

# Developing Social Capital in the Operating Room

## The Use of Population-based Techniques

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FUNCTIONAL relationships improve communities. An overall indicator of the quality of the relationships within a community is the century-old concept of social capital. Social capital has been defined as “those features of social structures—such as interpersonal trust and norms of reciprocity and mutual aid—which act as resources for individuals and facilitate collective action.”<sup>1</sup> Social capital builds successful communities *via* robust relationships that develop from and create the interpersonal resources.<sup>1,2</sup> Just as material capital produces more wealth, social capital lubricates interpersonal interactions and enables cooperative ventures, leading to better schools, decreased violent crime, decreased pugnacity, increased public health, and decreased mortality.<sup>1,2</sup>

Social capital within a group, known as *bonding* social capital, promotes reciprocity and underpins identity and homogeneity, but may exclude or harm those outside of the group. In the operating room community, such a group may be defined as all of the anesthesiologists, or it may be defined as the doctors, nurses, and technicians of the liver transplant team. *Bridging* social capital, on the other hand, occurs between groups, such as between surgeons and anesthesiologists, between physicians and nurses, or between clinicians and administrators. Bridging social capital promotes information exchange and generates broader identification and reciprocity. Social capital may help or hurt a community. For example, a subgroup of a community can have considerable social capital as they work together to thwart the majority. In this article, social capital refers to the positive aspects of both bonding and bridging social capital among the entire operating room community.

### How Social Capital Improves the Operating Room

By definition, increasing social capital improves communication and trust. Communication and trust improve most cooperative ventures and, in the operating room,

will likely improve efficiency and quality of care. An important aspect of social capital in the operating room is the trust among changing groups of participants. In small groups of people, where there is more frequent interaction, trust may be determined quickly. But large groups of people are less likely to have developed personal histories of successful interactions. In the absence of a personal history of trust, the expectation of trust from social capital permits individuals entering into negotiations to assume that they will be treated in a fair, appropriate, and civil manner.

The prisoner dilemma illustrates the benefits of trust among colleagues. In game theory, the phrase prisoner's dilemma is used as shorthand to describe a situation in which two participants may independently choose to either cooperate with the other participant or defect from the other participant. If they both cooperate, both gain a moderate amount. If one cooperates and one defects, the defector gains more than if they both cooperated and the one who cooperates (called a “sucker” in game theory terminology) is penalized. If both participants defect, participants gain more than if they were the sucker but less than if they mutually cooperated or if they unilaterally defected. Therefore, when faced with an unknown single-time opponent, it makes more sense to defect to avoid the risk of becoming the sucker.

The operating room may be more similar to iterative prisoner dilemmas—a series of games in which participants can choose to cooperate or defect.<sup>3</sup> Trust grows through iterative interactions in which a person can either cooperate or defect with another participant. In iterative prisoner dilemmas, if one believes the other participant is likely to cooperate, either because of personal history or an expectation of trust, one is more likely to cooperate. Similarly, if one believes that the other participant is likely to defect, one is more likely to defect. The goal is to create a history of cooperation among individuals that will not only improve trust among participants but will also enable the presumption of trust when newcomers interact.

Low trust encourages disingenuous behavior, rewarding the more skilled dissembler or the more powerful at the expense of achieving community goals. Defecting anesthesiologists push off cases to the next day, clogging the operating room schedule and inconveniencing patients. Such behavior will likely cause surgeons to defect through belligerence or gaming to get their cases done at night. Although defecting by the anesthesiologist or the

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Received from the Department of Anesthesiology, Perioperative and Pain Medicine, Children's Hospital Boston, Harvard Medical School. Submitted for publication April 18, 2003. Accepted for publication July 18, 2005. Support was provided solely from institutional and/or departmental sources.

