# Article

# Hospital Closure: A Review of Current and Proposed Research

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*This paper reviews available data describing issues and research findings with implications for hospital closings. Factors contributing to fiscal problems of hospitals (e.g., inadequate reimbursement, inflation, management problems, organizational structure, societal factors) are discussed. Selected studies offering examples of hospital and community characteristics associated with closure are presented. This review suggests that future directions for research should focus not only on hospital cost control but also on insuring equity in the distribution of hospital services. Specifically, research is needed that further describes the hospital closure phenomenon, the effects of closure, and the policy choices that might be pursued to insure equity in the continuation of hospital services to disadvantaged populations.*

Public interest in hospital closure has increased in the last five years. Recent studies report excess bed capacity throughout the nation and recommend reducing the number of hospital beds [1–3]. Desire to reduce unneeded capacity results from the belief that an inpatient bed oversupply contributes to hospital cost inflation. At the federal level interest in reducing beds is demonstrated by the 1979 passage of Title III of P.L. 96–79 (Health Planning and Resources Development Amendments) authorizing programs to assist and encourage the elimination of unneeded hospital services. At the state level, several—e.g., New York and Michigan—already have programs to stimulate hospital bed reduction.

However, eliminating beds is not without potential consequences.

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For example, the closure of inner city public hospitals has important implications for low-income groups. The primary service areas of 51 large urban public hospitals are low-income and minority group residential areas [4]. Analysis indicates that the poor and nonwhite populations have lower health status, postpone treatment until the need for health services can no longer be delayed, and often bypass private facilities to obtain care from public institutions. The explicit or implicit discrimination of private providers is believed to block many minority groups in obtaining care from private sources close to home. As a result, closure of public facilities decreases accessibility to health care for groups in need of services.

Urban hospital closures have also been legally challenged. Cases indicate community dissatisfaction with selected closures and suggest the possibility of inequitable action. Litigation has been based on potential violations of Title VI of the Civil Rights Act which prohibits actions with disproportionate adverse effects on minorities. Even in the absence of discriminatory intent, the courts have ruled that a prima facie Title VI violation occurs when closings can be seen to have this effect [5].

Finally, urban hospital closure involves voluntary as well as public hospitals. Many of the same factors affect both, and threats to their viability may be an indicator of other problems and changes in urban areas that require attention.

Resolving these and other problems is contingent on a better understanding of hospital closures as an increasingly important issue in health services. The objective of this paper is to review research having implications for hospital closure. A range of closure-related hospital and community characteristics is identified and issues in need of further study are presented. Finally, policy options that might be used to address closure are suggested.

## Reasons for Closure

Approximately 80 hospitals a year closed during mid-1970s. An American Hospital Association survey [6] of 231 hospitals that closed or relocated from 1975 to 1977 reveals a number of reasons for this. The five major ones are: financial (26.8%); replacement by new facility (23.4%); low occupancy (14.3%); outdated facility (13.4%); and lack of medical staff (10.0%). Hospital size also influenced closure. Approximately 81 percent of the hospitals that closed had fewer than 100 beds; another 11 percent were 100–199-bed hospitals.

## FACTORS CONTRIBUTING TO HOSPITAL FISCAL PROBLEMS

Individual facilities confront a unique set of internal and external circumstances that determine how they respond to adverse conditions. Some succumb while others compensate and survive. For closure, the final determinant is usually fiscal instability exacerbated by a facility's inability to compete for physicians and patients. Several factors appear to lead to this.

*Inadequate Reimbursement.* One explanation for the current problems facing hospitals is inadequate reimbursement for services provided to patients. Medicaid is often cited for contributing to financial problems [7–9]. Individuals qualify for program coverage if family income is below state-established eligibility levels. Illegal residents and individuals with incomes above established income levels must have private health insurance or pay for services directly. Thus, the uninsured who are unable to pay for hospital services become a fiscal drain upon institutions that provide this group with unreimbursed services. With few exceptions Medicare, Medicaid, and Blue Cross/Blue Shield plans limit payments to costs for their own beneficiaries and provide no reimbursement for "bad debt" expenses that result from unreimbursed services.

