[COMMITTEE PRINT]

COST AND EFFECTS OF EXTENDING HEALTH INSURANCE COVERAGE

PREPARED FOR THE

SUBCOMMITTEE ON LABOR-MANAGEMENT RELATIONS

AND THE

SUBCOMMITTEE ON LABOR STANDARDS

OF THE

COMMITTEE ON EDUCATION AND LABOR

AND THE

SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT

OF THE

COMMITTEE ON ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES

AND THE

SPECIAL COMMITTEE ON AGING
UNITED STATES SENATE

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Education and Labor Serial No. 100-EE
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U.S. GOVERNMENT PRINTING OFFICE

90-757 ⇆ WASHINGTON : 1989

For Sale by the Superintendent of Documents, Congressional Sales Office
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MINORITY—(202) 226-3725

October 14, 1987

Mr. Joseph E. Ross, Director
Congressional Research Service
Library of Congress
Washington, D. C. 20540

Dear Mr. Ross:

Public and private institutions now provide health insurance to the majority of the nation's population. In general, most employed working-age persons and their dependents are covered through employer-provided insurance. The elderly and disabled are covered by the Federal government's Medicare program and about two-fifths of the poor receive insurance through the Federal/State Medicaid program. However, a sizeable minority (estimates run as high as 37 million) have no health insurance even though most of these are employed. Furthermore, some 10 million people in poverty are not covered by Medicaid and have no health insurance.

Various means to extend health insurance coverage to those who do not have it have been proposed in the past, and although some improvements have been made, the largest part of the problem still remains. This Committee is interested in further efforts to extend coverage to those who do not now have it, and we are writing to you to solicit the assistance of the Congressional Research Service in analyzing options for doing so.

In particular, the Committee is interested in options for extending minimum health benefits to those who do not have health insurance as part of compensation for employment. This might be by providing incentives to employers, by mandating coverage, or some other means. In addition, the Committee is interested in options for providing insurance to those who are either unemployed, are uninsurable through current practices, or who are poor and yet do not qualify for Medicaid.

We recognize this to be a difficult task and are in need of high quality analysis to assist us. Accordingly, we are requesting the CRS to provide the Congress with analysis on the costs of the various options for mandating health insurance, on individuals, on businesses, and on other public and private institutions. In addition, we request that the analysis include consideration of some of the administrative issues associated with options for extending health insurance to those who do not have it.

We thank you for your support.

Sincerely,

Austin Murphy
Chairman
Subcommittee on Labor
Standards

Augustus F. Hawkins
Chairman

William L. Clay
Chairman
Subcommittee on Labor-
Management Relations

U.S. HOUSE OF REPRESENTATIVES
COMMITTEE ON ENERGY AND COMMERCE
SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT

2415 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515
PHONE (202) 225-4952

March 30, 1988

Mr. Joseph Ross, Director
Congressional Research Service
Library of Congress
Washington, D.C. 20540

Dear Mr. Ross:

I understand the Congressional Research Service is prepared to undertake a major study related to health insurance and the uninsured population in the U.S.: Who is Uncovered, what role private health insurance can play in providing coverage to the uninsured, options for extending that health insurance coverage, and the effects of a program to achieve this end.

I am aware that the Committee on Education and Labor has worked with you on the design and plan for the study. With their agreement, I would like to request that you also consider the Committee on Energy and Commerce as a requester of the study, include us in the study development, and provide us with your results.

My staff has already discussed the study plan in some detail with Royal Shipp and Janet Kline. We look forward to continuing to work with them as the study progresses. I believe it will provide great assistance to the Committee in its consideration of the Minimum Health Benefits bill, and will make an important contribution to our long-term understanding of and solution to the problem of the uninsured.

With every good wish, I am,

Sincerely,

Henry A. Waxman

HENRY A. Waxman
Chairman, Subcommittee on
Health and the Environment

HAW:kna

United States Senate
SPECIAL COMMITTEE ON AGING
WASHINGTON, DC 20510-6400

October 21, 1987

Joseph E. Ross
Director
Congressional Research Service
Library of Congress
Washington, DC 20540

Dear Mr. Ross:

Public and private institutions now provide health insurance to the majority of the Nation's population. Most employed persons and their dependents are covered through employer-sponsored insurance plans. Persons age 65 and older and disabled persons are covered by the Federal Government's Medicare program, and about two-fifths of the poor receive insurance through the Federal/State Medicaid program. Unfortunately, a sizeable minority (estimates run as high as 37 million) have no health insurance. While most of these are connected to the workforce, many are retirees under age 65 or others who have no current workforce connection. Ten million of those not covered live in poverty, but are ineligible for Medicaid.

Various means to extend health insurance coverage to those who do not have it have been proposed in the past, and although some improvements have been made, the largest part of the problem still remains. This Committee is interested in further efforts to extend coverage to those who do not now have it, and we are writing to you to solicit the assistance of the Congressional Research Service in analyzing options for doing so.

In particular, the Committee is interested in options for extending minimum health benefits to those who do not have health benefits as part of compensation for employement. This might be by providing incentives to employers, by mandating coverage, or some other means. In addition, the Committtee is interested in options for providing insurance to those who are either unemployed, are uninsurable through current practices, or who are poor and yet do not qualify for Medicaid.

We recognize this to be a difficult task and are in need of high quality analysis to assist us. Accordingly, we are requesting the Congressional Research Service to provide the Congress with analysis on the costs of the various options for mandating health insurance, on individuals, on businesses, and on other public and private institutions. In addition, we request that the analysis include consideration of some of the administrative issues associated with options for extending health insurance to those who do not have it.

We thank you for your support.

Sincerely,

JOHN HEINZ
Ranking Member

JOHN MELCHER
Chairman

Congressional Research Service
The Library of Congress

Washington, D.C. 20540

LETTER OF SUBMITTAL

October 24, 1988

Honorable Augustus F. Hawkins
Chairman, Committee on Education and Labor
U. S. House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

This report, "Costs and Effects of Extending Health Insurance Coverage," completes the Congressional Research Service's (CRS) study of health insurance for the uninsured, responding to your request of October 14, 1987, and to that of the Senate Special Committee on Aging of October 21, 1987. The House Committee on Energy and Commerce later joined in requesting the study.

Upon receipt of your letters, a team of CRS analysts began meeting and, in consultation with members of committee staffs, developed a plan for a comprehensive study. Our objective was to produce a study that would help the requesting committees, and the entire Congress, understand the issues raised by the various approaches for insuring the uninsured, if the Congress decides to take such action.

The first report of the study, "Health Insurance and the Uninsured: Background Data and Analysis," was released on June 9, 1988. The second report, "Insuring the Uninsured: Options and Analysis," submitted concurrently with this one, provides a comprehensive analysis of both public and private options for expanding health insurance coverage.

This third report, completing the study, estimates and analyzes premium costs of employer-based health insurance using an actuarial model developed as part of the project. The study then defines four illustrative plans for extending health insurance, and analyzes the effects of implementing them on (1) the number and characteristics of persons affected, (2) out-of-pocket expenditures for health care, (3) health care utilization, (4) employers, (5) health insurance companies, and (6) the fiscal condition of the Federal and State governments.

We hope this report will be of use to your Committee and to the Congress as you consider options for insuring the uninsured.

Sincerely,

Joseph E. Ross
Director

PREFACE

This report is the third of a three-part study by the Congressional Research Service (CRS) on the issues of extending health insurance to people who lack it. The study was initially requested by the House Committee on Education and Labor and the Senate Special Committee on Aging. Subsequently, the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce wrote to CRS expressing interest in the study and asked to be included as a sponsor.

A CRS team was formed to carry out this health insurance study. The team, which began meeting in the fall of 1987, developed a work plan, a detailed outline, and an analytic framework for the study. After meeting with committee staff requesters, the work on the study began, producing first a report titled "Health Insurance and the Uninsured: Background Data and Analysis," released on June 9, 1988. The first report provides background information, data, and analysis on: (1) the health insurance business, (2) government regulation of health insurance, (3) the number and characteristics of the uninsured, (4) exposure to health care out-of-pocket costs by people who have insurance, and (5) a comparison of the utilization and financing of health care services between the insured and the uninsured.

The second report, submitted concurrently with this one, is titled "Insuring the Uninsured: Options and Analysis." This report discusses a comprehensive range of both public and private options for providing health insurance and making it more readily available to those who lack it, including both public and private options. The report discusses the theory and practice of health insurance, including the issue of adverse selection, the problems of small employers, and underwriting practices of insurers to deal with these problems. The concept of "actuarial equivalence" is developed and analyzed. The report goes on to identify and analyze various possible means of increasing health insurance through public programs, private employer mandates, and tax incentives. A final section of the report discusses ways to change current health insurance institutions to encourage the market to make insurance more widely available at a cost employers can afford by setting up "pooling" arrangements whereby small companies could join together to enjoy some of the insurance benefits of larger employers.

This third report, "Costs and Effects of Extending Health Insurance Coverage," concentrates its analysis mainly on employer-based health insurance. An actuarial model was developed with assistance from Hay/Huggins Company, Inc., under contract with CRS. The model provides estimates of the level and sensitivity of health insurance premiums for the insured and the uninsured populations. This report also analyzes the effects of four illustrative plans for extending health insurance on (1) the number and charac-

teristics of persons affected, (2) out-of-pocket expenditures for health care, (3) changes in overall health care expenditures, (4) the health insurance industry, (5) private sector employers, and (6) the fiscal condition of Federal and State governments. Estimates measuring these effects were provided through a computer-based microsimulation model developed by Lewin/ICF under contract with CRS.

The CRS team formed to carry out the analysis consisted of the following analysts: Vicki Freedman, Beth Fuchs, Janet Kline, Janet Lundy, Mark Merlis, Michael O'Grady, Dennis Snook, and Jim Storey. Linda LeGrande provided a draft of a section on employer effects. P. Royal Shipp was the project manager.

Under contract with CRS, Edwin Hustead, Michael Carter, Larry Bobbitt, J. Alan Lauer, and Mark Schafer of Hay/Huggins Company, Inc., worked with the team to develop the health insurance premium model, to provide actuarial and other technical assistance, and to prepare data and written text on health insurance administrative costs and the effects of an employer mandate on the health insurance business. CRS also contracted with Lewin/ICF for estimates of the effects of extending health insurance through employer-based mandates and the expansion of Medicaid. Joseph A. Anderson, David L. Kennell, and John Sheils, using the Lewin/ICF Health Benefits Simulation Model, provided these estimates and a draft of appendix B.

The team worked together over the past year, agreeing on the Study's concept and structure. The entire team also reviewed, commented on, and discussed drafts of the report. Michael O'Grady directed the development of the CRS Health Insurance Premium Model used for the analysis in chapter 2. He also wrote parts of this chapter and appendix A. Janet Lundy analyzed health insurance premium data from the model and wrote major sections of the chapter. Vicki Freedman and Dennis Snook contributed to the model's development and wrote parts of chapter 2. Jim Storey directed the analysis of chapter 3 and wrote most of the text. In addition, Vicki Freedman, Beth Fuchs, Janet Kline, Linda LeGrande, Mark Merlis, and Michael O'Grady contributed to the analysis. Freedman and LeGrande also wrote sections of the chapter. Grover McDonald typed the drafts of the report and provided other support to the project.

The report was reviewed by the following outside experts who provided helpful comments:

Gerard F. Anderson, The Johns Hopkins Medical Institutions
Jim Cantwell, General Accounting Office
Jill Eden, Office of Technology Assessment
Lynn Etheredge, Consolidated Consulting Group
Kevin Haugh, Health Insurance Association of America
Stanley B. Jones, Consolidated Consulting Group
Mary Nell Lehnhard and Diana Jost, Blue Cross and Blue Shield Association
Stephen Long and Jack Rogers, Congressional Budget Office
John Luehrs, National Governors' Association
Patricia Neuman, The Johns Hopkins Medical Institutions
H. Michael Schiffer, CIGNA Corporation

In addition, the Task Force on National Health Insurance Issues of the American Academy of Actuaries reviewed and suggested improvements in the model and the methodology for estimating health insurance premium costs. The model and other analysis in the report have benefited from comments received from these expert reviewers.

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CHAPTER 1.—INTRODUCTION

This report analyzes the cost of health insurance and the effects of proposals to extend coverage. The analysis concentrates on employer-based health insurance, and costs of such plans are analyzed using data from an actuarial model. The effects of extending health insurance to the uninsured are studied by specifying four illustrative plans (three employer-based, and one Medicaid expansion) and estimating their impacts on the number and characteristics of persons affected, out-of-pocket expenditures for health care, health care utilization, health insurance companies, employers, and Federal and State governments.

The companion report, "Insuring the Uninsured: Options and Analysis," submitted concurrently with this one, examines a comprehensive range of possible ways to make health insurance more readily available to those who do not have it. It describes various options, identifies how current practices could be modified to bring coverage to more people, and discusses the difficult technical and political issues that would have to be resolved in implementing any of these options.

This report's study of the costs and effects of extending health insurance coverage required narrowing the range of possible options to issues of extending employer-based health insurance (and, to a lesser extent, extension of Medicaid). Employer-based health insurance was selected for additional detailed and quantitative analysis because it is by far the predominant source of health insurance coverage in the United States, with five out of six people under age 65 currently covered by employer-based health insurance. In addition, congressional committees requesting this Congressional Research Service study specifically asked for analysis of employer-based coverage. Finally, the analysis of costs and effects of extending employer-based coverage could help to provide an analytic framework for considering other options for expanding health insurance.

As is generally required for quantitative analysis, this report makes assumptions about many issues. For example, chapter 3 examines four different approaches to extending health insurance coverage. In order to show their effects, the provisions of the specific plans had to be spelled out in detail. Plan provisions were chosen for analytic purposes; none represents a recommendation. Assumptions also were made about utilization behavior of newly insured persons and other similar effects of extended coverage. These assumptions are made explicit in the course of the analysis.

The report required analytic decisions about issues characterized by considerable political controversy and technical difficulty. In particular, the report's assumptions and decisions consistently show the costs and effects of extending coverage to the maximum number of uninsured. This display is done for analytic reasons: to

help clarify the choices that arise in extending health insurance to the uninsured. The assumptions made here indicate the kinds of issues that would have to be resolved in legislative proposals for extending coverage.

For example, the report assumes that all employers would have to offer coverage to all their employees who work at least 10 hours per week, and that all such employees would have to accept coverage. This approach implies that the problems of the health insurance market for small employers and the high premiums that would be required of employees who only work part time could be surmounted. (The issues of small employers and part-time workers are discussed in chapter 3 below, and in chapter 6 of report number 2 in this series, "Insuring the Uninsured: Options and Analysis.")

Another important assumption is the year selected for the estimation of costs and effects. The costs and effects of specified alternative approaches are compared for a particular year, calendar year 1986. These 1986 estimates can be considered to be the full-year effects without regard to implementation issues. The report does not project costs and effects for a future year, although that would be necessary for specific legislative proposals. The specific year chosen is less important for this analysis than is the comparison of costs and effects of different approaches within the same time frame.

Picking a specific year for the analysis is necessary, and 1986 was chosen because the most recent trend data from the Current Population Survey on the numbers and characteristics of the insured and the uninsured are for that year. This choice disregards current health care inflation as an issue and concentrates the analysis on the comparison of alternative approaches. The report recognizes, however, that estimates of costs and effects are extremely sensitive to health care price inflation. For example, the annual premium for a typical employer-sponsored health insurance plan in 1986 was $936 for a single worker, while the comparable premium value for 1988 would be $1,184, nearly 27 percent higher.

In general, the purpose of the report is to enhance understanding of health insurance issues, particularly as they affect the uninsured population, and to provide an analytic framework for considering specific proposals for extending coverage.

The report consists of three chapters, this introduction and two analytic chapters. Chapter 2 analyzes the design and cost of health insurance using data from the CRS Health Insurance Premium Model, developed for this study. The analysis in chapter 3 emphasizes the effects of illustrative plans for extending health insurance coverage to the uninsured. Data from a micro-simulation model are used to show various effects.

Explanations of the two models are presented in chapters 2 and 3, with more detailed information provided in appendices A and B. These descriptions point up basic differences in the two types of models. Their analytic purposes are different, and so are the data they use. As a consequence, estimates of the number of persons who would be affected by mandatory employer-based coverage are somewhat different in the two chapters. The differences occur for two reasons:

- The estimated number of persons affected by extending employer-based coverage in chapter 2 are from the March 1987 Current Population Survey (CPS) that includes questions of health insurance coverage during calendar year 1986. The micro-simulation model used to provide estimates in chapter 3 relies on survey data from 1980 which it then projects forward in time ("ages") to reflect the health insurance characteristics of the population in 1986. The 1980 data are aged to match known 1986 data for the total population, the number of workers, and other facts known about the 1986 population. While the aging will approximate 1986 data on health insurance coverage, it does not provide an exact match.
- The two analyses are based on three minor differences in their definitions of who would and who would not be covered by mandated employer-based coverage:
  —In chapter 2, students age 19 to 22 who were the dependents of workers were assumed to receive coverage through their parents or spouses. In chapter 3, these working students were assumed to receive coverage from their own work.
  —In chapter 2, if workers indicated that they worked 10 or more hours per week but indicated that they received no pay for their work, they were assumed not to be covered by health insurance. Chapter 3 assumed such workers would be covered.
  —In chapter 2, covered workers age 19 and over are assumed to receive coverage through their own work; in chapter 3, the cut-off age is 18 and over.

These differences in the methodology and assumptions between chapters 2 and 3 lead to slightly different estimates for the number of persons (insured and uninsured) who would be affected by mandated coverage.

Premium Costs of Health Insurance

Chapter 2 discusses the premium costs of health insurance. The analysis begins by developing and presenting actuarial data on premiums for employer-based health insurance plans. The baseline for this analysis consists of estimated average premium costs for people covered by employer-based health insurance in 1986.

Data for the analysis come from an actuarial model developed by the Congressional Research Service, in conjunction with the actuarial firm of Hay/Huggins Company, Inc. This mathematical computer model estimates premiums for combinations of benefits and different target populations. (Appendix A describes the model.) The inputs to the model are benefit specifications and population characteristics of the group to be covered by the benefits; the outputs are estimated premiums.

The model and methodology allow for analysis of variations in plan costs along a number of dimensions:

- Variation due to benefit package design. The model estimates what different benefits might cost and how sensitive premium amounts are to variations in different benefit levels;
- Variation in the population being covered. The model estimates how premium amounts might vary with the infusion

into the plan of new people with different population characteristics;

- Variation in administrative costs as a percentage of claim costs. The model analyzes the influence of firm size and pooling mechanisms on administrative costs.

The actuarial model also helps to demonstrate how a particular benefit package can be tailored to a particular population while maintaining a constant premium level; i.e., it illustrates one possible form of "actuarial equivalence."

Using data from the model, three types of analysis are performed. First, the costs of the provisions of health insurance plans are analyzed. A "typical" health insurance plan is developed, based on data from the 896 medium to large company plans covering 25 million workers and dependents in the Hay/Huggins Benefits Report (HHBR). Then the average premium cost for this typical plan is estimated. This average is called a "standard" premium to distinguish it from a "group-specific" cost that would be appropriate for a set of specific individuals who constitute a "group" for health insurance purposes.

The standard premium for the typical plan is then used as a basis for showing the estimated cost effects of varying different plan provisions. For example, the annual standard premium for the typical employer-based plan in 1986 is estimated at $936 for an individual worker (not including dependent coverage). This typical plan has a $100 deductible that the employee would have to pay before the plan would pay for any covered services except for inpatient hospital coverage. If the deductible were increased to $200 (holding other plan provisions constant), the premium would be $903, a reduction of $33. On the other hand, if the deductible requirement were eliminated, the premium would increase to $1,000, a $64 increase to the standard premium. This type of analysis of premium costs is shown for a variety of plan provisions, including deductibles and coinsurance and types of services covered.

The second part of the analysis demonstrates the effects on premiums of changing the population characteristics. Actuarial estimates of premium costs vary by age, sex, geographic location, and income. The standard premium for the typical plan discussed above ($936 for an individual in 1986) is based on average population characteristics for persons in the HHBR plans that are assumed to be representative of the entire population covered by employer-based plans. Coverage of specific groups within the total population whose characteristics vary from the group covered by the typical plan, including the population currently without health insurance, would require model adjustments that account for population characteristics of the specific group to be covered. For example, while the standard premium for an individual in the typical plan in 1986 is $936, the premium cost for a male under age 25 would be $468; for a female between ages 55 and 59, the premium cost would be $1,451. This type of sensitivity analysis is conducted for different age, sex, geographic location, and income characteristics of people covered by the typical plan.

The report views premiums as consisting of two components: costs of paying claims and costs of plan administration. For purposes of the analysis to this point, the total premium cost (claims

costs plus administrative costs) has been assumed to include an administrative cost of 8 percent of claims costs. However, administrative costs vary substantially by size of firm. For example, administrative costs as a percent of claims average 5.5 percent for firms with 1,000 or more employees, but range from 25 to 40 percent of claims costs for firms with under 50 employees. The report analyzes the effects of firm size on administrative costs and estimates the effects on administrative costs of different types of "pooling" arrangements.

Population characteristics of the 37 million people without health insurance in 1986 differ substantially from those with employer-based coverage. As demonstrated in report number 1 in this series, "Health Insurance and the Uninsured: Background Data and Analysis," the uninsured are younger than the insured, poorer, more likely to work part time or not at all (although nearly half work full time or are in a family with a full-time worker), and more likely to work for a small company. Eight out of ten of the uninsured population (approximately 31 million employees and dependents) are in families with some attachment to the workforce. An employer-based mandate covering workers who work 10 or more hours a week and their dependents would cover most of them. In addition, about 23 million insured persons do not participate in an employer-based plan but are covered by other health insurance. The total of the uninsured who would be covered by mandated employer-based insurance, plus those now insured but not through employer-based coverage, who would be included in an employer mandate, are termed the "potentially insured." The characteristics of these 54 million "potentially insured" persons differ from those of the employer-based insured population. Accordingly, the report estimates the effects of extending employer-based coverage to the potentially insured, taking into account the important differences in population characteristics, attachment to the workforce, and size of employer.

Using this approach, it is possible to estimate the effects on premiums of differences in a group's demographic makeup. For example, premium costs for the potentially insured population, compared to the standard population, would be 10.4 percent less because of family size differences and 8.1 percent less because of family earnings differences. On the other hand, premium costs for the potentially insured would be 4.4 percent higher because of age and sex differences from the standard population and would be 11.1 percent larger because of differences in employer size. The addition of specific pooling arrangements for small employers could reduce the additional premium cost of covering the potentially insured due to difference in employer size from 11.1 to 3.7 percent. Geographic differences between the potentially insured and the standard insured population would have virtually no effect on premium costs.

It must be emphasized that these premium adjustments are the result of the specifications of the particular policy option chosen for illustration. Use of the 10-hour a week threshold for coverage results in coverage of many older, semi-retired workers. Under this option, the coverage of many of these workers would then shift from Medicare or retiree health plans to insurance through their current employer. A policy option that did not change the insur-

ance source for so many older workers would result in lower premiums for the potentially insured group.

Chapter 2 concludes by considering the possibility that the typical plan for the standard population may not be well suited to the particular characteristics of the uninsured population. In particular, as noted, people who lack health insurance are relatively young and poor. Thus, the deductible and coinsurance features of the typical plan might be sufficiently high to keep the younger and poorer uninsured population from seeking health care, even if insurance were provided. Accordingly, an example is developed that shows the increase in premium costs for the typical plan if deductible and coinsurance requirements were eliminated. Then the example demonstrates how benefits could be eliminated or reduced to reduce the overall premium cost to the level of the typical plan for the standard population. In effect, this is a demonstration of the concept of "actuarial equivalence" developed in the companion report, "Insuring the Uninsured: Options and Analysis." For example, eliminating all plan cost-sharing provisions would increase the premium cost from $936 to $1,097, an increase of $161. This premium could be reduced to the initial level of $936 by decreasing covered hospital days to 45; by eliminating mental health, skilled nursing and extended care facility, and prescription drug coverage; and by introducing a $65 hospital deductible.

This illustration of actuarial equivalence focuses on the idea of a health insurance plan tailored to the uninsured. However, the basis for the adjustments is the premium for the standard population, including the administrative cost of 8 percent of claims cost. The premium could easily be adjusted to reflect the characteristics of a different covered population. The premium for the standard population is used in this analysis to make the data more consistent with the earlier sections of chapter 2. In addition, considering the uninsured population to constitute a single group with unpooled small employer (or group) plans is useful for analytic purposes, but specific legislative proposals probably would not isolate the total uninsured population as a single group for the purpose of extending coverage.

Effects of Extending Coverage

Chapter 3 assesses the effects of extending health insurance on the number and characteristics of those newly insured and those who remain without health insurance, on out-of-pocket expenditures, on health care providers, businesses, insurers and governments. The chapter uses four illustrative plans and a micro-simulation model developed by Lewin/ICF to provide quantitative data on the effects of implementing these plans.

The simulation model estimates the effects of changes in eligibility, coverage, and benefits provisions of public and private health plans on households and total health benefit payments from various sources. For each of the illustrative plans analyzed in this chapter, the model is used to estimate changes in out-of-pocket health care expenditures and changes in household premium payments. The model is used to estimate the impact of these illustrative plans on selected demographic groups and the aggregate

impact of these proposals on total payments by public and private insurers.

The Lewin/ICF simulation model is based on national surveys that provide data on medical care expenditures and utilization. These surveys provide detailed information on demographic and economic characteristics, sources of health care coverage, number and types of health care contacts, and charges by source of payment. These data are updated (that is, "aged") from 1980 to 1986 to reflect changes in population, real incomes and other economic conditions, health care utilization, the average lengths of hospital stay, and health care expenditures.

Three of the illustrative plans are employer-based plans; the fourth is an expansion of Medicaid. Analysis is shown for each of the four plans separately and for a combination of an employer-based plan and Medicaid. These illustrative plans are designed to show the effects of covering the maximum possible number of the uninsured through employer-based plans, including most part-time workers.

The three employer-based plans are termed the "typical," "tailored" and "catastrophic" plans. The typical plan contains provisions that are representative of plans currently offered by medium and large U.S. employers. The tailored plan is designed to cover more preventive services than the typical plan, requires smaller deductibles and coinsurance payments, but costs less overall by offering less hospitalization coverage. The catastrophic plan would reimburse all covered expenditures above a deductible, the deductible being related to income and family size.

If a mandate required all employees working at least 10 hours per week and their dependents to be covered by employer-based plans, any of the three illustrative employer plans would reduce the number of uninsured from 37 million to 6 million. In addition, a requirement to upgrade existing employer plans offering coverage of less value than a newly mandated plan would result in improved coverage for many others (43 million for the typical plan, 24 million for the tailored plan, 22 million for the catastrophic plan).

The 6 million who would remain uninsured tend to be older, poorer, and heavier users of health care than are those who would gain coverage, as the non-working population has more people with low incomes or serious health conditions than the working population.

Medicaid expansion to all poor people would have a very different effect. The reduction in the number of uninsured would be much smaller, with 29 million remaining uncovered. However, the newly covered population would include the uninsured with the lowest incomes and above-average health care utilization. Combining the Medicaid expansion with the tailored employer plan would close the insurance coverage gap from both ends of the income distribution and leave only 4 million still uninsured.

The illustrative plans would increase national health care expenditures by varying amounts. If they had been in effect in 1986, the report estimates that increases in medical expenditures would have ranged from $4.1 billion for the Medicaid expansion and $4.4 billion for the catastrophic plan to $12.8 billion for the tailored plan and $14.6 billion for the typical plan. The employer plans

would have reduced the 1986 cost of public programs by $3.7 billion to $7.6 billion, since private plans are primary payers for non-retired persons with dual coverage. The typical and tailored plans would also have reduced household out-of-pocket expenditures for plan cost sharing overall by estimated sums of $4.0 billion and $2.6 billion, respectively. However, many individuals would have paid more than under current law because higher premium payments could outweigh any savings from reimbursement of expenditures by insurance. The catastrophic plan would have reduced household spending by only $0.6 billion.

The Medicaid expansion would have increased the program's 1986 spending by $13.3 billion. However, it would have reduced spending under other government programs by $2.0 billion and reduced household spending for health care by $5.6 billion. Virtually no individuals would have spent more under the Medicaid expansion than they did in 1986.

Increased health care expenditures mean greater consumption of health care services. However, the estimated utilization increases for the illustrative plans would be minor compared to current utilization levels. The typical plan would produce no more than a 5 percent increase in hospital inpatient days, which could be absorbed by excess hospital capacity in most areas. Spot shortages of certain health professionals in areas with large numbers of newly insured persons and little excess capacity could be a problem.

Estimated physician visits would increase by no more than 3 percent, which most areas could readily absorb. However, in rural and inner city areas with large numbers of low-income people relative to the physician supply, increases in physician charges might occur unless and until the supply of physicians responded to increased demand for services from the newly insured.

Extending insurance coverage would reduce substantially, but not eliminate, uncompensated care. The remaining uninsured would be more likely to experience hospital stays than would those with new coverage. Also, the cost-sharing amounts required under the plans might not be collectible from low-income enrollees.

The costs of employer-sponsored health plans would rise under the three mandatory employer illustrative plans. If they had been in effect in 1986, the typical plan would have increased employer costs by an estimated $32.5 billion, the tailored plan by $28.2 billion, and the catastrophic plan by $9.1 billion. Firms not now offering health coverage, mostly small firms, would bear the bulk of the increased costs. Some large firms would experience net savings, mainly due to an assumption that employed persons now covered as dependents under employer plans would be required to accept coverage through their own employers under the mandated plan.

Economic theory suggests that many firms bearing higher labor costs would try to offset them over time by reducing employee compensation, in this case, wages. Downward pressure on wage increases would be likely, with some loss of jobs possible at or near the statutory minimum wage where wage savings are not feasible. Studies predict that effects on employment would be small, however. A minority of firms might be able to pass the cost increases through to their customers in the form of higher prices.

Mandated health benefits would affect the market for health insurance, the nature of the effect depending on the type of risk pooling that might be introduced. If small employers were required to obtain insurance through a pooling arrangement, the market shares for the different types of insurers would be changed. If pools were restricted to particular regions, large insurers and the Blues could have an advantage. If employees were allowed to choose insurers through the pool, small insurers and HMOs would fare better.

Mandating employer coverage would result in modest reductions in the Federal budget deficit ($0.1 billion to $2.4 billion), as savings in Medicare, Medicaid and other programs would be largely offset by reduced revenue collections. Reduced revenue would result from taxable wages growing more slowly than would otherwise have occurred and nontaxable health benefits growing faster.

Medicaid expansion would increase government spending substantially, by $5.8 billion for the Federal Government and $5.5 billion for the States.

CHAPTER 2.—DESIGN AND COST OF HEALTH INSURANCE

I. INTRODUCTION

Health insurance premiums consist of two components: claims costs and administrative costs. The amount of the premium necessary to pay claims costs primarily depends on: (1) the specific provisions of the health insurance plan, and (2) the geographic and demographic characteristics of the group of persons covered by the plan. Administrative costs fall into such categories as claims administration, risk and profit charge, and commissions.[1] These costs are sensitive to the number of persons grouped together to be covered by a plan, usually determined by firm size or by any pooling mechanism. This chapter analyzes the premiums of health insurance plans and shows how they are affected by changes in the plan benefits offered and by modifications in the characteristics of the covered group.

The chapter does not analyze specific proposals but instead demonstrates a general methodology by which specific proposals can be analyzed. The chapter develops a framework for measuring and assessing the relative differences caused by changing health plan provisions or covered group characteristics. This framework demonstrates a capability for estimating the premium for extending health insurance to an uninsured population.

The methodology used for the analysis is explained briefly below. A more complete account of the methodology can be found in appendix A.

A. METHODOLOGY FOR ANALYZING PLAN PREMIUMS

The framework for estimating the premium cost of health insurance plans includes the elements discussed below.

1. The CRS Health Insurance Premium Model

CRS and Hay/Huggins Company, Inc., developed a computer-based actuarial model that projects annual health plan premiums for combinations of insurance provisions as applied to 25 million persons covered by 896 health insurance plans. These plans are those sponsored by medium- and large-size firms included in the Hay/Huggins Benefits Report (HHBR). The model uses techniques similar to the rate-setting procedures used by insurance companies.[2]

The analysis in this chapter measures the cost of changes in plan provisions, using as a baseline the provisions of a "typical" plan.

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[1] See chapter 2 in report number 2 in this series, "Insuring the Uninsured: Options and Analysis."

[2] See chapter 2 in report number 2 in this series, "Insuring the Uninsured: Options and Analysis."

The typical plan is built from the provisions most frequently reported by the HHBR firms. The typical plan's provisions are described in section II.A.3.

2. Standard Premiums and Group-Specific Premiums

This chapter demonstrates how health insurance premiums are affected by changes to health plan provisions and by circumstances specific to a particular group of covered persons, such as geographic location or average age. In order to accomplish these two strains of analysis, a distinction is drawn between two types of premiums: standard premiums and group-specific premiums.

a. Standard premiums

Standard premiums are defined as premiums for a health insurance plan covering a population consisting of all persons currently insured through employer-based plans. In section II.A of this chapter, these standard premiums are used to compare the effects of changes in the typical plan's provisions while the population covered by the plan is held constant. (The population of persons covered through employer-based plans is referred to throughout this chapter as the "currently insured.")

b. Group-specific premiums

Group-specific premiums are developed in order to indicate how the cost of a plan, initially priced for the population covered by employer-based plans, might be affected by changes in the characteristics of the covered group. These factors include demographic characteristics, geographic factors, and the number of people in the group. Group-specific premiums are used to compare the effects on premiums of changes in a specific covered population while plan provisions are held constant.

3. Basis for Population Adjustments

Data from the Current Population Survey (CPS) for 1986 were used to provide a demographic and income profile of the population covered by employer-based plans.[3] It was assumed that the standard premium for these 140 million persons would be the same as for the 25 million covered by HHBR plans.[4]

In section III of this chapter, group-specific premiums are estimated for the "potentially insured" population.[5] The potentially insured population includes persons who would become newly insured under an employer-based mandate, either because they do not now have insurance, or because they have insurance but not through the employer. The illustrative employer-based mandates discussed in chapter 3 of this report would increase the number covered by employer-based plans by 31.4 million employees and de-

[3] The March 1987 Current Population Survey, conducted by the Bureau of the Census, U.S. Department of Commerce, provides data for calendar year 1986.

[4] See appendix A for a further discussion of this assumption.

[5] Persons referred to in this chapter as "potentially insured" include workers employed for ten or more hours a week and their dependents who are not now covered by employer-based insurance. (Chapter 3 explains this assumption and the issues it raises.) Most employed persons who are currently insured as dependents would become covered through their own employment as a result of the mandate. It is assumed that the latter group has no effect on the population adjustments since they are simply changing status within the currently insured group.

pendents who do not now have insurance and 22.7 million employees and dependents who have nonemployment-based insurance.[6]

The characteristics of the potentially insured population were also drawn from the 1986 CPS. Group-specific premiums were estimated based on differences between the characteristics of employee groups in the HHBR and the employees and dependents who would become newly insured under employer-based plans. Adjustments were made for differences in geographic location, age, sex, family size and composition, income, and firm size.

4. Additional Assumptions

The following assumptions were used to simplify analysis.

a. Utilization of health services by the newly insured

The analysis assumes that, after an initial period of utilization adjustment, newly insured individuals will use health care services in the same manner as currently insured persons with the same demographic characteristics. Premiums shown are annual costs after an adjustment period has been completed.

b. Data shown for 1986

For ease of understanding, the data presented in this report are mainly for 1986. As mentioned above, the demographic profile used in this chapter is based on data compiled for the year 1986. Furthermore, the broader economic analysis in chapter 3 uses data, for simulation purposes, that were adjusted to 1986. Upward pressure on the price and utilization of health services would make the 1986 premium estimates approximately 27 percent higher if shown for 1988.[7]

c. Administrative costs

Based on the average administrative costs for plans surveyed in the HHBR, the premium for the typical plan includes 8 percent of claims costs to account for administrative costs. However, as noted in section II.B, the administrative costs of underwriting a plan for small employers could be substantially higher. A demonstration of the effects of firm size and pooling arrangements on administrative costs is provided in section III.B.

B. FORMAT OF THE CHAPTER

This chapter demonstrates the model used to estimate annual premiums for employer-based health insurance plans. Considerable variation is shown in the specifications of the plans and the populations covered, and the effect on premiums of these changes is estimated. After this introduction, section II.A demonstrates the effect on annual premiums of benefit and cost-sharing changes within the

[6] These numbers differ somewhat from similar estimates presented in chapter 3. See p. 5 above for an explanation of why the estimates differ.

[7] For example, premium amounts for the typical employer-based plan in 1986 would be $936 for an individual and $2,466 for a family. Using the 27 percent increase factor, premiums for the typical plan in 1988 would be $1,184 for an individual and $3,119 for a family. The 27 percent rate of increase is based on an 11 percent increase in premiums experienced by firms in the Hay/ Huggins Benefits Surveys from 1986 to 1987 and an expected increase of 14 percent from 1987 to 1988.

"typical" plan offered by large- and medium-sized employers. This is followed in section II.B by an analysis of the effect that certain demographic or other factors representative of the employed insured population could have on health insurance premiums. Section III.B shows demographic, geographic, and income differences between the insured and potentially insured populations and how these differences affect premiums. The chapter concludes in section III.C by illustrating some ways in which health plan benefits can be modified to provide a plan potentially better suited to the low-income uninsured population.

II. Health Insurance Plan Premiums for Employer-Based Plans

This section of the chapter identifies two major sources of variation in premiums. The first section reviews the ways in which benefit design affects health plan premiums. The second section explores the effects on premiums of the demographic profile of the covered population. In addition, the effect of firm size on administrative costs is explained.

A. How Benefit Design Affects Health Plan Premiums

1. Introduction

The purpose of this subsection is to illustrate how the benefit design of a health plan affects its cost, or premium. A health plan's benefit design includes the types of health care services covered by the plan, the extent of the plan's payment for those services (including any limits on those payments or on the quantity of health care services covered), any payment amounts required of the plan participants (i.e., cost-sharing amounts), and any cost containment features. The focus of this analysis will be on conventional plan design, i.e., that found in traditional indemnity or service benefit plans. A discussion of alternative delivery systems can be found at the end of subsection A.

The discussion begins with a general description of the benefit design features of health plans and their effects on health plan costs. The "typical" employer-based plan used as a baseline for the analysis in this report is then described. The components of a health plan's benefit design are examined in detail to illustrate the effect on premiums of varying these components. Information is provided on cost containment features included in health plans and their impact on premiums. Finally, issues related to coverage under alternative health care delivery systems such as health maintenance organizations (HMOs) and preferred provider organizations (PPOs) are discussed.

2. General Description of Health Benefit Design Features and Their Effect on Health Plan Premiums

The design of a health plan's benefits includes several features that define the benefits and help to determine what the benefits will cost. Therefore, these features must be taken into account when determining the premium necessary to pay for the benefits. These benefit features include:

- the health care services that are covered,

- the determination of the amount of the medical expense eligible for payment (i.e., the "eligible expense determination"),
- maximum limits on the dollar amount or on the units of service (for example, days of care or physician visits),
- cost-sharing amounts (i.e., any deductibles, coinsurance, or copayments) that the enrollee will be required to pay out-of-pocket for services covered by the health plan, and
- cost containment features.

a. Services covered

The benefits covered by the health plans of medium and large employers are generally the same: hospital services, surgical services, physician visits, X-ray and laboratory tests, prescription drugs, and mental health care. Dental care and vision care, if covered, are usually covered under separate plans. What varies more from plan to plan than the types of services covered are the reimbursement levels for each service (as determined by the eligible expenses, any limits on the payment amount, and any cost sharing required of the insureds) and the cost-containment features.

Before the mid-1970s, the trend in employer health plan coverage was to expand the types of services covered and the proportion of the full bill for the services that the plan would pay. In recent years, however, rising health care costs, increases in the availability and utilization of health care services, and changes in medical technology have all contributed to increases in health plan premium costs. As a result, employers and insurers have had incentives to contain the costs of the covered benefits.

One way of controlling health plan costs is to eliminate certain covered benefits. However, this approach generally has not been taken since the benefits offered have become accepted as those "required" for adequate coverage and because it is unpopular to eliminate a benefit once it has been offered. Instead, attempts to control costs have focused on limiting the plan's liability for payment of covered services and controlling the utilization of covered services by the insured population.

b. Eligible expense determination

The methods for determining the extent to which a medical expense is eligible for payment have been designed by most health plans to exert some control over plan costs by setting limits on the amount of a health care provider's charges or costs that will be reimbursed. For example, hospital bills are usually paid by commercial insurers as a percentage of the hospital's average charge for a semiprivate hospital room. (Hospital ancillary services are usually paid as a percentage of the reasonable charge.) Blue Cross and Blue Shield Plans generally limit payments to hospitals by negotiating contracts with participating providers under which the provider agrees to accept the Blue Plan's payment as payment in full for services provided.

A plan may pay physicians according to a method known as "reasonable and customary" (R&C). Services determined to be medically necessary are paid according to the physician's actual charge for a particular service, limited by a maximum determined as a percentage of the average charge for that service by physi-

cians in the same geographic area. Surgeons' fees are sometimes paid according to a fee schedule, where the plan establishes maximum payment amounts in each geographic area for each surgical procedure. In these two examples, the payment standards or maximums are determined according to the average charges for medical services in a particular geographic area, with the health plan thus limiting the amounts it will pay to high-cost providers. Blue Cross and Blue Shield Plans generally limit payments to physicians by negotiating contracts under which the physician agrees to accept the Blue Plan's payment as full payment for covered services.

There are other approaches that health plans use to limit the amounts they will pay to providers for medical care services rendered to those covered by the plan. For example, under Preferred Provider Organization (PPO) arrangements, a health plan contracts with certain hospitals and/or physicians who will provide services to those covered by the plan at discounted rates. The health plan either requires its enrollees to use those "preferred" providers or encourages them to do so by requiring enrollees to pay lower cost-sharing amounts if they use the preferred providers than would otherwise be required.

Some large health plans have established alternative hospital payment methods that attempt to control the amounts paid for these expensive services. For example, the Medicare program, many Medicaid programs, and certain Blue Cross Plans pay hospitals on the basis of fixed, prospectively determined rates according to the diagnosis of the patient. Health plans may also use volume purchasing for items such as prescription drugs and medical appliances to lower their payments for these items. By guaranteeing a certain volume of business from its enrollees, a health plan may be in a position to negotiate lower charges from the suppliers of these items.

c. Limits on services or total payments

Other health plan methods of controlling costs include setting limits on the units of service (e.g., visits or days of care) covered by the plan, or on the maximum dollar amount paid by the plan per service, per year, or over the insured's lifetime. For example, a plan's mental health coverage may limit payment for inpatient mental health care to 30 days per year and limit outpatient mental health care to a maximum number of visits per year (perhaps 50), with an annual maximum payment of $1,000 per year.

d. Enrollee cost sharing

In recent years, health plans have extended their use of enrollee cost sharing, including deductibles and coinsurance, in an attempt to reduce plan costs. A deductible is a specific dollar amount, commonly $100 to $200, that must be paid by the insured before the health plan will begin paying benefits. Typically, employer plans require the insured to pay a yearly overall plan deductible (also called a "major medical" deductible) prior to plan payment for all covered services except hospital services. In this report, coinsurance is a specified percentage of each bill for a covered medical

service that the insured must pay, commonly 20 percent.[8] The coinsurance is applied to the remaining covered expenses after any deductible has been met by the insured.

Many plans include as a benefit a yearly limit (commonly $1,000 to $2,000) on the amount of cost sharing (coinsurance and sometimes deductibles) that the insured must pay. After that limit is reached, the plan pays 100 percent of any additional expenses for health services covered by the plan.

Arguments exist both for and against the use of enrollee cost sharing. Clearly, cost sharing reduces premium costs because the health plan pays a smaller proportion (less than 100 percent) of the cost of covered health care services. Proponents for cost sharing maintain that requiring enrollees to contribute to the payment of their medical expenses makes them more sensitive to their utilization of medical care, potentially reducing utilization and, thus, health plan costs.

Opponents of the use of enrollee cost sharing argue that it does not reduce utilization since it is physicians, not the patients paying the cost-sharing amounts, who make most decisions about the use of health care services. In addition, it is argued that any reductions in utilization because of cost-sharing requirements are not necessarily desirable, since people may be discouraged from seeking needed medical care.

Studies such as the Rand Health Insurance Experiment (HIE) have found that cost sharing can lead to lower utilization and lower health plan costs. The HIE found that per capita expenses for enrollees in a plan with a 95-percent coinsurance rate (i.e., the percentage paid by the plan) for outpatient services were 28 percent lower than expenses for those in a plan with no out-of-pocket costs.[9]

Employer health plans have increased their use of cost sharing in recent years as a means of controlling health plan costs. In 1980, 65 percent of employer plans in the HHBR paid for hospital and surgery services at 100 percent of R&C; by 1987, only 30 percent of HHBR plans paid for these services at 100 percent.

The use of deductibles has also increased. In 1980, only 19 percent of HHBR plans applied the overall plan deductible to hospital expenses; in 1987, the proportion more than doubled to 44 percent. In 1980, 34 percent of HHBR plans applied the overall plan deductible to surgical expenses; in 1987, the proportion had risen to 57 percent. Also, the proportion of plans requiring a separate deductible for hospital services (in addition to an overall plan deductible for other covered expenses) has doubled from 5 percent in 1980 to 10 percent in 1987.

However, in spite of the increased use of deductibles, fixed-dollar deductible amounts (e.g., $100) represent a declining percentage of covered expenses since the cost of health care services continues to

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[8] Insurance plans define "coinsurance" as the portion of the covered expenses paid by the insurer. For instance, "80 percent coinsurance" means that the insurer will pay 80 percent of the expenses and the insured will pay the other 20 percent. This report will use the more familiar concept of coinsurance as that portion paid by the insured. Thus, "20 percent coinsurance" will mean that 20 percent of the expense will be paid by the insured.

[9] Manning, Willard G., et al. Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment. American Economic Review. June 1987. p. 251-277.

rise. Thus, the value of a fixed deductible as a cost-saving device decreases over time. Enrollee coinsurance amounts do not represent the same problem since they are a fixed percentage (e.g., 20 percent) of the bills for covered services.

e. Cost-containment features

In addition to enrollee cost-sharing requirements, other features included in many health plans are also designed to control premium costs. A discussion of these features and their impact on health plan costs can be found below in part 5.

3. The Typical Plan Used in This Analysis

To assist in this discussion of the impact of health benefits design on health plan costs, the Congressional Research Service (CRS) has identified the specific benefits of a "typical" health plan offered by a medium- or large-size employer. The typical plan requires an overall plan deductible of $100 which applies to all services except inpatient hospital services, reimburses at 80 percent of R&C for all services except hospital and mental health care, and has an annual limit of $1,000 per person on enrollee out-of-pocket cost-sharing amounts for covered services. The typical plan includes coverage for the following benefits: hospital care; certain alternatives to hospital care such as skilled nursing care in an extended care facility, or home health care; surgical services; non-surgical physician services; X-ray and laboratory tests; prescription drugs; and mental health care (inpatient and outpatient). Table 2.1 shows the benefits of the typical employer health plan used in the analysis in this report.

The typical health plan used in this analysis does not include certain benefits, either because only a small percentage of employers offer such benefits (e.g., vision care), or because they are generally covered through a separate plan (e.g., dental benefits).

Using the CRS Health Insurance Premium Model, the 1986 cost of the benefits covered by the typical plan (including 8 percent of claims costs for administrative expenses) was $936 per year for coverage of an individual and $2,466 for coverage of a family.

TABLE 2.1.—Typical Employer Health Plan Benefits

Benefit	Plan provision
1. General plan design	
Overall plan deductible	$100 per person for all benefits except hospital services (maximum of $300 per family)
Overall plan coinsurance: (Applies to many of the services listed below)	80% of reasonable and customary charge
Annual out-of-pocket limit	$1,000 per person (maximum of $3,000 per family); counts only 20% coinsurance for non-mental health care toward the limit
Lifetime maximum	None

TABLE 2.1.—Typical Employer Health Plan Benefits—Continued

Benefit	Plan provision
2. Hospital services	
Inpatient	100% of semiprivate room charge, with 365-day per stay maximum
Outpatient	100% of reasonable and customary charge
3. Hospitalization alternatives: Extended care facility, home health care	80% of reasonable and customary charge
4. Surgical services	80% of reasonable and customary charge
5. Physician services (non-surgical): Office, inhospital, and home visits	80% of reasonable and customary charge
6. X-ray and laboratory tests	80% of reasonable and customary charge
7. Prescription drugs	80% of reasonable and customary charge
8. Mental health services	
Inpatient	100% of semiprivate room charge, with annual 30-day maximum
Outpatient	50% of reasonable and customary charge, with annual 50-visit maximum

Part 4 below describes the major variations in benefit design features found in HHBR employer health plans and the specific benefits in the typical plan used in this analysis. Using the benefits in the typical plan as a constant, the benefits are varied to indicate what the annual typical plan premium for an individual would be for each variation. In this fashion, the effect of different benefit features on the annual premium for an individual (or for a family) can be examined.

