12-1995

The Politics of Trauma System Development

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*An earlier version of this paper was presented to the 1994 Annual Meeting of the Northeastern Political Science Association held in Providence, R.I., November 10-12, 1994. I am indebted to Bill Waters and Don Williams of the Rhode Island Department of Health and Gary Zajac of the University of Pittsburgh for their helpful comments and suggestions on previous drafts of this article.

Abstract

Federal and state policy makers have turned to health planning programs as a means to rationalize the delivery of health care services in the United States for over three decades. Early federal initiatives such as the Comprehensive Health Planning Act of 1966 and the Health Planning and Resource Development Act of 1974 were widely criticized for their inability to control costs effectively or to increase the efficiency of health services delivery. The design and implementation of the federal government's latest entry into health planning, the Trauma Care System Planning and Development Act of 1990 (Pub.L. 101-590), suggests that federal and state officials are poised to repeat the mistakes which plagued previous planning programs. The implementation of Pub. L. 101-590 illustrates the dilemmas that federal and state officials must confront in achieving effective representation and assuring active participation in the planning process. Successful regional and statewide planning ventures must devise strategies to overcome the inherent collective action problems associated with cooperative solutions to underserved populations. Contemporary approaches to health planning, however, are based upon a number of questionable assumptions. The creation of new institutional structures merely shifts the venue for existing conflicts among health providers, third party insurers, and other participants in the health policy making process to a new arena. In addition to examining possible alternatives for improving current trauma system planning initiatives, I present a new paradigm for designing and implementing state and federal planning programs.

The demise of the National Health Planning and Resources Development Act (Pub. L. 93-641) in 1986 signalled the end of two decades of federal involvement in state and local health planning. Within five years, however, the federal government was back in the planning business, albeit on a smaller scale, with the passage of the Trauma Care System Planning and Development Act of 1990 (Pub. L. 101-590). While health planning--either as a voluntary or a mandatory process--has a powerful appeal to federal and state policy makers seeking to control the rising cost of health care and improve the quality of services offered by health providers, the federal government's latest venture into health planning threatens to repeat the mistakes of the past. In contrast to more intrusive forms of regulation, planning programs promise to rationalize the delivery of health care services by forging consensus among providers, payers, and public representatives over the appropriate goals for the health care system. However, unless federal and state policy makers are able to grapple with the inherent contradictions sown within Pub. L. 101-590, the prospects for successfully implementing federal health planning programs appear no brighter today than in the 1970s.

Because state trauma system planning programs seek to address a number of shortcomings in the present U. S. health care delivery system, they offer an instructive case study of the prospects for effective state level health care reform. Trauma system planners have adopted an "inclusive" approach to improving the quality of care provided to injured patients by developing strategies for overcoming problems of access, cost, and variations in the quality of services. Trauma system planning raises fundamental questions of access, particularly for patients without health insurance or for those who live in rural areas far from the nearest hospital. Furthermore, since trauma centers must provide treatment to all injured patients brought through their doors, they have become a focal point for current concerns about caring for the uninsured, for trauma patients are more likely to lack health insurance coverage (particularly in urban areas) than non-trauma admissions. Finally, since not all hospitals are equipped to

care for severely injured patients, trauma system planning has emphasized the benefits of regionalization; by transporting injured patients to those facilities best equipped to care for them, it is argued, regionalization can improve both the quality of care and control health care costs by eliminating the need for expensive services and facilities at hospitals which are not participating trauma centers. Since the issues involved in trauma system planning raise a number of financing and organizational questions, the success or failure of these planning efforts can tell us a great deal about the ability of states to tackle health care reform. If states cannot implement reform in a narrowly defined arena where clear national standards are present, how likely are they to serve as engines of more comprehensive reform?

Health Planning as a Political Problem

The popularity of planning programs as the solution to the dilemmas of cost, quality, and access stems from a belief that although the U.S. health care system remains fundamentally sound, inefficiencies in the organization and financing of care could be improved through careful application of rational planning and technical expertise. State and federal planning legislation in the 1960s and 1970s reflected policy makers' belief that careful study of relevant data and broad participation from the community would identify inefficiencies in the delivery of health care. Furthermore, the development of comprehensive state and local plans would provide rational alternatives for changing the behavior of health providers and reorganizing the delivery of health services to control costs, improve the quality of services, and improve access to care for underserved groups.[1] Health planning programs also presented policy makers with an opportunity to address growing concerns about the U.S. health care system without significantly interfering in the practice of medicine, for early federal initiatives "sought to organize away profound American dilemmas without the use of systematic state power."[2]

