

**Beyond Electronic Medical Records:
The Hope and Promise of
Electronic Patient Management
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Several years ago, I was browsing in a book store, and saw a book with a black fly leaf. I picked it up and it fell open to page thirteen. An interlinear jumped out at me, which stated: "**Metanoia: -- A Shift of Mind.**" The paragraph went on to say, "(Metanoia is) the most accurate word in Western Culture to describe what happens in a learning organization..."

I knew the word *metanoia* and I knew that it had nothing to do with business. As a Christian and a Bible teacher, I have studied, written and taught that word for years. It is the Greek word for "repentance," and means to "have a change of mind or to change one's direction." I was absolutely confident that it had nothing to do with American business. In order to "debunk" what the author said, I read Peter Senge's *The Fifth Discipline*. Needless to say, "I had a change of mind."

I found in Dr. Senge's book a structural and philosophical foundation for what we were already doing at Southeast Texas Medical Associates in Beaumont, Texas. I also found another illustration of a principle a friend had taught me years before: the person who helps you the most is not one who teaches you something new, it is the person who teaches you how to say that which you already know or suspect.

Learning only distantly related to “taking in information”

Dr. Senge commented further: **"To grasp the meaning of ‘metanoia’ is to grasp the deeper meaning of ‘learning,’ for learning also involves a fundamental shift or movement of mind...Learning has come to be synonymous with ‘taking in information.’...Yet, taking in information is only distantly related to real learning."**

If there is one thing which is needed in the medical informatics, or medical information technology world, it is a **“change of mind.”** There needs to be a fundamental change of mind such that we are not talking about "electronic patient records (EMR)," but about "electronic patient management (EPM)."

Transitioning from an EMR mentality to an EPM goal is to apply Dr. Senge's concept of "generative learning" to the field of medicine. Addressing the concept of a "learning organization," Senge said:

"This then is the basic meaning of a learning organization... **continually** expanding its capacity to create its future. For such an organization, it is not enough merely to survive. ‘Survival learning’ or what is more often termed ‘adaptive learning’ is important – indeed it is necessary. But for a learning organization, ‘adaptive learning’ must be joined by ‘generative learning,’ learning that enhances our capacity to create." (emphasis added)

If we continue simply to talk about electronic patient records, we may create a future in which we discover that we have only created a very expensive and very complex substitute for a relatively inexpensive transcription service. If we are going to impact the future of health care, we -- vendors, managers, providers, payers, institutions, every

member of the health care team -- are going to have to begin thinking differently. This will involve at least three major shifts in our thinking. This will involve “**Medical metanoia.**”

1. **Those who are naturally competitors are going to have to work collaboratively.** The reality is that whether we are in solo practice, in group practice or providing resources for health care providers in their practices, we are all part of a larger team, which, among others, consists of those we would call our “competitors.”

It is a much larger team than those who are simply on our payrolls. This team consists of participants previously seen by health care providers as peripheral to the healthcare equation, such as pharmaceutical representatives, unit clerks, DME companies, home health agencies, hospital administrators, etc.

The dynamic interaction of all members of this community -- of this team -- is critical to the fundamental concept of electronic patient management. In this “new world,” our focus must no longer only be on “my winning,” because the reality is that if “I win” and if “they win,” then “we all win.”

If our only goal is to survive and to "triumph," we will not have changed our way of thinking and even if we succeed corporately, we probably will have failed in any thing which is ultimately valuable. This does not mean that we cease to compete, but it means that we now collaborate at some level with our competitors to make both of us better.

Recreationally, most Americans are drawn to zero-sum games -- football, basketball, car races, horse races, track and field, soccer -- in which there is a clear and decisive winner, by however narrow a margin, and where there is a clear and decisive loser, no matter how excellent a performance they turned in.

We're all charmed by Lance Armstrong's triumph over cancer and his four consecutive wins in the *Tour De France*. What I'm amazed at is that several people finished a three week race only 5 to 10 minutes behind him and experienced the "agony of defeat." In our "health care information" race, all finishers will be winners and because they drive the process, all participants will be winners, if they pursue the right goal. The best business model is not an "I win/you lose" zero-sum scenario.

