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Health Insurance Portability and Accountability Act of 1996

Lessons From the States

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OBJECTIVES. To assess the likely effects of the 1996 Health Insurance Portability and Accessibility Act (HIPAA), based on small firms' experiences under state small group insurance reforms that were similar in design to HIPAA.

METHODS. Data on 17,818 small businesses (range, 2–50 employees) nationwide from the 1994 National Employer Health Insurance Survey were analyzed to examine the effects of state small group reforms on the following: (1) employers' provision of coverage; (2) the percentage of workers in insured firms who were covered by plans; and (3) insurer practices of "enrollee exclusion." Logistic regression models were estimated and used to quantify the marginal effects of state small-group reform. Reform effects were examined for all small firms, for small firms by size category, and for small firms in redlined industries.

RESULTS. Under full reform for at least 3 years (full reform includes guaranteed issue and renewal, portability, limits on pre-existing condition waits, and rating restrictions), employers were slightly more likely to sponsor health plans; however, employee participation in employer plans was no higher and the prevalence of enrollee-exclusion provisions was unchanged. Businesses in redlined industries clearly benefitted from all types of small group reform. For other subgroups of businesses, however, there were advantages and disadvantages associated with reforms, which varied with the scope of the measures and time since their implementation.

CONCLUSION. Widespread small group reform may eventually help raise the proportion of small firms that sponsor health benefits, but not by much.

Key words: state small group reform. (Med Care 1999;37:692–705)

In the 1990s, incremental reforms to make private health insurance more accessible in the US have focused on revising the rules for underwriting in the small group market. Small group reforms are based on the premise that long-standing insurer practices are a reason for low provision of insurance among small businesses.[1,2]

"Industry redlining" and "enrollee exclusion" are two such practices blamed for limiting coverage. Under the former, businesses in specific industries, which were thought to be excessively risky, are *a priori* deemed ineligible to purchase a policy or, if offered, are subjected to a substantial surcharge. Redlined industries include those with hazardous working conditions, eg, asbestos removal, mining, and logging firms, as well as selected industries with other types of risks. Other high-risk businesses, according to interviews with

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health insurers and insurance agents, include firms with high-employee turnover, firms with a high proportion of women of child-bearing age (eg, hair salons), firms whose employees may be litigious (eg, law firms), and firms whose employees may have a strong preference for service utilization (doctor's offices).[3] Under enrollee exclusion, an insurer retains the right to refuse coverage to particular individuals within the group if they are found to have serious pre-existing health problems. "Durational rating" by some insurers and the stipulation of pre-existing condition clauses have also been identified as problematic for some small businesses.[4] "Durational rating" refers to sharply raising the premium at the time a policy is first renewed.

The federal Health Insurance Portability and Accountability Act of 1996 (HIPAA) mandated that, as of July 1997, all health insurers must: (1) guarantee the issue of insurance to any small group (range defined, 2–50), if they do any business at all in the small group market; (2) guarantee the renewal of such coverage, provided the group has paid their premium and otherwise has not violated the contract; (3) limit the duration of pre-existing condition clauses to no more than 1 year; and (4) waive such clauses entirely for persons who move from one employer plan to another, provided they have already satisfied the waiting period for coverage under the first plan. This last provision is referred to as "portability." Self-insured plans, too, must abide by the third and fourth rules.

Can reforms like these expand health insurance? This paper addresses this question by examining evidence from the effects of state-level insurance reforms, which are similar in design to HIPAA. Using cross-sectional data from a 1994 nationwide employer survey, we address the following four questions: (1) Were small businesses in 1993 any more likely to offer health insurance in states where such reforms were in place? (2) Were red-lined industries, which were, supposedly, a target for these measures, more likely to offer coverage? (3) Among those that offered insurance, were more workers covered by it under these measures? and (4) Was the plan less often subject to enrollee-exclusion provisions? Our analysis pays particular attention to length-of-time under reform, distinguishing between initiatives in place for at least 3 years versus those that were not.

Our data are from the National Employer Health Insurance Survey (NEHIS). This nationally representative survey of US employers, sponsored jointly by the National Center for Health Statistics (NCHS), the Agency for Health Care Policy and Research, and the Health Care Financing Administration gathered detailed information in 1994 from 17,818 small businesses (establishments in firms employing 50 or fewer workers) across the country. Questions regarding whether the company offered coverage and, if so, how many workers it covered, and the characteristics of the plan(s) were asked, all with reference to 1993.

Because our data are cross sectional, we are limited to using a quasi-experimental design to surmise the effects of reform on employer coverage. With cross-sectional data, true causal effects cannot be determined. We have not observed markets pre- and post-reform but, rather, can only compare markets with one another in 1993 based on their different reform regimes. If states that adopted reform early were ones that had less severe market problems to begin with, then we may inaccurately overestimate the benefits of small group reform. The reverse also applies: if those states were ones that had more severe problems, then we may underestimate the benefits. Despite this limitation, analysis of these data provides suggestive evidence of possible reform effects.

State Small Group Reform

Before HIPAA, many states had already implemented either some or all of its provisions for small group plans sold within their borders.[5–9] By 1993 (the year of our data), 38 states had actually implemented rules governing: guaranteed issue; guaranteed renewal; portability of coverage requirements; limits on pre-existing condition waiting periods; or premium rating restrictions (Table 1). Implementation means that the legislation had actually taken effect by January 1993.