By the early 1970s there was a widespread recognition that neither doctors, hospitals, nor patients had an incentive to restrict utilization of hospital services as long as health providers were

reimbursed in full for the cost of patient care on a fee for service basis. Doctors and hospitals could, in essence, increase the demand for hospital services by their choice of treatments or diagnostic procedures.[3] Patients, for their part, were insulated from the true cost of their treatment by extensive hospital insurance coverage.[4] Beginning in the late 1960s, states responded to rising utilization and health care costs with programs designed to restrict the growth of hospital facilities, in the expectation that "a bed not built is a bed not used."[5]

Government regulation of the hospital industry increased markedly during the 1970s after the passage of the Health Planning and Resource Development Act of 1974 (Pub. L. 93-641) established more than 200 federally funded local health planning agencies. While physicians and hospital administrators may have been unaccustomed to dealing with federal and state governments on such matters, health planners were primarily thorns in providers' sides whose actions did not threaten hospitals' long-term financial health or profitability. The most critical decisions which affected the level of reimbursement for hospital services remained beyond the scope of planners' jurisdiction. Furthermore, "physicians, and more relevantly, hospital administrators, quickly discovered that the planning system could be outmaneuvered. The system was not much of an obstacle once the consultants were called in to advise."[6]

The new planning agencies were unpopular with providers and ineffective at controlling costs, for planners lacked the authority to impose effective sanctions upon hospitals.[7] Even their supporters acknowledged that the new agencies were beset by multiple (and often conflicting) goals, lacked the requisite authority to pursue these goals, and offered budding planners few incentives to engage in trench warfare with local hospitals.[8] Proponents of planning expected the development of state and local planning documents to build a consensus for change based upon technical expertise and grassroots participation. In practice, however, health planning bore little resemblance to a rational approach to

resource allocation, as interested parties clamored for seats on state and local advisory boards to protect their own interests. Consensus proved to be an elusive, if not impossible goal.

Much of the controversy surrounding the federal health planning initiatives of the 1970s stemmed from heated debates over who would sit on the advisory boards of the new planning agencies. In the end, the process of planning took a back seat to conflicts over representation, for the 1974 enabling legislation mandated that a majority of each state or regional planning body be comprised of "consumers" (e.g., nonproviders). Agencies were required to assemble boards who were broadly representative of the "social, economic, linguistic, and racial populations, geographic areas of the health service area, and major purchasers of health care" in the surrounding community. In state after state, disaffected participants, or those who felt under-represented, claimed that the selection process was unfair and fought for seats on state and local boards in the courts.[9]

During the 1980s, health planning fell victim to a changing ideological climate that favored competitive rather than regulatory solutions. The Reagan administration's hostility towards health planning led to the demise of the federally funded state planning infrastructure after the expiration of Pub. L. 93-641 in 1986.[10] In addition, twelve states repealed existing certificate of need programs established during the 1970s to review health providers' proposed capital expenditures. By the end of the decade, however, health planning had returned to the federal policy agenda as surgeons, emergency physicians, emergency medical technicians (EMTs), and other allied health providers pressed for Congressional action to reduce the number of deaths from unintentional injuries in the United States. The result was ironic--after more than a decade of chafing under the restrictions imposed by federally funded health systems planning, many health providers (particularly surgeons and administrators of urban trauma centers)now clamored for a new federal planning initiative to rationalize the delivery of health care services for critically injured patients.

The Origins and Goals of Trauma System Planning

Advocates for trauma system development and injury prevention programs welcomed federal intervention despite the shortcomings of federally sponsored health planning initiatives in the 1970s. Injury was the nation's third leading cause of death during the 1980s, claiming more than 140,000 lives each year, and injuries were the leading cause of death among persons aged 1-44.[11] While injuries have long been regarded as "accidents," new studies in the 1970s and 1980s suggested that many injury-related deaths could be prevented by developing an organized and rational approach for treating injured patients.[12] Contemporary trauma care systems trace their origins to new techniques for caring for injured soldiers on the battlefields of Korea and Vietnam. Rapid access to definitive surgical care at mobile army surgical hospital (MASH) units and the refinement of prehospital care techniques significantly reduced U.S. military casualties in both wars. This experience led to calls for the development of similar organized systems to care for treating patients in the U.S., where injury had been dubbed the "neglected disease of modern society" by the National Academy of Sciences in the 1960s.[13] By the 1970s, many in the medical community believed that the lessons learned on the battlefield about the effectiveness of triage, rapid transport of injured patients, and the standardization of lifesaving techniques for use by medical personnel in remote areas could be applied to the treatment of persons injured in motor vehicle collisions, falls, and other unintentional injuries in the U.S. Although the passage of highway safety legislation by Congress provided an impetus for many communities to improve the quality of local emergency medical care and trauma services, the development of local trauma systems varied greatly within states and communities.

