A Regulatory Paradox: How a Governmental Attempt to Stabilize Hospital Finances Led to More Uninsured, Restricted Health Benefits, Reduced Hospitalizations, and Weakened Hospitals

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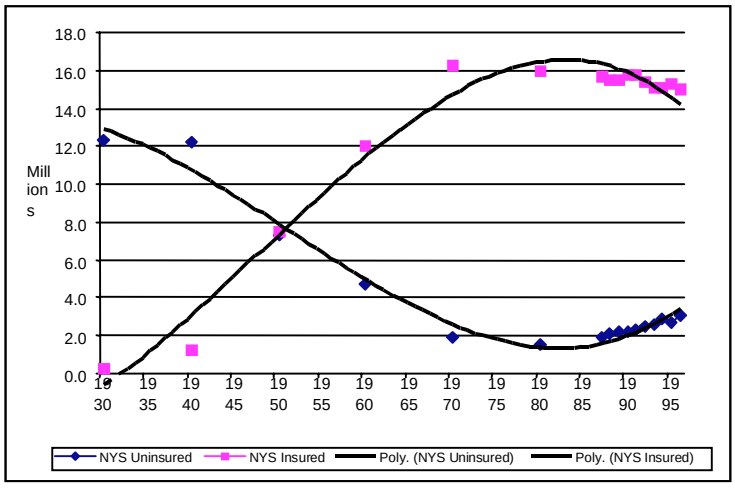
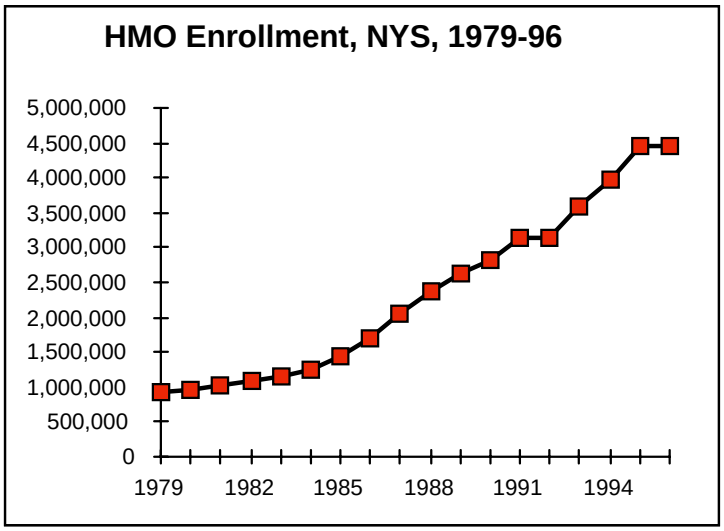
Background: Key Patterns

In the US, private health insurance emerged out of the Great Depression. Coverage grew rapidly during World War II and through the 1950s. It then began to stabilize until the enactment of the Medicare program to provide coverage for the elderly and the Medicaid program to (partially) provide coverage for the poor (See Graph 1.) generated a further increase. However, sometime in the late 1970s or early 1980s, the growth of health insurance ended, then reversed, and the number and proportion of people uninsured began to rise. During the same period health maintenance organizations (HMOs) and other types of managed care plans emerged and began to grow, substituting for traditional service and indemnity plans. (See Graph 2.)

