INFORMATICS PROFESSIONALS. LEADING THE WAY.
Kevin Fickenscher, MD – President/CEO

Members of the HIT Standards Committee,

Thank you for allowing me this opportunity to share my thoughts and perspectives related to usability of electronic health records and health information technology systems. As you know, I serve as the President/CEO of AMIA – the American Medical Informatics Association – however, I am here today as an individual who has been involved for nearly twenty years in the field of HIT deployment and use.

In addition to my comments which I am providing today, I have also submitted the report of the AMIA Task Force on Usability: *Enhancing patient safety and quality of care by improving usability of electronic health record systems: recommendations from AMIA.* The Task Force report is the culmination of work completed over the course of a year and, which was recently published in our journal, JAMIA. The article provides a comprehensive overview of the major issues related to usability and I encourage the HIT Standards Committee to consider the various recommendations provided as part of the report.

As I noted, I have been involved in HIT for some period of time on the delivery or operational side of informatics. For example, while serving as the Chief Medical Officer for Aurora Health Care, I was very involved in our decision to deploy the first Cerner Millennium EHR in the nation. In fact, I believe we were the first healthcare system to deploy the same EHR system across an entire healthcare system. We learned much in those early days. And, we have come a long distance in our approach toward adopting EHRs more effectively since those early days over twenty years ago. In many respects, the deployment of EHR systems revolves around the triad of "people", "process" and "technology". However, I would argue that the effective deployment of HIT systems revolves around the interchange of these three major areas – the "*change management*" issues which are highlighted in the interaction between PEOPLE and PROCESS; the "*implementation managemen*t" issues involved between PROCESS and TECHNOLOGY; and, the "*enablement management*" considerations involved in the interaction between PEOPLE and TECHNOLOGY. Understanding the interaction of this triad is at the core of usability – from my perspective.

First, there are any number of issues that immediately percolate to the top as barriers to the effective deployment of EHR systems in healthcare. These include: the **facilitators and barriers to the use** of these systems by physicians, which in my experience varies by specialty; the questions related to **functionality** that relates to the specific needs of the specialty; the **learning curve for effective use** of the system; and, a combination of the two most critical components for physicians on the front lines – **speed and support**.

Second, I believe there are a number of issues that need to be considered within the context of usability. If I were to create a shortlist of usability principles that seemingly apply across multiple venues and multiple groups of doctors regardless of whether they are part of systems or in independent practices – the following would be my primary list:

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1. **Design consistency is a major impediment** – imagine pilots of planes moving into the cockpit of a 737 versus a 757 versus a 747 and having an entirely different set of user interfaces. Would we not expect a problem? In fact, the "design consistency" issue is a major potential problem not only in terms of **use** of the product but also in terms of potential **patient safety** considerations that result from the use of the product. Specifically, aviation has addressed the issues of the GUI design, software user interface standards, and guidelines requirements on how the systems are used. Now, I will share that the problem in aviation was <u>not</u> solved by government edit. Rather, it was solved by Boeing and Northrup Grumman and Lockheed and Cessna and others getting together to create a formula for success on *how information would be presented to the pilot on a consistent basis*. Why? Because it would reduce error, enhance efficiency and foster effectiveness – three very laudable goals for healthcare. In my prepared response, I have provided a number of references to the aviation literature as guidance to the HIT Standards Committee in its discussions on the usability of EHR systems.

2. **Appreciation for the unique attributes of the various specialties –** Dermatology is different than Radiology is different than General Surgery is different than Family Medicine. However, one of the issues we face in the EHR world is the "force fitting" of the specialties into the pre-fab format of the various EHR systems. This creates resistance, decreased efficiency in use of the system and a host of other problems that are difficult to overcome in a one-size, fits-all environment. In a comparable format, the resistance to meaningful use has come from various specialties that believe that the requirements do not fit the practices of their specialty. For example, in Dermatology there is a need for body images in the EHR systems rather than having written descriptions. However, MU requires written descriptions and does not account for the unique characteristics of dermatology which is graphically and pictorially oriented. It is clear that while we need certain common "standards" and "approaches" we also need to recognize the unique attributes of the various specialties in providing care. Dermatologists need access to picture archiving systems that allow them to see a "picture" of their dermatologic lesion over time. Family physicians need access to the home health agency system information so that they can more adequately care for the Stage II congestive heart failure patients. I could on and on but, the picture is clear – the unique attributes of the various specialties need to be a consideration as we deploy HIT systems.