4. Detailed Description of Plan Benefits and Their Effect on the Plan Premium

a. General plan design

(1) *General description.* Most health insurance plans are categorized as either "basic plus supplemental major medical" or "comprehensive major medical." This distinction has become more confusing than helpful over the years. However, it is useful to define these terms since they often arise in the description of health insurance plans.

Basic coverage originally meant the type of expense that was fully paid for by the insurer without any coinsurance or deductible. The most common type of basic coverage was for hospital services and physician services provided in a hospital setting.

Major medical insurance was designed to cover expenses, such as physician office visits and prescription drugs, that were not covered as basic expenses. Major medical coverage is generally characterized by the enrollee payment of a deductible and coinsurance, a high ceiling on the total amount payable by the plan, and a limit on cost-sharing expenditures by enrollees. Since basic and major medical insurance plans were usually combined as one package, al-

though often offered by two different insurers, the package became known as "basic plus supplemental major medical."

Comprehensive major medical insurance originally subjected all covered expenses, including hospital-related expenses, to a common deductible and coinsurance. A typical design would be for the enrollee to pay 20 percent of all covered expenses after paying a $100 deductible.

Deductibles and coinsurance have been added to the basic coverage of many plans, and hospital and surgery are now covered in full by many comprehensive plans. Therefore, while the terms are still used, there is frequently little distinction between them. It is easiest to focus on individual plan features to understand the nature of a plan's coverage. This report uses the terms "overall plan deductible" and "overall plan coinsurance" to refer to the major medical features of health plans.

(2) *Overall plan deductible.* As mentioned earlier, many plans use deductibles to help control plan cost. Most employer plans in the HHBR require enrollee payment of an overall plan deductible of $100 to $200 before the plan will pay for any covered services except for hospital coverage. Less than half (44 percent) of the HHBR plans subject hospital coverage to the overall plan deductible.

Of HHBR plans with an overall plan deductible that is a fixed dollar amount, 46 percent have a deductible of $100, 19 percent use $150, and 19 percent use $200. The lower the deductible, the more likely that the HHBR plan covers hospital and surgical expenses at 100 percent. Thus, 40 percent of plans with a $100 overall deductible pay hospital and surgery bills at 100 percent, while only 22 percent of plans with a $200 overall deductible do so.

The typical plan used in this analysis requires enrollee payment of the overall plan deductible before the plan will pay for any covered services, except for hospital care. The application of the deductible to hospitalization alternatives such as extended care and home health care is implicit because most plans will not cover such an alternative unless there has been a hospital stay immediately prior to its use. Since a hospital stay typically results in at least $100 of associated physician charges, the overall plan deductible has usually already been satisfied prior to the use of the hospital alternative.

TABLE 2.2.—Impact of Overall Plan Deductible on Premium

Overall plan deductible	Annual premium per individual	Annual premium change from $100 deductible	
		Dollars	Percent
$0	$1,000	+64	+6.8
50	961	+25	+2.7
100 (typical plan)	936	—	—
150	919	−17	−1.8
200	903	−33	−3.5
300	883	−53	−5.7
400	873	−63	−6.7
500	862	−74	−7.9

Source: CRS Health Insurance Premium Model.

Table 2.2 illustrates the impact of varying the overall plan deductible on the annual cost of the typical plan, which is $936 for coverage of an individual in 1986. The incremental savings from the overall plan deductible decrease as the deductible is raised. For instance, the premium is $25 less if the deductible is changed from $50 to $100, but decreases by only $11 if the deductible is changed from $400 to $500. This relationship occurs because the majority of enrollees have bills of $50 or more, while fewer have bills of $400 or more.

The typical plan used in this analysis does not require payment of the overall plan deductible before the plan pays for hospital services. If the $100 overall plan deductible were also applied to hospital services, the typical plan premium would decrease $2 (−0.2 percent), to $934.

If the $100 overall plan deductible were not applied in the typical plan to either hospital or surgical services (only to physician, X-ray and laboratory tests, and prescription drugs), the typical plan premium would increase by $1 (+0.1 percent), to $937.

(3) *Overall plan coinsurance.* Employer plans generally pay for covered services, excluding hospital care and mental health care, at a specified percentage of the actual charge, limited by what is known as the "reasonable and customary" (R&C) charge. R&C is defined by each insurer as a maximum percentile of the charges for a particular service made by health care providers in a certain geographic area. If a provider's charge for services covered by the plan exceeds the R&C limit, for payment purposes it is reduced to that limit. (Any amounts in excess of the limit are the responsibility of the enrollee.) The plan then pays a percentage of the R&C charge, usually 80 to 100 percent; any remaining portion to be paid by the enrollee is the coinsurance amount.

After payment of the overall plan deductible, the typical plan used in this analysis pays for the following services at 80 percent of R&C: physician services (office, inhospital, and home visits); X-ray and laboratory tests; and prescription drugs. (These services are described in more detail in items e through g, below.) The typical plan counts enrollee coinsurance amounts (the remaining 20 percent of the R&C charge) toward the plan's out-of-pocket maximum, as described in part 4, below. The effect on the plan premium of varying the 80 percent R&C payment percentage for these services is shown in table 2.3.

TABLE 2.3.—Impact of Overall Plan R&C Percentage on Premium

Overall plan R&C percentage	Annual premium per individual	Annual premium change from 80% reimbursement	
		Dollars	Percent
100 percent	$983	+47	+5.0
90	960	+24	+2.6
80 (typical plan)	936	—	—
70	912	−24	−2.6

Source: CRS Health Insurance Premium Model.

(4) *Annual maximum out-of-pocket limit.* Most employer health plans (83 percent of HHBR plans) place an annual maximum on out-of-pocket payments by enrollees (i.e., deductibles and coinsurance) for services covered by the plan. Once that limit is exceeded, the plan pays for the full cost (100 percent) of subsequent covered expenses. The most common out-of-pocket limit for an individual is $1,000 (29 percent of HHBR plans with an individual limit). Most limits are in the $500 to $2,000 range, but a few are as high as $5,000.

Slightly more than half of the HHBR plans (51 percent) consider only the 20 percent enrollee coinsurance payments for non-mental health care in determining whether the limit has been reached. Most plans do not count any of the mental health out-of-pocket amounts (such as coinsurance for outpatient care, or amounts above maximum limits on inpatient days or outpatient visits) toward the limit. Slightly less than half (49 percent) of HHBR plans count the overall plan deductible toward the out-of-pocket limit.

The following two tables show the effect of the out-of-pocket limit and its variations on the premium cost of the typical plan. The typical plan includes a $1,000 annual limit on out-of-pocket expenses, counting only the 20 percent coinsurance for non-mental health care toward the limit.

Table 2.4 shows that the typical plan would cost $7 less (−0.7 percent) if the plan had no maximum out-of-pocket limit. The cost of including an out-of-pocket limit in a plan is small because few enrollees have out-of-pocket expenses that exceed the limit. For example, for the typical plan (which has an out-of-pocket limit of $1,000, an overall plan deductible of $100, and 20 percent enrollee coinsurance on non-hospital costs), the enrollee must have a medical bill for covered expenses of $5,100 to reach the $1,000 out-of-pocket limit (assuming that the deductible does not count toward the limit). If the deductible were to count toward the limit, the medical bill would have to be $4,600 to reach the out-of-pocket limit.

TABLE 2.4.—Impact of Annual Maximum Out-of-Pocket Limit on Premium

Out-of-pocket limit	Annual premium per individual	Annual premium reduction if no out-of-pocket limit	
		Dollars	Percent
Yes (typical plan)	$936	—	—
No	929	−7	−0.7

Source: CRS Health Insurance Premium Model.

Table 2.5 shows the impact on premium cost of variations in the maximum out-of-pocket limit.

TABLE 2.5.—Impact of Amount of Out-of-Pocket Limit on Premium

Out-of-pocket limit	Annual premium per individual	Annual premium change if no out-of-pocket limit	
		Dollars	Percent
$500	$944	+8	+0.9
1,000 (typical plan)	936	—	—
1,500	934	−2	−0.2
2,000	933	−3	−0.3
2,500	931	−5	−0.5

Source: CRS Health Insurance Premium Model.

The cost of the out-of-pocket limit will vary only slightly depending on which enrollee cost-sharing amounts are counted in determining whether the limit has been reached. (See table 2.6.) The typical plan used in this analysis does not count the overall plan deductible toward the out-of-pocket limit. If the $100 overall plan deductible (which in the typical plan applies to all services except hospital services) were to count toward the limit, the annual premium would increase by $1, from $936 to $937. If the typical plan had a $100 overall plan deductible that applied to all services *including hospital care,* the annual premium would be almost the same ($934) if the deductible counted toward the out-of-pocket limit. If the typical plan had a separate $100 hospital deductible (in addition to the $100 overall plan deductible that applies to all other services), the premium ($926) would be $3 higher ($929) if both deductibles counted toward the out-of-pocket limit.

TABLE 2.6.—Impact of Counting Deductible(s) Toward Out-of-Pocket Limit

Deductibles	Annual premium per individual	
	Deductible(s) count toward $1,000 out-of-pocket limit?	
	No	Yes
$100 overall plan deductible (applies to all but hospital services)	[1] $936	$937
$100 overall plan deductible (applies to all services including hospital)	[2] 934	[2] 934
$100 overall plan deductible (applies to all but hospital services), and a $100 separate hospital deductible	[3] 926	[4] 929

[1] Typical plan.
[2] The numbers appear the same because of rounding. Actual numbers are $933.58 in the "No" column and $934.37 in the "Yes" column.
[3] Neither deductible counts toward the limit.
[4] Both deductibles count toward the limit.

Source: CRS Health Insurance Premium Model.

If out-of-pocket payments for mental health services were counted toward the limit, the premium for the typical plan would increase as follows: outpatient mental health coinsurance, +$13 (or 1.4 percent); inpatient mental health amounts above the maximum day limit, +$24 (or 2.6 percent); outpatient mental health amounts above the maximum visit limit, +$1 (or 0.1 percent).

(5) *Lifetime maximum.* Many plans (73 percent of HHBR plans) place a limit on the amount they will reimburse of any insured's

medical expenses over a lifetime. Approximately 60 percent of plans with a lifetime limit have a limit of $1 million or more, which has no effect on premiums since few enrollees will ever reach the maximum. Only about 20 percent of plans with a lifetime limit have a limit of less than $500,000.

b. Hospital benefits

Hospital benefits generally provide coverage for inpatient hospital room and board costs (room, meals, and services provided routinely to all patients, such as general nursing services); any special care expenses (such as intensive care); other inpatient hospital services such as drugs, operating and recovery rooms, X-ray, laboratory and pathological services; and certain services in an outpatient department of a hospital. The average cost of these benefits varies depending on the type, amount, and maximum duration (number of hospital days) of the benefit as covered by the health plan.

(1) *Hospital deductible.* The percentage of plans that require a deductible before paying for hospital expenses has increased dramatically in recent years. According to the 1980 HHBR, 24 percent of employer health plans subjected claims for inpatient hospital services to a deductible; in 1987, that percentage increased to 55 percent. In 1987, 44 percent of plans required the insured to pay the overall plan deductible (usually between $100 and $200, toward which the bills for many different kinds of medical benefits are applied) before the plan paid for hospital benefits. In 10 percent of plans, there was a separate hospital deductible, usually under $200.

The typical employer health plan used in this analysis applies neither the overall plan deductible nor a separate hospital deductible to hospital services. As discussed in part 4.a.(2), applying the overall plan deductible to hospital services would decrease the typical plan's premium to $934, or by $2 (−0.2 percent). If a separate hospital deductible were required, the premium for the typical plan would decrease as shown in table 2.7. Since about 12 percent of enrollees will be admitted to a hospital each year, the savings per $50 increase in the separate hospital deductible would be about $6 (i.e., 12 percent of $50).

TABLE 2.7.—Impact of Separate Inpatient Hospital Deductible on Premium

Separate hospital deductible	Annual premium per individual	Annual premium reduction from $0 deductible	
		Dollars	Percent
$0 (typical plan)	$936	—	—
50	931	−5	−0.5
100	926	−10	−1.1
150	922	−14	−1.5
200	918	−18	−1.9
300	907	−29	−3.1
400	897	−39	−4.2
500	887	−49	−5.2

Source: CRS Health Insurance Premium Model.

(2) *Hospital reimbursement percentage.* Commercial insurers of medium to large employer plans generally pay for hospital room and board charges at a percentage (usually 80 to 100 percent) of the hospital's semiprivate room rate. Blue Cross/Blue Shield plans generally pay the full negotiated cost of most hospital services in member hospitals; in nonmember hospitals, they pay a portion of the semiprivate room rate, plus ancillary costs. A little over half of the HHBR plans reimburse at 100 percent; almost 40 percent reimburse at 80 percent. Less than one percent of plans reimburse at less than 80 percent.

The typical plan used in this analysis pays for hospital bills at 100 percent of the hospital's semiprivate room rate. Hospital intensive care, other hospital non-room and board services, and outpatient hospital care (both routine and emergency) are covered at 100 percent of the R&C charge. Reducing the reimbursement percentage would lower the typical plan's premium as shown in table 2.8. About one-half of the total premium cost pays for hospital expenses, so each 10 percent decrease in reimbursement level could reduce the premium by about 5 percent.

Although table 2.8 examines declining reimbursement percentages, it is important to note that enrollees would not necessarily pay all the hospital amounts not paid for by the health plan because the model assumes that any enrollee-paid amounts would count toward the plan's out-of-pocket limit. Once this limit is reached, the plan would pay 100 percent of subsequent covered medical services, including hospital services.

TABLE 2.8.—Impact of Hospital Reimbursement Percentage on Premium

Hospital reimbursement percentage	Annual premium per individual	Annual premium reduction from 100% reimbursement	
		Dollars	Percent
100% (typical plan)	$936	—	—
90	892	−44	−4.7
80	843	−93	−9.9
70	793	−143	−15.3

Source: CRS Health Insurance Premium Model.

Forty percent of HHBR plans have a maximum limit on the number of hospital days that are covered by the plan per hospital stay. Approximately half of the plans with limits have a maximum of 365 days, which is practically equivalent to no limit since seldom would a hospital stay exceed 365 days. About 30 percent of HHBR plans with limits have a maximum of 120 days; only 5 percent have a maximum of less than 70 days.

Table 2.9 shows the reduction in plan premium using different hospital day maximums. The table shows that, until the maximum number of days per stay is limited to 30 or less, the reduction in the maximum would not have a large impact on the premium. This relationship occurs because few hospital stays exceed 30 days. (The nationwide average length of hospital stay is approximately 6 days.)

TABLE 2.9.—Impact on Premium of Maximum Number of Hospital Days Per Stay

Maximum number of days per stay	Annual premium per individual	Annual premium reduction from 365 days	
		Dollars	Percent
365 days (typical plan)	$936	—	—
270	933	−3	−0.3
180	930	−6	−0.6
90	921	−15	−1.6
60	913	−23	−2.5
30	893	−43	−4.6
15	853	−83	−8.9

Source: CRS Health Insurance Premium Model.

c. Hospitalization alternatives

A number of health care services are available to treat individuals outside of the hospital setting, including skilled nursing care in an extended care facility and home health care. The cost of these services is generally believed to be offset, at least in part, by the savings achieved by treating patients in a less costly setting than the inpatient hospital setting.

(1) *Extended care facility.* Coverage for treatment in an extended care facility (also known as a skilled nursing facility) provides reimbursement for medical care expenses incurred when an individual requires ongoing active medical and skilled nursing care. To preclude coverage of custodial care, health plans limit care in an extended care facility in a number of ways: by requiring a period of hospitalization prior to care in the extended care facility, by determining that the patient needs skilled nursing care on a daily basis, or by requiring that the patient receive care in a Medicare-approved facility.

The proportion of HHBR plans offering extended care facility coverage has been steadily increasing from 67 percent in 1982, to 79 percent in 1984, to 90 percent in 1987. Usually HHBR plans pay a percentage of R&C for such services: 62 percent of plans pay less than 100 percent of R&C, 28 percent pay 100 percent of R&C, and the remaining 10 percent do not cover extended care facility services. Any coinsurance required of enrollees is generally counted toward the plan's out-of-pocket limit. Most HHBR plans have some limit on the maximum amount of extended care covered, either through the overall plan maximum (which is commonly $1 million, in effect no limit at all), through a maximum number of days (typically 60 or 120), or, less commonly, through a dollar limit per day.

The typical plan used in this analysis provides coverage for care in an extended care facility (ECF) or a skilled nursing facility (SNF) at 80 percent of R&C, with the 20 percent enrollee coinsurance counting toward the plan's $1,000 out-of-pocket limit. A deductible is required but is not applied in practice because the plan does not cover ECF/SNF services unless there has been a prior hospital stay, an event that typically results in physician costs sufficient to meet the $100 overall plan deductible. The ECF/SNF benefit is often paid at 100 percent because the enrollee has met the plan's out-of-pocket limit as a result of the hospital stay.

As can be seen in table 2.10, the savings from eliminating the ECF/SNF benefit are minimal (the premium decreases $5, or −0.5 percent). This small effect is due in part to the cost of the benefit being reduced by savings from potentially shorter hospital stays.

TABLE 2.10.—Impact of Extended Care/Skilled Nursing Facility Coverage on Premium

ECF/SNF coverage	Annual premium per individual	Annual premium reduction if no ECF/SNF coverage	
		Dollars	Percent
Yes (typical plan)	936	—	—
No	931	−5	−0.5

Source: CRS Health Insurance Premium Model.

(2) *Home health care.* Home health care benefits pay for a variety of types of skilled care (such as physical, occupational or speech therapy, and services of a registered nurse) provided in the patient's home. Eighty-six percent of HHBR plans cover home health services, typically providing 80 percent reimbursement. The enrollee out-of-pocket amounts generally count toward the plan's out-of-pocket maximum. The typical plan in this analysis covers home health services at 80 percent of R&C and counts the 20 percent enrollee share toward the $1,000 out-of-pocket plan maximum. A deductible is required but is not applied in practice because the plan does not cover home health services unless there has been a prior hospital stay, an event that typically results in physician costs sufficient to meet the $100 overall plan deductible.

Table 2.11 shows that eliminating home health coverage from the typical plan would actually increase the premium ($7, or +0.7 percent) since the cost of the benefit would be much less than the cost of the hospital care it would potentially replace.

TABLE 2.11.—Impact of Home Health Care Coverage on Premium

Home health care coverage	Annual premium per individual	Annual premium increase if no health coverage	
		Dollars	Percent
Yes (typical plan)	$936	—	—
No	943	−7	−0.7

Source: CRS Health Insurance Premium Model.

d. Surgical benefits

Surgical benefits include coverage of surgical procedures, both in the hospital and on an outpatient basis. Ninety-four percent of HHBR plans pay for surgical coverage as a percentage of R&C. Slightly over half of these plans (53 percent) pay at 80 percent of R&C; 36 percent pay at 100 percent of R&C. To encourage surgery in the generally less costly outpatient setting, 35 percent of HHBR plans pay a larger R&C percentage for outpatient surgery than for inpatient surgery (generally 100 percent, as opposed to 80 percent). Six percent of HHBR plans pay according to a fee schedule which

establishes the maximum plan payment for each type of surgical procedure.

In recent years, an increasing proportion of plans require payment of the overall plan deductible before the plan will pay for surgical benefits. In 1980, 34 percent of HHBR plans required the deductible payment, while in 1987 that percentage had risen to 57 percent. Most HHBR plans requiring a deductible pay at 80 percent of R&C; the 43 percent of plans that require no deductible generally pay at 100 percent of R&C.

The typical plan used in this analysis applies the overall plan deductible to surgical services. Table 2.2 above shows the impact on the typical plan premium of varying the amount of the overall plan deductible. The effect on the typical plan's premium of *not* applying the overall plan deductible to surgical services would be to increase the premium $1, or +0.1 percent. (The overall deductible would continue to apply to physician services, X-ray and laboratory tests, and prescription drugs.)

The typical plan pays for all surgical services at 80 percent of R&C. The impact on the plan premium of varying the percentage of R&C for surgery charges is shown in table 2.12. However, enrollees would not necessarily pay all the covered surgical charges left unpaid by the health plan because the model assumes that enrollee-paid amounts would count toward the plan's $1,000 out-of-pocket limit. Once this limit were reached, the plan would pay 100 percent of subsequent covered medical costs.

TABLE 2.12.—Impact of Surgery R&C Percentage on Premium

Surgery R&C percentage	Annual premium per individual	Annual premium change from 80% reimbursement	
		Dollars	Percent
100 percent	$957	+21	+2.2
90	946	+10	+1.1
80 (typical plan)	936	—	—
70	926	−10	−1.1

Source: CRS Health Insurance Premium Model.

e. Physician services (non-surgical)

Non-surgical physician benefits include coverage of physician medical care in the physician's office, in an inhospital setting, and at home. Most (85 percent) HHBR plans subject claims for physician office or home visits to the overall plan deductible, 11 percent require no deductible, and 4 percent have a separate deductible. Almost all plans (98 percent) pay for physician office visits as a percentage of R&C. Eighty-four percent of plans requiring a deductible pay for office visits at 80 percent of R&C; of plans requiring no deductible, 81 percent pay for office visits at 100 percent of R&C.

Physician visits to patients in hospitals are paid by most HHBR plans (92 percent) as a percentage of R&C. Sixty-seven percent of these plans subject inhospital physician visit claims to the overall plan deductible, and most of these (83 percent) pay for such visits

at 80 percent of R&C. Of the 33 percent of plans that require no deductible, 85 percent pay for such visits at 100 percent of R&C.

In the typical plan used in this analysis, physician services are subject to enrollee payment of the overall plan deductible and then are paid at the overall plan coinsurance rate of 80 percent of R&C. The percentage paid by the enrollee counts toward the plan's $1,000 out-of-pocket maximum; once the maximum is reached, the plan pays 100 percent for additional covered services.

If the overall plan deductible did not apply to physician services and the other services to which it applies in the typical plan, the typical plan's premium would increase $64, or +6.8 percent. The impact on the typical plan premium of varying the amount of the overall plan deductible for all the services to which it applies (including physician services) is shown in table 2.2. The premium effect of varying the amount of the percent of R&C paid by the typical plan for physician services (together with other medical services) is shown in table 2.3.

f. X-ray and laboratory tests

Employer plans generally cover diagnostic X-rays and laboratory examinations provided in a doctor's office, in an independent laboratory, or in a hospital outpatient department. Almost all (99 percent) of the HHBR plans pay for such services as a percentage of R&C. A little over half (58 percent) of these plans require payment of a deductible (usually the overall plan deductible), after which most plans (79 percent) reimburse at 80 percent of R&C. The remaining 42 percent of plans that pay R&C require no deductible, and most (94 percent) of these plans pay at 100 percent of R&C. A small proportion (13 percent) of HHBR plans have a yearly maximum on coverage for X-ray and laboratory tests, usually between $100 and $200 dollars.

In the typical plan used in this analysis, X-ray and laboratory tests are subject to enrollee payment of the overall plan deductible and then are paid at the overall plan coinsurance rate of 80 percent of R&C. The percentage paid by the enrollee counts toward the plan's $1,000 out-of-pocket maximum; once the maximum is reached, the plan pays 100 percent for additional covered services. The impact on the typical plan premium of varying the amount of the overall plan deductible for all the services to which it applies (including X-ray and laboratory tests) is shown in table 2.2. The premium effect of varying the amount of the R&C percentage paid by the typical plan for such tests (together with other medical services) is shown in table 2.3.

g. Prescription drug coverage

Prescription drug benefits pay the cost of covered outpatient drugs obtained with a prescription (drugs received in the inpatient hospital setting are paid for as a hospital benefit). Most (80 percent) of the HHBR plans provide prescription drug coverage subject to the overall plan deductible, with the plan paying 80 percent of the bill.

Twelve percent of the HHBR plans have a separate prescription drug plan with a separate premium. These separate plans usually require a copayment of from $1 to $3 per prescription; very few of

such plans (3 percent) require an annual deductible; 8 percent of such plans require neither a copayment nor a deductible; and 8 percent of such plans require coinsurance payments.

In the typical plan used in this analysis, prescription drugs are subject to enrollee payment of the overall plan deductible and then are paid at the overall plan coinsurance rate of 80 percent of R&C. The percentage paid by the enrollee counts towards the plan's $1,000 out-of-pocket maximum; once the maximum is reached, the plan pays 100 percent for additional covered services.

The impact on the typical plan premium of varying the amount of the overall plan deductible for all the services to which it applies (including prescription drugs) is shown in table 2.2. The premium effect of varying the amount of the percent of R&C paid by the typical plan for prescription drugs (together with other medical services) is shown in table 2.3.

Table 2.13 shows the premium cost for the typical plan if it had separate prescription drug coverage with a $2 copayment per prescription (+$9, or +1.0 percent), or no prescription drug coverage (−$31, or −3.3 percent). A separate prescription drug plan costs more than drug coverage that is part of a major medical plan because separate prescription drug plans generally do not require enrollees to pay deductibles or coinsurance, only copayment amounts (typically $2 per prescription).

TABLE 2.13.—Impact of Prescription Drug Coverage on Premium

Prescription drug coverage	Annual premium per individual	Annual premium reduction if no prescription drug coverage	
		Dollars	Percent
Separate plan ($2 copay)	$945	+9	+1.0
Typical plan (ded/coins)	936	—	—
No coverage	905	−31	−3.3

Source: CRS Health Insurance Premium Model.

h. Mental health care

Plans usually apply various special limits to inpatient and outpatient mental health care to limit coverage to short-term non-custodial care.

(1) *Inpatient mental health care.* Just over half of the HHBR plans reimburse for general (non-mental health) hospital services at 100 percent of the average semiprivate hospital room rate. Most of these plans also pay for inpatient mental health services at 100 percent, with a little over half of these plans applying a different annual maximum number of days from other hospital stays, and a little less than half applying the same day maximums. The most common maximum is 30 days, with other plans applying 60 or 120 days.

The typical plan used in this analysis covers inpatient mental health care at 100 percent of the semiprivate room charge, with a 30-day maximum number of days per stay. Table 2.14 shows the reduction in the typical plan premium if the mental health inpatient reimbursement percentage were decreased from 100 to 50 percent.

TABLE 2.14.—Impact of Reimbursement Percentage for Inpatient Mental Health on Premium

Inpatient mental health reimbursement percentage	Annual premium per individual	Annual premium reduction from 100%	
		Dollars	Percent
100% (typical plan)	$936	—	—
90	933	−3	−0.3
80	930	−6	−0.6
75	927	−9	−1.0
50	919	−17	−1.8

Source: CRS Health Insurance Premium Model.

Table 2.15 shows the impact on the annual plan premium of variations in the maximum number of inpatient mental health days covered per year.

TABLE 2.15.—Impact of Annual Maximum Number of Inpatient Mental Health Days on Premium

Maximum number of inpatient mental health days per year	Annual premium per individual	Annual premium change from 30 days	
		Dollars	Percent
365 days	$960	+24	+2.6
120	957	+21	+2.2
90	953	+17	+1.8
60	948	+12	+1.3
30 (typical plan)	936	—	—
15	926	−10	−1.1
0 (no coverage)	902	−34	−3.6

Source: CRS Health Insurance Premium Model.

(2) *Outpatient mental health care.* Most (approximately 95 percent) of 841 HHBR respondents provide some level of outpatient mental health coverage. Most (85 percent) of these require payment of the overall plan deductible, after which the majority of plans (70 percent) pay 50 percent of the R&C charge, 18 percent pay from 71 to 89 percent of R&C, and 7 percent pay from 90 to 100 percent of R&C.

Health care plans use a variety of other limits on outpatient mental health care. Approximately 30 percent of HHBR plans place a limit on the maximum number of outpatient mental health visits covered in a year (typically 50 visits). About 40 percent limit the total amount that the plan will pay for expenses in a year (typically $750 to $1,000). About 35 percent limit the provider's charges per visit. Many plans combine one or more of these limits.

The typical plan in this analysis combines the 50 percent coinsurance with an annual 50-visit limit. The effect of these two provisions is to limit the total mental health outpatient benefit to about $2,000 a year, a level similar to other typical limit combinations.

Table 2.16 shows the increase in the annual premium that would result from increasing the R&C percentage paid by the typical plan from 50 percent to 100 percent. Eliminating the coverage would decrease the premium $6, or −0.6 percent. In addition, the difference between no coverage of outpatient mental health and coverage of

50 percent reimbursement of all mental health care is a $7 increase (+0.7 percent) in the annual premium.

TABLE 2.16.—Impact of R&C Percentage for Outpatient Mental Health on Premium

Outpatient mental health R&C percentage	Annual premium per individual	Annual premium change from 50% R&C	
		Dollars	Percent
No coverage	$930	−6	−0.6
50% (typical plan)	936	—	—
80	943	+7	+0.7
90	945	+9	+1.0
100	949	+13	+1.4

Source: CRS Health Insurance Premium Model.

i. Well-baby care

Forty-seven percent of HHBR plans include coverage for "well-baby care," which means coverage of routine office visits and immunizations for children. Well-baby care is usually covered at 80 percent of R&C, subject to the overall plan deductible.

The typical plan used in this analysis does not include coverage for well- baby care. If such coverage were included, it would be a benefit under family coverage, not coverage for an individual, and therefore only the premium for family coverage would be affected. If well-baby coverage were included in the typical plan at a payment rate of 80 percent of R&C, the annual premium for family coverage would increase from $2,465 to $2,492, a $27 increase (+1.1 percent).

j. Summary of health plan benefits

This discussion has illustrated, through use of the CRS Health Insurance Premium Model, the impact of various health plan benefits on the premium of a typical medium to large employer health plan. Variations in the following features appear to have the most significant impact (i.e., more than 1 percent) on the typical plan premium amounts for an individual enrollee. These features are summarized in table 2.17.

(1) *Overall plan deductible.* The typical plan includes a $100 deductible that applies to all services except hospital care. The typical plan premium would increase by 3 percent if the overall plan deductible were lowered to $50 and by 7 percent if the overall plan deductible were eliminated. The typical plan premium would decrease by 2 percent if the deductible were increased to $150 and by 8 percent if the deductible were increased to $500.

(2) *Overall plan coinsurance.* The typical plan pays 80 percent of R&C charges for a number of covered services, including physician services, X-ray and laboratory tests, and prescription drugs. The 20 percent coinsurance paid by enrollees counts toward the plan's $1,000 limit on out-of-pocket costs. Increasing the plan's R&C percentage to 100 percent would increase the typical plan's premium by 5 percent; decreasing the percentage to 70 percent would decrease the premium by 3 percent.

(3) *Separate inpatient hospital deductible.* The typical plan does not apply a separate hospital deductible to hospital services. The typical plan premium would decrease by 1 percent if there were a $100 deductible, and by 5 percent if there were a $500 deductible.

(4) *Hospital reimbursement percentage.* The typical plan pays 100 percent of the semiprivate room charge for hospital services. The typical plan premium would decrease by 5 percent if the payment percentage were lowered to 90 percent, by 10 percent at 80 percent, and by 15 percent at 70 percent reimbursement.

(5) *Maximum number of hospital days per stay.* The typical plan covers 365 days of hospital care per stay. The typical plan premium would decrease by 1 percent if the number of covered days were decreased to 180, by 5 percent if covered days were decreased to 30, and by 9 percent if covered days were decreased to 15.

(6) *Surgical R&C percentage.* The typical plan pays 80 percent of R&C charges for surgical services. The typical plan premium would increase by 2 percent if coverage were at 100 percent of R&C and would decrease by 1 percent if coverage were at 70 percent of R&C.

(7) *Prescription drugs.* The typical plan covers outpatient prescription drugs. The typical plan premium would decrease by 3 percent if prescription drugs were not covered and would increase by 1 percent if covered through a separate prescription drug plan with a $2 per prescription copayment.

(8) *Inpatient mental health.* The typical plan covers inpatient mental health services at 100 percent of the average semiprivate room rate, with an annual limit of 30 days. Decreasing the reimbursement level to 80 percent would decrease the typical plan premium by 1 percent; decreasing it to 50 percent would decrease the premium by 2 percent. Changing the annual number of days covered would change the premium as follows: 365 days, +3 percent; 90 days, +2 percent; 60 days, +1 percent; 15 days, −1 percent; no coverage, −4 percent.

Table 2.17 displays summary information about the effects of these selected features on the typical plan premium.

TABLE 2.17.—Effect of Selected [1] Benefit Features on Typical Plan Premium

Benefit feature	Typical plan benefit	Range of benefit variation	Range of premium change from typical plan premium (in percent)
Overall plan deductible	$100	$0 to $500	+7 to −8
Overall plan coinsurance	80 percent	100 to 70 percent	+5 to −3
Separate hospital deductible	$0	$0 to $500	0 to −5
Hospital reimbursement percentage.	100 percent	100 to 70 percent	0 to −15
Maximum number of hospital days per stay.	365 days	365 to 15 days	0 to −9
Surgery R&C percentage	80 percent	100 to 70 percent	+2 to −1
Prescription drugs	Yes	Separate/Yes/No	+1 to −3
Inpatient mental health:			
R&C percentage	100 percent	100 to 50 percent	0 to −2
Days per year	30 days	365 to 0	+3 to −4

[1] These features have been selected because they affect the premium for the typical plan by more than 1 percent.

Source: CRS Health Insurance Premium Model.

5. Cost Containment Features

This discussion focuses on the various features included in health plans to control the cost of the plan. This discussion does not include cost containment mechanisms that have become generally accepted as standard features of most health insurance plans, such as claims review (the systematic examination of claims prior to plan payment) or coordination of benefits (the process by which insurers avoid duplicate payment for losses when an insured is covered under more than one policy for the same benefits). This discussion groups cost containment features into the following six categories: alternative financing arrangements, premium cost sharing, enrollee cost sharing, alternatives to hospitalization, managed care, and health promotion.

Where possible, the estimated cost savings (in terms of percent of premium) that could result from including various cost containment features in a health plan are indicated. These estimated savings are the typical percentages that major insurance companies apply when pricing health insurance plans for medium and large employers. They are not necessarily the same savings estimates as those resulting from research that may have been conducted on the cost containment features. The cost containment features discussed are summarized in table 2.18.

The discussion on cost containment features in this part of the report focuses on features added to conventional (indemnity and service benefit) plans. Part 6 includes a discussion of alternatives to conventional health plans, such as HMOs and PPOs, and their impact on health plan costs.

a. Alternative financing arrangements

Prior to the 1970s, most employer health plans were fully insured, meaning the employer paid premiums to an insurance carrier who paid employee health claims. Employers might change insurance carriers to lower their costs or avoid an unusually high rate. If the change was due to a carrier's increasing premiums to recoup a catastrophic loss (defined as a claim unlikely to recur on a regular basis), a new insurance carrier could produce a real savings for the employer. However, if a carrier artificially lowered a rate during a competitive bidding process, savings would be short-lived because future rate increases would erase any savings.

In response to rising health care costs and resulting demands from employers for lower premium costs, insurers began offering a number of approaches to health plan financing.

(1) *Premium delay or drag.* Carriers offer delays of 30 to 90 days on premium payment. Insurers estimate that employers can save 0.5 to 1.0 percent on improved investment return under this arrangement since they can invest and receive a return on the funds that would otherwise have been spent on premiums during the delay period.

(2) *Retrospective rate analysis.* Employers pay a premium discounted by 5 to 15 percent throughout the plan year. However, if premiums are insufficient to cover claims, reserves, and expenses, an additional premium is due following the close of the plan year.

This approach can save employers from 0.2 to 0.5 percent in improved investment return.

(3) *Minimum premium plans.* Under this approach, large employers (with generally at least 500 employees covered by the health plan) pay a small premium to a carrier to cover only the administrative expenses of processing claims and pooling charges for payment of very large claims; the employer holds money in reserve to pay for the actual claims amounts. The employer can save approximately 1.8 percent in lower State premium taxes and 0.5 percent on increased investment return.

(4) *Self-funded plans.* Large employers can also completely insure themselves by funding all claims costs, usually purchasing administrative services for the actual processing of claims from a carrier. Savings typically are 2 percent on State premium taxes, 0.5 to 1 percent on increased investment earnings, and 0.5 to 1 percent on lower administrative expenses. In addition, there could be a reduction of up to 2 percent on claims costs if a self-funded plan eliminates benefits that otherwise would have been required under a State mandate. (ERISA exempts self-funded plans from State mandated health benefit laws.)

During the mid-1970s, it became apparent that alternative financing alone was not sufficient to contain costs, and employers and carriers turned to other methods.

b. Premium cost sharing

Premium cost sharing seeks to lower the employer's overall cost of financing health care through two techniques, premium cost shifting and decreased participation.

(1) *Premium cost shifting.* Premium cost shifting requires employees to pay a portion (or a higher portion) of the premium for their own coverage and/or any dependents. Through cost shifting, the overall cost of coverage is not lowered; however, the employer's costs are reduced. In 1975, 62 percent of HHBR companies paid the full premium cost of employee coverage, and 36 percent paid the full cost for dependents, compared to 57 percent and 32 percent, respectively, in 1987.

(2) *Decreased participation resulting from cost shifting.* In addition to saving the employer the amount of premium shifted to the employees, cost shifting usually produces an additional saving to the employer due to decreased participation in the health plan. If employees have to pay some portion of the health coverage for dependents, some may decide to drop the coverage, especially if their dependents have coverage elsewhere (generally through the spouse's employment). Decreased participation can reduce the cost to the employer of family coverage by up to 20 percent in the short-term. While requiring employee contributions may decrease participation in one plan, it may increase participation in another plan if spouses switch plans to escape employee premium contributions. However, if the practice of employee-paid dependent coverage becomes widespread, cost shifting between employee plans would be minimized.

c. Enrollee cost sharing

As discussed above, employers have increasingly required enrollees to pay a portion of their covered health care bills in order to reduce utilization and health plan costs. Increasing the plan deductible from $100 to $150 can typically save a plan about 2 percent; extending deductibles and 20 percent coinsurance to hospital and surgical benefits (and including a $1,000 limit on enrollee cost-sharing amounts) can save a plan up to 8 percent.

d. Alternatives to hospitalization

To encourage less costly alternatives to hospitalization, health plans sometimes provide financial incentives when services are provided in the following alternative settings:

- A nursing home for skilled nursing care in a non-hospital environment;
- Home health care for continued services while recuperating at home;
- Hospice services for care of terminally ill patients;
- Birthing centers for childbirth in a more home-like environment;
- Urgent care centers for use as an alternative to hospital emergency rooms; and
- Ambulatory care centers for outpatient surgical procedures.

Thirty-five percent of HHBR plans reimburse outpatient surgery at a higher rate than inpatient surgery. A small but increasing number of plans pay for alternative facilities at 100 percent, while paying less than 100 percent for hospital coverage. For example, if hospitalization is paid by the health plan at less than 100 percent, such alternative services would be paid at 100 percent to encourage their use. Because these hospital alternatives are less costly, plan costs are reduced. It is difficult to quantify the savings from alternative services; insurers estimate savings of from 1 to 4 percent.

e. Managed care

"Managed care" is a term used to describe features of a health care system which seek to limit or control enrollees' use of covered services. The most common form of managed care system is the HMO. In the last five years, several managed care approaches have become prevalent in conventional health plans. If services received are not approved or do not follow procedures outlined by the plan, the insurer may deny reimbursement for those services.

(1) *Hospital pre-certification.* Hospital pre-certification, used for both cost and quality control, involves advance review by the health plan of the appropriateness of a planned non-emergency hospitalization, the hospital length of stay, and the course and quantity of treatment. In 1987, 57 percent of HHBR plans required hospital pre-certification, compared with only 27 percent in 1985.

The difference between physician-requested hospital days and approved/ utilized days can be quantified as a savings. Such savings are reported to be around 1.5 percent after administrative expenses and any "replacement" expenses (for example, home health care) are deducted.

(2) *Second surgical opinion.* To prevent unnecessary surgery from being performed, 54 percent of HHBR plans require (and pay for) a second opinion from a consulting physician or surgeon concerning the need for surgery which another surgeon has recommended. If the second opinion is not obtained, most plans reduce the amount of the benefit paid by the plan. While many studies of cost savings from requiring second surgical opinions have produced positive results, critics point out that such studies do not track postponed surgery that may occur in the future. Consequently, savings from second surgical opinion programs appear to be minimal (less than 1 percent).

(3) *Case management.* Case management is a recently developed technique designed to reduce the cost of very high claims for such conditions as spinal cord injuries, certain psychiatric conditions, cardiac conditions, and cancer. The health plan assigns a case manager to identify ways of removing impediments to the individual's discharge from the hospital to an extended care facility or to the home by recommending, for example, specific treatment courses or modifications to the home.[10] Forty-five percent of HHBR plans reported using case management in 1987. Insurers estimate that a plan using case management can realize a 2 to 5 percent saving (after deducting administrative costs).

f. Health promotion

Health promotion is a fairly recent development in employer cost containment efforts. Health promotion attempts to lower cost by lowering the need for services. Seventy-eight percent of employers use some form of health promotion programs, such as smoking cessation, substance abuse, weight reduction, and stress management programs. Intuitively, it makes sense that health promotion would lower medical costs. However, it is difficult to quantify such savings because it is hard to hold all other variables constant when studying the impact of such programs. In addition, their effects may be long-term and not apparent in a single year. Generally, savings estimates range from 1 to 5 percent.

g. Summary of cost containment features

Table 2.18 provides a list of health plan cost containment approaches and the estimated percent of premium savings used by insurers for these approaches. It should be noted that many of these measures overlap. For example, use of case management is feasible only if the plan covers home health or other hospital alternatives. For this reason, the projected saving for each cost containment feature should not be summed to arrive at a total potential savings amount.

[10] This form of "case management," involving intervention for a few high-cost (generally hospitalized) patients, is different from activities, also known as "case management," that involve ongoing management of the medical and social services required by a defined client population.

TABLE 2.18.—Common Insurer Savings Estimates From Cost Containment Approaches

Cost containment approach	Percent of HHBR plans using	Common insurer estimates of savings (percent)
Alternative financing		
Cash flow features	28	1
Minimum premium	22	3
Self funding	44	3-5
Premium cost sharing	59	1-20
Enrollee cost sharing		
Deductible increase/extension	80	2
Coinsurance increase/extension	43	2-10
Alternative facilities		
Covered	90	1
Paid at higher percent than hospital	39	1-4
Managed care		
Hospital pre-certification	57	1-2
Second surgical opinion required	54	<1
Case management	45	2-5
Health promotion	78	1-5

Note.—Savings from these various approaches are not additive.
Source: Hay/Huggins Company, Inc.

6. Alternative Delivery Systems

As health care costs continued to spiral, employers and insurers began investigating alternatives to traditional approaches of delivering medical services, and the marketplace responded with a proliferation of new systems. These systems, including HMOs and PPOs, can be offered by an employer as an alternative to a conventional (i.e., indemnity or service benefit) health plan or, less commonly, can be offered alone.

a. Health maintenance organizations (HMO)

An HMO is an arrangement in which comprehensive services are provided in exchange for a prepaid (monthly) per capita fee. Medical services are provided with little or no participant cost sharing. Sixty-eight percent of 790 HHBR survey respondents offered one or more HMO options in 1987, 29 percent did not offer HMOs, and 3 percent offered HMOs only.

The HMO participants must use health care providers designated by the HMO, and the HMO primary physician generally acts as a "gatekeeper" in controlling unnecessary medical utilization because the plan covers only those services referred by the primary physician. The primary physician's decisions may be subject to HMO review, or the physician may be given financial incentives to limit referral services. HMOs may also emphasize preventive care by covering routine physical exams and visits and "well child" care. The gatekeeper and prevention concepts in theory permit the HMO to provide services on a cost-effective basis. Gatekeeping can eliminate unnecessary services, and preventive care can eliminate some higher cost services by preventing major illness.

HMOs have been shown in controlled studies to reduce the use of services compared to equally comprehensive indemnity plans. However, few indemnity plans are as comprehensive as HMOs. Moreover, some have questioned whether HMOs achieve savings for the employer when enrollees are offered both an HMO and an indemnity plan in a "dual choice" program. First, most employers are required by law to make the same premium contribution to an HMO as to a conventional plan. Everything else being equal, then, HMOs would be a neutral cost factor to the employer.

Second, HMOs are believed to attract younger, healthier employees who are more receptive to the HMO approach and who are less likely to have longstanding relationships with a primary physician. The younger, healthier employees choosing an employer's HMO coverage may leave a competing employer-offered conventional plan with a higher percentage of less healthy persons who use more services and drive up the cost of the conventional plan. The additional cost is borne by the employer (and by the employees who remain in the conventional plan, depending on the premium cost-sharing arrangement). If the employer's contribution to the conventional plan increases, the employer's contributions to the HMO must rise as well.

b. Preferred provider organizations (PPO)

A recent development is the PPO. This term applies to a variety of arrangements in which health care providers contract (directly or through an intermediary) with employers to offer services at reduced rates. Enrollees have an incentive to use the "preferred providers" because they generally are required to pay lower cost-sharing amounts for such services. This arrangement differs from an HMO as employees are free to utilize nonpreferred providers and have a portion of their claims paid. In 1987, 16 percent of 662 HHBR respondents offered PPO arrangements.

Premium savings from the use of PPOs range from 2 to 10 percent. If the PPO covers all services including hospital services, then the overall savings could be 5 to 10 percent. If the PPO covers only physician services, then the overall plan cost savings might be only 2 to 4 percent. Since PPOs are usually integrated into a conventional plan, employers do not face the same potential disadvantage of the HMO option (i.e., lower-cost employees selecting the option, thus driving up the cost of the indemnity plan).

c. Multiple choice and hybrid arrangements

Employers may offer employees a multiple choice of a conventional indemnity plan, a PPO, or an HMO when they enroll in the employer's health plan or during a periodic open enrollment period. If an employee chooses the indemnity plan, the employee's choice of providers is not limited, and payment for services is made subject to a deductible and coinsurance. If the employee chooses the HMO and receives care from the HMO provider, the benefit will be fully covered or covered with a modest copayment; if the employee receives care from a provider not associated with the HMO, payment is not made. If an employee chooses the PPO and receives services from a participating provider, the benefit is usually covered in full or covered with modest coinsurance; if the em-

ployee chooses to go to a nonpreferred provider, payment is made under the indemnity plan, subject to a deductible and coinsurance.

Several major insurance carriers have introduced a hybrid or "bundled" approach where the employee's choice of provider determines the HMO or indemnity payment approach. If, for a particular service, the employee chooses an HMO provider, the benefit is fully covered or covered with a modest copayment. If the employee chooses a provider not associated with the HMO, the payment is covered under the indemnity plan subject to a deductible and coinsurance.

Under this bundled approach, known as an "open access" plan, the employee has the flexibility to choose providers, and thus the type of financing, at the point of service, rather than being locked into one type of plan and its associated providers. It is hoped that employees will be attracted to the HMO providers, giving the HMO the opportunity to manage their overall care and to potentially reduce plan costs.

B. POPULATION CHARACTERISTICS AFFECTING PREMIUMS IN EMPLOYER-BASED PLANS

1. Introduction

The claims costs that make up health plan premiums are not only affected by plan provisions as demonstrated above, but also vary with the demographic composition and geographic location of the covered population. For example, two otherwise similar groups covered by identical plans, but who live in different regions of the country, will have different premiums because of regional variations in health care prices and medical practice patterns.

This section focuses on demographic and geographic factors and their effects on health plan premiums. Five factors affecting claims costs are examined: age and sex, family structure and size, region, urban/rural location, and income. In addition, two factors affecting administrative costs are examined: firm size and pooling mechanisms.[11] The following subsections demonstrate how group-specific premiums vary with changes in each factor. Health plan premiums are estimated by modifying the standard premium for an individual covered by the typical employer-sponsored plan analyzed in this chapter.[12]

2. Factors Affecting Claims Costs

a. Variation by age and sex

Health plan premiums increase with age; the older a person gets, the greater the incidence and severity of illness a person faces. Persons over the age of 60 can expect group-specific premiums of twice the national average. In addition, there is variation in premiums

[11] Other factors such as occupation may also affect premiums but are not considered here to minimize complexity.

[12] The CRS health insurance model uses 1986 data from the Current Population Survey (CPS) and values health plan premiums in 1986 dollars. The standard premiums for the typical plan ($936 for an individual and $2,466 for a family) represent weighted averages adjusted for age and sex, family size and structure, region, urban vs. rural location, income, and firm size. The model adjusts the standard cost of the typical plan based on factors used in underwriting by major insurance companies.

by sex. As shown in table 2.19, females have higher health care premiums than males until age 55. The difference in premiums for males and females is greatest during childbearing years; from age 30 to 39, average annual premiums for women exceed costs for men of the same age by over 60 percent.

TABLE 2.19.—Variation in Average Annual Plan Premiums for the Typical Plan, by Age and Sex, 1986

Age	Male	Female
Under 25	$468	$702
25 to 29	515	749
30 to 34	515	842
35 to 39	608	983
40 to 44	749	1,030
45 to 49	983	1,076
50 to 54	1,217	1,310
55 to 59	1,451	1,451
60 to 64	1,872	1,872

Note.—Premium adjustments by age and sex are based on underwriting practices of major insurance companies.
Source: CRS Health Insurance Premium Model.

b. Variation by family structure and size

Health plan premiums are also affected by family size and structure. The CRS Health Insurance Premium Model can produce typical plan estimates for persons with various family sizes and structures, up to a family size of eight.

