Collaboration: Aligning Resources to Create and Sustain Partnerships

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Academic-service partnerships are the future. These partnerships require a new paradigm and new practice models that necessitate change in how and where decisions are made as well as who is accountable for both the decisions and the outcomes of those decisions. The role of organizational leaders in this new paradigm becomes aligning resources to create and sustain partnerships. Partnerships are relationships and are only as effective as the communication between all entities. Decision-making is an important outcome of partnerships, yet there is little research regarding specific behavioral strategies that promote quality problem solving and decision-making. This paper extends the work of organizational theorist Ralph Stacey by proposing an event-driven typology of behavioral strategies for problem solving. The typology can assist organizational leaders to align resources for best practices in academic-service partnerships and be used as a framework for future research. (Index words: Collaboration; Cooperation; Coordination; Toleration; Problem solving; Academic-service partnerships; Decision making) J Prof Nurs 20:310-322, 2004. © 2004 Elsevier Inc. All rights reserved.

ONE OF THE MOST perplexing challenges faced by organizational leaders is how to promote effective innovation and problem solving. Problems faced by academia and nursing service organizations are no exception, nor is the need for innovation. In fact, the imminent problems faced by academia and nursing service organizations are complex and multifaceted, and thoroughly defy traditional problem-solving approaches. Furthermore, the public expects innovation from academic and service organizations.

For instance, the nursing workforce shortage crisis, coupled with a looming nursing faculty shortage, is a gauntlet beyond anything we have faced in history. When Albert Einstein declared that “the problems that exist in the world today cannot be solved by the level of thinking that created them,” he could have been talking about these very issues. Solving the critical and imminent problems we confront demands a different level of thinking and behaving. It is time we attend to Tim Porter-O’Grady’s warning that “Holding onto old notions and practices that no longer characterize the demands of the time will do nothing but exacerbate the conditions which facilitate the demise of nurses and nursing work” (Porter-O’Grady, 2001b, p. 183).

What is required is a transformation of academic-service relationships that enables and fosters merging the collective intellectual capacity of both elements into new or reformed symbiotic, synergistic entities that might create new, effective, and sustainable academic-service models. The overarching goal of these models is “to yield innovative knowledge applications that improve quality, capture efficiencies, and further the strategic intent of the organization” (Weaver & Sorrells-Jones, 1999, para. 7). This will necessitate the establishment of working relationships beyond what has traditionally been experienced between academia and service and will invariably call for collaboration.

Although many practitioners and organizational leaders have declared assuredly that collaboration is a key strategy to improve problem solving and innovation in health care (Baggs et al., 1999; Fagin, 1992; Kilo, 1999; King, Lee, & Henneman, 1993), evidence to support such an assertion is lacking (Schmirtt, 2001). If collaboration is key, then a critical first step is to develop a clear understanding of it as a strategy—what it is, what it costs, what conditions are necessary for it to exist, when it is necessary, and what valued outcomes it realistically can generate.

This paper will reorient readers to the distinguishing attributes that surround collaboration and three other common behavioral sets that are often confused with collaboration: toleration, coordination, and cooperation. The Bleich-Kinnaman Organizational Decision-

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Making Model (Bleich-Kinnaman Model) proposes that there are different strategies and resources required with each behavioral strategy. The model is contingent on three equally important variables: (1) the attributes and competencies of those involved in problem solving, (2) the agreement and certainty about the relationship of specific actions to affect a desired outcome for an event/issue that triggers the need for problem solving, and (3) the organizational/systems context in which the action takes place.

The Sky is Falling!

Like Chicken Little, academicians and service providers are at a point where it seems undeniable that “the sky is falling.” The health care system is facing daunting challenges from all sides. Population demographics, rising health care costs, lack of quality outcomes, large numbers of uninsured, and the health care workforce shortage are issues that confront us on a daily basis. Collaboration is touted as the strategy it will take to innovate and solve complex problems. But what does “collaboration” mean? The literature reveals that there is not a clear and universally accepted definition of collaboration (Alpert, Goldman, Kilroy, & Pike, 1992). As a concept, collaboration has lost definitional crispness with common use and overuse; this contributes to important misconceptions and differences among health care administrators and practitioners about its meaning (Gardner, 1998). Based on a concept analysis by Kinnaman (1999), we posit that collaboration is a communication process that fosters innovation and advanced problem solving among people who:

- are of different disciplines, organizational ranks, or institutional settings;
- band together for advanced problem solving;
- discern innovative solutions without regard to discipline, rank, or institutional affiliation;
- enact change based on a higher standard of care or organizational outcomes.