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surgeon may be effective in the short run (from the defector's perspective), the loss of trust will impugn reputations (ever heard of the Department of Perioperative Cancellation?), harming both directly and indirectly related discussions, such as whether to postpone a case because of time ("Those anesthesiologists will do anything to cancel a case") or inadequately treated coexisting disease ("He doesn't care whether the patient dies, only whether he can do the case"). Damaged relationships among caregivers may hinder cooperative care, particularly in the face of production pressure, which may drive anesthesiologists to unwisely proceed with cases against their better judgment.<sup>4</sup>

Defecting through gaming leads others to believe that they have to game to achieve what they perceive to be a fair chance. Consider the surgeon who games to wheedle his patient to the top of the add-on list, disregarding those surgeons (and their patients) who have followed the rules. If this behavior becomes commonplace, the other surgeons lose trust and adopt comparable behaviors. Indeed, gaming harms the entire system, declaring the system irrelevant because it is ineffectual, irreparable, inequitable, or inapplicable.<sup>5</sup> Gaming also harms civil behavior by galvanizing interpersonal retribution through arguing, gossiping, and *sub rosa* behaviors to regain personal and public standing.<sup>6,7</sup>

An environment of greater trust leads to improved communication throughout hierarchies, because of a greater comfort in articulating potentially contentious concerns, and more effective negotiations.<sup>6</sup> Problems in medicine are often attributed to poor communication, particularly intradepartmental, across hierarchies and in areas of production pressure and stress.<sup>8</sup> For example, in neonatal intensive care units, better perceived leadership, coordination, and conflict resolution were associated with a lower incidence of periventricular/intraventricular hemorrhage or periventricular leukomalacia.<sup>9</sup>

Robust norms of proper behavior may also improve operating room function. Consider a situation in which it is 2:30 PM and the nurses and anesthesiologist change at 3:00 PM. If the norm is selfishness, they will lollygag toward 3:00 PM. But if the norm is to work hard, they are more likely to get the next case going, if only not to look like slackers. To be sure, there are other ways of getting people to work hard, such as belligerence, but such behavior often results in passive and effective stalling. By the same token, strong norms can affect other operating room ills, such as punctuality, cooperation with guidelines, and interpersonal behavior.

On a system level, increased social capital, especially between groups such as nurses and physicians, helps individuals move past parochial interests and enables them to consider the greater good.<sup>10</sup> Increased social capital may also forestall burnout, which are the feelings of overwhelming cynicism, detachment, and ineffectiveness that comes from overwork, sense of limited profes-

sional control and autonomy, role ambiguity, and role conflict.<sup>8,11-17</sup> Burnout muddles thinking, narrows attention, amplifies hierarchical behavior, aggravates depressed mood, and leads to a depersonalization in which individuals become less responsive to colleagues and patients. Residents with burnout were more likely to report having provided suboptimal care.<sup>18</sup> Career dissatisfaction for family physicians was strongly associated with the self-perceived inability to provide high-quality care.<sup>19</sup> More importantly, behaviors associated with burnout create an environment that hinders communication and fosters error.<sup>8,20-23</sup> An insidious problem of burnout is voluntary withdrawal in the form of chronic absenteeism, thereby increasing the workload and strain for remaining workers and possibly harming quality of care.<sup>11,24-32</sup> In one study, higher patient-to-nurse ratios led both to a greater mortality in surgical patients and to a greater likelihood of nurses experiencing burnout and job dissatisfaction.<sup>33</sup>

### Increasing Social Capital

The best way to develop social capital is through population-based techniques. Population-based techniques intervene on a population level to affect behavior throughout the entire population rather than intervene on the individual level to affect behavior of specific individuals.<sup>1,34</sup> By attempting to increase desirable behavior of all members of a group, overall behavior increases and undesirable behavior is further isolated. The population-based approach to increasing social capital centers on encouraging civil behavior and implementing functional operational guidelines to maximize conditions for successful interactions.<sup>11,12,17,35</sup>