In 13 states, the measures encompassed all four areas regulated by HIPAA. They also covered a fifth area, rating restrictions, which refer to rules regarding the premiums charged to small businesses. Premium rating bands or requirements that insurers follow some form of community rating are typical state-level rating restrictions. No state had reforms which covered only the four areas governed by HIPAA, but these 13 had implemented what we call "HIPAA plus." In each of other 25 with at least some operative reforms, the

TABLE 1. State Legislation Modifying Small-Group Health Insurance Provisions Before 1993 by Number and Timing of Reforms Implemented

State	Number and Timing of Reforms Implemented*	Effective Date of First Reform Implemented	Rating Restrictions	Guaranteed Renewal	Portability	Guaranteed Issue	Preexisting Condition Waiting Period
Connecticut	1	1990	1990	1990	1990	1990	1990
Delaware	1	1987	1991	1991	1992	1992	1987
Tennessee	1	1955	1992	1992	1992	1992	1955
Vermont	1	1953	1953	1991	1991	1991	1991
Wyoming	1	1990	1992	1992	1992	1992	1990
Florida	2	5/7/91	1991	1991	1992	1992	1992
Iowa	2	6/5/91	1991	1991	1991	1992	1992
Kansas	2	7/7/91	1991	1992	1991	1992	1991
Massachusetts	2	12/31/91	1991	1991	1991	1991	1991
North Carolina	2	7/10/91	1991	1991	1991	1991	1991
Ohio	2	1992	1992	1992	1992	1992	1992
Oregon	2	8/7/91	1991	1991	1991	1991	1991
Rhode Island	2	6/12/91	1992	1992	1991	1992	1991
Wisconsin	2	8/8/91	1991	1991	1992	1992	1992
Georgia	3	1978	1990				1978
Idaho	3	1981					1981
Indiana	3	1985	1992	1992			1985
Kentucky	3	1990			1990		
Michigan	3	1956					1956
Mississippi	3	1956					1956
Missouri	3	1989		1989			
Montana	3	1981			1981		1991
New York	3	1980			1986		1980
Oklahoma	3	1988	1992	1992	1992		1988
Pennsylvania	3	1979					1979
South Carolina	3	1976	1991	1991	1991		1976
South Dakota	3	1989	1991	1991	1989		
Arkansas	4	4/9/91	1991	1991	1991		1991
Colorado	4	6/7/91	1991	1991	1991		1991
Louisiana	4	9/30/91	1991	1991			
Maine	4	1991		1991			
Nebraska	4	6/6/91	1991	1991			1991
New Hampshire	4	1/1/93	1992	1992	1992		
New Jersey	4	11/30/92		1992	1992		
New Mexico	4	4/3/91	1991	1991			1991
North Dakota	4	3/21/91	1991	1991			
Virginia	4	1992		1992	1992		1992
West Virginia	4	7/1/91	1991	1991			1991

Note: As of January 1993, the following States had not implemented any small group reforms: Alabama, Alaska, Arizona, California, District of Columbia, Hawaii, Illinois, Maryland, Minnesota, Nevada, Texas, Utah, and Washington. Reforms, however, were implemented mid-year in Alaska, California, Minnesota, and Washington.
Sources: GAO (1992); Markus et al (1995); CAHI (1996); Ladenheim and Markus (1994).

*1, Full reforms, at least one implemented before 1991; 2, Full reforms implemented 1991–1992; 3, Partial reforms, at least one reform implemented before 1991; and 4, Partial reforms implemented 1991–1992.

measures were more modest and typically excluded requirements that carriers guarantee issue of insurance to any small firm. Twelve states and the District of Columbia (those not shown in the table) had no reforms by 1993.

By 1995, 36 states had enacted the HIPAA equivalent small-group reforms.[10] Only six states had not enacted any HIPAA-type reforms.[10] Thus, the federal regulations are the only reforms in six states and an addition to state reforms in nine. Given the widespread prevalence of HIPAA-like state regulations, HIPAA constitutes only a marginal change in regulation within most states. Nevertheless, knowledge about the effects of state reforms could shed light on what to expect for those states in which HIPAA represents either new or greatly expanded reforms.

Data and Methods

Overall, NEHIS collected data from a stratified random probability sample of 34,604 private business establishments, which were defined as "an economic unit, generally at a single location, in which business is conducted or services or industrial operations are performed,"[11] as well as 3,214 governmental units. Data were collected in a computer-assissted telephone interview with the individual most knowledgeable about health benefits in the organization.

Participants were asked whether health insurance was offered as of December 31, 1993, and if so, for the number of workers covered under the plan(s). For establishments that offered insurance, further questions regarding the nature of the benefits were asked with reference to the "1993 plan year," which was defined as the plan-year ending before April 1, 1994. Data on enrollee-exclusions were based on the question: "Can the insurer refuse to cover employees or their dependents under this plan who have particular health problems or conditions?" An establishment was considered subject to enrollee-exclusion if the respondent answered "yes" for one or more of its plans. For more details on the survey, see NCHS.[12]

We limited the analysis sample to private sector establishments with 50 or fewer employees, who were located outside of Hawaii, were not self insured, and were not merely "one self-employed person with no employees." Because Hawaii has had an employer mandate since 1974, most establishments there had no choice in 1993 of whether to sponsor a plan; thus, they had to. Self-insured plans are exempt from state insurance regulation under ERISA. Although self-insured employers may have been influenced indirectly by small-group reform, our main interest is in small businesses that purchased their coverage in the market. Excluding these cases, however, should not bias the analysis, as only 4.6% of small businesses self insured. Finally, self-employed persons with no employees are generally not eligible for "group" coverage, as most insurers in 1993 defined a group as having at least 2 members.[13]

For our sample, NEHIS obtained a response rate of 78%. Respondents and nonrespondents were similar in size (on average, nonrespondents had 9 employees, whereas respondents had 10).