The average annual premium for a typical individual covered by the typical plan is $936. The premium for a married couple would be slightly more than twice the premium for an individual, or $1,947, because a woman is more likely to be brought into a plan under spousal coverage, and women have higher claims costs than men on average.[13]

Children (under the age of 18) average 70 percent of the plan cost of adults because they use substantially fewer hospital and surgical services. Thus, while the premium for an average childless couple would be $1,947, a typical couple with one child would have an average annual premium of $2,621.

c. Variation by region

Premiums for individuals covered by the typical plan were calculated for the nine Census regions: New England, Mid-Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific regions.[14]

[13] If the plan had a coordination of benefits provision, the plan cost would be reduced by 2.5 percent to $1,900.

[14] The States in each region are: *New England:* Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont. *Mid Atlantic:* New Jersey, New York, Pennsylvania. *East North Central:* Illinois, Indiana, Michigan, Ohio, Wisconsin. *West North Central:* Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota. *South Atlantic:* Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia. *East South Central:* Alabama, Kentucky, Mississippi, Tennessee. *West South Central:* Arkansas, Louisiana, Oklahoma, Texas. *Mountain:* Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming. *Pacific:* Alaska, California, Hawaii, Oregon, Washington.

These area-specific premiums have been adjusted to reflect the distribution of the population in rural and urban areas within the region.

As chart 2.1 shows, the average annual premium for an individual ranges from a low of $795 in the East South Central region to a high of $1,154 in the Pacific region, a 45 percent difference. This variation in premiums reflects differences in health care costs, medical treatment practices, and utilization throughout the country.

d. Variation by group location

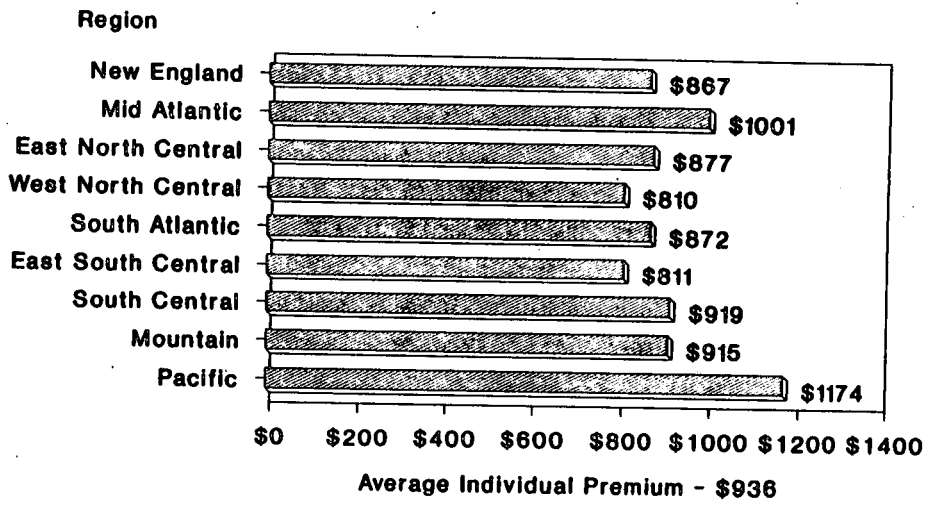
Health care premiums in general are higher in urban areas than in rural areas. The CRS Health Insurance Premium Model is designed to account for these premium variations. As chart 2.2 shows, the average annual premium for individuals covered by the typical plan in urban areas is consistently higher than the cost for individuals in rural areas. The average annual premium for individuals in urban areas ($976); is 18 percent higher than the $827 premium in rural areas.

e. Variation by family income

In general, if insured by a plan with cost-sharing requirements, low-income persons use fewer health care services than higher-income persons. This is because cost-sharing requirements are more likely to deter low-income persons from obtaining services.[15] On the other hand, high-income persons generally have sufficient financial resources to pay out-of-pocket costs for medical care.

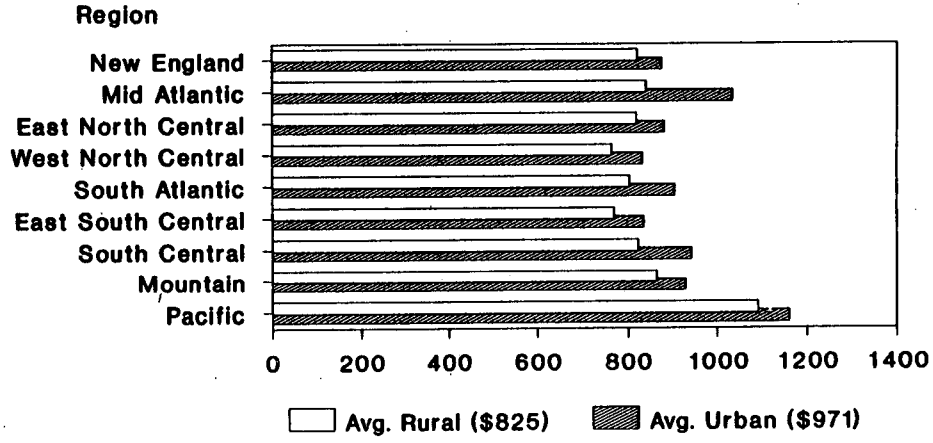
[15] For a discussion of the use of services by low-income insured and uninsured persons see: Davis, Karen, and Diane Rowland, "Uninsured and Underserved: Inequities in Health Care in the United States," Milbank Memorial Fund Quarterly, v. 61, no. 2, 1983. p. 149-150.

Chart 2.1
Typical Plan Premiums for Single Insured Individuals, by Region, 1986



Note: Premium adjustments are based on underwriting practices of major insurers
Source: CRS Health Insurance Prem. Model

Chart 2.2
Typical Plan Premiums for Single Insured Individuals, by Region and Urban/Rural Location, 1986



Note: Premium adjustments are based on underwriting practices of major insurers
Source: CRS Health Insurance Prem. Model

The average annual family income of persons in the standard population in 1986 was $25,000. However, if a group had an average family income of less than $15,000 per year, the average annual plan cost for the typical plan would be 10 percent lower than for those in the standard population, or $842. (See table 2.20.) On the other hand, persons in families earning $50,000 or more per year could on average be expected to have an annual plan cost of $1,076—15 percent higher than for the standard population.

TABLE 2.20.—Variation in Average Annual Plan Premiums For the Typical Plan, by Family Income, 1986

Average family income	Average annual premium for the typical plan
$14,999 or less	$842
15,000–19,999	889
20,000–29,999	936
30,000–39,999	983
40,000–49,999	1,030
50,000 or more	1,076

Note.—Premium adjustments by income are based on underwriting practices of major insurance companies.
Source: CRS Health Insurance Premium Model.

3. Factors Affecting Administrative Costs

The premiums presented above included administrative costs of 8 percent of claims costs. However, administrative costs can be expected to vary with the size of the group covered by a plan.[16]

The size of the group depends in part on any pooling mechanism incorporated in the health insurance plan. If firms are expected to obtain coverage as separate groups, and no pooling mechanism is set up or available to enlarge the covered group, then firm size remains a factor to be considered in estimating administrative costs. However, if a pooling arrangement were incorporated in the plan, firm size might be less significant in determining administrative costs than would be the specifics of the pooling arrangement.

Administrative costs vary by the number of employees covered by a plan. (See table 2.21.) For the smallest plans, administrative expenses are around 40 percent of claims. The administrative expenses for the largest plans are 5.5 percent of claims.

Three-fourths of the expenses for the smallest plans are for general administrative expenses, risk and profit charges, and commissions. Many of the administrative and commission expenses are fixed dollar amounts, while others drop sharply as a percentage of claims as the number of employees increases. Insurers reduce the risk and profit charges as a plan grows because there is less likelihood of unexpected losses and because insurers are more likely to compete for large plan business. The commission scale for brokers includes a large element of fixed dollar costs. For the largest plans, these three categories are less than 2 percent of claims.

[16] See chapter 2 in report number 2 of this series, "Insuring the Uninsured: Options and Analysis."

TABLE 2.21.—Insurance Company Administrative Expense Breakdown for Conventional Funding

(Expressed as a Percent of Incurred Claims)

Number of employees	Claims admin.	General admin.	Interest credit	Risk and profit	Commissions	Premium taxes	Total
1 to 4	9.3	12.5	−1.5	8.5	8.4	2.8	40.0
5 to 9	8.6	11.2	−1.5	8.0	6.0	2.7	35.0
10 to 19	7.2	9.2	−1.5	7.5	5.0	2.6	30.0
20 to 49	6.3	7.6	−1.5	6.8	3.3	2.5	25.0
50 to 99	4.3	4.8	−1.5	6.0	2.0	2.4	18.0
100 to 499	4.1	4.0	−1.5	5.5	1.6	2.3	16.0
500 to 2,499	3.9	3.2	−1.5	3.5	0.7	2.2	12.0
2,500 to 9,999	3.8	1.4	−1.5	1.8	0.3	2.2	8.0
10,000 or more	3.0	0.7	−1.5	1.1	0.1	2.1	5.5

Note.—Adjustments by firm size are based on underwriting practices of major insurance companies.
Source: Hay/Huggins Company, Inc.

Claims administration charges have some economies of scale since most claims for a large plan are processed in a similar manner. However, since each claim has to be examined and a separate payment made, claims administration charges (as a percentage of incurred claims) do not fall below 3 percent for even the largest plans. Charges range up to about 9 percent for the smallest plans.

Interest credit is about the same for all plan sizes because the proportion of claims held in reserve is about the same. The small variation in State premium taxes as a percent of claims occurs because the taxes are charged on total premiums (claims plus other expenses).

Table 2.21 shows the range of administrative expenses for a conventionally insured plan. Medium and large employers are able to pursue other approaches that further reduce the administrative charges. A minimum funding approach would lower the administrative charges by 2 percent. Self funding would lower the administrative charges by 3 percent. In either approach, most of the additional savings are achieved through reductions in premium taxes.

In addition, expenses will vary by the type of insuring organization, and some plans will not be subject to premium taxes. However, the general tendency for expenses per enrollee to decrease rapidly as the size of the employer grows applies to all types of insurance arrangements.

III. PREMIUM ISSUES IN COVERING THE POTENTIALLY INSURED

A. INTRODUCTION

In the previous section, the effects of changes in plan provisions on the standard premium for the employed insured were shown, and the effects on group-specific premiums of changes in the size and characteristics of the covered group were also demonstrated. This section examines the possible effect of an employer mandate on the premiums for employer-based insurance. The effect is created by differences between the characteristics of individuals currently insured through such plans and those that would become insured through an employer under a mandate. The individuals who

would become insured are referred to here as the "potentially insured."

1. Potentially Insured Population [17]

For purposes of this analysis, an illustrative population is used to demonstrate the effects of population characteristics on health plan premiums. The characteristics of the entire uninsured population, or any subgroup of the uninsured population, could be used to adjust standard premiums.

The illustrative population used in this analysis is the population that would receive coverage as a result of an employer-based mandate extended to all employers, and to all employees working 10 or more hours per week.[18] Also included in the demographic profile are dependents who would receive coverage as a result of a mandate.[19] To distinguish the illustrative population from the standard population (consisting of all persons currently covered through employer-based coverage), this population is referred to as the potentially insured population.

The potentially insured population differs from the entire uninsured population with respect to income, age and sex, and family structure. These differences would result in premiums for the potentially insured population that would be higher than those for the entire uninsured population, though lower than premiums for the currently insured population. For a further discussion of the characteristics of the potentially insured population, see appendix A.

2. Premium Adjustments for the Potentially Insured

The baseline unit of analysis in this chapter is the premium for the typical plan, which is based on the benefits and premiums of the typical HHBR employer plan. Demographic differences between the currently insured and the potentially insured populations would cause the premium for the typical plan to be different for a group composed primarily of potentially insured individuals.

For example, the potentially insured population has a greater percentage of persons age 60 and over than the currently insured population, and therefore is more likely to have higher than average claims costs.

On the other hand, the potentially insured have lower average incomes than the insured population, a factor leading to lower premiums. As noted earlier, cost-sharing features may deter utilization by low-income enrollees. In addition, lower premiums are associated with the family size and structure of the potentially insured population.

Finally, many potentially insured are employed in small firms that traditionally must pay more for health insurance coverage because of higher administrative costs associated with the coverage of small groups. The size of an administrative charge adjustment

[17] For a definition of the potentially insured, see footnote 5, p. 12 above.

[18] See chapter 3 for a discussion of how the number of potentially insured that would be covered by an employer mandate varies with the hours-of-work eligibility cut-off point.

[19] If dependents report that they attend college, it was assumed that they remain covered as dependents up to age 22.

could be limited by offering the plan as part of a pooling mechanism.

These factors can be analyzed separately to examine the influence that each might have on a specific plan that extended coverage to persons who are currently uninsured. Such analysis does not imply that proposals to expand insurance coverage would treat the potentially insured as a group. In fact, proposals for extending health insurance could be developed that would cause new groups to be formed, including some, but not all, potentially insured individuals.

The estimated effects on plan premiums of different demographic, income, and employer size factors are indicative of the magnitude of each potential effect, *but are not an estimate of the premiums for the uninsured as a group.* The summary section below discusses the relative importance, *on average,* of the various factors affecting plan premiums. More precise measurement of any particular effect depends on the specific method of grouping the uninsured to extend health insurance coverage to them.

Finally, for consistency in the presentation, and for ease in making general comparisons across the various sections of the chapter, administrative costs for most of the analysis are assumed at 8 percent of annual claims costs. This should not be taken as an estimate of the expected administrative costs of coverage for the uninsured because the uninsured disproportionately work for small firms, and administrative costs vary greatly by employer size. As noted above, additional amounts added to the claims cost by private insurance companies for administrative costs are highly dependent on the number of persons in the insured group. Section III.B contains an illustration of how firm size and pooling mechanisms affect administrative costs and, thus, total plan premiums. A range of the potential for reduction in administrative costs due to particular pooling approaches is included in that discussion.

B. CHARACTERISTICS OF THE POTENTIALLY INSURED AND EFFECTS ON PREMIUMS

1. Introduction

The number of persons grouped together and the characteristics of persons in the group will vary depending on the specifications of a health plan proposal. In turn, estimates of average annual plan premiums will vary depending on the number of persons grouped together and the characteristics of those persons.

This section analyzes the characteristics of the potentially insured population and how their characteristics would affect health plan premiums for a group they comprise. In this analysis, the characteristics of the standard population are varied, while the provisions of the typical plan are held constant. In this way, the CRS Health Insurance Premium Model can be used to generate premiums for a group with characteristics likely to be found among potentially insured persons.

2. Premium Adjustments for Characteristics

The characteristics of the potentially insured differ from those of the currently insured population in a variety of ways that affect

plan premiums. Some demographic differences would tend to lower health insurance premiums for groups comprised mainly of potentially insured persons, and some would increase premiums. Premiums would be upwardly adjusted to account for the age and sex and firm size characteristics of the potentially insured, and would be decreased to account for the fact that they are more likely to be low-income and single.

In total, these factors suggest that holding the provisions of the typical plan constant and varying the profile of the standard population to match the potentially insured population would lower premiums. Overall, the average annual plan premium of $936 for the standard population would be approximately 5 percent lower ($892) for the profile of the potentially insured population, assuming no pooling mechanism is incorporated in an employer-based proposal. The effect of each of these factors is explored below.

a. Adjustments for age and sex

Age and sex adjustments for the potentially insured population would cause premiums for this group to be 4.4 percent higher than the premiums estimated for the currently insured. Premiums would be higher because of a greater concentration of persons over age 60 in the potentially insured population. Persons age 60 and over can expect premiums that average twice the premium for the standard population.

The currently insured are distributed relatively uniformly by age group. However, the potentially insured have a disproportionate number in both the youngest and oldest age groups (25 percent are age 18 to 25; 13 percent are over ge 60). Those in the youngest group reduce the premium, but this reduction is more than offset by the very high cost for individuals over age 60.

Table 2.22 shows that 13 percent of the potentially insured, compared to 7 percent of the currently insured, are age 60 and over. It must be emphasized that the number of older persons covered (and the resulting premium adjustments) are due to the particular policy option chosen for illustration. Use of the 10-hour per week threshold for coverage results in coverage of many older, semi-retired workers. Many of these would shift from Medicare or retiree health plans to insurance through their current employer. A policy option that did not change the insurance source for so many older workers would result in lower premiums for the potentially insured group.

b. Adjustments for family size and structure

The currently insured and the potentially insured differ more with respect to family structure than family size. In general, the potentially insured are more likely to be in single adult families. As table 2.23 shows, 44 percent of the potentially insured are in families with one adult, compared to 23 percent of the currently insured. In addition, 24 percent of the potentially insured are single adults with no children, compared to 15 percent of the currently insured. As discussed above, premiums are slightly more than twice as much for a two-parent family as for a single-adult family, and single adults with no children would have the lowest premiums of all family sizes. Overall, family size and structure would

cause premiums for this group to be 10.4 percent lower than the standard premium estimated for the currently insured population.

TABLE 2.22.—Age and Sex Distribution of the Currently Insured and Potentially Insured Populations, 1986

Age group	Percent of currently insured		Percent of potentially insured	
	Male	Female	Male	Female
18-24	7	7	13	12
25-29	7	8	8	6
30-34	8	8	6	5
35-39	7	7	4	4
40-44	6	6	4	4
45-49	5	5	3	3
50-54	4	4	3	3
55-59	4	3	3	7
60 and over	4	3	8	5

Note.—Potentially insured are people who would be covered by a mandated employer-based plan under assumptions in this report. Currently insured are those currently covered under employer-based plans.
Source: CRS tabulations of data from the March 1987 Current Population Survey.

TABLE 2.23.—Family Size and Structure of the Currently Insured and Potentially Insured, 1986

One adult			Two adults		
Number of children	Percent of		Number of children	Percent of	
	Currently insured	Potentially insured		Currently insured	Potentially insured
0	15	24	0	18	16
1	4	8	1	17	11
2	3	7	2	25	13
3+	1	5	3+	17	15

Note.—Potentially insured are people who would be covered by mandated employer-based plans under assumptions in this report. Currently insured are those currently covered by employer-based plans.
Source: CRS tabulations of data from the March 1987 Current Population Survey.

c. Adjustments for plan location

Table 2.24 compares the distribution of the potentially insured and currently insured populations by region and urban/rural location. The potentially insured are found in greater concentrations in regions with above average premiums. For example, 17 percent of the potentially insured population resides in the Pacific region (the region with the highest average premiums), compared to 14 percent of the currently insured.

However, the potentially insured are also more likely to be found in rural areas. About 42 percent of the potentially insured, compared to 36 percent of the currently insured, reside in rural areas. As previously explained, premiums in urban areas, holding population characteristics constant, are 18 percent higher than in rural areas.

TABLE 2.24.—Distribution of Currently Insured and Potentially Insured by Region, 1986

Region/Standard premium	Percent of	
	Currently insured	Potentially insured
New England/$854	6	4
Mid-Atlantic/991	16	12
East North Central/864	18	14
West North Central/799	7	8
South Atlantic/860	17	17
East South Central/795	6	7
West South Central/901	11	14
Mountain/900	5	7
Pacific/1,154	14	17

Note.—Potentially insured are people who could be covered by mandated employer-based plans under assumptions of this report. Currently insured are those currently covered under employer-based plans.
Source: CRS tabulations of data from the March 1987 Current Population Survey and the CRS Health Insurance Premium Model.

Thus, the effects of the two aspects of location, region and urban vs. rural, are offsetting. These two factors result in premiums adjusted for the location of the potentially insured that would be on average less than 1 percent lower than premiums for the standard population.

d. Adjustments for family income

As chart 2.3 shows, the potentially insured have lower incomes on average than the currently insured population. Nearly half of the potentially insured are in families with less than $14,999 of annual income, compared to 10 percent of the insured population.[20]

If a plan has cost sharing requirements, health care utilization can be expected to increase as income increases, holding other factors constant. Thus, typical plan premiums for low-income families could be expected to be lower than for the standard population. Based on the income distribution of the potentially insured population, premiums for the typical plan would be about 8.1 percent lower than for the standard population.[21]

e. Adjustments for firm size by pooling arrangement

The potentially insured are more likely to be attached to the labor force through smaller than average firms. Because administrative charges for small firms range from 25 to 40 percent of claims, the effect of administrative costs on premiums for the potentially insured would probably be greater than the 8 percent average used for most of this analysis. If no pooling arrangement were included in the proposal, premiums could be expected to be 11 percent higher for the potentially insured than for the currently insured. At the other extreme, if a mandatory pooling arrangement were incorporated in an employer-based plan, premiums would be

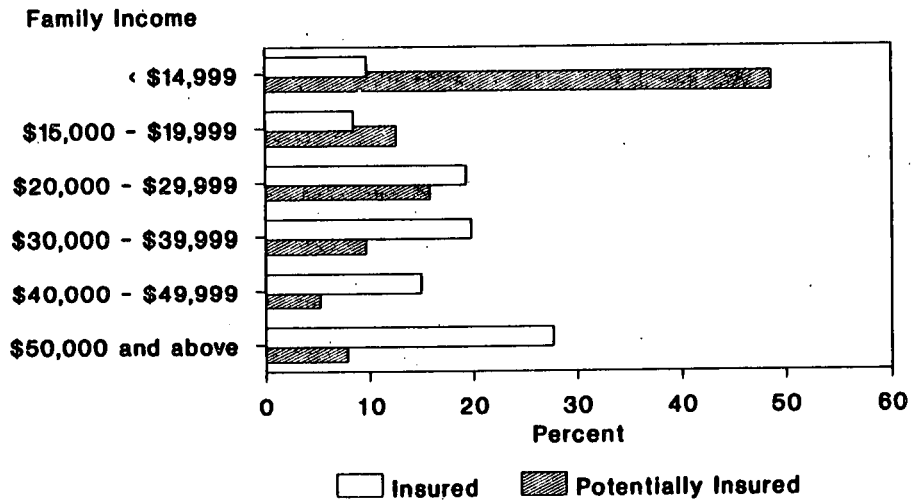
[20] Family income amounts include income from all persons in an insurance unit. Unrelated household members and children over the age of 18 living with parent(s) are considered separate insurance units. (Persons between the ages of 18 and 22 living with parent(s) who reported attending college are included as part of the parent(s)' insurance unit.)

[21] If, however, a plan does not require cost sharing by enrollees, income will not have as great an influence on premiums.

expected to average only about 4 percent more for the potentially insured than for the currently insured. A voluntary pooling mechanism would most likely result in an increase in premiums for the potentially insured of between 4 and 11 percent. An explanation of the effects of voluntary and mandatory pooling arrangements on administrative expenses is provided below.

Chart 2.3

Income Distribution of Insured and Potentially Insured



Potentially insured are those who would be covered by an employer mandate.
Source: 1986 data from the CPS.

Under a restrictive mandatory pooling arrangement, the administrative expense for a very small group would drop substantially from 40 to 15 percent of premium. However, the reduction in expense for a medium-sized firm would only be 4 to 6 percent of premium, and there would be little, if any, reduction in expenses for the largest groups. Since the potentially insured population is spread among all employer sizes, the average reduction would be much smaller than the 25 percent of premium reduction for the smallest employers.

(1) *Voluntary pooling.* The arrangement that would have the least impact on current administrative costs would be to rely on the marketplace as much as possible. The only pool would be a voluntary pool for employers who would be permitted to install plans that were actuarially equivalent to the mandate. Table 2.25 shows administrative costs that might be expected under this arrangement.

Claims and general administrative expenses would be reduced only slightly from their current level. There would be some uniformity in the design of plans, but most of the large differences in administrative costs between large and small employers would continue. Insurers would still have to deal directly with employers to sell the policy, bill and receive premiums, and receive and process claims. In the current environment, insurers are concerned that the small employer seeking insurance may be a bad risk or that it may be difficult to collect premiums. The insurers would still incur losses because of the inability to collect some premiums. There would be little change in the commissions charged the small employers because of the need to sell and service the accounts.

TABLE 2.25.—Insurance Company Administrative Expense Breakdown for Least Restrictive Mandate

(Expressed as a Percent of Incurred Claims)

Number of employees	Claims admin.	General admin.	Interest credit	Risk and profit	Commissions	Premium taxes	Total
1 to 4	8.0	10.0	−1.5	7.0	8.4	2.7	34.6
5 to 9	7.0	9.0	−1.5	7.0	6.0	2.6	30.1
10 to 19	6.0	8.0	−1.5	7.0	5.0	2.5	27.0
20 to 49	5.0	7.0	−1.5	6.8	3.3	2.5	23.1
50 to 99	4.3	4.8	−1.5	6.0	2.0	2.4	18.0
100 to 499	4.1	4.0	−1.5	5.5	1.6	2.3	16.0
500 to 2,499	3.9	3.2	−1.5	3.5	0.7	2.2	12.0
2,500 to 9,999	3.8	1.4	−1.5	1.8	0.3	2.2	8.0
10,000 or more	3.0	0.7	−1.5	1.1	0.1	2.1	5.5

Note.—Adjustments by firm size are based on underwriting practices of major insurance companies.
Source: Hay/Huggins Company, Inc.

With this least restrictive mandate/pooling arrangement, total administrative charges should decline to around 35 percent of claims for firms with less than five employees, would be reduced a few percentage points for firms with 5 to 49 employees, and would remain current levels for larger firms. The assumption is that under voluntary pooling, claims and general administrative charges would be no greater than 8 and 10 percent, respectively; risk and profit charges would not exceed 7 percent of claims costs.

(2) *Mandatory pooling.* Substantially lower administrative costs would occur under a more restrictive pooling arrangement, especially for small employers. The possible administrative costs under one such arrangement are shown on table 2.26. Under this arrangement, all firms of less than 100 employees would have to participate in the pool, larger employers could participate, and the mandate would permit only one plan. As a result, the claims processor would not have to determine the formula for payment. All premium and claims activities would be standardized and would not involve brokers or multiple insurers. Therefore, there would be no need for specialized billing and claims processing services. The pool intermediary would set up a fund to guarantee premiums so the risk charge could be cut substantially. Collection of premiums would be more likely since there would be legal requirements for premium payment. There would be no commissions since the transactions would be directly between the pool and employer.

TABLE 2.26.—Insurance Company Administrative Cost Breakdown for Restricted Pool/Single Plan

(Expressed as a Percent of Incurred Claims)

Number of employees	Claims admin.	General admin.	Interest credit	Risk and profit	Commissions	Premium taxes	Total
1 to 4	5.0	6.0	−1.5	3.0	0.0	2.3	14.8
5 to 9	5.0	6.0	−1.5	3.0	0.0	2.3	14.8
10 to 19	5.0	5.5	−1.5	3.0	0.0	2.3	14.3
20 to 49	4.5	5.0	−1.5	3.0	0.0	2.3	13.3
50 to 99	4.0	4.8	−1.5	3.0	0.0	2.2	12.5
100 to 499	4.0	4.0	−1.5	3.0	0.0	2.2	11.7
500 to 2,499	3.9	3.2	−1.5	3.0	0.0	2.2	10.8
2,500 to 9,999	3.8	1.4	−1.5	1.8	0.0	2.2	7.7
10,000 or more	3.0	0.7	−1.5	1.1	0.0	2.1	5.4

Note.—Adjustments by firm size are based on underwriting practices of major insurance companies.
Source: Hay/Huggins Company, Inc.

Even under this most restrictive pooling arrangement, the total administrative charges would be substantially higher for the smaller firms than for the larger firms. The much higher percentage is needed to support the assistance that the pool or insurer must provide the employer. For instance, the 0.7 percent for general administration cost for a firm of only 10,000 employees would generate over $70,000 in income to pay general administrative expenses. This $70,000 would provide considerable assistance to an employer who was already very familiar with the provisions and coverage of the health plan. However, only $120 would be set aside to cover the administrative expenses of a two-person group. This $120 would be sufficient to cover only two or three contacts between the insurer or the pool and the employer.

f. Summary

The total effect of all adjustment factors on premiums for the potentially insured, assuming the plan had no pooling mechanism, is a premium approximately 5 percent lower than the premium for the standard population. The typical plan, which would have a premium of $936 for the currently insured employer-based population,

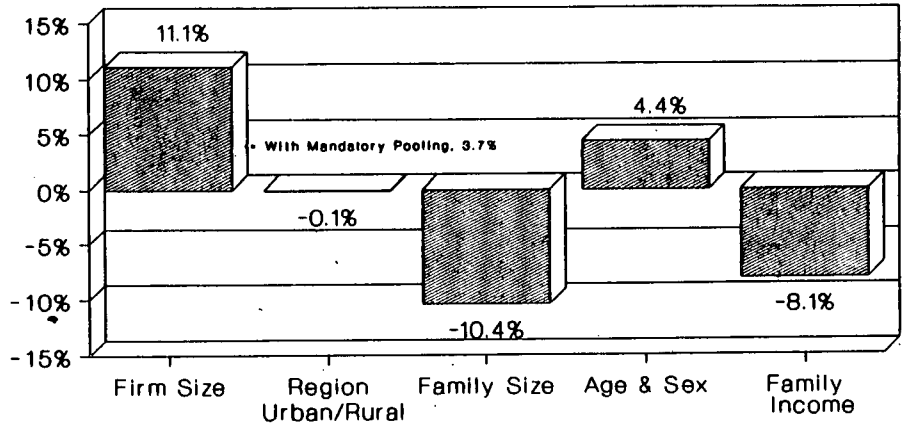
would have a premium of $892 for a group with a profile comparable to that of the potentially insured population. If a mandatory pooling mechanism were incorporated in an employer-based proposal, premiums for a group of potentially insured persons would be $833, or 11 percent lower than premiums for the standard population.

Chart 2.4 shows the relative effects of each adjustment factor on premiums for the potentially insured. The age and sex composition of the population, along with the firm size distribution, would cause the premiums to rise as much as 15 percent if no pooling arrangement were included. However, the income and family size characteristics of the potentially insured population would more than offset these adjustments; income and family size would account for a 19 percent decrease in premiums. Location, including region and urban/rural distribution, would have little effect on premiums for the potentially insured population.

C. DIFFERENT BENEFITS FOR THE POTENTIALLY INSURED POPULATION

Differences between the potentially insured and the currently insured populations suggest that the typical plan offered by medium and large employers (with coverage of a broad range of benefits, catastrophic coverage protecting against large expenditures, and employee cost-sharing for lesser expenditures) might not be as well suited for the potentially insured population as would certain alternatives. Since the potentially insured have lower average family incomes than the currently insured, a health insurance plan that requires the enrollee to pay deductibles and coinsurance could result in out-of-pocket expenditures that are large relative to family income.

Chart 2.4
Factors Affecting Health Insurance Premiums for the Potentially Insured as a Percent of Standard Premiums



Source: CRS Health Insurance Premium Model & 1986 CPS data.

The following section demonstrates the design of benefit packages tailored to the lower-income uninsured population. The analysis begins with the typical plan, the standard population, and assumes administrative costs at 8 percent of claims costs. The annual individual premium would be $936 in 1986. Then the cost-sharing provisions of the typical plan are eliminated. Without these cost-sharing requirements, the plan's premium would increase by $161 to $1,097. Benefits can then be modified until the premium is reduced to a level actuarially equivalent to the typical plan for the standard population.

As discussed above, the premium for potentially insured persons, if these constituted a group, would vary depending on the specific characteristics of the population covered by a plan. In particular, younger, single, and low- income workers would be expected to have lower than average claims costs. Location of the group would also affect claims costs, and smaller firms would pay higher administrative costs, the amount depending on the pooling arrangement incorporated in the plan. While the population characteristics of the uninsured population would produce lower premiums than the standard population, it would be difficult to construct a mandated employer-based plan that would treat the entire uninsured population as a single group. Accordingly, the following discussion measures the effect of benefit modifications for the standard population.

1. Elimination of Cost-Sharing Provisions

a. Cost-sharing requirements in the typical plan

The typical plan provided by medium and large employers requires enrollees to pay part of the cost of medical services through deductible and coinsurance provisions. The typical plan requires a $100 deductible on all care except hospital care and a 20 percent enrollee coinsurance payment for surgical care, physician visits, X-ray and laboratory tests, prescription drugs, and hospitalization alternatives.

Since the uninsured population has lower average income than the insured population, these cost-sharing requirements could amount to relatively high out-of-pocket expenditures in relation to income. For example, consider a hypothetical health insurance claim for a caesarean delivery. The average total charges in 1985 were $5,700 for maternity care and delivery.[22] About $4,200 of this amount was for hospital inpatient expenses, which would be covered in full under the typical plan with no deductible or coinsurance payment. The remaining expenses for physician inpatient care, surgical procedures and outpatient care would be subject to the overall deductible of $100 and 20 percent coinsurance for the remaining amount. In this case, an enrollee's out-of-pocket expenses for such a procedure would total $380.

Thus, a family earning $10,000 per year would pay about 4 percent of annual income for this one medical episode. (This income

[22] Charges were derived from the 1980 National Medical Care Utilization and Expenditure Survey and the 1986 Health Insurance Association of America's survey of maternity charges. See The Alan Guttmacher Institute. The Financing of Maternity Care in the United States. 1987. p. 100.

level, above the poverty line for a two- or three-person family, would disqualify the family for Medicaid in all States.)

b. Effects on premium of eliminating cost-sharing provisions

Modifying the typical plan by eliminating all cost sharing (deductibles and coinsurance) would increase the average annual premium. For an individual, premiums would increase from $936 to $1,097 for two reasons. First, costs to the insurer for each covered service would increase because the plan would now pay 100 percent of all covered expenses. Second, claims costs might increase if enrollees used more, and more costly, services, since they would no longer have an incentive to limit use of health care services or seek out less expensive forms of treatment.

2. Further Modification of the Benefit Package for the Potentially Insured

a. Introduction

The typical plan provided by medium and large employers includes a comprehensive array of services. Hospital care is covered in full for 365 days per stay, and alternatives to hospital care such as skilled nursing and extended care facilities are covered in full. Other covered benefits include services of physicians and other medical professionals, prescription drugs, surgical care, laboratory tests, and inpatient and outpatient mental health care.

The premium for the modified typical plan, which increased from $936 to $1,097 when cost-sharing provisions were removed, could be reduced to $936 again by modifying other provisions of the plan. Numerous options would have equivalent financial impact. For example, either introducing a separate $300 inpatient hospital deductible or reducing the number of covered hospital days from 365 to 50 would cause the typical plan premium to drop by approximately $30.

In this case, the benefits may be "actuarially equivalent", but they would have different effects on the potentially insured population. Because many of the potentially insured have relatively low incomes, a $300 inpatient hospital deductible could constitute a barrier to the use of health care services. On the other hand, if an employer had a workforce consisting of relatively young employees, this group would be less likely to be hospitalized for long periods of time and therefore might be less likely to use a 365-day hospital benefit. Though the modifications in this case would be actuarially equivalent, they would not be equivalent when extended to two distinct populations.

b. Example of benefit modifications

The following analysis demonstrates the differential effect of modifying and eliminating benefits upon the premium of a modified typical plan with no cost-sharing provisions. Table 2.27 shows the decrease in premium from $1,097 to $936 after six modifications in the plan. First, the number of covered hospital days is reduced from 365 to 45, reducing the premium to $1,078. Next, the premium would drop to $992 by eliminating the following benefits

from the plan: inpatient and outpatient mental health care, skilled nursing facility and extended care, and prescription drug coverage.

To reduce the premium further without modifying "front-end" benefits such as physician services, X-rays and laboratory tests, a small hospital deductible could be introduced. A $65 deductible on hospital stays would decrease the premium to $936.

TABLE 2.27.—Effect on Annual Premium of Benefit Modifications and Demonstration of Actuarial Equivalence, 1986

Benefit modification	Resulting premium (cumulative)	Premium change due to modification
Original typical plan premium	$936	$0
Eliminate all cost-sharing provisions	1,097	+161
Decrease 365 hospital days to 45 hospital days	1,078	−19
Eliminate inpatient mental health	1,044	−34
Eliminate outpatient mental health	1,025	−19
Eliminate skilled nursing facility and extended care	1,023	−2
Eliminate prescription drug provision	992	−31
Introduce $65 hospital deductible	936	−56

Source: CRS Health Insurance Premium Model.

IV. SUMMARY

This chapter analyzes premium costs of health insurance. The chapter begins by developing and presenting actuarial data on premiums for employer-based health insurance plans. The baseline for this analysis consists of estimated average premiums for people covered by employer-based health insurance in 1986.

Data for the analysis come from an actuarial model developed by the Congressional Research Service in conjunction with Hay/Huggins Company, Inc. This mathematical computer model produces estimated premiums for various combinations of benefits and different target populations. (Appendix A describes the model.) The inputs to the model are benefit specifications and population characteristics of the group to be covered by the benefits; the outputs are estimated premiums. The model and methodology allow for analysis of the following variations in plan premiums:

- Different *benefit package design.* The model estimates what different benefits might cost and how sensitive premium amounts are to variations in benefit levels.
- Different *populations being covered.* The model estimates how premiums would vary with the infusion of new people with different population characteristics into the plan.
- Different *administrative costs as a percent of claim costs.* The model analyzes the influence of firm size and pooling mechanisms.

The actuarial model also helps to demonstrate how the benefits in a health insurance plan can be "tailored" to a particular population while maintaining a constant premium level; i.e., it illustrates one possible form of "actuarial equivalence."

Using data from the model, three types of analysis are performed. First, the costs of the provisions of health insurance plans are analyzed. To do this, a "typical" health insurance plan is devel-

oped, based on data from the 896 medium to large company plans covering 25 million workers and dependents in the 1987 Hay/Huggins Benefits Report (HHBR). Then the average premium cost for this typical plan is estimated. This average is called a "standard" premium to distinguish it from a "group-specific" cost that would reflect the population characteristics of specific individuals to be covered as a "group" by a health insurance plan.

The second part of the analysis demonstrates the effects on premiums of changing the population characteristics. Actuarial estimates of premium costs vary by age, sex, geographic location, and income. The standard premium for the typical plan ($936 for individual coverage in 1986) is based on average population characteristics for persons in the HHBR plans that are assumed to be representative of the entire population covered by employer-based plans. Coverage of specific groups within the total population that vary from the group covered by the typical plan or consideration of the costs of covering the population currently without health insurance would require adjustments to the typical plan premium that take into account the population characteristics of the specific group to be covered.

Premiums consist of claims costs and the costs of plan administration. For purposes of the analyses to this point, the analysts of plan variation for the standard population assumed that the total premium (claims costs plus administrative costs) included administrative costs of 8 percent of claims costs. However, administrative costs vary substantially by size of firm. For example, administrative costs as a percent of claims average 5.5 percent for firms with 1,000 or more employees, while the ratio ranges from 25 to 40 percent of claims costs for firms of under 50 employees. This chapter analyzes the effects of firm size on administrative costs, and estimates the effects on administrative costs of different types of "pooling" arrangements.

Population characteristics of the 37 million people without health insurance in 1986 differ substantially from those with employer-based coverage. In particular, the uninsured (in comparison to the insured) are younger, poorer, more likely to work part time or not at all (although nearly half work full time or are in a family with a full-time worker), and more likely to work for a small company. Eight out of ten of the uninsured population (approximately 31 million employees and dependents) have some attachment to the workforce. An employer-based mandate covering workers who work 10 or more hours a week, and their dependents, would cover most of the uninsured. In addition, about 23 million persons are not covered by employer-based plans but are covered through other public or private health insurance. The total of those who would be covered by an employer mandate, including the uninsured plus those now insured but not through employer-based coverage, are called "potentially insured." The characteristics of these 54 million "potentially insured" persons differ from those of the employer-based coverage to the potentially insured, taking into account these important differences in population characteristics, attachment to the workforce, and size of employer.

It must be emphasized that these premium adjustments reflect the specifications of the particular policy option chosen for illustra-

tion. Use of the 10-hour a week threshold for coverage results in coverage of many older, semi-retired workers. Under this option, the coverage of many of these workers would then shift from Medicare or retiree health plans to insurance through their current employer. A policy option that did not change the insurance source for so many older workers would result in lower premiums for the potentially insured group.

Chapter 2 concludes by considering the possibility that the typical plan for the standard population may not be well suited to the particular characteristics of the uninsured population. In particular, people who lack health insurance are relatively young and poor. Thus, the deductible and coinsurance features of the typical plan might be sufficiently high to keep the younger and poorer uninsured population from seeking health care, even if insurance were provided. Accordingly, an example is developed that shows the increase in premium costs for the typical plan if deductible and coinsurance requirements were eliminated. Then the example demonstrates how benefits could be eliminated or reduced to reduce the overall premium cost to the level of the typical plan for the standard population. In effect, this is a demonstration of the concept of "actuarial equivalence."

This illustration of actuarial equivalence focuses on the idea of a health insurance plan tailored to the uninsured. However, the basis for the adjustments is the premium for the standard population, including administrative costs that are 8 percent of claims costs. The premium could easily be adjusted to reflect the characteristics of a different covered population. The premium for the standard population is used in this analysis to make the data more consistent with the earlier sections of chapter 2. In addition, considering the uninsured population to constitute a single health insurance "group" with unpooled small employer plans is useful for analytic purposes, but specific legislative proposals would be unlikely to isolate the total uninsured population as a single group for the purpose of extending coverage.

CHAPTER 3.—EFFECTS OF EXTENDING HEALTH INSURANCE COVERAGE

I. INTRODUCTION

This chapter presents the potential effects of four different approaches for extending health insurance to the uninsured. The discussion of the likely effects of these plans is structured around the key parties involved in health care delivery:

- Individuals, both insured and uninsured;
- Health care service providers;
- Employers;
- Insurers; and
- Federal and State governments.

The first section reviews the specific illustrative plans studied and key assumptions made in the analysis. Subsequent sections analyze the illustrative plans.

A. ILLUSTRATIVE PLANS

The alternatives were selected to illustrate the policy outcomes that could be expected under different approaches to extension of health insurance coverage. Hence, the term "illustrative plan" is used to convey the idea that each alternative should be viewed as illustrating an approach to coverage extension rather than defining a preferred solution. The policy alternatives chosen for analysis in this chapter are not intended to be representative of any existing legislative proposals. The plans' details have not been subject to the considerations of political compromise or administrative practicality that development of a legislative proposal would entail, and, in fact, some features were selected to facilitate the analysis.

Four illustrative plans for extension of health insurance coverage are analyzed. Three of the plans would be mandatory offerings by employers:

- A plan that is *typical* of current private-sector group plans;
- A plan *tailored* to the perceived health care needs of the currently uninsured population; and
- A plan that reimburses all covered expenditures after a sizable deductible and copayment are met (a "*catastrophic* only" plan).

The fourth plan studied would expand coverage under State Medicaid programs. The discussion which follows will refer to these four plans with the abbreviated titles of the "typical," "tailored," "catastrophic," and "Medicaid expansion" plans. The Medicaid expansion plan is analyzed both alone and in conjunction with the tailored employer plan.

1. Rationale for Plans Selected

Three employer plans were chosen to cover a wide range of possibilities for expanding health coverage through employer offerings. The Medicaid expansion plan was included to illustrate the effects of extending coverage to population groups that cannot be reached through an employer-based approach.

The objectives behind the design of the three employer plans are as follows:

Typical plan—This plan includes the features most often found in existing plans of large- and medium-sized U.S. employers. Thus, this plan would provide the eligible uninsured with coverage similar to what many currently insured employees receive. This plan is the most expensive of the three.

Tailored plan—Provisions of this plan were chosen to meet two goals. First, the plan was designed to be significantly less costly to employers than the typical plan. Second, it was designed with the fact in mind that the uninsured are a relatively young, lower-income population.[23] Thus, the plan would place more emphasis on preventive care than the typical plan and have lower deductibles and co-insurance. To meet these cost and benefit objectives, this plan was to be designed with less coverage for long hospital stays and with no catastrophic expenditure cap.

Catastrophic plan—This plan is designed to deal solely with the circumstances of individuals whose medical expenditures are quite large relative to their incomes. A deductible related to income and family size would have to be met before benefit eligibility would begin. This plan's cost would be significantly less than that of the two more comprehensive plans.

The Medicaid expansion approach would fill in the gaps that an employer mandate approach would leave. By offering coverage to everyone with income below the official poverty level, this plan would reach the neediest of those left without coverage by an employer mandate—i.e., the unemployed, early retirees, marginally employed persons, and the family members of these individuals.

2. Plan Coverage

The analysis of alternative employer-mandate approaches assumes that the plans would cover virtually all employed people and their dependents.[24] It was assumed that these plans would apply across all industries to employers of all sizes, including self-employed individuals. An employer currently offering insurance would be required to upgrade the firm's plan if it had a lower actuarial value [25] than the mandated plan.

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[23] In 1986, nearly three-fourths of the uninsured were under age 35; only half of the insured were under 35. Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

[24] Dependents include spouses and children age 18 and under.

[25] For a discussion of actuarial equivalence among plans, see CRS Report "Insuring the Uninsured: Options and Analysis."

Employers subject to the mandate would have to cover all employees working at least 10 hours a week after a 30-day waiting period. Employer contributions for premiums would be reduced for part-time employees working less than 30 hours per week on a pro rata basis, as explained below in subsection 4. The illustrative plans were designed this way to: (1) cover as many employees (and dependents) as possible; and (2) avoid setting the minimum hours threshold at a level that might tempt employers to avoid extending coverage by reducing the hours of part-timers. Phasing down the employer premium contribution prevents the health benefit from becoming an excessive share of total compensation for those working a small number of hours. However, the disadvantage of this approach is that persons working near the 10-hour cutoff would have to pay a substantial part of the premium.

The Medicaid expansion plan would apply to Medicaid programs in all States. Medicaid eligibility would be extended to include all individuals and families with incomes below the federally determined poverty level and assets below certain limits.[26] This new coverage would apply without regard to family composition, age, or disability.

3. Plan Benefits

Benefits covered by the three mandated employer plans are shown in table 3.1. The *typical plan* provides comprehensive coverage of medically necessary services and a catastrophic limit on out-of-pocket expenses, but it does not cover preventive services such as well-baby care or screening tests for such conditions as hypertension and diabetes (unless ordered by a physician). The *tailored plan* does cover such preventive services but has a limit on inpatient days, no catastrophic protection, and no mental health coverage. The *catastrophic plan* covers most of the services covered by the typical plan, the main exception being mental health services. None of the plans would cover vision or dental care.[27] All three plans would incorporate managed care features to eliminate unnecessary surgery and hospital stays.[28]

The *expanded Medicaid program* would provide benefits that approximate the required national minimum standard for the current program, excluding long-term care. The expanded program would add one optional service, prescription drugs, now offered in all but two States. These services would be covered:

- Inpatient hospital care (14 days per admission);
- Outpatient hospital services;
- Inpatient and outpatient physician services;
- Lab work and tests ordered by a physician;
- Prescription drugs;
- Prenatal care;
- Family planning; and

[26] In 1986, this annual income level was $11,200 for a family of four.

[27] Large firms usually offer dental coverage, but it is often provided through a separate plan, not the health insurance plan.

[28] Although the tailored plan would not generally cover services in alternate care facilities, it has been assumed that such services could be utilized as needed to achieve the cost-reduction objective of managed care programs.

- Screening and diagnosis for children (including dental, well-child care, and optical services).

TABLE 3.1.—Benefits Under Mandatory Employer Illustrative Plans

Benefit	Is benefit provided under:		
	Typical plan	Tailored plan	Catastrophic plan
Hospital inpatient	Yes	Yes; max. 14 days	Yes
Hospital outpatient	Yes	Yes	Yes
Alternate care facility [1]	Yes	No	Yes
Surgical	Yes	Yes	Yes
Physician inpatient	Yes	Yes	Yes
Physician outpatient	Yes	Yes	Yes
Drugs	Yes	Yes	Yes
Mental health inpatient	Yes; max. 30 days	No	No
Mental health outpatient	Yes; max. 50 visits	No	No
Prenatal care	Yes	Yes	No
Well baby care	No	Yes; up to 1 yr. old	No
Dental care	No	No	No
Vision care	No	No	No
Screening/diagnosis for hypertension, diabetes	No, unless ordered by physician	Yes	No
Catastrophic limit	Yes; $1000/indiv., $3000/fam.	No	Yes; related to income & fam. size
Lifetime benefit maximum	No	No	No
Case management	Yes	Yes	Yes

[1] Such facilities include skilled nursing facilities, home health care, surgicenters, and extended care facilities.

4. Costs and Cost Sharing

a. Premiums.

The estimated annual premiums per enrollee in 1986 dollars are shown below in table 3.2 for each plan. Estimates are shown based on the demographics of the population currently insured through employer-based insurance.[29]

TABLE 3.2.—Premiums for the Four Illustrative Plans for the Currently Insured Population, 1986

Plan	Self only	Self and family
Typical	$936	$2,466
Tailored	834	2,196
Catastrophic	499	1,602
Medicaid expansion	667	1,772

Source: CRS Health Insurance Premium Model.

[29] These premium cost estimates were prepared by CRS using the actuarial cost model described in chapter 2. Estimates for the insured population are based on the characteristics of persons covered by the large- and medium-size employer plans included in the Hay/Huggins Benefits Survey. Premium estimates include 8-percent of claims costs for the administrative costs and profits of insurers.

These actuarial estimates were used to guide the simulations of the illustrative plans to assure that the results would be consistent with the CRS Health Insurance Premium Model.

