit *over and above* what is already present in existing health plans.
- Actuarial estimates of the cost implications of a mandate are not likely to account for any adjustments made by workers and employers in response to the mandate. Hence an actuarial estimate will generally represent an upper bound estimate of the cost impact since it does not recognize the potential for offsetting adjustments.
- Causality from mandates to the costs of health insurance and health care may be difficult to establish.
- Assessments of whether individuals value benefit mandates, their response to benefit mandates in terms of health care utilization, and the social benefits

attributable to mandates are almost always ignored in discussions of mandates.

## Research on the Impact of Mandated Benefits

In the Appendix we provide a detailed summary of findings from descriptive, actuarial, and econometric studies of the impact of mandates that we identified in a comprehensive search of the research literature. The literature included in this tabulation was derived from a variety of sources, including searches among the economics and health services literature as well as through internet-based identification of more recent unpublished analyses.

Among alternative design approaches to study the impact of mandates, descriptive methods may simply provide a comparison of outcomes of interest (e.g., premiums, coverage rates) in a specific state before and after a mandate is implemented, or between states with and without mandated benefits. Such studies run the risk of drawing conclusions based on simple bivariate comparisons that fail to account for other confounding factors (e.g., changes in economic conditions over time or between states) and are not designed to identify causal relationships. Thus, our discussion of empirical findings regarding mandates does not include a review of these studies.

As discussed by Henderson, Seward, and Taylor,[13] studies employing actuarial methods makes assumptions about the costs of covered benefits and the expected utilization of the enrolled population covered by such benefits. While actuarial studies are the basis for establishing health insurance premiums, the authors observe that such studies may be subject to "parameter uncertainty." In particular, uncertainty may cloud estimates of the impact of mandates on health insurance premiums when a previously uncovered population is enrolled under a mandate or when a new condition or treatment that has never been covered or offered is included under a mandate (as in the case of a new medical treatment or technology).

Alternatively, econometric studies attempt to quantify the parameters governing the relationship between a mandated benefit and a particular outcome of interest. This approach relies upon the specification of a statistical model that seeks to identify the underlying causal relationship rather than merely establish a statistical association. In contrast to actuarial studies, econometric models make an effort to "hold constant" other

potentially confounding factors that may affect both the presence of a mandated benefit and the outcome of interest.

For purposes of this discussion, we focus on the impact of mandates on health insurance costs, on the decisions of firms to offer health insurance, and on uninsured rates.[14] We begin with a review of actuarial studies since much of the recent discussion of the impact of mandates on health insurance premiums has been based on actuarial evaluation. We then proceed to discuss estimates derived from econometric analyses.

## Actuarial Studies

### *Impact on Premiums*

A frequently cited example of an actuarial analysis of benefit mandates is a two-part study by Albee et al. for the Texas Department of Insurance. This study provides a useful illustration of the *net effect* of a mandate since aside from assessing the impact of mandates on the costs of coverage, the study also recognizes that potential cost-saving benefits may also arise.[15] The study also raises the issue of whether a benefit imposed by a mandate might otherwise be included in a health plan were such a regulation absent. Studying thirteen benefit mandates, including coverage for chemical dependency, HIV/AIDS, serious mental illness, and childhood immunizations among others, the authors initially estimate that such mandates account for 7.6 percent of premium costs for large groups and 7.2 percent of premium costs for small groups. The three mandates with the largest contribution to premiums were serious mental illness, congenital defects, and HIV/AIDS. The authors note that such estimates represent the addition to premiums *were these benefits previously excluded from coverage* and thus constitute an upper-bound estimate of the impact of mandates on premiums. In the second part of their study, the authors note that when indirect health care costs (e.g., follow-up treatment and testing) and offsetting savings (e.g., earlier detection and reduced hospitalizations) are considered, none of the specific mandates constitutes a significant percentage of the premium for group insurance in Texas, and the overall contribution of mandates to premiums is reduced to 6.5 percent and 6.3 percent for large and small groups respectively. The authors further note that these premium increases may be somewhat illusory since their study predicts that if the mandates were not required, a sizeable percentage of large and small group coverage would have included such benefits at their mandated levels. This last point suggests that such mandates may be valued by

employees and that the costs associated with the mandates might have otherwise appeared through voluntary benefit provision by employers. The study also raises the issue of whether it is appropriate to simply attribute premium increases strictly to the presence of mandates. Finally, their second study concludes that mandates are rarely the primary reason that firms choose to self insure, that elimination of mandates would likely have an unimportant impact on the number of uninsured in Texas, but that the incremental premium costs associated with mandates might drive some employers not to offer coverage.

Several additional studies have provided assessments of actuarial research regarding the impact of mandates. The US Congressional Budget Office (CBO) issued a report in 2000 reacting to a review by its sister Congressional agency, the General Accounting Office (GAO), of several states' experience with mandates. The CBO report noted that potential savings from the elimination of mandates would be smaller than actuarial estimates of the contribution of mandates to health insurance costs (which ranged from 5.4 percent to 22.0 percent of claims costs).[16] The report further asserted that it is very likely that *absent* these mandates, some health plans would have covered the benefits. Taking this into consideration, the report provided estimates of the effective marginal cost (i.e., net of offsetting savings and minus cost associated with plans that would cover the services in the absence of a mandate) of mandates for "expensive" services to be between 0.28 percent and 1.1 percent. Overall, CBO estimated that in general, mandates could increase premiums on the order of 5 percent.

A review of the contribution of mandates to health insurance premiums by the GAO in 2003 echoes the conclusions drawn by the CBO report.[17] Noting that few studies make the distinction between the incremental and total costs of benefit mandates, they cite two studies that place the marginal costs of mandates between 3 percent and 5 percent. The report notes that estimates by Mercer Human Resource Consulting for Maryland, the state with the most benefit mandates, placed the *incremental costs* of mandates at 3 percent compared to a total cost of 14 percent. Finally, a 2001 review of the evidence on mandates by the Minnesota Department of Public Health concluded that while mandated benefits raise premium costs by some degree, the increases are generally more modest than figures commonly cited.

## Econometric Studies

Beginning in the late 1980s, a series of econometric analyses have been conducted examining the impact of state health insurance mandates on a variety of outcomes in the employment-based insurance market, including premiums, employer decisions to offer coverage and whether to self insure, and the impact of mandates on individual health insurance status. These studies typically draw upon data on health insurance mandates assembled by the Blue Cross/Blue Shield Association (although some studies have obtained their own or alternative data on the prevalence of mandates) and rely on data on employer health insurance premiums, availability of coverage at the workplace, or rates of coverage either for a single year or pooled over several years. As research on the impact of mandates has developed, more ambitious analyses have been conducted using pooling several years of data.

### *Impact on Health Insurance Premiums*

Despite the widespread interest in the impact of health insurance mandates on premiums, there are relatively few econometric studies of this relationship. An early effort in this regard can be found in Gabel's and Jensen's effort to assess the relationship between mandates and health insurance premiums by drawing implications from an earlier econometric study by Jensen and Morrisey.[18] While not directly examining the impact of state mandates, the latter authors had examined the relationship between premiums for employer-sponsored health plans and the presence of specific health benefits in such plans, some of which were representative of common health insurance mandates. In doing so, the authors sought to identify the "average" incremental effect on premiums from including such benefits. Using data from the Bureau of Labor Statistics' (BLS) Employee Benefit Survey for 1981-1984, Jensen and Morrisey found a positive association between a number of such benefits and premiums. Gabel and Jensen used these findings to suggest that mandated benefits had a statistically and economically significant effect on health insurance premiums. For example, the Jensen-Morrisey study indicated that benefits for chemical dependency increased premiums by 8.8 percent, for psychiatric inpatient stays by 12.8 percent and for psychologist visits by 11.8 percent. Such findings also suggest that benefits associated with mandates may have a substantial cumulative effect on health insurance premiums.

In considering these results, it is important to recognize that the Jensen-Morrisey estimates cannot be used to determine the incremental effect of a mandate over that attributable to the presence of such benefits in health plans prior to a mandate. As these authors note in their previously cited review article (note 14 above), their estimates provide "half the information necessary to assess the market wide marginal costs of mandates" and suggest that their estimates may "overstate slightly" employer costs of having to begin complying with a mandate. Gabel and Jensen also acknowledge that the Jensen-Morrisey estimates may overstate the impact of mandates, since the content of specific benefits offered by employers in the BLS sample may have been more generous than that required by state mandates. This discussion suggests that health insurance premiums might even be lower were the same benefits imposed through mandates and is at variance with their normative assessment of the impact of mandates on health insurance costs.

In contrast to the inferences drawn by Gabel and Jensen, a study by Acs, Winterbottom, and Zedlewski[19] considered a somewhat more direct test of the impact of mandates on health insurance premiums. For their analysis, the authors used a sample of 2,525 employers from the 1989 Health Insurance Association of America employer survey. While their study focused on evaluating a comprehensive "play or pay" employer mandate requiring employers to offer coverage,[20] their analysis applied an econometric model to explain variation in monthly employment-related health insurance premiums, and included the number of health insurance mandates in a state among the explanatory variables. Some other variables included in the equation were the co-payment and deductible provisions of health plans offered and the presence of coverage for services such as well-baby care, diagnostic testing, physicals, and second opinion surgical procedures. The analysis revealed that for larger firms (in excess of 1,000 employees), the presence of an additional mandate added $1.50 to the monthly premium (the average state in their analysis had 10 mandates. By implication, in states with a sizeable number of mandates, other factors equal, large firms would likely exhibit relatively high premiums. In contrast to these findings, the number of state mandates had a negligible impact on premiums for medium-sized firms (defined as between 10 to 999 employees). Data limitations precluded the authors from examining the impact of mandates on premiums of very small firms (less than 10 employees).

Although this analysis explicitly examines the relationship between the presence of health insurance mandates and premium variation, the empirical test is not well

designed and is subject to the criticism raised earlier. In particular, one cannot really discern whether the relationship between mandates and higher premiums for large firms is causal, since the empirical strategy does not address the possibility that unobserved factors that affect both the presence of mandates and health insurance premiums (e.g., differences in state-specific rates of growth in health care expenditures or in the rate of diffusion of medical technologies) could be responsible for the positive correlation between mandates and premiums. Moreover, specifying the impact of mandates through the number of required benefits is problematic since one can only attribute an average effect to this variable and not identify whether specific types of mandates are responsible for the observed positive relationship. Finally, the empirical strategy does not address the important issue of discerning the true *marginal effect* of mandates beyond the contribution of benefits present in health plans prior to the onset of specific mandates. To be fair, the intent of the study was not focused on devising a specific test for mandated benefits and our critique should be interpreted as a caution to those seeking to use the results as evidence of the impact of mandates.