Analysis of employee participation in employer plans and enrollee-exclusion practices was limited to small businesses offering coverage. Consequently, findings on these variables generalize only to insured firms.

All estimates were weighted to account for NEHIS's complex sample design. In addition to incorporating the inverse of the probability of selection and nonresponse adjustments, NEHIS weighting procedures include ratio adjustments to independent employment totals by state, broad industrial groupings, and establishment of size ranges.

We model three outcome variables, as follows: (1) whether the establishment sponsored health insurance, and if so; (2) the proportion of workers enrolling; and (3) whether the establishment was subject to enrollee exclusion practices. We adopt a logit model for the first, a regression model for the logit transformation of the second, and a logit model for the third. The logit transformation was used for the employee-participation model to keep predicted values within the appropriate range of 0 and 1. A small constant of 0.001 was added and subtracted to the percentage of employees participating in their employer's plan when this proportion was 0 and 1, respectively. This was done so that all 7,983 cases would be retained in the logit transformation included in the analysis.

All models were computed using SUDAAN (Research Triangle Institute, Triangle Park, NC), a software package that takes into account the sampling design of NEHIS.[14] We have 17,818 complete cases for the first model, 7,983 cases for the second, and 6,559 cases for the third. The number of cases for the third model differs from the number of cases for the employee-participation model because the reference period for data based on health plan characteristics (enrollee-exclusion practices) differ from that for employee participation. The reference period for employee participation was December 31, 1993, whereas health plan characteristics were collected for the "1993 plan year." In addition, cases were lost when there was nonresponse to the CATI section covering health plan characteristics, as well as item nonresponse to the enrollee-exclusions question.

Explanatory variables hypothesized to influence each outcome were as follows: the state's regulatory environment for small group insurance; the economic environment for that business; its internal characteristics; and the characteristics of its workers. All models were estimated for four different subsets of employers, as follows: firms with 50 or fewer employees; firms with fewer than 10 employees; firms with 10 to 50 employees; and firms in "redlined" industries. We used the list of redlined industries reported in Zellers et al[2] to identify this last set. Sample means for selected subpopulations are presented in the Appendix.

Specification of Variables

Our approach to characterizing the state's regulatory environment accounts for the unique patterns in which states implemented reforms. In Table 1, notice that guaranteed issue legislation was always implemented as part of a larger package, never by itself. The same is true for rating restrictions, which were always present with at least one other reform. Also, in every instance in which all four provisions governed by HIPAA were in place (guaranteed issue, guaranteed renewal, portability, and limits on preexisting condition waiting periods), the state also restricted premiums in some way.

Acknowledging these patterns, we modeled the effects of the particular combinations and age of reforms actually found in the data. Five "reform recipes" are apparent, as follows: (1) five states had a "head start" over other states, with at least one measure implemented before 1991 and with rating restrictions plus the four areas governed by HIPAA; (2) nine states had implemented all five measures in either 1991 or 1992; (3) twelve states had at least one of these reforms, but not all, with at least one reform in place before 1991; (4) twelve states had some, but not all, of them in place, but only in 1991 or 1992; and (5) 12 states and the District of Columbia had none of these measures implemented (Table 1). These five reform recipes are compared with each other in the analysis.

Categories (1), (2), and (5) have clear interpretations. Category (1) represents full reform (all five measures) with a "head start" of at least 3 or more years in at least one of the measures. Category (2) represents full reform, in which implementation was in 1991 or 1992. Category (5) represents no small-group reform implemented by January 1993. Category (3) represents a partial approach to reform (1–4 of the measures), with a "head start" in at least one measure; and category (4), is also partial, but adopted only recently. Table 1 shows the content of these partial reform packages. None include guaranteed issue, most encompass preexisting condition clauses combined with either portability or renewal provisions, and rating restrictions are also often present.

One characteristic differentiating partial reform states that implemented reforms between 1991 to 1992 versus before 1991 is the degree that these states implemented both rating restrictions and guaranteed renewal. Among early partial reform states, 31% had implemented these two reforms, whereas 73% of 1991 to 1992 partial reform states had implemented both of these reforms. Rating restriction laws implemented by 1993 also varied greatly in the degree to which the states narrowed the range of allowable premiums.[10] Most conformed to the rating band approach included in the National Association of Insurance Commissioners (NAIC) model law. Although most rating restriction laws were similar to the NAIC model, two states adopted modified community rating and one adopted pure community rating.[7] Rating-restriction laws implemented during the study period, however, generally lacked strength; most did not exclude health status as a rating factor and allowed claims experience to be used as an adjustment factor for determining rates.[15]

Table 2 reports how the percentage of small businesses offering insurance varied with reform. Coverage was offered more when at least some reform was operating. There was no difference in coverage rates, however, between early full-reform states versus states that implemented full reforms between 1991 an 1992. There also was no difference in coverage rates between early full-reform states and early partial reform states.