2. **Those who are naturally idealists are going to have to produce work which is practical.** Americans are enamored with the fastest, the best, the biggest, the....you fill in the blank. None of these terms will apply to the successful electronic patient management tools which you will produce and use. Other words, such as “interactive,” “connectivity,” “stability,” “efficient,” etc, will define the parameters of our new pursuits. Our systems will have to be fast enough; they will have to be easy enough to use; they will have to be good

enough, but superlatives will not apply. Once our systems are “fast enough,” and “easy enough” to use, **we can begin to focus on what is really important – how do they help us increase the quality of care and decrease the cost of care which we delivery every day.**

Yet, it is possible to design an elegant solution to healthcare's problems and not impact healthcare at all because it is not possible to use it within present day healthcare-delivery realities. One enterprising full-page ad in the *New York Times* heralded that “it is not how many good ideas you have that matters, but how many good ideas you can implement.”

Forward thinkers versus Day Dreamers

Dr. Senge addresses the difference between a forward thinker and a day dreamer. He said:

“The juxtaposition of vision (what we want) and a clear picture of current reality (where we are relative to what we want) generates what we call ‘creative tension’: a force to bring them together, caused by the natural tendency of tension to seek resolution.”

Senge goes on to discuss “personal mastery” which in its essence, he says, “is learning how to generate and sustain creative tension in our lives.” Senge’s discussion of “personal mastery” is beyond the scope of our current discussion but is worthy of everyone’s review.

“Creative tension” can only produce results, however, when it finds a place from which to leverage change. Senge wisely comments that “Cynicism...often comes from frustrated idealism – someone who made the mistake of converting his ideals into expectations.” **It is not enough to want things to change; you have to make things change.** And, as IBM learned, when they encouraged “change agents” within their organization, “if you are going to change things, the change better make a difference.”

Furthermore, medical informatics technology must provide us with **tools** not with **toys**. A tool makes your job more efficient and your product more excellent, while a toy only makes your job more amusing. Over twenty years ago, a physician in our community was using computers. He had one of the very first portable computers. He would visit his medical school and attend grand rounds, plugging into a medical database. When the question and answer time came, he would ask questions based on obscure publications which were on line but not available in the medical library. He was computer savvy and knowledgeable, but he used the computer as a toy. He never changed the process of healthcare and he never improved the care of his patients with technology.

3. **Those who are naturally resistant to new ideas are going to have to become innovative and receptive to change.** Here we confront the major economic stakeholders in the health care establishment. Change is suspect because it upsets the equilibrium, which, while it has not solved the systemic problems we face, it has kept our "opponents" in check. In order to succeed, we must all surrender some level of comfort and some level of control.

The innovation required to design a future which meets everyone's needs is a future fraught with discomfort, difficulties and uncertainty. None of these characteristics are pleasant to participants in healthcare, though they so well and so often describe the nature of our enterprise. **Yet, change is the very nature of our business and if** changing how medicine is practiced and/or how health care is delivered in America is not our goal, then we need to rethink what we are doing.

Innovators are going to have to lead the process of change by helping make those successful who are reluctant to change. Leadership is more often defined in dedication and demonstration than it is in dictation. Rather than dictating change, we are going to have to demonstrate the benefits of and the possibility of change with our dedication to change.

Learning Disabilities Which Impede Electronic Patient Management

We -- you, me, all of us -- whether -- vendor, payer, provider, patient -- must actively and willingly participate in this "learning organization" which has no walls. Yet, the development of a "learning organization" is resisted, Dr. Senge suggests, by seven learning disabilities. These disabilities, which encumber our organization and team mobility, are applicable to medicine as well as to other enterprises. These learning disabilities and their application to health care informatics are:

1. I AM MY POSITION --

Dr. Senge comments: "When people in organizations focus only on their position, they have little sense of responsibility for the results produced when all positions interact. Moreover, when results are disappointing, it can be very difficult to know why. All you can do is assume that 'someone screwed up.'"

This disability principally addresses vendors. When all a vendor does is focus on his/her product and its functionalities, the vendor may accomplish something which has virtually no value, if it is not dynamically related to other members of the "medical information technology learning organization." Progressively, vendors are going to hear from end users, "You have a good product, if it worked with our other systems, but it doesn't. This means that while you have a great idea, we will not benefit from it."