Inconsistent reimbursement formulas that disallow certain categories of expenses also contribute to the financial problems of inner-city hospitals. For example, Medicare requires distribution of overhead costs from the acute service to others provided by the same facility such as nursing home and ambulatory care services. Yet in many states, Medicaid, a primary source of funds for these latter services, has ceilings for care which are insufficient to cover the cost distributed in this manner [10]. Institutions must absorb costs above the ceiling.

While local governments with concentrations of low-income populations often provide public hospitals with supplemental funding, a rise in public expenditure for health services and fiscal crises in urban areas have forced local governments to reduce support provided to these institutions [11]. This reduction is a contributing factor to closures in New York City, northern St. Louis, and Philadelphia. Other public hospitals such as Cook County Hospital in Chicago, Jackson Memorial Hospital in Miami, and Grady Memorial Hospital in Atlanta are in financial trouble [12].

The above policies reflect attempts to control public expenditures, *and* reduce federal Medicaid support to states. The direct effect of these policies is to lower the number of services for low-income groups. An indirect effect would appear to be the reduced stability of hospitals serving low-income patients.

*Inflation.* Operating expenses of hospitals are increasing at a high rate due to inflation, rapidly advancing medical technologies, excess hospital beds, and ineffectual planning. The American Hospital Association estimates that total hospital expenditures rose 14.4 percent between March 1979 and March 1980 [13]. The reimbursement received by many hospitals has not kept pace with expenses. For public hospitals, rapid inflation is a major problem. Private hospitals, with independent resources, are better able to withstand the economic pressure [14].

Additionally, urban hospitals are frequently burdened by obsolete physical plants but cannot renovate or modernize because depreciation funds are frequently channeled to meet operating expenses. Therefore, older institutions are at a disadvantage in the competition with newer facilities for doctors and patients. Of nine hospitals that closed in Massachusetts since 1970 major characteristics cited were a largely outdated physical plant, poor financial condition, and loss of medical staff [15]. Physical plant deficiencies and severe financial problems also characterized a number of hospital closures in New York City during 1978 [16].

*Management Problems.* Lack of management control, illustrated by poor accounting practices, inadequate collection efforts, and an inability to operate at most efficient staffing patterns, is frequently a contributing factor to a hospital's poor financial condition [7, 9]. Complex urban hospitals frequently have a management problem because they are generally large, teaching hospitals which provide multiple and complex health programs. Public hospital operations are further complicated by an overlay of local government bureaucracy.

Public ownership, however, is not always associated with management problems and hospital closure. Health services in public organizations are frequently less expensive than comparable services delivered by the private sector [17, 18]. Proprietary hospitals experienced the largest proportion of closings from 1972 to 1978 (51.1 percent of closings and 44.8 percent of beds) although this class of ownership comprised 12.8 percent of hospitals and 6.5 percent of beds in 1972 [19].

*Societal Factors.* Societal factors shape the hospital system within a community and affect the hospital's ability to respond to change [20]. Population shifts have occurred as more affluent groups move from inner cities to suburbs. Expansion of new and existing suburban hospitals to meet suburban demand results in over-bedding. The remaining urban hospitals, unless they develop into tertiary referral centers, must serve the less affluent populations that remain in the inner city.

Some hospitals serve subelements of the population within a city.

Ethnic groups may identify with a hospital because of sponsorship or a history of service to the group and resist efforts to reduce the level of services provided by "their" hospital. This relationship results in smaller, more numerous hospitals dedicated to providing services to specific populations in communities with a high degree of ethnic or racial heterogeneity [20]. This outcome develops less frequently in more homogenous communities. Analysis suggests that selected community characteristics limit the ability of hospitals to adapt to changing environmental conditions.