Also shown in Table 2 is the finding that, among establishments offering insurance, the percentage of employees enrolled was higher in nonreform

TABLE 2. Sample Size and Dependent Variables According to Type, Number, and Timing of Small Group Reforms: United States, 1993

Characteristic	Percent of Establishments Offering Health Insurance (and SE)	Percent of Employees in Establishments Offering Insurance That Enrolled in Employer's Plan (and SE)	Percent of Establishments With Health Plans That Experienced Enrollee-Exclusions (and SE)
Sample size	17,818	7,983	6,559
Total	41.2 (0.47)	66.9 (0.45)	40.2 (0.81)
Types of insurance regulation reforms implemented by State as of January 1993			
Guaranteed Issue	41.8 (0.82)	64.8 (0.75)	40.2 (1.42)
Guaranteed Renewal	40.7 (0.57)	65.1 (0.53)	42.8 (1.01)
Portability of Coverage	40.7 (0.61)	65.9 (0.58)	38.1 (1.04)
Preexisting Condition limitations	41.9 (0.55)	65.6 (0.52)	37.9 (0.92)
Rating restrictions of premiums*	42.8 (0.60)	64.8 (0.57)	43.9 (1.07)
Number of reforms implemented			
Full reform	41.8 (0.82)	64.8 (0.75)	40.2 (1.42)
Partial reform (1–4)	42.8 (0.63)	66.6 (0.60)	37.4 (1.04)
None	38.8 (0.98)	68.8 (0.96)	43.7 (1.74)
Time since implementation of first state reform			
First reform implemented before 1991	44.9 (0.74)	66.8 (0.70)	35.4 (1.18)
First reform implemented in 1991	39.4 (0.79)	65.3 (0.76)	40.6 (1.41)
First reform implemented in 1992	43.7 (1.31)	64.5 (1.15)	43.2 (2.24)
No reform implemented by January 1993	38.8 (0.98)	68.8 (0.96)	43.7 (1.74)
State reform variable			
State implemented full reform, at least one reform implemented before 1991	43.3 (1.48)	64.0 (1.31)	42.8 (2.61)
State implemented full reform 1991–January 1993	41.5 (0.93)	65.0 (0.86)	39.7 (1.61)
State implemented partial reforms, at least one reform implemented before 1991	45.1 (0.82)	67.2 (0.77)	34.3 (1.29)
State implemented partial reform 1991–January 1993	39.2 (0.93)	65.2 (0.88)	44.4 (1.69)
No reform implemented by January 1993	38.8 (0.98)	68.8 (0.96)	43.7 (1.74)

Note: Estimates in this table are based on a December 31, 1993, reference period and the 1993 plan year. Excludes establishments that self-insured and establishments in Hawaii. Eighty-nine percent of establishments in firms with 50 or fewer employees were single location firms; ie, the establishment was the firm.
*Includes rating restrictions, community rating, or modified community rating of premiums.

states than in full reform states, regardless of when full reform began. Employees in states with partial reform implemented between 1991 and 1992 were also less likely (relative to those in nonreform states) to enroll in their employer's plan.

The prevalence of enrollee-exclusions provisions shows a different pattern. Enrollee exclusions were less likely in partial reform states, particularly in states with early partial reform, as compared with nonreform states. These are univariate comparisons. The analysis that follows examines these relationships in a multivariate framework.

In addition to small group reform, the model controls for two other important aspects of state insurance regulation: the number of mandated benefits, as compiled by the Council for Affordable Health Insurance,[16] and whether the state had policies on the market exempting at least some of these mandated benefits for firms newly offering coverage.[16,17] The former has been found to deter some small firms from offering coverage.[18,19]

Economic conditions were proxied by the local 1993 unemployment rate, the 1993 HMO penetration rate, a rural indicator, and the census region of the establishment. The unemployment rate data are from the BLS, as recorded on the Area Resource File. (One percent of cases with the missing unemployment rate were imputed with the mean value for this variable.) Establishments in areas of high unemployment may be less likely to offer insurance because workers may be willing to take jobs without this benefit. The 1993 HMO penetration rate was obtained from InterStudy and is included because earlier research suggests that HMOs may enhance competition among insurance suppliers.[20,21] Because the HMO penetration rate was only available for metropolitan statistical areas, a rural indicator was also included to supplement cases in which this information was not collected. Census regions were included to control for market conditions not reflected in the unemployment rate, HMO penetration, or rural status indicator. Even though census regions may be too broad to reflect intrastate market conditions, census regions, rather than state indicators, were included in the models because the latter would be collinear with the state reform variables.

Firm characteristics in the model included the following: firm size indicators (< 5 employees; 5–9 employees; 10–24 employees; and 25–50 employees); age of the firm (< 5 years vs. ≥ 5 years); its corporate status (unincorporated vs. incorporated and nonprofit); its industry; and whether the firm was operating in an industry often redlined by insurers.

Worker characteristics included the following: the presence of any union employees; whether 50% or more of employees were low wage, which is defined as those earning less than $10,000 per year or those earning less than $5.00 per hour; and the percentage of full-time employees.

