

## **James L. Holly, M.D.**

**Futility and Entitlement:  
The Danger to Physicians in the Future of Medicine  
By James L. Holly, MD  
Your Life Your Health  
*The Examiner*  
June 16, 2011**

In 2000 there were 15,000 terabytes of machine readable healthcare data globally, in 2010 there was 150,000 terabytes and in 2020 it predicted that there be over 7,000,000,000 terabytes. At an average of 5000 characters per page, one terabyte of disk space could hold 220 million pages of text, which means the following:

- 3.2 trillion pages of medically-related text in 2000
- 33 trillion pages of medically-related text in 2010
- 980 trillion pages of medically-related text in 2020

Ah, but as you correctly point out, not all of this material has validity for clinical medicine; maybe the problem of “too much information” is not as serious as the above would indicate. The following shows how real the problem is. Depending upon how you count, there are between 4,000 and 7,000 medically-related journals presently being published. There are over 1,000 medically-related journal articles published each day.

In 2004, the *Journal of the Medical Library Association* published an article entitled, “How Much Effort is needed to keep up with the literature relevant to primary care?” Here are the authors’ conclusions:

- There are 341 currently active journals which are relevant to primary care.
- These journals publish approximately 7,287 articles monthly.
- It would take physicians trained in epidemiology an estimated 627.5 hours per month to read and evaluate these articles. That translates into 21 hours a day, seven days a week, every month.

In 1997, *The British Medical Journal* stated that there are over 10,000,000 medically-related articles on library shelves of which about 1/3<sup>rd</sup> are indexed in the Medline database compiled by the National Library of Medicine. If a healthcare provider receives only an average of 8 journals, including those which are free, it can be seen how overwhelming the problem of information is.

This much information can result in futility In his seminal work, *The Fifth Discipline*, Dr. Peter Senge addresses “systems thinking.” While the term does not refer to computer systems, the principles apply to health care delivery via an electronic format as legitimately as to other business enterprises.

Senge states, “Learning has come to be synonymous with ‘taking in information.’... Yet, taking in information is only distantly related to real learning.” Classically, healthcare has focused upon “taking in information” in the form of facts. The hurdle required to enter medicine as a physician is the proven ability to absorb and retain tens of thousands of isolated pieces of information and then to be able to repeat that information in a test format. Clinical training attempts to take the static database created by these facts and transform it into a dynamic tool which can provide answers to complex disease-process questions. This is where the complexity comes into healthcare: how do you take a linear database and transform it into a circular, global, decision-making tool?

### **Undermining Confidence**

Senge also identified the problem with which healthcare is faced today. He stated: “System thinking is needed more than ever because, as is demonstrated above, “for the first time in history, humankind has the capacity:

- “To create far more information than anyone can absorb,
- “To foster far greater interdependency than anyone can manage
- “To accelerate change far faster than anyone’s ability to keep pace.”

Senge concludes, “Complexity can easily undermine confidence and responsibility.” Confidence is undermined when the vastness of available, valuable and applicable information is such that it appears futile to the individual to try and “keep up.” In healthcare, once confidence is undermined, responsibility is surrendered as providers tacitly ignore best practices, substituting experience as a decision-making guide. While experience is not without merit in medical decision making, it is not the best guide.

Any sense of healthcare provider helplessness has a solution, but it is not based on attempting to take in more and more information. Senge states, “Systems thinking is the antidote to this sense of helplessness that many feel as we enter the ‘age of interdependence.’” The solution is not only to “see” the interrelatedness of disease-processes, one disease aggravating or precipitating another, but also to see the dynamic interaction between the treatments of two or more simultaneously occurring pathological processes. The solution also allows the healthcare provider to “see” how the treatment of one disease processes is required in order to augment and/or to facilitate the treatment of another.

### **Medical Knowledge Overload**

No intellectual discipline is more illustrative of the potential for undermining confidence/responsibility than is the knowledge base required to perform excellently in the delivery of healthcare. This is the problem for individual physicians; but, what about collaborative efforts to organize medical data? The Cochrane Collaboration was started in 1992 following Dr. Archie Cochrane’s 1979 statement, “It is surely a great criticism of our profession

that we have not organized a critical summary, by specialty or subspecialty, adapted periodically, of all relevant randomized controlled trials.”

There are now fifteen Cochrane Centers around the world with 1,098 complete reviews and 866 protocols (reviews in progress). It is estimated that it will take 30 years to complete reviews on random-controlled studies (RCTs) in all fields of medicine which presently exist. At the end of those 30 years, nothing would have been done on the RCTs which will have been completed in the intervening 30 years.