Civil behavior is rooted in an internal respect for others that enables a person to act with self-restraint.<sup>36</sup> Certain beliefs are necessary for operating room personnel to have sufficient internal respect for others to enable them to act with self-restraint. I suggest that the interpersonal trust requisite for enabling internal respect for others—and thus promoting civil behavior—flows from the assumptions that (1) colleagues' intentions are good, (2) colleagues' opinions have validity, (3) colleagues desire purposeful and professional discourse, and (4) the best way to obtain purposeful and professional discourse is through civil behavior.<sup>6,21,37</sup> These assumptions, in turn, favor conditions for successful interactions, which will build trust. Desirable behavior includes seeking to establish working relationships, appropriately addressing conflicts, working within the spirit of operating room guidelines, and acting with self-restraint. Behaviors harmful to successful interactions include dissembling, gossiping, gaming, and abusing official or unofficial authority as well as egregious behavior, such as wanton disregard for policies and gross disrespect for individuals.

## Functional Operational Guidelines Promote Successful Interactions

The best way to develop social capital is through population-based techniques. Analogous to theories underlying medical error, certain environments may minimize undesirable behaviors.<sup>17</sup> Focusing on the system acknowledges the role of the environment in organizational behaviors and suggests that a systems approach may improve individual behavior. The population-based approach to increasing social capital centers on implementing functional operational guidelines to maximize conditions for successful interactions.<sup>11,12,17,35</sup>

Functional operational guidelines provide a community-accepted approach that incorporates and represents the community's considered goals. Guidelines are flexible starting points that permit community members to deviate when specific instances indicate that doing so would be consistent with the community's goals. Consider a 4-h nonurgent surgical case scheduled for midnight because the surgeon wants to avoid the inconvenience of being relegated to the add-on list. Without functional operational guidelines, one anesthesiologist may agree to do the case, whereas another, with a differing view of how to use off-hour resources, may not. Functional operational guidelines regarding use of resources would provide a starting point for discussion while minimizing the rancor, confusion, and feelings of inequity that arise from seemingly mercurial actions. Indeed, for the most part, the position of the guideline is less relevant than the presence of functional operational guidelines. For example, it does not matter whether the hospital's policy is only to perform emergency surgeries at night; what matters is that both parties have an agreed-upon basis for discussion. Concerns about being treated fairly disturb social capital.<sup>7,38</sup>

Consider the impact of scheduling patients who are expected to require postoperative intensive unit care on the availability of intensive care beds. The adverse effects of intermittent excess demand (such as postponing elective operations) can be reduced by smoothing demand through improved coordination of scheduling elective operations.<sup>39</sup> Prospective management of limited resources by minimizing last-minute postponements can forestall the discord that comes from abrupt competition for resources.

Functional operational guidelines help to develop trust in the organization. When individuals trust that the administration will consistently apply transparent rules, suppress bias, acknowledge errors, practice procedural justice, and support a functional process for community members to affect change, social capital increases.<sup>7,38,40</sup> This organizational justice enables individuals with imperfect knowledge of events to maintain an *a priori* belief that the decisions occurring around them are predominantly fair. The expectation of trust accrued from

**Table 1. Characteristics That Favor Successful Functional Operational Guidelines<sup>42,43</sup>**

<b>Culture Characteristics</b>
<ul style="list-style-type: none"> <li>● Overt physician leadership</li> <li>● History of successful use of functional operational guidelines</li> <li>● Explicit expectations of participation</li> <li>● Large-scale change orientation</li> <li>● Professional education with a systems view</li> <li>● Physician culture that permits some loss of individual autonomy in favor of standardized processes that improve quality and outcomes of care</li> </ul>
<b>Infrastructure Characteristics</b>
<ul style="list-style-type: none"> <li>● Overt commitment of sufficient resources</li> <li>● Appropriate organizational structure (e.g., minimized hierarchy)</li> <li>● Supportive information systems that provide useful feedback</li> <li>● Investment in system redesign</li> </ul>
<b>Project-related Characteristics</b>
<ul style="list-style-type: none"> <li>● Clear and stable aims</li> <li>● Relevant measurements appropriately applied</li> <li>● Incentives for participation (not for outcome)</li> <li>● Physician development and implementation</li> <li>● Early, publicized successes</li> </ul>

Getting operational guidelines to be respected, followed, and appropriately contested may be difficult. The more these characteristics are present, the more likely functional operational guidelines will be successfully identified and implemented.

functional operational guidelines can help community members to cooperate, withstand turbulence, and resolve problems in areas where operational guidelines do not exist.