Graph 1: Health Insurance Status, NYS, 1930-1996, With Trends

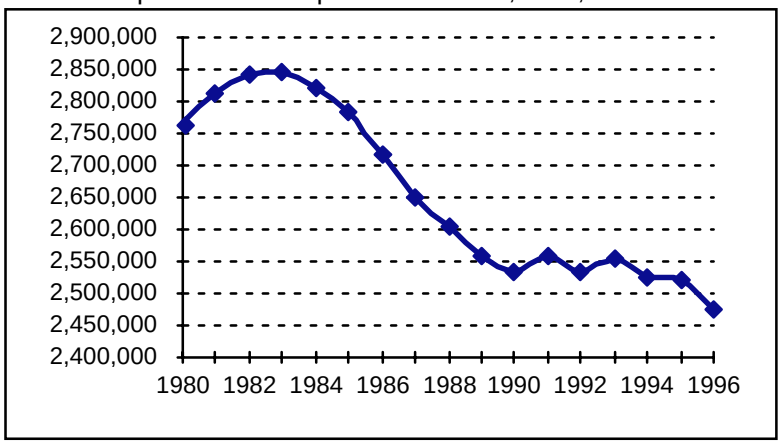


Graph 2



Hospital inpatient use grew along with health insurance and peaked in 1983. It has been declining fairly steadily since. (See Graph 3.)

Graph 3: Total Hospital Admissions, NYS, 1980-96



New York State is a particularly useful jurisdiction in which to study the interactions between parts of the healthcare system. It was the first state to create special legal status for Blue Cross and Blue Shield Plans.[1] The first two large Blue Cross plans were established there by hospitals, seeking to stabilize their cash flow during the Depression. Although New York was also the home of one of the first health maintenance organizations, generally they started later and initially grew more slowly than in many other states. It is also the home of an extraordinarily large and complex medical system, including the nations largest concentration of academic medical centers and teaching hospitals.. New York has the nation's largest and most expensive Medicaid program. Especially important to this analysis, from the late 1960s onward, New York had one of the most comprehensive, detailed, and aggressive health regulatory systems.

Background: New York's Regulatory "Solution"

In the late 1960s, in response to rising healthcare costs, New York embarked on an extended and increasingly detailed regulatory approach to controlling institutional healthcare costs. It began with the State's regulating hospital prices for Medicaid and Blue Cross and with establishment of a "certificate of need" program which required the State Health Department to determine whether there was a "public need" for a service and whether it would be "financially feasible" before granting a license for establishment or expansion of institutional health care services. These requirements did not apply to private physicians or their practices.

The method of regulating prices was based on comparing a hospital's per patient costs per day to those of other hospitals for a past year, screening out costs too far above the average, and then inflating the result to be used as the price in a future year. In 1983, State regulation was extended to all payers, including commercial insurers and Medicare. In 1986, regulation of Medicare prices reverted to the federal government. In 1988, following the federal lead, New York switched the unit of price regulation from a per diem to a per case basis. That is, the State set a separate price for each of over 200 hospitals for each of nearly 500 Diagnosis Related Groups (DRGs), for each of several classes of payers. The method for calculating the prices was quite complex. The law and regulation comprised hundreds of pages and there were only a handful of technical experts who fully understood all of its complexities and nuances.[2]

A seemingly technical, but profoundly important part of the price-setting method was the determination of the "trend factor," the rate used to inflate costs from a past to future year to determine regulated prices. From the late 1970's onward, the statute required a panel of economists to determine this factor based on a market basket of hospital input costs. No consideration was to be given to the financial abilities of insurers, government, employers, or the public to absorb price increases. As a practical matter, when combined with the regulatory behaviors described below, what this mechanism did was ensure that prices always rose. Since a percentage inflator was used, by law hospital prices were guaranteed to grow exponentially.

By the late 1970s, finances of New York hospitals were among the weakest in the country and during the 1980s and early 1990s hospital financial concerns were regularly among the most significant State policy issues. Within the context of the regulatory infrastructure, repeated attempts were made to remedy this.

At the same time, as early as 1986, state policy makers were aware of the rise in the number and proportion of the uninsured.[3] They had previously been aware of the immediate effects of the uninsured on hospital finances and had created a "Bad Debt/Charity Care Pool," subsidized through increased hospital prices.

