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REGULATING HOSPITAL FACILITIES CONSTRUCTION: THE ILLINOIS EXPERIENCE, 1975-79

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In 1974 Illinois became the twenty-fourth state to enact legislation requiring hospitals and other health facilities to acquire certificates of need (CON) before proceeding with large capital projects or significantly changing services. This act created the Illinois Health Facilities Planning Board (IHFPB) whose thirteen citizen members are appointed by the governor. The board has the authority to review and approve all construction and modification projects costing in excess of \$100,000, all substantial changes in scope of services or number of beds, and all discontinuations of facilities or services. According to the Illinois Revised Statutes, Illinois lawmakers hoped that the CON program would "reverse the trends of increasing costs of health care resulting from unnecessary construction," while at the same time "guarantee(ing) the availability of quality health care to the general public."

The rationale for government regulation of capital in the health care industry is based on the judgment that existing incentives for capital spending have generated excessive investments in capacity. This market response is due, in part, to the unique cost-reimbursement method of payment for hospital and nursing home services which guarantees that most costs accrued in the provision of services, including capital costs, will be recovered. The payment problem is compounded by pressure from physicians and the general public to raise the "quality" of medical services by the acquisition of the most advanced medical equipment or the construction of the most modern medical facilities. Patient demand for the "best care available" is encouraged by increasingly broad insurance coverage which insulates patients from the true cost of that care. The most recent coverage figures indicate that in 1979, 187 million people, or 85 percent of the civilian population, had insurance protection for hospital expenses. This figure had grown from 159 million in 1970. The combination of such demand and supply-side factors had created a perverse market for medical care in which the availability of medical equipment and facilities largely guarantees their utilization (a phenomenon called Roemer's Law). This situation was the most

important reason for the development of a certificate of need program in Illinois and is one of the main justifications given for its continuation.

In the present political climate, reform or elimination of the certificate of need program is a distinct possibility. At the national level, the deregulatory movement has led to attacks on the program by officials in the Reagan administration, who claim it is ineffective in containing capital spending and impedes competition in the industry. In the 1980-81 session of the Illinois General Assembly, legislation was introduced that would have abolished the program. Although unsuccessful, the proposed bill reflects the controversy surrounding the program within the state. As the debate continues, at both the national and state level, it is a good time to examine the experience of the Illinois program. This article does that by analyzing the decisions made by the certificate of need program on hospital proposals from 1975 through 1979 and by examining some evidence of the program's impact. In the first section, we present an overall summary of the program's approval rate in terms of the number and percent of projects approved, withdrawn, denied, and modified; in the next section, we describe the types of projects which the program favors; and in the final section, we discuss some evidence of the program's impact on hospital bed supplies. The complex process by which CON decisions are reached in the state is not addressed in this paper so that we may focus on the results of the process and its possible impacts.

THE RATE OF PROJECT APPROVALS

Table 1 presents the disposition of hospital certificate of need applications by year for the study period 1975-79. For the entire period, the board received 1,059 applications totalling nearly \$2.7 billion. This figure represents proposed capital spending on all hospital projects that exceeded the threshold for project review (\$100,000 from 1975 to July 1979 or \$150,000 after July 1979). The number of proposed projects and their costs varied from year to year. There is no discernible pattern in the annual fluctuations, but the disproportionately large amount of money and number of projects that appeared in the first year of the program probably reflects hospitals' anticipation of more stringent controls in future years. This anticipatory effect has been noted in many states as an implementation problem of CON. It suggests that the program's effectiveness in containing capital spending will be dimin-

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Table 1
SUMMARY OF CON DECISIONS: PROJECTS SUBMITTED 1975-79*

Year	Total Applications		Approved		Withdrawn		Denied		Under Review									
	No.	Total Cost	No.	Per-cent	Total Cost	Per-cent	Total Cost	Per-cent	Total Cost	Per-cent								
1975	226	\$932,442	210	92.9	\$829,026	88.9	13	5.6	\$83,362	8.9	3	1.3	\$20,053	2.2	0	0	\$ 0	0
1976	172	230,567	161	93.6	224,508	97.4	10	5.8	4,575	2.0	1	.6	1,484	.6	0	0	0	0
1977	213	527,254	184	86.4	410,260	77.8	27	12.7	99,796	18.9	1	.5	0	0	1	.5	17,198	3.3
1978	174	327,961	154	88.5	306,015	93.3	20	11.5	21,947	6.7	0	0	0	0	0	0	0	0
1979	274	679,357	241	88.0	614,309	90.4	26	9.5	37,746	5.6	1	.4	20	0	6	2.2	27,282	4.0
Total	1,059	\$2,697,581	950	89.7	\$2,384,118	88.4	96	9.1	\$247,426	9.2	6	.6	\$21,557	.8	7	.7	\$44,480	1.6