The process requires mutual respect, differing but complementary competencies, a distributive balance of power between the parties, and evidence of satisfying teamwork that results in change.

Researchers have found that a systematic study of collaboration is impeded by the complexity of the problems and innovations that surround the process. For example, each person’s professional values, self-interest, attitudes, knowledge, and skills are a part of problem solving (Bulger, 2000; Carroll, 2002; Sorrells-Jones & Weaver, 1999). Variable, complex, and confounding organizational factors in the work environment influence innovation (Aiken & Patrician, 2000; Benzies & Allen, 2001). In addition, the synonymous use of related concepts like cooperation, coordination, compromise, and teamwork make collaboration problematic to research and practice (Gardner, 1998; Schmitt, 2001; Wagner, Davis, Schafer, Korff, & Austin, 1999). In fact, collaboration is a mode of interaction, difficult to study in the complex context of organizational dynamics. The Bleich-Kinnaman Model we propose should help organizational leaders and researchers deal with this concept, which we base on the science of complex adaptive systems. Four behavioral scenarios will be the basis for conceptual clarification.

The Science of Complex Adaptive Systems

Before discussing the proposed model, it is helpful to reflect on the current paradigm that drives organizational decision making. Currently, a system is thought of as a set of interrelated parts that come together to form a whole that is greater than the sum of the individual parts (Bertalanffy, 1968). Although synergy is an expected outcome of a working system, the more traditional way of understanding a system is based on controlling each part individually. Entrenchment in this more traditional perspective led to management’s “obsession with seeking control and stability” (Valadez & Sportsman, 1999, p. 210) and a concomitant inability to grapple with complex, contextual issues requiring advanced problem solving and innovation. Wheatley (1999) expressed this eloquently when she wrote:

Each of us lives and works in organizations designed from Newtonian images of the universe. We manage by separating things into parts, we believe that influence occurs as a direct result of force exerted from one person to another, we engage in complex planning for a world that we keep expecting to be predictable, and we search continually for better methods of objectively measuring and perceiving the world. These assumptions . . . come to us from seventeenth-century physics, from Newtonian mechanics. They are the basis from which we design and manage organizations, and from which we do research in all of the social sciences (pp. 7-8).

Since Fredrick Taylor (1911) introduced the principles of scientific management, there has been consid-
erable effort to manage and control the parts of an organizational system and eliminate variation in actions and outcomes. The industrial model, based on the reductionistic belief that there is “one best way,” permeates many organizations. Because this approach is so successful in improving productivity, mechanical systems thinking is still “a strongly held paradigm” (Plsek, 2000, p. 311) in most organizations. When this is the predominant management approach used in an organization, the ability to adapt to the changing environment is lost, leading to demise of the organization (Begun & White, 1995; Weinberg, 2003).

The multiple nursing and academic service issues we confront can be directly related to the rapidly changing health care environment and our entrenched mechanistic management approach. In addressing this failure, Tim Porter-O’Grady (2001b) provides the sage advice that sustainability is only with partnerships, proclaiming “the age of the organization as institution is dead” (p. 182). He strongly admonishes the status quo, saying that “the major effort in hospitals and health systems to make the institutional model work is perhaps the greatest threat to their continued existence” (p. 182). He further challenges us to redefine our relationships by the context, and to embrace the “real work of leadership in health care today [as] the active and committed deconstruction of much of the infrastructure of health care as currently configured,” (p. 183) for, like him, we believe that it is “only in the demise of the industrial models of nursing work where space will be made for the emerging requirements of a new practice arena” (pp. 182-183). Clearly, today’s pressing problems call for an alternative approach to advanced problem solving and innovation.

A revised systems approach offering such an alternative was proposed by Plsek (2001) based on Stacey’s theory about complex adaptive systems (Figure 1). Plsek uses a two-dimensional graphical model to illustrate Stacey’s theory. To identify the appropriate problem-solving approach for a situation, one would determine the amount of certainty that specified actions will produce certain outcomes (x-axis) and the decision-makers’ level of agreement regarding the appropriate course of action for the situation (y-axis). If a vertical line is drawn upward from the point on the x-axis and a horizontal line is drawn from the point on the y-axis, the intersection of the two lines provides information about potentially relevant problem-solving approaches.