However, it was only in the mid 1990s that policy makers also became aware that, despite weak hospital finances, hospital and total healthcare costs in New York were relatively high. By 1990, hospital costs per New York resident were higher than those in every other state except Massachusetts.[4] Moreover, while their margins were relatively low, New York's hospital costs were among the highest in the nation and they were just as inefficient as hospitals outside of New York, leading to questions regarding the effectiveness of the regulatory system.[5]

Effective January 1, 1997, New York abandoned hospital price regulation for private sector payers. However, it maintained: price regulation for Medicaid, the certificate of need laws, and cross-subsidization of bad debt and charity care and certain other costs.

Analysis: Dynamics of Health Insurance and Health Care Cost Growth

By its very nature, health insurance reduces the effective price paid by a patient for medical services and therefore increases the quantity of services demanded. Since the patient does not pay the full price of the service (and, in some cases, does not pay at all), the patient consumes more service than would otherwise be the case. Moreover, the service provider is able to charge a higher price than would otherwise be the case.[6]

Both the patient and the medical service provider are able to influence the degree of service use and the provider is able to influence the price. In the insurance realm, "moral hazard," the ability of the insured to influence the risk, is generally grounds for not insuring against the possibility of an event. Because of their fear of moral hazard, insurers did not consider need for medical care an insurable risk until well into this century. In the US, it was not the decision of an insurer to take this risk that started the first health insurance plan, it was the decision of hospitals to create a plan to stabilize cash flow during the Great Depression.

A static view of insurance financing of healthcare suggests higher consumption and prices, but does not go far enough. A dynamic view presents us with a self-reinforcing system of continually increasing prices and use. By its very nature, health insurance leads to healthcare cost growth and the seeds of its own decline. Diagram 1 depicts two reinforcing loops which convey this. Loop R1 shows

the reinforcing effects on service price and R2 shows the reinforcing effects on service use. There is also some anecdotal evidence that insurers not only did not resist these cycles, they embraced them. Until their customers began to resist, it was in their interest for these cycles to continue because it meant that the health insurance industry also grew. This was particularly true of plans that were paid a percentage of claims. The greater the healthcare spending, the more they made. This loop is not depicted in the diagram.

The insurance cycles described above were reinforced by other factors, most notably the "medical arms race." [7] But at the time, what enabled the arms race was the relative insensitivity of payers to these rising costs. However, as healthcare costs and the associated insurance premiums rose, payers became more sensitive.

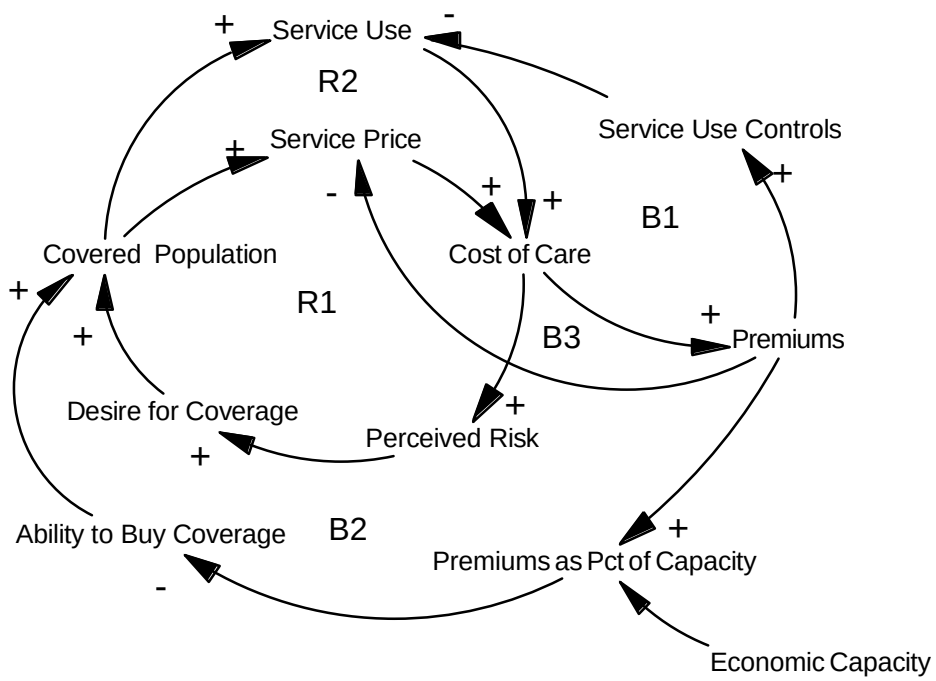
Diagram 1 depicts three balancing loops. Loop B1 shows the effects of premiums on service use controls. For many years, attempts to control service use were minimal or perfunctory. However, as premiums rose, the need to control costs also grew and this led to the implementation of utilization control systems and ultimately to the emergence of managed care plans and programs. For the sake of simplicity, Graph 4 does not distinguish between utilization controls implemented by traditional plans and managed care plans.