Premium costs would be allocated between employer and employee for the employer plans according to the provisions of each illustrative plan. This allocation and provisions of the mandated employer plans for deductibles, coinsurance, and copayments are shown in table 3.3. Medicaid costs would be borne by Federal and State governments according to the current formula matching arrangement.

TABLE 3.3.—Cost-Sharing Provisions of the Mandatory Employer Illustrative Plans

Plan provision	Employee share of cost under		
	Typical plan	Tailored plan	Catastrophic plan
Premium contribution for: [1]			
Employee	0 percent	20 percent	0 percent
Dependents	33 percent	25 percent	0 percent
Deductible	$100; 3 per fam. (no ded. for hosp'n)	$50; 3 per fam.	Income-related [2]
Employee coinsurance and copayments for:			
Inpatient care	0 percent	0 percent	10 percent on first $5000 after deductible, 0 percent thereafter
Alternate care facility	0 percent	0 percent	Do
Physician (incl. surgery)	20 percent	0 percent	Do
Outpatient prescription drugs	20 percent	$2/prescription	Do
Mental health inpatient	0 percent	[3]	[3]
Mental health outpatient	50 percent	[3]	[3]

[1] Employee shares of premium costs shown here are for persons working 30 or more hours per week. Those working less than 30 hours would receive an employer contribution to the premium cost equal to the employer contribution for full-time workers times the ratio of a part-time worker's hours per week to 30 hours.

[2] The catastrophic plan deductible is explained in subsection b.

[3] Benefit not available under this plan.

The *typical plan* would require no employee sharing in premium cost except for dependent coverage. The *tailored plan* would require an employee contribution for both employee and dependent coverage. Since the *catastrophic plan* would benefit only a minority of enrollees in any one year, and since it is designed to be highly progressive by income level, there would be no employee sharing in its premium cost.

Employer contributions for premiums would be prorated for those working less than 30 hours a week. For example, under the typical plan the employer would pay 100 percent of an employee's premium for those working 30 or more hours. A 20-hour employee would receive an employer contribution to the premium equal to the full-time rate (100 percent) times 20 hours divided by 30 hours, or 66.7 percent of the premium. This approach would be generous in its coverage of part-time workers and would make it difficult for

employers to avoid covering part-timers by reducing their hours. However, it would place a sizable share of the premium cost on part-timers who work relatively few hours.

Table 3.4 exemplifies how annual premium cost would be shared for workers covered by the typical and tailored plans, using the self-only premium estimates presented above for the insured population.

TABLE 3.4.—Premium Cost Sharing for the Typical and Tailored Plans, by Hours Per Week, 1986

Hours/week	Typical plan		Tailored plan	
	Employer	Employee	Employer	Employee
40	$936	$0	$667	$167
30	936	0	667	167
20	624	312	556	278
10	312	624	278	556

Source: CRS Health Insurance Premium Model.

b. Deductibles and coinsurance.

The *typical* plan would have a $100 deductible and 20-percent coinsurance for outpatient services and surgery. The *tailored plan,* on the other hand, would have only a copayment on prescription drugs and a small $50 deductible. Cost sharing in this plan would be limited in order to promote the use of services among the currently uninsured, many of whom have low wages.

The *catastrophic plan* would combine two approaches to catastrophic coverage. First, employers already offering group health insurance would be required to include a catastrophic provision with an annual out-of-pocket limit no higher than $3,000. Most plans already have limits below this level and would not be affected.[30] For others, a $3,000 limit is an inexpensive feature. Second, employers not already offering group health plans would have to provide their employees (and dependents) coverage under a new national catastrophic income-tested plan. Persons eligible for, but not participating in, existing employer plans would also fall under this new income-tested plan. Its deductibles and coinsurance would be complicated since they would depend on family size and income. The relationship to income is important because the amount of medical expenses that constitutes a "catastrophe" varies with income level.

Reimbursement for covered expenditures would not begin until the catastrophic deductible had been met. For regular employer plans, this deductible would be the lesser of $3,000 or the deductible selected by the employer.

For the income-related plan, the deductible would equal one-fourth of total income less personal exemptions [31] for families with total income no greater than $75,000. (Total income would be adjusted gross income, or AGI, plus any investment income or trans-

[30] According to the 1987 Hay/Huggins Benefits Report, 83 percent of surveyed plans have catastrophic expenditure limits. The most common limit used is $1,000.

[31] Personal exemptions would equal their value under Federal income tax law.

fer payments excluded from AGI in Federal tax law.) For families with total income above $75,000, the deductible would be computed as above for the first $75,000 of total income but would be increased by 35 percent of any income above $75,000.

For example, a family of four with total income of $20,000 would have a deductible of $3,100 (assuming personal exemptions are $1,900 each).[32] The deductible would be $0 whenever the formula produces a negative number. If an eligible employee's out-of-pocket family health care expenditures exceed the income-related deductible, they would be required to pay coinsurance of 10 percent on the first $5,000 of covered expenditures in excess of the deductible. Thus, maximum yearly out-of-pocket liability for covered expenses under the income-related plan would equal the deductible plus $500.[33] Table 3.5 gives examples of maximum liability.

The only cost sharing in the *Medicaid expansion plan* by newly covered Medicaid enrollees would be in the 24 States that currently charge small copayments to Medicaid beneficiaries for certain services. These copayments are mostly in the range of $1 to $5. The services to which copayments apply differ from State to State but are most commonly prescription drugs.

5. Plan Coordination

For individuals covered by both an employer plan and a public program, the employer plan would pay first, for both employees and dependents, with Medicare being secondary payer and Medicaid payer of last resort, as under current law. Thus, some medical expenses now paid by public programs would be absorbed by expanded employer coverage. Benefits under the expanded Medicaid plan would be secondary to all other plans including Medicare, but Medicaid would pay before programs that are funded entirely by State or local governments. In analyzing a combination of the tailored plan with the Medicaid expansion, it was assumed that Medicaid would pay the employee's share of premiums for those jointly eligible for both plans.

The employer-mandate plans would require employees to enroll in plans of their employers. Some of these employees already have health coverage as dependents on other family members' employer plans. These employees would still have to accept the new employer coverage but could retain the dependent coverage as secondary coverage if that were desirable.

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[32] Deductible = 0.25 x (20,000 − (4)x(1,900)) = 0.25 x (20,000 − 7,600) = 0.25 x 12,400 = 3,100.

[33] The relationship between out-of-pocket expenditures and income for a family with annual income below $75,000 would be as follows:

If expenses were to exceed the deductible by less than $5,000, the out-of-pocket amount would rise by 22.5 cents per additional dollar of income;

If expenses were to exceed the deductible by $5,000 or more, the out-of-pocket amount would rise by 25 cents per additional dollar of income;

If expenses were to meet the above condition and also exceed 7.5 percent of AGI, the out-of-pocket amount would increase by $(0.225 + 0.075t)/(1 + t)$ per additional dollar, where t is the marginal tax rate. This last result would occur because of the income tax deductibility of medical expenditures when such expenditures exceed 7.5 percent of AGI.

TABLE 3.5.—Maximum Out-of-Pocket Liability under the Income-Related Catastrophic Plan

Number of personal exemptions	Maximum annual out-of-pocket liability for total income of					
	$10,000	$15,000	$20,000	$30,000	$50,000	$100,000
1	$2,525	$3,775	$5,025	$7,525	$12,525	$27,025
2	2,050	3,300	4,550	7,050	12,050	26,550
3	1,575	2,825	4,075	6,575	11,575	26,075
4	1,100	2,350	3,600	6,100	11,100	25,600
5	625	1,875	3,125	5,625	10,625	25,125
6	500	1,400	2,650	5,150	10,150	24,650
7	500	925	2,175	4,675	9,675	24,175
8	500	500	1,700	4,200	9,200	23,700

Note.—The value of the personal exemption used in these computations was $1,900. The effect of income tax deductibility when medical expenses exceed 7.5 percent of total income is not taken into account in these calculations.

6. Insurance Arrangements of the Illustrative Plans

The *typical* and *tailored* plans would rely on employers' dealings with insurers in the marketplace to extend coverage to uninsured employees and their dependents. Problems of plan availability could be diminished by establishing State or regional insurance pools for small employers.[34] The analysis of the illustrative plans which follows assumes such pooling arrangements would be established.

The *catastrophic* plan would also rely on the employer-insurer relationship to provide insurance against excessively large out-of-pocket health care expenditures. For the income-testing necessary in this plan, insurers could contract with State Medicaid programs to obtain these eligibility determinations. Alternatively, insurers could do the income tests themselves. Since Medicaid agencies already determine eligibility based on need, it would probably be advantageous for insurers to contract out this function.

The *Medicaid expansion* plan would require States to extend Medicaid eligibility to a new population not now covered using current Medicaid administrative arrangements. This new population of eligibles would include nondisabled, low-income people who are either single, married with no children, or in families with two parents present.

B. ASSUMPTIONS UNDERLYING ANALYSIS

1. General Design of Study

This analysis of four illustrative plans was undertaken by simulating the effects of each plan on a data base representative of the U.S. population.[35] This data base contains socioeconomic information and medical expenditure and utilization data for each of the individuals in the sample. The simulations were conducted by the Lewin/ICF Division of Health and Sciences Research Corporation

[34] This subject is discussed in report number 2 of this series, "Insuring the Uninsured: Options and Analysis," chapter 7.

[35] The data base used is the 1980 National Medical Care Utilization and Expenditures Survey (NMCUES) conducted by the U.S. Department of Health and Human Services. Additional data elements were introduced into the analysis from the 1977 National Medical Care Expenditures Survey (NMCES), the March 1983 Current Population Survey (CPS), and the March 1987 CPS.

under a contract with the Congressional Research Service using the Health Benefits Simulation Model. The 1980 NMCUES was "aged" forward to 1986 by adjusting the individual records so that aggregate totals of key data items in the modified data base matched known 1986 totals. Thus, it presents estimates of what would have happened to coverage, benefits and costs if the four illustrative plans had been in effect in 1986. The analysis presented in the following sections is for calendar year 1986. This year was chosen primarily because much of the analysis done elsewhere on mandated health insurance proposals and on the uninsured population has used the March 1987 Current Population Survey (CPS) data for calendar year 1986.

A number of key assumptions were made in undertaking this analysis of illustrative plans. These assumptions are important to an understanding of the estimates presented in this chapter. They mostly involve the behavior of the various parties in response to a particular type of expansion in health insurance coverage. These assumptions deal with:

- Whether newly covered individuals would accept the coverage offered and pay the necessary premiums and cost sharing amounts;
- How newly covered individuals would change their utilization of health care services;
- How employers would react to the mandating of a national standard for health insurance coverage; and
- Numerous technical issues of policy simulation and data analysis. The assumptions are discussed below.

2. Acceptance of Coverage

It is assumed that newly covered individuals would be required to accept coverage for themselves and any eligible dependents. Research indicates that 5.3 percent of employees offered employer-sponsored health insurance in 1977 declined it, and 1.3 percent of employees who were uninsured for a full year had declined available group insurance.[36] These figures would likely be higher if coverage were extended to the uninsured population on a voluntary basis, particularly among part-time employees who would have to pay a sizable share of premiums. Of employees who do currently participate in an employer health plan, 3 percent of their spouses and 8 percent of their children under age 18 have no health coverage.[37] Since the purpose of this study is to determine the *potential* effects of a particular approach in covering the uninsured population, the plans are assumed to be mandatory for both employer and employee, including coverage of dependents not covered through their own employment.

Employees would be required to accept their own employers' coverage, whether or not they already have coverage as dependents through the employers of family members. It is assumed that em-

[36] Monheit, Alan C., et al. The Employed Uninsured and the Role of Public Policy. Inquiry, winter 1985. p. 354.

[37] U.S. Congress. House. Health Insurance and the Uninsured: Background Data and Analysis. House Education and Labor Committee Serial No. 100-Z; House Energy and Commerce Committee Serial No. 100-X; Senate Special Committee on Aging Serial No. 100-I. Washington, U.S. Govt. Print. Off., May 1988. p. 101.

ployees who fall into this category would retain the dependent coverage as secondary coverage, since such coverage would often be superior to that of the mandated plan.

3. Utilization of Services

Extension of health insurance to the currently uninsured would be expected to affect this group's utilization of health care services. In this analysis, it has been assumed that utilization patterns of the newly insured would eventually follow that of like individuals who already have employer-provided insurance. To estimate utilization changes, utilization by type of service was determined for the insured group by sex, age group, income level, and health status. Each newly insured individual was assumed to change his/her utilization rates to an extent that average rates for the already insured and the newly insured would be the same for each socioeconomic category. Any transitional behavior that might occur (e.g., having a much higher utilization rate in the first year to obtain care for past, untreated problems) was ignored. Thus, the estimated utilization rates represent behavior that might be expected after such a transition period.

Utilization rates would be expected to differ among health plans depending on each plan's benefits and cost-sharing. However, the methodology used in this project to estimate increased utilization generally could not be refined to make such distinctions. (One exception that was modeled is whether a plan covers a broad category of service such as mental health care.) Individuals in existing health plans who would obtain better coverage as a result of a mandated plan would be likely to increase utilization, but the methodology used could not provide estimates for this effect.

4. Employer Reactions to Mandate of National Standards

The mandating of a national standard for employer health insurance coverage could affect employers' decisions regarding their health plans and other aspects of employee compensation. Many employers have plans that may exceed the standard to be set by a mandated plan. In this analysis, it was assumed that such employers would leave their current plans unchanged.[38] Other employers currently offer health plans that are inadequate relative to the mandated plan. It was assumed that these employers would comply with a requirement that such plans be upgraded to achieve actuarial equivalence with the mandated plan.

The potential reactions of employers to the added costs of a mandate are discussed in section IV of this chapter. However, the analysis of impacts on individuals in section II does not reflect potential reactions by employers that might affect the employment or compensation of workers.

5. Other Assumptions

Many other technical assumptions were necessary to estimate the effects of the illustrative plans. These assumptions are described in appendix B to this report.

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[38] Experience with regulation of employee pension plans has shown that employers seldom revise plan benefits downward to minimum required levels.

II. Effects on Individuals

This section describes the potential effects of the illustrative plans on individuals. First, the characteristics of those newly covered and those left uninsured are discussed. Second, the impact each plan would have on individual and family expenditures for health care is analyzed. Finally, estimates of changes in individuals' utilization of health care services are presented.[39]

A. EXTENSION OF COVERAGE

1. The Mandated Employer Plans

a. Changes in coverage status.

The eligibility rules assumed for the three mandated employer plans are identical. Thus, each plan would extend coverage to the same group of people. Estimated changes in coverage status for the three plans are summarized in table 3.6.

TABLE 3.6.—Changes in Health Insurance Coverage Under Illustrative Plans, 1986

(Millions of individuals)

Illustrative plan and current insurance status	Total	No change	Coverage status under plan				
			Under existing employer plan with change		Under new coverage		
			Plan improved	Newly covered as dependents	Employee	Dependent	Employee who was covered as dependent
Typical:							
Insured	202.1	108.8	42.6	0.8	18.4	10.7	20.8
Uninsured	37.4	6.0	—	1.8	17.8	11.7	—
Total	239.5	114.8	42.6	2.6	36.2	22.4	20.8
Tailored:							
Insured	202.1	128.7	22.8	0.8	18.4	10.7	20.8
Uninsured	37.4	6.0	—	1.8	17.8	11.7	—
Total	239.5	134.7	22.8	2.6	36.2	22.4	20.8
Catastrophic:							
Insured	202.1	129.8	21.7	0.8	18.4	10.7	20.8
Uninsured	37.4	6.0	—	1.8	17.8	11.7	—
Total	239.5	135.8	21.7	2.6	36.2	22.4	20.8
Medicaid:							
Insured	202.1	199.0	[1] 3.1	—	—	—	—
Uninsured	37.4	28.9	—	—	3.8	4.7	—
Total	239.5	227.9	3.1	0.0	3.8	4.7	0.0
Combined:							
Insured	202.1	125.5	[2] 25.9	0.8	18.4	10.7	20.8
Uninsured	37.4	3.9	—	1.8	[2] 19.2	[3] 12.5	—
Total	239.5	129.4	25.9	2.6	37.6	23.2	20.8

[1] This group with plan improvement includes 3.1 million people who would have the cost-sharing under existing health plans reimbursed by the Medicaid program.
[2] This group includes 1.4 million who would be newly covered by Medicaid.
[3] This group includes 0.8 million who would be newly covered by Medicaid.

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

[39] Aggregate changes in utilization are discussed in section III of this chapter.

Of the 37.4 million uninsured, these plans would leave only 6.0 million still uninsured. The 31.3 million who would gain insurance (see the "Uninsured" rows of table 3.6) would do so as follows: 17.8 million would be covered as employees under new plans; 11.7 million would be covered as their dependents; and 1.8 million are uninsured dependents who would be covered by existing plans.

The "Insured" rows of table 3.6 show the new situation for the 202.1 million who already have health insurance. About one in four would be covered by new employer plans as follows: 18.4 million would be covered as employees who would drop their prior coverage (mostly individual policies); 10.7 million would be covered as the dependents of these employees; and 20.8 million, who are now covered as dependents on existing employer plans, would be covered as employees by the new plan.

A small number of those already insured (0.8 million) would gain insurance as dependents under existing plans. The remaining insured would be split between those whose status would not change and those who would see their benefits under existing plans improved. The number with improved benefits is greatest for the typical plan (42.6 million). The tailored and catastrophic plans would improve existing plans for 22.8 million and 21.7 million persons, respectively.

To summarize, nearly 80 million people would be covered by new employer plans, of whom 57 million would be covered as employees. However, only 18 million of these employees would be from the uninsured population, the other 39 million being transferees from existing group and individual plans.

Each of the three plans would leave 6.0 million people still uninsured. To reduce this number further would require relaxation of one or more of three eligibility rules. Employees would have to be covered: (1) with less than 10 hours of work per week; (2) with less than five weeks of work during the year; and/or (3) if under age 18 and a dependent in an adult's household. However, only one-fourth of the 6.0 million still uninsured could possibly be reached by these measures.

This analysis assumes that all covered individuals participate in a health plan. If it is assumed that part-timers with few hours of work would not participate heavily, or that their participation would not be required, then there would be fewer people covered by these illustrative plans. For example, the number of newly insured would decline by 5.4 percent if coverage were extended only to those working at least 20 hours instead of 10 hours; a 30-hour threshold would reduce the newly insured by 15.7 percent. Requiring coverage only above 30 hours would leave 10.9 million uninsured instead of the 6.0 million reported above.

b. The newly insured population.

Each of the three employer plans would reduce the uninsured population from 37.4 million to 6.0 million, creating a newly insured population of 31.3 million. The demographic characteristics of this newly insured group are shown in table 3.7; economic characteristics are given in table 3.8.

The newly insured would be relatively young, 44 percent of the group being children of newly covered employees. One-third of the newly insured would be under age 18, and over half would be under age 25. Males would comprise 51.3 percent of the newly insured. Over one-third would reside in the South, compared to only 13 percent in the Northeast.

TABLE 3.7.—Demographic Characteristics of the Newly Insured and the Remaining Uninsured Under the Mandatory Employer Illustrative Plans, 1986

(In thousands)

Population characteristic	Currently uninsured		Newly insured		Remaining uninsured		Percentage reduction in uninsured
	Number	Percent	Number	Percent	Number	Percent	
Total	37,390	100.0	31,345	100.0	6,045	100.0	83.8
By age:							
Under 18	12,211	32.7	10,289	32.8	1,922	31.8	84.3
18–24	8,103	21.7	7,188	22.9	915	15.1	88.7
25–34	7,056	18.9	6,389	20.4	667	11.0	90.5
35–44	3,300	8.8	3,015	9.6	285	4.7	91.4
45–54	3,194	8.5	2,534	8.1	660	10.9	79.3
55–64	3,194	8.5	1,893	6.0	1,301	21.5	59.3
65 and over	332	0.9	36	0.1	296	4.9	10.8
By race:							
White	31,253	83.6	26,713	85.2	4,540	75.1	85.5
Non-white	6,137	16.4	4,633	14.8	1,504	24.9	75.5
By sex:							
Male	18,978	50.8	16,085	51.3	2,893	47.9	84.8
Female	18,413	49.2	15,262	48.7	3,151	52.1	82.9
By region:							
Northeast	5,060	13.5	3,989	12.7	1,071	17.7	78.8
North Central	7,801	20.9	6,766	21.6	1,035	17.1	86.7
South	14,023	37.5	11,529	36.8	2,494	41.3	82.2
West	10,506	28.1	9,061	28.9	1,445	23.9	86.2
By relationship:							
Family head	7,488	20.0	6,418	20.5	1,070	17.7	85.7
Spouse	5,876	15.7	5,221	16.7	655	10.8	88.9
Child	16,202	43.3	13,912	44.4	2,290	37.9	85.9
Other relative	1,481	4.0	815	2.6	666	11.0	55.0
Unrelated	6,344	17.0	4,979	15.9	1,365	22.6	78.5

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

The newly insured would be concentrated in the lower-income brackets, with 58 percent in families with incomes of less than $20,000. Nevertheless, this group would be largely made up of people residing in families with heads that work full-time all year (60 percent).

TABLE 3.8.—Economic Characteristics of the Newly Insured and the Remaining Uninsured Under the Mandatory Employer Illustrative Plans, 1986

(In thousands)

Population characteristic	Currently uninsured		Newly insured		Remaining uninsured		Percentage reduction in uninsured
	Number	Percent	Number	Percent	Number	Percent	
Total	37,390	100.0	31,345	100.0	6,045	100.0	83.8
By work status of family head and/or spouse:							
Full-time/full-year	19,607	52.4	18,893	60.3	714	11.8	96.4
Less than full-time/full-year	12,328	33.0	11,529	36.8	799	13.2	93.5
No work	5,456	14.6	923	2.9	4,533	75.0	16.9
By family income:							
Under $10,000	12,557	33.6	9,197	29.3	3,360	55.6	73.2
$10,000-$14,999	6,250	16.7	5,151	16.4	1,099	18.2	82.4
$15,000-$19,999	4,301	11.5	3,936	12.6	365	6.0	91.5
$20,000-$29,999	5,722	15.3	5,207	16.6	515	8.5	91.0
$30,000-$39,999	3,350	9.0	3,072	9.8	278	4.6	91.7
$40,000-$49,999	1,893	5.1	1,781	5.7	112	1.9	94.1
$50,000 and over	3,317	8.9	3,001	9.6	316	5.2	90.5

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

c. The remaining uninsured.

Tables 3.7 and 3.8 also show the extent to which the illustrative employer mandates would reduce the uninsured by population characteristic. The proportionate reduction in the uninsured is greater for whites, males, and the prime working ages (25 to 44), reflecting the greater workforce attachment of these groups. Regionally, the Northeast would see the least reduction in its uninsured population.

The reduction in the uninsured is greatest proportionally for the higher income classes and lowest for those with incomes below $10,000. Again, this result reflects relative attachment to the labor force by income class. The uninsured in families with members working full-time all year would be reduced by 96 percent, reflecting the fact that a small number of employed persons would not be covered due to their limited work hours.

Six million would still remain uninsured if one of the three employer plans were implemented. (See tables 3.7 and 3.8.) This group would be older than the newly insured, with more than one-third being age 45 or older. About one-fifth would be in the 55–64 age group, an age range with many early retirees. About 300,000 of the remaining uninsured would be age 65 or older but left uncovered by both the employer mandate and Federal programs. The remain-

ing uninsured would be over half female (52.1 percent), and 41 percent would reside in the South.

The remaining uninsured would be primarily a low-income group, with three-quarters in families with incomes below $15,000. Three-quarters would belong to families with no members in the workforce.

2. The Medicaid Expansion Plan

a. Changes in coverage status.

By extending the Medicaid program to everyone in families with income below the federally defined poverty level and assets below certain eligibility limits, the uninsured population would be reduced from 37.4 million to 28.9 million (table 3.9). Thus, 8.4 million persons would be added to the Medicaid program,[40] whose participants numbered 32.7 million in 1986. These additional 8.4 million people are estimated participants who would actually seek health care services reimbursable by Medicaid. The number of eligibles, which would be a larger figure, is not used in the analysis since it is known that Medicaid participation is well below the number of eligibles in the current program.

b. The newly insured population.

The demographic characteristics of the 8.4 million assumed to be newly covered by the illustrative Medicaid expansion are shown in table 3.9. Their economic characteristics are shown in table 3.10. Compared to those currently uninsured, the Medicaid expansion would bring coverage to a group that is somewhat younger (58 percent under age 25 instead of 54 percent), more likely to be nonwhite (21 percent instead of 16 percent), and more likely to live in the South (46 percent rather than 38 percent). The breakdown of the new Medicaid participants by sex is almost identical to that for the currently uninsured.

The economic characteristics of the new Medicaid participants show them to be far different from the currently uninsured population due to the means test used to determine eligibility. Only 18 percent of the new participants would be in families with members working full-time all year, compared to 52 percent for those now uninsured. Over three-fourths of the new participants would be in families with incomes below $10,000, an income group that includes only one-third of the currently uninsured.

[40] This newly covered group may include some persons who have recently attained coverage through legislation taking effect in 1987 and subsequent years.

TABLE 3.9.—Demographic Characteristics of the Newly Insured and the Remaining Uninsured Under the Medicaid Expansion Illustrative Plan, 1986

(In thousands)

Population characteristic	Currently uninsured		Newly insured		Remaining uninsured		Percentage reduction in uninsured
	Number	Percent	Number	Percent	Number	Percent	
Total	37,390	100.0	8,445	100.0	28,945	100.0	22.6
By age:							
Under 18	12,211	32.7	2,853	33.8	9,358	32.3	23.4
18–24	8,103	21.7	2,064	24.4	6,039	20.9	25.5
25–34	7,056	18.9	1,485	17.6	5,571	19.2	21.0
35–44	3,300	8.8	489	5.8	2,811	9.7	14.8
45–54	3,194	8.5	777	9.2	2,417	8.4	24.3
55–64	3,194	8.5	761	9.0	2,433	8.4	23.8
65 and over	332	0.9	15	0.2	317	1.1	4.5
By race:							
White	31,253	83.6	6,646	78.7	24,607	85.0	21.3
Non-white	6,137	16.4	1,799	21.3	4,338	15.0	29.3
By sex:							
Male	18,978	50.8	4,280	50.7	14,698	50.8	22.6
Female	18,413	49.2	4,166	49.3	14,247	49.2	22.6
By region:							
Northeast	5,060	13.5	1,190	14.1	3,870	13.4	23.5
North Central	7,801	20.9	1,617	19.1	6,184	21.4	20.7
South	14,023	37.5	3,869	45.8	10,154	35.1	27.6
West	10,506	28.1	1,770	21.0	8,736	30.2	16.8
By relationship:							
Family head	7,488	20.0	1,607	19.0	5,881	20.3	21.5
Spouse	5,876	15.7	1,155	13.7	4,721	16.3	19.7
Child	16,202	43.3	3,315	39.3	12,887	44.5	20.5
Other relative	1,481	4.0	340	4.0	1,141	3.9	23.0
Unrelated	6,344	17.0	2,030	24.0	4,314	14.9	32.0

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

c. The remaining uninsured.

Those who would remain uninsured after a Medicaid expansion are also depicted in tables 3.9 and 3.10. Since this group would be equal to three-fourths of the uninsured population prior to the Medicaid expansion, its characteristics are similar to the full group's. However, some subgroups would have their uninsured numbers reduced more substantially than others. For example, the uninsured with below-poverty incomes would be cut by 53 percent; the uninsured in families with no one working full-time all year would be decreased by more than one-third; the number of uninsured non-whites would be reduced by 29 percent; and the number of uninsured in the South would be reduced by 28 percent.

TABLE 3.10.—Economic Characteristics of the Newly Insured and the Remaining Uninsured Under the Medicaid Expansion Illustrative Plan, 1986

(In thousands)

Population characteristic	Currently uninsured		Newly insured		Remaining uninsured		Percentage reduction in uninsured
	Number	Percent	Number	Percent	Number	Percent	
Total	37,390	100.0	8,445	100.0	28,945	100.0	22.6
By work status of family head and/or spouse:							
Full-time/full-year	19,607	52.4	1,546	18.3	18,061	62.4	7.9
Less than full-time/full-year	12,328	33.0	5,052	59.8	7,276	25.1	41.0
No work	5,456	14.6	1,848	21.9	3,608	12.5	33.9
By family income:							
Under $10,000	12,557	33.6	6,600	78.2	5,957	20.6	52.6
$10,000-$14,999	6,250	16.7	1,024	12.1	5,226	18.1	16.4
$15,000-$19,999	4,301	11.5	353	4.2	3,948	13.6	8.2
$20,000-$29,999	5,722	15.3	468	5.5	5,254	18.2	8.2
$30,000-$39,999	3,350	9.0	0	0.0	3,350	11.6	0.0
$40,000-$49,999	1,893	5.1	0	0.0	1,893	6.5	0.0
$50,000 and over	3,317	8.9	0	0.0	3,317	11.5	0.0

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

3. Combination of Medicaid Expansion and the Tailored Plan

a. Changes in coverage status.

The combination of the Medicaid expansion and the tailored plan would leave only 3.9 million uninsured, a 90-percent reduction in the uninsured population. The numbers newly eligible for an employer plan would be the same as reported above for the tailored plan. There would be 3.1 million people already covered by employer plans who would attain Medicaid eligibility as well and have some or all of their cost sharing under the employer plans reimbursed by Medicaid.

b. The newly insured population.

Tables 3.11 and 3.12 show the characteristics of those newly insured under the combination approach. Since all but one-tenth of the uninsured would be covered, the characteristics of the newly insured reflect that of the currently uninsured population. One exception is work status, with only 8 percent of the newly insured living in families with no member working compared to 15 percent of the currently uninsured.

TABLE 3.11.—Demographic Characteristics of the Newly Insured and the Remaining Uninsured Under the Combined Medicaid Expansion and Tailored Illustrative Plans, 1986

(In thousands)

Population characteristic	Currently uninsured		Newly insured		Remaining uninsured		Percentage reduction in uninsured
	Number	Percent	Number	Percent	Number	Percent	
Total	37,390	100.0	33,486	100.0	3,904	100.0	89.6
By age:							
Under 18	12,211	32.7	11,013	32.9	1,198	30.7	90.2
18–24	8,103	21.7	7,485	22.4	618	15.8	93.6
25–34	7,056	18.9	6,647	19.9	409	10.5	94.2
35–44	3,300	8.8	3,167	9.5	133	3.4	96.0
45–54	3,194	8.5	2,822	8.4	372	9.5	88.4
55–64	3,194	8.5	2,300	6.9	894	22.9	72.0
65 and over	332	0.9	52	0.2	280	7.2	15.7
By race:							
White	31,253	83.6	28,184	84.2	3,069	78.6	90.2
Non-white	6,137	16.4	5,302	15.8	835	21.4	86.4
By sex:							
Male	18,978	50.8	17,187	51.3	1,791	45.9	90.6
Female	18,413	49.2	16,300	48.7	2,113	54.1	88.5
By region:							
Northeast	5,060	13.5	4,385	13.1	675	17.3	86.7
North Central	7,801	20.9	7,134	21.3	667	17.1	91.4
South	14,023	37.5	12,551	37.5	1,472	37.7	89.5
West	10,506	28.1	9,415	28.1	1,091	27.9	89.6
By relationship:							
Family head	7,488	20.0	6,751	20.2	737	18.9	90.2
Spouse	5,876	15.7	5,494	16.4	382	9.8	93.5
Child	16,202	43.3	14,697	43.9	1,505	38.6	90.7
Other relative	1,481	4.0	1,017	3.0	464	11.9	68.7
Unrelated	6,344	17.0	5,528	16.5	816	20.9	87.1

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

c. The remaining uninsured.

Those remaining uninsured under the combined approach are significantly older than the currently uninsured. (Thirty percent are age 55 or older.) This group also tends to be more female, more non-white, and more low-income than the currently uninsured population. Of the remaining uninsured, 31 percent would be under age 18.

TABLE 3.12.—Economic Characteristics of the Newly Insured and the Remaining Uninsured Under the Combined Medicaid Expansion and Tailored Illustrative Plans, 1986

(In thousands)

Population characteristic	Currently uninsured		Newly insured		Remaining uninsured		Percentage reduction in uninsured
	Number	Percent	Number	Percent	Number	Percent	
Total	37,390	100.0	33,486	100.0	3,904	100.0	89.6
By work status of family head and/or spouse:							
Full-time/full-year	19,607	52.4	18,946	56.6	661	16.9	96.6
Less than full-time/full-year	12,328	33.0	11,866	35.4	462	11.8	96.3
No work	5,456	14.6	2,675	8.0	2,781	71.2	49.0
By family income:							
Under $10,000	12,557	33.6	11,046	33.0	1,511	38.7	88.0
$10,000–$14,999	6,250	16.7	5,392	16.1	858	22.0	86.3
$15,000–$19,999	4,301	11.5	3,953	11.8	348	8.9	91.9
$20,000–$29,999	5,722	15.3	5,241	15.7	481	12.3	91.6
$30,000–$39,999	3,350	9.0	3,072	9.2	278	7.1	91.7
$40,000–$49,999	1,893	5.1	1,781	5.3	112	2.9	94.1
$50,000 and over	3,317	8.9	3,001	9.0	316	8.1	90.5

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

B. IMPACT ON HEALTH CARE EXPENDITURES

1. Aggregate Changes by Payment Source

Each of the illustrative plans would affect national health care expenditures and cause significant shifts in the sources of payment for health care. Each plan would reduce the amounts that individuals must spend for health care. These estimated effects of the plans, had they been in effect in 1986, are summarized in table 3.13.

Each plan would have increased 1986 national health care expenditures, the typical plan having the largest effect ($14.6 billion, or 4.6 percent) of the employer mandates. The Medicaid expansion would have increased national expenditures by $4.1 billion (1.3 percent). These net increases are far less than the increased expenditures to be borne by employer plans, in the case of the mandates, or by governments in the case of a Medicaid expansion. This result is because the people newly covered by employers or by a Medicaid expansion would include individuals who would shift from another type of coverage. For instance, under the typical plan employers would have had to provide coverage to 61.2 million additional people, of whom only 31.3 million do not now have insurance.

TABLE 3.13.—Change in Health Care Expenditures by Payment Source Under Illustrative Plans, 1986

(In billions of dollars)

Payment source	Health care expenditures,[1] current law	Change in health care expenditures [1] under:				
		Typical plan	Tailored plan	Catastrophic plan	Medicaid expansion	Combined plan
Total	316.2	14.6	12.8	4.4	4.1	14.7
Household out-of-pocket	86.7	−4.0	−2.6	−0.6	−5.6	−7.6
Employer group insurance	92.1	32.5	28.2	9.1	0.0	28.2
Individual insurance	12.8	−5.0	−5.0	0.0	−1.1	−5.8
Other private sources	11.2	−1.2	−1.1	−0.5	−0.5	−1.6
Medicare	69.4	−2.3	−2.1	−1.0	0.0	−2.1
Medicaid	25.2	−2.0	−1.6	−1.1	13.3	7.3
Other government payments	18.7	−3.3	−3.1	−1.6	−2.0	−3.8

[1] These figures exclude expenditures for long-term care.

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

Individuals would have realized savings from their health care expenditures in 1986 under each plan, according to these estimates. These reductions range up to $7.6 billion (8.8 percent of the 1986 level of household health care expenditures) for the combination plan. (Increased expenditures for employer plans under the mandates are discussed in section IV of this chapter. Fiscal impacts on public programs are discussed in section VI.)

2. Changes in Average Family's Health Care Costs

The average family had health care costs of $1,248 in 1986.[41] (See tables 3.14 and 3.15.) Premium payments accounted for $408, with out-of-pocket spending for health care services (including cost sharing amounts and amounts for uncovered services) making up the remaining $840. Average costs were higher ($1,298) for families with heads who worked full-time all year, reflecting their greater propensity to have health insurance and, therefore, to pay premiums. The average cost for families with heads working less than full-time all year long was $1,096.

[41] The average family cost data discussed here are averages for all families regardless of insurance status. Thus, the figures understate the changes in costs that would be expected for families most affected by mandated coverage.

TABLE 3.14.—Change in Average Family Cost for Health Care Under the Mandatory Employer Illustrative Plans, by Family Characteristics [1] (1986)

Family Characteristic	Current law			Typical plan			Tailored plan			Catastrophic plan		
	Average Premium	Average O/P [2]	Total	Average Premium	Average O/P [2]	Total	Average Premium	Average O/P [2]	Total	Average Premium	Average O/P [2]	Total
Total	$408	$840	$1,248	$344	$801	$1,145	$401	$815	$1,216	$465	$835	$1,300
By age of head:												
Under 18	220	932	1,152	221	928	1,150	230	927	1,158	224	933	1,157
18-24	206	565	772	166	549	715	238	544	782	248	572	819
25-34	332	635	966	266	573	839	323	613	936	396	619	1,016
35-44	466	948	1,413	371	929	1,300	437	933	1,369	535	942	1,477
45-54	440	975	1,415	357	944	1,301	449	955	1,404	522	982	1,505
55-64	471	1,064	1,535	349	995	1,344	423	1,025	1,448	524	1,067	1,591
65 and over	514	924	1,438	513	892	1,405	521	888	1,409	545	909	1,454
By race:												
White	420	867	1,287	351	827	1,178	409	844	1,253	477	863	1,340
Non-white	321	650	971	293	612	904	342	605	948	376	630	1,006
By marital status:												
Married	556	1,057	1,613	472	1,010	1,482	540	1,021	1,560	641	1,060	1,701
Single-male	165	391	556	82	386	468	151	447	598	169	384	553
Single-female	229	609	838	174	571	745	220	573	793	233	587	821
By region:												
Northeast	352	881	1,233	282	857	1,139	351	873	1,224	391	876	1,267
North Central	409	782	1,192	339	756	1,095	391	769	1,159	463	788	1,250
South	474	910	1,384	395	843	1,238	458	881	1,339	541	890	1,432
West	375	778	1,153	342	746	1,088	386	731	1,117	439	779	1,217
By income:												
Under $10,000	237	609	846	265	568	833	280	600	880	275	578	853
$10,000-$14,999	390	875	1,265	375	791	1,166	404	776	1,180	461	845	1,306
$15,000-$19,999	422	761	1,183	358	717	1,075	396	721	1,117	482	759	1,241
$20,000-$29,999	453	938	1,391	370	887	1,265	433	895	1,329	517	936	1,453
$30,000-$39,999	464	845	1,309	353	815	1,169	434	807	1,241	519	867	1,386
$40,000-$49,999	440	801	1,241	345	793	1,138	423	803	1,226	493	806	1,299
$50,000 and over	525	1,085	1,611	385	1,063	1,448	487	1,102	1,589	592	1,094	1,687

[1] Data pertain to all families, whether or not covered by a plan.
[2] Out-of-pocket health care expenditures.

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

The *typical plan* would reduce both elements of this average expenditure substantially, to estimated amounts of $344 and $801, respectively, for an average (1986) yearly saving of $103. (It should be noted that this out-of-pocket amount of $801 assumes that newly covered families would utilize more health care services than they would while uninsured.) The average family's savings would be larger for families with older heads, for whites, for married couples, for residents of the South, and for those in the middle- and upper-income brackets. Families headed by full-time workers would save more ($153) on average than would those headed by part-time or part-year workers ($63) because of the higher share of premium costs part-timers would have to pay.

TABLE 3.15.—Change in Average Family Cost for Health Care Under the Medicaid Expansion Illustrative Plans, by Family Characteristics [1] (1986)

Family Characteristic	Current law			Medicaid expansion			Combination of Medicaid expansion and tailored plan		
	Average Premium	Average O/P [2]	Total	Average Premium	Average O/P [2]	Total	Average Premium	Average O/P [2]	Total
Total	$408	$840	$1,248	$390	$786	$1,177	$376	$767	$1,143
By age of head:									
Under 18	220	932	1,152	72	756	827	58	752	810
18–24	206	565	772	191	490	682	212	471	683
25–34	332	635	966	326	589	915	303	582	885
35–44	466	940	1,413	458	905	1,363	421	892	1,312
45–54	440	975	1,415	427	926	1,352	431	912	1,344
55–64	471	1,064	1,535	448	1,006	1,454	395	982	1,377
65 and over	514	924	1,438	474	864	1,338	483	820	1,304
By race:									
White	420	867	1,287	404	820	1,224	387	801	1,188
Non-white	321	650	971	291	543	833	296	520	816
By marital status:									
Married	556	1,057	1,613	542	1,013	1,555	521	984	1,506
Single-male	165	391	556	150	359	508	131	403	534
Single-female	229	609	838	201	536	736	187	508	695
By region:									
Northeast	352	881	1,233	340	841	1,181	335	839	1,173
North Central	409	782	1,192	395	745	1,140	368	724	1,092
South	474	910	1,384	444	818	1,262	421	803	1,224
West	375	778	1,153	364	743	1,106	367	701	1,068
By income:									
Under $10,000	237	609	846	172	413	585	190	426	616
$10,000–$14,999	390	875	1,265	374	827	1,201	380	730	1,110
$15,000–$19,999	422	761	1,183	419	736	1,155	390	704	1,094
$20,000–$29,999	453	938	1,391	448	927	1,375	428	884	1,312
$30,000–$39,999	464	845	1,309	462	843	1,305	431	802	1,233
$40,000–$49,999	440	801	1,241	439	800	1,239	422	802	1,224
$50,000 and over	525	1,085	1,611	524	1,084	1,608	486	1,099	1,585

[1] Data pertain to all families, whether or not covered by a plan.
[2] Out-of-pocket health care expenditures.

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

The *tailored plan* would reduce the average family's 1986 expenditures to an estimated sum of $1,216 ($401 for premiums and $815 for out-of-pocket expenditures). Reductions below current law would be smaller than for the typical plan because full-time employees would have to pay part of the premiums for their own coverage under the tailored plan and because covered services would be more limited under that plan. Groups with low coverage rates under current policy would tend to have somewhat higher costs under the tailored plan than currently, because the greater expenditures for the premiums they would have to pay and the assumed increases in use of health care services would outweigh their reduced out-of-pocket costs for each service used. These groups would include families with heads under age 25, those with incomes below $10,000, and those headed by single males. Families headed by full-time workers would pay $24 less in average annual premiums, while other families with working heads would pay $33

more. However, the latter group would have more substantial out-of-pocket savings ($71 compared to $17), leaving little difference in terms of change in average health care costs.

If no increase in the utilization of health care services were assumed for the *catastrophic plan,* the average family's (1986) expenditures would rise slightly compared to current law. Premiums would rise by an average of $37 due to premiums required of part-time employees and the addition of a catastrophic limit in some existing employer plans. Out-of-pocket expenditures would fall by an average of $19, as few families would breach the catastrophic expenditure limits to receive benefits in any one year. However, because of the redistributional nature of the income-tested catastrophic plan, the lowest income class (under $10,000) would have a net saving in average total family expenditures of $19.

Assuming that utilization would increase in response to the catastrophic plan, the average family's expenditures would rise by $51 per year. Premiums would increase by $57 because employees who work from 10 to 30 hours would be required to pay part of the premium and employee premiums for existing plans would not be reduced as in the other mandates. Out-of-pocket expenditures would fall by an average of $6 per year, reflecting the fact that few families would reach the catastrophic limits. The savings for these few families would be significant. It is estimated that a total of 346,000 families with the highest out-of-pocket expenditures would see an average reduction of $1,671 in those expenditures.

Since there would be no premium charges to Medicaid participants and very small copayments required, the cost to the average family would be substantially less under the *Medicaid expansion.* The average family's premium would fall by $18, and the average out-of-pocket figure would decline by $54, for a total saving of $71 a year. For certain subgroups, the average saving would be quite substantial: $325 for families headed by someone under age 18; $138 for non-whites; $102 for families headed by unmarried women; $122 for families residing in the South; and $261 for families with incomes below $10,000.

The average family would achieve savings in health care costs of $105 a year under the *combination plan.* Savings would be even larger for families headed by persons under age 18 ($342), non-whites ($155), single females ($143), and those making less than $10,000 ($230).

3. Distribution of Family Gains and Losses

The distribution of families by whether they would spend less or more on health care services under the mandatory employer plans is shown in table 3.16.[42] The typical plan produces more families that would spend less, the tailored plans would leave a somewhat greater number of families spending more, and the catastrophic plan would leave many more families with higher expenditures.

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[42] Some employees might receive lower wages over time if employers offset their added health insurance costs by reducing other forms of compensation. (See discussion in section IV of this chapter.) This possibility has not been factored into this analysis of family gains and losses.

Under the *typical plan,* it is estimated that 28.6 percent of families would spend at least $20 less than before, while 17.6 percent would spend at least $20 more. This plan would produce the greatest ratio of winners to losers among families with higher incomes, heads who are single, and heads who are older. However, about 70 percent of families in the lowest income brackets would experience little change (less than $20 either way) in their health care expenditures. Of families with heads under age 18, 85 percent would experience little change. These groups are less affected by the employer mandate approach.

TABLE 3.16.—Distribution of Families by Size of Change in Health Care Cost Under Mandatory Employer Illustrative Plans, 1986, by Family Characteristics

(Percent of families)

Family characteristic	Typical plan			Tailored plan			Catastrophic plan		
	Cost lower by > $20	Cost higher by > $20	Little change	Cost lower by > $20	Cost higher by > $20	Little change	Cost lower by > $20	Cost higher by > $20	Little change
Total (percent)	28.6	17.6	53.8	21.5	29.7	48.8	1.3	21.6	77.1
By income:									
Under $10,000	13.2	16.5	70.3	10.3	23.4	66.3	4.2	14.1	81.7
$10,000–$14,999	29.1	14.2	56.7	22.9	20.6	56.5	1.9	18.9	79.2
$15,000–$19,999	29.4	13.7	56.9	22.0	20.1	57.9	0.9	17.4	81.7
$20,000–$29,999	32.9	17.1	50.0	23.3	29.9	46.8	0.5	21.8	77.7
$30,000–$39,999	34.6	16.2	49.2	27.8	31.3	40.9	0.1	22.5	77.4
$40,000–$49,999	28.7	18.2	53.1	19.2	37.8	43.0	0.1	22.1	76.8
$50,000 and over	38.9	24.1	37.0	29.8	42.0	28.2	0.0	33.0	67.0
By percent of poverty:									
Under 100	11.3	19.9	68.8	9.1	26.2	64.7	5.8	17.3	76.9
100–149	19.8	20.6	59.6	17.0	27.1	55.9	2.3	22.7	75.0
150–199	27.7	18.5	53.8	24.7	26.8	48.5	1.0	23.4	75.6
200–299	29.1	15.5	55.4	21.9	28.3	49.8	0.7	21.3	78.0
300 and over	35.6	16.8	47.6	25.6	32.1	42.3	0.1	22.4	77.5
By marital status:									
Married	30.0	23.0	47.0	24.5	38.1	37.4	1.2	31.4	67.4
Single-male	33.0	9.5	57.5	22.9	21.3	55.8	0.7	6.0	93.3
Single-female	26.9	6.1	67.0	16.2	11.8	72.0	1.9	4.6	93.5
By age of head:									
Under 18	5.6	9.2	85.2	3.4	10.6	86.0	0.0	5.3	94.7
18–24	28.8	26.3	44.9	20.1	42.3	37.6	2.5	26.0	71.5
25–34	33.6	18.1	48.3	25.0	30.4	44.6	1.4	21.4	77.2
35–44	31.8	23.4	44.8	24.8	36.6	38.6	0.8	28.1	71.1
45–54	33.2	23.8	43.0	25.0	43.0	32.0	1.2	31.2	68.6
55–64	35.6	11.2	53.2	25.4	25.4	49.2	1.4	18.7	79.9
65 and over	12.3	6.3	81.4	10.8	8.5	80.7	1.2	9.4	89.4
By health care expenditures:									
$0	20.7	8.1	71.2	14.9	33.5	51.6	0.0	7.7	92.3
$1–$249	26.9	16.8	56.3	18.2	31.5	50.3	0.3	14.0	85.7
$250–$499	28.2	19.2	52.6	21.2	28.5	50.3	0.1	19.9	80.0
$500–$999	30.6	17.9	51.5	24.0	27.1	48.9	1.3	21.3	77.4
$1,000–$1,499	27.6	17.1	55.3	20.8	29.7	49.5	0.8	21.9	77.3
$1,500–$1,999	33.0	18.2	48.8	26.4	29.1	44.5	0.4	26.3	73.3
$2,000–$4,999	30.2	19.5	50.3	23.1	31.0	45.9	1.6	27.0	71.4
$5,000–$9,999	29.5	18.3	52.2	21.7	30.1	48.2	2.9	24.4	72.7
$10,000 and over	22.3	13.3	64.4	16.3	28.1	55.6	4.5	17.6	77.9

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

The *tailored plan* would require an estimated 21.5 percent of families to pay more for medical care and 29.7 percent to pay less. More families would be worse off than under the typical plan due to the greater premium cost sharing required. One difference in these results compared to the typical plan is that middle-income families would do relatively better under the tailored plan than would others. About two-thirds of the lowest-income families would experience little change, as would 86 percent of families with heads under age 18.