Racial discrimination also appears to be present in the existence of hospitals that serve predominantly black patients. Forms of discrimination include:

> —routine "dumping" of largely black, indigent patients on public hospitals, in large measure a result of public financing policies, especially Medicaid
>
> —exclusion of black physicians from medical staffs of hospitals, and promotion of separate hospitals for these physicians
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> —relocation by hospitals with obsolete plants from black, inner-city areas to white suburbs
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> —unwillingness of private physicians to practice in poor, black inner-city neighborhoods, leading to use of emergency rooms for primary care in certain hospitals as well as identification of the hospital rather than the physician as the primary provider. Here again, the effect is largely the result of Medicaid and other public financing. [20, p. 5]

These findings tend to be supported by an examination of voluntary hospital closures or relocations that occurred in 18 northeast and midwest cities from 1937 to 1977 [21]. About 30 percent of the hospitals open in 1937 did not exist in 1977, with 57 of 326 (18 percent) closed and 38 (12 percent) relocated. Total beds did increase somewhat because of hospital expansion and the smaller than average size of closed hospitals. Closings and relocations appeared to be associated with racial characteristics of neighborhoods:

> . . . as the minority proportion of the neighborhood around the hospital increases, so does the proportion of hospitals closing or relocating from 1937 to 1977. In neighborhoods 0–25 percent black in 1970, for example, only 14.2 percent of the 1937 hospitals had closed or relocated by 1977. But in neighborhoods 76–100 percent black in 1970, fully 46.9 percent of hospitals—almost half—had disappeared. [21, p. 5]

*Organizational Structure.* The structural characteristics of an organization are frequently considered important determinants of performance [22]. The size of hospitals that have closed suggests that institutions lacking sufficient capacity are not able to adapt. National studies [6, 19]

find that institutions of less than 100 beds are more likely to close. These results are supported by analysis in selected states [15, 23].

Mergers, or involvement of multi-institutional systems, appear to offer potential for continuing services within a community. For example, a Minneapolis urban specialty hospital with severe fiscal problems merged with a larger, short-term acute facility [16]. This act allowed continuation of specialty services, retired 48 beds, lowered unit costs by spreading them over a larger patient base, and improved occupancy of the larger facility by attracting rehabilitation patients.

Two voluntary hospitals merged three years ago in Buffalo. Local planning officials believe that the smaller hospital, which was in a health manpower shortage area experiencing declining median family incomes among a predominantly black population, may have closed if merger had not occurred. Plans are currently underway to convert the smaller hospital into a long-term care facility and continue the extensive ambulatory care program that has been an important service for the community. Two other 100-bed hospitals serving different ethnic populations are in fiscal difficulty. The remaining, larger hospitals in the Buffalo area appear to have only moderate fiscal problems.

A municipal hospital in Memphis with a large indigent patient load has been experiencing fiscal problems during recent years. Faced with a large deficit, the county commission contracted with a subsidiary of a local multihospital system for managing the facility. The new management group is in the process of improving internal operational efficiency and is attempting to encourage physicians to admit private patients to the hospital to improve third-party funding.

*Observations.* Direct strategies to identify and close unneeded hospitals are suggested as ineffective, and indirect financial pressure to remove marginal institutions is recommended to remove excess capacity [24]. This approach views most closures as a positive occurrence. However, use of market-based strategies to effect capacity reductions would appear to affect hospitals serving disadvantaged groups more than other groups.

This review suggests that the urban populations many hospitals serve have changed significantly. This shift, combined with the reduction of physicians in the area, places increasing strain on affected hospitals as do the numerous factors preventing these institutions from making required corrections in physical plant deficiencies. These factors appear to be more prevalent among institutions serving disadvantaged populations. Consolidation through hospital mergers is an alternative often pursued

by distressed hospitals because larger systems offer stability to hospitals experiencing fiscal problems.

While it might be argued that hospital capacity reduction may allow savings to be directed to other forms of health services and result in better care for low-income groups, experience in New York City contradicts this suggestion. Reductions in inpatient capacity were accompanied by cutbacks in ambulatory and preventive services [25]. This illustrates that discussions of the implications of hospital closure have been conjecture-based and not empirically validated, and that more information is needed to understand these complex phenomena.