Balancing Loop B2 shows the effect of premiums (as a percent of economic capacity) on the ability to buy coverage. It impairs the inflow into covered status and accelerates the outflow. There has been much discussion of the changing nature of the economy as the explanation for the loss of health insurance coverage. For example,

service workers are less likely to have coverage than manufacturing workers; the service sector is growing and manufacturing is declining. In fact, those explanations tend to be correlational rather than causal and this loop alone is sufficient to explain loss of coverage. [8]

Balancing Loop B3 shows the effects of premiums on service prices. As premiums increase, the pressure to restrict price growth also increases and prices are reduced. However, as will be discussed below, this did not work effectively in New York's regulatory system. Over the long term, the regulatory system neutralized this loop.

Diagram 1



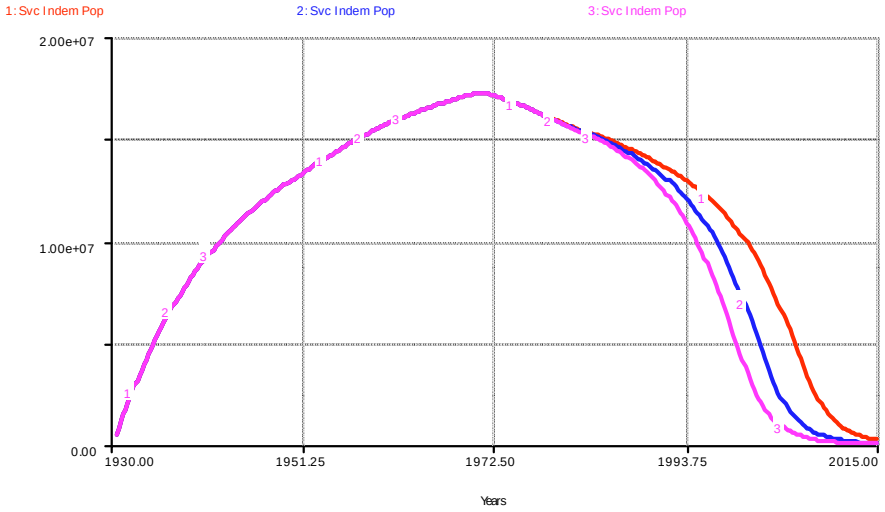
Although the relationships are hidden in the complexity of the system, there were (and are) delayed but substantial effects:

- Increased payments to hospitals, whether from price or service use increases, increase cost to payers.
- In return for premiums (or taxes for government sponsored coverage), insurers provide health insurance coverage. Thus, increased costs to payers means increased premiums paid by employers, individuals, and families to insurers and increased taxes for public programs.
- Once the balancing loops overpowered the reinforcing loops, the greater the increase in health care costs compared to growth in economic capacity, the more people lost coverage, particularly traditional coverage. Increased premiums lead employers to purchase more restricted health insurance, to purchase for fewer of their employees and dependents, government restricting Medicaid eligibility standards and fewer families purchasing insurance directly. Thus, more people moved and were moved into managed care.