* Dollar amounts are in thousands of dollars

ished during the early years as providers attempt to gain approvals before the program is fully implemented. Elsewhere, we have described the anticipatory effects that occurred prior to changes in the regulations especially prior to the major changes in July 1979. These latter anticipatory efforts did not greatly increase spending but shifted the focus of investment. Thus, this anticipatory effort is not apparent from the aggregate figures. Fluctuations in other years probably reflect normal investment cycles in the industry which are not influenced by the certificate of need process. These investment cycles are determined by numerous factors including the age of the facility, the year when the hospital received Hill-Burton funds, Medicare and Medicaid regulations, and the patterns of technological innovation.

The board approved almost 90 percent of all proposed projects at a total cost of nearly \$2.4 billion. The approval rate also varies somewhat from year to year, but there is no discernible time trend despite many changes in the certificate of need law, board membership, review criteria, and the review process. The overall high approval rate indicates the board's unwillingness to disapprove projects. Of those projects not approved, most were withdrawn some time during the review process. Some projects were withdrawn because of the likelihood of their ultimate denial. Others were withdrawn for reasons that have nothing to do with the review process. Only a handful of projects that completed the review process were actually denied: the overall denial rate for the study period was less than one percent of the total applications.

The board's unwillingness to deny projects does not necessarily imply that the program has simply rubber stamped the industry's investments. An extremely tough CON program may have a 100 percent approval rate while successfully constraining capital growth by discouraging the submission of unacceptable projects or by modifying projects during the review process. If and to what extent the Illinois program is constraining capital growth in the industry, it must result from the program's deterrent effects. In other words, if we are to believe that the program is effective despite the high approval rate, we must assume that inappropriate applications are eliminated during both the pre-review and the review stages but prior to the final decision. Unfortunately, approval rate data do not capture these effects, and therefore, they are ambiguous indicators of the program's success or failure.

Illinois' high approval rate is fairly typical for all states. In a survey of twenty states conducted in 1974, Lewin and Associates observed an average approval rate of 93.7 percent of all projects and 90 percent of dollar costs proposed. The Bureau of Health Planning has reported that thirty-two states approved 100 percent of all projects submitted during the first six months of 1979 while only seven states approved less than 90 percent. Finally, for the fiscal year ending June 30, 1980, the bureau reported an average approval rate of 90 percent for all states with certificate of need programs.

It has been argued that high approval rates reflect deficiencies in the availability and application of review criteria and are, therefore, subject to decline with the maturity of the program. Indeed, many states have only recently initiated their programs and have had little time to develop plans and criteria. The implication of this assertion is that approval rates should fall over time. The data for Illinois do not support this hypothesis. The approval rate in this state has remained relatively stable over the study period, despite the fact that the program has gained considerable experience with its planning methodology and review criteria. If the program has in fact become more effective over the years, it ought to be reflected in the number of projects deterred or screened out by the review process. This number is difficult if not impossible to calculate.

In summary, the Illinois program appears to approve nearly all projects which complete the review process. This high approval rate, however, has remained fairly stable over the years and is not out of line with the experience of other states. The cost containment potential of the program apparently lies in its deterrent effects on

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Table 3
AVERAGE CHANGE IN NUMBER OF BEDS
PRE- AND POST-CON

	1971-75	1975-79
<i>Average Change in the Number of Beds (All Counties)</i>		
Total	2,297	1,880
Average	27.02	22.11
Standard error	12.61	12.96
<i>Average Change in the Number of Beds (All Counties Except Cook, DuPage, and Lake)</i>		
Total	1,100	796
Average	13.58	9.83
Standard error	4.61	7.06
<i>Average Change in the Number of Beds (Cook, DuPage, and Lake Counties)</i>		
Total	909	887
Average	303.00	295.50
Standard error	238.01	216.52

counties. In sum, the bed change data show that the overall average increase in general care beds was lower after 1975 than before, but this difference is insignificant when considering the large variability among the counties in the bed change figures.

