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ELIMINATING WASTE AND INEFFICIENCY CAN DO LITTLE TO CONTAIN COSTS

by William B. Schwartz and Daniel N. Mendelson

Prologue: Americans often identify waste and inefficiency as the major culprits leading to the spiral of medical care costs. Indeed, when the Clinton administration unveiled its proposed reform of the health care system, its stewards argued that by removing inefficiencies, considerable savings would be generated to finance reform. In this paper William Schwartz, a physician-economist at the University of Southern California and the Pacific Center for Health Policy and Ethics, and Daniel Mendelson, a policy analyst at Lewin-VHI, Inc., take exception to this view. Their estimated potential savings from the reduction of inefficiencies in the acute care sector full far short of the administration’s cost containment goals. Schwartz and Mendelson were quick to point out in conversation that the basis of their study does not stem from ideology or opposition to reform, but rather from a belief that policymakers should have a frank discussion with the American people about the cost of reform. Schwartz is a rare figure in American medicine, combining the knowledge of a clinician with policy analysis skills. From 1950 to 1971 he headed the division of nephrology at Tufts-New England Medical Center and later served as physician-in-chief there. But in the mid-1970s as the problem of rising medical costs grew worse, Schwartz became fascinated with its implications, and has pursued them ever since. (For details, see John Iglehart’s interview with Schwartz, Health Affairs, Fall 1989.) Mendelson, who is a principal at Lewin-VHI, a nationally recognized health care consulting firm, has worked with states and the federal government to help structure and evaluate regulatory programs such as those recently proposed to reform the health system. Mendelson also has expertise in issues related to technology, such as cost-effectiveness analysis, practice guidelines, and quality measurement. He holds a master’s degree in public policy from Harvard University.
Abstract: This study estimates potential savings from eliminating waste and inefficiency in the acute care sector (hospital, physician, and pharmaceutical). Our analysis indicates that in the unlikely event that all potential savings are achieved between 1994 and 2000, the rise in costs would be reduced by about 1.5 percentage points annually. This would slow the real rise in costs from a projected rate of 6.5 percent to 5 percent annually. Covering the uninsured would partially offset these savings and bring the rise in costs to more than 5.5 percent annually. If our estimate of potential efficiency savings is in error by plus or minus 50 percent, the projected rise in costs would be altered by about one percentage point. We conclude that savings from eliminating inefficiency are likely to fall far short of the Clinton administration’s cost containment goals.

Slowing the growth of health care costs is a key issue in health care reform. On one side of the cost containment debate are those who argue that eliminating inefficiency (for example, unnecessary care, administrative costs, and “excessive” pharmaceutical profits) can effectively control costs without sacrificing medical benefits. On the other side are those who argue that the forces driving costs upward will overwhelm any potential efficiency savings. These widely differing forecasts have been supported by neither an analytic framework designed to estimate the savings nor documentation of the potential sources of savings. Most recently, the Clinton administration has asserted that the rise of health spending can be controlled through efficiency improvement.1 This paper assesses the validity of this claim by examining the factors that contribute to wasteful spending, making what we consider to be upper-bound estimates of potential savings and calculating the effects on the annual rise in acute care costs.

Efficiency Gains As A Means Of Cost Containment

Our projections of future increases in hospital, physician, and retail pharmaceutical costs between 1994 and 2000 are based on extrapolation of historical costs. We use 1981-1991 as a baseline because we anticipate that the technological and other changes that occurred during this period will reflect future changes most accurately. We then subtract the maximum savings that might be achieved through efficiency gains and calculate their effect on the annual rate of rise in costs, assuming that savings will accrue gradually over the seven-year period, with the maximum potential efficiency savings achieved in 2000. All costs are expressed in 1991 dollars.

The hospital sector. The factors that raised hospital costs over the past decade are likely to persist between 1994 and 2000. Analyses of hospital costs indicate that technological development has been the most important cause of increased hospital costs, accounting for roughly half of the rise over the past decade.2 Hospital spending on labor and other inputs and demographic changes account for the remainder.3 Although real hospital costs rose by an average of 5.4 percent between 1981 and 1991, this value
understates likely future increases in costs: During the 1980s diagnosis-related groups (DRGs) and the spread of managed care resulted in a one-time reduction in the use of hospital days of some 30 percent. The resulting savings largely offset the expected increase in costs from technology, demography, and other factors; only after further savings in days largely disappeared in the late 1980s did the high underlying rate of increase in costs reemerge.