Some businesses were unable to provide information on the age of the firm (6%), their corporate status (6%), the wage distribution of their workers (10%), or on their union status (5%). Altogether, these "incomplete" cases made up 12% of the sample. In preliminary analyses, we found that, as a group, these firms were significantly less likely to offer insurance and that many were redlined establishments. To avoid biasing the results, we included four separate dummy variables in our models to indicate when data on one of these items were missing.

Results

Table 3 reports how the probability-of-offer varies with reform recipe, after adjusting for all variables specified in the econometric models. The predicted probability-of-offer as a function of reform regime was computed for each model estimated using Chamberlain's preferred method.[22] This entailed first computing, for each establishment in that model's sample, a prediction of its probability-of-offer under each of the five reform regimes (specifically, the logit c.d.f. for that establishment given each regime). For each regime, the predictions were, then, averaged across all establishments in the model's estimation sample. Thus, the prediction of 0.442 for "full reform prior to 1991" is the average probability of offer that assumes all 17,818 establishments had been subjected to full reform before 1991. The marginal effects, also displayed in Table 3, were calculated as the difference in the average probability-of-offer under that type of reform versus "no reform." Thus, the marginal effect of 0.038 is the difference between 0.442 and 0.404, which is the average probability-of-offer under full reform before 1991 and no reform, respectively. The predicted probabilities and marginal effects reported in Tables 4 and 5 were computed similarly.

In the full sample (column 1), small group reforms in place for at least 3 years increased the probability of insurance. Older full reforms increased it by 0.04, older partial reforms, by 0.02.

Among the smallest businesses (range, 1–9 employees), older partial reforms were associated with a 0.03 increase in the probability of coverage. More recent partial reforms, however, were associated with a 0.03 decrease in the probability-of-offer. The cause of the latter finding is unclear but may stem from the particular combination of reforms enacted in these "recent partial reform" states. Most of them (73%) enacted rating restrictions but not guaranteed issue (Table 1). If insurers in these states were turning down high-risk groups out of fear that they would not be able to cover the restricted rate, that could explain the result. However, it may also be that

TABLE 3. Mean Predicted Percent of Establishments Offering Insurance and ME Under Various Assumptions According to Model

	<51 Employees in Firm		1–9 Employees in Firm		10–50 Employees in Firm		Redlined Establishments	
Assumptions	Prediction	ME	Prediction	ME	Prediction	ME	Prediction	ME
Regulatory environment:								
All states had full reform, at least one reform implemented before 1991	.442	.038†	.349	.034	.748	.056*	.436	.115*
All states had full reform implemented 1991–92	.409	.005	.319	.005	.696	.004	.385	.064†
All states had partial reforms, at least one reform implemented before 1991	.428	.023‡	.345	.030†	.694	.002	.379	.058†
All states had partial reforms implemented 1991–92	.386	−.018	.289	−.026‡	.700	.008	.353	.032
No states had any reforms implemented	.404	reference group	.314	reference group	.692	reference group	.322	reference group
Total Mandated benefits, 1993	. . .§	−.00002	. . .§	−.0003	. . .§	.0008	. . .§	.001
All states had bare-bones policies on the 1993 market	.430	.027*	.341	.027*	.716	.027†	.383	.032‡
No states had bare-bones policies on the 1993 market	.403	reference group	.314	reference group	.689	reference group	.350	reference group
Economic conditions:								
Unemployment rate in 1993	. . .§	−.011*	. . .§	−.010*	. . .§	−.008*	. . .§	−.003
HMO penetration rate	. . .§	.0002	. . .§	.0002	. . .§	.0004	. . .§	.0018
Characteristics of establishment's firm:								
All firms had 1–4 employees	.280	−.425*	.261	−.158*	. . .	. . .	.237	−.416*
All firms had 5–9 employees	.442	−.263*	.419	reference group	. . .	. . .	.354	−.300*
All firms had 10–24 employees	.588	−.118*	. . .	. . .	.666	−.105*	.514	−.140*
All firms had 25–50 employees	.706	reference group	. . .	. . .	.771	reference group	.654	reference group
Industry group:								
All establishments were in a redlined industry	.392	−.023†	.298	−.028†	.698	.001	. . .	. . .
No establishment was in a redlined industry	.415	reference group	.326	reference group	.697	reference group		
Sample size	17,818		11,935		5,883		3,337	
Mean of dependent variable	0.41		.32		.70		.36	
Adjusted R^2	0.29		0.19		0.27		0.32	
Overall likelihood ratio test	5942.02*		2584.11*		1664.49*		1216.08*	
Degrees of freedom	32		30		30		29	

Note: . . ., not applicable; ME, marginal effects.
*Significant at the $\alpha = 0.01$ level.
†Significant at the $\alpha = .05$ level.
‡Significant at the $\alpha = 0.10$ level.
§ME for continuous variables computed as p*(1−p)*logistic regression coefficient for variable, where p is the mean of the dependent variable. Model coefficients are available upon request.