Because the *catastrophic plan* is more redistributive and benefits few families, it would cause many more families (20.5 percent) to spend more on health care than to spend less (1.6 percent). When increased spending for higher utilization is taken into account, these figures become even more one-sided (21.6 percent spending more, 1.3 percent spending less). Although this plan would be needs-based, more families in poverty would see their spending increase rather than decrease. The reason is that families in existing employer plans that would be required to add catastrophic coverage would have to pay premiums, as would those under the income-tested plan who work less than 30 hours per week.

The same breakdown is shown for the *Medicaid expansion* in table 3.17. Virtually no one would have higher health costs under this approach, whereas 10 percent of families would experience sizable reductions in their health costs. The number of families saving at least $20 a year would amount to nearly half the families in poverty and 61 percent of those with heads under age 18. One in six families headed by unmarried women would also realize substantial cost savings.

TABLE 3.17.—Distribution of Families by Size of Change in Health Care Cost Under the Medicaid Expansion Illustrative Plans, 1986, by Family Characteristics

(Percent of families)

Family characteristic	Medicaid expansion			Medicaid expansion plus tailored plan		
	Cost lower by > $20	Cost higher by > $20	Little change	Cost lower by > $20	Cost higher by > $20	Little change
Total (percent)	10.2	0.1	89.7	30.7	26.3	43.0
By income:						
Under $10,000	33.4	0.4	65.1	41.0	11.6	47.4
$10,000-$14,999	8.5	0.0	91.5	29.7	18.1	52.2
$15,000-$19,999	5.0	0.0	95.0	27.2	18.4	54.4
$20,000-$29,999	3.7	0.0	96.3	26.6	29.1	44.3
$30,000-$39,999	1.6	0.0	98.4	29.6	31.0	39.4
$40,000-$49,999	0.6	0.0	99.4	19.7	37.5	42.8
$50,000 and over	1.4	0.0	98.6	30.7	41.6	27.7
By percent of poverty:						
Under 100	47.0	0.4	52.6	51.5	9.3	39.2
100-149	14.4	0.4	85.2	27.1	23.3	49.3
150-199	5.1	0.0	94.9	30.0	24.7	45.3
200-299	3.5	0.0	96.5	25.0	27.7	47.3
300 and over	1.6	0.0	98.4	27.3	31.8	40.9
By marital status:						
Married	6.0	(1)	94.0	29.4	36.0	34.6
Single-male	12.4	0.4	87.2	35.3	14.9	49.8
Single-female	16.7	0.1	83.2	31.2	8.5	60.3

TABLE 3.17.—Distribution of Families by Size of Change in Health Care Cost Under the Medicaid Expansion Illustrative Plans, 1986, by Family Characteristics—Continued

(Percent of families)

Family characteristic	Medicaid expansion			Medicaid expansion plus tailored plan		
	Cost lower by > $20	Cost higher by > $20	Little change	Cost lower by > $20	Cost higher by > $20	Little change
By age of head:						
Under 18	61.4	0.0	38.6	64.7	10.6	24.7
18-24	15.0	0.0	85.0	33.3	33.1	33.6
25-34	8.3	0.1	91.6	33.3	25.4	41.3
35-44	7.2	0.0	92.8	31.4	34.7	33.9
45-54	7.7	0.3	92.0	30.8	40.5	28.7
55-64	11.1	0.2	88.7	34.3	23.3	42.4
65 and over	12.5	(1)	87.5	22.0	8.2	69.8
By health care expenditures:						
$0	5.8	0.0	94.2	19.5	25.7	54.8
$1-$249	13.0	0.2	86.8	29.9	24.0	46.1
$250-$499	13.1	0.2	86.7	33.3	24.8	41.9
$500-$999	11.7	0.0	88.3	33.8	24.0	42.2
$1,000-$1,499	8.5	0.0	91.5	28.7	27.6	43.7
$1,500-$1,999	9.7	0.0	90.3	34.8	27.0	38.2
$2,000-$4,999	8.7	0.2	91.1	30.6	28.8	40.6
$5,000-$9,999	8.4	0.1	91.5	29.8	27.0	43.2
Over $10,000	9.7	0.1	90.2	26.1	26.9	47.0

[1] Less than 0.05 percent.

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

Under the *combination plan,* 31 percent of families are estimated to have significant reductions in their health care costs, and 26 percent to have significant increases. However, gainers exceed losers by large margins among those with below-poverty incomes (52 percent versus 9 percent), those headed by unmarried individuals, and those with heads under age 18.

C. IMPACT ON UTILIZATION OF HEALTH CARE SERVICES

Estimates of increased utilization of health care services under the mandatory employer illustrative plans are shown in table 3.18. These estimates result from assuming that a newly insured individual will behave in the same way as an individual who is already insured and is similar in regard to sex, age, income, and health status.

A comparison of the "newly insured" columns for each plan with the "not insured" column under current law shows the effect of each plan on utilization. Utilization of services would be higher for the newly insured with one exception—average length of hospital stays. This figure is either lower or the same for the newly insured as for the currently uninsured because the newly insured, most of whom are employed, are generally healthier than are those who would remain uninsured under the mandatory employer plans. The remaining uninsured would have lower utilization rates than the newly insured for services that tend to be elective, such as physician office visits. However, a relatively uncontrollable factor such

as length of hospital stay would be longer for the remaining uninsured, many of whom would be in this category because they are physically unable to work, a condition that would raise their utilization rates. Utilization is estimated to increase most under the typical plan, and to increase more under the tailored than the catastrophic plan, reflecting the relationship among the three plans in terms of breadth of services covered.

TABLE 3.18.—Estimated Health Care Utilization Under the Mandatory Employer Illustrative Plans, 1986

Utilization measure	Current law		Typical plan			Tailored plan			Catastrophic plan		
	Insured	Not insured	Already insured	Newly insured	Not insured	Already insured	Newly insured	Not insured	Already insured	Newly insured	Not insured
Physician visits per person	3.30	1.91	3.31	2.45	2.31	3.31	2.40	2.30	3.30	2.04	2.11
Percent with physician visits	68.7	52.1	68.7	58.9	49.1	68.7	58.8	49.1	68.7	57.2	51.7
Hospital stays per person	0.16	0.09	0.16	0.12	0.18	0.16	0.11	0.18	0.16	0.08	0.12
Average length of hospital stay (days)	6.83	6.14	6.83	6.09	7.42	6.83	6.14	7.40	6.83	5.25	6.67
Hospital outpatient visits per person	0.66	0.50	0.67	0.62	0.96	0.67	0.60	0.96	0.67	0.41	0.66
Emergency room visits per person	0.27	0.23	0.27	0.37	0.23	0.27	0.37	0.23	0.27	0.30	0.26
Percent with drug expenses	65.7	48.7	65.7	56.9	48.2	65.7	56.4	48.2	65.7	53.4	50.1

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

Table 3.19 shows the increased utilization estimated for the Medicaid expansion. The figures for the newly insured lag far behind the figures for the population already insured for physician visits and drug prescriptions but are comparable for hospital utilization and exceed the insured figures for outpatient and emergency room visits. This outcome is because the Medicaid population is poorer than the general population and includes many people with poorer than average health status.

Combining the Medicaid expansion with the tailored plan leaves an uninsured population that is apparently much less healthy than the currently uninsured. When the utilization estimates for the two groups are compared, the remaining uninsured under the combination plan would make greater use of physician visits, hospital stays, outpatient visits, emergency visits and drug prescriptions. Those remaining uninsured would include persons who are disabled but not eligible for either Medicare or a former employer's plan.

Increased health care utilization by newly covered individuals would have implications for the provision of health care. The potential effects of the illustrative plans on health care providers are discussed in the following section.

TABLE 3.19.—Estimated Health Care Utilization Under the Medicaid Expansion Illustrative Plans, 1986

Utilization measure	Current law		Medicaid expansion			Medicaid expansion plus tailored plan		
	Insured	Not insured	Already insured	Newly insured	Not insured	Already insured	Newly insured	Not insured
Physician visits per person	3.30	1.91	3.30	2.18	2.03	3.31	2.47	2.54
Percent with physician visits	68.7	52.1	68.7	52.2	53.7	68.7	59.0	49.7
Hospital stays per person	0.16	0.09	0.16	0.15	0.08	0.16	0.11	0.20
Average length of hospital stay (days)	6.83	6.14	6.83	6.76	6.17	6.83	6.13	7.48
Hospital outpatient visits per person	0.66	0.50	0.66	0.88	0.47	0.67	0.64	1.14
Emergency room visits per person	0.27	0.23	0.27	0.48	0.21	0.27	0.39	0.38
Percent with drug expenses	65.7	48.7	65.7	53.6	49.9	65.7	56.7	52.1

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

III. AGGREGATE EFFECTS ON HEALTH CARE UTILIZATION AND HEALTH CARE PROVIDERS

A. INTRODUCTION

In general, health insurance coverage can affect an individual's use of medical care services in two ways. First, health insurance reduces the amount the individual must pay to purchase health care services. If other things (e.g., the individual's income, prices of other goods and services) remain the same, then most persons facing reduced prices for health services might be expected to purchase a larger quantity of services. The extent to which the use of health care services would increase depends on: (1) the perceived need for health care services by the newly insured population; (2) the characteristics of the newly insured population; and (3) the specific benefits covered by the plan and the cost-sharing provisions associated with each benefit.

In addition to altering the behavior of health care consumers, health insurance can increase utilization by affecting the behavior of medical care providers. When providers are guaranteed payment through an insurance mechanism, they may feel less constrained in the provision and ordering of medical services. The extent to which the provision of medical services would be altered depends on: (1) the willingness of providers to deliver services; (2) the available capacity of the health care system; (3) the specific payment mechanism incorporated in the health insurance plan; and (4) other constraints imposed by the plan, such as peer review or precertification.

Previous studies have shown that health insurance coverage affects the extent to which medical care services are used. For example, Davis and Reynolds cite increases in the number of medical

contacts made by the poor and the elderly after the implementation of the Medicaid and Medicare programs.[43]

Other studies indicate that the extent of utilization of health care services is sensitive to the specific cost-sharing provisions of a health insurance plan. The Rand health insurance experiment of the 1970s examined the relationship among health insurance coverage, use of health care services, and effects on health status. The Rand experiment focused on the use of medical care services by persons under plans with different cost-sharing requirements. In general, the study found that the use of medical care services is lower with higher enrollee cost sharing and lowest for persons with no health insurance coverage. The series of studies resulting from the Rand experiment, along with subsequent research by other analysts, offer a basis for understanding how uninsured persons may change their utilization of medical services if given health insurance.[44]

This section reviews the likely aggregate changes in the use of health care services and the resulting effects that increasing insurance coverage of the population would have on the price and supply of health care services. Estimates of changes in the use of hospital and physician care under each of the illustrative plans are provided along with a discussion of the potential effects these changes might have on health care providers.

B. CHANGES IN UTILIZATION

The Lewin/ICF Health Benefits Simulation Model assumed that newly insured persons would increase their use of hospital and physician services to the levels of comparable persons already insured. Responses were simulated for the changes in utilization of newly insured persons who, according to the simulations, were part of the 37 million uninsured in 1986 and would be covered by the illustrative plans.

The estimates consider the services included in the specified illustrative plan and the population that would be covered by it. For example, the tailored and the typical plans would cover the same uninsured individuals (31 million persons), but the tailored plan

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[43] Davis, Karen, and Roger Reynolds. The Impact of Medicare and Medicaid on Access to Medical Care. Chapter 10 in: The Role of Health Insurance in the Health Services Sector. Ed., Richard N. Rosett. National Bureau of Economic Research, New York, 1976.

[44] The Rand Health Insurance Experiment (HIE) ran from Nov. 1974 through Jan. 1982. Approximately 8,000 people between the ages of 14 and 61, belonging to 2,700 families from 6 geographic sites, were assigned to 14 different fee-for-service insurance plans or to an HMO. Control groups were also established. The sites were chosen to represent the four census regions, and to reflect a range of city sizes, consumer waiting times for medical care services, and physician-to-population ratios. Families were enrolled in plans for 3- to 5-year periods to determine if the response to the plan changed over time.

Plans covered virtually all medical services. No premium was charged for any plan. Cost-sharing levels among the fee-for-service plans varied by required enrollee coinsurance and by out-of-pocket limits. Enrollee coinsurance rates were 0 (the "free" plan, with no out-of-pocket expenses), 25 percent, 50 percent, and 95 percent. Upper limits on annual out-of-pocket expenses were 5 percent, 10 percent, or 15 percent of annual family income up to a maximum of $1,000. In addition, an "individual deductible" plan required a 95-percent coinsurance payment for outpatient services (with individual and family annual out-of-pocket limits) and free inpatient care. The HMO plan provided a range of benefits identical to the "free" fee-for-service plan. For further discussion of the design of the HIE, including sample, variables, covariates, statistical methods, and empirical results, see Manning, Willard G., Joseph P. Newhouse, Naihua Duan, et al. Health Insurance and the Demand for Medical Care: Evidence from a Randomized Experiment. American Economic Review, June 1987: 251-277.

would not cover any inpatient mental health care services. Thus, the utilization responses for the two plans would differ slightly. The Medicaid expansion, however, would cover a smaller population (8.5 million persons) than the employer-based approaches; therefore, lower aggregate changes in utilization would be associated with the Medicaid option.

This section shows estimates of changes in utilization of health care services rather than changes in demand for health care services. Demand is a theoretical concept, based on incidence of diseases and conditions, and not easily measured. Utilization is the end result of a patient's seeking out health care services, the provider's recommendation of appropriate services, and the provider's willingness to provide services.

1. Model Assumptions

Simplifying assumptions about the nature of the change in the use of medical services by the newly insured population were necessary to produce model estimates. While necessary for this analysis, these assumptions mask complex utilization responses to changes in health insurance coverage. Assumptions are: (1) newly insured persons would use health care services at the same rates as currently insured persons with the same demographic characteristics; (2) health care providers would deliver services to the newly insured at the same rate that they deliver services to the currently insured population; and 3) there would be no unusual initial effects of extending coverage to the uninsured. The limitations of these assumptions are discussed below.

Assumption (1). The use of services by the newly insured would adjust to match the use of services by insured persons with similar demographic characteristics. Researchers have documented differences in the rates of health care utilization by the insured and uninsured, even after accounting for variations in age and income. For example, the uninsured have about half as many physician visits as the insured and about two-thirds as many days in the hospital.[45] The analysis in this chapter assumes that the newly insured would, over time, change their utilization of health care services to match the utilization of services of insured persons of the same sex, age, health status, and income. This assumption may not capture short-run differences between the insured and uninsured. For example, uninsured persons would be more likely than insured persons to see a physician in a hospital outpatient center or emergency room but less likely than the insured to see a physician in an office setting. (See table 3.20.) In the short run, newly insured persons might continue to use emergency and outpatient services because they do not have a regular source of care.[46]

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[45] For a discussion of the differences in use of health care services by the insured and uninsured in 1986, see report number 1 in this series, Health Insurance and the Uninsured: Background Data and Analysis. Chapter 6: in U.S. Congress. House. Committee on Education and Labor and Committee on Energy and Commerce. Committee Print. Washington, U.S. Govt. Print. Off., May 1988.

[46] According to the National Medical Care Expenditures Survey, 22 percent of the uninsured compared to 13 percent of the insured reported no regular source of care in 1977. Short, Pamela Farley, Gail Lee Cafferata and Marc Berk. Outpatient Use of Hospitals by the Poor and Uninsured. National Center for Health Services Research. Paper presented at the Annual Meetings

Continued

TABLE 3.20.—Average Number of Reported Physician Outpatient and Emergency Room Visits and Percentage of Total Visits, 1986

Place of visit	Insured		Uninsured	
	Number	Percent	Number	Percent
Physician	3.30	78	1.91	72
Outpatient	.66	16	.50	19
Emergency room	.27	6	.23	9
Total	4.23	100	2.64	100

Source: Tabulations prepared for CRS by Lewin/ICF from the 1986 Health Interview Survey.

Moreover, differences in the availability of health care providers may continue differences in utilization between the newly insured and the previously insured for a while. For example, areas with a high percentage of uninsured persons may have only one hospital or a limited number of physicians. Even if health insurance were provided to persons in such areas, their use of health care services might not rise to match the use by insured persons of the same sex, age, income, and health status because they do not have the same proximity to health care services.

Over time, the differences would be expected to disappear. But in the meantime, differences in utilization between the insured and the uninsured might persist, and the estimates presented may overstate the utilization of health care services by newly insured persons during this interim period.

Assumption (2). Health care providers would deliver services to the newly insured at the same rate as they do for the currently insured. The estimated changes in utilization assume that, over time, health care providers could fully absorb the increase in demand generated by the newly insured at least at the same rate as for the currently insured. This approach assumes away short-run problems of spot shortages of personnel or facilities that might occur in specific areas of the country. During the time that providers could not meet the demand for services completely, the health care estimates reported in this section overstate the utilization response.

Assumption (3). An initial transition period has ended, and utilization of health care services by the newly insured has stabilized. Research findings suggest an initial surge in the use of medical care services after the extension of health insurance to a previously uninsured population. For example, an analysis of hospital admission rates and lengths of stay showed that, shortly after the implementation of Medicare in 1966, the use of hospital care by the newly insured elderly population increased rapidly, tapering off by 1969.[47] Likewise, researchers have documented an "initial surge" of utilization of health care by persons receiving coverage under a

of the American Public Health Association, Nov. 1985. Updated, Dec. 18, 1986. A more recent survey conducted in 1986 by the Robert Wood Johnson Foundation found that 31 percent of the uninsured compared to 16 percent of the insured reported no regular source of health care. The Robert Wood Johnson Foundation. Special Report. Access to Health Care in the United States: Results of a 1986 Survey.

[47] Pettengill, Julian. Trends in Hospital Use by the Aged. Social Security Bulletin (July 1972). p. 3-14.

prepaid plan arrangement.[48] This short-term effect has been attributed at least in part to the uninsured's propensity to postpone medical care diagnosis and treatment.[49] Thus, pent-up demand could cause a surge of utilization if health insurance were extended to the uninsured. But the size of any surge is uncertain because newly insured persons might adjust to the new access to medical care slowly. The analysis in this section assumes that such a transition period would have ended and that the newly insured would use services in the same patterns as previously insured persons of the same sex, age, health status, and income.

2. Factors Not Modeled

The Lewin/ICF Health Benefits Simulation Model does not take account of two additional factors that might affect the utilization response of the newly insured population. First, the amount and type of health care services used by the newly insured were not adjusted to reflect the specific cost-sharing provisions in the illustrative health insurance plans. Similarly, estimates were not adjusted to reflect specific payment mechanisms or cost-containment provisions of a particular insurance plan. Implicitly, the model assumes that the cost-sharing provisions, payment mechanisms and specific cost-containment provisions of alternative illustrative plans would have the same effect, on average, on the newly insured as similar mechanisms in health insurance plans covering those who are currently insured. The potential influences of these features on the utilization estimates provided in this section are discussed below.

a. Cost-sharing provisions.

Research findings suggest that enrollees' use of health care services increases with more generous insurance coverage. For example, results from the Rand experiment show that enrollees with no cost-sharing requirements had total health care expenses that were 18 percent greater than those of enrollees who had to pay 25 percent of health care expenses out-of-pocket.[50] In general, coinsurance provisions appear to influence the likelihood of a person's seeking services rather than the intensity of treatment once services have begun.

Cost-sharing provisions also might affect the type of services provided. For example, the Rand experiment suggests that, given two plans that are identical except for the coinsurance requirement for outpatient and emergency room care, enrollees will use more outpatient and emergency room care under the plan with lower coin-

[48] Baloff and Griffith studied patient records from a health maintenance organization in Missouri and found that, for 3 to 3½ years, the "newly insured" had higher than average rates of physician visits, and, for 1 to 1½ years, higher than average rates of laboratory tests. After these initial periods, a newly insured person's utilization rates resembled those of other enrollees. See Baloff, Nicholas and Mary Jane Griffith. Policy Implications of Startup Utilization by Enrollees in Prepaid Group Plans. Health Services Research, v. 19(1), Apr. 1 1984. p. 23-40.

[49] Wilensky, Walden and Kasper have documented the uninsured's tendency to postpone care. These researchers found that persons with insurance only part of the year have an average of 3.2 physician visits when not insured but an average of 5.0 physician visits when insured. See Wilensky, Gail, Daniel Walden and Judith Kasper. The Uninsured and Their Use of Health Services. Paper presented at the annual meeting of the American Statistical Association, Aug. 1981.

[50] Manning, Willard G., Joseph P. Newhouse, Naihua Duan, et al. Health Insurance and the Demand for Medical Care: Evidence From A Randomized Experiment. American Economic Review, June 1987. p. 251.

surance requirements. Some of the difference may be attributed to the substitution of outpatient care for inpatient hospital care. Expenditures for emergency services under a plan with no cost sharing were about 16 percent greater than under a plan requiring 25-percent enrollee coinsurance.[51]

Other research findings indicate that outpatient care may be substituted for inpatient care, depending on the availability and price of inpatient care.[52] Similarly, a health insurance plan with no cost-sharing requirements for physician visits may induce the newly insured to substitute physician visits for outpatient or inpatient care.

However, these substitutions can be made only if necessary technology is available. For example, if a plan pays 100 percent of outpatient care but only 80 percent of inpatient care, a patient may use outpatient services for cataract surgery, thereby saving on out-of-pocket costs as well as total health care expenditures. However, the same patient may not have the option of using outpatient services, for example, for a hip fracture or a delivery. The magnitude of these shifts is difficult to estimate and depends principally on medical care technology and on the price and availability of other sources of care in a particular area.

The Lewin/ICF Health Benefits Simulation Model assumes cost-sharing provisions currently in plans provided by medium- and large-size firms. In general, lower than estimated utilization could be expected for services with higher than average cost-sharing requirements; similarly, utilization could be higher than estimated for services requiring below-average cost sharing by enrollees.

b. Payment mechanisms and cost-containment provisions.

Research findings also suggest that some portion of the increase in physician services resulting from improved insurance coverage might be physician-induced.[53] That is, if a traditional fee-for-service insurance plan were extended to the uninsured population, some increase in utilization might result from physicians being aggressive in recommending additional medical care.

The incentives for physicians to recommend additional services could be limited, however, by specific provisions incorporated in a health insurance plan. For example, if physicians were paid a capitation rate (a predetermined per-person fee regardless of services

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[51] Some of the difference may be attributed to the substitution of outpatient care for inpatient hospital care. O'Grady, Kevin, Willard Manning, Joseph Newhouse and Robert Brook. The Impact of Cost Sharing on Emergency Department Use. New England Journal of Medicine, Aug. 22, 1985. p. 484-490.

[52] Davis, Karen and Louise Russell. Davis and Russell report that the demand for hospital outpatient care is responsive to outpatient price and also to inpatient occupancy rates and the price of inpatient care. The Substitution of Hospital Care for Inpatient Care. The Review of Economics and Statistics, v. LIV, no. 2, May 1972. p. 109-120. Gold, Marsha. Gold shows that for every 1-percent reduction in price for outpatient services, there is approximately a 1-percent increase in outpatient demand, and that the demand for outpatient care increases as the cost of inpatient care rises. The Demand for Hospital Inpatient Services. Health Services Research, v. 19(3), Aug. 1984: 412-583.

[53] See Wilensky, Gail and Louis Rossiter. The Relative Importance of Physician-Induced Demand in the Demand for Medical Care. Milbank Memorial Fund Quarterly, v. 61(2), 1983. p. 252-277. Wilensky and Rossiter examined the extent to which physician visits are physician- or patient-initiated and found in 1977 that 43 percent of visits were physician-initiated and the remaining 57 percent were patient-initiated. The researchers examined changes in physician visits with decreased enrollee copayments and found that most of the additional visits were physician-initiated.

provided), they might be more likely to discourage unnecessary or excessive use of medical care.

Similarly, hospital charges and average lengths of stay could be affected by the mechanism through which hospital stays are financed. Payment systems such as Medicare's prospective payment system, under which hospitals are paid predetermined rates for each case, provide incentives to minimize unnecessary inpatient days.

Cost-containment provisions, such as second surgical opinions, case management, and precertification, also may limit the conditions under which providers can admit patients to a hospital and affect the lengths of patient stay. Thus, cost-containment measures may limit the extent of provider-induced utilization.

Provider-induced utilization is indirectly accounted for in the Lewin/ICF Health Benefits Simulation Model, which assumes that new plans would incorporate payment methods and cost-containment provisions in the same patterns as existing plans. That is, the number of newly insured persons covered by HMOs and indemnity plans is assumed to be proportional to existing patterns, and those plans are assumed to incorporate cost-containment methods at the same rate as existing plans. The analysis presented here does not take into account the possibility that a plan extended to the uninsured would include cost-containment measures and payment mechanisms that are more stringent than similar features of current plans. If a new plan were more stringent, the estimates provided would overstate the increase in utilization.

C. CHANGES IN HOSPITAL CARE

The Lewin/ICF Health Benefits Simulation Model was used to estimate the changes in health care utilization that would occur if health insurance were extended to specified groups of the uninsured. This section discusses estimates of increases in hospital inpatient days and hospital outpatient and emergency room visits.

First, the effects of mandated health insurance on the utilization of hospital care and average national occupancy rates are presented. A following section discusses the potential effects of changes in hospital care utilization on uncompensated care and on the price of, and access to, hospital care services.

1. Inpatient Hospital Days

a. Aggregate estimates.

In 1986, the U.S. population used 238 million inpatient hospital days.[54] As shown in table 3.21, under the typical plan, inpatient days would increase to 249 million, and under the tailored plan, to 247 million.[55] The catastrophic plan would result in 241 million inpatient days.

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[54] Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

[55] The 2-million day difference in estimates can be attributed to coverage for inpatient mental health care under the typical plan. This benefit is not covered under the tailored plan but is covered for 50 percent of expenses up to 30 days under the typical plan.

TABLE 3.21.—Inpatient Hospital Days by Plan, 1986

Plan type	Number of persons covered (in millions)	Total number of inpatient days (in millions)		Increase in inpatient days	
		1986 baseline	With plan	(In millions)	(Percent)
Typical	31	238	249	11	4
Tailored	31	238	247	9	4
Catastrophic	31	238	241	3	1
Medicaid	8	238	241	3	1
Combination	33	238	248	10	4

Source: Tabulations prepared for CRS using Lewin/ICF Health Benefits Simulation Model.

Under the Medicaid expansion plan, estimated hospital days would increase to 241 million inpatient days in 1986. Hospital stays under Medicaid expansion would be slightly higher per person than under the employer-based plans because of the higher hospitalization rate of the population that would be covered under such a plan. However, the Medicaid expansion would affect only 8 million persons, compared to 31 million in an employer-based plan, and the total number of additional inpatient hospital days would be lower under this Medicaid expansion than under the typical or tailored plan.

If health insurance were extended to 33 million currently uncovered persons through a combination of the tailored plan and Medicaid expansion, inpatient days would increase to 248 million.

b. Analysis of available capacity.

Ideally, the effects of estimated increases in hospital utilization would be assessed at the local level based in part on measures of hospital capacity available in each community. Available capacity refers to hospital beds and services not currently in use and not anticipated to be used within the near future.

In theory, available capacity can be measured by determining an "occupancy standard" for each hospital and subtracting from that rate the actual average operating occupancy rate. Occupancy standards are targeted occupancy levels and can be based on a number of factors such as hospital size, average community utilization, and variation in use of hospital services. However, although a number of standards have been suggested, there is little agreement as to what constitutes an appropriate occupancy standard.[56] Further, while aggregate numbers can be estimated, it is difficult to estimate the number of persons in a given community who would become insured if employers were required to provide health insurance, the Medicaid program were expanded, or some combination of plans were extended to the uninsured.

Community hospitals in the United States are currently operating at an average occupancy rate of 64 percent.[57] In general, hospi-

[56] A discussion of the basis for determining appropriate occupancy levels can be found in MacStravic, Robin. Occupancy Standards: What Are Appropriate Occupancy Levels? Hospitals, Sept. 16, 1982. p. 93-98.

[57] An occupancy rate is the ratio of a hospital's average daily number of patients, excluding newborns, to the average number of beds. In the American Hospital Association's 1986 Annual

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tal administrators could not maintain 100-percent occupancy because they might have to turn away patients in an emergency situation; on the other hand, unfilled beds can represent a cost to hospitals because they have fixed costs, such as maintenance, heat, light, and power.[58]

In 1978 an occupancy standard was adopted by the Federal Government as part of the National Guidelines for Health Planning. The guidelines recommended an 80-percent average annual occupancy rate for medically necessary hospital care for all non-Federal short-stay hospital beds. Lower occupancy rates were recommended for hospitals in rural areas because rural hospitals have a lower absolute number of unfilled beds to accommodate fluctuations in demand.[59]

Data tabulated for CRS using the Lewin/ICF Health Benefits Simulation Model and 1986 hospital occupancy rates reported by the American Hospital Association suggest that increases in inpatient hospital days resulting from expansion of insurance coverage would have a minimal impact on average national occupancy rates. As shown in table 3.22, average occupancy rates could be expected to increase from 2 to 5 percent, depending on the specific plan and the population covered.

The *typical* and *tailored* plans would increase estimated national average occupancy rates to about 67 percent, while the *catastrophic* and *Medicaid* plans would increase rates to 65 percent. Under a *combination tailored and Medicaid expansion plan*, average occupancy rates could be expected to rise to approximately 67 percent. Although it appears that the existing hospital system has an average occupancy rate low enough to absorb the aggregate increase in use of hospital services, spot shortages could occur in localities in which hospitals are currently operating at or near full capacity.

TABLE 3.22.—Expected Occupancy Rates by Plan Type, 1986

Plan type	1986 baseline (percent)	Expected occupancy rate (percent)	Increase in occupancy (percent)
Typical	64	67	5
Tailored	64	67	5
Catastrophic	64	65	2
Medicaid	64	65	2
Combination	64	67	5

Source: 1986 baseline occupancy rates from 1986 American Hospital Association Annual Survey data. published in Hospital Statistics, 1987 Edition. Expected occupancy rates estimated based on tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

Survey of registered hospitals, over 6,300 hospitals were surveyed with a response rate of 91 percent. Data in this section pertain to non-Federal short-term community hospitals included in this survey. Community hospitals include all non-Federal general and special hospitals with short-term services (average stay of less than 30 days) available to the public.

[58] Pauly, Mark, and Peter Wilson. Hospital Output Forecasts and the Cost of Empty Hospital Beds. Health Services Research, v. 21, no. 3. Aug. 1986. p. 403–428. Pauly and Wilson estimated the cost of empty hospital beds in the State of Michigan. They concluded that the cost of empty beds in small and medium hospitals is low and not sufficient to allow for substantial cost savings from partial debedding programs.

[59] Code of Federal Regulations. Public Health, 42. Parts 61 to 399. Subchapter K—Health Planning and Resources Development, Section 121.202. p. 160–161.

c. Local effects.

Whether the hospital system could absorb additional inpatient days is a local issue. Although available capacity statistics are maintained by the American Hospital Association for registered hospitals, reliable estimates of the number of uninsured in local areas are not available. Therefore, a local level analysis of the ability of hospitals to absorb increased demand for hospital care is not possible.

The ability of different localities to absorb increased utilization would vary greatly. This ability would depend on three factors: the number of newly insured in a community; the available capacity (e.g., the applicable occupancy standard minus the current average occupancy rate) in the hospital system; and the availability of professional staff to serve the population.

Hospitals operating near capacity, such as inner city hospitals, or hospitals with very few beds or very low occupancy standards, such as rural hospitals in sparsely populated areas, may have few available beds. Such hospitals may have difficulty serving newly insured individuals living nearby.

Finally, while the number of empty hospital beds is an important indicator of a hospital's available capacity, shortages in health professionals such as nurses, laboratory technicians or therapists might also constrain the hospital's ability to meet increased utilization of services by newly insured persons, particularly in some rural areas.[60] Hospitals would have to adjust to such shortages by increasing wages and/or shifting responsibilities to other health professionals.

2. Emergency Room and Hospital Outpatient Visits

Expected increases in outpatient and emergency room visits would be less than in hospital inpatient days because, compared to the insured, the uninsured tend to use outpatient and emergency room services relatively more than hospital inpatient services. If, as the simulations assume, the newly insured visit outpatient and emergency room facilities at the same rate as the insured population, total visits would increase, but by less than inpatient care.

a. Aggregate estimates.

There were 153 million outpatient and 64 million emergency room visits in 1986, according to estimates from the Lewin/ICF Health Benefits Simulation Model. Under each of the illustrative plans, minor increases in the number of emergency room and hospital outpatient visits could be expected. (See table 3.23.) The *typical* and *tailored plans would result in a 5-percent increase in outpatient and a 6-percent increase in emergency room visits. The catastrophic* plan would result in a 2-percent increase in both types of visits, and the *Medicaid expansion* would result in a 3-percent increase in both emergency room and outpatient visits. A *combina-*

[60] A 1986 survey sponsored by the American Hospital Association found that about 83 percent of hospitals in the United States had vacancies for registered nurses. In general, hospitals in rural areas had more vacancies than those in urban areas. Overall, the nurse vacancy rate in hospitals increased from 6.5 percent in 1985 to 13.6 percent in 1986. American Organization of Nurse Executives. Report of the 1986 Hospital Nursing Supply Survey. Dec. 1986.

tion tailored plan and Medicaid expansion would result in the greatest increase in both types of care, with a 7-percent increase in outpatient visits and a 9-percent increase in emergency room visits.

TABLE 3.23.—Emergency Room and Hospital Outpatient Visits by Plan Type, 1986

	Emergency room			Hospital Outpatient		
	1986 Baseline (in millions)	Total number of visits (in millions)	Percent increase in visits	1986 Baseline (in millions)	Total number of visits (in millions)	Percent increase in visits
Typical	64	68	6	153	161	5
Tailored	64	68	6	153	161	5
Catastrophic	64	65	2	153	156	2
Medicaid	64	66	3	153	157	3
Combination	64	70	9	153	163	7

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

Emergency and outpatient use would increase relatively more for the Medicaid expansion than for a mandated employer plan. The 8.4 million people added under the Medicaid option would increase use of both types of service by 3 percent, while the 31.3 million people added under an employer mandate would increase use by 5 to 6 percent. Individuals covered by Medicaid are among the heaviest users of outpatient and emergency room services.[61]

b. Effect of simulation assumptions on estimates.

The methodology used to estimate these effects on utilization changes is unable to take into account the distinct cost-sharing provisions of the illustrative plans and, therefore, ignores differential effects on utilization of coinsurance requirements for outpatient and emergency room care. Based on research on the effects of coinsurance provisions on utilization, it seems likely that outpatient and emergency room visits would be higher under the tailored plan than under the typical plan because such services are covered at 100 percent under the tailored plan but at only 80 percent under the typical plan.

Estimates for the Medicaid expansion may be somewhat understated because persons newly covered were assumed to have the same utilization as insured persons with the same income, sex, age, and health status. However, persons currently eligible for Medicaid are more likely to use outpatient and emergency room care than other insured poor persons. If Medicaid policies contribute to this pattern of utilization (for example, because of low reimbursement rates for office-based physician services), it can be assumed that persons given insurance under a Medicaid expansion would use services like Medicaid enrollees.

On the other hand, if the characteristics of Medicaid enrollees are driving their distinct patterns of utilization, it could be expect-

[61] Short, Pamela Farley, Gail Lee Cafferata and Marc L. Berk. Outpatient Use of Hospitals by the Poor and Uninsured. National Center for Health Services Research. Presented at the Annual Meetings of the American Public Health Association, Nov. 1985. Updated Dec. 16, 1986, table 1. p. 18. In 1977, over 12 percent of persons covered by Medicaid saw a physician in an outpatient department or emergency room, compared to 10 percent of persons without insurance and 5 percent of those insured by another source.

ed that persons given Medicaid coverage under an expansion will use services as do similar persons with other types of health insurance. In this case, estimates of the number of outpatient and emergency room visits might be somewhat overstated.

c. Existing utilization and expected increases.

The estimates of total outpatient and emergency room visits suggest increases of about 2 to 6 percent in outpatient visits and 2 to 9 percent in emergency room visits. These estimates would vary by geographic region, location and type of hospital. The time it would take providers to absorb the increased demand in a specified area would depend on the number of newly insured and the availability of emergency care, outpatient facilities, and staff in the area.

3. Effects on Hospitals

Although the increases in inpatient, outpatient and emergency room care would not be large compared to the existing base of health care services provided, the larger number of covered hospital services generally could affect hospitals in three basic ways: uncompensated care costs could be reduced, cost shifting could be reduced, and sites of care could be shifted for some newly insured persons.

a. Reduced uncompensated care.

Many persons who would be newly insured already receive substantial amounts of hospital care for which the hospital is not paid. Extending health insurance to these persons may decrease uncompensated care by hospitals that currently subsidize care for the uninsured.[62] As discussed below, however, the uncompensated care burden could be decreased as much as 60 percent by extending health insurance under any of the illustrative plans.

(1) *Existing amount.* According to the American Hospital Association, in 1986 hospitals incurred $6.96 billion in unsponsored care costs—that is, charity care plus bad debts minus any State and local government subsidies received by hospitals. Though uninsured care and unsponsored care are not identical, about 70 percent of unsponsored care can be attributed to uninsured patients.[63]

(2) *Estimated changes.* The decrease in the uncompensated hospital care burden would likely be limited for two reasons. First, none of the illustrative plans would cover the entire population; all would leave uninsured a population that uses hospital services at extremely high rates, such as uninsured disabled persons. Second, to the extent that the newly insured population would be covered by a plan with substantial cost-sharing provisions, these out-of-

[62] Uncompensated care is not defined uniformly among hospitals. In this section, uncompensated care refers to both "bad debts," for which payment is expected but not received, and "charity care," for which no payment is expected.

[63] According to a study conducted at the University of Florida on hospital care for the poor, patients classified as "self-pay" or "no-charge" accounted for approximately 70 percent of Florida hospitals' unpaid charges in 1985. Center for Health Policy Research. State University of Florida Study of Indigent Care. Analytic Report, v. 2, 1986. p. 271. Similarly, Bazzoli estimated, based on a national survey of hospitals, that 68 percent of hospitals' bad debts in 1982 were due to uninsured patients. Bazzoli, Gloria. Health Care for the Indigent. Overview of Critical Issues. Health Services Research, v. 21, no. 3, Aug. 1986. p. 379.

pocket costs for increased amounts of hospital services might go unpaid and contribute to the uncompensated care burden.

Under any of the employer-provided illustrative plans, persons not attached to the workforce remain uninsured. This group of approximately 6 million persons uses hospital care at above-average rates. For example, the remaining uninsured population is hospitalized at a rate of 183 hospital stays per 100,000 persons, compared to 153 per 100,000 for the total population. In addition, 11 percent of the population which would remain uninsured use hospital services for thirty or more days, compared to only 5 percent of the total population. The remaining uninsured would also be heavy users of outpatient facilities; this group has on average 956 outpatient visits per 100,000 persons, compared to 667 per 100,000 for the total population.

In addition, uncompensated care costs might be incurred from unpaid out-of-pocket expenses for insured patients. For example, the tailored plan would have a $50 deductible applied to all services, including hospital services, and a 14-day inpatient limit; likewise, the catastrophic plan would not begin to cover services until out-of-pocket expenses had reached a designated percentage of income. Insured persons who did not pay cost-sharing amounts for which they were liable would contribute to the uncompensated care burden.

Assuming all insured persons have all hospital days paid for, in 1986 there were 21 million uninsured hospital days. Under the *typical* plan, this number would be reduced to 8 million days—a 62-percent reduction in uninsured hospital days. Assuming these uninsured days accounted for roughly 70 percent of uncompensated care in 1986, a 62-percent reduction in uninsured days could result in a reduction of $3 billion in uncompensated care costs to hospitals.

The *tailored* plan could be expected to provide smaller decreases in unsponsored care than the typical plan because of the 14-day hospital limit. Approximately 9 percent of hospital stays for newly insured persons would be expected to exceed the 14-day limit. Since the newly insured population is generally low-income (two-thirds are in families with incomes less than twice the poverty level), it is reasonable to assume that care furnished after the hospital limit would be either charity or bad debt care.

The *catastrophic* plan would be expected to decrease uncompensated hospital care by a lower amount than the typical plan because of the extensive cost-sharing provisions in the catastrophic plan. Although the *Medicaid expansion* would cover persons using above-average amounts of uncompensated hospital care, the expansion would cover only 8 million persons. Thus, this approach would also have a smaller impact on hospitals' uncompensated care burden.

If these amounts are considered increases in hospital revenues, decreases in uncompensated care costs could be considered substantial by hospital administrators. Hospitals that experience decreases in their uncompensated care costs have several choices. They can: (1) consider the payments to be increased revenues and use them for expenses not associated with charity or bad debt care; (2) use payments to finance care for the remaining uninsured population; or (3) reduce prices for other paying patients.

b. Potential price changes.

If hospitals were to take the third course of action, what changes in the price of hospital care could be expected? Presently, the costs for nonpaying patients are either charged to paying patients or absorbed by the hospital. The extent to which this cost-shifting occurs is not clear. The American Hospital Association estimated in 1986 that private payers were charged at least a 10-percent surcharge for hospital services.[64] This surcharge might decrease as a result of a decrease in the total uncompensated care burden.

In theory, since the base of paying patients would be larger, costs per patient would be lower after a health insurance expansion. That is, costs for the previously uninsured could be shifted back to those patients or to their insurers. In doing so, costs to patients that previously subsidized care for the uninsured might be lowered.

The extent to which costs would be lowered for the currently insured population would be a direct function of the extent of cost shifting that presently occurs and the amount of previously uncompensated care that is reimbursed as a result of coverage expansion. At the same time, much of the decrease in costs to the currently insured population might be offset by corresponding increases in costs stemming from an increase in demand for hospital care.

In some cases, however, newly insured patients might continue to shift costs to other privately insured patients. For example, Medicaid payments in some States might be below actual cost. If so, new Medicaid payments would not serve as a source of subsidy for non-Medicaid patients, and cost-shifting would be necessary to subsidize the cost of care for Medicaid patients.

c. Patient shifts.

The burden of uncompensated care has been distributed unevenly across hospital types, with public hospitals providing a larger portion of uncompensated care in relation to total patient charges. Hospitals in the South and in urban areas and teaching hospitals have had disproportionate shares of uncompensated care.[65] These hospitals would be expected to benefit the most from the extension of health insurance to the uninsured population. However, newly insured persons might have access to facilities that would not accept them when they were uninsured. The revenues for these patients would not necessarily go to the facilities currently providing charity care. Instead, these facilities, such as public hospitals in inner cities, might continue to treat the uninsured while their newly insured clients went elsewhere. Whether this shifting of patient populations would occur is not certain. The newly insured might continue to use the facilities they had always used because of location or for other non-financial reasons.

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[64] This rate is the estimated ratio of unsponsored care costs to the costs associated with private paying patients. See Cost and Compassion: Recommendations for Avoiding a Crisis in Care for the Medically Indigent. American Hospital Association. 1987. p. 6 and 52.

[65] Sulvetta, Margaret, and Katherine Swartz. The Uninsured and Uncompensated Care. National Health Policy Forum, June 1986. p. 25-41.

D. CHANGES IN PHYSICIAN CARE

The Lewin/ICF Health Benefits Simulation Model was also used to show the effects on physician visits of extending health insurance to the uninsured through the illustrative plans. This section presents aggregate estimates of the increase in physician visits under each plan and a discussion of the ability of the existing physician supply to absorb such increases. Variation at the local level is examined along with the potential effects on physician fees and access to physician care.

1. Aggregate Estimates

There were an estimated 739 million physician visits in the United States in 1986. About 81 percent of these visits were for diagnosis and treatment. The remaining visits were for pre- and postnatal care, general checkups and other services.

As shown in table 3.24, it is estimated that, if the *typical* plan were extended to the uninsured, physician visits would increase by 20 million to 759 million visits. Under the *tailored* plan, the total number of visits would be 757 million, an increase of 18 million.[66]

TABLE 3.24.—Expected Physician Visits by Plan Type, 1986

Plan type	1986 baseline (millions)	Total physician visits (millions)	Increase in visits (millions)	Percent increase in visits
Typical	739	759	20	3
Tailored	739	757	18	2
Catastrophic	739	745	6	1
Medicaid	739	745	6	1
Combination	739	761	22	3

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

The *Medicaid expansion* plan would result in only 6 million additional visits. (The increase in aggregate visits is smaller because fewer persons are newly insured under the Medicaid expansion option.) Under the *catastrophic* option, physician visits would increase by 1 percent to 745 million visits. Under a *combination of Medicaid expansion and the tailored plan,* the total number of physician visits would increase by 3 percent to 761 million visits.

2. Effect of Simulation Assumption on Estimates

The methodology used to estimate these effects cannot account for differences in the coinsurance and deductible requirements among the plans. For doctor visits, the typical plan would require 20-percent coinsurance for all visits, including surgical procedures. Since the tailored plan would not require enrollee coinsurance for physician visits, it could be expected that the actual number of additional visits under the tailored plan would be somewhat larger than the estimated 18 million. Findings from the Rand experiment

[66] The two million difference can be attributed primarily to the absence of coverage for mental health care in the tailored plan.

indicate that the number of physician visits varies with coinsurance requirements.[67]

In addition to coinsurance provisions, the differing plan deductibles would also affect utilization of physician services. The deductible under the tailored plan is only $50 for all care, while the deductible for the typical plan is $100, applied to surgical and physician services. Based on studies of the effects of deductibles on utilization, utilization under the tailored plan might be somewhat higher than the expected 18 million additional visits.[68]

3. Existing Supply of Physicians and Capacity to Absorb Increases in Utilization

The estimated increases in physician visits represent roughly a 3-percent increase above existing levels of utilization. Analysts disagree whether there will be a "surplus" of physicians over the next 15 years, but projections of increases in the number of physicians suggest that this increase in utilization could be absorbed by the current supply of actively practicing physicians.

Unlike hospitals (for which the bed supply has been declining), the supply of physicians has been increasing and continues to grow. According to the Graduate Medical Education National Advisory Committee (GMENAC), the ratio of physicians to 100,000 persons is expected to increase by over one-third, from 171 in 1978 to 233 by the year 2000.[69] This estimate is based on projections of future demand for health care services as indicated by expected incidence of health care diseases and conditions.

According to American Medical Association (AMA) projections, the supply of active physicians will grow by approximately 10,400 each year between 1986 and 1990. For most specialty areas, growth in supply will exceed growth in utilization expected due to changes in the Nation's demographic and economic composition. However, utilization increases for general/family practice, general surgery, surgical subspecialties, and psychiatry are expected to exceed the growth in the supply of practicing physicians in these specialties.[70]

Other analysts assert that there will be changes in medical practice and the demand for medical care between now and the year 2000. Swartz, Sloan and Mendelson discuss the likelihood that per capita demand for physician services will increase substantially

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[67] Findings from the Rand study show that enrollees had an average of 4.55 visits under a plan requiring no enrollee coinsurance, 3.33 visits under a plan with 25-percent enrollee coinsurance, and 3.03 visits under a plan that required 50-percent coinsurance. These figures exclude visits for radiology, anesthesiology or pathology services. Manning, Willard G., Joseph P. Newhouse, Naihua Duan, et al. Health Insurance and the Demand for Medical Care: Evidence From a Randomized Experiment. American Economic Review, June 1987. p. 259.

[68] Newhouse, Joseph, John Rolph, Bryant Mori, and Maureen Murphy. An Estimate of the Impact of Deductibles on the Demand for Medical Care Services. Rand Corporation. R-1661-HEW. Oct. 1978.

[69] GMENAC, a 1977 commission charged by the Secretary of HEW to determine the Nation's need for physician services and how to meet those needs, projected an increase by the year 2000 to 643,000 physicians, or 243 per 100,000. This assumption was modified in 1986 to 630,000 physicians, or 233 per 100,000. See Tarlov, Alan. GMENAC Revisited. How Many Doctors Do We Need? A Policy Agenda for the United States in the 1990s Based on the Tenth Private Sector Conference, Durham: Duke University Press, 1985. p. 13-18.

[70] American Medical Association. Physician Supply and Utilization by Specialty: Trends and Projections. AMA Center for Health Policy Research, 1988. Tables 4.6 and 8.2.

over the next 15 years and that physicians will be increasingly involved in administrative activities.[71]

Given expected increases in the number of physicians over the next few decades, increased demand from extending health insurance to the uninsured could likely be absorbed because the magnitude of the expected increase is small compared to total visits. This generalization may not hold for individual localities.

4. Local Effects

Aggregate data is of limited use in assessing whether areas with physician shortages could be expected to absorb utilization increases. Because reliable estimates of the number of uninsured in each area are not available, a quantitative local level analysis is not possible. However, a framework for assessing whether or not a specific area could absorb an increase in utilization, which includes possible effects on physician fees and access to physician care, is provided below.

Variation in the ability of physicians to absorb increased demand for services depends on three factors: the number of newly insured in an area, the ratio of active physicians to the population in the area, and the extent to which physicians would be encouraged to locate in areas where access to physician care is limited. In the short run, physician prices may be affected in areas where physician supply is limited; in the long run, physician supply may adjust to meet increases in utilization.

The ratio of physicians to the population would be expected to be adequate to accommodate the expected increase in utilization for most local areas. In these areas, modest changes in practice patterns could be expected. For example, physicians could increase working hours or decrease the length of visit per patient in order to increase the quantity of visits supplied.