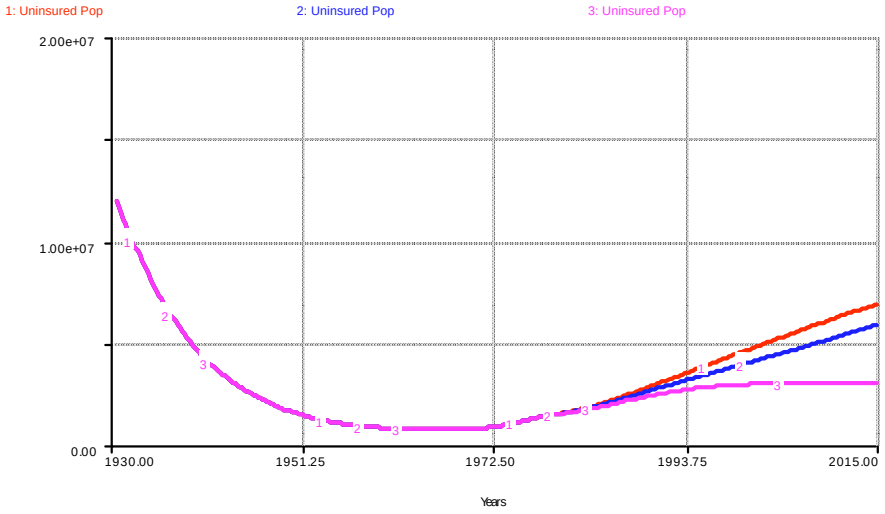
- The more coverage is restricted or dropped, the fewer hospital admissions are paid for. People who are uninsured are much less likely to be hospitalized.[9] Since uninsured people are less likely to be hospitalized, increasing numbers of uninsured contribute to an overall decline in the number of hospital admissions. In those cases where uninsured people are hospitalized, they are much less likely to pay or pay the full amount than they were when insured. In turn, this increases bad debt and the need for charity care which leads to further price and premium increases.
- For those covered, the greater the increase in health care costs, the more that coverage is restricted and the fewer health services are paid for. As a practical matter, this results in increased efforts to reduce utilization through higher co-payments and deductibles, more rigorous utilization review, benefit reduction, higher employee premium shares and accelerated movement into managed care, the essence of which is to control the use of services.
- It is noteworthy that the peak number of hospital admissions in New York was the first year of comprehensive price regulation. The subsequent decline was largely concentrated among those with traditional coverage.
- As utilization falls, hospital revenues fall and hospital financial status weakens. During the past 15-20 years weakened financial status led to increased lobbying and increased prices.

The three scenarios shown in Graphs 4-6 show the effects of this system on enrollment in traditional (service and indemnity) coverage plans, managed care plans, and those with no coverage, the uninsured. The scenarios differ in the relative growth rates in prices paid for health services by traditional and managed care plans and in the relation of their premium growth to economic capacity. The traditional plan, after a long period of dominance is moving from decline to collapse. It is being replaced with managed care, which after a period of emergence has gone through a period of explosive growth. However, managed care is not growing as quickly as the traditional plans are dying and thus the number of uninsured is growing.

