

# Health IT Usability Framework Research

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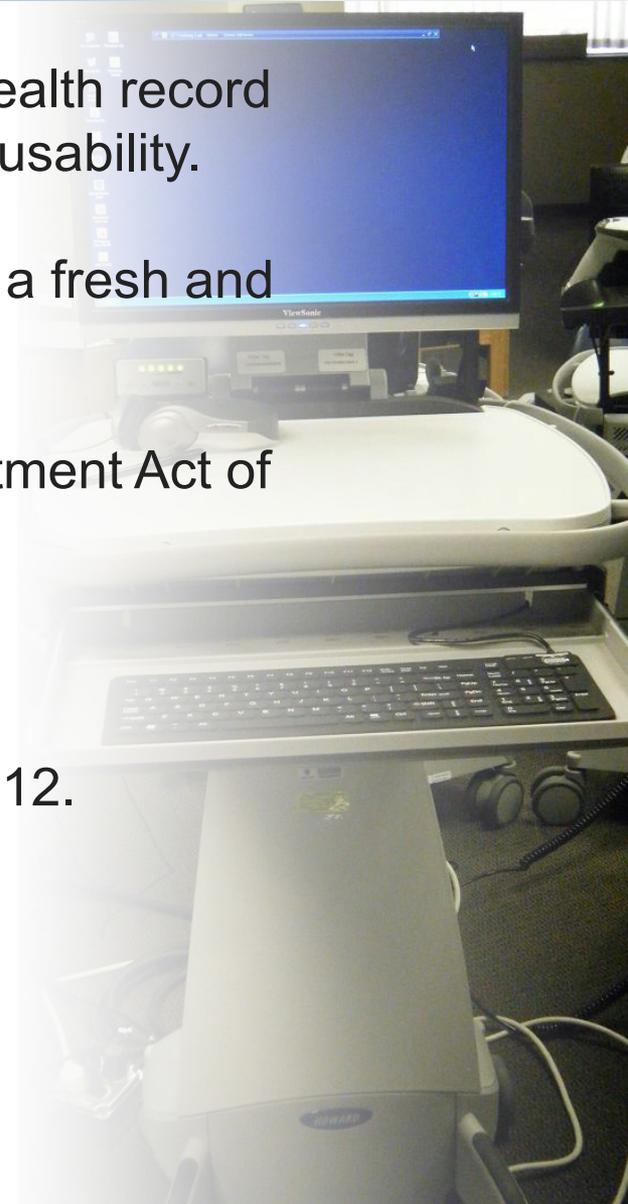
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# Project

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- Seeks to increase knowledge about electronic health record (EHR) users and identify ways to enhance EHR usability.
- Builds on prior work in the field while also taking a fresh and comprehensive look at EHR usability.
- Funded by the American Recovery and Reinvestment Act of 2009.
- NIST Staff: Svetlana Lowry and Matt Quinn
- Period of performance: Spring 2011 to Spring 2012.



# Team

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**National Institute of Standards and Technology**, Information Access Division, a group that has sponsored extensive EHR research.



**Wiklund Research & Design**, a consulting firm specializing in medical technology user interface design and usability testing.

**DESIGN  
SCIENCE**

**Design Science**, a consulting firm specializing in ethnographic research in the medical domain.



VANDERBILT

**Vanderbilt University**, Center for Research and Innovation in Systems Safety – a group that conducts human factors research on patient safety-related topics and has extensive EHR use and development expertise.



**University of Wisconsin**, Center for Quality and Productivity Improvement – a group that has conducted extensive research on EHR functional requirements and usability.

