

A Lesson in Patient Safety from 'A Beautiful Mind'

Executive Summary

- We must frame patient safety problems as arising from our inability to manage and contain inevitable conflicts among competing interests in a system.
- Before an integrative solution to patient safety concerns can occur, people issues in patient safety must be given more attention than they currently get.
- Optimal solutions must examine both the system and people side of the equation.

John Nash, PhD, the Princeton University mathematics professor whose life story was depicted in the award winning movie "A Beautiful Mind," contributed to an area of study broadly defined as "game theory." He won acclaim in his field, and in 1994 shared a Nobel Memorial Prize for ideas grounded in eloquent mathematical models that have applications for understanding conflict and decision making. Applications of his work have been applied in business, economics, law, political science, and other fields. I believe they also are relevant to patient safety (Dixit & Skeath, 1999; Milnor, 1999). Because his work has implications for how conflicts are resolved and decisions are made that affect individuals, groups, and organizations, it should be of interest to nurses and other medical practitioners concerned about patient safety.

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Let me begin by outlining why what he had to say appealed to me. As a psychologist, I was familiar with Professor Nash's ideas largely due to my work in human factors that influence people in systems, including how individuals and groups manage conflict and decide upon appropriate courses of action. Some of what he advocated formed a backdrop to my teaching and consulting activities on conflict resolution and team building in organizations (Grasha, 1996). In recent years, my interests have turned to concerns about the role of human factors in medication errors and patient safety issues (Grasha, 2000). Conflict, and the need to resolve it, through effective decision-making are at the heart of patient safety. Few people, I suspect, are likely to frame the problem this way.

Reframing Patient Safety

The relationship of patient safety to unresolved conflict and non-optimal decisions among people and groups within medical systems is not far-fetched. To make the connection, however, we must frame patient safety problems as arising from our inability to manage and contain inevitable conflicts among competing interests in a system. Nurses, for example, interface with other practitioners who don't always agree with each other on the best ways to provide safe and reliable patient care. Also, the needs of nursing compete for limited hospital resources with those of physicians, pharmacists, administrators, and other hospital staff. Agreement does not exist on appropriate levels of staffing for patient care, nor is there agreement on how much money, space, time, and technology are needed to provide services.

Decisions that reflect a consensus on the best way to conduct the business of patient care are seldom achieved. Instead, attempts to compromise occur as efforts are made to satisfy the demands of all of the parties involved. Such demands, unfortunately, are often incompatible. Thus, interesting tradeoffs subsequently develop among the needs to enhance patient safety while containing costs, working efficiently, and allocating progressively scarce resources to a growing patient population that wants more not less of what is available. The solutions obtained are not optimal and inevitably lead to additional stress and tension.

Nurses and their patients get caught in the middle of such conflict and classic signs of conflict emerge. People experience stress, become dissatisfied with their jobs, errors increase, and, they take their frustrations out on others (Grasha, 2001). When asked what he thought a major barrier to patient safety was, a physician friend quickly remarked, "If only those nurses would..." I know

some nurses who would beg to differ, and would just as quickly, place responsibility in the other direction. The problem here is that the conflicts embedded in patient safety produce tension, frustration, anger, and a default to a common cognitive bias - blaming others. When things do not go well, what psychologists labeled the "fundamental attribution error" arises. Instead of looking for broader causes for patient safety problems, including situational and system influences, attributions of blame turn to individuals and characteristics they possess or perhaps lack.

In the process, people frame conflicts embedded in patient safety in limited, stereotypical, and non-optimal ways. Issues become polarized and solutions are sought at one pole or the other. One is to make, as I just described, people the center of the problem. The other is to conceptualize the issues as a "systems problem" and to find ways to reduce the role of people in the equation. In systems thinking, nurses and other medical practitioners associated with patient safety failures also become "victims." In this case, their errors represent a form of victimization by explicit and latent problems in the system (Reason, 1990). Like the patient on the receiving end of the error, medical practitioners were in the wrong place at the wrong time. Fix the system, advocates of this approach suggest, and medication errors will be on their way to extinction (Leape, 1999; Morath, 2000).

From the perspective of principles embedded in Professor John Nash's work, neither "personalizing nor systematizing" the problem will produce an optimal solution. Instead, the optimal solution to any problem, with roots in unresolved embedded conflicts, is to seek an integrative resolution. What is needed are solutions that account for the needs of the group (that is, system, organization, institution) as well as those of the individuals involved (that is, patients, nurses, physicians, pharmacists, others). But we must do so in a manner that does not discount the importance of either entity. In effect, if patient safety concerns were analogous to the problem of "how to burn a candle quickly," then an optimal solution would involve burning the candle simultaneously at both ends. Both sides of the problem would then be addressed.

People Issues Cannot Be Swept Under the Rug

Before an integrative solution to patient safety concerns can occur, people issues in patient safety must be given more attention than they currently get. Elevating attempts to treat the problem as a systems issue has paradoxically put people into the background in ways that may not be productive. System-like solutions involving technology, changes in workflow, reorganizing the workplace, and other interventions are designed to make people efficient and safer. What happens in the process is that people are easily discounted as unreliable, unable to change their habits, or are perceived as interchangeable

parts within a larger system.

Those parts, nurses and her practitioners, are reorganized, reduced in force, given additional responsibilities, asked to employ new processes and procedures, and otherwise assigned roles without a careful consideration of the consequences. Unfortunately, this occurs without a systematic and careful solicitation of their input. One nurse remarked in a conflict management workshop I conducted that there were times when she felt treated "like a pawn on a chessboard." When people begin to feel like commodities, satisfaction with their roles decrease, and productivity and accuracy begin to suffer (Grasha, 2002 a & b).