More recent econometric work has applied similar though somewhat more expansive strategies to examine the impact of mandates on health insurance premiums. However, this work is subject to the same criticism noted above. For example, in a recent working paper, Congdon, Kowalski, and Showalter[21] examine the relationship between health insurance premiums in the non-group market and state regulations, including the presence of benefit mandates. Using data on premiums from the internet health insurer eHealthInsurance and from Golden Rule Insurance Company, the authors examine the impact of "service" and "provider" mandates on premium variation. Cross-sectional regressions for 42 states in 2003 (using eHealthInsurance data) and for 23 states in 2004 (using Golden Rule data on premiums by zip code) find statistically significant positive effects of the number of mandates on premiums: an additional mandated benefit increases, on average, individual and family premiums in the eHealthInsurance data by 0.4 percent and 0.5 percent, respectively, while family premiums in the Golden Rule data increase by 0.9 percent. The authors do recognize that their results should be interpreted cautiously. They note that "idiosyncratic state characteristics that are correlated with the propensity to enact mandates might influence results" and that "more fully exploring potential endogeneity concerns is an important area for future work" (page 8). In contrast to other authors, they also recognize that policymakers need to weigh the costs of mandates against the potential benefits of such regulations.

Work by Henderson, Seward, and Taylor[22] represents a departure from studies focusing on a single year of data. Their analysis examines the impact of mandates on health insurance premiums based upon a panel of 262 metropolitan areas between 1994 and 2001. Regression models examining the relationship between premiums and characteristics of health plans and the regulatory environment are computed for both indemnity and HMO plans, and separate models within each plan type are fit for single and family coverage. When the overall number of mandates within a metropolitan area is included in the regression model, the authors find that such a measure has no statistically significant impact on premium levels. Breaking out the number of mandates in each geographic unit by type of provision (e.g., benefit, service, or population group mandate), they find mixed results across plan type and type of mandate. For example, the total number of benefit mandates increase premiums for HMO single and indemnity family plans (i.e., an additional mandate increases premiums by 0.9 percent for the former and 0.6 percent for the latter), while by contrast, the total number of provider mandates was associated with significantly *lower* premiums for HMO policyholders (i.e., an additional mandate lowered premiums by 1.0 percent for the single policyholders and 0.7 percent for the family policyholders). The authors also find that coverage mandates were associated with lower premiums for all plan types with an additional mandate reducing premiums between 1.3 and 2.8 percent depending on type of plan.

As a final analysis, the authors consider econometric models with each of the specific benefit, provider, and coverage mandates included in the specifications. While it is difficult to succinctly summarize these findings, the authors draw several broad conclusions. First, the results suggest that mandates have a mixed effect on premiums, with some mandates associated with higher premiums and others with lower premiums. In particular, the authors find that ambulance transport, drug abuse programs, in vitro fertilization, home health care, and rehabilitation services are consistently associated with higher premiums in both HMO and indemnity plans, while mandates for alcoholism treatment, mental health services, and dentists are consistently associated with lower premiums in both types of plans.[23] In interpreting the unanticipated negative effect of mandates on premiums, the authors note that cost savings may arise from mandates since specific types of mandates may reduce costs in other areas (e.g., mandating ambulatory surgery may reduce the need for inpatient surgery). The lack of significance for other mandates, the authors surmise, may reflect the fact that the mandate is not binding in the sense that standard policies may provide the benefit or service even when it is not

mandated. Finally, the authors note that their results stand in stark contrast to the findings presented in Gabel and Jensen (discussed above). Of the eight mandates reviewed by Gabel and Jensen, the authors find that only one mandate – drug abuse treatment – is associated with higher premiums. The other mandates had no statistically significant effects on premiums. The authors' findings are also distinct from the econometric work of Jensen and Morrisey (cited earlier).

In sum, while the authors provide a very comprehensive analysis of the association between a variety of mandates and health insurance premiums in both HMO and indemnity plans, the findings should be interpreted cautiously and, as the authors note, treated as preliminary. Although the authors' methodology allows them to assess the contribution of specific mandates to premium increases, their estimates of the marginal cost of mandates merely capture the effect of the presence of a specific benefit and not the addition to premiums from mandated benefits that exceed benefits already in place. Thus, the authors cannot really identify the true marginal cost of a mandated benefit. In addition, the analysis does not consider the possible endogeneity of mandates as a response to rising health care costs rather than a cause of rising costs and health insurance premiums. Despite these issues, the findings that some mandates may lead to premium increases while others may lead to lower premiums suggest that one should not uniformly categorize mandated benefits as potentially cost enhancing.

### *Impact on Offers of Health Insurance by Employers*

Since workers and their dependents dominate the uninsured population and since lack of health insurance among workers has been most pervasive for those employed by small firms, considerable attention has been directed to factors affecting the decisions by small employers to provide coverage to their employees. Given the emphasis on the costs of coverage to small firms as an impediment to such provision, considerable attention has been directed to the possible cost-enhancing impact of state health insurance mandates on decisions by small employers to provide health insurance to their employees. Since such employers typically are at a disadvantage regarding costs of coverage, due to small size and high employee turnover which add to the administrative costs of coverage, mandated benefits are viewed as yet another component of costs that discourage small employers from providing coverage.

As discussed earlier, the evidence of the impact of mandates on health insurance premium costs is decidedly mixed reflecting a number of measurement and

methodological challenges. Consequently, if mandates are believed to raise health insurance costs, but if the evidence in this regard is not consistent, then one may have to appeal to other factors – cost enhancing or otherwise – to explain impediments to coverage availability at small firms.[24]

In their article cited above, Gabel and Jensen also considered the impact of mandates on employer decisions to provide health insurance. Using data from the 1985 National Federation of Independent Businesses (NFIB) survey of small business, they examined models of the likelihood that a small firm would offer health insurance. Among their findings, the authors estimate that higher state premium taxes reduced the likelihood of insurance offers as did the presence of continuation-of-coverage mandates (by 13 percent). They also found that each new mandate enacted between 1982 and 1988 reduced this likelihood by 1.5 percent (on average, states enacted three new mandates over this period, so the likelihood of coverage in a typical state was reduced by 4.5 percent). However, the authors also found that a number of mandates (including some classified as "expensive" in other work), such as psychologist's services, mental health benefits, alcoholism treatment, and drug abuse treatment, were not statistically significant correlates of a small firm's decision to offer coverage. Finally, the authors considered how many additional firms (of all sizes) would offer health insurance if there were no mandates for alcohol and drug abuse treatments, mental illness, psychotherapy, insurance risk pools, taxes, continuation-of-coverage requirements and if no other new mandates had been enacted during their study period. They predict that approximately 16 percent of firms not offering health insurance would do so under this scenario, with the largest gains obtained by firms most likely to afford health insurance: more financially established mid-sized firms employing more highly paid labor (firms in transportation, utilities, manufacturing, and mining).

The methodology and conclusions of this analysis raise a number of important questions regarding the empirical significance of mandates on decisions to provide coverage. First, the authors find that mandates have their largest impact on medium-sized firms and not the small firms for which the elimination of cost-enhancing mandates might be expected to yield the largest gains. Next, the authors fail to integrate results from their earlier work on the impact of mandates on health insurance premiums with their analysis of the impact of mandates on health insurance offers. For example, their work on the "price" of state mandates reveals a generally positive relationship between the presence of a selected set of mandates and premiums, but many of the same

mandates fail to achieve statistical significance in their analysis of health insurance offers. The authors never address this inconsistency and the failure to reconcile these findings raises doubts about their study implications regarding the direct impact of mandates on employer decisions to offer health insurance.

In a follow up to this study, Jensen and Gabel[25] provide a second analysis of the extent to which mandated benefit requirements discourage small firms from providing health insurance. This study builds upon their earlier work through the use of two data sets: data used earlier from the NFIB, consisting of 1,320 firms in 1985, and a new data set from the Health Insurance Association of America, consisting of 492 firms in 1988. The study motivates the econometric work by developing an economic model of decisions by employers to provide coverage. The econometric analysis includes two types of measures to capture the impact of mandates on employer health insurance decisions. These include variables measuring the total number of mandates in a state and the presence of five specific mandates (psychologist's clinical services, inpatient mental health services, alcoholism treatment coverage, drug abuse treatment coverage, and continuation of coverage provisions). The first four mandates are considered to be high-cost provisions by employers; the last mandate is included because of its similarity to federal COBRA coverage. The analysis also includes variables to capture other aspects of state regulation, specifically a state's average premium tax and an indicator of whether a state has taxed insured plans to finance a high risk pool.

The authors' empirical work yields mixed results and very large differences across the two data sets. In each data set, the authors find evidence that most of the specific mandates did not reduce the probability that a small employer would offer health insurance. For example, in the 1985 data, drug abuse treatment mandates had a statistically significant *positive* impact on employer offer decisions. Only continuation-of-coverage mandates had the expected negative association with employer offer rates and were statistically significant. Taken together, the set of mandates had a negative but weak statistical association with offer rates (i.e., significant only at $p < 0.10$). While the 1988 results indicate that mandates reduce the probability of employer offers, only a few of the mandates studied yielded statistically significant reductions in health insurance offers (i.e., psychologist's clinical services and state continuation-of-coverage requirements). Simulations reveal that in total, state mandates account for 19.7 percent of non-coverage in the 1985 sample and 43.4 percent of non-coverage in the 1988 sample. The authors cite continuation-of-coverage mandates as "particularly troublesome," accounting for 3.5

percent of non-coverage in the 1985 sample and 19.6 percent in the 1988 sample. Finally, the authors caution that their results should be regarded as tentative, given the possible sampling response bias in the 1985 data due to an extremely low response rate (19 percent), and possible specification bias in the 1988 data. They also note that the findings may not be generalized to all small firms since they surmise that both samples are probably comprised of older and more financially stable small firms.

