Health Technology Stress - Challenges and Opportunities

Vicky Tiase, PhD, RN-BC, FAMIA, FAAN
NewYork-Presbyterian Hospital
More Technology
Moral Distress
Less Time with Patients
Patient Safety Concerns

Patient Generated Health Data
Tech Innovations

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Pain Points

- Time Spent Documenting
- Information Overload/Cognitive Burden
- Poor Data Output
- ‘Get rid of the stupid stuff’ - Ashton
25 By 5 Symposium Series

Six Domains of Burden

1. Reimbursement
2. Regulatory
3. Quality
4. Usability
5. Interoperability
6. Self-Imposed
Usability Challenges

• Variability from EHR to EHR
• Duplicate Documentation/copy-paste
• “Silofication” of Notes
• Note Bloat/Kitchen Sink Approach
• Readability of the Output
Workflow Challenges

• Modular Approach to Design
• Interruption-oriented Communication Patterns
• Disruption of Patient-provider Relationship
• Inappropriate Allocation of EHR Tasks
• Technology-supported Guidelines with Hard Stops
• Changing Care Settings - “pajama time”

Unertl et al., 2009, Unertl et al., 2010, Arndt et al., 2017
Implementation Challenges

• Efficient Clinical Decision Support
• Problematic Drug-drug Interaction Alerts
• Full Electronic Medication Reconciliation
• Poor System Performance
• Disruption of the Nurse-patient Relationship

McBride et al., 2017
Complex Alarm Conditions

• Alarm Fatigue, Alarm Desensitization, Missed Alarms
• Inappropriate Parameter Settings
• Under Reporting of Alarm-related Events

Yue et al., 2016
Promising Interventions

• Use of Scribes
• Voice Recognition
• Ambient Voice
• Interoperability
• Terminology and Classifications
The Path Forward

- Organizational Priorities
- Partnership with Vendors
- Policy and Advocacy


Unertl KM, Novak LL, Johnson KB, Lorenzi NM. Traversing the many paths of workflow research: developing a conceptual framework of workflow terminology through a systematic literature review. JAMIA. 2010;17(3):265-73.