Stacey (1996) identifies three dimensions of problem solving and innovation. Faced with a situation in which a mechanistic approach is desired, decision makers use “plan and control” strategies. The underlying assumption of “plan and control” problem solving is that “there is an orderly, linear, and predictable world governed by natural laws” (Valadez & Sportsman, 1999, p. 210). Therefore, “analysis of problems involves identification of parts of the problem with little regard for understanding the complex whole, particularly the interrelationship of the parts” (Valadez & Sportsman, 1999, p. 210). A deterministic, linear problem-solving approach requires less intensive resources and direction-giving behaviors and is easily accommodated in existing, prevalent structures. Once decisions are in place, employees will primarily use toleration and coordination behaviors for work activities in the “plan and control” area of the model.

The second dimension of the model is “chaos,” which occurs when there is low certainty and low agreement about the appropriate approach to a problem or situation. It is always a goal to avoid “chaos.” The events of September 11, 2001, are a powerful example of chaos and, in particular, “how the heroic response of police officers and firefighters was undermined by poor planning, inadequate equipment, faulty communication and generations-old inter-agency rivalries” (Shenon & Flynn, 2004, para. 1). According to Shenon and Flynn, an independent federal commission identified the poor response to this tragedy as being directly attributable to a failure in communication and planning, even though a 1993 attack should have promulgated a wake-up call to city leaders for advanced problem solving and innovation to deal with such disasters. Chaos requires directive
leadership and cooperation that are usually easy to garner, given the situation at hand. Chaotic events are not an effective time for collaboration.

Between “plan and control” and “chaos” in Plsek’s model (Figure 1) is a new dimension referred to as the “zone of complexity.” In this newly identified area, a radically different paradigm for dealing with emerging problems and attempts at innovation can be fostered.

Three principles that must guide management in this new zone are antithetical to the “plan and control” approach:

1. The world is unpredictable.
2. The world is not independent of the observer; rather, the intent of the observer influences what is seen.
3. The relationships among things are what counts, not the things themselves. (Valadez & Sportsman, 1999, p. 210)

For situations known to be in the “plan and control” area, deterministic linear problem solving is an appropriate approach, but for those situations in which only a moderate amount of agreement or certainty exists, a nonlinear, divergent problem-solving approach is required to create and sustain innovation. Plsek (2001) clearly articulates, and we agree, that “for the most part the issues associated with designing the 21st-century health care system are in the zone of complexity where it would be more appropriate to use the paradigm of a complex adaptive system” (p. 312). Most of the situations in which academic and service partnerships are beneficial rest on problems or innovations that require the intellectual and material capital be applied in this zone. Solving problems and creating innovation in the “zone of complexity” will be very resource intensive and will demand use of the cooperation and collaboration behaviors described in the following section.

A Model to Differentiate Interdisciplinary Behaviors

An assumption underlying the proposed model is that not all organizational decisions are of equal concern, nor do they require equal resources. Organizational leaders can benefit from knowing when true collaboration is the appropriate behavioral set. The Bleich-Kinnaman Model (Figure 2) adapts and extends Plsek’s (2001) diagram, a diagram that reflects Stacey’s theory of complex adaptive systems. We offer our model as a foundation for research, education, and improved organizational practices.

As can be seen, the model depicts toleration, coordination, cooperation, and collaboration as four appropriate behavioral sets in organizations. The appropriateness and effectiveness of each behavior depends on the complexity of the initiating event, the agreement on and certainty of the event’s outcome given a specific course of action, and the organizational context in which the event arises.

THE FOUR PRIMARY BEHAVIORS OF INTEREST

Bleich (1995) proposed four tiered organizational behavioral scenarios, all of which are in use in academic and service organizations with varying degrees of effectiveness. Situations that require problem solving or promote innovation can be described using two high-to-low continuums (Figure 2) to project the method and resources to efficiently align with the scenario at hand. As mentioned, the first continuum, certainty, reflects a judgment that certain defined actions will resolve the specific problem. The second continuum, agreement, projects the amount of agreement among participants regarding the outcome given these defined actions. We propose that low agreement/low certainty initiating events require a higher level of decision-sup-
port resources and behavioral strategies than high agreement/high certainty events. The next four scenarios will demonstrate this proposition.