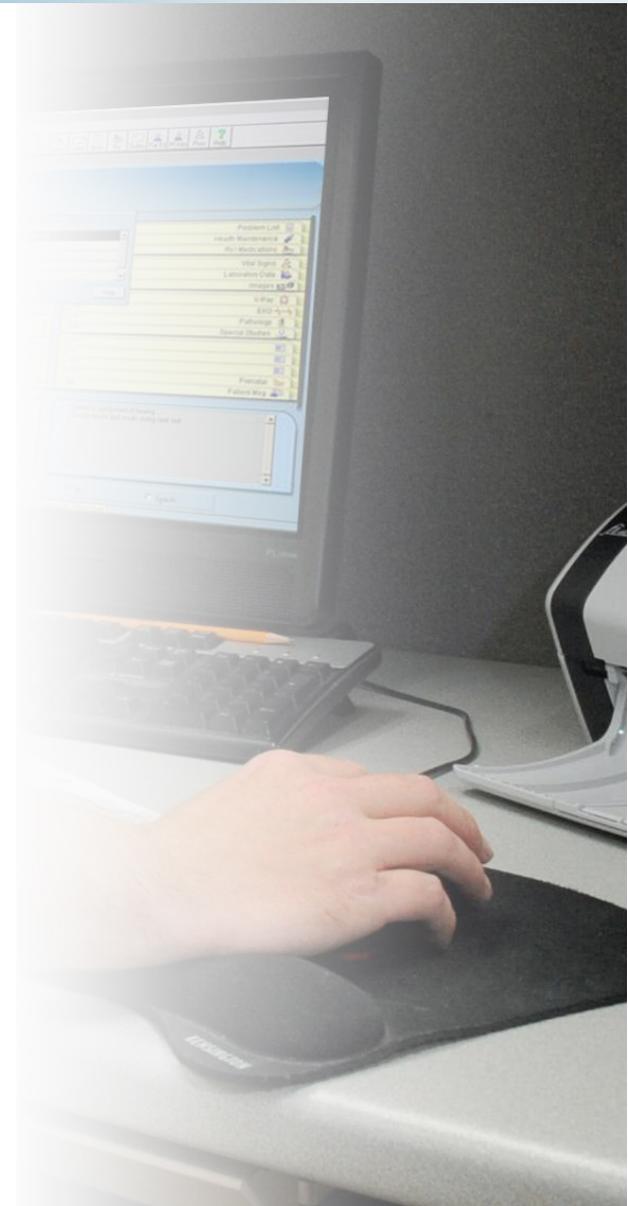
# Identify EHR users

- Identify an appropriate sample of sites (e.g., physician's offices, clinics, hospitals) that use various types of EHRs.
- Observe clinicians interacting with EHRs, and then interview them regarding EHR usability.
- Define specific types of EHR users and their usability-related needs and preferences.
- Define general characteristics of EHR user interfaces that increase versus decrease usability.



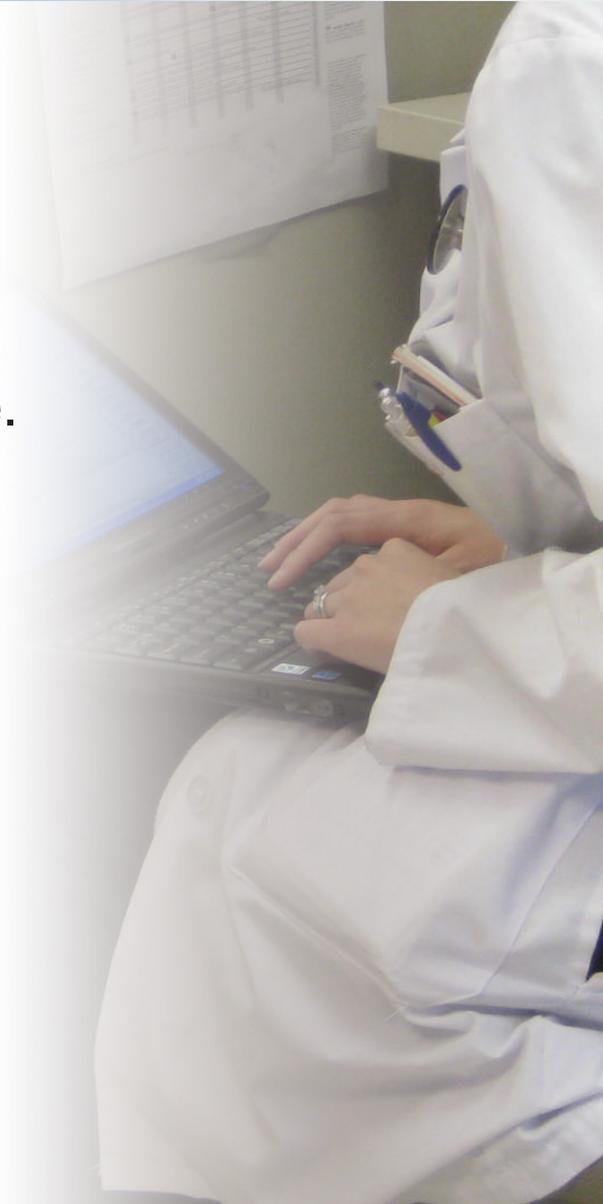
# Conduct formal usability studies of EHRs

- Identify an appropriate and representative sample of EHRs.
- Conduct benchmark usability studies of the selected EHRs to identify general user interfaces characteristics that increase versus decrease usability.



# Review EHRs based on HFE principles

- Review existing design guidance pertaining to software user interfaces and EHRs in particular.
- Expand guidance based on findings from fieldwork and the research team's human factors engineering and user interface design experience.
- Consolidate the user interface design guidance into a practical, EHR-specific set.
- For investigational purposes only, develop an EHR-specific usability measurement system.



# Develop performance-oriented usability guidelines

- Draw upon our earlier work to develop performance-oriented usability guidelines.

**Important:** The guidelines will not prescribe user interface design solutions. Rather, the guidelines will identify human factors principles and user interface characteristics demonstrated and judged to have enhanced the quality of interaction between EHRs and their users.



# Report our results

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- Our final project deliverable will be a report containing performance-oriented usability guidelines and a framework for EHR usability evaluation.