As with their earlier work, the authors' assertion that state insurance mandates play a major role in discouraging small employers from providing health insurance confronts some compelling difficulties. Sample considerations aside, the econometric evidence for both data sets provides little evidence of statistically significant impacts of the individual high-cost benefit mandates on employer offer decisions. This certainly should raise serious questions regarding the precise mechanism through which such mandates might discourage offers of coverage, especially when the overall effect of these mandates are considered (as in the simulations). The statistically significant findings regarding continuation-of-coverage mandates may be somewhat less relevant for current policy, given the implementation of federal COBRA legislation and HIPAA portability provisions.[26] In addition, subsequent work by Gruber and Madrian[27] suggests that continuation-of-coverage benefits also yield significant private and social benefits: a reduction in "job lock" through a 10 percent increase in labor mobility, and thus, some efficiency gains from enhanced worker job mobility and accompanying productivity improvements through better job matches. Finally, the simulation results raise a number of concerns. For example, given the weak statistical association and finding that the presence of high cost mandates and total mandates *increase* offer rates in the 1985 findings, it seems somewhat besides the point to go through a simulation exercise to discern the impact of such mandates on non-coverage. Additionally, the magnitude of the simulation findings for the 1988 data appears to be implausible and, as the authors note, should be considered very tentative at best.

In a frequently cited paper, Jonathan Gruber provides a more rigorous approach to assessing the impacts of mandates on decisions by employers to offer health insurance.[28] Characterizing employer decisions not to offer health insurance in response to mandates as a "displacement effect," Gruber focuses exclusively on the behavior of small firms (less than 100 employees) using data from the May supplements to the Current Population Survey (CPS) that collect information on survey respondents' job characteristics for 1979, 1983, and 1988. He recognizes that there is far more variation in

coverage availability among small firms compared to large firms and that a sizeable proportion of the latter are self insured and thus exempt from state insurance regulations such as mandates. Gruber's analysis focuses on what he characterizes as five high cost mandates: minimum benefits for alcoholism treatment, drug abuse treatment, mental illness, chiropractic services and mandated continuation-of-coverage benefits for employees losing jobs and for their dependents. He focuses on these mandates as he estimates that they represent roughly half of the total cost of all services subject to mandates (based on claims data), and as a practical matter, including a full array of state mandates would likely encounter of statistical problems (since the presence of particular mandates within a state are not likely to be independent of one another). Another distinguishing feature of Gruber's analysis is the use of more accurate information on the presence of state legislation regarding mandates. As he notes, tabulations on state mandates compiled by the Blue Cross/Blue Shield Association (used by Gabel and Jensen) are in a number of cases, inconsistent with actual state legislation.

Empirically, Gruber examines the relationship between the presence of a set of high-cost mandates in a state and outcome variables that include the likelihood that a worker is covered by health insurance on her current job and the probability that an employer will offer health insurance. He also considers this relationship using a "potential mandate cost index": a weighted average of the increment to group health insurance rates due to the five expensive mandates (with weights equal to the percentage of claims paid out for each of the services subject to mandates).[29] Finally, Gruber also considers whether the estimates of the impact of mandates on employer decisions to offer coverage may be biased due the fact that implementation of mandates may not be a random event but rather, a response to differences in health insurance coverage rates across states (i.e., the issue of policy endogeneity).

Gruber finds little evidence that mandates yield a statistically significant reduction in the likelihood that a worker employed by a small firm will obtain health insurance or in the probability that an employer will offer coverage. These results are obtained, regardless of whether mandates are specified as the five high-cost mandates, the sum of mandates, or the cost index.[30] The findings are also robust to a variety of alternative empirical models, including those limited to very small firms (less than 25 employees) where the effect should be greatest, models that evaluate the presence of waivers which allow "barebones" plans exempt from mandates to be available to small firms, and models that use the propensity of employers to offer coverage and worker coverage

status as separate outcome variables. Additionally, Gruber finds no evidence that his findings are biased due to the possibility that states with high underlying costs may also be more likely to enact mandates (thus eliminating the possibility of bias due to policy endogeneity). Gruber offers several possible reasons for his findings. He notes that small firms may not be particularly sensitive to changes in the price of coverage, that employees may value mandates at close to their costs to the employer (and by implication, are willing to pay for such benefits through reduced wages), and that mandates may not be binding on a firm's insurance decision. With regard to the latter, he notes that if most firms decide to offer certain benefits prior to their being mandated, then the resulting premium increase associated with mandates may be less than expected, resulting in a weak impact on employee coverage rates and employer decisions to offer coverage.

In the context of a somewhat more recent paper examining the impact of small group reform and insurance provisions on a sample of 2,472 small business (1 to 49 employees) for the years 1989-95, Jensen and Morrisey[31] examined the relationship between the number of mandates in a state and a small firm's decision to offer health insurance. The authors do not attempt to assess the impact of specific types of mandates on such decisions in this paper. Using data from the Health Insurance Association of America's annual employer surveys, they find that an additional mandate reduces the probability of an insurance offer by 0.004 percentage points for the entire sample. These results were driven by firms with 10-49 workers and not by very small firms. However, given earlier work by Jensen and Gable, the present authors never test the contribution of individual mandates, and beyond reporting results in a short paragraph, no further mention is made of this finding. Additionally, while the authors recognize that many reforms within the 1996 HIPAA had already been implemented by states prior to this federal legislation, they fail to acknowledge that the benefits required by insurance mandates may have already been included in health plans prior to implementation of specific mandates by states.

### *Impact on Uninsured Rates*

If mandated benefits are viewed as raising health insurance premiums, and in turn, yielding a reduction in the proportion of employers offering health insurance benefits, then one might also expect a rise in uninsured rates to be to be a direct consequence of mandates. However, only a few studies have attempted to empirically

assess the magnitude of this relationship. The paucity of such analyses may reflect the mixed and questionable evidence regarding the relationship between mandates and health insurance premiums, and mandates and offers of health insurance. Solid evidence on these relationships would appear to be an important pre-requisite for analyses seeking to determine whether mandates increase uninsured rates.

Perhaps the earliest effort to examine the mandate/uninsured rate relationship is by Goodman and Musgrove[32] who used CPS data for 1985 and 1986 on the percent of the non-elderly in each state without health insurance and the number of state mandates. Using an econometric model to study the determinants of state variation in uninsured rates, with total number of mandates as an explanatory variable, they found mandated benefits to be a major determinant of the rate of lack of coverage among a state's non-elderly population. They estimated that each mandate increased the percentage of non-elderly uninsured persons in a state by between 0.17 and 0.28 percentage points and depending on model specification, that state mandates were responsible for between 14 percent and 25.5 percent of the uninsured.

The estimation approach employed by Goodman and Musgrove has been criticized by Conover[33] and by Gruber.[34] Conover has noted that the study relied upon inaccurate data on state mandates from the Blue Cross/Blue Shield Association and failed to account for the possibility that states with higher costs might be more likely to enact mandates. Gruber further notes that the study does not account for other policy initiatives (such as differences in Medicaid eligibility criteria) which could also explain differences in uninsured rates (and might be correlated with the presence of mandates); that counts of mandates are a crude metric that fails to capture variation in the costs of mandates across states; and finally, that their measure of total mandates includes mandated offerings (i.e., the state requires health insurers to offer a particular health plan to specific groups) which, as Gruber asserts, should have no impact on the firm's insurance decision.

More recently, Marsteller et al.[35] used CPS data for the years 1989 to 1995 in an econometric model examining the impact of state insurance regulations on state-level uninsured rates. The set of explanatory variables in their model includes small group and individual market reform, any willing provider and freedom of (provider) choice laws, and following Gruber, the presence of high-cost state benefit mandates for alcoholism and drug abuse treatment, mental health treatment, and chiropractic care. The model further includes variables to account for the presence of a state high risk pool and the

percent of the state's population eligible for Medicaid. The authors include variables to account for variation in a state's economic environment over time and also add a set of demographic characteristics. In addition, their model controls for possible unobserved differences across states (through the use of state fixed effects) and year-specific dummy variables to account for unobserved trends over the time period studied. Results indicate that benefit mandates for alcohol and drug abuse treatment increase uninsured rates by 1.9 percentage points but the results are only significant at the $p < 0.10$ level. The authors speculate that such a change in coverage may result from the fact that mandates may increase health insurance premiums, causing individuals to drop employer-provided or individual coverage, rather than from employers discontinuing offered coverage.

Marsteller et al. also provide some weak evidence (in terms of statistical significance) that such high-cost mandates may result in increased uninsured rates. However, the authors' econometric model raises a number of questions regarding the interpretation of the findings. First, the empirical work provides no direct test of the precise mechanism through which mandates might affect coverage rates (e.g., their impact on premiums and/or employer decisions to provide coverage). Next, since mandates are expected to have a differential effect on small firms compared to large firms, the modeling effort and data are not able to differentiate findings according to firms size and thus, to determine whether mandates do indeed have the expected impact on employees of small firms relative to those in large firms. Finally, the authors' empirical strategy does not address the issue of whether there may be unobserved and differential effects *over time* between states with and without these high cost mandates. Put differently, if the set of high cost mandates represents a policy intervention restricted to a specific group of "experimental" states, the design does not adequately define a control group of states to compare the change in uninsured rates. Thus, if health care costs increases differ across states with/without these mandates over time, the empirical findings may attribute the decline in uninsured rates to mandates rather than to differences in the growth of such costs across the groups of states.

Sloan and Conover[36] also used CPS data for the years 1989 to 1994 for a rather comprehensive study of the impact of state insurance regulation on health insurance coverage of adults. Their study examined whether a variety of state reform initiatives in the small group and individual health insurance markets, the number of mandates in a state, and the presence of low-cost private insurance plan exempt from mandates had an impact on three outcome measures: the likelihood that an adult had any type of health

insurance, the likelihood that a person with insurance was covered by private insurance, and whether coverage was employment related. Noting that large firms are most likely to self-insure, the authors apply the mandate variable to individuals employed in groups of 500 or less or to individuals not employed. With regard to the outcome measure of interest -- whether an individual has any coverage -- the authors find that each additional mandate increases the probability that an individual is uninsured by a very small amount (0.004 percentage points). The authors note that by removing 11 mandates (the sample mean) the proportion of insured adults would increase by 0.04 percentage points. With 18 percent of the sample uninsured, this suggests that between a fifth and a quarter of the uninsured rate could be attributed to the presence of mandates. The number of mandates in a state was also significantly associated with a lower likelihood of having private coverage or employment-related coverage. Curiously, however, the authors' efforts to incorporate a set of high-cost mandates in the empirical specification yielded "results that were difficult to interpret" (see the authors' endnote 2). Finally, the presence of low-cost plans and their interaction with the number of mandates were not statistically significant (when tested individually or jointly). The authors also test for policy endogeneity by examining whether state policies were statistically related to a number of state characteristics, including prior rates of insurance coverage among state populations. The authors fail to find the expected positive relationship between the presence of state policies and these variables.

