

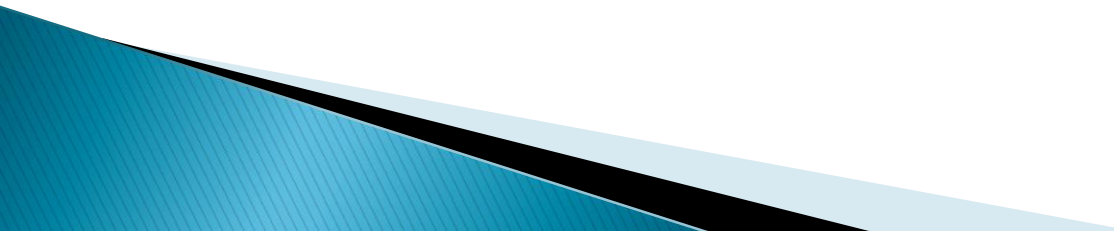
NIST - EHR Usability Research & Development



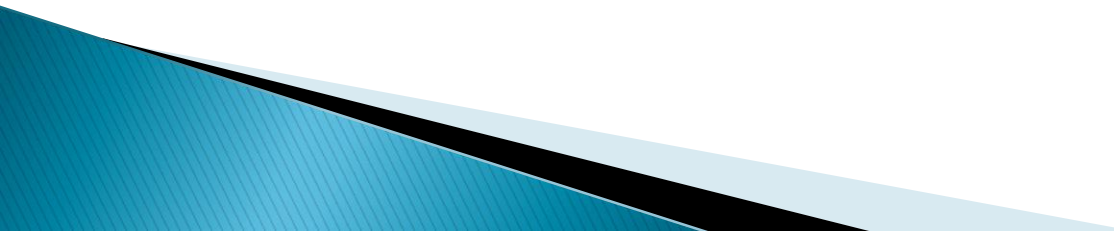
Topics

- ▶ 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
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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
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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
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Standards Development at NIST