Here is the counterintuitive decision vendors are going to have to make if they are going to contribute to solutions in healthcare informatics rather than simply

continue to aggravate the problem. Vendors must create products which can either interact with other proprietary products or they create products with an architecture which is easily adaptable to interaction with the products of their competitors.

2. THE ENEMY IS OUT THERE –

Senge says, "There is in each of us a propensity to find someone or something outside ourselves to blame when things go wrong."

This disability addresses providers and very often patients. The idea that someone is responsible for my difficulties is a common ploy with which to avoid responsibility for being a change agent yourself. Charging someone else with negligence or mistakes is an unproductive substitute for being willing to change. The reality in health care is that, like Pogo, "We have met the enemy and he are us!"

Several years ago, I had the opportunity to consult with a University, community-based residency program. They were struggling with the implementation of an EMR software product. After a day of analysis, I met with the faculty, administration and residents. I said, "You only have three problems. One, you have no faculty leadership. Two, you have inadequate technical, hardware support for your project. Three, you have residents with unacceptably bad attitudes. Quite frankly, I would fire all of you and start over." I concluded with the following two statements:

- a. "Either you are practicing better medicine than you are documenting or you are committing malpractice every time you see a patient.
- b. You do not have a software or a vendor problem."

The head of the program stood to respond to my conclusions. He courageously and humbly said, "You are right." Within less than a year, they had solved their problems and today are doing a great job.

The only hindrance to our success with medical informatics is our willingness to provide ourselves with an excuse for not succeeding. When a physician recently told me that he gets discouraged when things don't work in a week or so, I told him that I was going to give him a list of 100 excuses. In the future, he would not have to tell me why he didn't succeed, he could simply send me a note saying, "I was not able to succeed because of 16, 44 and 73." Anyone who wants an excuse can find one, but successful people refuse to accept an excuse, particularly for themselves.

3. THE ILLUSION OF TAKING CHARGE –

Senge argues that "All too often, 'proactiveness' is reactivity in disguise. If we simply become more aggressive fighting the 'enemy out there,' we are reacting – regardless of what we call it. True proactiveness comes from seeing how we

contribute to our own problems. It is a product of our way of thinking, not our emotional state."

Often we think action is good and inaction is bad, but we fail to recognize that disorganized activity, while fatiguing and sometimes fulfilling, rarely produces a positive result.

Remember the recent coal-mining accident; the success was won, not by furious action, but by careful planning and correct assumptions, however improbable that they were. Here's where vendors and providers often collaborate in ineffectiveness.

It is generally better to do something than it is to do nothing. And, there is no premium on timidity born of the fear of failure. Remember, the wonderful statement of Theodore Roosevelt:

"It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, and comes short again and again, because there is no effort without error and shortcoming; but who does actually try to do the deeds; who knows the great enthusiasms, the great devotions, who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who know neither victory nor defeat." Theodore Roosevelt, "Citizens in a Republic," the Sorbonne, Paris, France, April 23, 1910, quoted in *The Man in the Arena*, ed. John Allen Gable (Oyster Books, N.Y., Theodore Roosevelt Association, 1987, p. 54)

It is our nature by design that we try, but we must try with both insight and correct analysis. We must not tilt at windmills, yet we must continue to build wind turbines.

4. THE FIXATION ON EVENTS –

Senge explains:

"The primary threats to our survival, both of our organizations and of our societies, come not from sudden events but from slow gradual processes; the arms race, environmental decay, the erosion of a society's public education system..."

This learning disability addresses the possibility and even the probability that our "vision" may be obscured by our experience and by the subtle changes taking place in our world. In healthcare, this learning disability warns us not to devise solutions which are tied so closely to current phenomenon that they cannot adapt

to changing realities. If we don't, then we will design solutions which will not only be outdated by the time they are available, but they will be solutions which will encumber our ability effectively to respond to the new realities of which we will suddenly become aware.

Technological innovation has been one of the driving forces in human progress. But, the history of that innovation is filled with examples of inventors who have designed the best Betamax which was ever made, just as the market adopted the VCR. The same thing happened to the growing Laser Disc industry which was overtaken and replaced by the DVD. Adaptability to new technological trends will be critical to successful healthcare innovation in the future.

