ANA’s Policy Leadership: Advancing Usability/Safety with Health Information Technology (HIT)

Maureen Dailey, PhD, RN, CWOCN
Senior Policy Advisor, Department of Health Policy (HP)
ANA’s Multi-pronged HIT Safety/Usability Policy Advocacy

- Advocacy via Office of the National Coordinator (ONC) for Health Information Technology (HIT)
  - ANA/ONC Leadership Meetings
  - Kelly Cochran, Policy Advisor - ANA’s HIT policy lead, Department HP (Kelly.Cochran@ana.org)
    - Kelly/I Cross Cover Intersection between Quality/Safety-HIT
  - Increased Nursing Representation at ONC & ANA/ONC Collaboration
    - Committees, Workgroups, and Meetings
    - ANA-convened ANA/ONC Nurses Group
    - ANA-convened ONC Nurse Appointee Group

- ANA Government Affairs (GOVA) and HP Congressional Advocacy (e.g., Senate HELP Committee)
- Advocacy with National Stakeholder Groups, Nursing and Non-nursing
Quality Policy Portfolio

- **ANA Quality Advocacy Across the National Quality Enterprise:**

- **Focus - Three National Quality Strategy (NQS) Priorities:** Safety, Care Coordination, and Pt/Family- Centered Care Engagement
  
  - **Nursing Sensitive Measures – Pay for Reporting and Quality Programs:**
    - **Centers for Medicare and Medicaid Services (CMS)** measure development contracts, eMeasure Kaizen meetings, Technical Expert Panels (TEP)
    - **National Quality Forum (NQF)** - Measure endorsement, prioritization, gap-filling
  
  - **Center for Medicare and Medicaid Innovation (CMMI) Projects – Quality Improvement**
    - Partnership for Patients (PfP)
      - Goals - Hospital acquired condition (40%) and 30 day readmission (20%) reduction
      - ANA’s CAUTI Prevention Tool
      - Transforming Clinical Practice Initiative (TCPI) – Goal to improve ambulatory care outcomes
  
  - **Agency for Healthcare Research and Quality (AHRQ)** – Improved Quality/Reduce Disparities
  
  - **Patient Centered Outcomes Research Institute (PCORI)**
    - Funding and Nursing Input (e.g. Roundtables)
  
  - **ANA-convened Nursing Alliance for Quality Care (NAQC)**
Quality/HIT Policy Intersection

- NQS Tri-part goals: Better Care/Healthier People/Communities/More Affordable Care
  - HIT is one of nine levers to advance the goals
  - Collaborate/Integrate across internal ANA departments
  - Integrate with ANA’s national safety campaign (e.g., 2016 Culture of Safety)

- Nurses highest number (3.4 million versus 900K physicians) of HIT users
  - EHR pain -> 500 clicks for nurses to do initial assessments (Sengstack, 2015)
ANA Joint Advocacy/Collaboration with Nursing/Non-Nursing Groups

- **ANA’s President Cipriano and CEO Weston Presentations**
- **Ongoing Advocacy with Key Nursing Groups:**
  - Alliance for Nursing Informatics (ANI)
    - Policy comments and joint nominations collaboration
  - AMIA Nursing Informatics Workgroup
  - HIMSS Committees (e.g., Interprofessional Usability WG - [http://www.himss.org/get-involved/committees/hit-usability-committee](http://www.himss.org/get-involved/committees/hit-usability-committee) and Nursing Informatics Committee [http://www.himss.org/get-involved/committees/nursing-informatics](http://www.himss.org/get-involved/committees/nursing-informatics))
  - Nursing Big Data/Analytics
    - Care coordination and Nursing Policy Advocacy Committees
  - Interprofessional groups (e.g., National Institute of Standards and Technology (NIST) has released a [guide](http://www.nist.gov/healthcare/usability/) aimed at making electronic health records more usable and thus safer, [http://www.nist.gov/healthcare/usability/](http://www.nist.gov/healthcare/usability/)
Nursing Big Data: Care Coordination Project

Purpose: Identify nursing implications related to “big data” associated with “care coordination.

Rationale: No common measure has been developed in order to define the aspects of patients who may receive the most benefit from care coordination, leading to the most potential financial benefit, for the organizations providing care coordination services.