**Scenario 1: Toleration Behaviors**

Toleration behaviors are sublimated automatic responses associated with decision making in high-certainty/high-agreement events. Simply put, these problem-solving behaviors are so routinized that they are culturally embedded and explained as “the way things are done here” or not questioned at all. As such, they fit well into the “plan and control” area of the Plsek diagram (Figure 1). However, it is important to note that this does not necessarily mean that people are doing the right things, even though they may be doing things ritualistically judged as right. From a communication-competency perspective, only marginal communication is required because people assume their roles without conscious effort, interaction, or engagement. Because interaction is superficial and limited, toleration behaviors do not involve conflict. A descriptor sometimes used for this behavior is “parallel play.”

A historical example of parallel play is commonly found between academia and community health care providers. In typical reductionistic terms, each organization has structural, informational, and behavioral boundaries; each views the other as outside of its circle of control, concern, and influence (Covey, 1989). While there is no doubt respectful information sharing between the entities, there is in reality little, if any, real understanding of, engagement in, or shared problem solving about the critical issues each faces.

Information within each entity, especially as it relates to critical concerns, is typically closely guarded. Although the following quote from Wheatley (1999) refers to a single organization, we contend that control over information is typically viewed as even more important at the intraorganizational level because there is little to no “desire to let information roam about promiscuously, procreating where it will, creating chaos. Management’s task is to enforce control, to keep information contained, to pass it down in such a way that no newness occurs. Information chastity belts are a central management function” (p. 97).

The process in place between academia and community health care providers supports parallel play with those involved tolerating or working around limitations in the process, or simply keeping information secure so that each entity remains disconnected from the other’s inner workings and, most importantly, their crises. In one rare but extremely moving experience, a high-level nurse administrator broke into tears at a typically perfunctory parallel-play information-sharing meeting between academia and service. The critical nursing shortage and burnout issues faced over a long period of time in the provider organization had taken a toll, leaving this administrator utterly spent. While all listened, watched, and responded empathetically, the ability or willingness to move into any constructive problem solving was lacking. It was not in the parallel-play script.

The failure of both organizations to identify, recognize, respond to, and reorganize to meet this challenge and other new challenges in the environment by using the collective intellectual capacity of both organizations was evident. Typically, culturally embedded decision rules and actions are part of the institution’s policies or procedures or are passed along behaviorally without recall as to how, why, or when the process was established. And, because these routine problems have not produced significant conflict or discomfort, there has been a lack of dynamic feedback to engender change or innovation.

**Scenario 2: Coordination Behaviors**

Coordination, developmentally more complex than toleration, is the next behavioral scenario. O’Mara (1999) says that “in coordination, two or more people provide services to a client or program separately and inform each other of their activities” (p. 502). Gray (1989) further stipulates that coordination is part of the formal institutionalized relationships in an organization. Coordination is appropriate when the trajectory of a situation can be anticipated (high certainty/high agreement), and, like toleration, it fits well with the “plan and control” approach of mechanical systems thinking. In this scenario, decision makers consciously engage in observing a problem, create structured solutions within existing structures, and achieve an outcome that mimics regulatory or professional norms. Communication between organizations involves informing each other through established documentation procedures or verbally verifying the outcome of each scheduled step during routine communication.

Research studies indicate that coordination—through structures such as policies, procedures, standing orders, and care paths—can improve nurses’ role satisfaction in part because it reduces conflict-laden communication between disciplines (Ballou, 2001; Draper, 1987). Additionally, coordination processes improve other outcomes, such as the cost of care, patient satisfaction, and clinical outcomes (Draper,
Each other to perform effectively. They encourage each other because they understand the other’s priorities help them to be successful. Compatible goals promote trust. People expect help and assistance from others and are confident that they can rely on others; it is, after all, in others’ self-interest to help. Expecting to get and give assistance, they accurately disclose their intentions and feelings, offer ideas and resources, and request aid. They are able to work out arrangements of exchange that leave all better off. These interactions result in friendliness, cohesion, and high morale. (p. 25)

Cooperation is best recognized by recurring interpersonal communication between people over time on shared objectives (Kouzes & Posner, 1987). When people work together cooperatively, they maintain their distinct and individual professional identities, yet also achieve shared objectives (Marcus, Dorn, Kritek, Miller, & Wyatt, 1995). Cooperative behaviors mark the emergence of problem solving in the “zone of complexity.” In cooperation, the “relationship among things” outweighs the importance of “the things themselves” (Valadéz & Sportsman, 1999, p. 210), and it is the relationship that “will always evoke different potentialities (p. 211). Important characteristics that distinguish cooperation from toleration and coordination include (1) the uncertainty or lack of agreement around the best course of action to take in an emergent situation; (2) the unique viewpoint, expertise, and role of each person involved in a situation; (3) the relationship between those involved; and (4) the context of the interaction.

