Testimony to the HIT Panels on Implementation/Usability
Office of the National Coordinator
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Thank you for the opportunity to participate in today's hearing. I am Nancy Staggers representing HIMSS (Healthcare Information and Management Systems Society) as a member of its Usability Taskforce. My background includes 28 years in Health IT across systems implementation and usability arenas. For example, I led the program to select and implement the inpatient system now installed in 58 sites across Army, Navy, Air Force and serving 9 million beneficiaries. As a PhD-prepared nurse, I have been writing, speaking and performing user experience research for 20 years.

HIMSS is a cause-based, not-for-profit organization focused on better health through information technology (IT). HIMSS leads global efforts to optimize health engagements and care outcomes using information technology. HIMSS is a part of HIMSS WorldWide, a cause-based, global enterprise producing health IT thought leadership, education, events, market research and media services around the world. Founded in 1961, HIMSS WorldWide encompasses more than 52,000 individuals, of which more than two-thirds work in healthcare provider, governmental and not-for-profit organizations across the globe, plus over 600 corporations and 250 not-for-profit partner organizations, that share this cause.

HIMSS and its Usability Taskforce thank you for the opportunity to speak to the panels about usability and implementation. We also thank the ONC for raising national awareness about the importance of EHR (Electronic Health Record) usability and incorporating usability criteria into Meaningful Use (MU).

I will address two major topics: the current state of EHR implementations/usability and how the ONC might help. The material below was developed by surveying the HIMSS Usability Taskforce members, the HIMSS Utah Chapter board, the AMIA Nursing Informatics Workgroup, the Alliance for Nursing Informatics, by conducting a short dive into the literature and performing targeted interviews with EHR users.

Current state: Implementations and usability are **informal and uneven**. Every site starts an EHR implementation from scratch. What picklist will describe urine? Gender? Allergies? What should be in the order set for Community Acquired Pneumonia? Sharing content across sites is not common. Every site has the same struggles with implementation/project management and everywhere users struggle with a large data entry burden.

The driving force today is to hit the target dates for attestation and assure funding is obtained. Vendors are focused on functionality for MU criteria, so usability isn't fully on the radar. If summative testing is being done, the results may be discounted due to confusion about responsibilities. Vendors indicate that site customization precludes changes or that the issue is too vexing for one vendor to address (like alert fatigue). If clinicians take the time to report a system change request, any usability issues are merged with everything else. Change requests will receive a high priority if they include significant patient safety issues. Specific development priorities are not typically made public across vendor sites. Any usability testing results are stored informally within one vendor or site.

How the ONC Can Help:

- ✓ The vision.

A step back from operational issues is warranted. The ONC HIT Strategic Plan has a learning system as the pinnacle. Communicate what that means in more detail. Will we have a virtual national EHR? Patient-centered health system? Are we building appropriate infrastructure now? We must include other entities (telemedicine, pediatrics, data from mHealth devices, consumers). What are other learning system elements, especially related to interoperability? Lack of interoperability is a key usability issue among clinicians, the strategic plan and to achieving MU in the future (Stack, 2013). It can't progress fast enough.

- ✓ Smart standardization.
  - ✓ EHR starter kits – provide agnostic content that 80% of sites use, e.g., typical order sets, documentation, use cases, testing scenarios, data models – in a usable, non-academic format.
  - ✓ Standardize basic functions – a library of health EHR icons, lab displays, vital signs
  - ✓ Usability toolkit – performance benchmarks, tasks for EHR functions, good designs
  - ✓ Consolidate and market available resources – For example, the HIMSS Usability Taskforce developed a Usability Maturity Model to help organizations incorporate usability into their operations. The model is comprised of five stages from unrecognized to strategic usability and five dimensions – education, management, infrastructure, resources and a focus on users.

- ✓ Innovate on Wicked Health IT Problems.
  - ✓ Creating the patient's story - within and across care venues, defining salient information by context and devising methods to create and update the patient's story
  - ✓ Complex displays - electronic medication administration records (eMAR), clinical summaries, decision support integrated into workflow, transitions, team-based care need attention. Improving the user experience could also result in displays that provide more clarity in diagnostic coding and decrease current issues with upcoding.

- ✓ Usability = patient safety.
  Evolve from summative testing to identifying/fixing patient safety issues, reporting performance metrics, having benchmarks for critical tasks. The required summative test was an effective way to focus attention on the user experience but the spotlight should be on how usability impacts patient safety and how to prevent patient safety issues early in the design process. Summative testing is too late in the process to impact the product before release. Evolve the Safety Enhanced Design process to place more emphasis on early testing, iterative design and resources and efforts for formative, task-based activities.

- ✓ Transparency for user experience issues – currently, users cannot see usability testing results for certified EHRs. Make usability testing results transparent to users. Make the reporting of issues easier without having to report every detail and path. Have a national repository with analytics to discover user experience issues across sites/vendors and functions that create more subtle patient safety and efficiency issues. Include best designs and design practices as well as usability issues.

Thank you again for this opportunity to give voice to the usability challenges and opportunities many users are facing, and I look forward to the panel's questions.