Trauma centers proliferated during the 1970s, as many hospitals regarded trauma patients as a source of both profitable patients and institutional prestige. Under the prevailing method of retrospective,

cost-based reimbursement, health providers had an incentive to treat more "expensive" and difficult cases, for their costs would be fully reimbursed by third-party insurers. Since hospitals compete on the basis of perceived quality and reputation, rather than price, the development of a trauma center was often regarded as a means to improve the hospital's image in the community and attract patients. In addition to the obvious revenue incentives for treating trauma patients, emergency physicians and surgeons at many teaching hospitals also had a strong professional interest in developing trauma centers, for a greater volume of patients would provide opportunities for improving their skills and conducting research. Hospital administrators, for their part, were willing to accommodate the desires of their medical staffs, for "the group of attending physicians on the hospital's staff enjoys *de facto* control of the hospital at any point in time" as a result of their monopoly over patient referrals.[2]

By the early 1980s, however, spiralling Medicare and Medicaid costs led to the first significant change in hospital reimbursement since 1965. Beginning in 1982, for the first time, a significant fraction of hospitals' revenues were determined on a prospective, rather than a retrospective basis. Under the new system, federal bureaucrats, not hospital administrators, set reimbursement rates for all inpatient hospital services, minimizing haggling over "allowable costs." A year later, Congress adopted a new case-based prospective payment system (PPS) for Medicare amid little debate after a brief four month gestation period. Within five years, Medicare's new PPS turned the long-established relationships among providers, payers, and the public upside down. While generous reimbursement rates in the first three years of PPS led to record profits in the hospital industry, as institutions' operating margin for Medicare patients exceeded 10 percent from 1984-86, by the late 1980s adjustments to PPS rates lagged well behind the overall rate of medical inflation.[14] [15] PPS offered federal officials a powerful weapon to influence providers' behavior. Since Medicare patients represented the largest component of most hospitals' charges, institutions were forced to modify their behavior to cope with lower rates of

reimbursement.[16] Medicare reaped considerable savings under the new system as hospitals changed their behavior to conform to the incentives of a case-based reimbursement system: admissions declined, as did patients average length of stay.

The changes in Medicare's reimbursement formula had a powerful impact on hospital trauma centers. Under PPS, payments for inpatient hospital care was based on the average cost of a procedure among a peer group of hospitals. PPS was designed to promote the efficient use of resources by hospitals, for if an institution's costs for treating a case were below the peer group average, it kept the difference as profit. Institutions whose costs exceeded the average price per case, however, were not compensated for their losses. To complicate matters further, Medicare's new payment system did not adjust reimbursement rates adequately to account for differences in the severity of patients' injuries.[17] [18] [19] These changes were particularly difficult for hospitals with a large caseload of trauma patients, for the cost of treating severely injured patients is often two to four times the average cost of non-trauma admissions as a result of longer lengths of stay and more frequent use of intensive care units.[20] At the same time, hospitals in many cities saw a dramatic increase in trauma cases as a result of a growing wave of drug related violence. Combined with the high costs of 24 hour staffing and equipment requirements, inadequate reimbursement and a growing number of uninsured patients led to significant financial losses for many trauma centers. As a result, more than 10% of the trauma centers in the US closed between 1983 and 1992, while others continued to pile up red ink.[21]

Growing concern about the fiscal health of the nation's trauma centers in the late 1980s, coupled with increased awareness of the importance of injury control after the publication of a second report on injury by the National Academy of Sciences, led to renewed Congressional interest in improving the nation's emergency medical services and trauma care system. Congressional hearings on the Trauma Care Systems Planning and Development Act (S. 15) in 1989 and 1990 attracted strong support from a host of

health providers, including representatives from the American College of Surgeons (ACS), the American College of Emergency Physicians (ACEP), and various organizations representing emergency nurses and allied health professionals. The testimony of surgeons and ER physicians before Congress underscored a common theme: more than a decade of statistical evidence from across the nation suggested that many injury related deaths were preventable.[22] By directing patients to facilities which met well defined minimum standards established by the ACS and other national organizations, regional trauma systems saved lives and improved the quality of care for injured patients.

Since well defined standards of care already existed for trauma patients, the challenge for states was to coordinate the activities of different groups of providers to create a seamless system of care. Federal intervention, these providers argued, would help states to develop plans which applied the lessons learned from existing trauma systems in San Francisco, Orange County, and elsewhere. From trauma providers' perspective, a new federal planning program would contribute essential seed money to conduct needs assessments, bring relevant parties together, and create an institutional mechanism to coordinate care among prehospital providers such as EMTs and air ambulance services, clinics and other hospitals which lacked the facilities or personnel to treat trauma patients, and specialized trauma centers. The legislation met the approval of a joint House-Senate conference committee in October 1990.