In Code Green: Money-Driven Hospitals and the Dismantling of Nursing, Weinberg (2003) described cooperation between nursing and administration at Beth Israel Hospital in Boston before financial difficulties and a decision to merge with the New England Deaconess Hospital in 1996. From the 1970s, Beth Israel Hospital—an original “magnet” hospital and originator of primary nursing—had in place a highly cooperative relationship between the nursing department and administration. This cooperative relationship provided nursing the power to develop and implement a unique and effective professional practice model that existed until a new administration effectively “dismantled” nursing following the merger.

Too often, and certainly in this instance, cooperation is marred when respect between the two parties is devalued. With mounting pressure on administration to stop financial losses, the administrators at Beth Israel Deaconess Medical Center abandoned problem solving based on the science of complex adaptive systems and reverted to an industrial model, driving a “plan
“and control” approach throughout the merged organization and dismissing nursing concerns as simply resistance to change. In the process, nursing was stripped of its power and control over practice, and according to Weinberg (2003):

The hospital administrators mistakenly assumed that the nursing leadership’s efforts to preserve professional resources related more to preserving the power of the nursing discipline in the hospital than to preserving the quality of patient care. Based on this assumption, hospital administrators dismissed bedside nurses’ claims about deteriorating quality of care as representing professional self-interest rather than warnings about real threats to patient safety. (p. 87)

Much of what is called collaboration is actually cooperation. Cooperation is best used when complex decision making associated with a lower certainty or lower agreement regarding expected patient and/or organizational outcomes is necessary to determine actions. Cooperation is marked by active, respectful negotiations. A major difference between cooperation and collaboration is that these negotiations occur within professional boundaries and cultural practices.

**Scenario 4: Collaboration Behaviors**

The highest developmentally, and most complex and resource-intensive interdisciplinary behavior is collaboration (Bleich, 1995; Hoffmann, 1998). According to Bleich (1995), it exists when the goals and aims of every party are focused on a common cause or need, the vision of what is desired is clear, care systems support clinical practice, and there is an even power base and incentive for each person to participate fully in achieving the outcome. (p. 320)

In agreement with Gray (1989), collaboration is an emergent process that “should be distinguished from the terms cooperation and coordination,” (p. 15) even though both “often occur as part of the process of collaborating” (p. 15).

Interdependence is a crucial characteristic that differentiates collaboration from other forms of interdisciplinary behaviors (Corser, 1998; Fagin, 1992; Liedtka & Whitten, 1998; Stichler, 1995) because financial and human resources now combine to “form a new common identity to foster shared and enhanced process and outcomes” (Marcus et al., 1995, p. 423). Interdependence suspends professional role identities that are artificially or legally contrived and focuses on the complementary knowledge, skills, and abilities of each decision-making member. The event that triggers the need for collaboration is depicted in the model as problems with low-to-moderate certainty and low-to-moderate agreement regarding the outcomes expected based on defined actions. An apt descriptor of this area on the model is “at the edge of chaos” (Burns, 2001, p. 475). By asking “wicked questions” (Begun, Zimmerman, & Dooley, 2003, p. 278) that break old patterns of thinking and acting, emergent problem solving in these situations can identify multiple ways to effectively and innovatively solve problems.

Begun et al. (2003) provide a good example of collaboration surrounding a complex health care issue. In 1997, AIDS was assumed to be an intractable problem in developing countries based on five assumptions:

1. The impact of today’s interventions (and prevention efforts) will take a generation or two to play out.
2. The cost of the antiretroviral drug cocktails is out of reach for poor countries.
3. Treatment is a luxury poor countries cannot afford, and they opt to focus almost exclusively on prevention.
4. Uneducated, illiterate patients cannot manage their own complicated drug therapies.
5. Meaningful solutions require sophisticated, integrated national health care systems. (pp. 275-276)

While the World Bank projected in 1992 that Brazil would have 1.2 million cases of AIDS by 2000, Brazilians instead reported 0.5 million cases.