A comprehensive discussion about how to implement operational guidelines and affect change is beyond the scope of this article. But in general, effective guidelines are flexible, are transparent, and often put immediate goals in the context of greater personal and institutional values. They rarely permit special treatment based on power or authority. If it is possible, they should be driven by data to establish credibility. The article "Optimal Sequencing of Urgent Surgical Cases" provides an example of how operational guidelines may be implemented.<sup>41</sup> Specific clinical data were used to develop a program to advise in the sequencing of surgical cases.<sup>41</sup> This process began with transparent communal establishment of priorities and options. The complex modeling that followed (such as determining what information is available to assess outcome, the gaining of that information, and the mathematical modeling) remained in the background, available to interested parties. After publication and implementation of sequencing rules, effects were assessed and reported back to the interested community.

Perhaps most importantly, affecting change requires consistent and indefatigable oversight (table 1).<sup>10,42,43</sup> New procedures require reinforcement until adopted as a norm. There is a need for leadership to set standards of behavior. Consider the safety goal of having a process to eliminate wrong-site, wrong-patient procedures. A hospital may implement an operational guideline to require the surgeon to involve the patient in signing the surgical site so that the signature is visible after the patient is draped for surgery. Signing the surgical site appeals to

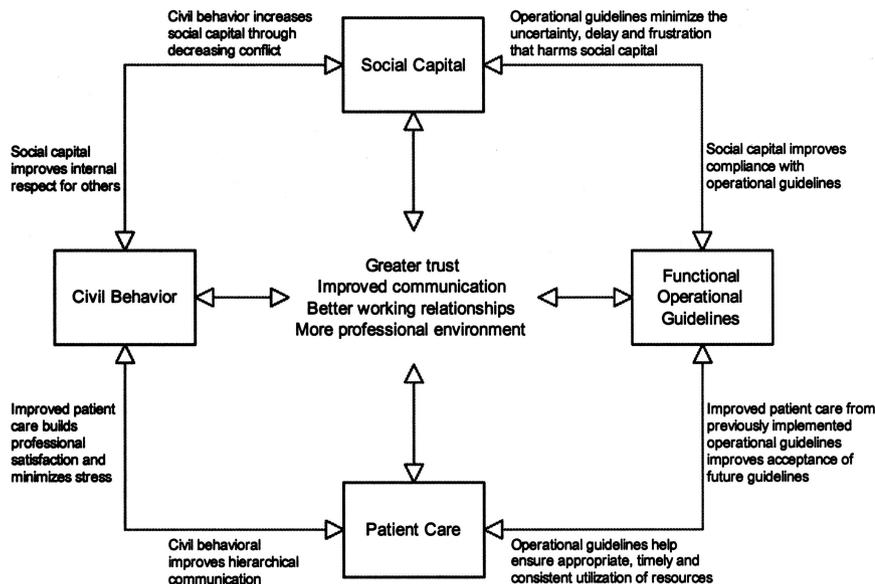


Fig. 1. Relationships of social capital. Examples of the relationships among social capital, civil behavior, patient care, and functional operational guidelines and the potential benefits that may accrue.

the greater goal of patient safety. Because it is a guideline, operating room members know that they may deviate for good reasons centering on improving health-care. So, although it is inappropriate to deviate because “it is obvious which site is having surgery,” it may be appropriate to deviate if it would cause patient harm, such as delaying surgery for a signature if a patient has a gunshot wound. Nonetheless, with any new guideline, some may resist because of inconvenience, perceived inconvenience, or bullheadedness. Oversight then becomes critical. If physicians challenge or ignore the guideline, they must be held to the standard by appropriate authorities. Similarly, when others insist on the enforcement of the guideline, they must be supported. When participants realize that deviation for poor reasons will not be tolerated, following the guideline will become the norm, bringing benefit to patients. But if the guideline is enforced inconsistently or is not permitted to be deviated from with good reason, it will be ignored.