Without medical knowledge, quality-of-care initiatives will falter, but the volume of medical knowledge is so vast that it can overwhelm healthcare providers. Stated a different way, the good news about healthcare today is the state of our current knowledge; it is excellent. The bad news is the form in which that knowledge is stored and/or accessed. The solution is “a shift of mind.”

### ***METANOIA – A Shift of Mind***

In *The Fifth Discipline*, Senge comments about the Greek term *Metanoia*:

“The most accurate word in Western culture to describe what happens in a learning organization is one that hasn’t had much currency for the past several hundred years...The word is ‘*metanoia*’ and it means *a shift of mind*...For the Greeks, it meant a fundamental shift or change...

“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.”

Change is not easy. It often creates anxiety and insecurity, even and maybe especially among healthcare providers. However, to create excellence in healthcare, which is more of a process than it is a characteristic of a product, providers must continually be “learning,” which will require a change in the understanding of the nature of learning and will also require the elimination of barriers to learning. To sustain the learning process created by this “shift of mind” healthcare providers need tools which facilitate change rather than processes which support the status quo.

### **Limitation to Success in the future of medicine – futility and entitlement**

Without doubt the explosion of medical knowledge potentially has a negative impact upon healthcare, if providers, particularly generalists, think it is futile to try to “keep up,” and “give up” on evidenced-based, scientific medicine and just adopt habits of care developed by personal experience. The solution to this potential problem is a “change of mind,” a *METANIO*. But, if

physicians refuse to change, particularly if they adopt an entitlement mentality, the future of healthcare will be grim in spite of reform or transformation.

“Entitlement” is the attitude that it is someone else’s responsibility to make me successful. While physicians have classically despised this mentality in patients who think it is someone else’s responsibility to make them healthy, physicians are now often adopting that attitude by sitting back and expecting someone else to transform their practice with informatics. They expect someone else to pay for computer systems, and they expect for someone else to do the hard transforming work.

This is particularly seen in healthcare providers who are employed by a hospital or who work for other organizations. These physicians evidence some of the attitudes of “getting as much as I can, for as long as I can, for as little as I can, from as many as I can.” Rather than taking responsibility for the future, these physicians expect someone else to make them successful. Unwittingly, they become what they have traditionally abhorred; they become a barrier to change and consequently, the future of healthcare is placed at risk.

### **Knowledge Problem Getting Worse Immediately**

If the current state of medical knowledge can cause frustration and contribute to futility, just think about the genome. Depending on how you store and display the information, you can be dealing with 30 terabytes of information. In our lifetime, the genome will be a part of clinical practice. The only way to manage that amount of data is going to be with electronic medical records and they will have to be more than a means of documenting a patient encounter.

Even in the short run, data management is going to be a clinical problem. In 2014, all billing will switch to ICD-10 from the current ICD-9. The difference is ten fold. Depending on how you count, there are about 15,000 diagnostic codes in the ICD-9 code list, but there are almost 150,000 in ICD-10. In 2015, physicians will be required to use the diagnostic descriptions of *SNOMED* (Systematized Nomenclature of Medicine Clinical Terms). This standardized how physicians refer to disorders in order to allow comparison of outcomes and of quality metrics. For instance, today a heart attack can be called an “MI,” “Coronary Infarction,” “Myocardial Infarction,” and many other names. It is impossible to compare quality and outcomes when the names are not even the same.

These innovations, SNOMED, ICD-10 and others are mandated by law and are not optional. Physicians can sit back and say to others, “that’s your responsibility,” whether talking to a hospital administrator who owns or “leases” the practice, or to a board of a privately owned medical practice. On the other hand, embraced by physicians, these changes will improve healthcare, particularly by making sure everyone is “talking about” the same conditions as they use the same vocabulary. Yet, this will require the management of information.

## **The Solution is a “Change of Mind”**

A change of mind by physicians, as they embrace new methodologies of practicing, particularly informatics means:

- A change of mind, as physicians realize that “learning” no longer means memorizing more details but means adopting new methods of managing information.
- A change of mind, as physicians accept personal responsibility for adopting these changes and become a part of the transforming team rather than by word or by habit resisting change.
- A change of mind, as physicians renew their personal commitment to transforming healthcare, which is the only way in which physicians will regain and retain the right to lead healthcare.

If someone wants an excuse for resisting change and for rejecting the future, I can give them a catalogue to choose from, but if they are prepared to manage the healthcare of the future, they need to step and say, “I am here and I will help.”