One explanation for the inter-county variation in bed changes is the differences in the need for additional beds. Evidence on whether CON has adjusted the relationship between bed need and bed supply is provided by comparing the growth pattern of general care beds to the estimated need for such beds as projected by the State Health Plan. The most recent bed need estimates are provided in the 1977 and 1980 State Health Facilities Plans. Comparison of the two years indicates little improvement in the distribution of beds during the period.

Table 4 summarizes the number of needed beds and excess beds for four different categories identified in the plan, which covers fifty-three regions of the state. The data indicate that the number of needed beds has actually increased since 1977, as has the number of hospital service areas with shortages. At the same time, the number of excess beds has declined, albeit marginally. The number of hospital service areas with surpluses has also declined, as has the percentage of total service areas with surpluses (except in one category).

These findings suggest that the relationship between community need and hospital expansion has not been dramatically improved by the certificate of need program. Although the rate of increase in short-term general bed supplies has declined and the actual number of excess beds has declined slightly since certificates of need were instituted, there remains a gross surplus of all types of beds in most areas of the state; in some areas there is a severe shortage of beds. In its short time of existence, the CON system was apparently better able to reduce excesses than to reduce deficiencies. Undoubtedly, this is because CON provides only negative incentives and has no means to direct investments toward underserved areas.

CONCLUSION

The experience of the Illinois certificate of need program provides no simple answer to the question: Did CON achieve its goals of cost containment and access to health care? Examination of the outcome of certificate of need decisions indicates a very high approval rate, but this rate is not inconsistent with other states and does not necessarily imply that the program has been overly generous to the industry. While approving a high percentage of the proposed projects, the CON process may constrain capital spending indirectly by deterring investment plans and by negotiating modifications which reduce costs of projects. On the other hand, it appears that the program stimulated or redirected investment through anticipatory effects in the early implementation phases. It is clear that the program tends to discriminate against new facilities but to some extent this is justified by the excess supply of beds that exists in the state. The high approval of expansion projects for existing facilities, however, cannot be justified given the already existing surplus in most areas.

On the average, fewer additional beds have been added during the four years after implementation than during the four years before. The variability between counties, however, was so great as to make the average reduction statistically insignificant. Moreover, after implementation of certificate of need, increases in hospital beds apparently occurred in counties identified as having a surplus and not in counties identified as having a need for new beds. Consequently, the number of excess beds in the state has declined only marginally as have

Table 4
CORRELATION BETWEEN THE SUPPLY OF
HOSPITAL BEDS AND THEIR NEED

	1977		1980	
	Beds Needed	Excess Beds	Beds Needed	Excess Beds
<i>State</i>				
Intensive care units	98	767	82	816
Medical-surgical	641	7,719	783	7,610
Obstetrics	123	1,323	160	1,278
Pediatrics	109	1,770	114	1,414
Total	971	11,579	1,139	11,118
<i>Number of Hospital Service Areas with Shortage or Surplus Beds</i>				
Intensive care units	14	43	14	38
Medical-surgical	19	44	19	37
Obstetrics	8	56	7	54
Pediatrics	11	50	17	37
Total	52	193	57	166
<i>Percentage of Hospital Service Areas with Shortage or Surplus Beds</i>				
Intensive care units	21.9	67.2	24.6	66.7
Medical-surgical	29.7	68.8	33.3	64.9
Obstetrics	12.5	87.5	12.3	94.7
Pediatrics	17.2	78.1	29.8	64.9

hospital investment plans and its negotiations with applicants during the pre-review stage and the review process. Although there are no good measures of these effects, an examination of the types of projects approved by the program provides some insight into its cost containment potential.

THE TYPES OF PROJECTS APPROVED

Evidence from previous studies suggests that decision making on CON proposals has been uneven, creating a selective reward structure. For example, these studies indicate that certificates of need are less easily obtained for new facilities and for bed additions to existing facilities than they are for equipment purchases and modernization. An explanation for this selectivity is that bed need standards are more quickly developed and easily applied to project reviews than are need standards for new equipment, new services, or modernization of existing services. Information about the latter — such as their optimal use, cost, and existing supply — is much more difficult to obtain and apply to individual proposals than is information about bed needs. Unfortunately, this selectivity causes hospitals to redirect investment away from capacity expansion projects towards equipment and modernization projects which increase the capital intensity of services. Since hospitals are reimbursed on the basis of costs, this selectivity may have the perverse effect of further escalating the costs of health care to the consumer and the government.