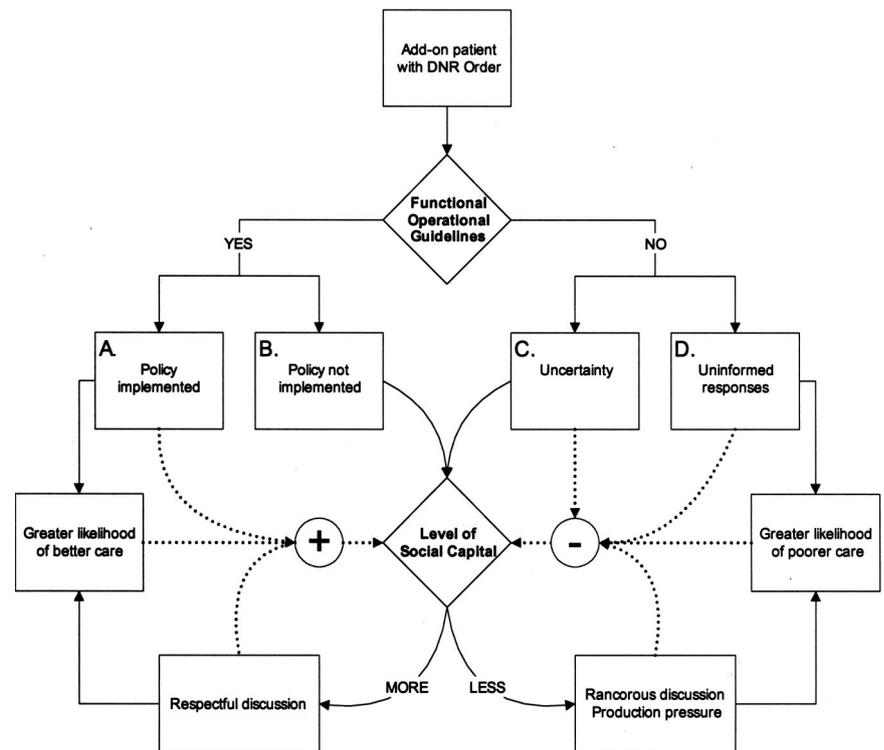
The wisdom lies in knowing when to institute operational guidelines. Parsimony is the key. Although there can be several indications to introduce operational guidelines, such as regulatory mandates, operational guidelines are best applied to systemic problems with recognized harms that participants want solved. Guidelines that are unnecessary, overly bureaucratized, or instituted to punish or “prove a point” are counterproductive and lead to failure and mockery. For example, consider a situation in which surgeons greeted their patients in the preoperative area and then retired to their offices, to return promptly when paged by the operating room nurses. Over time, several surgeons started abusing the system by being tardy, wasting operating room time and increasing time under anesthesia. Tardiness and haughtiness led to tit-for-tat matches of spitefulness, incident reports, and unfulfilled threats about loss of op-

erating room block time. To suppress conflict, administration instituted an operational guideline that attending surgeons had to be present in the operating room during anesthesia time. The effect was predictable. The guideline unnecessarily punished the prompt surgeons, diminishing trust in the ability of the organization to resolve problems. Some surgeons balked at the guideline, sowing discord. Some nurses applied the guideline rigidly, disregarding legitimate reasons to be absent, whereas other nurses did not apply the guideline at all, confusing surgeons and precipitating arguments. The tit-for-tat squabbles, previously limited to a few sites, permeated the operating rooms. In response to complaints, senior leadership told nurses to use common sense in enforcing the policy, leading to charges of favoritism. Eventually, the policy became ignored, cheapening respect for other operational guidelines and legitimate authority as well as weakening the social capital of the community.