Vendor, provider, payer, participant, almost always forget that the issue is the *process*, not "a" or "my" or "your" *product*! Focusing exclusively on "my product" makes us guilty of the first three "learning disabilities" as we illustrate in our behavior the fourth.

5. THE PARABLE OF THE BOILED FROG –

Senge illustrates:

"Learning to see slow, gradual processes requires slowing down our frenetic pace and paying attention to the subtle as well as the dramatic."

As long as the frog swims around in the slowly heating water, he can't focus on what is really bothering him -- the rising temperature -- and what he needs to do about it -- get out of the water.

How often have we seen those who are constantly busy but equally ineffective? They vigorously work but rarely solve the problem they are intent on addressing. I have known people who were very busy about their task, but who never did their job. They were "busy as bees" but without the bees purposed efforts and design.

This applies to all participants in the healthcare industry. Very often, we are so fatigued from our frenetic swimming about that we don't take the time to do that which initially doesn't make sense, but which ultimately leads us to the solution we desired in the first place.

Repeatedly, Senge addresses "counterintuitive" behavior – doing that which initially does not seem to make sense, but which ultimately accomplishes your goal. Senge gives an illustration

On a winter canoeing trip, his party faced a waterfall. Porting around the fall, they noticed a man going over the water fall. The canoe capsized and the man furiously tried to swim away from the water fall. The freezing water overcame him. His body then sank below the water and was pushed by the current to the

side of the river. The man's dead body ended up exactly where he was trying to go, but too late to save his life.

Success in this instance, involved doing that which was counterintuitive, holding your breath, going under water, and allowing the current to carry you to safety. Business solutions and particularly medical informatics solutions are often like this.

In 1998, when four Southeast Texas physicians invested \$700,000 in technology to beginning the development of electronic patient management, it did not seem the logical thing to do. Five years later, with 200 employees instead of 26, and 31 providers instead of 7 and with the original \$700,000 note "paid off," the decision seems so easy. Southeast Texas Medical Associates, LLP is a product of a lot of hard work, but also of several strategic decisions, the major one of which was to develop electronic patient management.

6. THE DELUSION OF LEARNING FROM EXPERIENCE –

Senge cautions:

"When our actions have consequences beyond our learning horizon (a breadth of vision in time and space within which we assess our effectiveness), it becomes impossible to learn from direct experience."

Linear thinking will lead us to solve the problems of which our own experience has made us aware, without our realizing that the ultimate solution is just beyond our experience. This is why we all need one another, because all of us have different experiences and all of us have drawn different conclusions. It is only by consulting with our competitors that we will not create solutions which perpetuate the problems we are trying to eliminate.

This disability is a culmination of the deficiencies created by a "fixation on events" and by being like a "frog in boiling water." If learning is more than "taking in information" and if learning is the managing of "creative tension" to create a future of our choosing, then we will need to move beyond *a posteriori* knowledge – experienced-based learning -- to an *apriori* comprehension – an intuitive apprehension both of reality and of creativity -- of the future and of its demands.

7. THE MYTH OF THE MANAGEMENT TEAM –

Senge declares:

"All too often, teams in business tend to spend their time fighting for turf, avoiding anything that will make them look bad personally, and pretending that

everyone is behind the team's collective strategy – maintaining the appearance of a cohesive team."

The deception employed here is the illusion of competence. It is never popular to say, "I don't know," but sometimes it is the most creative approach to solving a problem. The admission that you don't know, or that the "management team" does not know, often makes the team aware of possibilities which otherwise would be excluded.

This is the foundation of the last three characteristics of "personal mastery" which Senge addresses in *The Fifth Discipline*. People who have a high degree of personal mastery:

- Never ARRIVE!
- Are acutely aware of their ignorance, their incompetence, and their growth areas.
- Are deeply self-confident! (p. 142)

How can you be "deeply self-confident" and yet be "acutely aware of your ignorance and incompetence?" It is that very contradiction which is the foundation of a learning organization. If we are going to move forward in medical informatics, we will have to be part of such a team. **We will have to confidently, but with a degree of incompetence, move forward to create a future of our own design.**

If the health care industry is going to design its own future by solving "the" problems, it means that we must develop a collaborative, learning team which avoids these disabilities.

