# Comments on Meaningful Use

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**The authors are associated with a company called WAVi, either as a principle or a researcher seeking to utilize the company's platform. WAVi will produce a new brain scan device and information management software with communications system intended to significantly reduce the costs of effective diagnosis and early monitoring of disease and injuries related to the brain, such as Alzeihmer's, Traumatic Brain Injury, early onset Diabetes, Cardiac risk, impacts of pharmaceuticals on the brain and a host of other applications. One of the most significant benefits of the technology is the opportunity for the collection and assembly of massive amounts of data related to brain function and health as a result of extremely low cost scanning technology, and the electronic management of such information in ways that offer tremendous opportunities for both clinical research and for physician access to critical data at the time and point of care.**

## "Meaningful Use" includes efficient flow of new information to and from the end-user at point of care

Efforts to improve quality and reduce cost are practically "meaningful" in so far as the end user can readily utilize these advances at the point of care. Stated HIT goals include a system that, according to 2009 HR1 "reduces health care costs resulting from inefficiency, medical errors, inappropriate care, duplicative care, and incomplete information." Some of the greatest and **most practical cost reductions**, and improved quality, may be found not just by reducing errors and completing information, however, but also by creating a system that inexpensively **collects new information** and brings that information to the clinician in a timely manner. (As also stated in HR1, a system that "provides appropriate information to help guide medical decisions at the time and place of care", "improves efforts to reduce health disparities", and "promotes early detection, prevention, and management of chronic diseases".) With the ability to build ultra-large data bases, the new information provided by an electronic-health system has the potential to provide effective diagnoses, treatments, and preventions in ways presently unobtainable.

## Efficient information flow means low-cost assessment tools and imaging devices

Electronic-health initiatives need a disruptive technology movement of the sort that brought low-cost personal computers to every household, bringing low-cost medical imaging to every patient. These initiatives, for example, can play a critical role in reducing the costs of epidemics such as Alzheimer's with better information on prevention, more efficient diagnosis, and better treatment monitoring. What is missing, however, are medical assessment devices that promote acquisition of large, in-clinic and "real-life" data sets that can be seamlessly inserted into the system. Most medical assessment devices used in Alzheimer's, again as an example, such as MRI's, are extremely expensive and time consuming—available only to patients already showing critical symptoms. For successful electronic initiatives, **new tests are needed** that can be implemented **over disparate populations**. Low-cost devices must become part of routine examinations— data collection must be fast, inexpensive *and* valid.

## Efficient information flow means a timely dissemination of information to physician

As with the personal computer, low-cost assessment devices would in turn create inexpensive, ultra-large data sets that would close the point-of-care loop by providing meaningful information back to the physician and patient. The trick is to provide *valid* medical information in a timely manner. Presently, the data flow

from scientific finding to medical use takes on order of decades. With information volume doubling at an ever-increasing rate, any electronic-health initiative must include a way to present valid and up-to-date information to the physician at the time and place of care.

### Time urgency of "Meaningful Use" definitions

For diseases related to mental decline in aging, there is time urgency to accomplish HIT goals since every year the growing group of baby boomers has an increased impact on the healthcare system. Possible medical advancements achieved through these programs could keep millions of productive years from being lost. With the global economic downturn taking retirement dollars, many people are being required to delay retirement. **Ensuring the mental optimization in this aging population could be the most important asset these electronic-health initiatives deliver the country.**