The passage of Pub. L. 101-590 raised expectations among trauma care providers that federal intervention would significantly improve the quality of services for injured patients by enabling states to inventory their patient care resources, assess unmet needs, and develop plans to coordinate services. A national trauma care advisory council was created to develop a model trauma care system plan which would outline the crucial elements of an "inclusive" trauma care system within one year. The inclusive approach to trauma system development embodied in the 1990 legislation reflected a growing consensus that the planning process should address several distinct, yet related goals, including (1) public

education, data collection and evaluation, and injury prevention programs to reduce the incidence of injury, (2) improved access to care through the development of effective prehospital communications and emergency 9-1-1 systems; (3) proper training and triage protocols for prehospital personnel; (4) standards for the designation and classification of health care facilities; (5) the creation of evaluation procedures and data to monitor the quality of care, and (6) effective linkages with rehabilitation providers to ensure that injured individuals return to a productive role in society.[23] In order to ensure that state plans provide for "access to the highest possible quality of trauma care" Pub. L. 101-590 required states which received trauma system planning grants to develop or modify their plans to meet eleven criteria, which reflected the existing guidelines and standards established by the ACS and ACEP.[24]

Organizational Barriers to Trauma System Development

All new federal programs must grapple with basic challenges of internal organization and establishing linkages with other organizations in their environment. In addition, federal policy makers must devise strategies to implement their goals effectively through state and local agencies.[25] Responsibility for implementing Pub .L. 101-590 for the 1992 fiscal year fell to the Health Resources and Services Administration's Bureau of Health Resources Development (BHRD). BHRD officials immediately faced a difficult set of choices, for the initial appropriation for the program first year of operation ($4.3 million) was far short of its authorized level ($60 million) for FY1992. Furthermore, a careful inspection of both the statutory requirements of Pub. L. 101-590 and the BHRD's application guidelines suggests that Congress failed to learn from the past in designing the federal government's latest venture into health planning. In particular, state trauma system planning programs would encounter substantial difficulties as a result of both the program's statutory requirements and questionable assumptions about the nature of the health planning process.

The BHRD's insistence that state applicants structure their goals and objectives to implement the goals outlined in its Model Trauma Care System Plan presented an additional challenge for state applicants. Pub. L. 101-590 required the BHRD to develop a model plan within a year, but a draft of the plan was not available prior to the first application cycle. Instead, applicants were asked to use the criteria presented in the National Transportation and Highway Safety Administration's (NHTSA) Assessment of Emergency Medical Services to assure a consistent format for evaluating applications. State plans were required to address eleven specific statutory functions, from establishing standards for trauma center designation to identifying resources for data collection, evaluation, and public education. The BHRD's emphasis on uniformity reflected its statutory mandate; the eleven criteria contained in the legislation were not goals, but rather requirements, for states which accepted federal funding to develop or modify trauma system plans.

A rigid adherence to the federal model trauma care system plan, however, ignores the considerable variation in both states' needs and priorities for trauma system development. In some states, participants may regard prehospital communications and training as the most pressing problem, while others may emphasize data collection, the creation of standards for classifying and/or designating institutions as trauma centers, or other concerns. By requiring states to simultaneously address a diverse set of complex issues with limited resources (the largest grants awarded in FY 1992 were below $300,000) Pub. L. 101-590 reflects a "top-down" approach to health planning.

Although Pub. L. 101-590 was designed as a capacity-building program for state governments, the matching funds requirements in the enabling legislation discouraged many states from applying for second and third year grants. Although no matching funds were required for a first year application, in the second year, states were required to match every federal dollar with two state dollars either in-cash or in-kind. The matching requirement was intended to extend the pool of funds available as widely as

possible by shifting much of the fiscal responsibility for the program to the states. Trauma system development was expected to be a long term process, and Congress expected the states to share in the cost. In practice, however, the matching requirement presented a significant hurdle for state health departments reeling from budget cuts and fiscal constraints. The required state contribution increased to three state dollars for every federal dollar in all subsequent years. States which could not meet the matching requirements were ineligible to reapply for funding; x states did not reapply for second year grants.