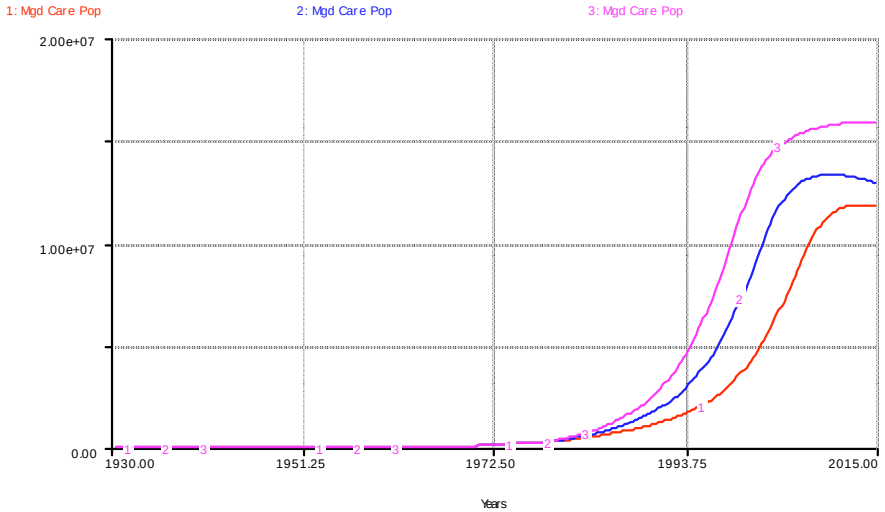
Graph 4: Three Scenarios for Indemnity (Traditional) Insurance Plans



Graph 5: Three Scenarios for the Uninsured Population

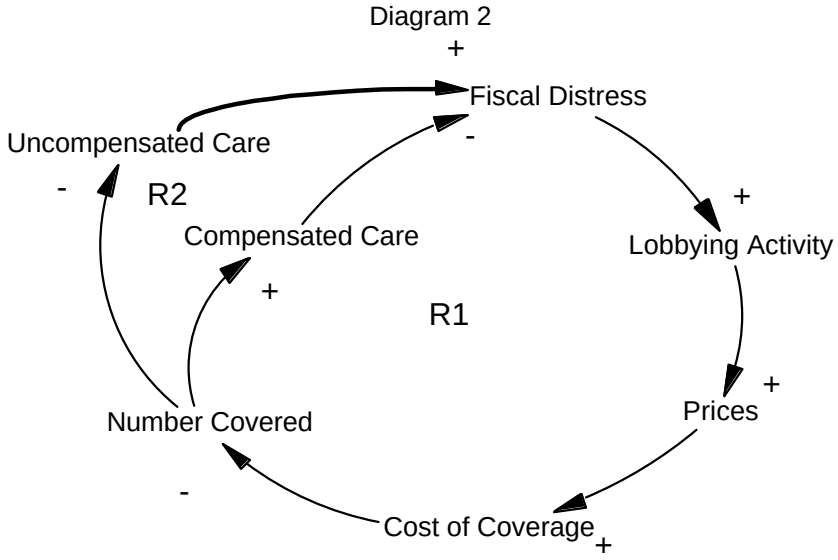


Graph 6: Three Scenarios for Managed Care Plans



Analysis: "Regulatory Loops"

Numerous studies have been conducted comparing hospital cost growth in highly regulated states to those in non-regulated states. The results were mixed or ambiguous, but today, only one state, Maryland, continues to regulate hospital prices and there is increasing dissatisfaction with that system. The economic literature is replete with discussions of "regulatory capture," the eventual control of the regulatory process by the regulated entities. In this case, regulatory capture produced a "fix that failed." Because the primary regulatory tool was price control, and because the insurance relationship masked and delayed the effect of price increases, the more that hospitals experienced financial distress, the more they lobbied for price increases. The more that prices were increased, the more insurance premiums rose. The more that premiums rose, the more that insurers attempted to control utilization and the more than people lost coverage. *The net effect was to neutralize Balancing Loop, B3 (showing the relationship between premiums and service prices) in Diagram 1 and replace it with the reinforcing effects depicted in Diagram 2.*