Although examining the impact of health insurance mandates represents a very small part of Sloan and Conover's overall study, their effort shares a number of shortcomings with research discussed earlier. As noted, the number of mandates represents a very crude metric to assess their impact and the fact that use of a set of high-cost mandates yields findings not readily interpretable raises questions regarding the underlying methodology. Additionally, as pointed out in the 1999 literature review by Jensen and Morrisey, Sloan and Conover's assessment of as much as a 24 percent decline in uninsured rates due to elimination of mandates may overstate the study's impact since no state in the study sample was without mandated benefits (i.e., the authors are extrapolating beyond the data contained in their sample). Other concerns include the fact that the analysis applies the mandate variable over a broad range of firm sizes (500 or fewer) and does not directly test whether the mandate variable has an effect among relatively small firms where its expected effect should be largest. Finally, the study does

not reconcile its results with other work that has failed to find a significant impact of mandates on health insurance costs.

Finally, other analyses suggest that the elimination of state insurance mandates would have little effect on the size of the uninsured population. Gruber's analysis of state insurance mandates using both the individual worker and the firm as the unit of analysis finds little evidence that mandates would affect worker insurance status and hence the likelihood that a worker would be uninsured. At most, he suggests that imposing a set of high cost mandates would lower coverage by one percent, a result that is not statistically significant. Additionally, the actuarial study by the State of Texas (cited earlier) concludes that elimination of mandates would likely have an insignificant impact on the number of uninsured in Texas.

## Conclusion

As this review has demonstrated, research regarding the impact of state health insurance mandates on health insurance costs, employer decisions to offer coverage, and coverage rates has employed a variety of methodological approaches, data sets, and measures of mandated benefits. Despite these alternative approaches, the body of research provides little in the way of compelling evidence that state insurance mandates have had an important impact on these outcomes. This assessment reflects the failure of such work to yield consistent empirical evidence in support of the precise mechanisms through which mandates may achieve their adverse effects: increases in health insurance costs which, in turn, yield a decline in employer offers of coverage (especially among small firms) and result in subsequent increases in uninsured rates. The failure to obtain results that consistently support the claims that mandates may have adverse consequences on such outcomes should give policymakers pause as they seek to focus on mandated benefits as a primary reason for rising health insurance costs.

There are a variety of reasons that may underlie this paucity of convincing research results. From a methodological perspective, and taking a fairly pessimistic view, it simply may be beyond the capacity of empirical research to construct a tightly controlled study to identify the causal impact of mandates. In contrast to other studies of health insurance – such as the Medicaid expansions and state insurance market reforms of the late 1980s and early 1990s – there is no well-defined pre/post-observation period with available data over which to assess a policy intervention such as mandated benefits,

and additionally, it is difficult to identify adequate control states (such as those without mandates or with common set of limited mandated provisions) to serve as a counterfactual to states that have implemented mandated benefits. Perhaps most daunting is the difficult challenge of disentangling the marginal contribution of a mandate over the impact of similar benefits that may have already been present in health insurance plans prior to the implementation of the mandated benefits. Other methodological issues, such developing well-founded hypotheses regarding the expected impact of mandates, sorting out issues of policy endogeneity (i.e., having confidence that the presence of a mandate is truly independent of other potentially confounding factors that may be correlated with its presence as well as with the outcomes of interest), and assessing both the costs and benefits of specific mandates, remain important challenges to empirical research.

Next, behavioral responses by employers and employees may be at variance with hypotheses regarding the expected impact of mandates. For example, as Gruber[37] has noted, demand responsiveness by small firms to changes in health insurance costs may be relatively low as evidenced by prior demonstration studies of small employer responses to health insurance subsidies. Recent empirical work by Hadley and Reschovsky[38] suggest that this may be partly true: for small firms of less than 100 employees, they estimate that on average, an employer's demand for health insurance is not especially responsive to changes in premiums, that employer responsiveness is larger for very small firms, but that the responsiveness declines as the size of a small firm increases.[39] Thus, the somewhat larger estimate for very small firms suggests that Gruber's assertion may not be strictly true for all small firms. Next, Gruber notes that the weak findings may reflect the fact that employees do value mandated benefits and are willing to "pay" for such additional coverage though reduced wages or adjustments to their labor supply. Finally, he notes that mandates may not be "binding" in the sense that they may already be present in health insurance plans offered by most employers, a point made throughout this review.

Additionally, having accurate data regarding the implementation and content of mandated benefit laws may have also affected study results. It may be that unmeasured details of mandate laws also reduce their binding impact. For example, if a state mandates coverage of prosthetics but does not require insurers to raise their annual limits on durable medical equipment coverage, then the actuarial impact of such a mandate

would be diminished. Likewise, mandates that do not apply to very small firms may also greatly reduce their impact.

While the results presented in this review suggest that the focus on mandates as a primary cause of rising health insurance premiums and declining coverage rates may be misplaced, policymakers still need to be cognizant of the implications of adding additional mandates in an environment of dynamic health care technology diffusion. Given the cost-enhancing nature of most new medical technologies, and the desire to ensure that individuals have access to such care, this review should not be interpreted simply as a *carte blanche* for the implementation of new mandates in response to the presence of new technology. Recall that most of the studies cited are nearly a decade old when "high cost" mandates consisted of services such as alcohol treatment, drug abuse treatment, mental illness, chiropractic care, along with continuation of coverage mandates (as in Gruber's analysis). In considering new mandates for services focusing on advanced technologies, policymakers should draw from the lessons of the present report. However, at the same time, decision makers need to provide careful consideration of *both* the true incremental costs of mandates and the benefits likely to emerge from their implementation.

# Endnotes

[1] Blue Cross and Blue Shield Association, December 2001. Title 17B of the New Jersey Statutes provides the following definition: "Mandated health benefit" or "mandate" means: a benefit or coverage that is required by law to be provided by a carrier and includes: coverage for specific health care services, treatments or practices; or direct reimbursement to specific health care providers." State of New Jersey, C.17B:27D-2. (Vic Tandon, "Mandated Health Insurance Benefits: Separating Rhetoric from Reality." Unpublished manuscript, Center for State Health Policy, Rutgers University, May 2004.

[2] Victoria Craig Bunce and J.P. Weiske, Health Insurance Mandates in the States 2004 (Alexandria, Virginia: Council for Affordable Health Insurance, July 2004).

[3] Blue Cross and Blue Shield Association op. cit.; Bunce and Weiske op. cit.

[4] See http://www.state.nj.us/dobi/mandatedhbac.htm for information on New Jersey health insurance mandates (last accessed January 24, 2006).

[5] Data from the Centers for Medicare and Medicaid Services available at http://www.cms.hhs.gov/NationalHealthExpendData/downloads/nhestatesummary2004.pdf last accessed on November 14, 2006.

[6] See http://www.state.nj.us/dobi/mandatedhbac.htm cited in note 4.

[7] See http://www.state.nj.us/dobi/acrobat/a333report.pdf for the full commission reports of each of these proposals (last accessed January 24, 2006).

[8] This point was perhaps first made in Jonathan Gruber. 1994. "State-Mandated Benefits and Employer-Provided Health Insurance." *Journal of Public Economics* 55: 433-464.

[9] Empirical evidence as to whether employees bear the full cost of mandated benefits is sparse and has yielded mixed results. For example, Kaestner and Simon find that the number and type of state benefit mandates had no statistically significant impact on wages or other labor market outcomes such as weeks worked. However, mandates were associated with an increase in weekly hours of work. See Robert Kaestner and Kosali Ilayperuma Simon. 2002. *Industrial and Labor Relations Review* 56 (12): 136-159. Alternatively, Gruber has found that the implementation of mandated maternity benefits resulted in a nearly offsetting dollar decline in wages for women of childbearing years in states implementing the mandate compared to those without the mandate. See Jonathan Gruber. 1994. "The Incidence of Mandated Maternity Benefits." *American Economic Review* 84(3):622-641.

[10] Lawrence H. Summers. "Some Simple Economics of Mandated Benefits." *American Economic Review* 1989 79(2): 177-183.

[11] More formally, from a research design perspective, the implementation of a mandate should reflect a random process that is unrelated to any unobserved factors that may also be correlated with both the mandate and the outcome of interest. Thus applying a quasi-experimental research design that compares health insurance costs between "control" and "experimental" groups of states in response to the introduction of a mandate, or implementing a fully-specified empirical model that takes account of differences in the political environment across states, has become essential in identifying the impact of policy interventions such as mandates.

[12] David M. Cutler, "Your Money or Your Life: Strong Medicine for America's Health Care System" (New York: Oxford University Press, 2004) and David M. Cutler and Mark McClellan. 2001, "Is Technological Change in Medicine Worth It?" *Health Affairs* 20 (September/October): 11-29.

[13] James H. Henderson, J. Allen Seward, and Beck A. Taylor. 2005. "State-Level Health Insurance Mandates and Premium Costs." Unpublished manuscript. Baylor University. June 1.

[14] Gail A. Jensen and Michael A. Morrisey "Employer-Sponsored Health Insurance and Mandated Benefit Laws" *Milbank Quarterly* 77 (4) 1999: 425-459 provide a useful discussion of the political economy of mandate provisions and a selective review of the literature up to the late 1990s on the impact of mandates on a variety of outcomes, including premium costs, employer decisions to provide coverage, and uninsured rates.