## DESCRIPTIVE RESEARCH ON HOSPITAL CLOSURE

Inadequate data exist to describe problems and plan responses associated with hospital closure. For example, patient census information is needed to determine if hospital closings would have discriminatory adverse effects. Data available in New York City were not considered precise enough to determine if proposed hospital closings would affect minority groups adversely or disproportionately. Extensive surveys were undertaken to obtain data on the anticipated impact closings would have on the ability of minority groups to obtain comparable care in other settings.

Another issue in need of better descriptive data is the extent to which hospitals throughout the country are facing serious financial difficulties. Little analysis is available describing rural hospital problems. With few exceptions [19, 26], studies have not identified the extent to which hospitals are closing and the location of the closings. The following questions need to be addressed:

—How many hospitals are closing and relocating each year? What is the profile of these institutions in terms of the type of community served, geographic location, facility size, and type of ownership?

—What proportion of closures occur in areas with stringent rate-setting agencies, where third-party payor reimbursement policies place severe fiscal limitations on hospitals, or where a competitive environment eliminates marginal performers?

—Are closures more prevalent in areas with high per capita expenditure for inpatient services?

—What constitutes adverse discrimination in the closing of a hospital? More important, can the measure be defined as a useful indicator of potential adverse discriminatory effects?

## ANALYTICAL RESEARCH ON HOSPITAL CLOSURE

### PREDICTORS OF CLOSURE

While descriptive research is necessary, it is not sufficient. Studies must be undertaken to identify economic and social indicators that could predict hospital closure. This knowledge, where appropriate, could allow adequate time to prepare a coordinated set of responses to prevent adverse effects on the community. Initiating activities to strengthen the threatened institution or to substitute appropriate alternative methods of care might then be possible. A complicating factor for such research is that data are not yet available to identify systematically hospitals in financial trouble. Comparisons among institutions are difficult because differences in hospital accounting systems complicate comparative analysis.

Research is also needed to identify and analyze legal issues arising from efforts to consolidate or close institutions. Such studies could determine how various legal issues were handled. These might include the responsibility of various levels of government to insure that adequate services are provided and that changes in service delivery do not have a disproportionate adverse effect on minorities, and to determine the fiduciary responsibilities of trustees of institutions facing potential closure.

While inadequate reimbursement, inflation, management and structural problems, and societal factors are suggested as contributing to closure, little empirical evaluation of the effect of these and other factors exists. A number of questions are suggested:

—What factors determine closure versus alternative strategies such as contract management or mergers? Is it possible to identify distressed hospitals in adequate time either to prevent closure of institutions necessary for health services delivery in the community, or to develop alternative forms of health services for populations served by the facility?

—To what extent do reimbursement policies that limit allowable costs contribute to closure? Specifically, what percentage of patients served by closing institutions have services financed by Medicare and Medicaid, or have no third-party coverage?

—Does a declining inner-city population inevitably result in declining patient days for inner-city hospitals? Do hospitals providing different types of services (i.e., secondary versus tertiary) or under varying forms of ownership (i.e., religious versus governmental,

independents versus multihospital systems) fare differently as urban populations decline?

## EFFECTS OF CLOSURE

The ultimate question is whether closure affects health expenditures and health status of the population served. Specifically, evaluation of the effects of hospital closings on accessibility, quality, health care expenditures, physician availability, and community should be conducted.

*Accessibility.* Access is the factor most likely to be negatively affected by closure and is a major consideration from a social policy perspective. Opportunity costs or time spent annually to obtain health services (travel, waiting, and service time) might increase.

