NIST - EHR Usability
Research & Development
Topics

- Mission and Role of NIST in EHR Usability
- Applying the Science
- Advancing the Science
- Establishing the Metrology
- Current Activities
- Planned Activities
- Question and Answers

www.nist.gov/healthcare/usability
Mission and Role of NIST

- NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.

- NIST Laboratories conduct research that advances the nation's technology infrastructure and is needed by U.S. industry to continually improve products and services.
Why EHR Usability at NIST?

- Important, acknowledged issue
- AHRQ panel: “Specific best practices and standards of design, testing, and monitoring of EHR products not used or readily available”
- Applicable expertise in usability / HF
Developing standards is a consensus based process

NIST traditionally works with all stakeholders to develop standards, and then to ensure that the standards are harmonized and industry is able to implement them
NIST Activities – EHR Usability

- Applying the Science
- Advancing the Science
- Establishing Metrology
NIST Activities
Applying the Science

- NIST Guide to the Processes Approach for Improving the Usability of Electronic Health Records (NISTIR 7741)
- Customized Common Industry Format Template for Electronic Health Record Usability Testing (NISTIR 7742)
- Human Factors Guidance to Prevent Healthcare Disparities with the Adoption of EHRs (NISTIR 7769)
- Methodology of EHR Usability Evaluation Protocol (EUP)
NIST IR 7741 – UCD Processes

- Guidance on best practices for user-centered design
NIST IR 7742 – CIF – EHR Edition

- ISO standard for reporting usability findings…adapted for HIT: allows users to reliably compare application performance with user testing

- Common Industry Format (CIF) for Reporting Summative Usability Studies
  
  Assist vendors in demonstrating evidence of usability in their final product in a format that allows both independent evaluation of a single product and comparison across multiple products.
NIST Activities
Advancing the Science

- The Relationship Between Health IT Usability and Patient Safety: A Human Factors Engineering Framework (Developed & Incorporated in EUP)
- Collaboration with SHARP–C (Work–Centered Design of Care Process Improvements in HIT)
NIST Activities
Establishing the Metrology

- EHR Evaluation Protocol (EUP) – Draft NISTIR 7804

- Health IT Usability Framework Research
  - Establishing a framework that defines and establishes measures for health IT usability
1) Identify highest risk aspects of system
2) Identify most significant deviations from universal design best practices
3) Demonstrate remediation of critical issues
Where Do We Go From Here?

- Gain feedback on EUP (Draft NISTIR 7804)
  - Email comments to ehrusability@nist.gov
- Support collaboration
- Work closely with stakeholders
  - Government
  - Industry
  - Academia
  - Healthcare providers
(Draft NISTIR 7804) Technical Evaluation, Testing and Validation of the Usability of Electronic Health Records (NISTIR 7804)
- Send comments to ehrusability@nist.gov by Nov 10

(NISTIR 7741) NIST Guide to the Processes Approach for Improving the Usability of Electronic Health Records

(NISTIR 7742) Customized Common Industry Format Template for Electronic Health Record Usability Testing

(NISTIR 7769) Human Factors Guidance to Prevent Healthcare Disparities with the Adoption of EHRs