[15] Susan K. Albee, Esther Blount, Tim D. Lee and Mike Strum. *Cost Impact Study of Mandated Benefits in Texas*. Report #1 (July 21, 2000) and #2 (September 28, 2000), State of Texas Department of Insurance.
[16] US Congressional Budget Office. *Increasing Small-Firm Health Insurance Coverage through Association Health Plans and Health Marts*. Washington DC, January 2000.
[17] US General Accounting Office. *Private Health Insurance: Federal and State Requirements Affecting Coverage Offered by Small Firms*. GAO-03-1133. September 2003.
[18] Gail A. Jensen and Jon R. Gabel. 1989. "The Price of State Mandated Benefits." *Inquiry* 26(4): 419-431. Gail A. Jensen and Michael A. Morrisey. 1990. "Group Health Insurance: A Hedonic Approach." *Review of Economics and Statistics* 72(1): 38-44. The latter authors estimate "hedonic" premium regressions that quantify the relationship between health insurance premiums and specific characteristics of health plans and use the findings to derive estimates of the contribution of specific plan characteristics premiums. These estimates can be considered as the "marginal cost" of adding a particular benefit to a health plan.
[19] "Employers' payroll and insurance costs: Implications for play or pay employer mandates" *Health Benefits and the Workforce*. 1992. Washington, D.C.: U.S. Department of Labor.
[20] Such a mandate would compel employers to either provide health insurance (e.g., "play") or contribute additional payroll taxes toward the provision of public coverage for their employees (e.g., "pay").
[21] William J. Congdon, Amanda Kowalski, and Mark H. Showalter. 2005. "State Health Insurance Regulations and the Price of High Deductible Policies." Unpublished paper. 13 January.
[22] James H. Henderson, J. Allen Seward, and Beck A. Taylor, op. cit.
[23] Other examples of mandates associated with increased premiums include home health care services, physical therapists, and prostate cancer screening (in HMO plans) and cervical cancer screening, blood lead screening, and emergency services (in indemnity plans). Examples of mandates associated with reduced premiums include ambulatory surgery, psychiatric nurses and mammography screening (in HMO plans) and prostate cancer screening, diabetic supplies, and second opinions (in indemnity plans).
[24] For example, there is some evidence that the lack of coverage at small firms may reflect employee preferences for wage income rather than health insurance benefits and that workers "sort" into small firms to obtain a more desirable compensation package. See for example, Alan C. Monheit and Jessica Primoff Vistnes. "Health Insurance Availability at the Workplace: How Important are Worker Preferences?" *Journal of Human Resources* 34, 4 Fall 1999: 770-785.
[25] Gail A. Jensen and Jon R. Gabel. "State Mandated Benefits and the Small Firm's Decision to Offer Insurance." *Journal of Regulatory Economics* 1992 4:379-404.
[26] COBRA refers to the 1985 Consolidated Omnibus Budget Reconciliation Act and HIPAA refers to the 1996 Health Insurance Portability and Accountability Act.
[27] Jonathan Gruber and Brigitte C. Madrian. "Health Insurance and Job Mobility: The Effect of Public Policy on Job Lock." *Industrial and Labor Relations Review* 1994 48(1): 86-102.
[28] Gruber, op. cit.
[29] Here it is important to note that the increment in costs due to the specific mandates does not represent the incremental costs above those contributed by the specific benefits that were present in the plan prior to the implementation of the mandates.
[30] Consistent with Gruber's findings, an unpublished econometric study by Cori E. Uccello, Firms' Health Insurance Decisions: The Relative Effects of Firm Characteristics and State Insurance Regulations, Urban Institute, July 1996 concluded that state mandated benefits and insurance market reform played "only a minor role in a firm's health insurance decision."
[31] Gail A. Jensen and Michael A. Morrisey. "Small Group Reform and Insurance Provision by Small Firms, 1989-1995." *Inquiry* 36 (Summer 1999): 176-187.
[32] John C. Goodman and Gerald L. Musgrave. "Freedom of Choice in Health Insurance." Policy Report No. 134, National Center for Policy Analysis, November 1988.
[33] Christopher J. Conover. "Health Benefit Mandates." Health Insurance Regulation Working Paper No. 1 – 5, Center for Health Policy, Law, and Management, Duke University, July 25, 2003.
[34] Gruber, op. cit.

[35] Jill A. Marsteller, Len M. Nichols, Adam Badawi, Bethany Kessler, Shruti Rajan, and Stephen Zuckerman. June 11, 1998. "Variation in the Uninsured: State and County Analyses." Unpublished manuscript, The Urban Institute. June 11.
[36] Frank A. Sloan and Christopher J. Conover. "Effects of State Reforms on Health Insurance Coverage of Adults." *Inquiry* 35 (Fall 1998): 280-293.
[37] Gruber op. cit.
[38] Jack Hadley and James D. Reschovsky. "Small Firms' Demand for Health Insurance: The Decision to Offer Insurance." *Inquiry* 39 (Summer 2002): 118-137.
[39] Hadley and Reschovsky provide premium elasticity estimates of employer decisions to offer health insurance. These measures assess the percentage change in the likelihood that an employer will offer coverage in response to a given percentage change in premiums. Among all small firms in their sample, they estimate a premium elasticity of -0.54 (e.g., a ten percent change in premiums yield a 5.4 percent decline in the likelihood that an employer will offer coverage, an inelastic response). Their elasticity estimates range from -0.63 for firms with less than ten employees, -0.30 for those with 10-24 employees, -0.24 for those with 25-49 employees, and -0.03 for firms with 50-99 employees (although the latter finding is not statistically significant).