However, researchers have identified two types of localities with limited physician supply: (1) inner city poverty areas have a decreasing number of office-based physicians;[72] and (2) persons living in sparsely populated rural areas have limited access to specialized categories of physician care. Sparsely settled areas traditionally have been unattractive for physicians, partly because the pool of patients is relatively small.[73]

In the long run, new physicians would possibly be attracted to locate practices in areas where the ratio of physicians to the local population is low if a sufficient number of newly insured persons lived in those areas. However, other factors affect physician location decisions.

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[71] This analysis takes into account the changing nature of health insurance and is based on projected demand for health care (as opposed to the need-based GMENAC model). Specifically, it assumes that alternative medical plans, health maintenance organizations, and preferred provider organizations will provide health care to nearly half of the U.S. population by the year 2000. See Schwartz, William B., Frank Sloan, and Daniel Mendelson. Why There Will Be Little or No Physician Surplus Between Now and the Year 2000. New England Journal of Medicine, v. 318, no. 14, Apr. 7, 1988. p. 892-897.

[72] Kindig, David, Hormoz Movassaghi, Nancy Dunham, Daniel Zwick, and Charles Taylor. Trends in Physician Availability in 10 Urban Areas from 1963 to 1980. Inquiry. Summer 1987. p. 136-146.

[73] Williams, Albert, William Schwartz, Joseph Newhouse, and Bruce Bennett. How Many Miles to the Doctor? New England Journal of Medicine, Oct. 20, 1983. p. 958-963.

In general, behavioral studies have found that physician location decisions depend on a combination of individual preferences for a particular lifestyle and systematic constraints of the health care delivery system. Lifestyle preferences include the preference to obtain certain fees or a targeted annual salary, to live near family or friends, or to work in an area where the availability of associates will allow for vacation time. Systematic constraints of the delivery system include the availability of suitable surgery or office space and related specialized diagnostic and therapeutic facilities. (In general, rural areas with limited numbers of physicians tend to have less specialized facilities.)

In some rural areas where populations are declining, the extension of health insurance to the uninsured may not serve as sufficient incentive for new physicians to locate there. Likewise, the benefits of locating a practice in an area where demand for services has increased may not outweigh the lifestyle considerations associated with urban poverty areas.

If a relatively large number of newly insured individuals reside in areas where the physician supply is limited, and if new physicians would not choose to locate in those areas, access to care for the insured and uninsured alike might continue to be limited.

IV. Effects on Employers

Plans that would expand health insurance coverage through requirements on employers raise a fundamental concern about how employers would be affected financially. How employers might react to mandated health benefits raises yet another major issue—how those reactions might affect the U.S. economy. This section addresses these issues in the context of the illustrative plans described above. First, the characteristics of the employers that would be most affected by a mandate are presented. Second, estimates of the costs that a mandate would add to employer payrolls are discussed. Third, the possible reactions of employers are explored. Finally, the implications of these reactions for the economy as a whole are considered.

A. Characteristics of Employers With No Health Plans

If legislation were enacted that mandates employer provision of a specified health benefit package, employers that do not currently offer health insurance would be required to do so. Some employers already offering health coverage would have to improve their plans to the level of the mandated package and extend coverage to some part-time employees who are not currently eligible. The illustrative plans also assume that employers would have to cover all nonworking dependents of their employees. However, many of these employers with existing plans would experience offsetting savings, since currently covered dependents who work elsewhere would have to obtain coverage from their own employers. Also, expanded insurance coverage would reduce uncompensated care and thereby reduce the indirect costs that current plans pay to make up for the revenue shortfalls of providers who treat the uninsured.

The primary impact of a mandate would be on firms not now offering plans. The majority of these employers would be small busi-

nesses organized as sole proprietorships or partnerships. These firms are more likely to be relatively new (in existence fewer than 10 years), to employ part-time or seasonal, low-wage earners, and to be nonunion. These firms are more likely to be in selected service-sector industries, such as personal services, entertainment and retail trade, and in such goods-producing industries as agriculture and construction. Finally, rural employers would be affected to a greater degree than urban employers, and employers in sections of the South and West would be affected more than those in other regions. The characteristics of firms with no health plans are described below.

1. Firm Size

Employers not providing health insurance for employees are more likely to be small firms. According to the 1986 Small Business Administration (SBA) Health Benefits Survey,[74] more than half of firms with fewer than 10 employees and about one-fourth of firms with 10 to 24 employees did not offer health insurance.[75] (See table 3.25.)

Of the firms not offering health insurance, 92 percent employed fewer than 25 workers, and 7 percent had 10 to 24 employees.

TABLE 3.25.—Percent of Firms Not Offering Health Insurance By Firm Size, 1986

Number of employees	Percent of firms
1-9	54
10-24	22
25-99	8
100-499	2
500 +	0
All firms	44

Source: SBA Survey, 1987, table III-64, p. III-12.

In addition, small firms are less likely to provide family coverage for employees' dependents. (See table 3.26.) Fifty-two percent of covered workers in small firms (24 employees or less) were not provided with dependent coverage, compared to 46 percent of covered workers in firms with 25 to 499 employees and 36 percent of covered workers in firms of 500 or more employees.

[74] This survey was conducted for the Small Business Administration by ICF, Inc. Responses were received from 846 employers, about 20 percent of the survey sample.

[75] Of the 3.7 million U.S. employers, 2.8 million have less than 10 employees and 0.5 million have 10-24 employees. Source: U.S. Small Business Administration Health Benefits Data Base, 1986.

TABLE 3.26.—Dependent Coverage Provided to Employees by Firm Size, 1986

Number of employees in firm	Percent of covered employees without dependent coverage
1-24	52
25-99	46
100-499	46
500 or more	36
All firms	41

Source: U.S. Small Business Administration. The State of Small Business. Table 4.10, 1987. p. 164.

2. Legal Status of Firm

As shown in table 3.27, sole proprietors and small subchapter S corporations (partnerships with less than 25 employees) [76] are less likely than corporations to offer health insurance to employees. Sole proprietorships include unincorporated, one-owner businesses, farms, and professional practices.

TABLE 3.27.—Percent of Firms Not Offering Health Insurance By Legal Status, 1986

Number of employees	Percent of firms by legal status		
	Sole proprietorship	Corporation	Subchapter S corporation
1-9	71	30	69
10-24	70	18	15
25-99	56	4	12
100-499	16	0	0
500 or more	0	0	7
All firms	71	23	51

Source: U.S. Small Business Administration. The State of Small Business, Table 4.3, 1987. p. 148.

According to SBA, about 1.6 million of the 10 million business owners in the U.S. are uninsured. Of these uninsured owners, 1.2 million are sole proprietors of their own unincorporated businesses.

3. Age of Firm

Newer firms are less likely to offer health insurance coverage. As shown in table 3.28, nearly two-thirds of very small firms (with 1 to 9 employees) that had been established for 10 years or less did not offer health insurance, compared to half of the older firms of the same size.

[76] Under the Internal Revenue Code, subchapter S corporations receive identical tax treatment as incorporated firms with respect to tax deductions for health insurance premiums. Such corporations can deduct 100 percent of the premium as a business expense. Unincorporated firms are allowed only a 25-percent deduction, which will expire Dec. 31, 1989 unless extended by Congress.

TABLE 3.28.—Percent of Firms Not Offering Health Insurance By Age of Firm and Firm Size, 1986

Number of employees	Percent of firms by age	
	10 years or less	More than 10 years
1-9	62	49
10-24	36	18
25-99	4	10
100-499	6	1
500 +	0	0

Source: SBA, The State of Small Business, 1987, table 4.3, p. 148.

A recent survey by the National Rural Electric Cooperative Association of small rural employers indicates similar patterns of noncoverage among relatively young firms.[77] Though the survey found that small rural employers offer health insurance less frequently than the national average, almost 60 percent of small rural firms less than two years old did not offer health insurance in 1988, compared to less than one-third of well-established firms 20 or more years old or more. (See table 3.29.)

TABLE 3.29.—Percent of Small Rural Firms Not Offering Health Insurance By Age of Firm, 1988 [1]

Age of firm (years)	Percent of firms
2 or less	60
3-5	55
6-10	52
11-20	36
More than 20	31
All firms	44

[1] The survey sample included employers with 60 or fewer employees.

Source: National Rural Electric Cooperative Association (NRECA) Survey of Health Insurance Coverage in Smaller Firms: Evidence and Policy Implications, Apr. 1988 Report to NRECA.

4. Industry of Firm

The proportion of employers not providing health insurance varies widely by industry. As table 3.30 indicates, persons in agriculture, personal services, entertainment, retail trade, business and repair services, and construction are the least likely to receive coverage through their own jobs.

[77] National Rural Electric Cooperative Association. Health Coverage in Smaller Firms: Evidence and Policy Implications. June 1988.

TABLE 3.30.—Percent of Workers Not Obtaining Health Insurance From Their Own Jobs by Major Industry, 1986

Major industry	Percent of workers with no health insurance from own job
Agriculture, forestry, and fisheries	82
Personal services, including household	79
Entertainment and recreation services	69
Retail trade	64
Business and repair services	56
Construction	52
Professional and related services	40
Finance, insurance and real estate	33
Wholesale trade	32
Manufacturing, nondurable goods	27
Transportation, communications and public utilities	24
Public administration	23
Mining	20
Manufacturing, durable goods	17

Source: Table prepared by CRS based on data from Mar. 1987 CPS.

Closely related to the type of industry are other compensation-related factors. According to SBA, industries that typically employ low-wage, seasonal or part-time workers are less likely to offer health insurance, as are the least unionized industries.

In addition, some businesses do not offer health insurance because they have been deemed ineligible by insurance carriers. Businesses may be considered ineligible if they engage in hazardous activities, or if they are likely to employ persons who may be considered high risks. Firms that are likely to change insurance carriers frequently, or that have high rates of employee turnover or business failures, may also be ineligible to purchase health insurance for their employees. However, such exclusion practices by insurance companies are not uniform; firms rejected by one carrier may be able to receive coverage from another insurer.

5. Firm Location

A final factor associated with whether an employer provides health insurance is firm location. Employers in rural parts of the country are less likely than those in urban centers to provide health insurance. Regional differences have also been observed.

Table 3.31 shows that 22 percent of urban employees have no health insurance from their own jobs, compared to 28 percent of employees in rural areas. Employers in the South and West are less likely to provide health insurance than are those in other regions.[78]

[78] A recent survey of small rural firms (with less than 60 employees) concluded that coverage patterns among these firms differ from national estimates. According to the survey, 44 percent of such employers did not offer health coverage in 1988. See National Rural Electric Cooperative Association. Health Coverage in Smaller Firms: Evidence and Policy Implications. June 1988.

TABLE 3.31.—Percent of Full-time Employees Not Receiving Health Insurance From Own Employer By Region and Rural/Urban Location, 1986

Region	Percent of full-time employees not receiving health insurance from own employer	
	Rural	Urban
Northeast:		
New England	24	21
Mid-Atlantic	21	19
Midwest:		
East North Central	25	20
West North Central	36	20
South:		
South Atlantic	26	24
East South Central	31	22
West South Central	36	24
West:		
Mountain	33	23
Pacific	29	26
All Regions	28	22

Source: CRS analysis of March 1987 CPS.

B. FIRMS AFFECTED BY ILLUSTRATIVE PLANS

The analysis of the three mandatory employer illustrative plans provides estimates of expanded coverage by firm size. Table 3.32 shows the distribution of the newly insured by firm size for each plan. The mandatory employer plans would increase by 83 percent the number of insured employees in firms with less than 25 employees. A one-third increase would occur for firms with 25 to 99 employees. The impact would be far less for larger firms, falling to a 14-percent increase for firms with over 1,000 employees. This last figure may seem surprisingly high since the lack of employer-provided insurance is often regarded as a small-firm phenomenon. However, the illustrative plans specified in this analysis would extend coverage to most part-time employees, many of whom lack coverage in even the largest firms. Furthermore, some covered employees do not now participate due to cost considerations and other coverage they might have. Thus, firms of all types could be affected by a mandate.

TABLE 3.32.—Distribution of Newly Insured Employees by Firm Size Under the Mandatory Employer Illustrative Plans, 1986

(In millions)

Firm size (number of employees)	Employees currently insured through own employment	Employees currently uninsured	Uninsured employees newly insured by mandatory employer plan
Total	68.6	19.6	19.0
Under 25	10.0	8.6	8.3
25–99	8.8	3.0	3.0
100–499	11.0	2.3	2.2
500–999	4.7	0.8	0.8
1,000 and over	34.2	4.9	4.7

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

The illustrative plan analysis also shows that many firms already offering health insurance would have to upgrade their plans to meet the standard adopted for a mandatory employer offering. While there are no data available on the need for upgrading by firm size, it is likely that firms in all size categories would be affected. The illustrative plan analysis found that necessary improvements in existing plans would affect 30 percent of individuals covered by employer plans if upgrading to the *typical plan* standard were required. The other two employer plans would require less upgrading, but 16 percent of currently insured individuals would be affected under the *tailored plan* and 15 percent under the *catastrophic plan.* In addition, if non-covered dependents with no employer coverage were required to be enrolled by all employers, existing plans would see their enrollments increase by 1.9 percent.

C. IMPACT OF MANDATED HEALTH INSURANCE ON EMPLOYER COSTS

The mandatory employer illustrative plans would increase costs for employers by: (1) requiring a plan if none were currently offered; (2) requiring improvement in a current plan to meet the mandated standard; (3) covering classes of employees that may now be ineligible for a current plan, such as part-time employees; (4) extending coverage to uncovered dependents of employees now under current plans; and (5) covering employees who are already eligible but have declined to participate.

On the other hand, some employers would experience cost reductions due to: (1) covered dependents who are employed being required to accept coverage from their own employers; (2) reductions in the need for private payers to subsidize uncompensated care; and (3) certain insured, such as retirees who work in post-retirement jobs, gaining coverage under a plan mandated on the new employer.

The net effect of these several factors is to increase costs to employers. (See table 3.33.) Estimated (1986) benefit payments from employer plans would rise by $32.4 billion for the typical plan, $28.0 billion for the tailored plan, and $9.1 billion for the catastrophic plan. (Current-law payments for 1986 totalled $92.2 billion.) To obtain the net cost to employers, an 8-percent factor was added to cover the administrative costs and profits of insurers, and

increased premium charges to employees were subtracted. Thus, net pre-tax increases in employer costs are $33.0 billion for the typical plan, $22.3 billion for the tailored plan, and $3.9 billion for the catastrophic plan.

As indicated later in this section, it is possible that firms with added health benefit costs would try to offset them over time, mainly by reducing other forms of employee compensation. In the absence of any such offsets, these added costs could be partially offset by tax savings. With the exception of sole proprietors, employee health insurance costs were deductible from taxable income in computing 1986 Federal income taxes on businesses. The estimated tax savings shown in table 3.33 are the maximum savings possible in 1986 if all eligible expenses were deducted and all the businesses had net income against which the deductions could be applied. Using these estimates, the net costs to employers would be reduced to $18.7 billion for the typical plan, $12.7 billion for the tailored plan, and $2.2 billion for the catastrophic plan.

D. POSSIBLE EMPLOYER REACTIONS TO MANDATED HEALTH INSURANCE

Given the additional compensation costs employers would have to bear under the mandated plans, how would employers react? The answer to this question is crucial in determining what the effects of a mandate would be on labor, businesses, consumers, and the economy in general. The following discussion presents what is known from prior research about what employers' options are and which would be the most likely to be exercised.

TABLE 3.33.—Net Cost of Mandated Health Benefits To Employers Under Illustrative Plans, 1986

(In billions of dollars)

	Illustrative plan		
	Typical	Tailored	Catastrophic
Increased benefit payments by employer plans	32.4	28.0	9.1
Administrative costs and profits (8 percent of benefit costs)	2.6	2.2	0.7
Total, increased costs of employer plans	35.0	30.2	9.8
Less increased employee premium payments	2.0	7.9	5.9
Net before-tax cost increase to employers	33.0	22.3	3.9
Less savings in Federal income taxes [1] [2]	14.3	9.6	1.7
Net after-tax cost increase to employers	18.7	12.7	2.2

[1] Tax savings would partially offset the added costs to employers for health insurance. If employers chose to offset the added costs by reducing other forms of compensation, then these estimated tax savings would not apply.

[2] While most businesses could deduct employee health insurance expenses in computing taxable income, sole proprietors could not deduct the cost of their own health insurance as a business expense in 1986. There were 1.2 million uninsured proprietors in 1984 according to the U.S. Small Business Administration. This number would equal 6.1 percent of uninsured employees in 1986. The estimated tax savings assume that 93.9 percent (100–6.1) of net costs would be deductible, and the applicable marginal tax rate would be the U.S. corporate rate of 46 percent. Firms with no profits in 1986 would have to carry these deductions forward to subsequent years to realize any tax savings.

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

1. Role of Employers in Benefit Provision

Employers have contributed to the provision of mandated benefits such as Social Security for over 50 years. From a mere 0.2 percent of total employee compensation in 1929, employer payments for social insurance benefits rose rapidly following enactment of Depression-era legislation. (See chart 3.1.) Employer contributions have more than doubled since then, reaching 8.5 percent of total employee compensation in 1987.[79]

Currently, fringe benefits make up more than one-fourth of employee compensation, with mandated benefits being the largest component.[80] The U.S. Bureau of Labor Statistics calculated that employer costs for legally required benefits[81] were 8.8 percent of total private-sector compensation in March 1988.[82] (See chart 3.2.) Using different definitions, samples, and time periods, the U.S. Chamber of Commerce came to a similar conclusion: in 1986, legally required payments from employers totalled 8.9 percent of their payroll costs.[83]

For every hour that an employee works, employers contribute $1.22 on average toward mandated benefits. Such benefits account for almost half of all noncash employee benefits (i.e., all fringe benefits minus paid leave and supplemental pay). These legally required benefits cost employers about 12 percent above their payments for employees' wages and salaries.[84]

Private industry employers paid about 70 cents per hour worked (5 percent of total compensation costs) in March 1988 as health insurance benefits.[85] Nearly one-fifth of all benefit costs incurred by employers were due to health insurance provision, according to the U.S. Bureau of Labor Statistics. The Chamber of Commerce survey produced a somewhat higher estimate: 85 cents per hour worked (6.7 percent of employer payroll costs) went toward health insurance premiums.[86]

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[79] This total includes payments for Federal social insurance funds (i.e., Old-age, Survivors, Disability, and Hospital Insurance; Unemployment Insurance; Federal Employee Retirement; Railroad Retirement; veterans' life insurance; workers' compensation; and military medical insurance) as well as State and local social insurance funds (i.e., State and local employee retirement; temporary disability insurance; workers' compensation).

[80] Employee compensation is defined as wages and salaries (i.e., straight-time pay, production bonuses, incentive and commission earnings, cost-of-living adjustments) and fringe benefits. Fringe benefits include paid leave (e.g., for vacations, sickness, holidays), supplemental pay (e.g., for overtime, holiday and weekend work, shift differentials, nonproduction bonuses, lump-sum payments), insurance (e.g., life, health, sickness, and accident), retirement and savings plans, legally required payments (e.g., Social Security, Railroad Retirement and Unemployment Insurance, workers' compensation, Federal and State unemployment insurance), and other benefits (e.g., severance pay, merchandise discounts).

[81] Benefits required by law include Social Security, Medicare, unemployment compensation, and workers' compensation.

[82] Daily Labor Report. Employment Costs Average $13.79 Per Hour in March; Benefits Comprise Bigger Share. June 17, 1988. p. B-4.

[83] U.S. Chamber of Commerce. Employee Benefits 1986. Washington, 1987. p. 10.

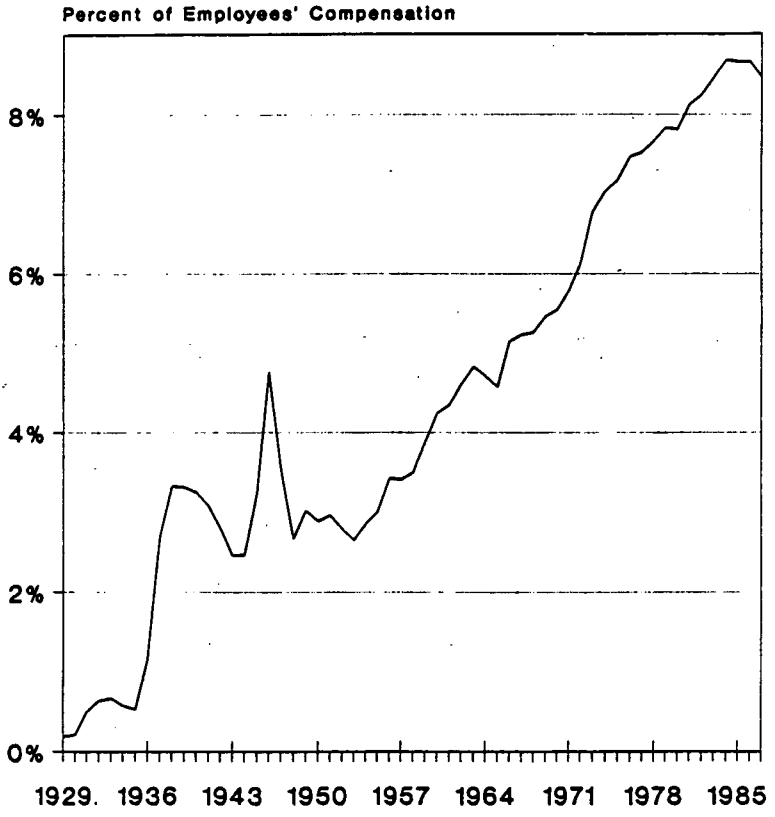
[84] Daily Labor Report. Employment Costs Average $13.79 Per Hour in March; Benefits Comprise Bigger Share. June 17, 1988. p. B-6.

[85] Unpublished U.S. Bureau of Labor Statistics data. Health insurance costs relate to employer payments for current employees, not retirees or other former employees. In addition to hospital, surgical, medical and major medical insurance, dental and vision care are included.

[86] U.S. Chamber of Commerce. Employee Benefits 1986. Washington, 1987. p. 11-12. These figures reflect employer-paid premiums for hospital, surgical, medical, and major medical insurance as well as dental insurance.

CHART 3.1

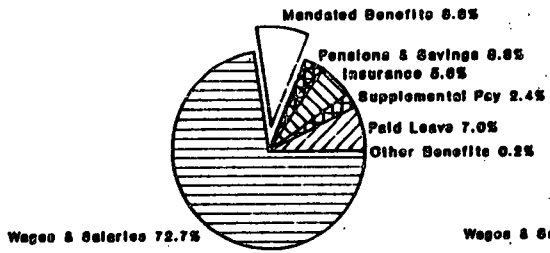
Employer Contributions for Social Insurance as a Percent of Employees' Compensation, 1929-1987



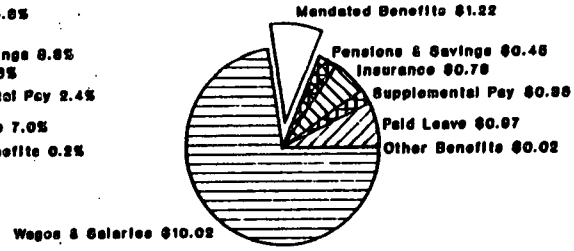
Source: National Income and Product Accounts.

CHART 3.2

PRIVATE SECTOR EMPLOYER COSTS FOR EMPLOYEE BENEFITS, MARCH 1988



Percent Distribution of Total Compensation



Employer Costs Per Hour Worked

Source: U.S. Bureau of Labor Statistics

Fringe benefit costs at firms with no health plans are lower than the figures cited above for all private firms. There are no dollar estimates of how much benefits are worth at these firms, but it is known that firms with less than ten employees, fewer than half of which have health plans, are less likely than the average firm to offer any particular benefit.[87] For example, only 52 percent of these smallest firms offer paid vacations, only one-third offer paid sick leave, and only 1 in 10 have a pension plan. Thus, a requirement to offer a health plan would impose a substantial cost on these small firms, but for many of them this cost would be added to a lower base of fringe benefit costs than would be true of large firms that already offer a full range of benefits.

2. Economic Theory of Employer Responses to Mandate

If the Government were to expand its role in the fringe benefit area by mandating that employers offer health insurance to workers and their dependents, employers' labor costs could initially increase.[88]

There are various ways in which employers might respond to an increase in the health insurance component of their labor costs:

- Raise prices, thereby passing the additional cost on to customers.
- Reduce other labor costs, either by reducing compensation or employment, thereby passing the added cost on to employees.
- Do nothing, allowing profits to fall, thereby passing the added cost on to shareholders through depressed dividends and stock prices.
- Circumvent the mandate by taking full advantage of any exemptions allowed, thereby denying employees health benefits and circumventing the intent of Congress.

The primary financial goal of firms is to maximize profits.[89] Therefore, it is likely that employers would respond to an externally imposed cost increase such as mandated health benefits.

Employers would be unlikely to raise product prices if they are selling in a competitive market where sales might be lost to rival firms. Reluctance to raise prices would be reinforced if some firms (e.g., very small businesses) were exempt from a mandated benefit law, because the exemptions would confer a cost advantage. Of course, the ability of firms to raise prices varies among industries and markets. Firms with large market shares or unique products that give them some control over prices are generally large firms that already offer health insurance. Nonetheless, it is likely that some firms affected by a health insurance mandate could raise prices to some degree. An example might be a restaurant or retail establishment that has a commanding position in a local market

[87] U.S. Small Business Administration. The State of Small Business. Washington, 1987. Table 4.1. p. 137.

[88] The fourth plan analyzed for this study, the Medicaid expansion plan, would not directly increase labor costs since Medicaid is a State-run program funded by the general revenues of Federal and State governments. However, a Medicaid expansion might mean increased taxes and/or public borrowing, which could indirectly affect employers, either by reducing after-tax profits or by constraining funds available for private investment.

[89] Non-profit firms would likely react much the same way as for-profit firms. That, is, they could raise the fees or prices that they charge their members or clients and/or reduce the amount of staff salaries and benefits.

where there is little short-run likelihood that new competitors will enter. Another example would be in situations where all firms competing in a particular market were affected similarly by the benefit mandate and experienced equivalent cost increases simultaneously. These firms could presumably all pass their costs through in price increases to customers.

If firms were to raise prices to offset a mandated payroll cost increase, their employees might ultimately bear the burden of that action. In markets where consumers are quite sensitive to price changes, they would buy less of a product after its price had increased. With reduced product demand, the firm would eventually have to cut output and employment. Thus, a firm's attempt to shift the cost of mandated health insurance forward to its customers could ultimately affect its workforce.

Circumventing the mandate would be possible to the extent that exemptions were permitted in legislation or that enforcement penalties were ineffective. In the three mandatory employer illustrative plans, the only significant exemption is that for employees working less than 10 hours a week. To the extent feasible, firms might reduce part-timers' hours below this minimum. Employers could also reduce their costs by reducing hours of full-time employees to less than 30. Such actions could create workforce inefficiencies that would offset the financial benefit of avoiding the mandate.

Thus, except for a minority of firms that could raise prices and/or reduce work hours, the most likely employer response to mandated health insurance would be to shift the added costs back to the workforce. There are a number of ways in which such a shift might be accomplished:

- Cut back some other component of employee compensation (e.g., wages or discretionary benefits);
- Reduce current employment; or
- Hold down the rate of future increases in compensation and/or jobs.

Some of these actions are more feasible than others. During the term of a collective bargaining agreement, for example, a firm cannot cut labor costs immediately. Similarly, a firm cannot reduce the earnings of workers paid at the legislated minimum wage. Job cutbacks might not be possible in the short run if a firm wants to maintain its current level of production.

Most firms probably would try to take one or both of the following actions:

- Keep future wage or discretionary benefit increases below what they might have been in the absence of mandated health benefits; and/or
- Keep job growth, either for all groups or for particular groups, below what it might have been in the absence of mandated health benefits.

If firms responded by reducing compensation over time, then the overall dollar value of compensation for workers eventually might be no greater than before enactment of health insurance legislation. Employers would pay for higher health insurance costs by reducing future employee compensation increases. Because of the new benefit, other forms of employee compensation would be lower

than they otherwise might have been, and this difference would be reallocated to cover employers' health insurance costs. Of course, some employees would still gain by being able to drop expensive individual health plan coverage. Others would gain due to having an above-average utilization of health care.

If firms responded by eliminating jobs over time, some workers would be worse off with a health insurance mandate. By raising the cost of labor relative to capital, the mandated benefit might make it feasible for firms to reduce employment by using techniques that would otherwise be too expensive. The degree to which capital can be substituted for labor depends on the nature of a worker's job and the characteristics of a firm's production process, but such opportunities exist widely in industries that are not already heavily automated.

The mandating of health insurance would make some groups within the labor force relatively more expensive to hire, inducing firms to employ fewer such workers. For example, if employers want to offset higher health insurance costs by reducing wages, they would have the least leeway to do so among low-paid or minimum-wage employees. That is, employers could not cut the wages of employees working at the minimum wage and could cut only slightly the wages of those working just above that floor. Thus, lower-paid employees would become relatively more expensive than higher-paid employees, whose wages could be reduced to compensate for the new benefit's cost. Moreover, employee health premiums currently do not vary with wages and, hence, are higher as a percent of compensation for low-wage compared to high-wage employees.[90] Thus, if present practice were followed, mandated coverage would increase the cost of employing low-wage workers to a greater degree than high-wage workers. Consequently, employers might cut back the employment of low-wage workers through layoffs, attrition, or alteration of future hiring patterns.

The illustrative plans would make part-timers who work 30 or more hours a week relatively expensive compared to other part-time workers and to full-time workers. Part-timers working at least 30 hours would be entitled to the same benefit coverage as full-timers (those working 40 hours per week) under the three mandatory employer illustrative plans, thereby raising their hourly compensation relative to that of full-timers. Employers might react by reducing their hours to fewer than 30 and hiring additional part-time workers or by increasing their hours to 40 and hiring fewer part-time workers. Part-timers who work somewhat longer than the floor of 10 hours would be relatively more expensive to employ than ineligible part-timers working 9 hours or less. Firms might avoid the mandate for these workers by cutting back their hours, although avoidance schemes might create inefficiencies that would outweigh the savings in benefit costs.

Other types of workers (e.g., women of childbearing age, older workers, workers with families) also might experience unintended consequences if employers were required to offer health insurance. The elevated health care costs of these workers are of no concern

[90] In the catastrophic illustrative plan, costs would vary inversely with a worker's family income.

to an employer that does not provide health coverage or that employs individuals who are covered under the policies of family members who work elsewhere. Since health costs for women of childbearing age or workers age 55 to 64 are above average, requiring each employer to offer health insurance for all employees might dissuade firms from hiring these high-cost workers.

Whether or not high-cost workers would be put at a disadvantage by a mandated health policy would depend on how insurance is made available to small firms. If insurance were offered to these firms through a risk-pooling mechanism, then the firm's cost would not be directly tied to the type of employee hired. Similarly, if insurance could be offered using a community-rated basis for setting premium cost, then there would be no direct link between a single firm's workforce composition and the plan's cost to the firm. Only if the new plan were offered on an experience-rated or individually underwritten basis would this concern be warranted.

3. Evidence on Likelihood of Employer Actions

Research on existing laws that have increased labor costs provides some insight into how employers might react if health benefits were mandated. However, such research findings are limited.

The effects of minimum wage legislation have been studied and give some basis for understanding the effects of mandating an increase in the compensation package. Studies done in the 1940s and 1950s concluded that the law had no adverse employment effect since employment often increased after the minimum wage rose.[91] This simple before-and-after comparison is inappropriate, however. The relevant question, which was asked in subsequent studies, is whether the employment level following an increase in the minimum wage was as high as it would have been had the minimum wage remained unchanged. That is, the minimum wage might affect job opportunities (i.e., jobs that could have been created) without causing actual job losses.

Some research on the minimum wage indicates that teenage employment opportunities are adversely affected by minimum wage hikes.[92] Other research suggests that the magnitude of the effect might be sensitive to the size of the youth labor force during the period being analyzed.[93]

Little can be said with confidence about the employment effect of the minimum wage on adults, however.[94] About 97 percent of the workers who would be covered by mandated health insurance benefits are adults. A recent study found that a 10-percent increase in the minimum wage should have a negligible effect on adult workers but could be expected to result in a 0.6 percent loss in teenage job opportunities.[95]

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[91] Ehrenberg, Ronald G., and Robert S. Smith. Modern Labor Economics: Theory and Public Policy. Third Edition, 1988. p. 81-82.

[92] Brown, Charles, with Curtis Gilroy and Andrew Kohan. The Effect of the Minimum Wage on Employment and Unemployment. Journal of Economic Literature, v. XX. June 1982. p. 524.

[93] Luskin, David. Time-Series Studies of Teenage Employment: What Do They Show? Paper presented at the 1984 Meetings of the Western Economic Association. June 1984.

[94] Brown, Charles, with Curtis Gilroy and Andrew Kohan. The Effect of the Minimum Wage on Employment and Unemployment. Journal of Economic Literature, v. XX. June 1982. p. 524.

[95] Wellington, Alison J. Effects of the Minimum Wage on the Employment Status of Youths: An Update. Presented at the Demography Seminar at the University of Michigan. Mar. 22, 1988.

Empirical studies of other labor market regulations do not prove helpful. Few analyses of occupational safety and health legislation, for example, have examined its employment effects.[96] Evidence is mixed on the employment consequences of pension regulation.[97] Studies of the effects of an increase in the payroll tax to fund the Social Security and Unemployment Insurance programs agree that some portion of the employers' share of the tax is paid for by workers. However, the extent to which this effect is evidenced by dampened wage growth rather than slowed employment growth has yet to be conclusively determined.[98]

Some evidence suggesting possible employer reactions may be drawn from responses to recent increases in health insurance premiums. Many firms have reacted to sharply rising premiums by seeking offsetting health plan savings through benefit reductions and utilization control measures. One study found that 79 percent of firms with health plans have taken measures to reduce health plan costs in recent years.[99] Thus, firms presented with involuntary increases in their health benefit costs have sought to offset that growth in benefit costs. Of course, firms that would be offering plans for the first time would not have this recourse for offsetting savings and would have to reduce other forms of compensation.

To summarize, economic theory of how firms behave suggests that firms would try to pass through the added costs of mandated health benefits. A minority of firms would offset these costs by price increases, while the majority of employers would find savings through reductions in employee compensation over several years. The group most vulnerable to job loss from this process would be workers in jobs at or near the minimum wage, since their compensation cannot be reduced except by reductions in hours worked. Almost all employers should be able to offset most or all of the costs of mandated benefits. Those unable to do so would realize smaller profits or larger losses. Firms in this situation, with little working capital and bad prospects for future business, could be forced to close.

Research on how past mandatory increases in employee compensation have affected employers is limited mainly to research on the impact of the minimum wage. That research is inconclusive but does show that job loss may occur for groups with limited human capital and job skills such as teenagers. Employers have responded to recent increases in the cost of health insurance with efforts to reduce benefit costs.

E. ECONOMIC IMPLICATIONS OF EMPLOYERS' REACTIONS

The imposition of additional benefit costs on certain employers, and the reactions of those employers, could potentially affect the economy:

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[96] Mitchell, Olivia S. The Labor Market Impact of Federal Regulation: OSHA, ERISA, EEO, and Minimum Wage. National Bureau of Economic Research, Cambridge, Mass. Jan. 1982. (Working Paper No. 844) p. 10; Employee Benefit Research Institute. Government Mandating of Employee Benefits. Washington, 1987. p. 11.

[97] Mitchell, The Labor Market Impact of Federal Regulation, p.16; Employee Benefit Research Institute. Government Mandating of Employee Benefits. p. 21.

[98] Employee Benefit Research Institute. Government Mandating of Employee Benefits. p. 18.

[99] ICF, Inc. Health Care Coverage and Costs in Small and Large Businesses. Prepared for the U.S. Small Business Administration. Washington. Apr. 15, 1987. p. V-2.

- Prices and employment might be affected;
- There could be an impact on competition among firms, both internationally and domestically;
- The productivity of firms could be affected; and
- Employment discrimination could be heightened.

Ultimately, economic growth could be slowed as a result. This section assesses the probable economic effects of a requirement that all employers offer group health insurance.

The following discussion relies heavily on several economic studies completed within the past 2 years.[100] Most of these studies focus on the proposed Minimum Health Benefits for All Workers Act introduced in the 100th Congress by Senator Edward Kennedy (S. 1265) and Representative Henry Waxman (H.R. 2508). However, the findings are relevant to other possible proposals for mandatory employer health benefits, including the illustrative plans analyzed in this report.

1. Employee Compensation

There is a consensus among the economic studies that most employers will try to offset the net after-tax cost of a new health insurance offering by reducing employee compensation. This presumption is based on the economic theory of firm behavior.

In testimony on S.1265/H.R. 2508, the Congressional Budget Office (CBO) estimated that it would take firms from 1 to 3 years to lower wages below what they would have been to offset the costs of that proposal. Thus, the period of time allowed to phase in a mandated health plan would determine the extent to which firms could minimize the cost impact of a mandate with this strategy.

However, some firms would find it impossible to offset their added costs in full using these approaches because wages would be inflexible for some of the affected jobs. Some jobs would be subject to union contracts, although few union jobs would be affected since most union members already have group health coverage. Some of the affected jobs would be at the statutory minimum wage. One study found that about half of the working uninsured earned hourly wages of less than 125 percent of the minimum hourly

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[100] These studies are described in the following documents:

Danzon, Patricia M., and Sloan, Frank A. Covering the Uninsured: How Much Would It Cost. LDI Policy Discussion Paper No. 9. Leonard Davis Institute of Health Economics, University of Pennsylvania. Dec. 1986.

Robert R. Nathan Associates, Inc. The Private and Public Sector Costs of Proposed Mandated Health Benefit Insurance for All Workers. Prepared for the National Foundation for the Study of Employment Policy. Jan. 1988.

U.S. Congress. Senate. Committee on Labor and Human Resources. Minimum Health Benefits for All Workers Act of 1988. Report 100-376, Part I. Washington, U.S. Gov't. Print. Off., May 25, 1988.

——— Hearings on the Minimum Health Benefits for All Workers Act of 1988. Report 100-376, Part II. Washington, U.S. Gov't. Print. Off., Nov. 4, 1987.

U.S. Congress. House. Subcommittee on Health and Environment. Hearings on the Minimum Health Benefits for All Workers Act of 1988. Washington, U.S. Gov't. Print. Off., Apr. 14-15, 1988.

The Congressional hearings cited above include testimony by:

F. Gerard Adams, Wharton Econometrics.
Karen Davis, Professor, Johns Hopkins University.
Nancy M. Gordon, Assistant Director for Human Resources and Community Development, Congressional Budget Office.
Edward M. Gramlich, Acting Director, Congressional Budget Office.
Jack A. Meyer, President, New Directions for Policy.
Thomas G. Moore, President's Council of Economic Advisers.

wage.[101] To the extent that wage inflexibility would limit offsets to the costs of a mandate, some disemployment would be likely.

2. Employment

Economic studies have agreed that some short-term disemployment could occur if employers were required to offer health insurance. This effect would be seen for jobs at or near the minimum wage as employers tried to offset the added cost of offering health coverage.

In testimony on S. 1265/H.R. 2508, CBO estimated such legislation would have the effect of raising compensation for minimum wage employees by 12 to 15 percent, which could result in the elimination of about 100,000 jobs, or 2 percent of all jobs paying the minimum wage or less. Testimony by Karen Davis estimated a loss of 100,000 to 120,000 jobs, which would add 0.1 percentage points to the unemployment rate in an economy with over 100 million jobs. A macroeconomic analysis by Gerard Adams called the legislation's likely impact on employment too small to measure.

Karen Davis also pointed out that, to the extent that mandated benefits would result in increased utilization of health care services, there would be increased employment in the health care sector. However, the analysis in section III of this chapter shows that utilization increases would be modest and could be handled by existing resources in most areas. Any job increases that did occur would offset at least part of the loss of low-wage jobs for the economy as a whole; however, opportunity for direct transfer into these new jobs by people laid off due to mandated benefits would be limited since some of the new health-sector jobs would have substantial skill requirements.

3. Prices

Mandated health benefits could trigger price increases for two reasons: (1) some employers might attempt to pass through to consumers a part of their increased benefit costs; and (2) increases in health care utilization by the newly insured could worsen the inflation in physician and hospital fees.

Economic studies of S. 1265/H.R. 2508 generally agree that some inflationary pressure on consumer prices would be likely, since it would not be possible in every instance for employers to offset higher benefit costs through reductions in wage growth and workforce size. However, mitigating against an inflationary effect would be the tendency for the mostly small firms subject to a mandate to be concentrated in highly competitive, price-sensitive industries. It would be difficult for most of these firms to raise prices significantly. An exception might be found in industries where virtually all employers would be affected by a mandate. In such a situation, almost all of the competing firms would have incurred the same cost increase and could raise prices accordingly without losing ground to competitors.

The Adams study attempted to quantify the effect of S. 1265 on prices and concluded that a price increase of 0.1 percentage points

[101] Employee Benefit Research Institute. A Profile of the Nonelderly Population without Health Insurance. EBRI Issue Brief No. 66. Washington, May 1987.

would be expected. In an economy that normally experiences consumer price increases of 4 to 5 percent annually, such an impact would go unnoticed.

The available economic analyses have also concluded that health care prices would not be affected significantly by S. 1265/H.R. 2508. The reason is that the net addition to health care expenditures would be small relative to current national spending. Studies by Davis, Adams, Danzon/Sloan and CBO all agree that net new spending for health care would range from $5 billion to $10 billion annually under a plan such as S. 1265/H.R. 2508. Estimates for the three mandatory employer illustrative plans show added health care expenditures ranging up to $14.6 billion depending on the plan.[102] New expenditures in that range would increase current health care spending by no more than 1 to 3 percent. The Nathan study estimated a gross cost for S. 1265/H.R. 2508 that would be about $10 billion higher than the CBO and Davis estimates, but, even if this additional cost were added to the net CBO estimate, the increase in national health expenditures would still be only about 4 percent. (Additional discussion of effects on health care prices may be found in section III of this chapter.)

4. Productivity

There is no quantitative research linking mandated health benefits with changes in labor productivity. Arguments can be made that both positive and negative effects could result.

On the negative side, Moore points out that a mandated health plan would reduce flexibility with respect to hours worked, thereby making the use of labor resources by management more rigid and reducing productivity. This problem would arise from the establishment of an hours threshold for benefit eligibility. An employer that could employ labor below that threshold—10 hours in the plans studied here—would be reluctant to allow such workers to work increased hours, even though consumer demand and the production process might otherwise require it. Another negative factor cited by Nathan is that affected firms would have to devote additional resources to benefit plan administration.

The Nathan study cites several possible positive effects of a mandate on productivity: greater financial security for workers, greater job satisfaction, and more job mobility, since a job move would no longer endanger health insurance coverage. Also, a mandated rise in labor cost could spur capital investment to achieve new efficiencies in production.

One important question in regard to health insurance and productivity is whether insurance would promote improved health among workers. Research indicates that the uninsured do postpone seeking treatment compared to the insured, even when in poor health. One study found that 20 percent of the uninsured who had serious medical problems did not see a medical doctor during a

[102] The net addition to health care expenditures would be $14.6 billion for the typical plan, $12.8 billion for the tailored plan, and $4.4 billion for the catastrophic plan. The typical and tailored plans would add more new health spending than would S. 1265/H.R. 2508 due to broader coverage of part-time workers and, for the typical plan, more extensive benefits.

year.[103] However, studies of the Rand health insurance experiment [104] and of Medicaid eligibles [105] show that acquisition of insurance directly affected health status only in narrow circumstances. In the Rand experiment, this link was shown for low-income people who were high medical risks. In Medicaid, the program of early, periodic screening, diagnosis and treatment of children was shown to improve health status. For most health problems that affect work performance, the length of time from onset to morbidity or mortality is so great that a short-term event such as change in insured status would be unlikely to have an impact immediate enough to measure over short time periods.

5. Economic Growth

A government policy that could result in price increases and reduced wage growth might be expected to have a negative effect on national economic growth. Moore highlighted this possibility in his testimony on S. 1265. However, the only quantitative analysis (by Adams) indicates that a mandate like that proposed in S. 1265 would have a negligible effect on Gross National Product. The small effect would be due to the assumption made by Adams and others that virtually all of the added employer benefit cost would eventually be absorbed by employees through reduced wages. These employees would not be made worse off by this cost shifting, since the total dollar value of their compensation would not have changed. Only the composition of their compensation would be different.

6. Competition Among Firms

Mandated health benefits would add to labor costs of firms with no health coverage and reduce labor costs of many firms with health plans, assuming employed dependents insured as family members by current plans are forced to acquire coverage based on their own employment. Thus, there would be the potential for a significant impact on the competition among firms for market share. A firm forced to offer health coverage would have its cost advantage eliminated if that firm competes with firms that already offer health coverage.

The effect on competition would be seen most clearly in the service sector, especially in retail trades, where coverage of employees under S. 1265 would rise by 180 percent according to the Nathan study. For example, a local clothing store that had to extend health benefits would lose an advantage it now has relative to the nearby outlet of a major department store that already offers health benefits. Closing this gap in labor costs would presumably be translated into pricing policies, resulting in more business for the department store and less for the clothing store unless the local store were suc-

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[103] Freeman, Howard E., Robert J. Blendon, Linda H. Aiken, Seymour Sudman, Connie F. Mullinix, and Christopher R. Corey. Americans Report on Their Access to Care. Health Affairs, v. 6(1). Spring 1987. p. 14.

[104] Brook, Robert H., John E. Ware, William H. Rogers, et al. Does Free Care Improve Adults' Health: Results from a Randomized Controlled Trial. New England Journal of Medicine, v. 309(23). Dec. 8, 1983. p. 1426-34.

[105] Bazzoli, Gloria J. Health Care for the Indigent: Overview of Critical Issues. Health Services Research, v. 21(3). Aug. 1986. p. 367.

cessful in offsetting its cost increase through wage reductions. The Nathan study speculates that some firms might be forced to go out of business if the shift in competitive advantage were extremely adverse.

The impact on competition would be less noticeable in other industries, the least potential for an effect being in manufacturing, where the mandate in S. 1265 would increase coverage by only 30 percent. The impact would also vary by region, with the greatest effects likely in the South and Southwest and the least in the Northeast and the Pacific Coast.

Moore points out that one effect in regard to competition would be to reduce the ability of small firms to compete with large firms. He fears that a benefit mandate would retard entrepreneurship. In some situations this small vs. large firm concern might be mitigated by the fact that many large firms with health plans would still be affected by a mandate. For example, 76 percent of large firms would be affected by mandatory inclusion of part-time workers under S. 1265. However, large firms in total would experience net savings in health costs, mainly due to the requirement that employed dependents covered by large firms accept their own employers' coverage.

7. International Competitiveness

Both the Nathan study and the Moore testimony indicate that U.S. firms would be hurt in international competition if labor costs were to rise due to mandated health benefits. However, Davis points out that the preponderance of the impact of a mandate would be on firms in services and the retail trades, sectors with relatively little involvement in international trade. Services account for only five percent of all U.S. exports. Thus, Davis states that any harm to international competitiveness of U.S. firms would be limited in scope.

The Nathan study suggests that the effects could be broadened if affected firms pass some of their increased costs on to other U.S. firms with which they deal. For example, a wholesaler with no international business may be a supplier to a manufacturer with extensive involvement in international trade. If the manufacturer were to incur higher input costs due to higher labor costs passed through by the supplier, the manufacturer's international situation could be harmed. Such pass throughs of cost increases should be minimal if affected firms manage to offset health benefit costs with wage reductions, however.

The primary firms directly involved in international trade are the largest corporations. These firms could experience savings in their health benefit costs, in which case their competitive positions internationally should be improved.

8. Employment Discrimination

When health insurance is added to the compensation package of a workforce, it has a differential effect on the cost of labor by labor subgroup. First, the lower-paid employee would receive a higher percentage increase in total compensation than would the higher-paid employee, making the lower-paid employee relatively more costly than before. Second, in an experience-rated firm, an older

employee could drive up the premium more than a younger employee; similarly, within a given age group, women may be more expensive to the group than men. Thus, to the extent that firms have to bear additional labor costs as a result of a health benefit mandate, they would have incentives to minimize health costs by reducing the extent to which they employ workers at low wages, older workers, and female workers.

Estimates of the newly insured under the mandatory employer illustrative plans show that they would be primarily a young group (with 76 percent under age 35). Only 14 percent would be 45 or older, and only 6 percent would be 55 or older. However, 49 percent of the newly insured would be women.

As mentioned earlier, concerns about this kind of situation would be eliminated if risk-pooling were adopted for small firms or if these firms could acquire health benefit plans at costs determined by community-rating rather than experience-rating.

V. Effects on Health Care Insurers

A. THE CURRENT MARKET FOR HEALTH INSURANCE

In 1986, an estimated $99 billion was spent on employer group health insurance in the United States. If all employers were required to provide a typical health insurance plan, it is estimated that this total would rise to $135 billion. (The increase would be less for the tailored plan—to $130 billion.) [106] If the process of mandating were not to favor any one segment of the private group insurance market, it is possible that each participant in that market would receive a share of the increase in insurance spending proportional to current market share. However, as explained below, pooling arrangements and regulations may favor certain segments of the insurance industry over others.

This section considers the effects that various mandated approaches might have on the market share of the resultant increase in spending on health insurance obtained through the employer.