Table 2 presents information on the Illinois program which addresses the selectivity hypothesis. The final row for each year shows approval rates for eight different categories of projects during the study period. The relative rank orderings of approval rates for the various categories over the years are similar with the exception of those for modernization which vary greatly in no pattern and those for outpatient clinics which vary with changes in the law.

Projects involving new beds construction (see column 3, Modernization/Expansion) did receive a lower approval rate (88.1 percent of the proposed costs and 86.9 percent of proposed projects) than modernization projects and equipment projects (93.2 percent of proposed costs and 90 percent of proposed projects; and 93.6 percent of proposed costs and 92.4 percent of proposed projects, respectively), but the difference between them was not significant. New facilities, however, were clearly discriminated against, having an approval rate (50.3 percent of costs) far below that of other types of projects. Hence, although the reward structure in Illinois rejects new bed proposals in new facilities it tends to approve them in existing facilities. One possible explanation for this result, given the general surplus of beds in the state, is that the board is unwilling to halt expansion entirely but considers the additional beds in existing institutions to be less excessive than their addition along with the construction of a new facility. Although both add beds and increase the costs of health care, the lower relative cost increase may be the key to approval. Another possible and less complimentary explanation is that the board's decisions are heavily influenced by the existing providers who desire protection from new competition. Both explanations are consistent with the data, and there appears to be no available method to objectively establish

the "true" one. Further discussion of the effects of this approval pattern on bed supplies in the state is provided in the next section.

Among all categories of project proposals, parking facilities and physicians' office buildings have the highest rate of approval. Prior to July 1979, the approval rate for these projects was consistently higher than for other project categories because they were not considered reviewable by the board and were, therefore, automatically approved. In July 1979, the board began reviewing such projects; but most hospitals managed to submit their applications prior to July in order to avoid the review process. These two types of projects together with outpatient clinics, which also came under review in July, constituted 43 percent of all proposed expenditures in 1979. Additionally, in 1979, almost 98 percent of the costs of outpatient clinics, 100 percent of the parking lots, and over 95 percent of physicians' offices were submitted prior to the July change in the regulations. Many of these projects can be attributed to anticipatory behavior that stimulated or redirected capital spending. If capital expenditure is stimulated, this works against the cost containment objective. If capital expenditure is redirected, then the effect on cost containment depends upon the ratio of the capital intensity of the potential investment to that of the actual investment. We have not attempted to estimate either the proportion of investments which were anticipatory or the costs of the potential, alternative investments. However, the magnitude of investments proposed in these areas raises the possibility that the CON program has stimulated investment in certain areas while deterring investments in other areas.

IMPACT ON BED SUPPLIES

In this section, we examine evidence regarding the impact of certificate of need on the growth and distribution of hospital beds in the state. A pre-post design is adopted to compare changes in the number of hospital beds and their distribution during the four years before implementation of certificate of need (1971-75) to the four years immediately following (1975-79). Similar methodology has been used to evaluate programs in other states; (especially useful is a study on New York by E. Rothenberg). It should be noted that this approach is only one way to evaluate the impact of the program and, further, focuses on only one aspect of the program's activities.

Table 3 indicates that the overall increase in the number of nonfederal, short-term general hospital beds in the state was smaller in the four-year period after than before introduction of the program. This finding confirms the assertion that the program has been successful in slowing the rate of expansion of bed capacity. It should be noted, however, that statistically insignificant differences are observed when average changes in the number of beds for each county are compared between the two periods. This can be attributed to the large inter-county variation in the bed change figures. To eliminate some of the variability, the counties are grouped by population; the results are similar. The difference between the average change in the number of short-term beds for each county except Cook, DuPage, and Lake (the three most populous counties) was smaller in the post- than in the pre-certificate of need period, but again the difference is not statistically significant. The same result is observed when the data are applied to the three largest