# Appendix

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Browne et al. (1987) | Descriptive | 1. Mental illness<br>2. Alcohol abuse treatment<br>3. Drug abuse treatment | Group market in AR, CT, MD, MA, OR, and WI | 1987 survey of health plan carriers, national actuarial firm, large national employer, major group insurers, and independent agents | Of those surveyed, 64% reported premium increases resulting from the three mandated benefits. 98% reported no change from insured to self-insured status due solely to mandated benefits. None of the sources indicated that any plans had been terminated because of mandated benefits. | Cost |
| Lanam (1987) | Review | Various | General | Federal and state legislation | This paper describes the history surrounding state and federal mandates. The author points out: "The cost of any benefit relates to two factors – price and frequency of utilization. Only when benefits are substituted is there likely to be any real savings. Adding benefits without qualification only increases the universe eligible for reimbursement and does little or nothing to reduce total health care costs. This is the dilemma that faces state legislators – limit access or increase costs." | Cost |
| Gabel et al. (1988) | Descriptive | Not specified | All public and private employers except federal government (small employers were undersampled and large employers were oversampled) | Interviews by Health Care Financing Administration, 1984<br><br>Follow-up interviews by the authors, 1987 | From 1984 to 1987 there was an increase in the number of firms that self-insured (46% in 1984 to 52% in 1987). The major growth was among mid-sized firms and public employers. Almost 85% of large firms had some form of self-insurance.<br><br>One reason why employers may decide to face the risk of self-insurance is because of ERISA, which exempts employers from state mandates. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Goodman and Musgrave (1988) | Econometric | Total number of state mandated benefits | Non-elderly uninsured | Current Population Survey, 1985 and 1986<br><br>Data on mandates from Blue Cross Blue Shield Association, 1988 | The major determinant of lack of health insurance is mandated benefit regulations. Each mandated increased percentage of uninsured in the state by 0.17% to 0.28%. Based on different models, the authors estimated that 14% to 25.2% of individuals are uninsured because state mandates have increased the price of insurance. | Coverage |
| Jensen and Gabel (1988) | Descriptive | 1. Alcohol treatment<br>2. Drug abuse treatment<br>3. Mental health<br>4. Home health services | Private sector medium and large firms | Bureau of Labor Statistics Employee Benefit Surveys 1981, 1984, and 1985 | Conventional self-insured plans were less likely than purchased plans to include alcohol and drug abuse coverage, mental health benefits, and home health services. | Coverage |
| Morrisey and Jensen (1988) | Descriptive | 1. Alcohol treatment<br>2. Drug abuse treatment | Private sector medium and large firms | Bureau of Labor Statistics Employee Benefit Surveys 1981, 1983, and 1985 | In 1985, 68.5% of employees with health insurance had coverage for alcoholism treatment and 61.6% for drug abuse treatment. Alcoholism coverage increased 89% from 1981 to 1985. The increases are only partly explained by the trend in state mandates that require coverage for these services, since self-insured firms, exempt from state mandates, had the greatest increases in coverage. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Gabel and Jensen (1989) | Review | Various | Various | Jensen and Morrisey, 1988<br>Goodman and Musgrave, 1988<br>Jensen and Gabel, 1989 (working paper)<br><br>Data on mandates from BCBSA, 1988 | Mandates raise the price of health insurance substantially. Approx 16% of small firms that do not offer health insurance would in an essentially mandate-free environment. 51% of large firms that are converting to self-insurance would not if there were no mandates.<br><br>Each new mandate between 1982 and 1988 reduced the likelihood of offer by 1.5%. On average, states enacted 3 mandates during this period, so the likelihood of coverage decreased by 4.5%.<br><br>Most mandates increased the likelihood that a firm (medium and large sized) self-insured. | Cost |
| Summers (1989) | Economic theory | General | General | Not specified | "Mandated benefits are like public programs financed through benefit taxes, thus saving many of the inefficiencies of government provision of public goods."<br><br>The author used a supply and demand model to examine the effect of mandated benefits on wages and employment. Mandates increase the cost of insurance and decrease the demand for labor. If employees value the benefit, they will increase the supply of labor. Wages will fall but employment may or may not fall depending on the relative supply and demand shifts. | Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Jensen and Morrisey (1990) | Econometric | 1.Chemical dependency treatment<br>2. Psychiatric hospital stays<br>3. Psychologist services | Private sector medium and large firms | Bureau of Labor Statistics Employee Benefits Surveys 1981-1984 | Covering benefits similar to ones that are mandated may be costly for firms. The three benefits looked at raised premiums by 9% to 12%. Benefits may also have a cumulative effect on premiums. | Cost |
| Krohm and Grossman (1990) | Actuarial | 1. Alcohol and drug abuse treatment<br>2. Diabetes<br>3. Home health care<br>4. Skilled nursing facility care<br>5. Kidney disease treatment<br>6. Chiropractic care | Group market in Wisconsin | Survey of third party administrators and benefit consultants | in 1989, the 6 mandates accounted for, on average, 10.2% of total medical benefits in self-funded plans vs. 7.9% in insured plans. Indicates that self-funded plans provide at least as many of the mandated benefits as insured plans and in some cases, provide more generous coverage.<br><br>In most cases, self-funded plans offer benefits equal to or greater than those mandated by the state. 98% of respondents said that there was no change from insured to self-funded status solely because of mandated benefits. 2% said there was a change from insured to self-funded status based solely on the implementation of mandated benefits. | Cost |
| Acs et al. (1992) | Econometric | Total number of mandates in states | All public and private employers except federal government | Health Insurance Association of America Employer Survey, 1989 | For large employers (>1000 employees), each state mandate adds $1.50 to the monthly premium. The average state has 10 mandates.<br><br>For medium-size employers (10-999 employees), the number of state mandates has a negligible effect on health insurance costs.<br><br>Did not perform analysis for small employers (<10 employees) because of data limitations. | Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Jensen and Gabel (1992) | Econometric | 1. Psychologists' clinical services<br>2. Inpatient mental health<br>3. Alcoholism treatment<br>4. Drug abuse treatment<br>5. Continuation of coverage for terminated/laid off | Small firms | National Federation of Independent Businesses survey of small businesses, 1985<br><br>Health Insurance Association of America employer benefits survey, 1988<br><br>Data on mandates from BCBSA | In models for the 1985 and 1988 data sets, the authors found a statistically weak collective effect of mandates in reducing the probability that a small firm offers insurance. The results for individual mandates were mixed.<br><br>Simulation of the effect of mandates in 1985 showed that mandates accounted for 19.7% of noncoverage, compared to 43.4% in 1988. The authors conclude that the 1985 was more representative of the characteristics of small firms and therefore these simulations have more credence. | Coverage |
| Feldman (1993) | Economic theory | General | General | Data on mandates from BCBSA *Mandated Benefits Manual* , 1992 | A mandated benefit will cause employees to increase their labor supply (work hours) as a way to adjust to an imbalance in their market basket of goods that includes both benefits and other consumption goods. The increase in labor supply causes compensation per hour to fall.<br><br>Low-paid workers, whose total compensation is less than the cost of mandated benefits plus "mandated goods" face a different scenario. To afford the extra mandate, the worker's marginal productivity must increase but this increase can only occur through a reduction in the amount of labor hired by employers. The standard conclusion is that mandates will create unemployment for low-paid workers. | Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Morrisey and Jensen | Econometric | 1. Alcohol treatment<br>2. Drug abuse treatment<br>3. Inpatient mental health<br>4. Outpatient mental health | All public and private employers except federal government | Health Insurance Association of America employer survey, 1989 | In states with and without mandates for alcohol and drug abuse treatment and mental health benefits, self-insured firms were less likely than purchased plans to include these benefits. A self-insured firm was almost 30% less likely to offer alcohol, drug abuse or outpatient mental health coverage and 44% less likely to offer inpatient mental health coverage. | Coverage |
| Gruber (1994a) | Econometric | 1. Minimum benefits for alcohol treatment<br>2. Drug abuse treatment<br>3. Mental illness<br>4. Chiropractic services<br>5. Continuation of coverage for terminated or laid off workers | Small firms | May Pension and Employee Benefits supplements to the Current Population Survey, 1979, 1983, and 1988<br><br>March CPS, 1990 and 1992<br><br>Data on mandates from BCBSA, Health Insurance Association of America, state legislative records, and other studies | Five high cost mandates, accounting for 50% of total cost of all mandated benefits, had no effect on small firms' decision to offer insurance. Taken together, benefit mandates reduced coverage by 0.3-1.2%. State benefit mandate waiver laws would increase coverage by less than 2%, further showing that mandates do not have a significant effect on small firms' decisions to offer health insurance.<br><br>Small firms which offer insurance include benefits that are nearly as generous as those in larger firms. Firms in states with mandates do not seem to offer these benefits much more frequently than firms in states without mandates. Self-insured firms are no less likely to offer benefits than insured firms. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Gruber (1994b) | Econometric | State maternity benefits | Married women ages 20-40 | May Current Population Survey, 1974, 1975, 1977, and 1978<br><br>National Medical Care Expenditure Survey, 1977 | In states with mandated maternity benefit laws, there was a 5.4% fall in relative wages of 20-40 year old married women, compared to states without maternity benefits.<br><br>For a 100% rise in cost due to the mandate, there was a 0.63% rise is total labor input per worker, contrasted with a 4.7% fall in wages for the target group. The estimated effect on net labor input is small, which confirms the conclusion of substantial shifting to wages for the target group. | Cost |
| Morrisey et al. (1994) | Descriptive | Total number of mandates | Small firms | Survey of small businesses, 1993<br><br>Health Insurance Association of America employer surveys, 1989-1992 | The number of mandates had a negative but small effect on small firms offering insurance. Each additional mandate lowered the probability of offer by 0.6%. Each state had an average of 18 mandates, so on average mandated benefit laws were estimated to reduce the probability of small firms offering insurance by 11%. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Jensen et al. (1995) | Econometric | 1. Psychologists' clinical services<br>2. Inpatient mental health<br>3. Alcoholism treatment<br>4. Drug abuse treatment<br>5. Continuation of coverage for terminated/laid off workers | All public and private employers except federal government | Bureau of Labor Statistics Employee Benefit Surveys, 1981, 1984, and 1985<br><br>Health Care Financing Administration Health Insurance Benchmark Survey, 1984<br><br>Health Insurance Association of America Employer Health Insurance Survey, 1987<br><br>Data on mandates from BCBSA *Mandated Benefits Manual* , 1992 | State insurance regulation had a mixed effect on firms' decisions to convert to self-insurance during the early 1980s and no effect during the mid-1980s. However, the net effect of mandates alone was negligible.<br><br>The total number of mandates, the presence of a mandate for mental health coverage and the presence of a continuation of coverage mandate each significantly increased the likelihood that a firm converted to self-insurance during the early 1980s. The other mandates had a negative effect, making it less likely that a firm converted. This could be because mandates lowered the market price of these benefits. | Coverage |
| Garfinkel (1995) | Econometric | 1. Alcoholism treatment<br>2. Drug abuse<br>3. Mental health services<br>4. Chiropractic services | All public and private employers except federal government | Health Care Financing Administration Survey of Private Health Insurance Plans, 1989<br><br>Data on mandates from *Health Benefits Letter* | The total number of mandates was not significant, but the presence of an alcohol treatment mandate increased the probability of self-insurance, and the presence of a mental health mandate decreased the probability.<br><br>The finding for the mental health mandate is inconsistent with Jensen, Cotter, and Morrisey (1994) but the variable studied here included the presence of a "mental health" or "psychologist service" mandate. Jensen et al. separated these two mandates and found the mental health had a positive effect and psychologist service had a negative effect on self-insurance. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Acs et al. (1996) | Actuarial | 1. Prenatal care<br>2. Maternity care<br>3. Outpatient drug<br>4. Outpatient mental health<br>5. Alcohol abuse treatment | All public and private employers except federal government | Health Insurance Association of America survey, 1991<br><br>Robert Wood Johnson Foundation Employer Health Insurance Survey, 1993<br><br>National Medical Expenditures Survey, 1987 | Benefits in self-insured plans were similar to fully insured plans. The authors conclude that mandated benefits may not have driven firms to self-insure. The trend to self-insurance may also have leveled off in recent years as firms turned to purchasing managed care plans to contain costs. | Coverage |