### Putting It All Together

Figure 1 shows examples of the relationships among social capital, civil behavior, patient care, and functional operational guidelines and the potential benefits that may accrue. The figure is designed as a loop, indicating that each aspect is both a cause and an effect. Functional operational guidelines provide clear, transparent, consistent, and flexible expectations of behavior, which create norms of behaviors. These norms of behavior increase the likelihood of a consistent response that minimizes conflict. More uniform responses minimize uncertainty and delay frustration and conflict. Appropriately decreased conflict (*i.e.*, either conflict that is avoided through preemptive analysis, resolution, and implementation or conflict that can be resolved amicably through

Fig. 2. Intersection of functional operational guidelines and social capital. Both functional operational guidelines and increased social capital *in concert and by themselves* improve patient care. An add-on patient with a ward do-not-resuscitate (DNR) order is brought to surgery. The anesthesiologist discovers that the patient has a DNR order. Assuming that the best care for the patient is reevaluation of the order (as recommended by the American Society of Anesthesiologists and the American College of Surgeons), one of four things can happen. (A) In a system with functional operational guidelines, the anesthesiologist has access to the process for reevaluating perioperative DNR orders. Ideally, the surgeon would be expecting such a process and would participate in it. (B) Operational guidelines may exist, but caregivers may not know of them or may choose to ignore them. (C) Without operational guidelines, caregivers may be uncertain how to proceed. Uncertainty is likely to cause delays and increase stress. (D) Inadequately informed caregivers are likely to act in ways harmful to patients, such as defaulting to the outdated standard of revoking the DNR order without reevaluation. Note that for boxes B and C, the effect of nonfunctional or absent operational guidelines depends in large part on the level of social capital. In operating room communities with more social capital, it is more likely that the colleagues will cooperate to resolve this unexpected hitch. In areas with less social capital, it is more likely that discussion will be rancorous and that production pressure will play a greater role in forcing resolution.



an expected process and not conflicts that are ignored or artificially resolved) minimizes uncivil and marginally civil behavior. Improved behavior and successful interactions increase trust and communication, which, in turn, improves the operating room working environment and increases the success of cooperative ventures, such as having more efficient operating rooms. Improved communications minimizes errors. Improved working environment minimized problems of poor work environment, such as disregard or burnout. These benefits lead to more successful operating rooms.

## Conclusion

In the operating room, the social capital benefits of expectations of trust, robust norms, and better communication help to achieve community goals. If you agree with this formulation, I would propose two actions. First, promote the idea that developing social capital is everybody's responsibility. Physicians, as prominent members of the medical system, have considerable professional responsibility for the success of interdependent medical systems and ethically are obligated to reduce "the waste of supplies, equipment, space, ideas and human spirit."<sup>10,42</sup> Operating rooms are stressful and tiring, and more often than not, tension spills out in actions and language. But the sum of individual actions affects the environment, and individual improvements in

behavior will move the community in the right direction. Physicians should also realize that acknowledging the role of the environment in organizational behavior does not validate or forgive an individual's undesirable behaviors. The norm should be that medical professionals seek flawless behavior, particularly in regard to interacting with others and respecting operational guidelines.

Second, promote successful interactions through implementing transparent and functional guidelines that are based on organizational values. Choosing an area in which to develop functional guidelines is as simple as picking a source of dysfunction in the operating room. In my experience of working in two different operating rooms, worthwhile topics may include the order of add-on cases, types of cases to be performed off-hours, patterns of communications (who calls whom to communicate issues such as posting a case), surgical and anesthetic preoperative responsibilities, punctuality, *nil per os* guidelines, and confusing patient care issues, such as patients with do-not-resuscitate orders. An example of how functional operational guidelines about perioperative do-not-resuscitate orders may help is shown in figure 2.

This article proposes that successful stewardship of the complex, dynamic, and fluid relationships in the operating room depends heavily on the improved trust, communication, and cooperation generated from robust social capital. Although it may not be easy to increase social capital within the constraints of the modern op-

erating room, we have a professional and ethical obligation to ourselves, our colleagues, and our patients to try.

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