Proposed Key Tasks
- Map the most common care coordination processes.
- Document the current state of care coordination and then begin to deconstruct the current state, breaking it down into segments or components to study further.
- Develop information model for the most important variables related to patients who will benefit most.
- Determine a strategy to identify from “big data” those who will most benefit from care coordination.
- Identify key patient characteristics from data elements in the EHR “big data” indicating the patients who will receive the most value.
- Consider building off the HL7-reviewed care plan model for nursing value to show the interventions and outcomes associated with nursing care coordination work.

Proposed Deliverables
- White paper discussing common care coordination processes.
- Begin the development of standardized processes across the continuum of care.
- Create a method to identify patients who will receive the most value from care coordination.
Nursing Big Data: HIT Policy Advocacy Project

Purpose
Engage all nurses in health IT policy efforts; To provide nurses with the education, tools and resources to equip them as knowledgeable advocates for policy efforts that are important to nursing.

Proposed Key Tasks
Identify existing and develop or modify relevant health IT policy-related educational tools and resources; make them available in a resource library for nurses. Include items such as:

- How to give testimony; How to write a blog
- What is health IT policy? Why is it important to nurses?
- Success stories, best practice examples, storyboards
- Contact information and listing of relevant individuals, groups and organizations.
- Key talking points/recommendations/position statements
- Student projects
- Example testimony, blogs, comments
- Newsletters, blogs and websites
- Webinars
- Describe how to contact elected officials, including visits, calls, email, website communication, and the value of establishing an ongoing relationship with elected official staffers.
Key Nursing HIT Safety/Usability Advocacy in 2015-2016

- ONC Usability-Safety/Interoperability/Measurement Work
- Policy and Standards Committees
  - Workgroups (WG)
  - Newer Structure – Topic-focused Task Forces
- Invitational Meetings (e.g., April, 2015 Care Plan Listening Session)
  - Five nurse attendees
  - Nurse presented regarding the HL7-reviewed standards for care plan
- Testimony - Expert Nursing Testimony (e.g., Use cases)
- Spread of Tools/Toolkits (e.g., ONS Safer Guides https://www.healthit.gov/safer/safer-guides)
Additional Key Safety/Usability Policy Advocacy 2015-2016

• 2015 Westhealth Interoperability between Medical Devices - Report/Meeting
  • Links -
    • http://www.westhealth.org/interoperability/
    • http://www.westhealth.org/news/nurses-say-medical-errors-could-be-reduced-if-devices-were-connected-west-health-institute-survey-shows/
  
• July, 2015 Pew Designing EHR Usability
  • Recommended follow-up –Develop a HIT Safety Standards
    • Association for the Advancement for Medical Instrumentation (AAMI) Standards
    • Standards to apply to health service provider organizations and vendors that develop, implement, or use HIT software and systems
  
• NQF HIT Safety Framework/Measures Steering Committee
Nursing Presentation at PEW’s Safety/Usability Conference

• ANA Advocacy Increases Nursing Representation and Supports Common Talking Points –
  • Ensures alignment with ANA/AAN seminal documents (e.g., care coordination) and HIT policy documents and comments
• Nursing Presentation - Nancy Staggers presented three pain points for nursing from patient-centered context:
  • Documentation
  • Care Coordination
  • Medication management

Links to Pew’s Conference, *Designing EHR Usability* Presentations:

- Ayse Gurses
- Nancy Staggers
- Matt Weinger
- Andrew Gettinger
AAMI Safety Framework/Principles

- Invitational AAMI Conference/Meeting - Health IT Safety Framework/Principles
- AAMI HIT Safety Task Forces 1/2016 –
- Multiple Workgroups (WG) and Higher-level Health IT Safety Committee
  - Six nurse appointees
Current Related Nursing Work by ANA Members

- Nancy Staggers co-leads the HIMSS Usability WG
  - Initial survey completed on nurse-focused usability (2015), white paper pending (1st in a series)

- Texas Tech state-wide usability survey/research:
  Dr. Susan McBride, PhD, RN-BC, CPHIMS, FAAN
  Principle Investigator, Committee member
  Professor and Program Director Masters and Post Masters Nursing Informatics
  Texas Tech University Health Sciences Center, School of Nursing
Maureen Dailey, PhD, RN, CWOCN