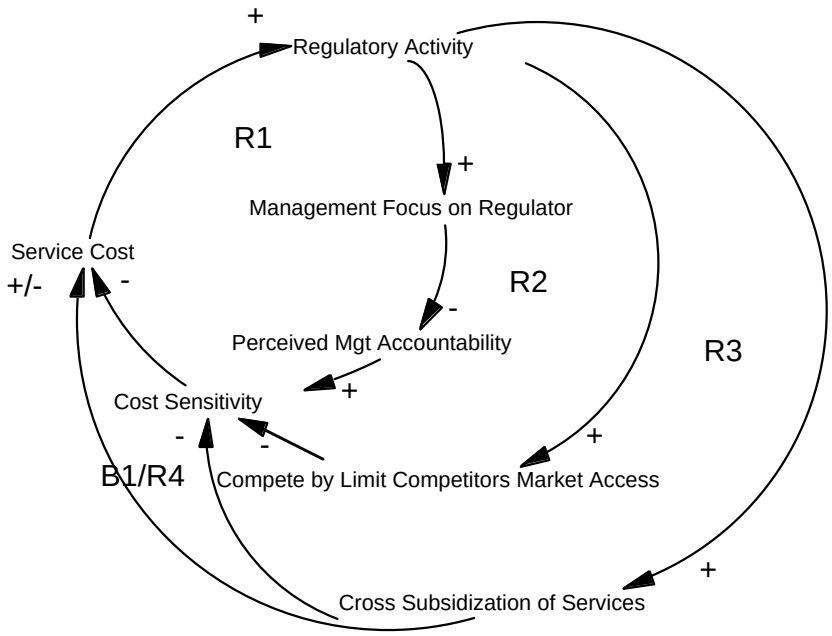
There were also other, more subtle, effects of the regulatory system. In all economic sectors, management tends to behave differently when regulated.[10] In regulated industries, management tends to:

- Focus on the regulator as customer rather than the ultimate customer, in this case the patient and the community.
- Often perceive a lack of accountability since final authority for many decisions is vested in the regulatory agency.
- Allow and even encourage cross subsidization of products and show a lack of cost sensitivity since they become part of the rate base.
- Emphasize the process of decision making rather than the outcome.
- Compete with other organizations by attempting to limit their access to the market rather than by selling a superior or less expensive product. This is an important effect of the certificate of need system.

These effects are presented in Diagram 3. This structure is not explicitly part of the model. However, its effects of the price setting behavior are captured implicitly in the

price inflator rates which are built into the model.[11] Loop B1/R4 is described as such in this diagram because some services are subsidized and others subsidize.

Diagram 3



Observations and Conclusions

The most important conclusion was that continued increases in healthcare costs generally, and hospital prices specifically at rates greater than rates of economic growth could not be sustained indefinitely. This seems self-evident after the fact (and probably before hand to a System Dynamicist), but it was far from obvious in the policy making environment. Continued growth in hospital prices at rates greater than growth in economic capacity forced accelerated movement into managed care and accelerated loss of health insurance. As premiums absorbed an increasing share of carrying capacity, those responsible for paying premiums created backpressure (balancing loops), by forcing changes that reduced utilization, by forcing reductions in spending elsewhere in healthcare, and ultimately, when no other options were available, by dropping coverage entirely.

Over the long term, rather than controlling medical cost growth, New York's price regulatory system made the problem worse. Because the combination of the regulatory infrastructure and the surrounding politics prevented price stabilization, much less reduction, the only outlets for the backpressure were elsewhere, more utilization control, more loss of coverage, and more restrictions on non-hospital services. Attempting to remedy weak hospital finances through a price regulatory system that increased prices was a classic "fix that failed." Subsequent to de-regulation, the same will be true for hospitals that attempt to improve their financial status with voluntary price increases.

In the aggregate, price controls could theoretically hold price increases to rates less than growth in the economic capacity of those paying for the system. However, price control systems are subject to "regulatory capture" by the regulated industry. Ironically, because of its structure, New York's system required prices to grow exponentially with its effects on coverage. As the State regulated private payments only for hospital services, payers looking for price reductions focused their attention on other services, most notably physician services. Although it was not part of the model, this analysis suggests that greater price increases under the regulatory system created pressures for tighter fee

controls on physician services. This may partially explain why per capita expenditures on physician services in New York were less than the national average.[12] Ultimately policymakers in New York concluded that politically they could not sustain rates of price increases at or below rates of growth in economic capacity and therefore could not prevent the downstream effects described above. This was the fundamental reason for de-regulation.