| Uccello (1996) | Econometric | Total number of mandates in each state, and specifically:<br>1. Alcoholism treatment<br>2. Drug abuse treatment<br>3. Mental health<br>4. Psychologist coverage | All public and private employers except federal government | Health Insurance Association of America Employer Survey, 1991<br><br>Data on mandates from BCBSA *Mandated Benefits Manual* , 1992 | Small firm model found no significant effect of total number of mandates on decision to offer. Only statistically significant mandate was psychologist coverage. Small firms were 22% less likely to offer insurance in states with psychologist mandate. Mental health coverage mandate only had a small negative statistically insignificant effect on a small firm's decision to offer insurance.<br><br>Medium to large firm model found no significant effect of mandates on firms offering insurance. Of the medium and large firms that self-insure, the only mandate significantly affecting a firm's decision to self-insure was the drug abuse treatment mandate. Firms in states with such a mandate were 18% less likely to self-insure. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| United States General Accounting Office (1996) | Review | State-specific mandated benefits | Various | State and federal legislation<br><br>7 studies published between 1987 and 1994<br><br>KPMB Peat Marwick employer survey, 1995<br><br>Data on mandates from BCBSA, 1995 | Cost estimates based on claims were generally higher in states with more mandated benefits and in states that mandated more costly benefits. However, the studies are limited because they do not account for other cost elements and do not measure the incremental cost of adding a mandated benefit to a plan.<br><br>Actuarial studies of states' experiences have found that mandated benefits accounted for 5% to 22% of claims costs in the late 1980s and early 1990s. Obstetrical care and mental health care were often cited as the most expensive mandated benefits. | Cost |
| Flynn et al. (1997) | Review | Proposed state mandates on employers to provide health insurance | General | 34 studies published between 1979 and 1997 | The literature suggests that an employer mandate will reduce employees' wages in the long run. In the short run, to compensate for the costs associated with mandated health care insurance for their employees, firms may raise their prices to consumers, reduce the number of employees, or allow a drop in profit margins. By increasing health care spending and the number of insured persons, mandates would also increase states' levels of economic activity. | Cost |
| Goodman and Matthews (1997) | Actuarial study by Milliman & Robertson | 12 of the most common mandates including:<br>1.Infertility treatment<br>2. Mental health parity | One representative state (not specified) | Not specified | Collectively, the 12 most common mandates could raise the cost of insurance premiums by 15%-30%. Infertility treatment and mental health parity are especially high cost mandates. | Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Nichols et al. (1997) | Review | Various | Various | Goodman and Musgrave, 1988<br>Jensen and Gabel, 1992<br>Gruber, 1994<br>Ucello, 1996<br>Presentation by Gail Jensen, Michael Morrisey, and Robert Morlock, 1995. "The effects of state initiatives in the small group insurance market" | Evidence to date on effect of mandated benefits and other state insurance market reforms on the decision to offer is not strong. If these reforms do have some impact, they are probably modest and restricted to a small number of specific policies. | Coverage |
| Custer (1998) | Econometric | Mental health | Uninsured | March Current Population Survey Supplement, 1998 | Mandates for mental health coverage increased the probability of being uninsured by 5.8%. | Coverage |
| Jensen, Rost, Burton, and Bulycheva (1998) | Descriptive | Mental health | All public and private employers except federal government | Health Insurance Association of America Employer Health Benefits Survey, 1991<br><br>KPMG Peat Marwick and Wayne State University Survey of Employer-Sponsored Health Benefits, 1995<br><br>Bureau of Labor Statistics Employer Benefit Survey, 1991 and 1995 | In states with mandated mental health coverage, 85% of insured firms offered inpatient MH, 87% offered outpatient MH, compared to 97% and 98% respectively, of self-insured firms.<br><br>In states without mandated mental health, 93% of insured firms offered inpatient MH and 92% offered outpatient MH, compared to 100% and 99% respectively, of self-insured firms 100% and 99%. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Jensen, Roychoudhury, and Cherkin (1998) | Descriptive | Chiropractic services | All public and private employers except federal government | KPMG Peat Marwick, Wayne State University, and Institute for Health Policy Solutions Survey of Employer-Sponsored Health Benefits, and Institute for Health Policy Solutions, 1993<br><br>Survey of chiropractic benefits in random sample of employer-sponsored plans from above survey, 1995 | In 1992, 44 states have mandates for chiropractic services. In states with a mandate, 77% of employees in conventional purchased plans had coverage. Rate of noncompliance was 17-23%.<br><br>In the same states, more employees in self-insured plans (88%) had coverage. The prevalence rate of coverage in self-insured plans was significantly higher than in purchased plans. Although self-insured plans are more common in large firms, even very small firms that were self-insured offered coverage (87% of their employees had coverage). | Coverage |
| Marsteller et al. (1998) | Econometric | 1. Alcoholism treatment<br>2. Drug abuse treatment<br>3. General mental health<br>4. Chiropractic care | Adults under age 65 | March Current Population Survey, 1990-1996<br><br>Data on mandates from BCBSA, 1996 Survey of Plans; and Gruber, 1994 | Mandates for alcohol or drug abuse treatment have a weakly significant effect on reducing overall coverage and increasing overall uninsurance. Most firms may not drop coverage because one of these mandates is enacted, but the mandates may contribute to generally higher premiums over time. These higher premiums may lead some people to drop their employer-sponsored or individual coverage. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Schriver and Arnett (1998) | Descriptive | State-specific mandated benefits | Adults under age 65 | Current Population Survey,1989-1996 | From 1990-1994, 16 states were most aggressive in passing laws designed to increase access to health insurance for their uninsured citizens (including mandated benefits and other regulations). In 1996, all 16 states experienced an average annual growth in their uninsured populations 8 times that of the other 34 states (8.1% vs. 1%). In 1990, before the 16 states started passing so many reforms, the average growth rate in these states was roughly equivalent to the other 34 states.<br><br>The 16 states varied widely in the number of mandates in 1997. | Coverage |
| Sloan and Conover (1998) | Econometric | Total number of mandates in states | Adults under age 65 | March Current Population Survey, 1989-1994 | The number of mandates decreased the probability of having any private insurance, including group coverage. For each mandated added, the probability of being covered fell by 0.004. The mean number of mandates for the states was 11. Removing 11 mandates would increase the proportion of adults covered by over 0.04. Given that 18% of the sample was uninsured, this implies that between 1/5 to 1/4 of uninsurance is due to mandates.<br><br>Low cost policies (mandate waiver laws) had no effect on increasing coverage. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Jensen and Morrisey (1999a) | Econometric | Total number of mandates in states | Small firms | Health Insurance Association of America Annual Employer Health Insurance Survey, 1989 and 1991<br><br>Survey of small firms, 1993 and 1995<br><br>Data on mandates from *Health Benefits Letter* , 1994 | The number of mandates required by the state had a significant negative association with the probability that the firm offered coverage. For all firms in the sample, each additional mandate lowered the probability of offering coverage by 0.004. However, this was not significant in very small firms of 1-9 employees. Mandated benefits make it harder for small firms to buy coverage. Suggests that about 18% of businesses that currently do not offer insurance would likely offer it if there were no mandates.<br><br>Bare bones plans have no impact on coverage. | Coverage |
| Jensen and Morrisey (1999b) | Review | Various state and federal mandates | Group market | 60 studies published between 1948 and 1999<br><br>Data on mandates from BCBSA, 1997 | Most state mandates affect less than half of a state's population. The increase in uninsured can be partly tied to mandates.<br><br>Both economic theory and a growing body of empirical evidence suggest that workers pay for health insurance mandates in the form of lower wages. | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Albee et al. (2000a) | Actuarial | 1. Chemical dependency<br>2. Complications of pregnancy<br>3. Oral contraceptives<br>4. Congenital defects<br>5. HIV/AIDS<br>6. mammography<br>7. prostate screening<br>8. Serious mental illness<br>9. Minimum hospital stay for maternity<br>10. Minimum hospital stay for mastectomy<br>11. Reconstructive breast surgery<br>12. Handicapped dependents<br>13. Childhood immunizations | Group market | Used claim cost estimates to derive premium costs | Direct premium costs of the 13 mandates were estimated to account for a combined total of 7.2% to 7.6% of group premiums, before accounting for the fact that many of these services would likely be covered at some level even if there were no mandates. These figures could be considered upper-end estimates of the total cost of the coverage assuming that the benefit was not previously covered.<br><br>The 3 mandates with the highest estimated % of premium cost were serious mental illness, congenital defects, and HIV/AIDS. | Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Albee et al. (2000b) | Actuarial | See Albee et al., 2000a | Group market | Among the measures employed to determine costs of individual mandates were utilization statistics, incidence rates, physical or economic consequences of not providing care, current and future medical cost savings, and impact on utilization of sick days or disability benefits | None of the thirteen mandated benefits on its own constitutes a significant percentage of the premium for group insurance. When indirect health care costs (follow-up testing and treatment) and offsetting savings (decreased hospitalizations, earlier detection) are taken into consideration, these numbers fall to 6.3 to 6.5% of group premiums.<br><br>The authors predicted that a large majority of small and large group insurance plans would still cover the benefits at some level without mandates. While the cost of mandated benefits is a consideration for most employers who choose to self-fund, it is rarely the primary reason. The elimination of the mandates studied would probably have an insignificant impact on the number of uninsured in Texas. However, each incremental cost increase due to additional mandates may drive some employers to choose not to offer coverage. | Cost Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| United States Congressional Budget Office (2000) | Review | Various | Various | 14 studies published between 1992 and 1999 | Summarizing studies that examined several states, the General Accounting Office found that the actuarial costs of mandated benefits ranged from 5.4% to 22.0% of total claims costs. But the potential savings from the mandates exemption are smaller than the actuarial costs of the required benefits to the extent that health plans would have covered those benefits anyway. To adjust the results of studies that looked at actuarial costs, CBO used data on the frequency with which a health plan covered certain benefits (those that fell under the mandates Gruber (1994) designated as expensive) even though the state in which the plan operated did not require such coverage. Those calculations suggest a range of 0.28-1.1% as the effective marginal cost of state mandates. CBO also estimated that mandated benefits in general could increase premiums by about 5% over what they would have been without mandates. | Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Minnesota Department of Health (2001) | Review | Mandates in MN and federal mandates | Various | Medical Expenditure Panel Survey, 1998<br><br>12 studies published between 1989 and 2000<br><br>Data on mandates from MN Department of Commerce and BCBSA | Mandated health benefits raise premium costs to some degree, however these increases are generally more modest than commonly cited figures. The type of mandate appears to have a much greater impact on cost than the sheer number of mandates enacted.<br><br>Benefit packages offered through self-funded of fully-insured plans are generally quite similar to one another and the evidence suggests that most self-funded plans cover the majority of mandated benefits.<br><br>Mandates do not appear to play a major role in a firm's decision to self-insure. | Cost<br>Coverage |
| Laudicina et al. (2001) | Descriptive | Total number and type of mandates in states | General | State legislation | Total of 767 benefit mandates, 704 provider and persons covered mandates nationwide (also includes mandated offerings). | Tracking of mandates |
