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Dear Mr. Reynolds,

Thank-you for the opportunity to provide written testimony to the NCVHS hearing focusing on "Meaningful Use" of Health Information Technology. Surprisingly three missing and critical elements to achieving meaningful use were not discussed at the meeting. They are:

1. Cognitive mistakes leading to diagnostic error by clinicians is a recognized driver of poor quality, patient harm and un-necessary costs in our health system. **Recommendation: Clinical diagnostic decision support to address cognitive error should be defined as a component of meaningful use**
2. Healthcare Disparities: Improved point of care information for clinical decision making in the underserved patient is essential. **Recommendation: Clinical decision support to address disparities in healthcare knowledge should be defined as a component of meaningful use**
3. Small Companies with innovative solutions in the marketplace today are virtually never at the podium of national forums. It is typically the small company that brings the transformative and disruptive technologies to the field and certainly job growth. **Recommendation: Small companies focusing on decision support and meaningful use need policies that support their ability to innovate and grow jobs. Invite small companies with innovations to participate in policy meetings**

**Cognitive Mistakes:** Groopman in How Doctors Think, Croskerry, Toker and Graber in multiple papers have discussed cognitive mistakes leading to diagnostic error. The AHRQ convened a Diagnostic Errors in Medicine Conference, yet Clinical Diagnostic Decision Support was barely mentioned at the NCVHS hearing. As one example of the significant impact of diagnostic error, we have evidence from research at UCLA and the University of Rochester that 20% or greater of the admissions for suspected cellulitis are not needed. Physicians routinely "prematurely close" on those patients presenting with red, warm skin wrongly diagnosing cellulitis, then admitting those patients to the hospital and treating with IV antibiotics resulting in hundreds of millions (or more) of wasted dollars and the furthering of bacterial resistance. One of the underreported problems in the American health care system is that of diagnostic error due to flawed clinician thinking. While medication and surgical errors get a great deal of attention from the media and policy makers, diagnostic error is an order of magnitude greater with devastating costs, and they are preventable.

**Healthcare Disparities**: Disparities in medical information is obvious to any reader of a medical text or atlas. On the surface the issue of information disparities might seem trivial, but it is not, for example the pictures of disease of mostly white skin in our books means our dark skin patients are marginalized through the lack of quality information. When nearly 30% of the population has dark skin, decision support designed to address the information gaps in people of color and populations with unique risk factors must be supported through clear policy for meaningful use and disparities.

**Small Companies:** Transformational technologies are almost universally created and pushed forward by individuals or small companies. The innovative work in healthcare IT is occurring out of the spotlight and by small companies. With the focus of the ARRA

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"stimulus" legislation on job creation, small companies with innovative ideas need recognition for their work and visibility.

**Meaningful use in work today:** As Chief Medical and Scientific Officers of Logical Images, a company working for the past decade in point of care clinical information systems we would like to make sure that policy encompasses and supports existing systems already fulfilling "meaningful use". VisualDx is a point of care, clinical diagnostic decision support tool that is widely used across the US. While developed to bring specialty level differential diagnosis to the non-specialist, VisualDx has been adopted because it fulfills a very real need of bringing more accurate diagnosis through pattern-recognition to generalists. The system includes over 1000 diseases, 17,000 images, and 20,000 searchable patient findings and is in use in more than 700 hospitals in the US. Use of the system has grown steadily with over 5,400,000 images viewed by users in 2008 alone. The system has been licensed throughout US military healthcare, it also has also been incorporated into the curricula of some of our finest medical schools including UCLA, Harvard, Iowa, Oklahoma, Rochester and others. VisualDx is also integrated into California state sponsored telemedicine programs serving remote rural health care sites in Los Angeles County.

State departments of health have licensed this clinical diagnostic decision support system to improve general medical care and accuracy in diagnosis for hundreds of diseases. VisualDx also integrates a parallel database system that allows sponsoring organizations such as state health departments to insert their local public health alerting and reporting information into the system 24x7 (presented at CDC PHIN meeting). This means that when a clinician user is reading about a diagnosis of public health significance, that clinician can immediately click and see the local public health communicable disease related reporting contact information. This feature might seem trivial, but it is not when one considers that time-strapped clinicians do not know which diseases are reportable and who in the local public health department to contact. Delaware, South Carolina, Georgia, Indiana, South Dakota, and Wyoming have deployed the visual diagnostic decision support system to all hospitals in their respective states.

As another example, as we consider the increasing problem of CA-MRSA and bacterial resistance, diagnostic clinical decision support can drive forward more accurate diagnosis of skin and soft tissue infections and therefore more appropriate use of antibiotics. While visual diagnostic decision support is used for day to day care issues such as medication reactions and common rashes, the system also has broad applicability to the public health mission, covering not only bioterrorism and pandemic flu, SARS, and other recent public health events….but sexually transmitted diseases, child abuse, infections in travelers and the immunocompromised. There is special emphasis on presenting the variant presentations of disease as well as displaying how diseases present in people of dark skin color.

Experts in the fields of cognitive theory research and medical diagnostic errors have described known factors affecting physician decision-making. For example, if a clinician is faced with an unknown disease presentation, the chance of that doctor making the correct diagnosis depends on having the correct diagnosis somewhere in the working differential diagnosis within the first 5 minutes. One of the key functions of visual diagnostic clinical decision support is the usability at the bedside in less than 5 minutes. We are hoping we can meet with you as your schedule allows to demonstrate "meaningful use" as it exists today for 1300 clinical sites. It is imperative that diagnostic decision support is defined as "meaningful use" and our policy makers do not wrongly assume that diagnostic decision support is for some future day.

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