We estimate that the average increase in hospital costs between 1981 and 1991 would have been 7.2 percent without the observed savings in days. Given that the forces responsible for the underlying rise in costs are likely to persist, a similar increase in costs can be expected in the future if demand for care is not constrained. We project that increases will be attenuated to 6.8 percent between 1994 and 2000 because the age cohorts with highest medical outlays are growing more slowly than in the past and because population growth is expected to slow. Our projected growth in hospital costs exceeds that issued by the Health Care Financing Administration (HCFA) because that estimate made no correction for one-time savings in days and included some psychiatric, rehabilitation, and other hospitals whose costs grow more slowly than community hospital costs.

A variety of strategies have been proposed to control hospital costs. Here we estimate the maximum potential savings associated with each strategy.

Inappropriate hospital days. The argument that reducing hospital days can produce significant savings without sacrificing benefits originates from the observation that patients in health maintenance organizations (HMOs) used about 30 percent fewer days than did patients in the fee-for-service sector between 1950 and 1980. But, as noted earlier, DRGs, the diffusion of managed care, and the emulation of HMO-style practice in the fee-for-service sector in the 1980s led to a 30 percent reduction in days, matching historical HMO performance. Despite the expansion of managed care, utilization review, and competitive pressures, only an additional 1.8 percent of hospital days were eliminated between 1988 and 1991.

Studies by Robert Brook and colleagues are consistent with the notion that the days eliminated during the 1980s were indeed inappropriate and that few savings remain. Their initial analyses of national hospital records from 1979-1982 showed that 14 percent of coronary artery bypass grafts, 32 percent of carotid endarterectomies, 17 percent of coronary angioplasties, and 17 percent of upper gastrointestinal tract endoscopies were inappropriate. A subsequent analysis of 1990 hospital records in New York State was dramatically different: Fewer than 2.4 percent of coronary artery bypass grafts, 4 percent of percutaneous transluminal coronary angioplasties, and 4 percent of coronary angiographies were provided inappropriately. These findings suggest major progress in eliminating unnecessary care but do not
exclude the possibility that hospitals in New York State have been more effective than others in eliminating unnecessary care.

Some have argued that an expansion of managed care can further cut inappropriate hospital days, particularly among the half of the U.S. population not now enrolled in managed care plans. How much can be saved by expanding managed care is uncertain, given that virtually all medical care is subject to some form of utilization review. The observed differences in hospitalization rates between HMOs and the fee-for-service sector cannot be used to estimate potential savings because self-selection of patients tends to overstate what can be achieved. Nor is there compelling evidence that further management of care through clinical practice guidelines and outcomes research will reduce systemwide hospital costs; an Institute of Medicine (IOM) panel concluded that some guidelines for outpatient care may actually increase aggregate spending. Nevertheless, given the likelihood that the spread of managed care, practice guidelines, and new technologies will shift more services to the ambulatory sector, we assume that the population will reduce its use of inpatient hospital days by an additional 20 percent.

Whether such a reduction in days will result in appreciable dollar savings is uncertain. During the 1980s an ever-larger portion of the savings from reductions in inpatient days was offset by the simultaneous rise in outpatient costs; by 1988 increases in outpatient costs exceeded savings from reduced inpatient days. This finding is due in part to the shifting of ever-sicker patients into the outpatient sector and to the use of more expensive drugs and technology in ambulatory settings—patterns that are likely to continue throughout the decade.

Although these findings suggest little or no net savings from a further reduction in inpatient days, more vigorous cost containment in the outpatient sector may introduce new efficiencies. We therefore assume that for each percentage reduction in days, there will be a one-third percentage point savings in total hospital costs (the average savings between 1981 and 1989). Thus, a 20 percent further reduction in days would save $18 billion (Exhibit 1). This estimate does not account for cost increases in non-hospital ambulatory care as patients are shifted from the inpatient sector.