The dynamic interactions between healthcare service use, pricing and health insurance described above is generalizable to what is happening in medical cost growth throughout the US. It explains the simultaneous growth of efforts to control service use through utilization control, the growth of managed care and the growth in the uninsured population, along with the demise of traditional health insurance plans. However, if managed care plans are unable to control cost growth, then their aggregate enrollment will not reach the same peak that traditional insurance once attained. This suggests that after they have completely replaced traditional health insurers, managed care plans will begin to lose enrollment, and will become even more price competitive than they are today and they will be forced to take additional, and probably even more controversial, steps to control costs. The traditional health insurance plan, one which lacks control of service use and prices is likely doomed. The only scenario in which it might have survived is one in which healthcare cost growth is consistently less than growth in the rest of the economy. However, it is probably too late even in that case.

A corollary to these observations is that were the medical system to hold price increases to relatively low levels, it would reduce other pressures on itself. However, each part of the system must do this and must also restrain growth in service use, a much more difficult proposition. Health insurance itself creates open (or at least semi-open) access resources, and a classic “dilemma of the common.” There are indications that the dynamics of open access resources (the dilemma of the common) are subject to repeated boom and bust economic cycles.[13] If health insurance is correctly characterized as an open access resource, then we may expect similar system behavior. Absent healthcare cost stabilization, the number of uninsured will continue to rise. Given the nature of health insurance, spontaneous self-control by the healthcare system is unlikely. If health insurance is correctly characterized as an open access resource, then we may expect similar system behavior. These will be explored in future work.

[1] James R. Tallon, Jr. and John W. Rodat, Health Insurance, Public Policy in New York, a Report of the Subcommittee on Health Insurance, Council on Health Care Financing, December 31, 1984

[2] The law itself ran about 200 pages and even included mathematical formulae in equation form.

[3] Tallon and Rodat, and John W. Rodat, New Yorkers Are Losing Their Health Insurance, March 19, 1986.

[4] John W. Rodat, "Hospital Reimbursement Revisited," Empire State Report, March, 1994.

[5] Donald F. Vitaliano and Mark Toren, "Hospital Cost and Efficiency in a Regime of Stringent Regulation," Eastern Economic Journal, Vol. 22, No. 2, Spring 1996.

[6] Paul J. Feldstein, PhD, Health Care Economics, Third Edition, John Wiley & Sons, New York, 1988; Sherman Folland, Allen C. Goodman, and Miron Stano, The Economics of Health and Health Care, Second Edition, Prentice-Hall, Upper Saddle River, NJ, 1997.

[7] "The Medical Arms Race," The Systems Thinker, Pegasus Communications, Cambridge, MA, November, 1991.

[8] John F. Sheils, Paul Hogan, and Nikolay Manolov, Ph.D., Exploring the Determinants of Employer Health Insurance Coverage, A Report for the AFL-CIO, The Lewin Group, January 20, 1998.

[9] John W. Rodat, and Barbara Caress, Risking the Future, Low Income People in New York Without Health Insurance: Problems and Proposed Solutions, August, 17, 1987, Hospital Trustees of New York State

[10] Thomas S. Robertson, Scott Ward, and William M. Caldwell, IV, "Deregulation: Surviving the Transition," The Harvard Business Review,(July-August, 1982), p.20.

[11] Experience suggests that the a similar pattern applies to regulatory oversight of the quality of care.

[12] It certainly helps to explain why physician fees under Medicaid in New York are so low. For the past 20 years, New York's Medicaid physician fees have been among the country's lowest. Not surprisingly, few private physicians in New York participate in its Medicaid program.

[13] Matthias Ruth and Bruce Hannon, Modeling Dynamic Economic Systems, Springer-Verlag, New York, 1997, pp. 233-245.