TABLE 4. Mean Predicted Percent of Employees Enrolling in Their Employer's Plan in Establishments Offering Insurance and ME Under Various Assumptions According to Model

Assumptions	<51 Employees in Firm Prediction	<51 Employees in Firm ME	1–9 Employees in Firm Prediction	1–9 Employees in Firm ME	10–50 Employees in Firm Prediction	10–50 Employees in Firm ME	Redlined Establishments Prediction	Redlined Establishments ME
Regulatory environment:								
All states had full reform, at least one reform implemented before 1991	.782	−.014	.791	−.021	.772	.004	.766	.052
All states had full reform implemented 1991–92	.778	−.018	.790	−.022	.760	−.007	.687	−.026
All states had partial reforms, at least one reform implemented before 1991	.794	−.002	.815	0.003	.759	−.008	.768	.054
All states had partial reforms implemented 1991–92	.772	−.024‡	.797	−.015	.732	−.035‡	.713	−.001
No states had any reforms implemented	.796	reference group	.812	reference group	.767	reference group	.714	reference group
Total mandated benefits, 1993	. . .§	.003‡	. . .§	.003	. . .§	.002	. . .§	.004
All states had bare-bones policies on the 1993 market	.797	.014	.816	.016	.766	.010	.756	.043‡
No states had bare-bones policies on the 1993 market	.783	reference group	.800	reference group	.756	reference group	.713	reference group
Economic conditions:								
Unemployment rate in 1993	. . .§	.007	. . .§	.009	. . .§	.007	. . .§	.011
HMO penetration rate	. . .§	−.0007	. . .§	−.0011	. . .§	.0000	. . .§	−.023
Characteristics of establishment's firm:								
All firms had 1–4 employees	.871	.123*	.864	.110*	. . .	. . .	.803	.087†
All firms had 5–9 employees	.762	.014	.754	reference group	. . .	. . .	.682	−.033
All firms had 10–24 employees	.747	−.001	. . .	. . .	.759	−.001	.716	.0003
All firms had 25–50 employees	.748	reference group	. . .	. . .	.760	reference group	.716	reference group
Industry group:								
All establishments were in a redlined industry	.787	−.001	.796	−.010	.771	.014		
No establishment was in a redlined industry	.788	reference group	.806	reference group	.757	reference group		
Sample size	7,983		3,857		4,126		1,284	
Mean of dependent variable	.67		.68		.65		.62	
R^2	0.29		0.29		0.29		0.33	
Adjusted F test for the entire model	104.35*		441.39*		49.02*		14.28*	
Degrees of freedom	33		31		31		28	

Note: ". . .", not applicable; ME, marginal effects.
*Significant at the α = 0.01 level.
†Significant at the α = .05 level.
‡Significant at the α = 0.10 level.
§ME for continuous variables computed as p*(1−p)*regression coefficient for variable, where p is the mean of the dependent variable. Model coefficients are available upon request.

TABLE 5. Mean Predicted Percent of Establishments Experiencing Enrollee-Exclusion Practices Among Establishments With Health Plans and ME Under Various Assumptions According to Model

Assumptions	<51 Employees in Firm Prediction	<51 Employees in Firm ME	1–9 Employees in Firm Prediction	1–9 Employees in Firm ME	10–50 Employees in Firm Prediction	10–50 Employees in Firm ME	Redlined Establishments Prediction	Redlined Establishments ME
Regulatory environment:								
All States had full reform, at least one reform implemented before 1991	.441	.001	.502	.010	.349	−.023	.351	−.124
All States had full reform implemented 1991–92	.376	−.064*	.408	−.084†	.332	−.040	.437	−.037
All States had partial reforms, at least one reform implemented before 1991	.353	−.087*	.358	−.133*	.349	−.023	.378	−.096
All States had partial reforms implemented 1991–92	.443	.003	.441	−.051	.441	.069†	.460	−.014
No States had any reforms implemented	.440	reference group	.492	reference group	.372	reference group	.474	reference group
Total mandated benefits, 1993	. . .§	−.003*	. . .§	−.004†	. . .§	−.003	. . .§	−.002
All States had bare-bones policies on the 1993 market	.391	−.015	.423	−.008	.345	−.029	.369	−.093†
No States had no bare-bones policies	.406	reference group	.431	reference group	.374	reference group	.462	reference group
Economic conditions:								
Unemployment rate, 1993	. . .§	−.008‡	. . .§	−.010‡	. . .§	−.006	. . .§	−.014
HMO penetration rate	. . .§	−.001	. . .§	−.002	. . .§	−.001	. . .§	−.006†
Characteristics of establishment's firm:								
All firms had 1–4 employees	.418	.109*	.421	−.014	. . .	. . .	.523	.176*
All firms had 5–9 employees	.429	.121*	.435	reference group	. . .	. . .	.400	.053
All firms had 10–24 employees	.402	.094*	. . .	. . .	.398	.096*	.439	.092‡
All firms had 25–50 employees	.308	reference group	. . .	. . .	.302	reference group	.346	reference group
Industry group:								
All establishments were in a redlined industry	.436	.042‡	.463	.040	.397	.039	. . .	. . .
No establishment was in a redlined industry	.395	reference group	.423	reference group	.358	reference group	. . .	. . .
Sample size	6,559		3,112		3,447		1,074	
Mean of dependent variable	.40		.43		.38		.43	
Adjusted R^2	0.05		0.05		0.06		0.09	
Overall likelihood ratio test	362.66*		178.07*		195.75*		99.67*	
Degrees of freedom	32		30		30		28	

Note: ". . ." not applicable; ME, marginal effects.
*Significant at the $\alpha = 0.01$ level.
†Significant at the $\alpha = .05$ level.
‡Significant at the $\alpha = 0.10$ level.
§ME for continuous variables computed as $p^*(1-p)^*$logistic regression coefficient for variable, where p is the mean of the dependent variable. Model coefficients are available upon request.