Hospital capacity. Closing hospitals with chronically low occupancy will yield only small savings because patients served by such facilities can be expected to seek care elsewhere. As a result, the bulk of savings from closing underused hospitals are offset by increased spending in other facilities. William Schwartz and Paul Joskow estimated that closing underused hospitals would have saved about $800 million in 1980. This understates current potential savings because the average daily census has dropped, and hospital costs have increased. Updating their calculation to 1991, we
### Exhibit 1: Maximum Potential Efficiency Savings, 1994-2000

<table>
<thead>
<tr>
<th>Acute care sector</th>
<th>Maximum savings achieved in 2000</th>
<th>Attenuation of average annual rise in costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital sector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inappropriate hospital days</td>
<td>$18.4</td>
<td>0.7%</td>
</tr>
<tr>
<td>Hospital capacity</td>
<td>6.6</td>
<td>0.3</td>
</tr>
<tr>
<td>Administrative costs</td>
<td>5.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Cost per patient day</td>
<td>13.8</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>43.8</td>
<td>1.7</td>
</tr>
<tr>
<td>Physician sector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative costs</td>
<td>9.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Physician ownership of labs</td>
<td>1.4</td>
<td>0.1</td>
</tr>
<tr>
<td>Defensive medicine</td>
<td>8.0</td>
<td>0.5</td>
</tr>
<tr>
<td>Unnecessary physician services</td>
<td>8.6</td>
<td>0.5</td>
</tr>
<tr>
<td>Total</td>
<td>27.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Retail prescription drug sector</td>
<td>1.3</td>
<td>0.3</td>
</tr>
<tr>
<td>“Excess returns”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total acute care system</td>
<td>$72.3</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Source: Authors' calculations.

*a* All dollar savings expressed in billions of 1994 dollars.

*b* To estimate the attenuation in the average annual rise in costs, we assume that cost savings will be achieved gradually between 1994 and 2000. Specifically, we assume that one-seventh of the maximum potential efficiency savings will be realized in 1994, two-sevenths in 1995, three-sevenths in 1996, and so on; the full savings is achieved in 2000. Total cumulative savings over the period 1994 through 2000 can therefore be calculated by multiplying the maximum potential efficiency savings by a factor of 4.

estimate that no more than $6.6 billion might be saved by eliminating low-occupancy facilities.  

Actual savings are likely to be substantially smaller, because regulators will face severe community resistance to hospital closures; when a rural or inner-city hospital closes, patients may lose ready access to emergency services, face delays in appointments for complex care, and be forced to travel farther for routine care. Furthermore, transferring patients from small rural and urban hospitals to larger tertiary care institutions in some instances can actually increase costs.  

Administrative costs. Estimates of hospital administrative costs (such as management, personnel, purchasing, accounts receivable, medical records, administration, and data processing) range from $41 billion to $47 billion. Dramatic reductions will be difficult to achieve, because cost containment efforts during the past decade have already stimulated hospitals to reduce administrative costs. Moreover, administrative costs in hospitals have been raised by reporting requirements of managed care organizations and insurers, and this trend is likely to continue as health reform increases hospital data-reporting requirements. Nevertheless, for this analysis we assume a savings of more than 10 percent of the $44 billion spent on administration...
A recent study of hospital administrative savings from adopting a Canadian-style system in the United States arrived at a much larger estimate of potential administrative savings. However, this study systematically overstated both the extent of administrative spending and the potential savings that might be achieved. First, the analysis included many costs that are not administrative in nature, such as capital-related costs (buildings, fixtures, and movable equipment), employee benefits, and the full costs of medical records. Second, the analysis relied on the Medicare Cost Report, a data source that gives hospitals an incentive to shift some expenses from clinical areas to administrative categories to maximize Medicare reimbursement. Third, while the costs of research and other similar programs were excluded from the calculations, the portion of general administrative costs attributable to these activities was not excluded. Fourth, many of the costs included under the general administrative category support utilization review, quality control, and quality assurance; reductions in such administrative spending would be expected to increase overall costs and potentially reduce the quality of care. Finally, the report dramatically understated costs in Canada by not counting many administrative costs in that country; in fact, Patricia Danzon has concluded that administrative costs in the United States are roughly equal to those in Canada.

Reductions in costs per patient day. Over the past ten years many hospitals have engaged in aggressive programs to reduce the use of nursing services, medical supplies, and other direct patient costs. They also have implemented management information systems, negotiated aggressively with suppliers, and reduced indirect costs. Despite these efforts, costs per patient day have risen, largely because of technologic change and shifting of less-sick patients out of the hospital. One dramatic expression of the increased intensity of care is the growth in number of nurses per patient day observed over the past decade. The period from which we project future increases in costs thus includes both improved hospital efficiency and growth in the intensity of patient care. Based on the hope that future efficiency gains increasingly will offset growth in intensity, we assume that hospitals will be able to reduce their costs per day by 5 percent, or $14 billion.

