*Discussion Forum* ■

# Managing Change:
## Analysis of a Hypothetical Case

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## Case Presentation

Mercer Medical Center has been successfully competing for business because of the strong visionary leadership of Chief Executive Officer (CEO), E. Joseph Burns. However, the pressure has been relentless to constantly update expensive systems and equipment. The latest lawsuit has brought this forcefully home yet again. The publicity will undoubtedly have a negative impact on the public's perception of Mercer and on critical negotiations with the area's largest employer, Syntel. Medical Director of Information Services Kathryn Reed has just left a meeting where she and Chief Information Officer (CIO) Barry Marks were informed that it is critical that the timeline for implementation of the new physician order entry (POE) system be moved up. They now only have nine months instead of two years to make this happen. And make it happen they must.

### Background

Mercer Medical Center is a 450-bed community hospital in a large metropolitan area in the Pacific Northwest, with 650 medical staff and a residency program. It is part of an ever-growing health system that has been successful in competing with two other major health systems in the city. Managed care penetration is increasing, and Mercer has bought up small private clinics as well as having its own managed care insurance plan. To remain competitive in the marketplace, Mercer has gone after contracts with the high-technology firms in the "Silicon Forest," as the area is known. These contracts are sought after because these companies tend to employ lots of young, relatively healthy people who, overall, use fewer health care dollars—a critical advantage in this area of high managed care penetration.

One such company, Syntel, a leading manufacturer of processing chips for the computer industry, is currently in negotiation with Mercer for a managed care contract. Interestingly, Syntel has recently announced its plans to get more involved in the health care arena. The medical industry, top executives say, is due for a consumer-driven technologic revolution that will result in advances that have already changed the business world in retailing, banking, and investing. The prevailing sentiment is that the health industry is lagging behind the corporate world. Questions about the hospital's information system arose during negotiations. Mercer's information services are comparable with those of the other health systems in town, with the exception of its POE system. One of the competing medical centers has announced its plan to deploy a new POE system. Syntel was impressed by this innovation and queried Mercer about its plan for a POE system. Mercer's CEO, loathe to be upstaged by the other health system, told Syntel that they also plan to implement such a system in the not-too-distant future.

## The Pressures

Two years ago, the hospital attempted to implement a nursing documentation system called Physician-Manager, and it ended in a disaster of grand proportions. The medical staff had opposed this system from the time they previewed it. It was implemented without any consideration of physicians' opinions. After only two days of operation, it had to be abandoned because there were so many technical problems. A substantial amount of money was wasted, the CIO nearly lost his job, and the information services department's image was severely tarnished. More recently, another system, called CareReviewer, was deployed and the medical staff was challenged yet again by unwelcome technology. In general, information service systems are seen by the medical staff members as adding to their workload when these systems should be making jobs easier. Physicians are increasingly being pushed to see more patients in less time and with less compensation. Managed care is driving down their salaries. Professionals who had previously enjoyed a great degree of autonomy now are feeling like cogs in the health care machinery, working to make more money for the top executives. All these pressures are driving physicians to the breaking point.

The corporation is under pressure as well. Negative publicity from a recent lawsuit could damage Mercer's position in the market and its managed care contracts. A 35-year-old woman, a promising new talent at Syntel, was admitted to Mercer, through the emergency department, for high spiking fever and rigors. Blood cultures, blood for a complete blood cell count, and appropriate samples were drawn in the emergency department. The doctors were about to administer antibiotics when the patient's blood pressure dropped, and she was rushed to the intensive care unit with a presumptive diagnosis of sepsis. The ordering systems in the emergency department and the intensive care unit were separate, so new orders had to be written. A sleep-deprived physician who had been up for 27 hours quickly scrawled a stat order for ampicillin/sulbactam (a potent antibacterial medication). The order was issued in triplicate, with one copy going to the pharmacy. The pharmacy read the medication as Acyclovir (an antiviral medication) and filled it as such. The registered nurse from the float pool quickly hung the intravenous medication, and it was administered. A seasoned intensive care unit nurse recognized the size IV medication bag as being the wrong size and caught the error, but two hours had elapsed. Unfortunately, the young woman's pressure continued to drop, and she suffered irreversible brain damage.