"recent partial reform" states were states which had lower rates of coverage to begin with and that the market simply had not adjusted yet to reform.

Among businesses with 10 to 50 employees, the probability of coverage increased by 0.06 under older full reforms. Among redlined businesses, the probability of coverage was significantly higher under older full reforms (by 0.115), more recent full reforms (by 0.06), and older partial reforms (by 0.06). Recall that in those states with recent partial reforms, guaranteed issue was never present.

State mandated benefits were not related to the provision of insurance, although the presence of "bare-bones legislation" was associated with an increase in insurance provision (0.03) in all four models. Taken together, these findings suggest that, although the marginal effect of additional mandates was negligible in 1993, their collective effect may have been quite large. Apparently, the availability of products exempt from these laws generated an increase in insurance demand.

We comment briefly on a few other interesting findings. The marginal effect of being redlined was a 0.02 decrease in the probability of offer among all small businesses, as well as a 0.03 decrease among businesses with fewer than 10 employees. In 1993, the HMO penetration rate had no effect on the provision of coverage.

Table 4 reports findings for the proportion of employees receiving coverage. There were no positive effects of reform evident. For the full sample and for firms with 10 to 50 employees, small-group reform had negative significant effects on the proportion of workers participating in their employer's plan. Among all small firms in states with recent partial reforms, the proportion of workers covered was 0.02 lower than the proportion in noreform states. A similar effect (-0.04) was found for firms with 10 to 50 employees. The latter may be related to the tendency of recent partial reform states to include premium rating restrictions but not guaranteed issue. Marstellar et al[23] reported negative effects for small group rating restrictions in their model for the privately insured population. These findings are also consistent with a recent study which found increased access to employer-sponsored insurance by workers between 1987 and 1996, but lower worker participation in 1996, particularly among workers in establishments with fewer than 25 employees.[24]

For all small businesses, the proportion of employees enrolling in their employer's plan increased as the number of mandated benefits increased. Each additional mandate increased the proportion by 0.003. To the extent that the number of mandates is correlated with the generosity of benefits in the offered plan, generosity matters to employees when deciding whether to participate.

The marginal effects of "bare-bones legislation" were small (0.04), but significant, among redlined establishments. These findings may be related the fact that 11 of 12 states that enacted "bare-bones" legislation in 1992 guaranteed coverage to all who met the criteria for the target population regardless of health risk.[17]

Table 5 reports our findings for the probability of enrollee exclusion. Small group reform may have helped in reducing this practice, particularly among establishments in very small firms (< 10 employees). With one exception, the significant effects we observe for reforms are all negative. Enrollee exclusion among redlined establishments, however, was not influenced by reform, even though redlined establishments were much more likely to face such provisions in the first place.

For the full sample, the marginal effect of full reform implemented between 1991 and 1992 was a decrease in the probability of this practice by 0.06. Partial reforms implemented before 1991 were associated with an even larger decrease (-0.09). The effects of these two categories of reform were largest among very small businesses (range, 1–9 employees). Surprisingly, we found that recently implemented partial reforms among small businesses with 10 to 50 employees increased the probability of this practice by 0.07. This finding may be related to the composition of the reform packages in "recent partial reform" states. As shown in Table 1, none of these states had provisions for guaranteed issue, however, guaranteed renewal was required. It could be that insurers who wanted to limit their risks for new policy holders did so through the use of enrollee exclusions. In contrast, for one of the categories of reform which appears to have reduced enrollee-exclusion practices (recent full reform), guaranteed issue was always present.

The marginal effect for state mandated benefits was negative (-0.003 to -0.004) and significant in two size groups, although the reason is unclear. Perhaps, this variable is a proxy for some other factor, possibly a more widespread philosophy within the state for "nondiscrimination" or all inclusiveness in health insurance.

There was no difference in enrollee exclusions experienced in states with "bare-bones policies on the market" and states without; however, among redlined establishments with health plans, the marginal effect for states with mandated benefit waiver laws was a significant decrease (-0.09) in the probability of this practice. This may be because in some states, the "bare-bones" plans were sometimes the same plan for which guaranteed issue applied.[17]

Finally, HMO market penetration was associated with a significantly lower probability of enrollee-exclusion practices among redlined establishments, which may be because HMOs rarely practiced enrollee exclusion.[21]

Conclusions

Our findings are mixed. On the one hand, they suggest that HIPAA-type small group reforms may have improved coverage but that the effects were small and took several years to be realized. However, such reforms did not increase the proportion of workers actually enrolled or make it less likely that enrollee exclusion clauses applied.

On the other hand, reforms given only 1 year or 2 to influence the market were found to have detrimental effects. We found that under "recent partial reform," for example, the provision of coverage was actually lower among businesses with 1 to 9 employees and that fewer workers participated in employer plans. Enrollee-exclusion practices also occurred more frequently among establishments with 10 to 50 employees.

This mix of good and bad news suggests caution. Did reforms create short-run market disruptions, but in the end were beneficial, a possibility suggested by Blumberg and Nichols?[25] Perhaps. Our results are certainly consistent with this scenario.