No one likes being a pawn in a chess game. They rebel and look for ways to exert their own identity. Or, they find work-arounds to organizational processes and system solutions they dislike but have to embrace. One example is a tendency of system proponents to import solutions from systems outside of medicine into a hospital. Automobile plants and other assembly line operations, for example, benefit financially and with production efficiencies when inventories are kept to a minimum. Thus a system is established to allow needed parts to arrive "just in time." On the surface, this solution of bringing parts to the assembly line when needed sounds good. But when applied to medical care, nurses quickly learn that "just in time" means "not in time." Treating patients is only loosely related to building cars. Patients need their medications at specified times, but the system cannot always anticipate their needs in advance. To compensate, nurses hoard and store medications in patient care units. Mistakes inevitably occur in part because they are distributed outside of normal procedures for doing so.

The idea that nursing and other areas of medicine can learn from the good things that happen in other systems is not necessarily a bad idea. The issue is that people on the receiving end of the intervention are not adequately consulted. This happens when system changes gain momentum, and when people are viewed as parts that can be moved around as needed.

Another way to see the latter point is to look at "what is not imported." Aviation, for example, is viewed as a system that has managed safety problems well. Ideas for reporting and tracking mistakes, quality assurance processes, the use of technology and automation have roots in aviation. There are important "people things" that are not imported. Pilots, for example, have to have regular physical exams to demonstrate that they are physically fit to do their jobs. They also follow rules regarding how many hours they can work. Aviation learned that physically fit pilots who are not overly fatigued are less likely to make mistakes. When was the last time a nurse, physician, pharmacist, or other medical

practitioner was required to demonstrate they were physically fit to do their jobs? What institutional safeguards, rules, and procedures are in place, and reinforced, to insure that nurses and other medical personnel will not become victims of chronic fatigue - a well-known precursor to human error?

Also, it is not uncommon for supervisors to tell staff nurses to work hard, think safety, and leave your problems at the door. Professionals should not bring their problems to work and instead should concentrate only on the task at hand. Those same nursing supervisors have a hard time not thinking about "pink elephants" or "white polar bears" when I ask them in workshops to keep such thoughts out of their minds. Up to 30% of the stress experienced on the job comes from family and social life concerns (Crowe & Grasha, 1993). Such things create mental distractions and emotions that interfere with judgments and decisions and otherwise create an overload on cognitive processing. They contribute to error in medical systems.

Even the analyses of errors shy away from emphasizing personal antecedents to mistakes. In a long article on a medication error in a hospital, Lisa Belkin devoted several pages to system issues involved in the error that led to the death of a child (Belkin, 1997). Only at the end of the article, and almost in passing, the author noted that the nurse who questioned the order was trained in a country where women rarely confront those in positions of authority. The nurse suspected that the doctor had made a mistake, but given cultural injunctions embedded in her thought processes, she decided that he must have known what he was doing. Confronting authority in an assertive manner is a trainable skill, and not an unchangeable aspect of the human condition.

Job tension and stress takes a toll on patient safety. And, it sometimes comes from unexpected sources. In a study of nurse, physician, pharmacist teams, those with supervisors who exhibited more autocratic, negative, and controlling supervisory styles reported and intercepted fewer errors (Edmundson, 1996). Similar findings occur in my work with pharmacists and in other industries as well (Catlette & Hadden, 1998; Grasha, 2002a & b). Such styles create mental distractions, stress, and anxiety that interferes with quality-assurance efforts.

One of the causes is a institutional norm that values supervision but not training supervisors. A hospital administrator told me, "If you've been here long enough, you learn how to manage people." Reductions in funding and people in human resources also contribute to the problem. A decade ago, I conducted a supervisory training program for nurses and other hospital staff. What began as 2 days of training is now reduced to 4 hours. A lack of training translates into fewer options for managing others. People default to high-control modes of managing others. The best solution, of course, is a two-way street. Employees also need to learn positive ways to interact with their supervisors. These are trainable skills, but they require that a higher priority be given to the people side of the equation.

Working the Problem from a People and a Systems Perspective

Optimal solutions must examine both the system and people side of the equation. How many more people will have to leave the profession of nursing; how many jobs will continue to go unfilled; and how many errors will occur due to poorly trained personnel or inadequately staffed patient care areas before someone realizes people issues are involved? Reshaping the system, adding technology and automation, redesigning workflow, and other system-level interventions cannot succeed in nursing, or elsewhere in medicine, without the right people being in place. And when they are in place, working as part of a team on patient care and safety issues provides value added to individual efforts. Teams are very effective in promoting safety (Geller, 1996; Schell & Brushwood, 2002). But effective teams, like individuals, also require training, time to discuss and analyze ways to improve their work, support, and encouragement.

Paradoxically, in trying to protect people, to encourage reporting of error conditions, and to foster the analysis of error for improving patient care, we have placed too much emphasis on the power of system interventions to resolve our patient safety concerns. If Professor John Nash is correct, we need to redirect our efforts. The important question to ask is, "How can I do what is right both for the system and the people involved in our medication use systems?" An optimal solution lies in considering both. This is not going to be easy, but we must try. To continue to split the two entities, and to consider one more important than the other, will not help nursing, other medical professions, or the patients they serve.\$

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