- ▶ 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

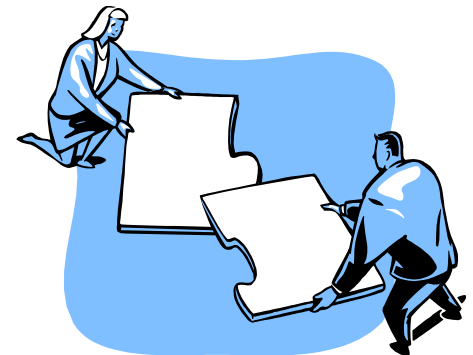
Advancing the Science

Establishing Metrology

NIST Activities

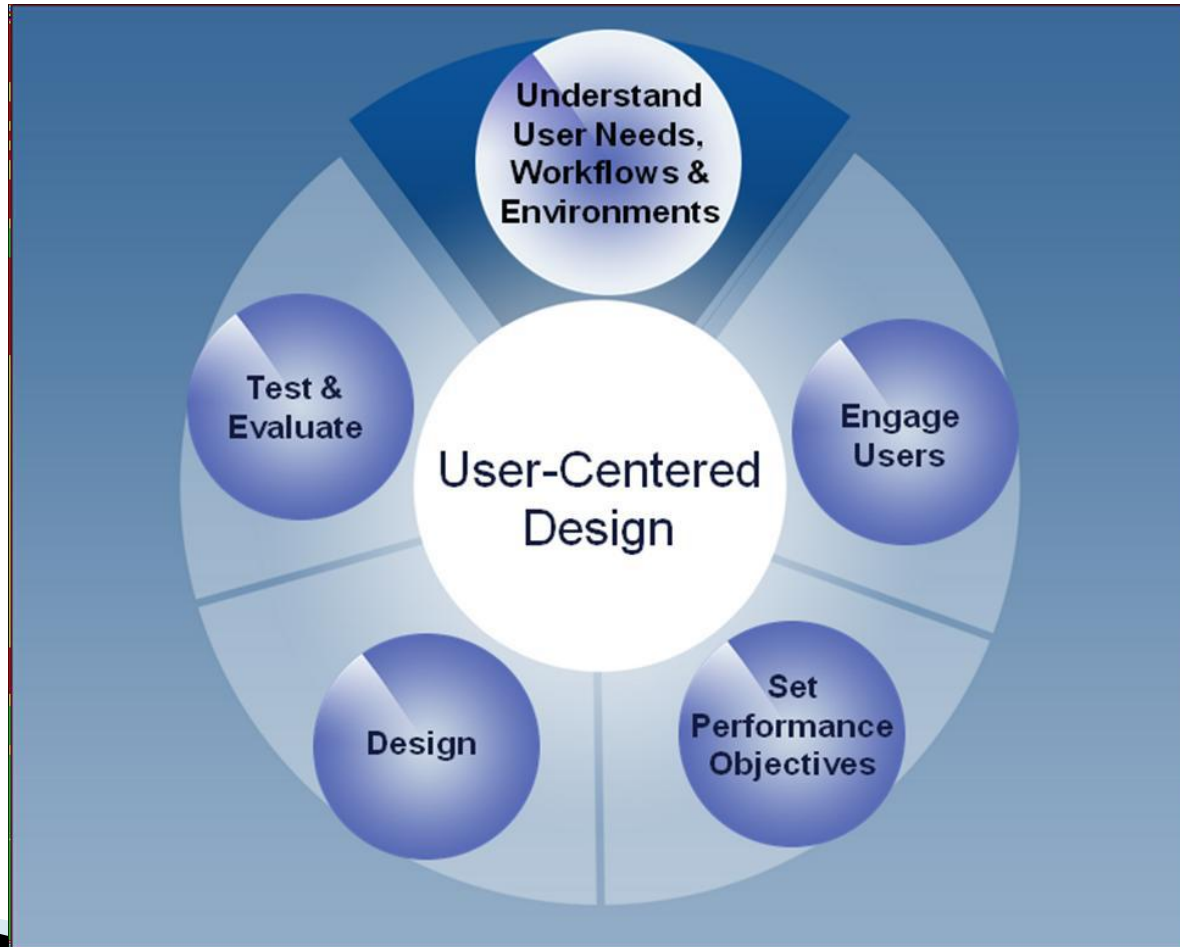
Applying the Science

- ▶ 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

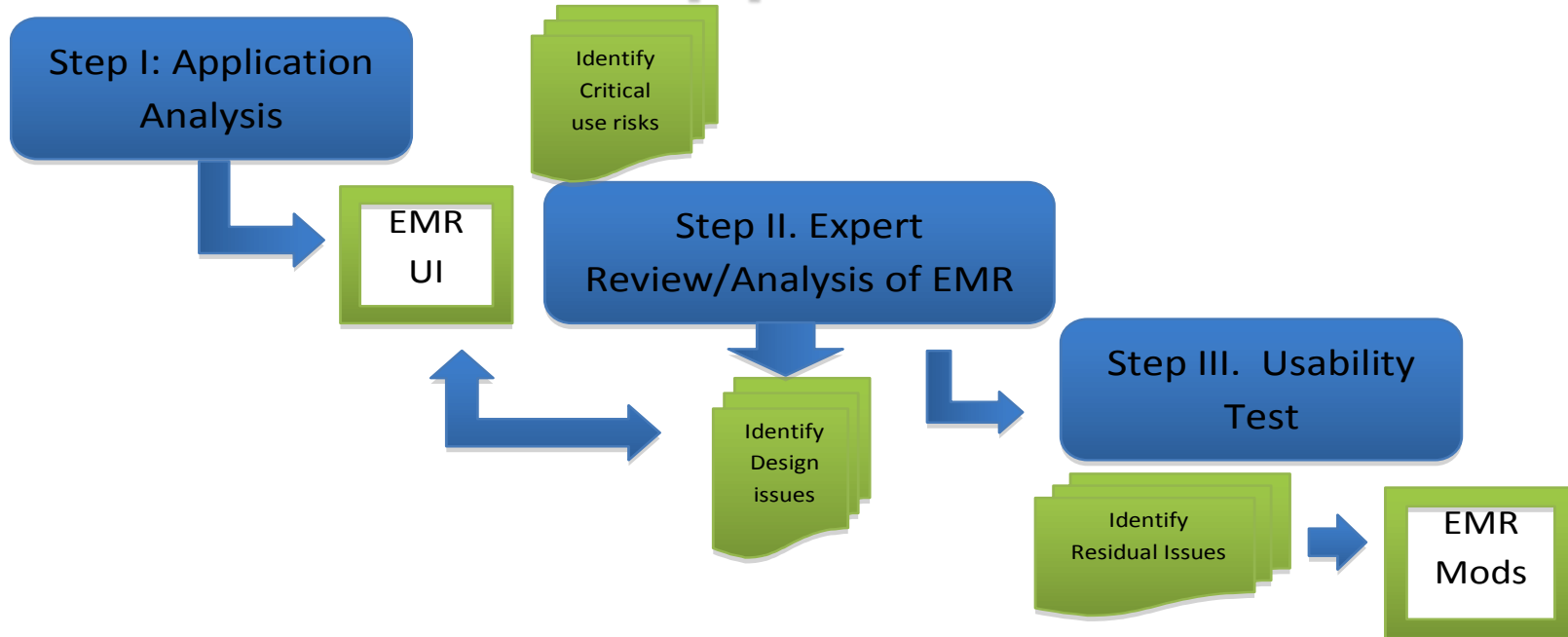
Establishing the Metrology

- ▶ EHR Evaluation Protocol (EUP) – Draft NISTIR 7804
- ▶ Health IT Usability Framework Research
 - Establishing a framework that defines and establishes measures for health IT usability



Draft NISTIR 7804 (EUP)

Process Approach



- 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



www.nist.gov/healthcare/usability

- ▶ (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
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