Brazilians approached the challenge before them by asking "wicked questions" (Begun et al., p. 278). They asked how the cost of drugs could be reduced so everyone needing treatment could receive it, rather than how could they provide treatment when the cost of the drugs was so high. Furthermore, they asked how they could achieve their prevention goals while treating those infected, rather than choosing one or the other, which was the usual approach. To address the first question, the Brazilian government produced generic antiretroviral drugs by exploiting a World Trade Organization clause in support of violating patent laws in cases of national emergency, and then provided the drugs to patients free of charge. To address the second question, the treatment was made part of the prevention strategy, greatly facilitating getting people in to health care facilities for testing, treatment, and education (Begun et al., 2003).
Although the health care system in Brazil was significantly fragmented, the Brazilian government—by aligning resources and creating partnerships—overcame the catastrophic World Bank predictions. Even the assumption that the people of Brazil were uneducated and illiterate and could not manage their own complicated drug therapies was invalidated. New ways to communicate with patients were developed by nurses and other health care providers, and by 2000, the drug adherence rate in Brazil was the same as that in San Diego. Now a model for other developing countries fighting the spread of AIDS, the country achieved success through innovative problem solving and collaboration at the edge of chaos (Begun et al., 2003).

The Brazilian government, by taking the appropriate leadership role, removed barriers, aligned the resources of over 600 nongovernmental organizations and community-level health care organizations, and fostered the creation of partnerships to reach the population of Brazil affected by AIDS. An additional 133 centers for testing and counseling have been added to the system; these now work with health care providers from existing agencies to provide a full range of needed services for this population of patients (Begun et al., 2003).

Collaboration, then, is marked by knowledge contribution, equal distribution of power, and a focus on achieving best outcomes without regard to discipline, hierarchy, or even organizational boundaries. It is most effective for circumstances in which the relationship between actions and outcomes is uncertain and in which there is little to no agreement among those involved on the best course of action to take (low agreement/low certainty), but in which a general vision of the desired future state is known.

It should be evident that the conditions triggering the need for collaboration are not omnipresent. It is important, however, for organizational leaders to (1) acknowledge low agreement/low certainty events rather than assuming a mechanical systems thinking approach to all problems, and (2) create a culture to support collaboration, including mechanisms to reinforce and reward desirable clinical and organizational achievements. Understanding the conditions necessary for collaboration from an organizational perspective provides one way to examine when, how, and whether collaboration is possible, and to appreciate that collaboration is “an elusive goal” (Lockhart-Wood, 2000, p. 280).

Both cooperation and collaboration involve double-loop learning. Bowen (1997), in describing Argyris and Schon’s “action science models,” (Argyris & Schon, 1974) identified that double-loop learning supports innovation through the use of problem-solving skills that encourage alternative questions to complex or emergent problems—the “wicked questions” referred to earlier. Double-loop learning is facilitated in organizations that encourage the free and open exchange of information, where decisions are based on informed choice, and where those involved in problem solving advocate their position in an environment supportive of public testing.

**Typology for Choosing Appropriate Interdisciplinary Behavior**

As previously noted, this typology can benefit both academic and service partnerships built around improving care and organizational outcomes. The use of this typology could:

- increase clarity of the specific problem solving behaviors;
- help set realistic expectations between professionals and organizational leaders with regard to interactions;
- improve the outcomes of care and organizational outcomes;
- improve the satisfaction of health care professionals and organizational leaders with their interactions; and
- improve the satisfaction of health care professionals with their individual and shared role responsibilities.

When organizational leaders observe ineffective decisionmaking, the typology can aid in diagnosing and correcting communication and environmental flaws.

Given the escalating cost of health care and the often unacknowledged costs associated with decision making, it is important that academic and service leaders choose the least intensive behavioral strategy that will achieve the desired outcome. **Collaboration is not always necessary to achieve optimal patient or organizational outcomes, and in fact may only occasionally be required** (i.e., low agreement/low certainty situations). However, collaboration—even when desired—may be impossible in some organizations because of norms that diminish the importance of professional interactions or belief that mechanical systems thinking can solve all complex problems. Because repeated and purposeful interaction over time is a key determinant of
the type of interdisciplinary interaction achievable, and organizational factors often determine this context of care, these conditions must also be considered in choosing the most appropriate type of interdisciplinary behavior. Table 1 provides a typology of the individual, organizational, and systems attributes of four behavioral strategies involved in problem solving, decision making, and innovation: toleration, coordination, cooperation, and collaboration.