## Information Services Leadership

After the PhysicianManager system failure and the resulting uproar from the physicians, the Board of Directors created the position of Medical Director of Information Services (MDIS). This person would be a medical information specialist who would work closely with the CIO and develop an alliance with the medical staff. Kathryn Reed, MD, was appointed because of her excellent informatics background. After receiving her MD and MBA, she earned her PhD in Medical Informatics from Stanford University. Under the guidance of Edward Shortliffe, one of the pioneers of medical informatics, Kathryn proved to be a formidable student. She was hired as the MDIS reporting directly to CIO Barry Marks. The goal was for these two people to work together, the CIO to bring management discipline to the complex organization, and the MDIS to work with the medical staff to both stimulate effective user input and build their support for technology improvements. It was hoped that these efforts would go a long way toward overcoming the organizational and political barriers in the organization.

## Physician Computing Council

Reed eventually received enough funding to hire six people devoted to supporting physician computing. She created positions for two technical specialists, a network analyst, two support technicians, and a support person for her department. She focused all these resources on meeting the needs of the physicians and being their trustworthy ally in the organization. She established a 12-member Physician Computing Council earlier this year to create a venue for presenting new ideas, brainstorming, and having physicians "test drive" programs before they were introduced throughout the organization. She also hoped to gain their support and have this group champion ideas to other physicians.

Reed is acutely aware of the dangers of imposing a system on unwilling users. She has worked hard to gain the respect and trust of the medical community by being straightforward and honest and having no hidden agendas. By keeping the users' needs foremost in her mind, she sets a high standard of customer service for everyone in her department. She has also had to overcome automatic distrust because she is seen as part of the hospital administration and because she did not advance from within the existing medical staff. Reed demonstrates her commitment to "walking the talk" by going the second mile herself. When introducing e-mail to the medical staff, she offered to help them get hooked up at home by personally vis-

iting each one at home. By doing this, she was not only building trust but also making a first step toward getting physicians to use information technology on a personal level and seeing advantages to the system. She is further building relationships through the training program she has created. Nurses have been challenged to teach physicians one-to-one to use the current information system to look up patient data. For the nurse who manages to teach the most physicians, she offered the unorthodox incentive of an all-expenses-paid trip to Hawaii.

## Managing the Change

Implementing a POE system has been identified as a future goal, and Reed is working toward that step by step. She knows that this will be a challenge at Mercer, given its previous history. She also knows that such a system will cause dramatic change in the organization and that such change will naturally be resisted. Her research has shown her that the whole organization can expect to be stressed by several aspects of POE implementation:

- Changes in established workflow patterns and practices

- The strict, literal interpretation of rules by the computer or the inability of the system to identify intent

- The ambiguity of governance policies

- The lack of a clear understanding in the physician community of the long-term strategic value of the information services initiative


Reed is also familiar with the experiences of other hospitals in implementing POE systems, and she is determined to learn from them. She has seen how profoundly organizations change when new technology comes along. New organizational structures get configured. The vision developed by administration takes time to percolate into the hearts of personnel at all levels. Integrating the vision into the strong culture of the medical staff requires senior, respected, and powerful members of that staff to viscerally and intellectually believe in it too. Such champions must be able to sell the vision to others and respond to any pressures with innovative methods. Reed has been making progress in developing such champions. The physicians on her Physician Computing Council seem to be coming along nicely. They are beginning to understand the potential of this technology and are able to speak convincingly in support of a POE system. However, considerable skepticism remains, even in their

minds. From them, Reed knows that physicians want a system that:

- Is fast (subsecond response time)

- Is easy to use, requiring a minimum of training

- Has help available 24 hours a day either on line or by telephone

- Has a consistent system interface

- Will positively affect patient care

- Is accurate and reliable

Physicians' needs must be thoroughly addressed prior to implementation if there is to be any hope that they will use the system. The ability to review a patient's record on demand is powerful. Once they realize that their time is being maximized as they use a POE system, they will then be motivated to use it. The innate desire of physicians for information is a factor in motivating them to use a clinical information system. Essentially, ensuring ongoing use would require meeting their efficiency needs through productivity and ease of use.