Deja Vu All Over Again: *Facing Up to Political Reality*

Trauma system development requires extensive cooperation among a wide range of organizations with different professional norms, economic interests, and values. The BHRD's model trauma care system plan exhorts states to forge a consensus for improving the quality of care provided to injured patients among a diverse group of payers, providers, and consumers.[26] While few organizations would oppose the desirability of the BHRD's long term goal of improving the quality of care for injured patients, agreeing on the means to achieve the goal, or even the definition of the most significant problems in a state's present trauma care delivery system is a different matter. The BHRD's model trauma care system plan emphasized the importance of conducting a systematic needs assessment in order to assemble data to evaluate the performance of state trauma systems. Implicit in the BHRD's model trauma plan, however, is the notion that hospitals, EMTs, third party insurers, rehabilitation providers, and others involved in the care of injured patients will set aside their self interest to cooperate for the benefit of patients. Data alone, however, is unlikely to foster cooperation among a diverse set of providers, for trauma system development, and health planning in general, presents policy makers with a contemporary example of the collective action problem.

Regional trauma care systems are public goods which have the potential to impose significant costs on participating health providers. A trauma system, in other words, confers general benefits on its surrounding community by specifying operating standards, transfer protocols, mutual aid agreements, and other cooperative ventures to provide "optimal" care to injured patients. Individual providers, however, may bear the burden of a systematic approach--some hospitals and physicians may not be designated as trauma centers, and hence may treat fewer patients, while other hospitals which are designated as trauma centers may experience increased costs for staffing or a greater volume of uncompensated care for uninsured patients. While nonprofit hospitals often emphasize their service to the community, institutions which set aside their own self interest for the common good in the long run may go out of business altogether. Unless planners recognize the inherent barriers to consensus among participants in the planning process, they will be hard pressed to transform goals into actual policies.

In recent years, game theory has been used to explain a wide variety of phenomena, from international arms races to competition among hospitals for patients and physicians.[27] The problem of cooperation is typically described in terms of a "game" between two parties known as the "prisoner's dilemma." In the classic prisoner's dilemma, two prisoners suspected of having committed a crime are placed in separate cells by the police. The police have enough evidence to convict each prisoner on a lesser charge, but nevertheless tell each man that he will be released if he denounces his companion. If each prisoner implicates the other, both will be jailed, while if neither talks, each will receive a short sentence. The usefulness of the prisoner's dilemma for analyzing cooperative behavior lies in the dominant strategy for both players--a rational player will choose to defect and implicate his companion, even though both will be worse off than if they cooperated and remained silent. Since both players make their decisions independently without any knowledge of the other's choice, each assumes that the other will defect and acts accordingly.[28]

The Politics of Designation

Trauma system development resembles a prisoner's dilemma in several ways. First, institutions will weigh the costs and benefits of participating in a regional trauma system. In theory, regionalization represents a rational solution to the problems of treating severely injured patients by directing trauma cases to designated facilities that are best equipped to care for them. However, it can be difficult to convince hospital administrators to participate in such a system. An assessment of state EMS and trauma care systems in the late 1980s concluded that only Maryland and Virginia had operational trauma care systems which met the criteria developed by the American College of Surgeons' Committee on Trauma.[29] In the absence of a solution to the problems of trauma center reimbursement, few providers are likely participate, for designation as a trauma center threatens to saddle institutions with an unprofitable mix of severely injured patients, many of whom lack insurance. While hospitals which treat a small number of trauma patients may be happy to unload the responsibility of caring for their most expensive, unprofitable cases onto a regional trauma center, administrators at large teaching hospitals will strive to avoid having such patients "dumped" at their doorstep.

Other participants may also be reluctant to cooperate in trauma system planning. Outlying hospitals which are not designated as trauma centers may also be reticent to participate in a regionalized trauma care system for fear of losing patients or physicians. Although trauma patients are typically not a major sources of revenue for smaller community hospitals, administrators at non-designated institutions may fear that patients' perceptions of their institution will change if they no longer treat trauma patients. Furthermore, hospitals compete with neighboring institutions to attract and retain attending physicians on their medical staffs[30] and the prospect of an exodus of physicians to institutions which treat a larger percentage of more challenging patients may make administrators hesitant to triage patients elsewhere.