Total potential hospital efficiency savings. The foregoing analysis indicates that, in total, reductions in hospital costs from improving efficiency are not likely to exceed $44 billion between 1994 and 2000 (Exhibit 1). Assuming that savings are spread out evenly over this period, the annual rise in hospital spending would be slowed by about 1.7 percentage points annually, from 6.8 percent to 5.1 percent (Exhibit 2).

The physician sector. Over the past decade there has been a striking increase in the demand for physician services and a 6.8 percent increase in
Exhibit 2
Annual Average Percentage Increase In Acute Health Care Spending, 1994-2000

<table>
<thead>
<tr>
<th>Acute care sector</th>
<th>Real increase</th>
<th>Baseline projections (including demographic corrections)</th>
<th>Adding maximum potential efficiency savings</th>
<th>Adding coverage for the uninsured</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital sector</td>
<td>6.8%</td>
<td>5.1%</td>
<td>5.8%</td>
<td></td>
</tr>
<tr>
<td>Physician sector</td>
<td>6.5</td>
<td>4.8</td>
<td>5.3</td>
<td></td>
</tr>
<tr>
<td>Retail prescription drug sector</td>
<td>5.8</td>
<td>5.4</td>
<td>6.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6.6</td>
<td>5.0</td>
<td>6.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nominal increasea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital sector</td>
</tr>
<tr>
<td>Physician sector</td>
</tr>
<tr>
<td>Retail prescription drug sector</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations.

a Assumes an annual inflation rate of 4.0 percent.

real annual spending for physician services. Increased intensity of services provided in the physician’s office, largely a function of new procedures, has been the single most important force driving up costs. Spending on physician services also has increased as a result of a formidable rise in practice expenses; medical supplies, office rent, and salaries for support personnel (which accounted for half of gross receipts in 1990) have risen by an average of 7 percent annually—a value larger than the 5 percent annual rise in real net income. We expect that technologic change and the other trends observed over the past decade will continue to raise physician expenditures at a rate similar to that observed over the past decade, except for an attenuation to 6.5 percent due to the slowing in the aging and growth of the population. These projections do not include the likely effects of reductions in Medicare payments to physicians and of other policies designed to control spending on physicians, which are discussed below.

Administrative costs. Estimates of physicians’ administrative costs ranged from $31 billion to $46 billion (average $38.5 billion) in 1991. We believe that the potential for reducing administrative costs in the physician sector is greater than that for the hospital sector because doctors have not been subject to comparable cost containment pressures over the past decade. We therefore assume that physicians’ administrative costs can be cut by 20 percent of estimated 1994 spending, or $9.2 billion. As discussed in connection with hospitals, such savings will be difficult to achieve, given the growth of reporting requirements from insurers and government.

Physician ownership of laboratories. In 1989, $8.4 billion was spent on
medical laboratories, and we estimate that the figure for 1994 will be $11.2 billion.\textsuperscript{34} Because 25 percent of independent clinical labs and diagnostic-imaging facilities were owned in whole or in part by referring physicians, we assume that $2.8 billion will be paid to physician-owned facilities.\textsuperscript{35} To estimate an extreme upper bound on potential savings, we can assume that half of all referrals to physician-owned facilities might be eliminated, for a savings of $1.4 billion. We should note, however, that there is no compelling analytic evidence that physicians refer inappropriately to testing facilities they own.

Defensive medicine. Defensive medicine consists of procedures and tests carried out to avoid malpractice litigation. Unfortunately, there are no reliable estimates of the systemwide costs of such actions. A study carried out by the American Medical Association (AMA) showed that physicians with higher malpractice premiums have a higher volume of patients, use more ancillary services, and have higher practice costs.\textsuperscript{36} The meaning of this finding is uncertain, because it does not establish a causal relationship between high premiums and increased health spending. The AMA estimate also included a range of physician responses to the tort system as well as defensive medicine (for example, provision of legitimate services to patients to reduce the probability of lawsuit). A recent study that reviewed data from the AMA and a number of other sources concluded that aggressive malpractice reform would result in annual savings of about $8 billion.\textsuperscript{37}