These may have differential effects on accessibility. When the waiting time for care is more than 30 minutes, the insured poor have about the same number of physician visits as the insured nonpoor and more visits than the uninsured nonpoor [27], suggesting that waiting time is not a deterrent to the insured poor. However, a regular source of care requiring more than 30 minutes' travel time results in fewer visits for the insured poor versus both the insured and uninsured nonpoor [27]. Since nonwhites are usually more ill than whites when they seek care [28], geographic proximity of care may be important for nonwhites.

As demand increases at other institutions, the screening/admission procedures of remaining facilities might become more rigid and discriminate against specific population groups. Several studies have noted that minorities will bypass a nearby hospital and travel to a distant, often public hospital [29–31]. Whether these findings are the result of discrimination or individual choice is unclear. In either case, reduced accessibility results from closure. Minorities might also delay or not seek needed medical services because of the loss of religious/ethnically affiliated health services in facilities that have closed. The specific effects of closure on selected populations still need to be determined.

Movement from inpatient hospitalization to other health services (long-term care, ambulatory care, home health care, outpatient surgery) may occur as bed supply is restricted [32–35]. Closures, however, appear to occur in manpower shortage areas. Research is needed to determine if availability of alternative forms of care influences accessibility to needed health services.

*Quality.* The degree to which services provide effective care properly matched to population needs may be influenced by closure. Changes in

quality could be positive or negative. If services in closed hospitals are unneeded, then the possibility of reducing inappropriate utilization in the community is strengthened. The competence of staff providing remaining health care services might be increased if previous utilization levels were not adequate to maintain staff competence. Conversely, too great a reduction, or a reduction in needed services, might overtax existing services, reducing the quality of care available there. While preliminary findings are available on the effect of hospital closures on a selected number of utilization variables in nearby hospitals [36], more detailed analysis is needed to determine the effect of closings on the quality of care delivered in the community. Changes in structure and process of health service delivery, as well as changes in health status, must be assessed.

*Health Care Expenditures.* While it might be anticipated that health care expenditures will be reduced by hospital closings, several factors will determine actual changes in expenditures. Hospitals that have closed tend to be smaller facilities having lower per diem cost than other institutions in the area [15, 23]. Patients that normally would be treated at the closed hospital might receive inpatient services in a larger facility with a higher per diem cost. However, the lower marginal cost of the patient days of care provided at the hospital receiving patients displaced by closure may offset the average cost differences. Net increase in economic costs have, in fact, been found in the application of a flow model that was used to predict how the actual closing of a hospital in Massachusetts would affect hospitalizations in surrounding hospitals and the total medical costs in the area [37].

Situations might exist in which a net decrease in economic costs results from a hospital closing. Leakages from the system of those that receive no care or receive alternative modes of care might result in short-run savings. Caution should be exercised in evaluating such instances to determine if loss of services for those that need care have long-run cost consequences. This would have important social policy implications as well as economic implications.

*Physician Availability.* Several studies have found that physicians tend to locate in communities with higher socioeconomic status [38, 39]. Closures might exacerbate the problems of physician scarcity for disadvantaged populations. While the closure and consolidation of maternity services in Massachusetts did not greatly affect the personal or practice patterns of obstetricians in the state [40], the proximity and availability of alternative inpatient facilities for physicians to admit patients would be one determinant of physician relocation decisions [41].

Other factors might reduce physician availability in a community. Since hospitals with teaching programs are somewhat more likely to close [26], training opportunities for interns and residents could be reduced by closure. Hospital-based specialists employed by the hospital might experience income reductions if specialized treatment facilities were reduced. Physician referral patterns might change if extreme dislocations in services occurred. The ability of the community to attract new physicians could be seriously hampered. Changes in physician location and practice patterns that result from closure must be measured.

*Community Impact.* The local community could be affected adversely by closures, with some groups more vulnerable than others. Hospitals employ proportionately more blacks and women [20]. Public hospitals tend to be major employers in an inner city with higher unemployment rates [42]. After closure, low-skilled employees have difficulty finding jobs [43]. Loss of construction dollars and jobs, reduced purchasing of hospital supplies, and tax revenue loss from proprietary hospital closure could influence the community economy. These would have greater impact if the hospital is a major employer in the community. Smaller, rural communities could suffer from closings or severe reductions in services [44].