**Discussion**

There is a substantial difference in time requirements for each level of interdisciplinary behavior. Collaboration, the most expensive in the short term, requires people to spend time together developing relationships and learning to communicate, respect, and trust one another (Alpert et al., 1992; Arslanian-Engoren, 1995; Zimmerman, 1999). Because time is money, we should expect that health care professionals and organizational leaders select behavioral strategies commensurate with the complexity and risk of the situation. A more imminent concern is that we do a poor job in recognizing and reacting to situations truly requiring collaboration, and instead implement short-term fixes that merely obfuscate the problem(s) or create new ones.

In a study by Coeling and Wilcox (1994), nurses decided whether to confront the physician about a patient concern first on whether it was a patient safety issue and second on their perception of whether a collegial relationship existed with the physician. Therefore, it is likely that nurses already assess the time, energy, effort, and expected outcome in choosing a level of interdisciplinary behavior that aligns with the specific situation and organizational context.

With the exception of Baggs et al. (1997), most studies that address the concept of collaboration have

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<td>← Management functions to make decisions, align roles to functions, direct/control work, manage/control individual’s work and behavior →</td>
<td>← Focus on process →</td>
<td>← Management functions to align roles to information infrastructure, focus on team results, manage data complexes, facilitate resources, transfer skill sets, construct relationships through partnerships →</td>
<td>← Complex, adaptive, dynamic →</td>
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<td></td>
<td>← Focus on process →</td>
<td>← Reductionistic →</td>
<td>← Focus on outcomes →</td>
<td>← One best way is not known/agreed on →</td>
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<td>← One best way →</td>
<td>← The world is orderly, linear, and predictable and is governed by natural laws →</td>
<td>← Complex, adaptive, dynamic →</td>
<td>← One best way is not known/agreed on →</td>
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<td>← The world is orderly, linear, and predictable and is governed by natural laws →</td>
<td>← Linear problem solving →</td>
<td>← One best way is not known/agreed on →</td>
<td>← The world is unpredictable, the intent of the observer influences what is seen, and the relationships among things are wh at counts →</td>
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<td>← Linear problem solving →</td>
<td>← Things themselves are what is important →</td>
<td>← Complex, adaptive, dynamic →</td>
<td>← The world is unpredictable, the intent of the observer influences what is seen, and the relationships among things are wh at counts →</td>
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<td>← Things themselves are what is important →</td>
<td>← Single-loop learning system guides actions →</td>
<td>← Relationship between things is what is important →</td>
<td>← Relationship between things is what is important →</td>
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<td>← Single-loop learning system guides actions →</td>
<td>← Ambiguity can be eliminated →</td>
<td>← Double-loop learning system guides actions →</td>
<td>← Must thrive on ambiguity →</td>
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<td>← Ambiguity can be eliminated →</td>
<td>← Limited resource utilization →</td>
<td>← Advanced problem-solving skills →</td>
<td>← Moderate to high level of resource utilization →</td>
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assessed the presence of it without considering the necessity of behaviors for achieving desired outcomes. Further studies are needed to determine whether appropriate behavioral strategies are present when needed to achieve expected patient and organizational outcomes. It may well be that “relationships drive everything” (Porter-O’Grady, 1999, para. 18) and are, therefore, the key to future success in complex problem solving. Wheatley (1999) lends support and identifies the questions all organizational leaders should ask.

Even organizational power is purely relational. One evening, I had a long, exploratory talk with a wise friend who told me that “power in organizations is the capacity generated by relationships.” It is an energy that comes into existence through relationships. Now I look carefully at a workplace’s capacity for healthy relationships. Not its organizational form in terms of tasks, functions, span of control, and hierarchies, but things more fundamental to strong relations. Do people know how to listen and speak to each other? To work well with diverse members? Do people have free access to one another throughout the organization? Are they trusted with open information? Do organizational values bring them together or keep them apart? Is collaboration truly honored? Can people speak truthfully to one another?” (pp. 39-40)

We suggest that gaining knowledge about interdisciplinary behaviors is critical and that for this research to progress, a systems approach that encompasses both mechanical systems thinking and the science of complex adaptive systems is required. An initial step is to establish terminology and definitions further differentiating the types of interpersonal behaviors, which we label toleration, cooperation, coordination, and collaboration. These definitions can then be used to establish agreement on the type of interdisciplinary behavior warranted in a variety of health care circumstances. The relationship between specific behavioral strategies and patient and organizational outcomes can then be tested. Academic-service partnerships would be an ideal testing ground for this research.