Furthermore, institutions may be cautious about embracing a regionalized trauma system because of concerns about how many institutions will be designated and what standards will be used to verify hospitals' resources and capabilities. Since not all institutions in a geographic area will be designated as trauma centers, many institutions are concerned about their role in a reformed system. The cost of attaining and maintaining trauma center designation also constitute a significant barrier to building a consensus among providers, for the staffing and equipment requirements outlined by the ACS require a considerable financial commitment from participating institutions. Hospitals which presently serve as de facto trauma centers, without having to meet ACS standards, may be required to add staff, expand shifts, or invest in new equipment or technologies in order to retain their designation. Unless existing trauma centers are "grandfathered" or the standards for designation and/or verification are known in advance, many hospital administrators will be reluctant to participate in trauma system development. Finally, enticing third party payers to support trauma system development will also be difficult, for effective treatment of trauma patients may involve two or more institutions. Modifying existing reimbursement methodologies to compensate hospitals which stabilize injured patients for transfer to a trauma center, for example, poses a real challenge for case-based reimbursement systems such as Medicare's PPS, for insurers will not pay for the same treatment twice. In addition, recent trends in managed care (e.g., selective contracting with certain hospitals or integrated service delivery networks) will also affect third party payers' level of interest, and willingness, to finance trauma system development. Under such circumstances, how will hospitals share the reimbursement for treating a patient? While cooperation may be appealing from the perspective of providing "optimal care" to injured patients, the implementation of effective triage and transfer arrangements depends upon the creation of appropriate financial incentives for participating providers.

Studies of cooperation over the past decade suggest at least two possible solutions to the collective action problem facing health planners. On the one hand, coercive government intervention through legislation or rule-making offers a means to overcome the collective action problem by forcing providers, payers, and others to modify their behavior. Political theorists use a variation of this argument to account for the emergence of governments in the first place. In this view, the creation of coercive state power will assure the provision of collective goods, for government officials compel all to participate, even though all parties have an incentive to "free ride" by not pursuing joint action.[31] [32] Few providers, however, are likely to welcome new government regulations which either restrict the types of patients they can treat or which impose new staffing and equipment requirements on cash-strapped institutions. Furthermore, the BHRD's model trauma care system plan envisions cooperation, not unilateral government action, as the catalyst for trauma system development. In light of the obstacles to cooperation among providers and payers noted above, however, how can planners transform conflict into cooperation and consensus?

Recent research on negotiation by Robert Axelrod and others emphasizes the importance of reciprocity and the creation of institutions or norms to ensure continued collaboration among the parties involved.[33] In stark contrast to the coercive approach to solving the collective action problem outlined above, Axelrod used computer simulations to demonstrate that under certain conditions cooperation could emerge in "a world of egoists without centralized authority." The conditions required for the emergence of cooperation are remarkably simple, yet intuitively appealing. The evolution of cooperation requires participants to interact on more than one occasion. If the parties expect to interact on a regular basis, reciprocity (e.g., tit for tat) offers the best strategy to improve cooperation among autonomous actors, for rational individuals (or firms) will base their actions upon the expected behavior of others. If

other players consistently cooperate, rather than defect, cooperation can emerge as the dominant strategy for all participants.

Institution-building also offers a viable means to promote cooperation, particularly in cases where actors may be concerned about the possibility that others are cheating. The establishment of a regime which specifies either formal rules or informal norms to govern the behavior of all participants institutionalize patterns of reciprocity. Such arrangements reassure participants because the "regime must specify what constitutes cooperation and what constitutes cheating, and each actor must be assured of its own ability to spot others' cheating immediately."[34] Reciprocity and institution-building are mutually reinforcing, rather than competing alternatives for promoting cooperation. Although participants may initially agree to cooperate on a limited basis on peripheral issues, the successful implementation of a "tit for tat" strategy can "spill over" to more significant issues over time.

How can the lessons learned from studies of cooperation be applied to trauma system planning? If key groups view trauma system planning as merely the latest in a series of well-intentioned, but abortive state and federal initiatives, they are unlikely to commit themselves to the process. How can state officials encourage a diverse group of hospitals, prehospital providers, third party payers, and other stakeholders to participate in a collaborative planning process? Recent developments in the study of how individuals change their behavior offer insights into creating an effective "bottoms-up" approach to systemwide planning.

A New Approach to Health Planning

As Douglas Cook, the Director of Florida's Agency for Health Care Administration, notes, "health care reform isn't something that can be imposed from the top down, from the state to the local level, or necessarily from the federal to the state and local level. You need to accustom people to the notion that change will take place and that they will have to be a part of it."[35] The first challenge

planners face in building consensus is enticing organizations to participate in the process. As Cook notes, "the first essential element of restructuring the system is to gain political consensus that change needs to take place. That means challenging the status quo in which there's a tremendous amount of money." Hospitals and other organizations involved in trauma system development, however, may differ in their willingness to embrace change.