**Table 2
SUMMARY OF CON DECISIONS BY TYPE OF PROJECT***

	Total Projects		Modernization		Modernization/ Expansion		Equipment		Outpatient Clinic		Parking Facilities		Physicians' Offices		New Facilities		Other		
	No.	Total Cost	No.	Total Cost	No.	Total Cost	No.	Total Cost	No.	Total Cost	No.	Total Cost	No.	Total Cost	No.	Total Cost	No.	Total Cost	
1975																			
Applied	226	\$932,442	51	\$162,057	55	\$398,926	63	\$24,573	18	\$123,378	10	\$28,791	6	\$18,330	11	\$171,355	12	\$5,031	
Approved	210	829,026	47	155,077	49	380,803	62	23,869	18	123,378	10	28,791	6	18,330	8	94,295	10	4,483	
Percent Approval	92.9	88.9	92.2	95.7	89.1	95.5	98.4	97.1	100.0	100.0	100.0	100.0	100.0	100.0	72.7	56.0	83.3	89.1	
1976																			
Applied	172	\$230,567	45	\$106,686	36	\$68,244	60	\$20,216	11	\$17,935	6	\$9,996	3	\$4,573	0	0	11	\$2,918	
Approved	161	224,508	40	103,648	34	67,144	56	18,294	11	17,935	6	9,996	3	4,573	0	0	11	2,918	
Percent Approval	93.6	97.4	88.9	97.2	94.4	98.4	93.3	90.5	100.0	100.0	100.0	100.0	100.0	100.0	0.0	0.0	100.0	100.0	
1977																			
Applied	213	\$527,254	56	\$243,034	27	\$188,872	91	\$39,869	14	\$22,584	4	\$8,463	8	\$7,904	2	\$12,720	11	\$3,807	
Approved	184	410,260	49	210,395	22	128,418	79	33,328	14	22,584	3	3,963	8	7,904	0	0	9	3,669	
Percent Approval	86.4	77.8	87.5	86.6	81.5	68.0	86.8	83.6	100.0	100.0	75.0	46.8	100.0	100.0	0.0	0.0	81.8	96.4	
1978																			
Applied	174	\$327,961	49	\$101,785	19	\$67,952	58	\$58,243	11	\$27,100	9	\$15,006	17	\$55,004	1	\$2,255	10	\$616	
Approved	154	306,015	45	98,649	15	63,048	52	56,552	10	26,813	8	14,342	16	45,995	0	0	8	616	
Percent Approval	88.5	93.3	91.8	96.9	78.9	72.8	89.7	97.1	90.9	98.9	88.9	95.6	94.1	83.6	0.0	0.0	80.0	100.0	
1979																			
Applied	274	\$679,357	70	\$251,542	39	\$64,742	59	\$37,518	45	\$175,166	22	\$54,819	22	\$74,630	4	\$12,292	13	\$19,649	
Approved	241	614,309	63	238,111	33	55,381	57	36,880	34	166,368	21	43,519	20	65,305	3	5,707	10	3,036	
Percent Approval	88.0	90.4	70.0	94.7	84.6	85.5	96.6	98.3	75.6	95.0	95.5	79.4	90.9	87.5	75.0	46.4	76.9	15.5	
Total																			
Applied	1059	\$2,697,581	271	\$865,104	176	\$788,736	331	\$180,419	99	\$366,163	51	\$106,075	56	\$160,441	18	\$198,622	57	\$32,021	
Approved	950	2,384,118	244	808,880	153	694,794	306	168,923	87	357,078	48	100,611	53	142,107	11	100,002	49	14,724	
Percent Approval	89.7	88.4	90.0	93.2	86.9	88.1	92.4	93.6	87.9	97.5	94.1	88.6	94.6	88.6	61.1	50.3	86.0	46.0	

* Dollar amounts in thousands of dollars

the number of areas with surpluses. Meanwhile, bed shortages and bed shortage areas increased.

It may be concluded from these findings that the certificate of need process needs some improvements. The state must begin to develop positive incentives, possibly financial, in order to stimulate construction in counties having a deficiency of beds. Furthermore, where a surplus exists, the program must be tougher on the expansion plans of existing facilities.

From the beginning, the program has been plagued with implementation problems, such as the anticipatory effects that occurred in the first year of the program and again in 1979. These problems kept the program from reaching its full potential, but with their elimination and with further strengthening of the program, the future impact should be greater.



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