Opposition would naturally be expected to any change that challenges assumptions and routine behaviors of practicing physicians, and Reed knows she can expect mighty opposition from that group especially. She hopes to manage the expected change by carefully leading the medical staff to acceptance of the new system. She plans to work on substantial physician involvement and leadership in the process of application development, focusing on speed and convenience and showing a willingness to identify user needs and reflect them in the system. By having physicians on the development team, Reed is looking to establish the physician champions who will lead the rest of the medical staff into smooth adoption of the POE system.

## What Should Dr. Reed Do?

Reed now finds herself in a difficult position. The CEO is pressing hard for a fast implementation of the POE system. Critical negotiations and public perceptions are dependent on making it happen. Reed is convinced that the corporation is not ready for this change. Without physician support, such a system will be doomed to failure. She sees all her hard work in building trust and credibility going up in smoke if she forces the system on the organization without taking the time to do it right, and time is what she now does not have. What should she do?

## Comment by James G. Anderson

### Assessing the Motives

The rush to implement the POE system is driven by all the wrong forces. The first is competition: the Mercer Medical Center wants to negotiate managed care contracts. It is competing with other managed care providers in the area, so basically the implementation is being driven by this as a primary motive. Also, there is a secondary motive here: public relations. Having a state-of-the-art POE system will be a good promotional tool for negotiating these contracts. The unfortunate thing, of course, is that a system that has been implemented too hastily increases the risk of failure, of errors, and of increased staff resistance. We have already had the instance of the case of the young woman who was injured because two systems—the emergency room system and the intensive care unit system—did not articulate. Certainly, hastily implementing a new system is likely to lead to more failure and more errors and more distrust from the physicians. We have also heard that the physicians are angry and upset about managed care and already feel that they have not been consulted adequately in an earlier implementation, and this hasty implementation is likely to increase staff resistance.

### Failure

What do we know about failure? Many published case studies illustrate failure: failure to demonstrate improvement in patient care[1]; failure because a system was unable to demonstrate savings in operating costs[2]; failure because there was not adequate training and preparation of residents and house staff and, as a result, the new system increased patient waiting time and staff overload[3]; failure of a system that was put into a private practice, because none of the physicians had intimate knowledge of the system or took part in the decision making[4]; and failure because physicians opposed a system that interfered with traditional practice routines.[5,6] All these cases demonstrate the folly of rapid implementation without adequate participation of the medical staff. In fact, these failures are likely to result in lawsuits. These failures have a key element: a lack of physician involvement in and acceptance of clinical information systems. Without that, we are almost guaranteed failure.

### Ensure Physician Involvement

What can Dr. Reed do about it? She seems well aware of the problems she will have with the staff. The first thing she can do is to ensure broad physician involvement in the selection and implementation of the system. It may be too late in this case, but systems without sponsorship of the medical staff are likely to fail. One strategy, of course, is to enlist the support of influential physicians. In one study, we identified and recruited influential physicians on the medical staff of a university hospital in order to increase use of a POE system. As a result, the hospital experienced an increase in the use of the system by the medical and house staff and a reduction in order entry errors.[7] A second major factor here is to make sure the system provides immediate benefits to users. To do that, you need to identify key features that users will need on a daily basis and stress both short-term and long-term benefits. It is not sufficient to merely say that the hospital will benefit by being at a better competitive advantage and that the new system will bring more to the bottom line. There clearly have to be tangible benefits to the individual clinical users. I worked with Carolyn Aydin and the people at the Kaiser Permanente Medical Center in San Diego in the implementation of the CompuHx system, which was a computer-based health appraisal system.[8] It was a fairly successful medical system implementation, not only because the medical director was strongly behind it, and we did have that support from the medical staff, but also because it provided tangible benefits to the examiners who were taking in patients, collecting medical history data, and entering physical examination data. There were clear benefits to the users in this case.