In recent years, new views of how individuals change long standing behaviors highlights a critical, but often overlooked point for proponents of trauma systems development. The development of regional trauma systems requires individuals and organizations to abandon long standing practices in the hope of improving patient care. Enticing hospitals and other organizations to modify their behavior, however, is not as simple as presenting individuals with data that trauma systems can save lives, for decision makers are often resistant to change. Despite economists' assumptions to the contrary, hospitals are not monolithic and are rarely governed by single actors who can act unilaterally; in most institutions, power exists on many levels. Since the regulatory role of state health departments often places them in conflict with hospitals and other health providers, the very organizations and individuals whose cooperation is essential for the success of trauma system development are likely to view state-sponsored initiatives to regionalize services with caution. One strategy frequently used by participants in health planning processes is stalling--organizations send representatives who lack decision making authority to monitor the progress of the planning process, but never fully commit themselves to change. Health planners must recognize that individuals and institutions vary considerably in their willingness to change their behavior. Trauma system development does not occur in a vacuum. Proponents of regionalized trauma care services must recognize that other factors in the political, economic, and organizational environment can and will change, and that such changes may have widespread repercussions for trauma system development.

Prochaska and others have identified several basic stages and processes of change that individuals progress through as they seek to modify their behavior.[36] Individuals progress through several preparatory stages before adopting a new mode of behavior. Persons who have given little or no thought to changing their behavior are at a "precontempletion" stage; in order to change such individuals' behavior, planners must first provide decisionmakers within affected organizations with information about the problem and its importance. Other individuals have contemplated change, but have not yet decided to take action. In contrast, other individuals are actively preparing for change by gathering information and exploring alternatives to their present behavior. Some organizations may change their behavior without support or prodding from external actors; others need encouragement and support in order to reach a decision to change. Since individuals' motivations to stay the course also vary, persons in different circumstances will require differing types and levels of support to maintain their new pattern of behavior.

The Challenge of Effective Representation

The process of representation in most health planning programs presents an additional barrier to enticing individuals and organizations to conform to the goals outlined in a comprehensive state plan. Although committees and other formal planning bodies offer a forum for providers, payers, and consumers to express their views, the opinions of appointed members are at best an imperfect mirror of a state's trauma care constituency. Representatives are unable to speak for groups who are not present at the advisory committee's meetings. Merely including representatives from the hospital industry, for example, may introduce a hospital's views on trauma system development, but in no way does it insure adequate representation for the hospital industry in the planning process. The limited size of the most planning boards means that some institutions will inevitably be left out; excluded groups may challenge

the legitimacy of the plan, or object to the composition of the membership which drafted it. In short, it is not enough to merely invite a "representative" sample of organizations; rather, the process should be designed so that each group feels as if it is a stakeholder which has an opportunity to influence the final outcome.

For a statewide trauma system plan to have a reasonable chance at successful implementation, planners must assure that the representatives who participate in the process are authorized to speak for their institutions. This notion is not as simple as it first appears, for most planning bodies are assembled by trying to model the demographic characteristics of the surrounding community.[37] Participation in the planning process in no way implies a commitment by an organization to change its behavior. Instead, the salience of the project can be gauged by organizations' choice of representatives--hospitals, for example, may send middle managers with no real decision making authority to simply "have someone at the table" to monitor the behavior of others and to express symbolic support for the goals of the process. Conversely, projects which are a priority for the institution will attract personnel from the upper layers of management, who have more authority to speak on behalf of their organizations. While participants' final decision to commit themselves to the goals outlined in a plan typically must be approved by others (e.g., the board of directors or other senior managers), high level participants have greater access to key decision makers in their organizations. For planning to generate real long term results, it must incorporate key decision makers within organizations, rather than simply providing a seat at the bargaining table for interested participants.

This approach marks a departure from traditional approaches to health planning, which have emphasized grassroots planning and broad based participation rather than forging consensus among key decision makers. Community input remains an essential component of any successful health planning program, but plans must win the support of those organizations and individuals who will be called upon

to implement their recomendations. Unless decision makers in positions of authority in affected organizations commit themselves to the planning process and endorse the final product, most plans are destined to collect dust.

A new agenda for trauma system development

Although contemporary planning processes strive to acheive a "balance" between different groups represented on policy making boards and commissions, merely including a representative from the state hospital association or one of its member institutions often fails to meet the industry's concerns about representation, for other institutions may feel excluded from the planning process if they are not able to send a representative. Furthermore, "peak associations" at the state level (e.g., state hospital associations and medical societies) rarely possess the authority to bargain with representatives from other groups and government, in the U.S. such organizations typically lack binding authority to bargain on behalf of their members. As a result, effective representation in health planning debates must strike a balance between forging consensus among elites and ensuring grassroots feedback. Successful health planning programs must create an inclusive process which fosters a sense of ownership for participants.