In general, studies of the effects of closure have not been fully explored. Findings cited are usually tangential to the central issues. Brown [11] is currently examining utilization changes occurring in California following closure. In the meantime, other important questions must be addressed:

—What characteristics of the hospital, the setting, and population served are effective in predicting potential effects of closure on accessibility to health care of the population served by the closing institution? Does availability of alternative forms of care influence accessibility to needed health services?

—Do varying levels of previous utilization within the closing and surrounding hospitals influence the quality of care provided to the community after closure? Are differential effects experienced under varying conditions?

—What are the effects of hospital closure on community health care expenditures? What factors contribute to short-term and long-term savings?

—Do physicians change practice locations as a result of closure, and if so, what factors influence these decisions? Must incentives be

developed to encourage physicians to remain in declining areas? Do hospitals tend to follow physicians to the suburbs or does the reverse occur?

—To what extent is growth in nonhealth sector employment able to offset decreases in hospital employment caused by hospital closure? If nonhealth sector growth does counterbalance the negative community economic effects of closure, what steps can be taken to encourage such growth?

## RESEARCH ON POLICY OPTIONS

Current research suggests that the population served by closed hospitals has changed, and that these hospitals are not able to adapt to alternative roles or to develop new markets for their services. While research is not available to determine whether the closed facilities are needed, many hospitals serve areas in which physicians are in scarce supply. Alternative forms of care such as home health services and long-term care facilities are in short supply nationally [45], and are anticipated as scarce in the communities in which closure occurs.

Thus, the final set of research questions involves the cost and effectiveness of options that might be used to address immediate issues of closure. One approach is to conduct policy analysis to estimate the costs and effects of the various options, or combination of options, that might be used. An example of this strategy is the effort of the Bureau of Health Facilities of the Department of Health and Human Services to develop a method for estimating economic and noneconomic effects of the conversion or discontinuance of hospital services [46].

A second approach is to begin limited experimentation by implementing selected options in settings when closure occurs (or is imminent) and evaluating the effects of the activities chosen. This approach would provide greater confidence in the outcome of the various actions that might be pursued. One limitation to this approach is that results would not be available for several years because of the time required to identify anticipated closures, implement programs, and evaluate outcomes.

Two types of strategies that might be used in addressing urban hospital problems should be evaluated. Short-term strategies might be used to increase funding for distressed facilities that are deemed necessary, or to smooth transition to a restructured delivery system when the facility is not required. Long-term strategies might then provide initiatives to restructure the health care delivery system. These two classes of alternatives are identified as financing changes and structural changes.

## FINANCING CHANGES

The Report of the Commission on Public General Hospitals [47] studied the future for public general hospitals and stated that financial problems threatening these institutions must be resolved if they are to continue serving their communities. The report also called for a reformation and restructuring of programs that provide funding and/or care for persons unable to pay for services. Among the financing changes that might be considered are targeted grants, or changes in basic reimbursement policies for distressed institutions.

Distress grants for targeted hospitals in financial difficulty is one strategy to be evaluated. This approach requires the development of specific criteria to determine the institutions eligible for assistance. One difficulty with this approach is that eligibility determination is complicated by different accounting practices across hospitals. In addition, a determination must be made of whether federal only or a combination of federal/state/local participation via matching funds would be used.

Reimbursement changes to add "bad debt" allowances for Medicare and Medicaid is another mechanism to provide additional funding for hospitals distressed by absorbing losses incurred by providing services to uninsured patients. However, restricting this change in reimbursement to distressed hospitals might be difficult. An editorial in the *Federation of American Hospitals Review* [48] argues that any change in the Medicare law to pay for bad debts should include all hospitals regardless of ownership or location. Targeting this change to institutions in need of assistance might be difficult.