### Assess Workflow

Another major factor that you should consider in advance is how the system will affect routine practice patterns and professional relations. Study current workflows and identify those processes that the computer can improve, especially those that the computer will have an impact on. One technique for doing this, which was used effectively in a recently published study,[9] is to use surveys and interviews of every organizational unit and professional group to identify training needs, potential problems, and areas where support is needed. In the study, this was done not just one time; it was done before implementation and repeatedly during implementation, so that the implementers could head off problems before they arose.

### Behavioral Change

Another factor is to anticipate and be prepared to manage a host of behavioral and organizational changes caused by the implementation of this system. Unfortunately, as much as we talk about them and look at past implementations, every organization is

different and has a unique culture. One technique that has been used effectively is to introduce the system in stages, possibly in one unit or in one department, instead of all at once throughout the organization.[10] Provide specialized training to each group of users. Physicians frequently want to be trained by other physicians, and they will not attend CME types of programs or in-service training. It is likely that physicians are going to have to have contact one-to-one with other physicians who are experienced in using the system if implementation is to be successful. Provide technical assistance on a 24-hour basis. If you do not do this, there is likely to be frustration, anger, and failure.

### The Ethical Challenge

If we are going to successfully develop and implement a system, it must be fast, flexible, easy to use, and reliable. The ethical challenge here is this: If the physicians really believe that the system requires 18 months and not 9 months to implement then to protect patient welfare, safety, and institutional morale they need to tell the administration that the administration is wrong. They need to refuse to do the job poorly.

## Comment by Rita Zielstorff

### Force Field Analysis

The Mercer Medical Center case depicts a situation that is not uncommon when automated systems are implemented, when diverse, often conflicting forces taken together affect the likelihood of success of a planned change. Confronted with a situation like this, the change agent must analyze the nature of these forces and work to change them, or at least accommodate them, to achieve the desired goal.

One method that I have found useful for doing this is to use Kurt Lewin's classic force field analysis model.[11] The parameter of interest in the Mercer Medical Center case is the likelihood of success of the POE system. Figure 1 shows the general model. In Figure 2, the circled arrows represent forces that indicate a low likelihood of success, whereas the circled arrows in Figure 3 indicate a high likelihood of success.

So how does this apply to Mercer Medical Center? First, we identify the forces themselves and determine whether they are positive or negative in their impact on likelihood of success. Next, we determine how to manipulate the forces so that the negative ones are weakened and the positive ones are strengthened.
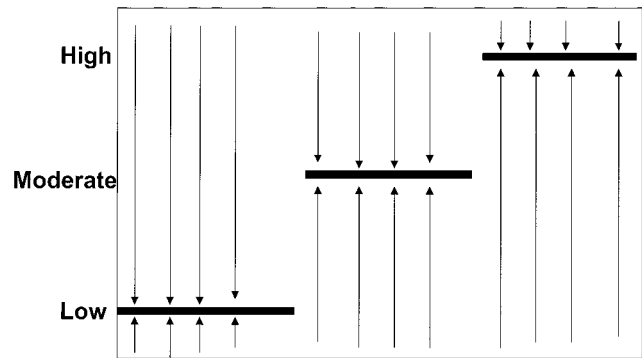


**Figure 1** Kurt Lewin's classic force field analysis model. The likelihood of success is classified as low, moderate, or high. The arrows symbolize the forces that have an impact on each possible outcome. The downward arrows represent forces that drive the likelihood of success down; the upward ones represent forces that drive the likelihood of success up. In this adaptation of the model, the length of each arrow indicates the strength of the force it represents. Adapted from Lewin.[11]
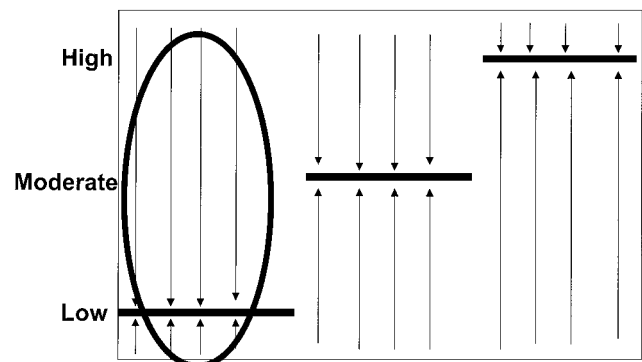