EMR only "Distantly related to 'real' EPM

Remember, Dr. Senge said, "Yet, taking in information is only distantly related to real learning." It is the same with our health care world. The ability to accurately, efficiently and quickly document a patient encounter in a physician's office is "only distantly related to 'real' electronic patient management."

If all we generally talk about is Electronic Patient Records or Computerized Patient Records or Electronic Medical Records, or ...then everyone is going to get the idea that when they create the ability to produce an electronically generated document of a patient encounter, they have arrived. The problem with this is that many health care providers, who are very interested in joining the 21st-Century methodology of health care (EPM), are going to buy a product which they suddenly find is wholly inadequate for the tasks at hand.

Electronic Patient Management

To accomplish *metanoia* in medical informatics, I would immediately hold up the standard of Electronic Patient Management (EPM). I would describe it at least, if not define it. I would detail and illustrate its every aspect. I would model it where it exists, and I would dream about it where it does not.

And I would herald the truth that the ability to document a patient encounter only "gets you on to the playing field" in EPM. That ability is not the end point; and, the vendor who can only do that is not holding the winning hand.

The check list for an EPM system would include things like:

1. Medication modules which can check for drug/drug interactions, patient allergy interactions and patient chronic condition interactions with pharmaceuticals.
2. HIPAA compliance strategies
3. Charge capturing
4. E&M Coding suggestions
5. CMS Compliance standards
6. Solving recurring, complex charging and coding strategies

But, this is where the "fun" begins. And, here are some of the questions:

- How can this powerful tool be used to change and to improve provider behavior?
- How can this tool be used to improve communications among providers, which is one of the essential elements of changing behavior?
- How can the tool help providers monitor themselves, which is ultimately the best way of changing behavior? I have never met a physician or a health care provider who would admit to not wanting to provide excellent care. Now, I have met many who would not admit that they could improve, but none who would say, "Well, I know that I am not giving the best of care, and, quite frankly, I don't care!" I have never heard that. How can we "tap" in to that desire to do "good" which most providers have?

And, if these are achieved, inevitably the quality of patient care and the cost of that care will go up and down respectively.

The elements of that task are at least the following:

1. Establish a national standard of care or a "best practices" which confronts a provider EVERY TIME a patient is seen, no matter where the patient is seen.
2. Establish a methodology for auditing the providers' compliance with "best practices."
3. Enable that methodology to adapt dynamically to "changes" in those "best practices," as such changes are not only possible but inevitable.
4. Create an environment, so much as is possible, where the provider is a partner in the process and not the victim of it legally or administratively

SAFIR records

The characteristics of an electronic-management system, which would be a "winner," in ascending order as to importance, but in descending order as to how people judge a product, **are:**

1. **Speed**
2. **Appearance**
3. **Functionalities**
4. **Interaction**
5. **Research**

SAFIR records will:

- Be fast enough to be functional, both from the standpoint of reaction time and from the standpoint of time and attention required to document a record in the presence of a patient.
- Be attractive enough so that providers less inclined to embrace the more important functions of electronic patient management will be drawn to EMR.
- Have the functionalities, which define a robust EMR. Any evaluation tool should have a weighted check list. It could be like the Olympics in that there would be **compulsory** exercises -- things which every system must demonstrate -- **optional** exercises -- functions which are highly desirable but not critical -- and then a **free style** exercise where the participant can demonstrate novelties.
- Interaction with other clinical functions is critical to electronic patient management. The system which is the fastest may not be the best if its speed is achieved at the expense of doing nothing but being a substitute for dictation and transcription of records. A system which allows in-patient and out-patient care from the same database is superior. A system which allows "real time" ICU patient management which is useable from the provider's office, home, hotel room, etc, would have tremendous value. A system where the specialist and the generalist are using the same data base in the clinic, in the hospital, in the ER, in the physical therapy, in the home health, in the hospice, in the home would be the ideal.
- Research -- ultimately, the superior record must demonstrate its ability to allow **data** to become **information** to become **decision making** for improving the quality of care and for controlling cost. "Expensive" and "excellence" are not synonyms -- this aspect of the electronic patient management can prove once and for all that it is possible to decrease cost while increasing quality of care. In addition, the research aspect also can be used for clinical trials of medications, for managing the business side of medicine and for influencing provider behavior

21st Century Specialist with 19th Century Methods

Recently, I went to Houston with a relative to see a world-renowned specialist for a life-threatening problem to a young, professional woman. I sat and watched as this specialist hand wrote a History and Physical. I then sat and watched while a Chief Resident repeated the same exercise, independent of the data collected by the specialist. I then sat and watched while the Junior Resident did the same thing. The nurse then collected the same data. I then went with our niece to the hospital where the admitting nurse collected -- in hand-written format -- the same data.