3. **System integration with resources and information across the spectrum of sources** – irrespective of specialty, I would argue that most clinicians recognize the importance for cross-specialty communications. I am a firm believer that we need to foster the use of standards – not necessarily creating more standards but, simply the use of the standards we already have in place. Imagine the capabilities of the Internet if we had the plethora of standards used by various Internet providers if different ways. We would not be able to communicate. Such is the state of healthcare communications. In the case of the Internet, the standards were created by industry. In the case of the rail industry, prior to 1860, we had multiple standards for the distance from rail-to-rail until the government finally stepped in and decided that to support the

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potential for improved commerce, a standard of 56.5" would be the rail-to-rail requirement across the nation. In short order, we were able to move rail cars from Boston to Buffalo to Chicago to Fargo to Bozeman to San Francisco – and, I might add – quite quickly.

4. **Standardized reporting of adverse events and safety reportin**g – We clearly need standards on the elements of reporting which need to be included in voluntary reporting of adverse events and medical errors. We – at AMIA – have advocated that the industry should follow the NIST Common Industry Format. Through such a model, we believe that the ability of patient safety organizations (PSO) would be enhanced and support in their challenge to increase the quality of care throughout the nation.

5. **Dissemination of "best practices" related to safe implementation of EHR systems** – Clearly, one of the central tenets of effective EHR deployment is the "sharing" of best practices. Creating a central repository of "lessons learned" and "best practices" would be invaluable for the healthcare industry and a service to the American public.

6. **Efficiency requires looking at all steps of the process**. Healthcare systems too frequently deploy EHR systems without fully reconsidering their processes for how information is shared and used across the organization. If a healthcare system deploys processes on top of processes, it naturally creates resistance across the entire front of providers. We should demand that effective usability include process redesign as a foundation for effective deployment.

I have recently proposed that we need to create a "public-private" partnership that brings together the various constituencies to engage in a meaningful dialogue on how best to deploy and support EHR diffusion. I believe that we will not solve the problems related to "usability" until and when we have such a public-private partnership in place.

So the question remains – who should be involved? Clearly, the vendors need to be a part of the proposal I'm envisioning. We also need the academics, the associations who provide the representation for the various constituencies engaged in this discussion – for example, the American Hospital Association, the Council for Medical Specialty Societies, the America's Health Insurance Plans are representative of this perspective. In addition, other vendors need to be at the table such at the new, evolving care delivery initiatives (e.g. Walgreens, RiteAid, CVS and others). Finally, while government may want to keep an "arms length" relationship in place, it is critical that the various agencies of government who are involved in standards setting – for example, ONC, the FDA, NIST and others – need to be at the table in some fashion.

I would propose that we need to create a forum for the ongoing dialogue on how to implement such a public-private partnership. It is an imperative that extends beyond the boundaries of any one perspective. We know what to do. We simply need to get on the same page for making it happen. Through dialogue, debate and discussion, I'm absolutely convinced that the "greater good" will win at

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the end of the day. We simply need to foster the discussion and support the debate so that solutions can be brought forward that are supported by the many organizations with a stake in the game.

If that fails – and, I would give only a couple of years – we should mandate the 56.5" of rail-to-rail distance for all of the electronic trains we have created and supported over the last several years of the HITECH investment. We cannot afford the lack of interoperability. We cannot afford the lack of the use of standards. We must support effective usability.

Thank you for allowing me this opportunity to share my perspective with the HIT Standards Committee. I look forward to further dialogue. Again, thank you.

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