Unnecessary physician services. Some observers have argued that the increase in physician spending has resulted not from increased demand for expensive and complex new services, but rather from the growth in inappropriate services stimulated by an increased supply of physicians. This argument is contradicted by HMO experience; despite direct incentives to limit physician services, the growth in per capita demand for physicians has matched that of the fee-for-service sector since the early 1950s.\textsuperscript{38} Unpublished data on Kaiser Permanente plans in northern and southern California confirm that this trend has persisted in recent years, showing that growth in the number of physicians per enrollee exceeded growth in per capita physician supply between 1984 and 1992.\textsuperscript{39} Because this increase in demand occurred in settings where there are clear incentives to do less rather than more, induced demand for unnecessary care cannot be held responsible for the growth in service provision. Nevertheless, for the purposes of this analysis we assume that as much as 5 percent of physician revenues can be eliminated through reductions in unnecessary care and in fraudulent billing of services (for example, through physician profiling systems).\textsuperscript{40} This assumption translates into a savings of $8.6 billion.

Total potential efficiency savings in the physician sector. Efficiency savings in the physician sector are unlikely to exceed $27 billion (Exhibit 1);
spread evenly between 1994 and 2000, such a savings would reduce the rise in spending on physician services by about 1.7 percentage points annually, from 6.5 to 4.8 percent (Exhibit 2).

**Retail prescription drugs.** Increased expenditures on prescription drugs—some 5.8 percent annually between 1981 and 1991—have resulted from a combination of growth in prices and the emergence of new drugs. Some industry experts have attributed half of the rise to the diffusion of new drugs. The future promises more of the same, as major advances in cellular and molecular biology will lead to a wave of new treatments for serious diseases such as cancer, rheumatoid arthritis, and diabetes. In the absence of controls on the price of existing pharmaceuticals or impediments to the development or diffusion of new drugs, we project that the rise in costs will equal or exceed the historical rate of growth.

**Potential for pharmaceutical efficiency improvement.** The Office of Technology Assessment (OTA) estimated that pharmaceutical firms generated “excess returns” of 2 to 3 percent per year between 1976 and 1987. This comparison was made relative to other industries, after adjusting for the inherent riskiness of drug development. Eliminating 3 percent of the $43 billion that we estimate will be spent on retail pharmaceuticals in 1994 would result in savings of about $1.3 billion.

**Overall efficiency savings and effect on rising costs.** Our analysis indicates that total potential savings in the acute care sector are unlikely to exceed $72 billion. These savings, if achieved gradually between 1994 and 2000, would only slow the rate of increase from about 6.5 percent to 5 percent annually. We believe that this estimate is robust, first, because we have used upper-bound estimates of potential savings, and second, because it is unlikely that in the real world of implementing regulatory programs the full savings will be achieved. Moreover, even if they are achieved, some of the savings inevitably will be offset by a variety of administrative costs (such as the costs of ensuring compliance) not considered in our analysis.

The net savings, whatever they may be, will be further offset by the expansion of insurance coverage. Estimates of the costs of covering the uninsured vary, but we have taken the most conservatively small figure—some $27 billion in 1994 ($17 billion for the hospital, $9 billion in the physician sector, and $1 billion in the prescription pharmaceutical sector). Such an expenditure, spread between 1994 and 2000, would add about 0.5 percentage points annually and would raise the projected increase in costs to about 5.5 percent annually between 1994 and 2000.
costs by more than 1.5 percentage points annually between 1994 and 2000, or one percentage point if there is an expansion of insurance coverage. Additional and more stringent measures therefore will be required to achieve the substantial further reductions proposed by the Clinton administration. From the following discussion it will be apparent that any such measures, short of rationing beneficial services, are not likely to solve the problem of rising acute care costs between 1994 and 2000.

Developing cost-saving technology. Some portion of the increase in costs due to technology may be restrained by devices or drugs that can accomplish a given task at lower cost. But unless fiscal constraints are severe enough to discourage innovation, the flood of new technologies is likely to overwhelm any savings resulting from a new concern for cost-effectiveness over the next decade. It is, of course, theoretically possible that new insights into the nature of disease will lead to cost reductions. But such a happy prospect seems far more distant than the year 2000 and should not be counted on as a cost containment mechanism. It seems far more likely that between 1994 and 2000 many new treatments and new imaging techniques will lead chiefly to incremental gains in the management of major diseases. Moreover, as in the case of acquired immunodeficiency syndrome (AIDS), treatment may extend life instead of curing the disease, thus adding substantially to costs. Even some less expensive surgical procedures, such as laparoscopy and arthroscopy, are likely to add to costs; because such procedures reduce risks and pain, they open the door to a larger case volume.