| Task Force on the Affordability and Accessibility of Health Care in New Jersey (2001) | Review | Benefit mandates in NJ vs. US | Various | Medical Expenditure Panel Survey, 1998<br><br>Data on mandates form BCBSA, 1999 | Based on 1999 data from BCBSA, NJ had more benefit mandates than the average state (16 vs. 14) and fewer provider mandates (9 vs. 14). In 1998, a smaller percentage of firms self-insured in NJ compared to the nation (24.3% vs. 26.9%). The rate of self-insurance among smaller firms was higher in NJ (15.6% vs. 11.2%) than the nation, but the rate was lower among larger firms (45.4% vs. 52.3%). | Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Guppy (2002) | Review<br><br>Case study of mandates in Washington | Total number of mandates<br><br>Coverage of pre-existing medical conditions | Various | 12 studies<br><br>Data on mandates from Washington State Office of Insurance Commissioner, 2002 | From 1992-2001, the rising number of uninsured in WA state roughly tracked with the increasing number of mandates. WA had one of the highest levels of mandates and regulations placed on health insurance and also one of the highest uninsured rates in the country. A survey in 2001 of small business owners in the state found that owners were concerned about the way mandates drive up the health coverage costs for small firms. “The large number of state-imposed mandates means basic, low-cost health coverage is currently unavailable in Washington.”<br><br>In the late 1990s, most insurers were forced to pull out of the individual health insurance market in WA because of massive losses due to a state mandate on coverage of pre-existing medical conditions. The legislature repealed the mandate which has proved successful in restoring the availability of health care coverage to individuals. | Cost<br>Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Kaestner and Simon (2002) | Econometric | Total number and type of mandates<br><br>Number of mandates by type:<br>1. High cost mandates (drug abuse, alcohol, mental health care, mental health parity)<br>2. women and child related medical benefits<br>3. other benefits | Employees age 18-54 in small firms | March Current Population Survey, 1989-1998<br><br>Data on mandates from BCBSA, 1993, 1997, and 1998; and *Health Benefits Letter* , 1992 | The number and type of state mandated health benefits had no statistically significant effect on labor market outcomes such as the weeks of work, wages, and prevalence of private insurance coverage. But they were positively associated with weekly work hours, presumably because the mandates increase the cost of health insurance.<br><br>Mandated benefits (and small group reforms, another part of their analysis) may have the following effects:<br>1. increase in hours worked per employee<br>2. decrease in employment in sectors affected by these changes<br>3. increase or decrease in wage depending on the underlying operation of labor markets<br>4. decrease in the generosity or provision of employer-sponsored health insurance<br><br>Looking at the total number of mandates in a state, the authors found that mandates have no impact on the prevalence of coverage for full or part time employees. This was also true when they looked at the joint effect of drug treatment, alcohol treatment, mental health care, and mental health parity. | Cost Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Lee (2002) | Review | Various | Various | 5 studies published between 1989 and 1998<br><br>Data on mandates from BCBSA, 2001 | The strongest available research (Gruber, 1994) shows that existing benefit mandates do not substantially increase costs or reduce coverage. Gruber indirectly measured the impact on costs by examining changes in coverage rates and found that, in aggregate, benefit mandates decreased coverage by less than 2%.<br><br>Other authors have found greater increases in costs or reductions in coverage. However these studies were methodologically weaker – relying on nonrepresentative samples, omitting important variables, or failing to assess causality. However, Gruber's study was based on data from 1992 and since then there have been many more benefit mandates. There may be a threshold at which additional mandates increase premium costs for small firms. | Cost<br>Coverage |
| Madden et al. (2002) | Clinical | Minimum maternity stay | Mothers and infants | Data on 20,366 mother-infant pairs with normal vaginal deliveries. Measured changes in length of stay, newborn exams on the 3rd or 4th days of life, office visits, ED visits, and hospital readmissions for newborns. Also looked at expenditures for hospitalizations and home-based care. | Neither the early-discharge policy nor minimum maternity stay mandate appeared to have affected health outcomes of newborns. After the mandate, newborns were less likely to be examined as recommended on day 3 or 4.<br><br>Because of changes in hospital prices, the two policies had minimal effects on HMO expenditures for hospital and home-based services. | Health outcomes<br>Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Pricewaterhouse Coopers (2002) | Descriptive | State and federal mandates | General | Not specified | In 2002, there were approximately 1500 state and federal mandates. The authors estimated that 15% (about $10 billion) of the increase in health insurance costs from 2001-2002 could be attributed to government mandates and regulation. | Cost |
| Conover (2003) | Review | Total number of state mandates | Various | 16 studies published between 1984 and 2002<br><br>Data on mandates from BCBSA, 2001 | The author estimated the cost of mandates by considering compliance costs (higher premiums), indirect costs (external costs of being uninsured and mortality losses) and social welfare losses (efficiency losses from regulatory costs). The estimated cost of mandates was $28.7 billion and estimated benefits of mandates was $16.4 billion. | Cost |
| Klick and Markowitz (2003) | Econometric | Mental health mandates including:<br>1. mandated offerings<br>2. mandated benefits, but not parity<br>3. mandated mental health parity | Adults under age 65 | National Center for Health Statistics Compressed Mortality File<br><br>Data on mandates from National Conference of State Legislatures, 2003 | From a simple analysis of suicide rates in several states over time, the authors found that suicide rates fell regardless of presence of mandates.<br><br>Regression analysis also did not show that mandates had an effect on reducing suicide rates. Previous studies have shown that states with lower mental health utilization and presumably better mental health status are more likely to enact mental health parity laws. Therefore, it may be difficult to estimate the effect of mental health parity on mental health status. | Health outcomes |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| United States General Accounting Office (2003) | Review<br>Descriptive | Mandates for small group market in 8 states | Small group market | US Congressional Budget Office, 2000<br>Gruber, 1994<br><br>Data on mandates from interviews with state officials in MD, GA, IL, CO, NV, VT, AL, and ID; and BCBSA, 2002 | In estimating costs associated with mandated benefits, few studies have taken into account the fact that many businesses would offer some similar benefits even without a mandate to do so.<br><br>However, two studies estimated that the additional costs associated with mandates represented about 3% - 5% of total premiums. Maryland, the state with the most mandated benefits, analyzed total and marginal costs of mandates. The total costs were about 14% but the marginal costs were about 3% of premiums. | Cost |
| Kominski et al. (2004) | Actuarial | Proposed benefit mandates in California | California insured population under age 65 | California Health Interview Survey, 2001<br><br>Kaiser Family Foundation/Health Research and Education Trust California Employer Health Benefits Survey, 2002<br><br>Milliman Health Cost Guidelines<br><br>Survey of 7 largest health plans in California | The authors describe their actuarial forecasting methodology. California Health Benefits Review Program was charged by the legislature to estimate the medical effectiveness, public health, and cost implications of proposed health benefits mandates. Cost implications include: effect on premiums, out of pocket costs, administrative costs, effect on the number of uninsured persons and access to health care services, and effects on the provision of health insurance by different types of employers. Their goal is to describe the present coverage of a benefit and existing utilization and costs and also the project changes in utilization and costs following a mandate. | Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| United States Federal Trade Commission and Department of Justice (2004) | Review | Benefit mandates | General | Joint Hearings from February through October, 2003<br><br>Workshop in September, 2002<br><br>15 studies published between 1956 and 2002 | In practice, mandates may limit consumer choice, eliminate product diversity, and raise the cost of health insurance. Mandates may also increase the number of uninsured Americans, as employers and employees opt out of the market. State and federal policy makers should consider expressly factoring these risks into their decision making process, and develop ways of insulating the process of mandating benefits from their effects. | Cost |
| California Health Benefits Review Program (2005) | Actuarial | Proposed mandate for mental health parity | Insured population under age 65 in CA | See Kominski et al., 2004 for methods | The authors estimated that 98% of people in insurance plans would receive new coverage because of the mandate. Health care costs would increase by $119 million (0.21%) per year for the population in plans subject to the mandate. Total premiums paid by employers would increase by $111 million (0.32%) per year. Large group fee-for-service plans would experience the greatest increase of $2.24 on per member per month premiums. Large group HMOs would have the smallest increase of $0.17. Out of pocket expenditures would decline by $40 million (0.99%). | Cost<br>Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| California Health Benefits Review Program (2005) | Actuarial | Proposed mandate for chiropractic services | Insured population under age 65 in CA | See Kominski et al., 2004 for methods | The mandate would provide coverage to 5,464,000 (27%) enrollees in plans that currently do not provide coverage. Also, 1,014,000 (5%) enrollees would be able to access services without a referral.<br><br>It would increase the average annual number of visits to chiropractors by 28%. No evidence to suggest it would decrease other healthcare costs. Total private employer premiums would increase by $54 million (0.15%) per year. CalPERS' employer costs would increase by $5.3 million (0.24%). Individuals who pay for a share of their insurance would pay an additional $19 million (0.19%) in premiums per year. Premiums for individual policies would increase by $10 million (0.63%) per year. Out of pocket costs for services currently not covered by plans would decrease by $48 million (100%). | Cost<br>Coverage |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Congdon et al. (2005) | Econometric | Total number of mandates | Non-group market | Data from 42 states in 2003 on actual insurance policies from eHealthInsurance, a large health insurance distributor, and from 23 states in 2004 from Golden Rule Insurance Company which provided offer-prices for family policies from a random set of zip codes.<br><br>Data on mandated benefits from BCBSA and National Conference of State Legislatures | States with more than the median of 21 mandates have an average monthly premium of $135. States with less than 21 mandates had an average monthly premium of $119.<br><br>Each mandate raises the price of an individual policy by 0.4%, and a family policy by 0.5%. This implies that a state with a median of 21 mandates could reduce the average price of an individual policy by 8.4% by eliminating all mandates. Or a reduction from 20 to 10 mandates would imply a premium reduction of 4%.<br><br>Using the Golden Rule data, they found an even greater effect of mandates, 0.9% increase in premium cost for family policy. However, this reflects offer prices, not actual prices of policies. | Cost |
| Henderson et al. (2005) | Econometric | 36 benefit mandates<br>26 provider mandates<br>8 coverage mandates | Group market | City-level data from 262 metropolitan areas in all 50 states and DC, 1994-2001<br><br>Premium data from Geographic Reference Report by BTA Economic Research Institute<br><br>Demographic data from US Census Bureau and Bureau of Labor Statistics<br><br>Data on mandates from BCBSA | The number of mandates has little effect on the overall level of premiums. This is likely due to the fact that some mandates raise premiums while others lower them. When mandates are analyzed individually, many do have a statistically significant impact on premiums.<br><br>5 mandates are consistently associated with higher premiums in both HMO and indemnity plans – ambulance transport, drug abuse treatment, in vitro fertilization, home health care, and rehabilitation.<br><br>3 mandates are consistently associated with lower premiums – alcoholism treatment, mental health (general) and dentists. | Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| NJ Mandated Health Benefits Advisory Commission (2005a) | Actuarial | 1. Mental health parity<br>2. Alcoholism treatment<br>3. Substance abuse treatment | Regulated insurance market in NJ and self-funded and insured coverage provided by the State Health Benefits Plan | Estimates provided by carriers, NJ Association of Health Plans and the NJ Psychological Association | Bill A-333 would result in an overall increase in premiums from 0.3% to 0.7%. The increase from the mental health mandate would range from 0.2% to 0.5% and the increase from the alcoholism and substance abuse treatment mandate would be 0.1% to 0.2%.<br><br>Based on an overall premium increase of 1%, it is estimated that about 5,000 people would lose coverage (out of a total of 3.2 million insured people). | Cost<br>Coverage |
| NJ Mandated Health Benefits Advisory Commission (2005b) | Actuarial | Orthopedic and prosthetic appliances | Regulated insurance market in NJ and self-funded and insured coverage provided by the State Health Benefits Plan | Estimates provided by carriers, information from the NJ Prosthetic and Orthotic Society | Bill A-2774 would result in an overall increase in premiums of 0.025%.<br><br>Based on this premium increase, it is estimated that about 250 people would lose coverage (out of a total of 3.2 million insured people). | Cost<br>Coverage |
| Washington Alliance for a Competitive Economy (2005) | Descriptive | Not specified | General | Federal Trade Commission and the Department of Justice, 2004<br><br>Data on mandates from CAHI, 2005 | WA ranks 7$^{th}$ highest in the nation with 48 separate mandates in 2004.<br><br>According to Bunce and Wieske, 2005 (not available), “mandated benefits currently increase the cost of basic health coverage from a little less than 20% to more than 50%, depending on the state.” Alcoholism treatment adds 1-3% to costs and mental health parity adds 5-10%. In assessing these estimates, CAHI suggests some caution because some mandated services may be included in nearly every standard policy. Mandates may also vary significantly from state to state. | Cost |

# Mandated Health Insurance Benefits: Annotated Bibliography

| Source | Type of Study | Mandates Studied | Population Studied | Data Source | Major Findings | Topic |
|---|---|---|---|---|---|---|
| Bunce et al. (2006) | Descriptive | State-specific mandated benefits | General | State legislation | In 1965, only 7 benefits were mandated by states. In early 2006, CAHI identified 1,423 mandated benefits and providers. | Tracking of mandates |


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