**Figure 2** Adapted Lewin model. The area inside the oval shows that the forces driving down the likelihood of success are strong, while those driving it up are weak, resulting in the likelihood of success being low.
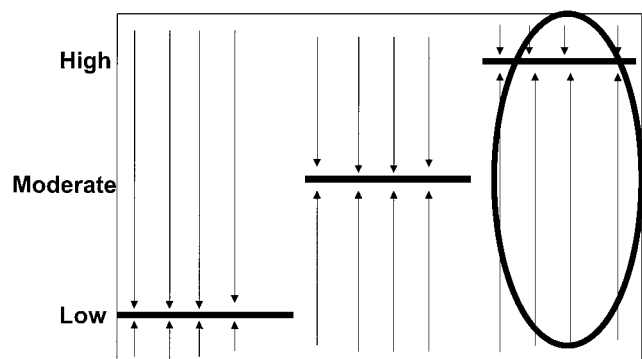


**Figure 3** Adapted Lewin model, showing weak downward forces and strong upward forces, resulting in the likelihood of success being high.

*Table 1* ■

Forces in Play at Mercer Medical Center

Unrealistic time frame
Unenlightened CEO
Pressure from Syntel for rapid implementation
Promises of implementation by competing hospital
Skeptical clinicians, but fragile trust is building
Strong administrative support for implementing POE
Existence of physician advisory group
Creation of position of Director of Medical Information Systems
Desire for safe care among all participants
A "good" system, capable of delivering the functionality
  needed to provide value to clinicians

## Analysis of Forces at Mercer Medical Center

It is important to point out that the forces themselves are neither good nor bad. They are only positive or negative with respect to whether they influence the likelihood of success of the POE system. Table 1 summarizes the forces in play at Mercer Medical Center. They include a competitive environment that leads to the perceived need for rapid deployment of the POE system, a CEO who seems unaware of the risks involved in such a course, a skeptical clinician population that has been burned by a previous mismanaged implementation, a strong MDIS, a physician computing council headed by a sympathetic leader, and several others. After carefully examining each force that is expected to affect the likelihood of success, we can categorize them as positive or negative, as shown in Table 2. Having done that, we can now figure out how to weaken the negative forces and strengthen the positive ones.

## Example of Weakening Negative Forces

Let us look at one of the forces categorized as negative: an unenlightened CEO. This person has responded to pressure by making a promise to implement the system within nine months, a highly risky proposition. It might be possible to weaken this factor by giving him information about previously failed attempts at implementation. For example, two articles by Massaro[5,6] provide useful descriptions of lessons learned in a failed implementation, with all of its ramifications. Other tactics might include surveying other hospitals like Mercer to find out about their experiences; hiring a consultant who is experienced with the selected POE system, to provide a quick assessment of how much time is actually needed for implementation; asking the vendor for their experience with implementing such a system at similar hospitals; or reminding the CEO of the considerable disruption that occurred when the practice management system was implemented at Mercer.

The aim is to make the CEO aware of the risks of a hasty implementation and the consequences of failure. In this case, the consequences of failure could include further negative publicity for Mercer, possible withdrawal of the Syntel contract (or at least failure to renew the contract), and further weakening of Mercer's competitive position for acquiring other contracts.

## Example of Strengthening Positive Forces

One of the forces we classified as positive is the beginning trust among clinicians that has been nurtured by the MDIS, Dr. Reed, who created the Physician Computing Council. This trust could be strengthened by being absolutely honest about the strong motivating factor for implementing the system as quickly as feasible: competition for contracts that underpin the survival of the medical center. After all, two thirds of the physicians (and probably most of the nurses) are on salary. If the medical center fails for lack of business, these employees and many others will lose their jobs, and patients may have a harder time getting care. Rallying around a common goal and capitalizing on the support of opinion leaders could foster a "can do" environment, a culture where everyone identifies with the need to get the system up and is willing to make compromises to do so. The implementation is then seen as something that is done not to them but with them or, better still, by them. This is, admittedly, hard to pull off, but the insight and sensitivity shown by Dr. Reed and her colleague are very strong positive forces that can be leveraged to strengthen other, weaker positive forces.