Freezing or cutting physician income. As many policymakers have suggested, one way to reduce spending on physician services would be to freeze or cut physician income. One strategy would be to hold average net income of individual physicians constant for the next seven years. Even this relatively severe constraint would have only a small effect on the overall rise in physician expenditures, for two reasons: the 2.5 percent increase in physician supply, and the continuous rise in practice expenses that must be accommodated. The net effect of holding physician income constant thus would be an average annual increase in expenditures of about 5 percent annually. To hold the increase in real aggregate expenditures constant at 2.5 percent annually between 1994 and 2000, individual net physician income would have to be reduced by about 20 percent.

The negative consequences of such limits on physician income would depend on how the constraints are imposed. Price controls would encourage physicians to spend less time with patients and increase their volume, as observed in reaction to Medicare’s resource-based relative value scale (RBRVS). Limits on total income in a given year might lead physicians to take a vacation from their practice once they had reached the billing cap, a
phenomenon observed for some time under a similar system in Canada. Cutting the size of fees after a physician reaches some predetermined earnings figure might have a lesser effect on behavior but undoubtedly would discourage physicians from maintaining a full workload. Limiting the number of specialists also might control expensive care but might limit patients’ access to complex services.

**Limiting the rise in pharmaceutical prices.** Pharmaceutical manufacturers’ proposals to forgo increases in the prices of existing drugs might appear to go a long way toward slowing the rise in drug spending because half of the 5.8 percent increase in pharmaceutical revenues has been attributed to such increases. However, even if such restraints are maintained, real increases in expenditures still will exceed three percentage points annually; rapid advances in drug development, particularly biotechnology, are likely to accelerate diffusion of expensive, valuable new drugs. Furthermore, to the extent that marginal improvements in existing agents are treated as new drugs, further cost increases can be expected.

If pharmaceutical costs continued to rise substantially faster than gross domestic product (GDP), government could intervene through targeted taxes on profits or limits on the prices of new or existing drugs. Such constraints almost certainly would discourage innovation and the introduction of new agents. Unfortunately, even the most draconian constraints also will have, at most, a minor effect on the total rise in acute care costs. Retail pharmaceutical spending accounts for only 8 percent of acute care costs, and slowing the rise in spending to 2.5 percent annually would lower the overall rise in acute care costs by only 0.25 percentage points.

**Concluding Comments**

Eliminating all inefficiencies from the acute care system between 1994 and 2000, a utopian goal, would only slow the real rise in costs by 1.5 percentage points annually. This would slow the projected rise in costs from 6.5 percent to 5 percent annually. Assuming that the uninsured gain expanded access to the acute care system, some of the projected efficiency gains would be offset, and we estimate that costs would rise at about 5.5 percent annually. If regulators succeeded in freezing individual net physician income and preventing increases in the price of existing drugs, the rise might be slowed by another 0.5 percent. This rate of increase would still be more than double the estimated 2 percent average annual increase in real acute care spending that would be allowed between 1996 and 1998 under the Clinton administration’s Health Security Act and well above the goal for the period 1998-2000.

We recognize the impossibility of estimating potential administrative
savings or any other gains in efficiency with precision. As emphasized throughout the paper, our goal has not been to forecast precisely future increases in costs, but rather to obtain a rough sense of potential efficiency savings using what we consider to be upper-bound estimates of such savings. In making these estimates, we also have made the overly optimistic assumption that the full theoretical savings could be achieved without any implementation costs or other offsetting expenditures.

Our conclusion that efficiency savings will not be sufficient to contain costs to the levels desired by the Clinton administration holds true even if potential savings prove to be much larger than we have estimated. To illustrate the sensitivity of our calculations, we estimate the effect of increasing/decreasing the total savings by some $40 billion (that is, more than half of total savings). This defines a range of potential savings from a high of $110 billion to a low of $30 billion. Such savings change our projections by about one percentage point to define a range of cost increases from 4.7 percent to 6.5 percent (assuming coverage for the uninsured).