Persons involved in regional planning must be able to influence the policy preferences of key decision makers within their organizations, rather than simply reporting on the activities of planning councils. Planners must create a process which brings together leaders from stakeholder groups who understand the constraints and possibilities of their organizations' operating environment to air common concerns in order to identify points of agreement and discuss realistic strategies for implementing goals. Without a commitment from the leadership of affected organizations, trauma system planning efforts will fail. Planning, unlike rule-making and regulation, must be a collaborative process, rather than one which relies on a "command and control" approach in which affected organizations are instructed to conform to

a model plan. The outlines of a new strategy to reorient contemporary health planning incorporate lessons learned from studies of behavioral change and the evolution of cooperation.

Stakeholders in trauma system development may vary considerably in their willingness to modify longstanding patterns of behavior. A planning process which requires all participants to commit resources or make decisions affecting their organizations by a preestablished deadline ignores the fact that some groups will be ready to change their organizational routines with little or no external prodding, while others do not yet recognize the need for change, or if they agree that change is necessary, believe that while others may need to change their behavior, they do not. In short, planners must work with each organization's "learning curve" in order to effect change in a voluntary planning process. Recent experience with "negotiated investment strategies" and other forms of collaborative decision making offer an institutional mechanism to structure consensus-building efforts in health planning programs.[38]

Decision making using a negotiated investment strategy (NIS) was pioneered by the Kettering Foundation of Dayton, Ohio in response to growing dissatisfaction with existing methods of policy development and program implementation. Implementation of a NIS approach to trauma system planning would rely upon mediated negotiations among teams of leaders from different levels of government, health providers, payers, and other affected interests. Similar strategies have been used successfully to resolve differences over the allocation of federal grant monies and program reductions in Connecticut during the 1980s. Under a NIS, the "end product" of the negotiations is a written agreement on how to resolve problems requiring joint action. The NIS approach organizes various participants who do not have a history of cooperation into distinct negotiating teams, each of which addresses a single component of the overall problem. As implemented in Connecticut, the NIS approach "envisions the building of consensus on broad policy issues in a two step process. First, consensus is developed *within* teams made up of leaders representing organizations with similar, although by no means indentical, interests and

constituencies. Then, a consensus is negotiated *among* teams which ... have conflicting interests and constituencies and which have seldom or never entered into a similar negotiating situation."[39]

To build consensus among groups with different goals and interests, the NIS model relies upon the services of an impartial mediator to facilitate discussion and identify common ground among participants. Although participants in an NIS have different economic and political interests, they share some things in common (e.g., providing high quality care to injured patients). The mediator does not suggest solutions or impose decisions on participants, but rather encourages organizations to exchange information and present their concerns before any proposals or goals are drafted. The end result of protracted, face-to-face negotiations among participants is a written agreement containing mutual assumptions, commitments, and expectations. After other interested parties have had an opportunity to comment upon the proposed agreement, it is ratified by each of the participants, who also pledge to monitor the implementation of stated goals and review the performance of the programs or processes created by the agreement.

The NIS approach reflects Axelrod's notion of promoting collaboration by encouraging reciprocity; by defining each organization's interests and concerns, the NIS process aids participants in identifying common ground. Implicit in the NIS approach is the notion of "spillover" effects. If organizations can identify possibilities for cooperation in areas which are peripheral, or at least not central, to their core activities, a pattern of tit for tat may emerge in which success in one area builds confidence among participants in the prospects for joint problem solving in other areas. Furthermore, by emphasizing participating organizations' common interests and goals, a NIS approach minimizes the potential conflicts of interest among different groups. Such a process, however, does not lend itself to quick solutions; negotiations are likely to be long, and change incremental. The appeal of NIS, however,

lies in the incremental approach to consensus-building, for it ensures commitment from parties to the agreement.

Conclusion

In the end, planners must create a new mechanism to forge agreement among a diverse group of prehospital providers, payers, and hospitals. Such a mechanism must openly acknowledge conflicts of interest between parties, rather than seeking to create an artificial consensus. An effective planning process must cope with concerns about the distribution of health care personnel and resources, overcome resistance from entrenched geographical interests, and replace traditional decision making processes with more "rational" approaches to caring for treating injured patients. The diffuse benefits of trauma system development efforts hinder planners' ability to mobilize support for new legislative initiatives or proposals which would impose new costs or obligations on health providers or payers. Although the model trauma care system plan and public health plans such as *Healthy People 2000* offer detailed blueprints of state goals and options for achieving them, systemwide planning efforts neglect to consider the political feasibility of their policy recommendations.

Trauma system planning must promote collaborative problem-solving that is relatively immune to the uncertainties of competition for federal grant funds and the unpredictability of the state budget process, for an episodic approach to planning is both ineffective and counterproductive. At best, bursts of activity followed by periods of inactivity due to budget shortfalls result in unnecessary delays in implementing programmatic objectives. At worst, however, such a process alienates the very organizations whose participation is essential for improving the quality of care for injured persons.

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