It is not always possible to mitigate every negative force or strengthen every positive force to the degree that one would like. However, using tactics like these can usually at least alter the likelihood of achieving the desired goal.

*Table 2* ■

Forces Classified as Positive or Negative

| Positive | Negative |
|---|---|
| Strong administrative support | Unrealistic time frame |
| Director of Medical Information Systems | Unenlightened CEO |
| Physician Advisory Council | Pressure from Syntel for rapid implementation |
| Beginning trust among clinicians | Competing hospital promises implementation |
| Desire for safe care among all participants | |
| A "good" system | |

## Comment by Paul N. Gorman

### The Language Used

We are talking about two things here: implementing systems and caring for patients. It is interesting to look at the language used in this discussion about managing change. These are some of the words and phrases used in reference to the implementers, the advocates of change: They show "strong leadership" in the organization, an organization that is "competitive and innovative"; they are people of status, people who are "chief officers" and "directors" of various kinds; they are characterized by "movement" in various directions, by "vision," "value," and "integration." Other words used to describe them are "champions" and "early adopters," conjuring up images of people carrying standards as they ride forward on their white horses. These are some very positive terms.

Looking at the language used about the implementees, the people on whom the change would be imposed or inflicted, we see words describing their "objections," "barriers," "resistance," and "reluctance." We are told that they would "fight it." These are not people of status, these are "staff"—"medical staff, nursing staff, hospital staff." We are not told about what they think but about how they feel. They feel like cogs, they feel distrust, they feel tension, they feel fear, and they are not ready. They need education and they need training, presumably from the implementers. These differences in language are important, because they suggest implicit constructs or models about people. In fact, they set up for us a nearly adversarial relationship, an us/them relationship. The words describing us are positive and proactive; those describing them are mostly negative and reactive. We embrace the new, they cling to the old. We are thinking and cerebral, they are feeling and affective. We use logical scientific rationale for change; they are resistant, irrational, and unscientific. The words do imply our forceful way of changing the way we think and changing the way we act. They may set us up in a really counterproductive relationship.

### Is Resistance to Change Rational?

The next point has to do with whether resistance to change is irrational or unscientific. To quote David Miller's essay in *Science* this year[12]: "But science is more than the sum of its hypotheses, its observations, and its experiments. From the point of view of rationality, science is above all its method: essentially the critical method of searching for errors." It is not argument, it is not logic, it is not hypotheses; it is a critical method of searching for errors. In medicine, this has been especially important. The history of medicine is littered with good ideas that were bad for patients. If you know about using oxygen for babies in the 1940s, it was considered an obviously beneficial therapy. It was difficult to organize randomized trials for this therapy because of the ethical dilemma of depriving patients, babies, of such obviously beneficial treatment. For those of you who are not familiar with the story, the trials showed that oxygen causes retrolental fibroplasia and blindness.

The ethical dilemma was very difficult to get past in that case. There are many other examples. The left internal mammary artery was tied off during the 1950s because it was thought that this would be good for coronary artery disease. Nowadays, we use the left internal mammary to bypass to the coronaries because it is so useful not to tie it off. We have used massive doses of steroids to treat things like acute respiratory distress syndrome and cerebral hemorrhage. It was rational, it made perfect sense that it would work, but it did not work and in some cases it was harmful. In the 1970s and 1980s, the pulmonary artery catheter, the Swan-Ganz catheter, really swept the nation because it was so rational, it made such good sense that this catheter would help people, would help us manage patients in a rational way. But in the 1990s, proponents of this test called for a moratorium on its use until trials had shown that it was beneficial, because none had.