Government could, of course, limit the rise in costs by discouraging valuable but expensive innovation. Strict budget limits or limits on premium increases would curtail funds available for capital equipment and the purchase of expensive new drugs and thus would discourage investment in research and development. Controls on prices of new drugs would have the same effect. Indeed, even the threat of price controls on new drugs is said by industry observers to have already slowed the flow of venture capital to biotechnology companies. Coverage decisions also might serve to limit the market demand for expensive new devices and procedures and thus further discourage innovation. Whether it is desirable to limit advances in medicine by curtailing innovation or other silent rationing is an important social and analytic question.

Finally, we believe that our analysis has value beyond our specific numeric savings estimates. The analytic framework that we have presented should be of use even to those who disagree with the specific values in our projections. Critics should find our analytic framework useful in calculating their own maximum potential efficiency savings.

This research was supported in part by a grant from The Robert Wood Johnson Foundation and from G.D. Searle and Company. We thank Henry Aaron of The Brookings Institution, Andrew Dreyfus of the Massachusetts Hospital Association, and members of the Lewin-VHI staff for helpful comments. We also thank Kellie Mitra of Lewin-VHI for excellent research assistance.
NOTES

5. Ibid.
9. Ibid.
12. Ibid.
17. Wickizer et al., “Have Hospital Inpatient Cost Containment Programs Contributed to the Growth in Outpatient Expenditures?,” and Schwartz and Mendelson, “Hospital Cost Containment in the 1980s.”
18. Pauly and Wilson, “Hospital Output Forecasts and the Cost of Empty Hospital Beds.”


20. To update the calculation of potential savings from closing hospitals, as carried out by Schwartz and Joskow, we need estimates of the number of beds to be eliminated, the current cost of treating patients in the hospital to be closed, and the marginal cost of treating these patients elsewhere. We have employed assumptions throughout that will tend to overestimate potential savings. Schwartz and Joskow estimated that 75,000 beds could be closed in 1980; because census has dropped by some ten percentage points since that time, we assume that 150,000 beds might be closed in 1991. We estimate that average annual cost per bed in hospitals likely to be closed is about $175,000. Finally, based on the economic literature describing hospital costs, at least 75 percent of these costs will be incurred by the health system, assuming that patients are treated elsewhere. We conclude that no more than $6.6 billion might be saved through eliminating low-occupancy hospitals. For an alternative calculation yielding roughly similar results, see M. Gaynor and G.F. Anderson, “Uncertain Demand, the Structure of Hospital Costs, and the Cost of Empty Hospital Beds,” *National Bureau of Economic Research Working Paper* 4460 (Stanford, Calif.: NBER, September 1993).

21. Pauly and Wilson, “Hospital Output Forecasts and the Cost of Empty Hospital Beds.”


28. Wickizer et al., “Have Hospital Inpatient Cost Containment Programs Contributed to the Growth in Outpatient Expenditures?,” Schwartz and Mendelson, “Hospital Cost Containment in the 1980s;” and Pauly and Wilson, “Hospital Output Forecasts and the Cost of Empty Hospital Beds.”


32. Gonzalez and Emmons, *Socioeconomic Characteristics of Medical Practice*.

33. The $31 billion estimate is from Woolhandler and Himmelstein, “The Deteriorating Administrative Efficiency of the U.S. Health Care System.” The $46 billion figure is from CBO, *Universal Health insurance Coverage using Medicare’s Payment Rates*. 
40. A report by the General Accounting Office (GAO) released in May 1992 reported that 10 percent of all health spending can be accounted for by fraud and abuse. The report provides no estimate of the actual cost of fraud, nor is it clear whether efforts to reduce fraud will result in substantial savings. The number cited by the GAO is also misleading because it includes unnecessary care, a component of expenditures ordinarily considered separately from fraud and abuse. As noted in the text, we have previously taken into account the possible savings from eliminating inappropriate referrals to laboratories that are physician owned.
47. The Health Security Act proposes to hold the rise in spending to a “general health care inflation factor” equal to the increase in the Consumer Price Index (a measure of overall economywide inflation), the average annual percentage change in population (typically less than one percentage point annually), and an added factor (decreases from 1.5 percentage points in 1996 to zero in 1999).