There is a second explanation for our findings, however. Maybe states that acted earlier with full reforms were those that had better functioning small group markets to begin with. If so, the reform "effects" we reported may partly reflect these fundamental differences across markets, and we have likely overestimated the long-term benefits of reform. Unfortunately, as our data consist of firms observed all at the same point in time (1993), they cannot discern between these two possibilities.

CPS data, however, can shed light on this issue. According to Employee Benefit Research Institute (EBRI) tabulations of insurance coverage by state,[26] the five "early full reform" states had higher-than-average rates of employer coverage in 1987 (the earliest year for which data are available). In that year, the proportion of the nonelderly population with employment based coverage was 0.73 in Vermont, 0.81 in Connecticut, 0.70 in Delaware, 0.68 in Tennessee, and 0.72 in Wyoming, whereas for the nation as a whole it was only 0.69. Thus, self selection of states in enactment may have indeed occurred, which gives our second interpretation above more credence.

Related work using different data and evaluation methods suggests that the reforms, per se, have not expanded coverage. Jensen and Morrisey,[18] using data on small employers which spanned both space and time (1989–1995), found that the reforms had virtually no effect on the provision of coverage. Unlike this study, they did not find any negative consequences but rather discovered that reforms simply didn't matter.

The contribution of this paper is that it has documented effects of small group reform based on a unique and large dataset. These effects extend well beyond simply increasing firms' offer rates, albeit minimally. There are negative consequences as well. Indeed, the pros and cons of small group reform were shown to vary for different classes of small firms. Businesses in redlined industries appear to have been the only clear "winners" in that they showed improved rates of coverage with no negative effects of reform on employee participation rates or enrollee-exclusion practices. Other small businesses, however, were affected both positively and negatively by reform.

Several limitations of our analysis deserve mention. The first concerns our definition of reform categories. We chose a cut-off date of January 1993 to define whether any reform was present. Thus, states that implemented small group reform after this date were treated as "non-reform" states. If their data reflects some modest reform response, we may have understated the benefits of reform. Second, in classifying reform states, we relied heavily on secondary sources which may have contained errors. Third, there are real differences in the manner in which various states crafted specific reforms. Although our results may speak to collective experiences under reform, they may have little bearing on the experiences of small businesses in particular states.

Finally, our findings on the effects of state small group reforms may not easily generalize to the eventual effects of HIPAA. As noted earlier, our full reform states all had what we termed "HIPAA-plus," which was not exactly HIPAA but something close to it. Because full reform in our analysis was not strictly equivalent to HIPAA, our findings should be interpreted as suggestive, not definitive, of what to expect from these federal measures. In addition, the general economy has improved since 1993, and managed care now has a much stronger presence in the small group market.[27] These considerations all point to the need for further research to monitor what actually happens under HIPAA.

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APPENDIX. Sample Means of Small Businesses With 50 or Fewer Employees in Firm and Sample Means of Their Employees by Firm Size: United States, 1993

	Establishment Sample Means by Firm Size		Employee Sample Means by Firm Size	
	<51 Employees	<10 Employees	<51 Employees	<10 Employees
Regulatory environment:				
Full reforms, at least one reform implemented before 1991	4.0	4.1	4.0	4.6
Full reforms implemented 1991 and later	21.2	21.2	21.6	21.4
Partial reforms, at least one reform implemented before 1991	24.5	24.6	29.1	30.8
Partial reforms implemented 1991 and later	15.5	15.6	12.6	12.6
Mandated benefits, total number in 1993	25.3	25.3	25.1	25.0
Bare-bones policies on the 1993 market	28.4	28.4	29.2	29.8
Economic conditions:				
Unemployment rate in 1993	6.9	6.9	6.7	6.7
HMO penetration rate	14.1	13.8	15.0	14.7
Rural indicator	22.2	23.3	17.5	19.5
Northeast	19.5	20.1	22.3	25.4
Midwest	23.6	23.3	25.1	23.1
South	33.1	32.8	30.4	30.0
Characteristics of establishment's firm:				
1–4 employees	48.5	63.8	9.1	30.4
5–9 employees	27.5	. . .	20.8	
10–24 employees	16.7		36.0	
In business less than 5 years	13.6	14.5	8.4	10.7
Unknown how long business operating	5.7	6.6	0.7	0.9
Unincorporated	36.8	43.6	15.1	27.3
Corporate status unknown	5.7	6.8	0.6	0.7
Industry group:				
Agriculture, forestry, and fishing	4.1	4.5	2.8	2.9
Construction	9.8	10.8	8.5	10.9
Mining; transportation, communication, utilities	3.8	3.6	4.9	4.5
Wholesale trade	7.7	7.0	10.2	9.5
Retail trade	22.4	22.1	16.5	15.4
Finance, insurance, and real estate	7.2	7.4	7.1	7.7
Services	37.4	37.6	38.0	40.7
Redlined industry	18.1	17.4	17.6	14.9
Employee characteristic:				
Majority low-wage employees	15.5	16.8	5.9	5.7
Percent low-wage employees unknown	10.0	11.6	3.0	4.0
Presence of union employees	2.1	1.6	5.6	3.1
Presence of union employees unknown	4.9	5.7	0.1	0.1
Percent of full-time employees	74.0	73.7	81.9	81.8

Note: ". . .", not applicable.
*Means for other analytic samples are available upon request.