Advanced cardiac life support protocols, if you have ever seen the old ones from the 1970s and 1980s, were mostly based on theories, and today we scoff and laugh at the kinds of treatments that were included in the early protocols, because we now do not think they are right. In medicine, it has been very important that we make sure that what makes sense is actually good for people. Sackett, in his typical fashion, put it this way[13]: "Reports with enthusiasm generally lack controls, while reports with controls generally lack enthusiasm." That is the rationale that underlies evidence-based medicine. We have got the same problem with technology. To quote Michael Crighton[14]:

> We live in a culture of relentless, round-the-clock boosterism for science and technology. With each new discovery and invention, the virtues are always oversold, the drawbacks understated. Who can forget the freely mobile society of the automobile, the friendly atom, the paperless office, the impending crisis of too much leisure time, or the era of universal education ushered in by television? We now hear the same utopian claims about the Internet. But everyone knows science and technology are inevitably a mixed blessing.

Gregory Bateson[15] has pointed out a logical rationale for clinging to the old:

> It is very easy to fall into the notion that if the new is viable, there must be something wrong with the old. . . . What is always important is to be sure that the new is not worse than the old. Other things being equal, the old, which has been somewhat tested, is more likely to be viable than the new, which has not been tested at all

### What Is a Clinician?

The above argument shows that not changing has a rationale. It is not necessarily irrational, and it might be a very rational approach. Let us now talk about what we mean by clinical or clinician. The word *clinical* can mean different things to different people. For example, a clinical assistant professor is not a real professor. It is a title we give out to people so that they will come and teach at the medical center. In Chicago, a radio report told how a policeman was describing an assailant who stuck an automatic weapon in the window of his squad car and began firing. The policeman was asked what the man looked like. He said the man looked "cold and clinical," which is different from how clinicians imagine themselves looking. We all have different views of what a clinician might be. In our research on information needs, we have tried to come up with an operational definition, and these are some of the features that we use: clinicians possess specialized knowledge, they have received some kind of experiential training, and they have a direct relationship with a person one calls a patient or sometimes a client. They make decisions about patient care; and they act in the patient's best interest, not Syntel's, not the CEO's. They integrate diverse information into decisions, and they function within time and resource constraints. For those of us who design information systems, the central task is the use of the information systems. The patient care problem and problem resolution are secondary things. For physicians and clinicians, the main problem is to resolve the patient's problem, and they will take the shortest path to the best resolution of the problem. Sometimes that will include the information system and sometimes it won't. Those flying on airplanes are not avoiding trains, they taking the shortest or easiest path to a destination. When physicians do not use computer systems, it may not be sabotage or avoidance, but simply a matter of taking the shortest, most direct path to the goal they are trying to accomplish, which is usually a goal for their patients.

Understanding this can help us work with them a little better. Annas pointed out, in the *New England Jour-*

*nal of Medicine* in 1995,[16] that metaphors matter and that language has a powerful effect on how we think and act. He suggests that we can invigorate the debate by adopting a new metaphor, and one of the things that we might do as we think about how to change health care processes with information systems is that we think about how we use language, and refine the metaphor to make ourselves more effective.

### Constructive Engagement

To summarize, language suggests implicit constructs, and if we re-examine the model, we might be able to frame the debate in a more productive way. Second, skepticism is scientific and rational; it is not reactionary or irrational or affective or feeling. It may be that people have feelings about computers, but there is also a scientific or rational reason to stick with what works. The clinician's task is caring for patients, not using a computer. If we understand that, we can understand how to help them use computers more effectively. Finally, "constructive engagement" might be the way to view this process, and that requires time. Nine months might not be enough, and physicians need to say that if it is the truth. The process requires time, effort, patience, and understanding.

## Audience Discussion

*Joan Ash*: In summary, the ethicist has said that the physicians should probably take a stand. The implementer has done a careful, practical force field analysis to identify the strengths of the various influences on the likelihood of success, and the clinician has stated that not changing may actually be a rational thing to do. Audience, what would you do?

*Member of the audience*: The question emphasized the point that the senior executive is telling the experts in systems implementation, the people who know how to do things, what to do. This represents the wrong people making the wrong decisions. This is micromanagement, actually mismanagement. You never hear the term mismanagement, we do not usually phrase it as such, but in medicine we look at mismanagement of patients very carefully.