Another option would involve waivers in federal programs for reimbursing costs of care for illegal residents. An estimated three to six million foreign-born persons live illegally in the United States [49].[1] These individuals possibly place a major drain on hospitals that cannot ethically refuse to care for them when they appear for services. Waivers would improve the financial situation of hospitals that provide services for large numbers of illegal residents.

A related option implemented by the Health Care Financing Administration is use of demonstration grants. Grants were awarded to five distressed hospitals that used a case manager to direct the care of low-income persons not otherwise eligible for Medicaid coverage. In addition to ensuring efficient use of services, this project was intended to increase funding for the hospitals by adding persons to the Medicaid rolls who would otherwise receive unreimbursed services from the facility.

A fifth option is changing from the current method of reimbursing hospitals for unadjusted historical cost depreciation to replacement cost

depreciation [50]. Historical cost depreciation places older facilities at a disadvantage because they were built when costs were lower, resulting in lower or no reimbursement if equipment and facilities have fully depreciated. Replacement cost depreciation would require third-party payments to adjust depreciation for inflated costs of replacement. Improvement in a hospital's financial position would result. One danger with this method is the potential for unnecessary capital investment in the hospital industry. The financial improvement which replacement cost depreciation provides may encourage hospitals to incur new debt and finance unneeded projects.

## STRUCTURAL CHANGES

The following options, or combination of options, would focus on changes in the pattern and mix of health services available. One major structural change could result from encouraging mergers or collaborative arrangements among institutions. The case studies that were reviewed tend to demonstrate that mergers of financially troubled institutions with other larger institutions or systems provided an opportunity for continuity of services in the community. This might result from the greater management expertise available in larger systems, the availability of physicians and other health professionals to provide services within the community, and the financial stability of other institutions, particularly in suburban areas, that might cross-subsidize urban institutions [51–54]. Strong incentives for mergers might have to be developed because segmentation within some communities acts as a barrier to consolidation [20].

A second option would include incentive packages and initiatives to insure that physician manpower was attracted to urban areas. Higher priority might be given to stationing National Health Services Corps doctors at hospitals in medically underserved urban areas. Incentive packages might be developed to encourage physicians and medical groups to relocate. Funding increases for clinics and ambulatory centers might insure their survival. These approaches would provide increases in primary care services. The increased availability of physicians to admit patients would likely result in higher occupancy rates for facilities currently serving manpower shortage areas.

A third option would be to encourage development of affiliations between medical schools and urban hospitals. This strategy might serve to attract physicians into the area as faculty for the teaching program. House staff would also become available to provide care. Rotation of students

through this setting also might encourage medical students and residents to establish practices in these areas on completing their training.

A fourth option for structural change in the health care delivery system is suggested based upon the perception of excess hospital capacity that was discussed earlier. Areas with excess capacity would be encouraged to close unneeded beds and savings from closure might then be used to develop alternative modes of treatment such as ambulatory care or long-term care in the community, or be channeled to other areas with financially distressed hospitals that had documented need for services. Appropriate safeguards would have to be developed to insure that closure did not have a disproportionate adverse effect on special populations and that fair and equitable arrangements have been made to protect interests of employees affected by discontinuance of services. This strategy is suggested based on Title III of P.L. 96–79.

## SUMMARY

As hospital costs have risen and pressure to control costs has increased, the primary concern of the public and of the research community has been in cost control, partially through the reduction of excess hospital capacity. This review of hospital closures suggests that factors contributing to hospital distress are inadequate reimbursement, inflation, management problems, organizational characteristics, and societal factors. It appears that institutions serving disadvantaged populations are more likely to close.

It is suggested that future directions for research should focus not only upon hospital cost control but also upon insuring equity in the distribution of health services. Specifically, research is needed that further describes the hospital closure phenomenon, the impact of closure, and the policy choices that might be pursued to insure equity in continuation of health services to disadvantaged populations.

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## NOTE

This study [49] cautions that definitive estimates of the number of illegal residents is not possible and that their estimate is based on inferences drawn from review of available analytical studies.

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