Organizational context in and between organizations is another major factor that impacts research surrounding interdisciplinary behavior. A power differential between administrators, physicians, and nurses in or between organizations can inhibit optimal relationship development, cooperation, collaboration, and conflict management, and severely limit the opportunity for self-organization, advanced problem solving, and innovation at the edge of chaos (Kritek, 1994; Morrison & Milliken, 2000; Valentine, 2001). Weinberg’s (2003) case study of the dismantling of nursing at Beth Israel Hospital is a potent example of the negative effect that organizational context can have when power, faulty paradigms, and unsubstantiated conclusions about another group’s behavior replaces an appropriate approach to problem solving at the edge of chaos.

The current uneven table (Kritek, 1994)—where nurses are all-too-frequently seated—may further exacerbate the cyclical nursing shortages and the organizational issues faced in care delivery. The “magnet” hospital studies have shown that workforce retention is dependent, among other things, on “nurses’ participation in clinical decision-making and organization of clinical care systems” (American Association of Colleges of Nursing, 2002, para. 26). Porter-O’Grady (2001a) calls for “team-based processes, councils, and partnership structures . . . designed and constructed to support the expectations for accountability and shared decision making” (p. 472) as a necessary approach to building the necessary relationships and power bases for advanced problem solving and innovation.

Finally, health care professionals need to study the nuances of systems thinking and differentiate mechanical systems from complex adaptive systems. Typically, nurses have a broad exposure to general systems theory but have limited exposure to complexity science that supports the contemporary applications associated with learning organizations. Learning organizations are not about staff development; rather, they are structured around the use of informational feedback loops that are used to nimbly adapt and respond to environmental influences, including those associated with patient care systems. Simply put, there is a tremendous opportunity to apply systems theories to the changes that can emanate from academic-service partnerships.

Studies are needed to determine how the use of the four interdisciplinary behaviors and organizational context are related, and then how organizational context impacts the ability of organizational leaders and health professionals to use appropriate interdisciplinary behaviors for problem solving and decision making for providing a system that supports the provision of quality care.

Conclusion

Is the sky really falling? It all depends on perspective. Since the institution is dead, one perspective—based in mechanical systems thinking—could be that chaos is the only alternative. Another, based on the science of complex adaptive systems, suggests new, exciting pos-
sibilities in academic-service partnerships. Creating this future requires leaders and managers with different attitudes, knowledge, and skills. A key role for the leader and manager of the future will be aligning resources to create and sustain partnerships. Tim Porter-O’Grady (2003) refers to this as the distribution of power at the point of service, which translates to the right people, right time, right place, and right decision.

The value of academic-service partnerships will be determined by improvements in the critical and complex issues now faced. This translates into problem solving, decision making, and innovation at “the edge of chaos.” Innovation and problem solving are dependent on relationships, which in turn are dependent on communication competence and strategies. Therefore, it is imperative that we identify and incorporate into staff development and student education the teaching methods to align behavioral strategies that foster problem solving and innovation.

Communication strategies impact student, patient, and organizational outcomes, as well as the satisfaction of health care educators, providers, and leaders in their own roles. When the notion of complexity is introduced into the communication mix, it becomes even more apparent that organizational context becomes a critical factor in decision making. Academe and service can no longer operate independently of one another, making the desire for effective communication an absolute necessity.

The use and effectiveness of communication behaviors is a function of the complexity of the event initiating the professional interaction, the communication skills of those involved, and the organizational context in which the interdisciplinary behaviors occur. The organizational context is, in part, a function of how those with power in the organization view, organize, and support the achievement of organizational goals through the various health care disciplines.

If relationships are organizational power, the “learning for all of us seems clear. If power is the capacity generated by our relationships, then we need to be attending to the quality of those relationships” (Wheatley, 1999, p. 40). To attend, we must:

- study and understand more about relationships and effective decision-making;
- know how to best use and support relationships and problem solving in, between, and among organizations;
- create metrics that demonstrate how appropriate decision making impacts cost, quality, and satisfaction of both consumers (students and the public) and health care professionals (in service and academe); and
- learn to quickly recognize and respond appropriately when an event is in the “zone of complexity.”

Following these four activities, academic-service partnerships can thrive through appropriate, efficient, and effective problem solving and innovative decision making. The model presented in this paper advances the knowledge, skills, and abilities needed to do so.

References


Wagner, E. H., Davis, C., Schaefer, J., Korff, M. V., &