The current market is allocated among four types of insurance arrangements. In 1986, about nine-tenths of expenditures for employee health care was split among Blue Cross/Blue Shield organizations (the Blues), commercial insurance companies, and employer self-insurance arrangements. The remaining tenth was paid in dues to HMOs. Table 3.34 shows the allocation of 1986 expenditures.

The major impact of any mandated coverage would be on the employer-provided group health insurance market. However, there would be a sharp reduction in insurance premiums for coverage bought by individuals since employees, and dependents of employees who now buy insurance on their own, might drop or scale down their individual policies. About $13 billion in premiums was paid for non-group private insurance in 1986.

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[106] Data are from tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model. Expenditures on employer group health insurance are the total of (1) direct employer contributions and (2) the employee share of the premium. Therefore, the totals in this section are somewhat larger than the direct employer group insurance premium in table 3.13.

When health insurance is added to the compensation package of

TABLE 3.34.—Expenditures for Employer Group Health Insurance, 1986

(Billions of dollars)

Segment of Market	
Group insurance	
Blue Cross/Blue Shield	32
Large insurers	15
Small insurers	12
HMOs	11
Total, all insurers	70
Self insurance	29
Total, group market	99
Individual insurance	13
Total, group and individual insurance market	112

Source: Total from Lewin/ICF analysis for CRS. Breakdown by Hay/Huggins based on Interstudy Edge, GHAA Study of HMO Industry Trends, the Argus Health Chart.

The distribution of the employer health insurance premium by type of insurer was made by Hay/Huggins based on four data compilations on the market share held by each segment of insurers. These were the Interstudy Edge, Fall 1987, Group Health Association of America's 1987 Study of HMO Industry Trends, the 1986 Argus Health Chart, and the 1986–87 Source Book of Health Insurance Data.

B. EFFECTS OF ALTERNATIVE APPROACHES TO THE MARKET

The three illustrative mandated employer approaches described earlier in this chapter would increase the amount spent on employer-provided group health insurance by estimated sums ranging from $10 billion to $36 billion. It is unlikely that the increase in the employer-provided insurance payments would be distributed among the various segments of the insurance market in the same proportion as the current $99 billion in insurance premiums. The characteristics and purchasing patterns of the employers who would be most affected by the mandate differ from those of the current market. Furthermore, the type of pooling arrangement would tend to favor certain parts of the market over others.

Since most of the expanded market would be for small-employer group plans, the introduction of a mandate, with or without a pooling arrangement, would have little effect on total employer payments for self insurance. However, self-insurance expenditures would increase to cover any benefit improvements that might be required for existing programs and to cover employee categories (such as part-timers) that are not now covered in some large groups.

The individual insurance market of $13 billion would decline by about one-third to $8 billion since employees would have little need to continue individual coverage. Coupled with a $36 billion increase in group health insurance, the $112 billion private health insurance market would increase to $143 billion.

The type of mandate would influence the share of the expanded market captured by each category of insurer. If the mandated plan

were similar in design to current health insurance plans, and the pooling arrangement did not interrupt the usual insurance approaches, the expansion would flow proportionately to insurers who operate in the current market. The Medicaid expansion option would not affect the private insurance market. The catastrophic approach would tend to favor the larger insurers, who could effectively underwrite high-risk pools. However, smaller insurers could participate in the market if they were to join together or use a larger insurer for "reinsurance." [107] The share of the increased market falling to HMOs would depend on the structure of the pooling arrangements. HMOs currently have a very small share of the small-employer market for several reasons. First, HMOs tend to concentrate their marketing efforts among the larger firms. Second, HMOs have stricter underwriting rules. Finally, they do not like to participate in situations in which employees do not have a choice. If, for instance, an HMO were to offer insurance to a group of 10 employees, and 4 of the 10 were to select the HMO, it might be difficult or impossible for the employer to purchase traditional insurance for the other 6 employees. As a result, those 6 employees would be forced into the HMO. This outcome would be a serious problem if some of the employees lived outside the area served by the HMO.

If there were no pooling arrangements, it is unlikely that HMOs would pick up a proportionate share of the expanded market since that expansion would be largely among small employers. Also, if pools were to be limited to a few insurers who covered the entire pool area, only the largest HMOs could form joint ventures that would be permitted to participate in the pool.

There is one approach to pooling under which HMOs would seek, and probably capture, a significant share of the expanded market. This approach would be to permit participation in a pool by any qualified HMO and to enable individuals to use the combined employer/employee contribution to purchase membership in any qualified HMO. The HMO would then treat the pool itself as one large group from which members could freely join the HMO as an alternative. The HMO could target its marketing to the large pooled group, avoid the barrier to selection that could occur by dealing directly with small employers, and be assured that all employees would be able to choose traditional insurance instead of the HMO.

C. EFFECT OF POOLING ARRANGEMENT

It is unlikely that mandated health insurance would be practical without some form of pooling arrangement. The form of pooling could range from voluntary pools that would cover only those who could not purchase insurance at standard rates to forced pooling of all employers below a certain size. The voluntary approach would have little impact on the shares in the expanded market, but forced pooling could affect not only the distribution of the new expenditures but also the shares of current insurance.

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[107] Alternative approaches to risk pooling are discussed in report number 2 in this series, Insuring the Uninsured: Options and Analysis. Chapter 7.

The effect of pooling on the insurance market would also depend on the number of insurers permitted to participate in the pool and the requirements to be a participating insurer. If the pools were limited to 10 to 15 of the most competitive insurers, those insurers would obviously capture a greater market share. At the other extreme, if the pools were to be designed to accept participation from any qualified insurer, there might not be much disruption in the marketplace.

Blue Cross/Blue Shield organizations would probably join together in whatever form was needed to participate in each pool. Large insurers should be able to qualify for any pool arrangements since they already operate in most States. Small insurers would have to either band together or be left out of some or all of the pools.

If pools were limited to large organizations operating in every State in the region served by the pool, HMOs would capture little if any of the expanded coverage. However, if all small employers were forced to participate in the pool, but employees were free to use employer contributions to pay HMO fees, the HMOs could capture a significant part of the market.

The effect of pooling would also depend on the geographic area covered by the pool. A national pool or large regional pools would tend to favor insurers who operate throughout the region or the nation.

Table 3.35 compares the distribution of current expenditures for private health insurance to those under three pooling approaches for the typical plan.[108] Tables 3.36 and 3.37 repeat this comparison for the tailored and catastrophic plans.

The first pooling approach would be to establish "voluntary" pools that would accept any employer group but not force anyone to join the pool. This type of pool would attract only the high-risk groups and would probably have to be subsidized. Since the large majority of new insurance would be purchased directly from insurers, the increase in market share would be equally spread among these insurers. The market would be concentrated among small employers; thus, there would be little increase in HMO or self-insurance expenditures.

The second type of pooling arrangement would be to establish regional restricted pools. All employers below a specified size would be required to participate in the pool, and a limited number of insurers who operated throughout the region would be selected to provide the insurance. Most of the new business would go to the large insurers and the Blues, since these are the only organizations that could operate in these pools. In fact, small insurers would lose current business to the extent that their clients were forced into the pools. Tables 3.35, 3.36, and 3.37 assume that HMOs would continue to be able to offer optional coverage to all groups and that employers who self-insure would be exempt from the pool.

The third type of pooling arrangement would permit any insurer to participate, and the employees could use the employer money to

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[108] The type of pooling arrangement might be expected to affect the amount of total spending for group insurance. However, the policy simulations from which these data are drawn did not vary pooling arrangement in arriving at spending estimates. Thus, these tables portray how pooling might affect the distribution of spending by market sector, but the total market size does not vary by arrangement.

pay HMO fees directly. In this case, all insurance providers would share equally in the new premiums.

TABLE 3.35.—Estimated Expenditures for Private Health Insurance Under Typical Plan, 1986

(Billions of dollars)

Segment of market	Current arrangements	Type of pool		
		Voluntary	Regional restricted	Employee choice
Group insurance				
Blue Cross/Blue Shield	32	50	57	48
Large insurers	15	24	27	23
Small insurers	12	19	9	18
HMOs	11	11	11	15
Total, all insurers	70	104	104	104
Self insurance	29	31	31	31
Total, group market	99	135	135	135
Individual insurance	13	8	8	8
Total, group and individual insurance market	112	143	143	143

Source: Total from Lewin/ICF analysis for CRS. Breakdown by Hay/Huggins based on Interstudy Edge, GHAA Study of HMO Industry Trends, the Argus Health Chart, and the HIAA Source Book.

TABLE 3.36.—Estimated Expenditures for Private Health Insurance Under Tailored Plan, 1986

(Billions of dollars)

Segment of market	Current arrangements	Type of pool		
		Voluntary	Regional restricted	Employee choice
Group insurance				
Blue Cross/Blue Shield	32	48	54	47
Large insurers	15	22	25	21
Small insurers	12	18	9	17
HMOs	11	11	11	14
Total, all insurers	70	99	99	99
Self insurance	29	31	31	31
Total, group market	99	130	130	130
Individual insurance	13	8	8	8
Total, group and individual insurance market	112	138	138	138

Source: Total from Lewin/ICF analysis for CRS. Breakdown by Hay/Huggins based on Interstudy Edge, GHAA Study of HMO Industry Trends, the Argus Health Chart, and the HIAA Source Book.

TABLE 3.37.—Estimated Expenditures for Private Health Insurance Under Catastrophic Plan, 1986

(Billions of dollars)

Segment of market	Current arrangements	Type of pool		
		Voluntary	Regional restricted	Employee choice
Group insurance				
Blue Cross/Blue Shield	32	37	40	36
Large insurers	15	17	18	17
Small insurers	12	13	9	13
HMOs	11	11	11	12
Total, all insurers	70	78	78	78
Self insurance	29	31	31	31
Total, group market	99	109	109	109
Individual insurance	13	13	13	13
Total, group and individual insurance market	112	122	122	122

Source: Total from Lewin/ICF analysis for CRS. Breakdown by Hay/Huggins based on Interstudy Edge, GHAA Study of HMO Industry Trends, the Argus Health Chart, and the HIAA Source Book.

VI. FISCAL EFFECTS ON GOVERNMENTS

The mandatory employer illustrative plans would reduce the expenditures of public health care financing systems by extending private coverage to some individuals who now rely on public programs. These plans would tend to lower tax revenues as well, assuming that employers pass on most of the added costs of new coverage to employees.[109] Employees would then have greater health benefits, which are not taxable, and lower wages, which are taxable.[110] Thus, employees would pay less in income and payroll taxes than they would in the absence of a mandated benefit.

The Medicaid expansion would increase public expenditures for Medicaid substantially. There would be little effect on revenues under this approach. Thus, while the net fiscal effect on governments is shown below to be basically neutral under the mandatory employer illustrative plans, using Medicaid as the vehicle for expanding coverage would significantly increase government spending.

The following discussion presents estimates of fiscal effects for calendar year 1986 using the data from the policy simulations of the four illustrative plans. (See tables 3.38 and 3.39.) Expenditure effects were taken directly from those simulations. Revenue effects were derived using the methodology and assumptions developed by the Congressional Budget Office (CBO) for its analysis of S. 1265 and H.R. 2508.[111]

[109] If employers did not pass on the added costs, then employer taxes would decline as shown earlier in table 3.33. In section VI it is assumed that added costs are passed on, leaving employer tax liability unchanged.

[110] The earlier analysis of individual effects (section II) did not consider the reductions in wages that might occur over time as employers offset the added costs of mandated health benefits.

[111] CBO's revenue estimates for S. 1265 and H.R. 2508 are described in the following publications:

Continued

A. FEDERAL GOVERNMENT

1. Medicare

The Medicare program, which covers almost all of the aged and certain permanently disabled individuals, would see its expenditures reduced under the mandatory employer plans. These plans, being the primary payers for employees under existing benefit coordination rules, would absorb some of the costs for persons who would be eligible for both a new mandatory plan and Medicare. Estimated savings would range from $1.0 billion under the catastrophic plan to $2.3 billion under the typical plan. Savings at these levels would amount to a reduction in annual Medicare spending of 1.4 to 3.3 percent.

TABLE 3.38.—Impacts of Illustrative Plans on Government Program Expenditures, 1986

(In billions of dollars)

Government program	Expenditures under current law [1]	Change in spending under:				
		Typical plan	Tailored plan	Catastrophic plan	Medicaid expansion	Medicaid expansion plus tailored plan
Medicare	69.4	−2.3	−2.1	−1.0	0.0	−2.1
Medicaid	25.2	−2.0	−1.6	−1.1	+13.3	+7.3
Other (VA, CHAMPUS)	18.7	−3.3	−3.1	−1.6	−2.0	−3.8
Total	113.3	−7.6	−6.8	−3.7	+11.3	+1.4
(Federal)	(102.1)	(−6.7)	(−6.1)	(−3.2)	(+5.8)	(−1.7)
(State/local)	(11.2)	(−0.9)	(−0.7)	(−0.5)	(+5.5)	(+3.1)

[1] Costs of institutionalized beneficiaries were not included in this analysis. With these beneficiaries included, 1986 expenditures were $76.0 billion for Medicare and $43.6 billion for Medicaid.

Source: Tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

TABLE 3.39.—Impacts of Illustrative Plans on Government Budget Deficit, 1986

(In billions of dollars)

	Typical plan	Tailored plan	Catastrophic plan	Medicaid expansion	Medicaid expansion plus tailored plan
Federal:					
Spending changes	−6.7	−6.1	−3.2	+5.8	−1.7
Revenue changes	−6.6	−4.5	−0.8	0.0	−4.8
Net effect on budget deficit	−0.1	−1.6	−2.4	+5.8	+3.1
State/local:					
Spending changes	−0.9	−0.7	−0.5	+5.5	+3.1
Revenue changes	−0.9	−0.6	−0.1	0.0	−0.6
Net effect on budget deficit	0.0	−0.1	−0.4	+5.5	+3.7

Source: CRS estimates based on tabulations prepared for CRS using the Lewin/ICF Health Benefits Simulation Model.

U.S. Congress. House. Committee on Labor and Human Resources. Hearings on the Minimum Health Benefits for All Workers Act of 1988. Report No. 100- 376, Part II. Washington, U.S. Gov't. Print. Off., Nov. 4, 1987.

U.S. Congress. House. Subcom. on Health and Environment. Hearings on the Minimum Health Benefits for All Workers Act of 1988. Washington, U.S. Gov't. Print. Off., Apr. 14-15, 1988.

2. Medicaid

The mandated employer illustrative plans would also result in savings to the Medicaid program due to employer plans being primary payers for persons eligible for both an employer plan and Medicaid. Estimated savings range from $1.1 billion under the catastrophic plan to $2.0 billion under the typical plan. These savings would reduce current Medicaid spending by 4.4 to 7.9 percent. Since Medicaid is funded by both Federal and State governments, these savings would be split between the two levels of government. The Federal share of Medicaid for FY 1986 was 53.5 percent. However, based on the geographic distribution of the persons newly insured under the employer plans, the Federal share of savings is estimated to be 57 percent.

The Medicaid expansion would result in a $13.3 billion increase in Medicaid spending, a 52.8-percent increase over the current program level for non-institutional care. This increase would be shared by Federal and State governments. The estimated Federal share based on the geographic distribution of those who would be newly covered by Medicaid is 59 percent.

3. Other Federal Programs

Other Federal programs also provide health care benefits, spending $18.7 billion in 1986. The largest of these programs are the Veterans Administration medical care system and the CHAMPUS program of health insurance for military dependents. Each of the illustrative plans would reduce the cost of these programs substantially by extending coverage to persons now benefitting from them. Estimated savings would range from $1.6 billion under the catastrophic plan to $3.3 billion under the typical plan, or 8.6 to 17.6 percent of current spending. The Medicaid expansion would yield savings of $2.0 billion for these programs.

In addition, direct medical services using Federal funds are furnished by numerous Public Health Service grant programs, including direct grants to community and migrant health centers, block grants to States, such as those for maternal and child health services, and the Indian Health Service. Many people presently served by these programs, either at no charge or under an income-based sliding-fee scale, would receive insurance coverage under one or more of the illustrative plans, especially the Medicaid expansion. As a result, it might be possible to reduce funding for some of these programs. Alternatively, given stable funding levels, the programs could concentrate their services on the population remaining uninsured. These effects cannot be estimated with available data.

4. Revenues

The impact on Federal revenue shown in table 3.39 reflects an assumption that the increased cost of mandated health benefits to employers is offset by reduced wages. Thus, the primary tax effect is the conversion of taxable wage income into nontaxable health benefits, thereby reducing the Federal individual income tax and the employee payroll tax for Social Security and Medicare. These estimates are based on the estimated 1988 revenue effects of S. 1265/H.R. 2508 presented in testimony by the Congressional

Budget Office. Adjustments were made to CBO's methodology to reflect the higher income tax rates and lower payroll tax rates in effect in 1986.

The estimated Federal revenue loss associated with the typical plan would be $6.6 billion. Lost revenue under the tailored plan would be $4.5 billion ($4.8 billion if combined with Medicaid expansion). Lost revenue under the catastrophic plan would be only $0.8 billion.

B. STATE AND LOCAL GOVERNMENTS

1. Medicaid

As indicated above, Medicaid spending would be reduced if employer benefits were mandated. The State share of savings would be 43 percent of total program savings, and would range from $0.5 billion to $0.9 billion for the plans analyzed.

The large increase in spending ($13.3 billion) estimated for the Medicaid expansion would fall partially on State governments. States would bear 41 percent of this added cost, increasing their current spending by $5.5 billion (21.8 percent).

2. Other State/Local Programs

In addition to the Medicaid program, many States operate programs for low-income or medically indigent persons who do not qualify for Medicaid coverage. In some States, these programs provide benefits as comprehensive as those furnished by the Medicaid program. In other States, benefits are much more limited. States may operate the programs directly, or the programs may be administered and partially or wholly funded at the county level. A survey by the Health Care Financing Administration found that, in 1985, 29 States offered "State only" medical assistance programs, so called because they are operated without Federal funding. The programs served 1.3 million persons at a cost of $1.0 billion.[112]

Any of the illustrative plans would produce some savings for these State-funded programs. Because data on State-funded medical assistance programs are very limited, this report does not attempt to quantify the potential impacts on these programs of expanded private or Medicaid coverage. The Medicaid expansion would be more likely to reduce State-only expenditures, as most of the programs target low-income persons. The effects of the employer-based options are less certain. Some of the State programs (under such names as "general assistance" or "home relief") are aimed chiefly at disabled persons who are unable to meet the disability standards for the Federal Supplemental Security Income (SSI) program. Because these persons are unlikely to be working, expansion of employer coverage would have little impact on State programs of this kind.

Finally, both State and local governments finance indigent care in public hospitals, clinics, and other settings. An increase in the insured population might reduce the necessity for government sub-

[112] Health Care Financing Administration. Analysis of State Medicaid Program Characteristics, 1986. Baltimore, MD. 1987. p. 134. The figures cited in this report differ from the published data, which accidentally included among "State only" programs figures for Michigan's federally funded Medicaid program.

sidy of care in these facilities. The extent of the reductions cannot be estimated from the data used for this report because government subsidies generally contribute to the total budget of an institution and cannot be allocated to the care of individual patients. As was noted in section III.C.3 of this chapter, estimates of uncompensated care are generally net of public subsidies. The estimated $3 billion in reduced uncompensated care cited in that section may partially overlap with the potential reduction in direct subsidies to facilities.

3. Revenues

State and local governments would lose revenue under the mandatory employer plans for the same reason stated above with respect to Federal revenue. The estimates shown in table 3.39 are based on the relative proportion of State and local individual income tax revenue to Federal individual income tax revenue for the most recent year available.

The estimated revenue loss for State and local governments would be $0.9 billion for the typical plan, $0.6 billion for the tailored plan, and $0.1 billion for the catastrophic plan.

C. OVERALL BUDGET EFFECTS

The net effect of the illustrative plans on government budgets is shown in table 3.39. The employer plans would reduce the Federal budget deficit since savings in spending would exceed revenue losses. This effect is small for the typical plan ($0.1 billion) but larger for the tailored and catastrophic plans ($1.6 billion and $2.4 billion, respectively).

Medicaid expansion would add to Federal budget deficits since there would be a substantial spending increase. Standing alone, Medicaid expansion would add $5.8 billion to the Federal deficit; in combination with the tailored plan, this impact would be only $3.1 billion.

The employer plans would add to State and local budget surpluses (or reduce deficits), but by small amounts. The effect of the typical plan would be negligible; the tailored and catastrophic plans would add $0.1 billion and $0.4 billion to State/local surpluses, respectively.

Medicaid expansion wold add substantially to State spending, thereby reducing State/local budget surpluses (or increasing deficits). The estimated additional impact of $5.5 billion would be reduced to $3.7 billion if Medicaid expansion were combined with the tailored plan.

VII. Summary

Chapter 3 analyzes the effects an extension of health insurance coverage would have on individuals, health care providers, employers, insurers, and governments. To provide a framework for the analysis, four illustrative plans for expansion of health coverage are studied. Three of the plans would require employers to offer health insurance to their employees and dependents. The fourth plan would expand the Medicaid program to cover all individuals and families with incomes below the Federal poverty level. The

Medicaid expansion is analyzed both by itself and in conjunction with the tailored plan.

The three employer plans are termed the "typical", "tailored" and "catastrophic" plans. The typical plan contains provisions that are representative of plans currently offered by large U.S. employers. The tailored plan is designed to cover more preventive services than the typical plan, require smaller deductibles and co-insurance payments, but cost less overall by offering less hospitalization coverage. The catastrophic plan would reimburse all covered expenditures above a deductible, the deductible being related to income and family size.

If all employees working at least 10 hours per week, and their dependents, were covered, the employer plans would reduce the number of uninsured from 37.4 million to 6.0 million. In addition, a requirement that existing employer plans offering coverage of less value than a newly mandated plan be upgraded would result in improved coverage for many others (43 million for the typical plan, 24 million for the tailored plan, 22 million for the catastrophic plan).

The 6.0 million who would remain uninsured tend to be older, poorer, and heavier users of health care than are those who would gain coverage, reflecting the fact that the working population includes fewer people with low incomes or serious health conditions compared to the non-working population.

Medicaid expansion to all poor people would have a very different effect. The reduction in the number of uninsured would be smaller, with 28.9 million remaining uncovered. However, the newly covered population would include the uninsured with the lowest incomes and above-average health care utilization. Combining the Medicaid expansion with the tailored employer plan would attack the insurance coverage gap from both ends of the spectrum and leave only 3.9 million still uninsured.

The illustrative plans would increase national health care expenditures by varying amounts. Estimates of the increases range from $4.1 billion for the Medicaid expansion and $4.4 billion for the catastrophic plan to $12.8 billion for the tailored plan and $14.6 billion for the typical plan. The employer plans would reduce the cost of public programs by an estimated $3.7 billion to $7.6 billion, since private plans are primary payers for persons with dual coverage. The typical and tailored plans would also reduce household out-of-pocket expenditures overall, by $4.0 billion and $2.6 billion respectively, although many individuals would pay more than under current law because higher premium payments would outweigh savings from reimbursement of expenditures by insurance. The catastrophic plan would reduce household spending by only $0.6 billion.

The Medicaid expansion would increase that program's spending by $13.3 billion. However, it would reduce spending under other government programs by $2.0 billion and reduce household spending by $5.6 billion. Virtually no one would spend more under the Medicaid expansion than under current law.

Increased health care expenditures mean greater consumption of health care services. However, the estimated utilization increases for the illustrative plans would be minor compared to current utilization levels. The typical plan would produce no more than a 5-percent increase in hospital inpatient days, which could be absorbed

by excess capacity in most areas. Spot shortages of certain health professionals in areas with large numbers of uninsured and little excess capacity could be a problem.

Extending insurance coverage would reduce, but not eliminate, uncompensated care. The remaining uninsured would be more likely to experience hospital stays than would those with new coverage. Also, the cost sharing required under the plans would generate uncompensated care by low-income enrollees.

Estimated physician visits would increase by no more than 3 percent, which most areas could readily absorb. However, in rural and inner city areas where there are large numbers of low-income people relative to the physician supply, price increases would be likely unless and until the supply of physicians responded to increased demand for service from the newly insured.

Projected costs of employer-sponsored health plans would rise under the three mandatory employer illustrative plans, by $32.5 billion under the typical plan, $28.2 billion under the tailored plan, and $9.1 billion for the catastrophic plan. Firms not now offering health coverage, mostly small firms, would bear the bulk of the increased costs. Some large firms would experience net savings, mainly due to an assumption that employed persons now covered as dependents under employer plans would be required to accept coverage through their own employers under the mandated plan.

Economic theory suggests that firms bearing higher labor costs would try to offset them over time by reducing employee compensation, in this case, wages. Downward pressure on wage increases would be likely, with some loss of jobs possible at or near the statutory minimum wage where wage savings are not feasible. Studies have estimated that effects on employment would be small, however. A minority of firms might be able to pass the cost increases through to their customers in the form of higher prices.

Mandated health benefits would affect the market for health insurance, the nature of the effects depending on the type of risk pooling that might be introduced. If small employers were required to obtain insurance through a pooling arrangement, the market shares for the different types of insurers would be changed. If pools were restricted to particular regions, large insurers and the Blues could have an advantage. If employees were allowed to choose insurers through the pool, small insurers and HMOs would fare better.

Mandating employer coverage would result in modest reductions in the Federal budget deficit ($0.1 billion to $2.4 billion), as savings in Medicare, Medicaid and other programs would be largely offset by reduced revenue collections. Revenue would fall because taxable wages would grow more slowly than otherwise, and nontaxable benefits would grow faster than otherwise.

Medicaid expansion would increase government spending substantially, by $5.8 billion for the Federal Government and $5.5 for the States.

APPENDIX A.—THE CONGRESSIONAL RESEARCH SERVICE HEALTH INSURANCE PREMIUM MODEL

I. Introduction

The Congressional Research Service (CRS), in conjunction with Hay/Huggins Company, Inc. (a private actuarial consulting firm), developed a model of health insurance premiums for this project. The underlying purpose in developing a model of health insurance premiums was to enable CRS to estimate health insurance premiums for different types of benefits and for different groups in the population.

The CRS model has two major components allowing the analysis of changes in both the nature of the insurance offerings and the population being covered. The first component estimates a standard premium, using methods similar to those employed by actuaries and insurance underwriters in analyzing the premium for a particular set of benefits. The first step is to assume that a standard population is being covered. For purposes of this report, the "standard population" comprises employees and their dependents who receive employer-based health insurance.

The second component of the model applies the demographic adjustments necessary to estimate insurance premiums for the particular populations being insured. Since the standard premium from the first component of the model is based upon a specific population, it is necessary to adjust the premium to take into account demographic and other differences between the standard population and the population being analyzed.

II. Standard Premium Estimates

The first component of the model estimates the premium necessary to provide health insurance to a standard population given a particular set of plan provisions. This model uses the same methodology employed by actuaries and underwriters in developing rate books that insurance companies use to set premiums. Based upon insurance company experience, actuaries have estimated the effects of certain variations in plan provisions. For example, raising a plan deductible from $100 to $150 might drop the cost of the premium by $17. Offering "well baby" coverage might increase the premium by $27.

These adjustments vary somewhat from insurance company to insurance company. The model attempts to provide a more generic version of this process by comparing the adjustments from three major insurance companies. Differences among the three companies were averaged or blended to produce more representative results. This methodology was then applied to health insurance plans from 896 medium to large firms that are included in the Hay/Hug-

gins data base.[113] This data base covers approximately 25 million people who receive health insurance through these 896 employers. The methodology was tested and refined in order to ensure that it could accurately estimate the actual premiums for these 896 employers.

III. Overview of the Model

The model is based on the Hay/Huggins Benefit Value Comparison (BVC) model for the analysis of health benefits costs. It was developed by Hay/Huggins in 1966 and has been modified each year to replicate the cost of current employer-based health insurance programs. The updating includes increasing the cost of each provision of the plans and extending the model to include new features being added to health care plans. The model elements that estimate costs of different provisions are also annually reviewed and validated against national health care cost and utilization norms.

The model's premium estimates are also compared to the actual benefits design and premiums of employers included in the annual Hay/Huggins Benefits Survey (HHBS) to determine if the BVC results accurately reflected the overall cost of the health insurance plans in the United States. The HHBS includes the results of the Hay/Huggins annual survey of the benefits of medium and large firms in the United States. As noted, the 1987 survey includes benefits information on 896 plans covering approximately 25 million persons.

The original BVC was derived by actuaries and benefits consultants experienced in setting the rates for health insurance plans. A primary resource used was a set of rate manuals from major insurance companies. The rate manuals were reviewed to determine the relative cost of each part of the benefits package and the incremental cost of modifications to the part of the package.

Since the BVC is based on a standard population of insured employees, its cost estimates will differ from the actual costs for a specific employer because of demographic, economic and financial factors that apply to individual companies.

The BVC model's health insurance component is composed of the following major sections:

- Hospital costs
- Surgery costs
- Inpatient physician costs
- Outpatient physician costs
- X-ray and laboratory costs
- Inpatient psychiatric costs
- Outpatient psychiatric costs
- Prescription drug costs
- Dental costs
- Vision costs
- Emergency/accident costs
- Extension of coverage to retirees
- Share of cost paid by the employee

[113] The Hay/Huggins Company, Inc. data base is described in the first report in this series, "Health Insurance and the Uninsured: Background Data and Analysis," pp. 33-67, 161-168.

A. CONGRESSIONAL RESEARCH SERVICE HEALTH INSURANCE PREMIUM MODEL

As the first step in modifying the BVC to meet CRS needs, Hay/Huggins' mainframe BVC model was reproduced as a Personal Computer (PC) model using the computer language PASCAL. The PC model was validated by running health plans through both the PC model and the mainframe and determining that the results were identical.

Next, modifications were introduced to enable CRS to analyze aspects of potential mandated employer health plans. The section of the BVC model that determines the cost of extending health insurance benefits to retirees was removed since the current CRS project focuses on extending health insurance coverage to the working population. The factors used in the model were refined to estimate the cost of plan variations that were not measured in the BVC model but might be part of a mandated proposal. For instance, the BVC includes a discrete table of adjustments that vary the plan deductible by units of $25, but the CRS adaptation includes a continuous function that permits analysis of any deductible amount.

Each section of the model produces a cost for an unlimited benefit. That cost is then adjusted for variations specific to the benefit plan. For example, annual premiums for fully covered inpatient hospital benefits were $815 for individual coverage. If the employer plan limits the coverage to 90 days, limits outpatient psychiatric payments to 80 percent of a maximum 45 days, and applies a deductible of $100, the premium would be reduced to $742.

The model allows for the direct specification of 34 different plan provisions which were identified by CRS and Hay/Huggins as those most likely to be varied or altered during Congressional deliberation. These provisions and their effects on plan premiums were analyzed in the first half of chapter 2. Behind these 34 provisions lie about 200 more detailed provisions that are "hardwired" into the model; that is, their effects on plan premiums are set and are difficult to alter. For example, the model directly allows for a dental plan to be included, either as part of the main health insurance plan or as a separate plan. The characteristics of a generic dental plan are "hardwired" into the model. If it became necessary, these more detailed provisions could be altered, (e.g., to include orthodontics). This design allows for ease of specification when changing the most common aspects of a health insurance plan. At the same time, the model can analyze almost any combination of health plan provisions by altering the underlying detailed provisions.

The final model modification to the BVC was to introduce demographics for the uninsured population into the CRS model to enable estimation of the effect of mandated plans and possible pooling arrangements on the uninsured as well as the insured population. These demographic adjustments were applied for age, sex, geographic location, income and number and type of dependents. The CRS model produces the following results for each analysis:

- The premium for the typical employer plan for individual coverage.

- The premium for the typical employer plan for family coverage.
- The average premium for employees who are not, but could be, covered through an employer's plan.
- The average premium for uninsured dependents who are not, but could be, covered through an employee's plan.
- The average premium for mandated coverage if plans are not pooled.
- The average premium for mandated coverage if there is a pool.

B. SAMPLE MODEL RESULTS

This report includes the model results for the "typical" and "tailored" plans defined by CRS. The typical plan is based on a review of the typical provisions for medium and large employers in the United States as reported in the HHBR. The tailored plan emphasizes first-dollar coverage and limits coverage for catastrophic costs. The following would have been the annual premiums in 1986, including 8 percent of claims for administrative costs:

	Individual	Individual and Family
Typical plan	$936	$2,466
Tailored plan	$834	$2,196

IV. The Populations Being Analyzed

As stated above, the first part of the model assumes a standard population of workers and their dependents receiving health insurance coverage through their employers. The premium estimated for the standard population may require adjustments if the group targeted for coverage differs demographically and geographically from the standard population. The demographics of the standard population and specific sub-populations (e.g., those below poverty not currently receiving Medicaid) are estimated from the Census Bureau's Current Population Survey (CPS).[114] The most recent CPS data available for this study were from the March 1987 survey which provides information on health insurance statistics and other population and income characteristics for calendar year 1986. Availability of CPS data for 1986 is the primary reason the health insurance premiums displayed in this study are for 1986. The March 1988 CPS data covering 1987 have subsequently been released and this more recent data will be incorporated into the model for future analyses.

[114] For use in this study, families surveyed by the Census Bureau were restructured into health insurance units. This technique follows earlier work done by the Congressional Budget Office. The basic reason for restructuring the file is to exclude family members who would not be covered under a standard employer-based health insurance plan (e.g., parents of the worker, children 22 and older). Family members who would not normally be covered by the family's primary insurance plan were restructured into their own insurance units. For example, a family with two parents and four children, where two of the children were over 21, would be counted as three insurance units—one for the worker, spouse, and dependents under age 22, and one for each of the older children.

As mentioned earlier, the model was benchmarked against the experiences of 896 medium to large firms with health plans covering about 25 million employees and dependents. Since the CPS estimated that about 138.5 million people were covered by employer-based health insurance in 1986, data from the HHBR were analyzed to determine the extent to which the 25 million represented by the HHBR are comparable to the 138.5 million estimated by the CPS. The HHBR includes few small firms. As chapter 2 of this report indicates, the size of a firm influences the administrative costs included in the premium. These costs, shown as a percentage of claims costs, are analyzed in chapter 2 and the additional costs associated with insuring a population from smaller firms are discussed in detail. But even if the administrative costs are estimated and accounted for properly, a judgment must be reached concerning the extent to which people who work for smaller firms have systematically different demographic and other characteristics that would affect how their health insurance would be underwritten. Are people in smaller firms more likely to be younger or older? Are they more likely to be women? In other words, are their demographic features different enough that the 25 million in the Hay data base are not representative of the 138.5 million with employer-based coverage in the nation as a whole?

The question cannot be answered directly because the HHBR does not include demographic data on the employees and dependents included in the survey. The question can be answered indirectly by using the underwriting factors Hay/ Huggins uses to estimate the premiums of employers in the data base. For example, age and sex factors are designed so that when the factors of all the different age and sex categories are weighted by the proportion of the population found in each category, they sum to 1.00. The same logic holds for other characteristics, including region of the country, urban vs. rural, and income. By applying the weights from the Hay/Huggins BVC to the population characteristics of the 138.5 million persons covered by employer-based plans in 1986, demographic and other population differences between the 25 million in the HHBR and the national total of 138.5 million were measured. Demographic and other population characteristics of the two populations were found to be within 6 percent of each other. Because the actuarial underwriting factors represent less exact estimates of demographic and other population characteristics than is true for the Current Population Survey, the judgment was made that attempting to reduce this difference to less than 4 percent would not signify greater accuracy in the estimates. Based on this validation, it is assumed that the characteristics of the two populations are effectively the same for purposes of this analysis.

A. THE STANDARD POPULATION

The standard (or currently insured) population comprises people who receive their health insurance coverage through their employer or through the employer of their parents or spouse. When considering how this population might be affected by a mandated employer-based or other federally-sponsored health insurance cover-

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age, it is important to think of this population as three distinct sub-populations.

First is the group of workers whose jobs provide coverage for themselves and their dependents. They tend to have strong attachments to the labor force. They are more likely to be male than female and more likely to be older than younger.

The second sub-population consists of people who are in the labor force but receive health insurance coverage through their spouse's or parent's employer. The model and the illustrative plans analyzed in this report assume that, under a mandate, these people would be covered instead by their own employer. As the second report ("Insuring the Uninsured: Options and Analysis") in this series indicates, this is only one of a variety of possible policies for this group. Although these people probably would not represent considerable net additional costs, they would represent a sizeable shift in health insurance costs from certain employers to others.

The third sub-population is comprised of dependents of the workers in the first two sub-populations. They are not workers, but they receive employer-based health coverage through the employment of a spouse or parent. Under a mandate that would require each worker in a family to be covered by his/her own employer, decision rules would have to be established on how to divide the dependents between the different policies of the covered workers. For example, a family with two working parents and four dependent nonworking children may be covered currently under the father's employer-based policy. The model and the illustrative plans assume that under mandated employer-based coverage, the mother would pick up coverage from her own employer. The father's employer might argue that some of the children should also be covered by the mother's employer. State insurance commissioners commonly deal with these coordination of benefits questions, and a number of different decision rules are in use at the State level. Policy options for dependent coverage are discussed in the second report in this series, "Insuring the Uninsured: Options and Analysis."

In summary, the standard population is composed of these three sub-populations. For most of the analysis in this report, it is not necessary to consider the three sub-populations separately. In the analysis of an actual legislative proposal, however, the distinctions between these three sub-populations would become important.

B. THE POTENTIALLY INSURED POPULATION

Under different proposals, different people fall into the category of potentially insured. Throughout most of this analysis, the potentially insured are those who are at least 18-years-old [115] and working at least 10 hours per week. There are two sub-populations of the potentially insured.

The first sub-population is uninsured workers. These are people who meet the age criterion and have an attachment to the labor force but are currently receiving no coverage through their employ-

[115] Flexibility in the model has been emphasized for people under age 22. Those under 18 who do not live with their parents and who work 10 or more hours per week have been included as workers who would be covered. People between 18 and 22 who are in school and are the dependents of workers are included as dependents but not as workers.

er. From the CPS data, it is not clear what percentage of these workers have been offered health insurance and declined it. Given that most employers who provide health insurance fully cover the premium cost for their employees (if not for dependents), the percentage who turn down coverage is probably low.

The second sub-population is uninsured dependents of workers. These people are not in the labor force but are dependents of someone who is employed. Two groups make up this sub-population: (1) the uninsured dependents of uninsured workers, and (2) the uninsured dependents of insured workers. Some employers cover only their workers and do not offer family coverage. More common is the situation where the employer pays the full premium cost for the worker but requires the worker to pay a sizeable percentage of the premium for family coverage. This distinction between the two groups that make up this sub-population of uninsured dependents does not affect the overall cost of providing insurance coverage but does determine who will pay for it.

For this analysis, the most important distinction is between the population currently covered and the population potentially covered. Based on 1986 CPS data, 138.5 million workers were insured by an employer in 1986; an additional 53.7 million would be added to employer-based coverage if there had been a mandate in 1986. In 1986 the total population was estimated at 238.6 million. Thus, 46.4 million people would have been unaffected by any mandate. Of this 46.4 million, 39 million (84 percent) already have some sort of health insurance coverage. However, 7.4 million people would still be without health insurance coverage, even with an employer mandate.[116]

V. Demographic Adjustments

To adjust standard premiums for differences in the demographics between the standard population and the potentially insured, a number of key demographic factors were identified for both the standard population and the potentially insured group.

A. AGE AND SEX

While there is little difference in premiums between the sexes during childhood, the potential for pregnancy and maternity care in adulthood increases claims costs for women as much as 50 percent above costs for men of a comparable age. These differences become minimal and eventually disappear in later life.

Health insurance for older people tends to be more expensive than for younger persons. The greatest cost difference is among men; those men over age 60 have premiums as much as four times the costs for men ages 18 to 25.

The standard and the potentially insured populations were compared and analyzed by age and sex distribution. The two populations differ little by sex. The standard population is almost exactly

[116] The number of potentially insured and those who would remain not covered by an employer mandate shown here and in chapter 2 differ slightly from the estimates developed for chapter 3. Chapter 1 of this report explains why the numbers are different.

50/50, while the potentially insured population is 52 percent male and 48 percent female.

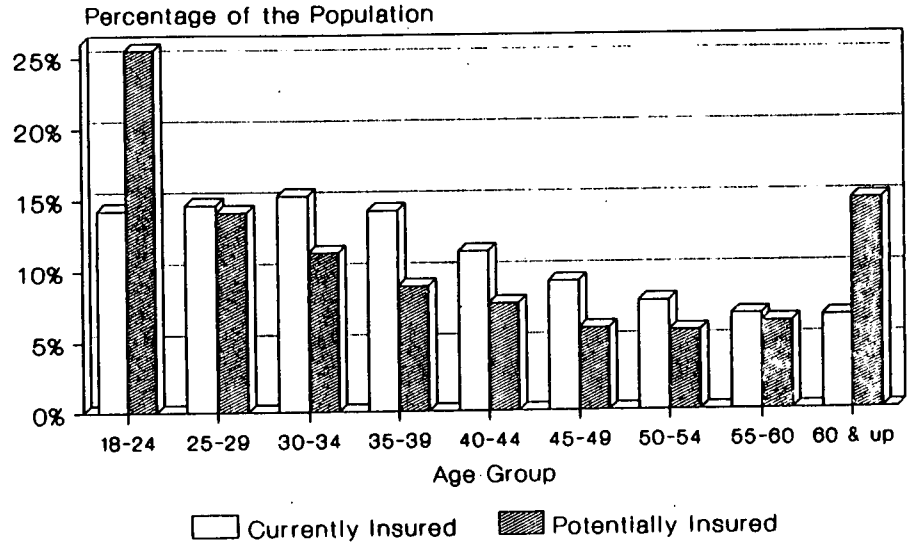
However, the two populations differ substantially by age. As chart A–1 illustrates, the standard population has an age distribution that gently slopes downward as age increases. The potentially insured population, in contrast, is distributed somewhat bimodally; there are relatively more young adults and older people in the potentially insured population, compared to the standard population. While the relative bulge of younger adults is more pronounced, the greater cost associated with insuring older people more than offsets the lower cost associated with insuring younger people and results in a net increase in premiums for the potentially insured population of about 4.4 percent over the standard population.

B. REGION AND URBAN/RURAL DIFFERENCES

Costs associated with health care vary by region, as well as between urban and rural areas. The estimated cost of millions of additional insured can be greatly affected by where those people are located. The costs associated with insuring additional workers and their dependents in the rural South are much lower than if the same people were located in the urban North. For purposes of this analysis, however, the key question is whether or not the potentially insured are distributed in ways that are significantly different from the currently insured. For the most part, they are not. There are slight differences which tend to offset each other. The overall effect of difference in region and urbanity of the two populations results in a reduction of premium costs for the potentially insured of 0.1 percent.

Chart A-1

Age Distributions of the Currently and Potentially Insured Populations - 1986.



Source: 1986 data from the CPS.

C. THE NUMBER AND TYPE OF DEPENDENTS

The number and type of dependents are important in estimating health insurance costs. Costs are affected both by overall family size and by the mix of adults and children within the family. The effect of family size is straightforward; the more dependents a worker has, the more expensive it will be for an employer to insure them.

The potentially insured population differs from the standard population in both of the ways discussed above. The average family size is smaller among the potentially insured population. The percentage of single individuals is much higher, 24.0 percent compared to 14.6 percent. In addition, the potentially insured in families are more likely to be in one-adult families. The net effect of these family size and composition differences is to reduce the estimated premiums for the potentially insured by 10.4 percent. This estimate assumes that there would be provisions to coordinate benefits when more than one member of a family is employed. Without coordination of benefits, these differences would reduce estimated premiums by 10.6 percent.

VI. INCOME

Family income potentially affects the use of health services by insured persons and may make people with higher incomes more expensive to insure. First, deductibles and coinsurance are stronger deterrents to the use of services by lower-income people. Second, lower-income people, either due to location or price sensitivity, tend to use lower-priced providers.[117] A third factor, offsetting the first two somewhat, is that lower-income people are often in poorer health.

Overall, the potentially insured population has lower incomes than the standard population. For example, about 10 percent of the standard population have incomes under $15,000, compared to about 50 percent of the potentially insured population. The effect is to reduce estimated premiums for the potentially insured by about 8.1 percent.

VII. SUMMARY

The CRS Health Insurance Premium Model (1) provides a methodology for estimating the premiums of illustrative employer-based health insurance plans, and (2) links the estimates to specific demographic adjustments necessary to calculate premiums for specific groups that differ from the standard population. The model reflects the practices of the insurance industry without overly representing any particular insurer's specific practice.

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[117] As noted in the introduction to this report, the purpose of the actuarial model and the analysis in chapter 2 is based on underwriting practices and factors and is designed to estimate premium levels and relationships. Interactions of the factors discussed in this section represent the logic of the underwriters and actuaries questioned, not an independent data analysis.

APPENDIX B.—DOCUMENTATION OF ANALYSIS OF ILLUSTRATIVE PLANS FOR EXTENSION OF HEALTH INSURANCE TO THE UNINSURED [118]

INTRODUCTION

This study estimated the impact of selected proposals to expand health insurance coverage by mandating that all employers provide health insurance to their employees and by expanding Medicaid eligibility. The study analyzed five policy proposals:

- *Tailored Plan*—The tailored plan would require all employers to provide a minimum level of health benefits to all employees working 10 or more hours per week. The minimum required insurance benefits would cover most preventive care and the first 14 days of hospital care but would not cover mental health care. The tailored plan would be less comprehensive than the plans typically offered by current employers.
- *Typical Plan*—The typical plan would also require all employers to provide a minimum standard of health benefits coverage to employees working 10 or more hours per week. The typical plan is more comprehensive than the tailored plan in that it would cover mental health care and an unlimited number of hospital days.
- *Catastrophic Plan*—The catastrophic plan would require all employers to provide all workers with a plan that covers health charges over a catastrophic deductible amount. The deductible amount would increase with family income and decrease with family size.
- *Medicaid Expansion*—The Medicaid expansion proposal would make all persons with incomes below the poverty level eligible for the minimum level of coverage provided under Medicaid.
- *Combined Policy*—The combined policy is composed of the tailored plan together with the Medicaid expansion.

The impact of these policies was simulated using the Lewin/ICF Health Benefits Simulation Model (HBSM). The model was used to develop estimates of the impact of these proposals on the number of persons lacking health insurance, household out-of-pocket health care expenses, and family health insurance premium payments. The impact these policies would have on the amounts paid for health care by various types of public and private insurers (e.g., Medicare, employer group plans, individual plans) was also estimated. These estimates reflect the increase in health care utilization which would occur as coverage is extended to those who do not now have insurance.

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[118] Prepared by Lewin/ICF for the Congressional Research Service (CRS).

This appendix describes the HBSM, the methodologies used to simulate each of the proposed policies, and the methodology used to simulate utilization changes under these policies.

A. THE HEALTH BENEFITS SIMULATION MODEL

The HBSM estimates the impact of changes in the eligibility, coverage, and benefits provisions of public and private health plans on households and total health benefit payments from various sources. For each of the proposals analyzed in this study, the model was used to estimate changes in household out-of-pocket health care expenditures and changes in household premium payments. The model estimated the impact of these policy alternatives on selected demographic groups and the aggregate impact of these proposals on total payments by public and private insurers.

1. Data Base

The HBSM is based on the 1980 National Medical Care Utilization and Expenditure Survey (NMCUES). The NMCUES provides detailed information on demographic and economic characteristics, sources of health care coverage, number and types of health care contacts during 1980, and charges by source of payment for each health care contact during that year for a sample of about 17,000 persons (6,000 households).

The data were adjusted ("aged") to reflect changes in population, real incomes and other economic conditions, health care utilization, the average length of hospital stays, and health care expenditures between 1980 and 1986. Health care expenditures were adjusted to reflect U.S. Health Care Financing Administration (HCFA) estimates of health expenditures by type of service and source of payment in 1986.[119]

2. Aging Procedure

The Health Benefits Simulation Model was used to "age" the 1980 National Medical Care Utilization and Expenditures Survey data to 1986. These aged 1986 NMCUES data represent the base case simulation in this study.

a. Income aging.

The first step in the aging process was to adjust the 1980 incomes reported by persons in the NMCUES survey to 1986 levels. Income from wages, interest, dividends, and self-employment were adjusted by the average growth in wages between 1980 and 1986. Incomes from pensions and social insurance programs, such as Social Security and Unemployment Insurance, were also increased by the wage index, because benefits from these programs are generally tied to prior earnings. Public assistance benefits were increased by the consumer price index (CPI-U).

b. Population adjustment.

The second step was to adjust the sample weights of each individual in the NMCUES file to reflect changes in the size and the age

[119] These HCFA estimates are known as the National Health Accounts.

and sex composition of the population between 1980 and 1986. In this step, the NMCUES data were also adjusted to reflect health insurance coverage levels and income distributions in 1986. This adjustment was done by changing the NMCUES sample weights so that, in the aggregate, the NMCUES data replicate the distribution of persons by age, sex, health insurance coverage status, and family income reported in the March 1987 Current Population Survey (CPS).[120]

c. Utilization adjustments.