*Paul Gorman*: There is a difference between failures in those different domains and between the models in those different domains. First of all, with respect to failures, there are failures in business, failures in information systems, and failures in medicine. In business, most businesses fail. The failure rate of small businesses is enormous, and business is the most Darwinian of worlds: it is the survival of the fittest. Failure is something that happens all the time; you get

some more money, get some more capital, and you move on. Failure is frequent. The business model of what failure means is a little different from ours. In information technology, similarly, failure happens all the time. You write a program, it crashes, you change it, you fix it, and you write a better program.

In medicine, failure is different, in that somebody either got worse or died. I don't know that we fail less, we hope that we fail less, but failure matters in a very different way, it matters as it does to aircraft operators. Failure has different meanings, and I think the differences make people think differently. The management model, the information technology model, and the medical model are very different. Librarians also have a different way of thinking about things, and when these cultures come together it takes a lot of work, a lot of time, a lot of talking to get to where you understand one another. Often, you're using the same words and talking about something different, or you're using different words and talking about the same thing. It takes a fair amount of time to get to that point. This computing council idea is one of the key ways to get there, and it usually takes more than nine months. I agree that the idea that you can just tell information technology people how to do something if you're not in information technology is not the best course.

*Joan Ash*: Don't we have an obligation to teach these CEOs our point of view? We could provide some sort of training or education for them so that they would be better at making those decisions, or at least they could let the right people make the decisions.

*Member of the audience*: Where in the structure of the hospital environment and through the approval process does the clinical point of view come in, and where should it come in?

*Paul Gorman*: Some technologies that get into hospitals don't affect workflow much, like telephones. No one pays much attention to what kinds of phones get purchased. Part of the problem is that we used to think about computers that way. They're just devices: buy a bunch of them, install them, and keep them running. Yet they're much more like the real tools of the trade, the bronchoscope or the catheter that the cardiologist uses. The cardiologist wouldn't dream of having someone else specify what catheter to insert into a coronary artery to do an angioplasty. Computers are now tools that affect the way we work every bit as much as that, and we don't have a model or structure that has the people who use those tools engaged in specifying what the tools are or how they should be used. One of the comments about the Mercer Medical

Center scenario is that no one is actually asking for physicians' input about whether or when to install the system. They want buy in and not input, and those are very different things.

*Member of the audience*: When Nancy gave her overview (see p. 116 of this issue),[17] she pointed out how important communication is. I was struck during the discussion by the lack of involvement of the CEO. There's a glass wall here, because the CEO has been allowed to make these decisions, yet communication hasn't taken place.

*Member of the audience*: The analyses have been a bit hard on the CEO. It seems that the issues of competition and public relations aren't things that can be ignored. My CEO is puzzled but not irrational. The best thing that Dr. Reed can do is cancel the meeting. Then she needs to engage the CEO productively. I would challenge the CEO to come into the rescheduled physicians' meeting and lay out the case to get everybody moving in the same direction. Let the physicians go back and explain why it can't be done in nine months and lay out a pilot implementation, work out the details, try to solve the competition issues, and solve the Syntel issues. We can get everybody engaged in the challenge of accelerated implementation through pilots in 9 months and further roll out in 12 months. This is taking the force field analysis and beginning to engage the people. We can't ignore the CEO's point of view.

*Jody Pettit*: Our assignment in writing the case included making a recommendation. Part of our suggested strategy was to actually do just what the last person said—increase communication and get everyone working on a solution together. We propose the creation of a new, smaller, multidisciplinary planning group of six to eight people, including at least two physicians and a representative from Syntel. This group should be charged with specific goals and a tight timeline. Dr. Reed should provide a facilitator and all the resources necessary to meet the goals. She should also create a comprehensive communication plan to keep everyone in the organization informed all along the way.

## Conclusion

The Mercer Medical Center case offers a real-world scenario illustrating many of the points raised by Lorenzi and Riley.[17] Organizations need to become learning organizations if they are going to survive and adapt to change. The environmental influences outlined in the Mercer case are not very different from

those pressuring many of our organizations. The panelists and members of the audience suggested different strategies for dealing with Dr. Reed's dilemma because they represent different stakeholder groups. However, there was a common theme underlying all of the recommendations—communication. The stakeholders must come together, engage in constructive problem solving, create a common strategy, and actively take charge of the change.

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