I listened as each one of them collected slightly different and, at significant, but not critical points, incorrect data. I thought, "Wow, these are the best we've got and they're using 19th-Century methodologies, while practicing 21st-Century, 'cutting age,' technological medicine." This is inefficient, expensive and at times, it can be dangerous medicine.

Two requirements -- standardization and elimination of variances

Perhaps the first thing which has to happen is the acceptance of the fact that excellence of care requires standardization of care based on "best practices," "national standards of care," "guidelines," "treatment pathways, or what ever other phrase you wish to use to define quality of care.

The second principle which must be accepted is that variance from those standards of care add expense to health care costs. Typically, such variances are based on habits, which are not grounded in empirical analysis but in what is familiar.

There is only ONE way, to my knowledge, to effectively standardize care and to eliminate variations and that is with a systems approach to healthcare.

Changing behavior

First, there is no effective way to change behavior other than with systems which challenge the provider to either "do it the right way," or to document why another way is better.

Second, there is no effective way to make a change in behavior habitual without the ability to audit performance and to give "real time" feed back on standards and variances.

Third, using my illustration above, I suspect that we might not get this world-renowned specialist to document his data in an electronic format, but we can get him to review the patient's data which has already been electronically documented by others, and we can make that data available to:

- a. The chief resident
- b. The junior resident
- c. The office nurse
- d. The hospital nurse
- e. etc.

As the specialist sees the benefit of a common patient database, I believe he/she could be personally motivated to begin documenting electronically.

Changing Processes

First, the goal must be correct. "Paperlessness" in a medical office is a by-product, not the end point for electronic patient management. It might be possible to eliminate all of the paper in an office without improving the process of healthcare delivery. The goal must be ELECTRONIC PATIENT MANAGEMENT! This must be reflected in name, in content, in addresses, in position papers, etc. If you have the wrong goal, even if you achieve your goal, you haven't effectively changed the process.

Second, there are different audiences. The complexity of the "process issue" is that the process changes from venue to venue. The small medical office needs electronic patient management as much, if not more, than the large metropolitan integrated-delivery hospital network, but the issues are so different as to make a common discussion almost unintelligible, except at the goal level.

Third, pictures are powerful motivators. In this case, it is pictures of those who are "doing it." Nike Corporation achieved great success doing what they are very good at. But, there is one thing they have never done. **They have never made a pair of shoes.** They are good at design, marketing and distribution, but they are not good at manufacturing shoes. Nike took its corporate name from the transliteration of the Greek word for "overcoming," which is *nike*. There are major obstacles to "overcoming" the inefficient and expensive process of disconnected health care delivery. One way to "NIKE" this process is to model, celebrate, and publicize those who have "done it" and/or who are "doing it."

If anyone "really" listened at medical informatics conferences and if anyone were "really" watching the audiences, the only animated audience attention is when they are interacting with those who are "doing it." I have listened to consultant after consultant, who was expert at filling time but who at the end have not changed any behavior and/or given anyone a clear idea of how to change behavior.

Four, to change the process is going to require a degree of honesty which is painful. In *The Fifth Discipline*, Peter Senge says the following about "truth telling."

"We begin with a disarmingly simple yet profound strategy for dealing with structural conflict: telling the truth... (which) means a relentless willingness to root out the way we limit or deceive ourselves from seeing what is, and to continually challenge our theories of why things are the way they are. ..Telling the truth means continually broadening our awareness, just as the great athlete with extraordinary peripheral vision keeps trying to 'see more of the playing field.'...'telling the truth' means continually deepening our understanding of the structures underlying current events."

Conclusion

There has never been a more exciting time to be a part of health care. Those of us who are innovating in the area of medical informatics are participating in creating the future of health care. Few things could be as fulfilling.