The NMCUES data were also adjusted to reflect changes in health care utilization rates between 1980 and 1986 by further adjusting the NMCUES sample weights so that the NMCUES data replicate average inpatient hospital, outpatient and emergency room hospital, physician, dentist, and prescription drug utilization rates for 1986. (See table B–1.) The sample weights were adjusted in an iterative fashion so that the data simultaneously replicate the utilization rates shown in table B–1 and maintain the distribution of persons by age, sex, income, and health coverage status reported in the March 1987 CPS.

The utilization rates for 1986 shown in table B–1 were estimated by applying trends in utilization between 1980 and 1986 to the utilization rates reported in the 1980 NMCUES data (also shown in table B–1). Trends in utilization of physicians and hospital services were estimated from National Health Interview Survey (HIS) data for 1980 through 1986. Trends in hospital outpatient utilization for the 1980–1986 period were estimated from American Hospital Association data.

Utilization of prescription drug and other health services was assumed to remain unchanged between 1980 and 1986 within each age, sex, income, and health coverage status group. Thus, the change in utilization for the drug and other health service categories shown in table B–1 can be attributed entirely to changes in the socioeconomic composition of the population.

d. Health expenditures.

In the final step, the expenditures reported by individuals in the 1980 NMCUES data were adjusted to replicate estimates of total health care expenditures by type of service and source of payment for the civilian non-institutionalized population in 1986. The basis of these expenditure estimates was the National Health Accounts (NHA) data for 1986 developed by HCFA.

The NHA data show total health expenditures by source of payment and type of service for the entire U.S. population. These data were adjusted to represent total expenditures for the civilian non-institutionalized population based on a Lewin/ICF analysis of the health care expenditures for the institutionalized and the military populations. The resulting estimates of total expenditures for the civilian non-institutionalized population are presented in table B–2.[121]

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[120] The March 1987 CPS includes coverage and income information for calendar year 1986.

[121] NHA drug data were adjusted so that they included only prescription drug expenditures. This change was made because the NMCUES data exclude information on nonprescription drugs.

TABLE B-1.—Selected Utilization Rates by Age for 1980 and Estimated Utilization Rates for 1986

Utilization measure	Under age 65		Age 65 and older	
	1980	1986	1980	1986
Physicians visits:				
Visits per 1000 persons [1]	2,748.07	2,720.93	5,338.73	5,356.10
Percent of persons with visits [1]	64.63	63.77	77.56	80.94
Percent of visits by type [2]				
a. Diagnosis and treatment	79.18	79.46	89.34	89.26
b. Prenatal and postnatal care	4.81	4.18	0.00	0.00
c. General check up	9.11	9.11	5.93	6.08
d. Other services	6.93	7.29	4.73	4.66
Dental visits per 1000 persons [2]	1,423.71	1,472.44	1,005.00	1,180.66
Percent of persons with visits [2]	46.19	47.98	33.08	37.26
Hospital stays per 1000 persons [3]	150.28	117.68	385.49	340.85
Average length of hospital stay [4]	6.76	6.04	11.25	8.60
Outpatient and emergency room visits				
Visits per 1000 persons [5]	824.03	843.93	1,132.73	1,217.01
Percent with drug expenses [2]	60.66	60.40	79.36	79.88
Percent with other services [2]	37.36	38.46	51.06	52.20

[1] NMCUES rate adjusted to 1986 by change in utilization reported in the NHIS data for 1980 and 1986.
[2] Percent distribution estimated from reweighting of NMCUES by age, sex, income, and insured status.
[3] NMCUES rate adjusted to 1986 levels using change in utilization reported in the NHIS data for 1980 through 1986.
[4] Average length of stay for persons under 65 was estimated based upon the trend in average length of stay for non-elderly reported in the NHIS data for 1980 through 1986. The average length of stay for persons age 65 or older is the average length of stay for Medicare patients.
[5] Based on a 7.7-percent increase in outpatient visits observed in the American Hospital Association data.

Source: Lewin/ICF analysis of the 1980 National Medical Care Utilization and Expenditures Survey (NMCUES) data.

TABLE B-2.—Health Expenditures by Type of Service and Source of Payment for the Civilian Non-Institutionalized Population in 1986

(Amounts in millions)

	Total	Out of pocket	Private insurance	Other private	Medicare	Medicaid	Other public
Hospital inp..	120,013.7	10,403.8	44,555.0	3,433.7	41,129.8	11,595.8	8,895.7
Physician svcs	88,507.0	25,509.0	34,019.6	3,680.1	18,493.2	3,840.6	2,964.6
Dentist svcs...	29,765.5	18,847.7	8,382.3	1,334.6	92.5	522.0	586.4
Other prof svcs	13,904.8	5,949.9	3,287.4	340.5	2,015.9	1,463.8	847.3
Drugs & med supplies	20,579.3	14,913.2	2,507.9	410.5	289.4	1,865.9	592.5
Eyeglasses	7,976.2	5,393.1	645.9	300.4	1,407.0	99.0	130.8
Nursing home care..	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other health care	6,505.9	900.4	942.0	254.7	1,014.5	2,655.8	738.6
Hosp ER/ outpatient..	24,808.2	4,299.3	9,143.6	1,435.2	3,985.7	2,330.4	3,714.0
Total	312,060.1	86,216.2	103,483.4	11,189.7	68,427.9	24,273.2	18,469.8

Source: Lewin/ICF estimates using National Health Accounts data.

e. Trends in Employer Plan Catastrophic Cap

Recent surveys of employer health plans conducted by the U.S. Department of Labor (DoL) indicate that the percentage of employ-

ers with health plans that have a cap on out-of-pocket expenses increased from about 27 percent in 1980 to about 80 percent in 1986. To reflect this trend, about 53 percent of all persons covered by employer health plans were selected to be in a plan with a $3,000 cap. Employer plan payments and household out-of-pocket payments were then adjusted for these persons in cases where out-of-pocket expenditures were greater than this amount.

3. Imputation of Health Insurance Premium Payments

The public use version of the NMCUES data does not report family out-of-pocket payments for health insurance premiums. Separate procedures were used to impute premium payments. Premium payments were imputed only to NMCUES families who reported that they paid premiums for health insurance out-of-pocket.

The aged NMCUES data were statistically matched with a sample of employer health insurance plans developed by Lewin/ICF for the U.S. Small Business Administration (SBA). In this statistical matching process, each individual in the NMCUES who reported that he or she had health insurance coverage at his or her place of employment was assigned one of the 640 plans in the Lewin/ICF health plan data base, which is in the same firm size and industry group reported by the individual. Other plan characteristics were also controlled for performing this match, including whether or not an employee contribution is required. These plan data provide information on employer plan premiums and the amount paid by the employee. The Lewin/ICF SBA data base also includes information on health plan eligibility rules, covered services, cost-sharing provisions, and employer costs.[122]

Premium payment amounts for persons with individual insurance coverage were imputed to each family in the NMCUES data based on health insurance premium payment data reported for families in the 1977 National Medical Care Expenditures Survey (NMCES). Individual and family characteristics and whether or not dependents were covered under the plan were controlled for imputing health insurance premiums. The family premium payment was allocated equally over all family members covered under an individual plan.

4. Actuarial Valuation of Employer Plans

Some mandatory employer health insurance proposals would require that employers provide a package of health benefits with an actuarial value that meets or exceeds a minimum actuarial value specified in the legislation. The number of persons affected by these requirements was estimated using the health plan data from the Lewin/ICF health plan data base, which were statistically matched to individuals in the NMCUES who are covered by an employer plan. The actuarial value of the insurance benefits provided by each of the employer plans in the Lewin/ICF data base (described above) was estimated using an actuarial valuation model developed by Hay/Huggins Associates. These data were then used

[122] The sample was drawn from the Dun & Bradstreet U.S. Enterprise and Establishment Microdata file (USEEM). The sample was stratified by industry (seven groups) and firm size (five groups) to obtain estimates for these firm size and industry groups.

to estimate the number of persons who are in plans which provide benefits below the minimum actuarial value required under the mandatory insurance proposal. These data also permit one to estimate the number of employers affected and the increase in employer costs that would be required to bring all employer plans up to the mandated standard.

5. Imputation of Firm Size

The NMCUES data do not report the size of the firm for which employed persons are working. This information was imputed to the NMCUES data based on the distribution of workers by firm size reported in the Pension Supplement to the May 1983 Current Population Survey (CPS). Industry of employment, age, sex, and health coverage status were controlled when imputing firm size to the NMCUES data. (Industry, age, sex, and health coverage status are reported in both the May 1983 CPS and the NMCUES data.)

B. UTILIZATION RESPONSE SIMULATIONS

This study examined proposals to extend health insurance coverage to many who currently lack insurance. As uninsured individuals become covered by a health plan, their utilization of health care services can be expected to increase. The HBSM simulates this utilization response.

This section explains how changes in utilization were modeled for the newly insured, first discussing assumptions concerning how the newly insured will adjust their utilization, and then explaining how these changes in utilization are simulated in HBSM.

1. Utilization Response Assumptions

Although there is likely to be a utilization response by the newly insured, it is unclear how large the response will be and what types of health care will be affected. This analysis assumes that, among the newly insured, the level of utilization for all types of services covered under the new plan will increase so that, on average, it matches the level of utilization for persons in similar age, sex, income, and health status groups who previously had insurance.

This approach involves two major assumptions. First, it is assumed that utilization for the newly insured would increase only for those services covered under the mandatory insurance plan. This assumption implies that the newly insured would use none of the expenditures they save on covered services to consume additional health services that are not covered under the plan. For example, if a plan excludes dental care, there were no increases in utilization of dental services by the newly insured, even though many newly insured persons might use the money they save on covered health expenditures for additional care not covered under the plan.

A second key assumption is that health care utilization rates for the newly insured will increase to the level of the previously insured within selected age, sex, income, and health status groups. As previously uninsured individuals become insured, it is assumed that their rates of utilization for each type of service will increase

to the level of the previously insured in the same age, sex, income, and health status group (controlled for a total of 67 socioeconomic groups).[123] The following categories of health care utilization are adjusted:

- Percent with physicians visits;
- Physicians visits per 1,000;
- Percent with hospital stays;
- Hospital stays per 1,000;
- Hospital days per stay;
- Percent with outpatient visits;
- Outpatient visits per 1,000;
- Percent with drug expenses;
- Drug episodes per 1,000;
- Percent with emergency room visits;
- Emergency room visits per 1,000;
- Percent with other expenses; and
- Other expense episodes per 1,000.

The utilization adjustments were controlled for age, sex, income, and self-reported health status because these are important determinants of health care utilization. Sample size limitations precluded controls for other variables such as race and region. Also, because the sample of persons reporting themselves to be in fair or poor health was small, it was not possible to control for sex or income within those health status groups.

Controls could have been applied for additional variables using multivariate analyses of the NMCUES data for each of the 13 utilization measures listed above. Regression equations could have been used to estimate a utilization response for each newly insured individual based on his/her socioeconomic characteristics. This approach was beyond the scope of this study.

2. Imputation Methodology

The Health Benefits Simulation Model randomly selects newly insured individuals to change their utilization based upon the assumed changes in group-specific rates of utilization. The model then imputes to these individuals medical expense episodes so that rates of utilization among the newly insured reflect the assumed change in utilization. This process is performed separately for each newly insured individual.

The procedure for imputing medical expense episodes was executed in three steps. First, for those newly insured who reported medical treatments prior to becoming insured, the number of medical episodes they experience was increased. Second, the number of persons in the newly insured population who have medical treatments was increased, and the number of health care episodes they experience once becoming insured was imputed. Third, the imputation process was constrained to impute only services covered by the mandatory plan.

Step 1: Adjust reported utilization. The first step was to adjust the number of medical episodes reported in NMCUES for the sub-

[123] The model could also use alternate assumptions on the percentage change in utilization for the newly insured derived from other sources. One such source may be Rand Corporation research on the impact of insurance on utilization.

group of the newly insured who had reported health expenditures. For example, for those who saw a physician, physician visits per 1,000 males age 18 to 29 in excellent health with less than $10,000 in family income were 1,794.59 for the insured and 1,585.06 for the uninsured. It was assumed that, among the newly insured, the number of visits per 1,000 persons with visits in this age/sex/income/health status group would increase to the level reported by the insured (1,794.59).

This increase was achieved by selecting physician visits reported previously by the newly insured and duplicating these visits. In this example, about 13.2 percent of all physician visits originally reported by individuals who become newly insured will appear twice for these individuals (1794.59/1585.06 = 1.132). Visits reported by newly insured individuals were duplicated rather than modified by the "hotdecking" procedure (discussed below in step 2) because the process of duplicating reported visits assures that the types of treatments and charges imputed to an individual are consistent with their reported health conditions.

This process of selecting episodes reported by the newly insured to be duplicated is repeated separately for each of the following types of health care:

- Physician visits;
- Outpatient visits;
- Hospital visits;
- Emergency room visits;
- Drug purchases; and
- Other health care episodes.

In this step, the lengths of stay for hospital visits originally reported by the newly insured were increased so that the average length of stay for the newly insured rises to the level of the previously insured. For example, the average length of stay for males under age 18 in excellent health with over $30,000 in family income who had hospital stays was 4.11 for the insured and 3.54 for the uninsured. In this analysis, 57 percent of hospital stays originally reported by the newly insured in this age/sex/income/health status group were selected to be assigned an additional day (4.11 - 3.54 = 0.57). Total charges for the hospital stay would be increased by the amount of the average charge per day for that hospital stay. This procedure increases the average length of stay for the newly insured to that of the previously insured.

Step 2: Increase the number with medical episodes. In the second step, the number of newly insured persons reporting one or more medical episodes was increased. For example, the percentage of males under age 18 in excellent health with family incomes of less than $10,000 who saw a physician was 50.96 percent for the insured and 45.04 percent for the uninsured. In this study, it was assumed that the percentage of the newly insured in this age/sex/income/health status group with physician visits would increase to the level reported by the insured.

Newly insured individuals who did not originally report physician visits were selected to be assigned physician visits. In this example, 10.8 percent of newly insured males under age 18 in excellent health with income of less than $10,000 who did not originally report physician visits were selected to be assigned physician visits

[(50.96 - 45.04)/(100 - 45.04)] = 0.1077. This procedure increases the percentage of newly insured persons in this group with physician visits to the level reported by the insured.

Newly insured persons who previously had no physician visits and who are selected to have physician visits were assigned physician visits using the "hotdecking" technique. In hotdecking, each newly insured individual selected to be assigned physician visits is randomly matched with an insured person in the same age/sex/income/health status group who reported physician visits. The newly insured person is assumed to have physician visits identical in number, type, and cost to those reported by the insured person to whom he/she is matched. This hotdecking procedure increases the number of visits per 1,000 persons for the newly insured to the level of the previously insured within each age/sex/income/health status group.

This hotdecking process for the newly insured was repeated separately for each of the following types of health care:

- Physician visits;
- Outpatient visits;
- Hospital visits;
- Emergency room visits;
- Drug purchases; and
- Other health care episodes.

Step 3: Limit imputations to covered services only. The final step was to refine the imputations to eliminate imputed visits that are not covered under the mandatory health plan. For example, if the plan does not cover well-baby care, all physician visits for this type of care were eliminated from the imputed episodes. Similarly, physician, drug, and hospital stays for psychiatric care were eliminated from the imputed episodes in cases where the mandatory plan does not cover psychiatric care. Due to this elimination process, the simulated average utilization rates of the newly insured do not always duplicate the average utilization rates for the insured within a given age/ sex/income/health status group.

3. Summary

After utilization was adjusted, the model calculated the amount of expenditures covered by the proposed plan. The procedures and assumptions used to develop these estimates are discussed separately in the following sections for each of the policy proposals simulated in this study. In general, the utilization response methodology was the same as described above for all newly insured persons under each policy.

C. SIMULATION OF THE TAILORED PLAN

The tailored employer illustrative plan would require all employers to provide coverage to all employees working 10 or more hours per week. The plan emphasizes "front-end" rather than catastrophic expenditures and favors primary and preventive care services. This section describes the provisions of this plan and explains the assumptions used in modeling each provision.

1. Population Coverage

All employers would be required to provide health insurance coverage. All employees age 18 or older working at least 10 hours per week would be eligible, as well as employees under age 18 who are heads of families. Coverage would be mandatory for all eligible employees and their dependents after a waiting period of 30 days. If they are covered under another employer plan, it is assumed that coverage was retained as secondary coverage.

Assumptions

Coverage under the tailored plan is provided to all non-covered workers who are working 10 or more hours per week. To approximate the 30-day waiting period, persons who worked less than 5 weeks during the year are not covered. The following assumptions were also made:

- Non-working children and non-working spouses of newly covered workers will be covered under the tailored plan. Dependents covered under another employer plan would retain coverage under the plan.
- Coverage under individual plans would be dropped by all persons newly insured under the tailored plan.
- Non-covered dependents of workers currently insured by an employer plan (i.e., dependents of covered workers who did not elect family coverage) would be extended coverage under the tailored plan and would be required to take the coverage.
- Employed dependents who previously were covered by another family member's plan would be required to take their own employer's plan as primary coverage.

2. Covered Services

The tailored plan would cover the following services:

- Inpatient hospital days (up to 14 per year);
- Inpatient physician services;
- Outpatient hospital care under the direction of a physician, including ambulatory surgical centers;
- Laboratory and x-ray services ordered by a physician;
- Prenatal care;
- Well-baby care up to one year of age;
- Prescription drugs;
- Family planning;
- Hypertension screening and treatment; and
- Diabetes control.

No coverage is provided for mental and nervous conditions or dental care.

Assumptions

Coverage under the tailored plan was determined for the health care episodes of newly covered persons using the condition and type of service data reported in NMCUES. All treatments which are attributed to dental care or mental and nervous conditions were excluded from covered services. The following assumptions were also made:

- All inpatient hospital stays except those attributed to mental or nervous disorders are covered. The 14 day per year limit will be applied on a per-person basis rather than a per-family basis.
- All outpatient visits are covered.
- All prescription drug expenditures are covered unless they are attributed to a mental or nervous condition.
- All physician visits in and out of the hospital are covered under the plan except "general checkups." Physician visits for check-ups are not covered unless these visits are attributed to children under the age of one (assumed to be well-baby care treatments).
- All laboratory tests and x-rays are assumed to have been ordered by a physician and therefore covered under the plan.
- Well-baby care up to 1 year of age is covered.
- Family planning, hypertension treatment, and diabetes control services are included in the NMCUES health care data but cannot be distinguished from other services. These services were covered in the simulations only if they are part of a health care episode which meets the covered service assumptions described above.

3. Covered Charges

The tailored plan would cover all charges attributed to the covered services described above up to a "reasonable and customary" amount. Private insurance plans typically set the reasonable and customary amount at the 80th percentile of charges for each type of service.

Assumptions

NMCUES provides the total charge for each medical care episode but does not include reasonable and customary charge information. It was assumed that the full amount of all hospital charges are within the usual and customary charge amount. It was assumed that, for 80 percent of all other covered services, the total charge is within the reasonable and customary limit and the full amount is covered. For the remaining 20 percent of charges, only 80 percent would be covered and the beneficiary must pay the remaining 20 percent. Therefore, even in a plan with no cost sharing, the beneficiary may have out-of-pocket expenses under the plan.

4. Cost Sharing

The tailored plan would have a $50 deductible in 1988 ($46.75 in 1986 dollars).[124] The full amount of covered charges over the deductible for hospital, surgical, inpatient and outpatient physician care up to the reasonable and customary amount would be reimbursed under this plan. There would be a maximum of three $50 deductibles per family. A copayment of $2 in 1988 ($1.87 in 1986 dollars) would be placed on prescription drugs.

[124] From the perspective of insurers, a $50 deductible in 1988 would be equivalent to a $34 deductible in 1986 dollars, given the change in health care prices between 1986 and 1988 (because insurers are paying for charges that exceed $50). In terms of household payments, it would correspond to $46.75 in 1986 dollars.

Assumptions

These deductible and copayment provisions were applied within the model using the following assumptions:

- The $50 deductible ($46.75 in 1986 dollars) is applied to the first $50 of covered charges per year rather than the first $50 of each individual charge;
- The deductible is applied to the first $50 of each individual's covered charges rather than the first $50 of family charges;
- There is a maximum of three deductibles per family; and
- The $2 deductible on covered drug expenses will be applied to each prescription drug purchase in the NMCUES data.

5. Premiums for Tailored Plan

The employer will pay 80 percent of premium costs for employees working 30 or more hours per week and 75 percent for their dependents. The employer contribution for an employee working 10 to 29 hours would be the product of the contribution for a full-time employee times the ratio of hours worked to 30. Employer contributions apply only for the time period that an employee is actually working during the year.

Assumptions

Premium payments for persons who are newly covered under the tailored plan were estimated using HBSM. Premiums were estimated by dividing the total amount of charges simulated to be paid by the plan over the number of person-months of coverage.[125] Premium amounts were estimated separately for covered workers and their dependents. Premium payments were not estimated by age, sex, or any other set of variables, because plan premiums are generally a set amount per employee and/or dependent and do not vary by demographic group.

A surcharge was added to premiums for net costs of insurance and profit. This surcharge, usually referred to as retention, was assumed to be eight percent, which is approximately the average rate of retention for private insurers. The family premium payment was then calculated for each individual covered by the plan using the formula described above.

In cases where a person's individual coverage is dropped once he/she becomes insured under the tailored plan, his/her premium payment for individual coverage is set to zero.

6. Impact on Current Employer Plans

The employer must provide a plan with an actuarial value at least as great as the tailored plan but could provide one or more plans of greater actuarial value as well. It was assumed that companies would not cut back their existing health benefit plans.

Assumptions

It was assumed that each employer who does not offer a plan with an actuarial value equal to or greater than the tailored plan

[125] Person-months are the total number of months persons are covered by a plan. For example, a person who worked 5 months during the year and became covered under the plan would account for 5 person-months of coverage.

will offer a plan with equal value if he/she has no plan, or will modify his/her existing plan to achieve an actuarial value equal to or greater than the tailored plan. As described above in section A, each individual in NMCUES covered by an employer plan was statistically matched to an actual health plan in the Lewin/ICF health plan data base. The actuarial value of these plans was estimated using a health plan evaluation model developed by Hay/Huggins Associates. If an individual was currently assigned to a plan with a net actuarial value smaller than the tailored plan, the plan was modified as follows: [126]

- The amount of the total plan premium cost paid by the employer was increased until the employer premium payment was equal to the net actuarial value of the tailored plan to the employee (this would equal 80 percent of the actuarial value of the tailored plan mandated benefits to employees working 30 or more hours per week) or until the employer is paying 100 percent of the costs.
- If, after this adjustment, the plan premium paid by the employer is still less than the net actuarial value of the tailored plan, the proportion of the individual's health expenditures paid by the plan was increased by the ratio of the value of the tailored plan to the actuarial value of employer-paid health plan premiums (calculated in the prior step). Premiums under the plan were adjusted by the same ratio.

7. Other Provisions

The tailored plan would include certain administrative practices which could affect plan costs but cannot be simulated in HBSM. These are:

- Precertification for elective hospitalization;
- Case management for expensive treatments;
- Mandatory second opinion for selected surgical procedures;
- No preexisting condition clauses; and
- 30-day waiting period before becoming eligible for coverage.

8. Utilization Response

Among those who become newly insured under the tailored plan, it was assumed that utilization of services covered under the plan increased to the levels reported by currently insured persons with similar characteristics. The methodology used is described in detail above in section B. A utilization response was simulated only for those who were not covered by any public or private plan prior to the tailored plan. It was assumed that utilization will not increase among the currently insured, even though cost sharing is liberalized for many employer plans under this proposal.

D. SIMULATION OF THE TYPICAL PLAN

The typical employer illustrative plan would require all employers to provide coverage to all employees working 10 or more hours per week. The plan is a comprehensive plan that typifies the cur-

[126] Net actuarial value refers to the actuarial value of the plan's benefits multiplied by the proportion of the plan premium cost paid by the employer.

rent offerings of the large- and medium-size employers found in the Hay/Huggins Benefits Survey. This section describes the provisions of this plan and explains the assumptions used in modeling each provision.

1. Population Coverage

All employers would be required to provide health insurance coverage. All employees age 18 or older working at least 10 hours per week would be eligible, as well as those employees under age 18 who are heads of families. Coverage would be mandatory for all employees and their dependents after a waiting period of 30 days. If they are covered under another employer plan, it was assumed that coverage would be retained as secondary coverage.

Assumptions

It was assumed that coverage under the typical plan is extended to all non-covered workers who are working 10 or more hours per week. To approximate the 30-day waiting period, it was assumed that persons who worked less than 5 weeks during the year are not covered. The following assumptions were also made:

- Children and spouses of newly covered workers, who do not themselves qualify for coverage as employees, will be covered under the typical plan. Dependents covered under another employer plan would retain coverage under the plan.
- Coverage under individual plans would be dropped by all persons newly insured under the typical plan.
- Non-covered dependents of workers currently insured by an employer plan (i.e., dependents of covered workers who did not elect family coverage) would be extended coverage under the typical plan and would be required to take the coverage.
- Employed dependents who previously were covered by another family member's plan would be required to take their own employer's plan as primary coverage.

2. Covered Services

The typical plan would cover the following services:

- Inpatient hospital days (no limit);
- Inpatient care in alternative care facilities (e.g., SNFs);
- Inpatient physician services;
- Outpatient hospital care under the direction of a physician, including ambulatory surgical centers;
- Laboratory and x-ray services ordered by a physician;
- Prenatal care;
- Prescription drugs;
- Psychiatric inpatient care (limit of 30 days);
- Psychiatric outpatient care (limit of 50 visits).

No coverage is provided for dental care.

Assumptions

Coverage of the health care episodes for newly covered persons under the typical plan was determined using the condition and type of service data reported in NMCUES. All treatments which are attributed to dental care were excluded. The following assumptions were also made:

- All inpatient hospital stays are covered. The 30 day per year limit on mental health care was applied on a per-person basis rather than a per-family basis.
- All outpatient visits are covered. The 50-visit limit on mental health care was applied on a per-person basis.
- All prescription drug expenditures are covered.
- All physician visits in and out of the hospital are covered under the plan except "general checkups."
- Well baby care is not covered.
- All laboratory tests and x-rays are assumed to have been ordered by a physician and therefore covered under the plan.

3. Covered Charges

The typical plan would cover all charges attributed to the covered services described above up to a "reasonable and customary" amount. Private insurance plans typically set the reasonable and customary amount at the 80th percentile of charges for each type of service.

Assumptions

NMCUES provides the total charge for each medical care episode but does not include reasonable and customary charge information. It was assumed that all inpatient hospital charges are within the reasonable and customary limit. It was assumed that, for 80 percent of all other covered services, the total charge is within the reasonable and customary limit and the full amount is covered. For the remaining charges, it was assumed that only 80 percent is covered and the beneficiary must pay the remaining 20 percent. Therefore, even in a plan with no cost sharing, the beneficiary may have out-of-pocket expenses under the plan.

4. Cost Sharing

The typical plan would have a $100 deductible for outpatient care, including surgical and physician care, in 1988 ($93.50 in 1986 dollars).[127] There would be no deductible for inpatient care. The plan would reimburse 100 percent of covered charges for inpatient hospital and mental health care, 80 percent of inpatient and outpatient surgery up to the reasonable and customary amount, 80 percent of inpatient and outpatient physician care up to the reasonable and customary amount, and 50 percent of outpatient mental health care up to the reasonable and customary amount.

The plan also places a limit on out-of-pocket expenditures for covered services of $1,000 per person and $3,000 per family.

Assumptions

These deductible and copayment provisions were applied within the model using the following assumptions:

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[127] From the perspective of insurers, a $100 deductible in 1988 would be equivalent to a $68 deductible in 1986 dollars, given the change in health care prices between 1986 and 1988 (because insurers are paying for charges that exceed $100). In terms of household payments, it would correspond to $93.50 in 1986 dollars.

- The $100 deductible ($93.50 in 1986 dollars) is applied to the first $100 of covered charges per year rather than the first $100 of each individual charge;
- The deductible is applied to the first $100 of each individual's covered charges, with a family limit of $300; and
- The coinsurance amounts are applied on an episode-by-episode basis.

The cap on out-of-pocket expenditures was assumed to apply only to covered charges for covered services. Therefore, the out-of-pocket expenses to which the cap is applied are defined to include only the coinsurance and deductible amounts for covered services. The out-of-pocket charges to which the cap applies exclude charges for non-covered services, such as charges for mental health care in excess of the inpatient day and outpatient visit limits.

The cap on out-of-pocket expenses was applied to individuals at the point where out-of-pocket costs exceed the $1,000 limit ($935 in 1986 dollars) or the point where family out-of-pocket charges exceed $3,000 ($2,805 in 1986 dollars). Thus, the family cap may be invoked without any one family member exceeding the individual cap.

5. Premiums for Typical Plan

The employer will pay 100 percent of premium costs for employees working 30 or more hours per week and 66.67 percent for dependents. The employer contribution for an employee working 10 to 29 hours would be the contribution for a full-time employee multiplied by the ratio of hours worked to 30. Employer contributions apply only for the time period that an employee is actually working during the year.

Assumptions

Premium payments for persons who are newly covered under the typical plan were estimated using the HBSM. These premiums were estimated by dividing the total amount of charges simulated to be paid by the plan over the number of person-months of coverage.[128] Premium amounts were estimated separately for covered workers and their dependents. Premium payments were not estimated by age, sex, or any other set of variables because plan premiums are generally a set amount per employee and/or dependent and do not vary by demographic group.

A surcharge was added to premiums for administration and profit. This surcharge, generally termed retention, was assumed to be 8 percent, which is approximately the average retention rate for private insurers. The family premium payment was then calculated for each individual covered by the plan using the formula described above.

In cases where a person's individual coverage is dropped after he/she becomes insured under the typical plan, his/her premium payment for individual coverage is set to zero.

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[128] Person-months are the total number of months persons are covered by a plan. For example, a person who worked 5 months during the year and became covered under the plan would account for 5 person-months of coverage.

6. Impact on Current Employer Plans

The employer must provide a plan with an actuarial value at least as great as the typical plan but could provide one or more plans of greater actuarial value as well. It was assumed that companies would not cut back their existing health benefit plans.

Assumptions

It was assumed that each employer who does not offer a plan with an actuarial value equal to or greater than the typical plan will offer a plan with equal value if he/she has no plan or will modify his/her existing plan to achieve an actuarial value equal to the typical plan. As described above in section A, each individual in NMCUES covered by an employer plan was statistically matched to an actual health plan in the Lewin/ICF health plan data base. The actuarial value of these plans was estimated using a model developed by Hay/Huggins. If an individual was assigned to a plan that has a net actuarial value smaller than the typical plan, the plan was modified as follows: [129]

- The amount of the total plan premium cost paid by the employer was increased until the employer premium payment was equal to the net actuarial value of the typical plan to the employee (this would equal 80 percent of the actuarial value of the typical plan mandated benefits to employees working 30 or more hours per week), or until the employer was paying 100 percent of the costs.
- If after this adjustment the employer was paying 100 percent of the costs and the plan premium paid by the employer was still less than the net actuarial value of the typical plan, the proportion of the individual's health expenditures paid by the plan was increased by the ratio of the value of the typical plan to the value of employer-paid health plan premiums (calculated in the prior step). Premiums under the plan would be adjusted by the same ratio.

7. Other Provisions

The typical plan would include certain administrative practices that could affect plan costs but cannot be simulated in HBSM. These are:

- Precertification for elective hospitalization;
- Case management for expensive treatments;
- Mandatory second opinion for selected surgical procedures; and
- No preexisting condition clauses.

8. Utilization Response

It was assumed that, among those who become newly insured under the typical plan, utilization of services covered under the plan will increase to the levels reported by currently insured persons with similar characteristics. The methodology used to model this utilization response is described above in section B of this appendix. A utilization response was simulated only for those who

[129] Net actuarial value refers to the actuarial value of the plan's benefits multiplied by the proportion of the plan premium cost paid by the employer.

were not covered by any public or private plan prior to the typical plan. It was assumed that utilization does not increase among the currently insured, even though cost sharing is liberalized for many employer plans under the typical plan.

E. SIMULATION OF THE CATASTROPHIC PLAN

The catastrophic employer illustrative plan would require all employers to provide insurance against catastrophic health care expenditures to all employees working 10 or more hours per week. The degree of protection would depend on family size and income. All employers without a health plan would have to provide a catastrophic plan. Existing employer plans would have to add catastrophic protection if there is no such feature in the current plan.

This section describes the provisions of this plan and explains the assumptions used in modeling each provision.

1. Population Coverage

All employers would be required to provide catastrophic health insurance coverage. All employees age 18 or older working at least 10 hours per week would be eligible, as well as those employees under age 18 who are heads of families. Coverage would be mandatory for all employees and their dependents after a waiting period of 30 days. If they are covered under another employer plan, it would be assumed that coverage would be retained.

Assumptions

It was assumed that coverage under the catastrophic plan is provided to all workers who work 10 or more hours per week. To approximate the 30-day waiting period, it was assumed that persons who worked less than 5 weeks during the year are not covered by the mandatory catastrophic plan. The following assumptions were also made:

- Children and spouses of newly covered workers, who do not themselves qualify for coverage as employees, will be covered under the catastrophic plan of the worker. Dependents covered under another employer plan would retain coverage under the plan.
- Coverage under individual plans would be supplemented by the catastrophic plan for all persons newly insured under the catastrophic plan.
- Non-covered dependents of a worker currently insured by an employer plan (i.e., dependents of covered workers who do not elect family coverage) would be extended coverage under the catastrophic provision of the worker's plan (the lesser of the existing limit on out-of-pocket expenses or $3,000 per person and $9,000 per family).

2. Covered Services

The catastrophic plan would cover the following services:

- Inpatient hospital days (no limit);
- Inpatient care in alternative care facilities (e.g., SNFs);
- Inpatient physician services;

- Outpatient hospital care under the direction of a physician, including ambulatory surgical centers;
- Laboratory and x-ray services ordered by a physician; and
- Prescription drugs.

No coverage is provided for psychiatric care or dental care.

Assumptions

Coverage of the health care episodes for newly covered persons under the catastrophic plan was determined by using the condition and type of service data reported in NMCUES. All treatments which are attributed to mental and nervous care and dental care were excluded. The following assumptions were also made:

- All inpatient hospital stays unrelated to mental and nervous conditions are covered.
- All outpatient visits unrelated to mental and nervous conditions are covered.
- All prescription drug expenditures unrelated to mental and nervous conditions are covered.
- All physician visits in and out of the hospital are covered under the plan except "general checkups" and those related to mental and nervous conditions.
- Well-baby care is not covered.
- All laboratory tests and x-rays are assumed to have been ordered by a physician and therefore covered under the plan.

3. Covered Charges

The catastrophic plan would cover all charges attributed to the covered services described above up to a "reasonable and customary" amount. Private insurance plans typically set the reasonable and customary amount at the 80th percentile of charges for each type of service.

Assumptions

It was assumed that all inpatient hospital charges are within the usual and customary limit. It was assumed that, for 80 percent of all other covered services, the total charge exceeding the cap is within the reasonable and customary limit and the full amount is covered. For the remaining charges, it was assumed that only 80 percent is covered and the beneficiary must pay the remaining 20 percent. Therefore, the beneficiary may have out-of-pocket expenses exceeding the cap under the plan.

4. Cost Sharing

The catastrophic plan would have a deductible for all covered services. The plan would reimburse 90 percent of all covered charges for the first $5,000 of charges over the deductible amount and 100 percent of any additional covered charges. The plan also places a limit on out-of-pocket expenditures for covered services in existing employer plans of the lesser of the existing limit or $3,000 per person and $9,000 per family.

Deductibles. Reimbursement for covered expenditures would not begin until the catastrophic deductible had been met. For existing employer plans, this deductible is the lesser of $3,000 or the deductible selected by the employer.

For the new catastrophic plan, each family's deductible would be determined by the family's income level. The income-related deductible would apply to the family income. The deductible would be computed as follows for families with total income of $75,000 or less:

Deductible = 0.25 * (AGI + transfer payments + tax free interest income − personal exemptions), where AGI is adjusted gross income for the Federal income tax, transfer payments are such amounts that are not includible in AGI, and personal exemptions are the value of a family's personal exemptions under the Federal income tax.

For units with total income greater than $75,000:

Deductible = (0.25 * (75,000 − personal exemptions)) + (0.35 * (total income − 75,000)).

Thus, for example, a family of four with total income of $20,000 would have a deductible of $3,100 (assuming personal exemptions are $1,900 each). The deductible is set to $0 if the formula produces a negative number. Income is measured using the previous calendar year's income.

Co-payments. Once an eligible employee's family would have met the income-related deductible, they would be required to make a co-payment of 10 percent on the first $5,000 of covered expenditures in excess of the deductible. Thus, maximum out-of-pocket liability for covered expenses under the income-related catastrophic plan would equal the deductible plus $500 (i.e., 10 percent of $5,000). The following table gives examples of maximum liability assuming personal exemptions are worth $1,900.

Number of personal exemptions	Maximum out-of-pocket liability for total income of:					
	$10,000	$15,000	$20,000	$30,000	$50,000	$100,000
1	$2,525	$3,775	$5,025	$7,525	$12,525	$27,025
2	2,050	3,300	4,550	7,050	12,050	26,550
3	1,575	2,825	4,075	6,575	11,575	26,075
4	1,100	2,350	3,600	6,100	11,100	25,600
5	625	1,875	3,125	5,625	10,625	25,125
6	500	1,400	2,650	5,150	10,150	24,650
7	500	925	2,175	4,675	9,675	24,175
8	500	500	1,700	4,200	9,200	23,700

The relationship between out-of-pocket expenditures and income for a family with annual income below $75,000 is as follows:

- If expenses exceed the deductible by less than $5,000, the out-of-pocket amount rises 22.5 cents per additional dollar of income;
- If expenses exceed the deductible by $5,000 or more, the out-of-pocket amount rises by 25 cents per additional dollar of income;
- If expenses meet the above condition and also exceed 7.5 percent of AGI, the out-of-pocket amount increases per additional dollar of income according to the formula (0.225 + 0.075t)/(1 + t), where t is the marginal tax rate.

This last result is due to the tax deductibility of medical expenditures greater than 7.5 percent of AGI.

Assumptions

These deductible and copayment provisions were applied within the model using the following assumptions:

- The deductible was applied to the total covered charges incurred in a year rather than to each individual charge;
- The deductible was applied on a per-family basis rather than on a per-individual basis; and
- The coinsurance amounts were applied to the charges incurred subsequent to satisfaction of the family deductible.

The cap on out-of-pocket expenditures was applied only to covered charges for covered services. The out-of-pocket charges to which the cap applies exclude charges for non-covered services, such as charges for mental health care or dental care, and charges exceeding the "usual and customary" amount.

The cap on out-of-pocket expenses was applied at the point where family out-of-pocket charges exceed the deductible calculated for that family.

5. Premiums for the Catastrophic Plan

The employer will pay 100 percent of premium costs for employees working 30 or more hours per week and 100 percent for their dependents. The employer contribution for an employee working 10 to 29 hours would be the contribution for a full-time employee multiplied by the ratio of hours worked to 30. Employer contributions apply only for the time period that an employee is actually working during the year.

In existing plans that must add a catastrophic plan, the premium for the catastrophic plan will be divided between employer and employee in the same manner as for the new catastrophic plan.

Assumptions

Premium payments were estimated for persons who are newly covered under the catastrophic plan. These premiums were estimated by dividing the total amount of charges simulated to be paid by the plan over the number of person-months of coverage. Premium amounts were estimated separately for covered workers and their dependents. Premium payments were not estimated by age, sex, or any other set of variables because plan premiums are generally a set amount per employee and/or dependent and do not vary by demographic group.

A surcharge for administration and profit was added to these premium amounts. This surcharge, generally termed retention, was assumed to be eight percent, which is the average rate of retention for employer plans. The family premium payment was then calculated for each individual covered by the plan using the formula described above.

6. Impact on Current Employer Plans

If the employer does not already provide a plan with a limit on out-of-pocket health care expenditures, the employer must either add a catastrophic provision to an existing plan or offer the proposed catastrophic plan. It was assumed that companies would not cut back their existing health benefit plans.

Assumptions

It was assumed that each employer with an existing plan that does not have a catastrophic cap on out-of-pocket expenses will modify the plan to add a catastrophic provision with a deductible of $3,000 per person and $9,000 per family. All other employers will offer the proposed catastrophic plan.

7. Other Provisions

The catastrophic plan would include certain administrative practices that could affect plan costs but cannot be simulated in HBSM. These are:

- Precertification for elective hospitalization;
- Case management for expensive treatments;
- Mandatory second opinion for selected surgical procedures; and
- No preexisting condition clauses.

8. Utilization Response

A utilization response to the catastrophic plan was simulated. Individuals in families with total out-of-pocket expenditures greater than or equal to the catastrophic deductible for their income and family size were subject to a utilization response. The utilization response for these individuals was simulated as described in section B of this appendix.

The utilization response tended to be highest among low-income families and tapered off as income increased because the deductible is at or near zero for most low-income families and increases with income.

F. SIMULATION OF MEDICAID EXPANSION PLAN

The Medicaid expansion plan would require all states to extend Medicaid coverage to all persons in families with incomes below the poverty line. The plan emphasizes "front-end" rather than catastrophic expenditures and favors primary and preventive care services. This section describes the provisions of this plan and explains the assumptions used in modeling each of these provisions.

1. Population Coverage

All persons with family incomes below 100 percent of the Federal poverty level would be eligible for coverage. This rule differs from current law where income eligibility limits are often significantly below the poverty threshold and eligibility is limited to the elderly, disabled, and families with dependent children. Families would be ineligible if their assets exceeded the asset eligibility threshold. The asset limit would be equal to the current Federal minimum standard plus $1,700. This limit is $3,400 for single individuals and $4,250 for families of two or more. The expansion of eligibility standards would be mandatory for all States.

Assumptions

Eligibility was modeled on a monthly basis, which permitted changes in Medicaid eligibility to be modeled during the year as each individual's employment status changed. It was assumed that individuals retain their health coverage from all public and private

plans except individual coverage. It was assumed that all persons with individual insurance drop their coverage during the portion of the year that they are covered by Medicaid.

Family assets, which are not reported in NMCUES, were estimated from reported interest and dividend income by dividing this reported income by an assumed average rate of return on investment income of 6 percent.

2. Enrollment

Based on the current experience of the Medicaid program, it can be anticipated that not all eligible individuals will elect to participate in Medicaid. For example, various studies have found that up to 50 percent of those eligible for cash assistance under the SSI and AFDC programs do not participate in these programs. Because participants in these cash assistance programs are categorically eligible for Medicaid, a substantial portion of those eligible for Medicaid are not enrolled.

Explanations for non-participation in these programs range from a lack of information about the program to a perceived stigma attached to participating in public assistance programs. Whatever the reason, full enrollment should not be expected for all those eligible for the Medicaid expansion program.

Assumptions

It was assumed that enrollment will not increase among those who are currently eligible. There is little reason to assume that non-participating eligible individuals will choose to enroll simply because the eligibility limit is increased.

Because the NMCUES data do not identify persons who are eligible but not enrolled in the Medicaid program, the number of non-enrolled eligibles under current law was estimated. In this study, eligible non-enrollees included all persons who are not enrolled in Medicaid and who had incomes below the weighted average Medicaid income eligibility threshold for States included in the census region in which they are living. (NMCUES does not provide the State identifiers required to simulate eligibility on a State-by-State basis.)

It was assumed that eligible non-enrollees under current law will remain non-enrolled under the new program. The following assumptions were used in simulating the eligible non-enrolled population under current law:

- All AFDC and SSI participants under current law are assumed to be enrolled in Medicaid, even if they did not report so in the survey, because AFDC and SSI participants are categorically eligible for Medicaid. This assumption is reflected in all HBSM simulations performed in this study.
- The non-enrolled eligibles included only those who meet the SSI or AFDC family structure requirements under current law. For SSI, this group included elderly individuals and elderly couples. For AFDC, this group included only families with dependent children.
- For persons in dependent children families, the weighted average income eligibility threshold was based upon the AFDC benefit standard in States without a medically needy program and

the Medicaid eligibility standard in States that do have a medically needy program. For elderly families, the threshold was a weighted average of the SSI benefit standards within the census region.

Among the newly eligible, it was assumed that families enroll in the program in all cases where one or more family members used services covered under the Medicaid program.

3. Participation

In this analysis, enrollees who utilize health care services paid by Medicaid are defined to be participants.

Assumptions

It is assumed that all covered services for individuals selected to enroll in the program will be subject to Medicaid reimbursement. Thus, it was assumed that all enrollees who have services covered by Medicaid participate in the program.

4. Covered Services

The Medicaid plan would cover the following services:

- Inpatient hospital days (up to 14 per year);
- Inpatient physician services;
- Outpatient hospital care under the direction of a physician, including ambulatory surgical centers;
- Laboratory and x-ray services ordered by a physician;
- Prenatal care;
- Well-child care up to 18 years of age;
- Prescription drugs;
- Family planning;
- Hypertension screening and treatment;
- Diabetes control; and
- Dental care.

No coverage is provided for mental conditions. States could enhance the package at their option, so long as the newly covered individuals do not receive a broader benefit package than existing beneficiaries.

Assumptions

All States are assumed to adopt the minimum benefit package for persons newly covered under the plan. Coverage of the health care episodes for newly covered persons covered under the Medicaid plan was estimated using the condition and type of service data reported in NMCUES. All treatments attributed to mental and nervous conditions were excluded. The following assumptions were also made:

- All inpatient hospital stays except those attributed to mental or nervous disorders are covered. The 14 day per year limit will be applied on a per-person basis rather than a per-family basis.
- All outpatient visits except those attributed to mental or nervous disorders are covered.
- All prescription drug expenditures are covered unless they are attributed to a mental or nervous condition.

- All physician visits in and out of the hospital are covered under the plan except "general checkups." Physician visits for checkups are not covered unless these visits are attributed to children under the age of 18 (assumed to be well-child care treatments).
- All laboratory tests and x-rays are assumed to have been ordered by a physician and therefore covered under the plan.
- Family planning, hypertension treatment, and diabetes control services are included in the NMCUES health care data but cannot be distinguished from other services. These services will be covered in the simulations only if they are part of a health care episode that meets the covered service assumptions described above.

5. Covered Charges

The Medicaid expansion plan would cover all charges attributed to the covered services described above. Coverage would be secondary to other insurance available to the beneficiary, including Medicare, but not to plans that are wholly State-funded, such as general assistance or State medically indigent programs.

Assumptions

It was assumed that the full charge for covered services is covered by Medicaid. A "usual and customary" charge amount was not simulated.

Medicaid was assumed to be secondary payer to other insurers including private plans, Medicare, workers' compensation, and CHAMPUS. Services provided by company or union clinics were assumed to continue being covered by those organizations. It was assumed that Medicaid will cover costs which under current law are paid out-of-pocket, paid by philanthropy, or paid by State and local general assistance and medically indigent programs.

6. Cost Sharing

States would be permitted to impose the nominal cost-sharing requirements included in their current Medicaid plans.

Assumptions

It was assumed that all States waive the right to impose cost-sharing, and the full amount of all covered charges will be paid by Medicaid for the newly eligible population. This assumption is required by the lack of State identifiers in the NMCUES data.

7. Plan Premiums

There will be no premium payment required for participants in the Medicaid program. As under current law, States will have the option of paying the Medicare part B premium for all Medicaid participants who are also covered by Medicare. Nearly all States have elected this option.

Assumptions

It was assumed that no premium will be paid by newly eligible individuals under the Medicaid program. Premiums for employer coverage were assumed to remain unchanged for covered workers

eligible for the Medicaid program. It was assumed that individual premium payments are terminated during periods when individuals are covered by Medicaid, which is consistent with the assumption that individual coverage will terminate for individuals during periods covered by Medicaid. For all persons selected to enroll in the Medicaid program who are also Medicare participants, it was assumed that Medicaid pays their Medicare part B premiums during the months of the year that they are simulated to be enrolled in Medicaid. Some families with part-year employment will be eligible only during the months they are not working.

8. Utilization Response

Among those who are selected to become newly enrolled in Medicaid, it was assumed that utilization of services covered under the program will increase to the levels reported by similar persons who are currently insured. This utilization response was modeled as described above in section B of this appendix. A utilization response was simulated only for those who were not covered by any public or private plan prior to the Medicaid expansion. Because the model does not currently simulate utilization responses for dental care, utilization of dental services was assumed to remain unchanged from the base case simulation.

G. SIMULATION OF THE TAILORED PLAN AND THE MEDICAID EXPANSION PLAN COMBINED

This simulation modeled the combined impact of implementing both a private and a public sector health plan. The private sector plan was the tailored plan described above in section C of this appendix. The public sector plan was the Medicaid expansion plan described above in section F.

The methodology used to simulate the tailored plan was identical to the methodology used in the prior simulation of the tailored plan. The methodology used to simulate the Medicaid expansion plan was identical to that used in the prior simulation of the Medicaid expansion plan, with the following modifications:

- Medicaid will be secondary payer to the tailored plan;
- Medicaid will pay the employee share of employer plan premiums for all workers eligible for Medicaid;
- Because Medicaid will pay the employee share of the premium, it was assumed that all workers eligible for Medicaid will enroll in the Medicaid plan if their employer requires an employee contribution for health insurance premiums.

Other than these modifications, methods used to model the tailored and Medicaid expansion plans were identical to those used in prior simulations of these policies.

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