Prepare for Nominations:
ANA leadership training opportunities -
https://learn.ana-nursingknowledge.org/catalog?pagename=ANA-Leadership-Institute
Send Bio/CV for Nominations - Yvonne Humes (Yvonne.Humes@ana.org)
My contact: Maureen.Dailey@ana.org
TNA/TONE Health IT Committee

• Charge: Determine implications of health care informatics for nursing practice and education in Texas

• Include nationally-based Technology Informatics Guiding Education Reform (TIGER) initiative

Vision: To enable nurses and interprofessional colleagues to use informatics and emerging technologies to make healthcare safer, more effective, efficient, patient-centered, timely and equitable by interweaving evidence and technology seamlessly into practice, education and research fostering a learning healthcare system.

TNA = Texas Nurses Association
TONE = Texas Organization of Nurse Executives

http://www.thetigerinitiative.org/

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Why Does HIT Matter Deep in the Heart of Texas?

Environmental Forces:
- Health Care Reform/ARRA
- Advanced Practice Nurse Roles
- EHR Incentives
- IOM/RWJF Report Advancing Health Care
  - Informatics Nurse Standards by ANA

Involved Constituents

CNE for Practicing Nurses

Educational Content Dissemination

Awareness Campaign

Nursing HIT Curriculum Development

Embrace the Technology
Preserve the Art
For 400,000 Texas Nurses

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Advisory Committee: Practice, Administration, Education and Vendors/Suppliers

T.I.G.E.R Phase III Partnership
HIT Committee Membership

Composed of TNA and TONE Member from practice and academia

**TNA**

**Task Force Members**

- Julie Brixey
- Nancy Crider (co-chair)
- Mary Anne Hanley
- Linda Harrington
- Susan McBride (PI)
- Elizabeth Sjoberg
- Laura Thomas
- Mari Tietze (co-chair)

- Cindy Zolnierek [pres./co-PI]
- Laura Lerma [educ.]
- Kat Hinson [comm.]
- Amy Loewe [admin.]
Background

Clinical Information Systems Implementation Evaluation Scale (CISIES) Survey*

1. Launched September 23, 2014, statewide
2. Over sampled rural hospitals in an effort to insure representation
3. Over 1,000 responses received
   – Included a newly-developed** EHR “maturity-index”

*= Gugerty, B.

**= McBride, S. & Tietze, M.

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The goal:

Develop a tool kit focused on evidence-based improvement using study findings to inform improvements

Content for toolkit

- Use CISIES survey responses to guide toolkit content and focus groups to determine best strategies involving stakeholders
- Create and place on TNA and TONE Web sites
- Three CNE Webinars are being proposed based on immediate results:
  - “Workflow versus Work-Arounds to Optimize EHR Patient Safety and Quality.”
  - “Interoperability of Electronic Health Records.”
  - Best Practices for Using EHRs in Nursing Practice within Interprofessional Teams
Policy/Legislation Implications

Renew the 2010 TNA-TONE resolutions and add the following content:

1. Interoperability
2. Meaningful Use of EHRs (*for Nursing*)
3. Interprofessional Education/Collaboration
4. TIGER competencies initiative
5. Defining Best Practices for Using an EHR within the Clinical Workflow
Research Questions

• What are key issues with the current deployment of the electronic health record in the practice setting?
  – What is the relationship between health setting characteristics and the nurses’ perceptions of their CIS?
  – What is the relationship between the nurses’ characteristics and the nurses’ perceptions of their CIS?
  – What is the relationship between CIS characteristics and the nurses’ perceptions of their CIS?
• What are the related core HIT competencies that should be covered in nursing education?
Research Design

- A descriptive and exploratory research study of the current nursing workforce in Texas, using a previously validated survey instrument, was conducted in select acute care facilities and their associated acute care, ambulatory/episodic care and long term care (LTC) units (Texas Workforce Center), collectively “Health Care Organization” to answer the research questions. (a priori power analysis/n=1,000)
First page of the TNA/TONE state wide online survey

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Demographic information about EHR functionality (5 of 24 items)

Meaningful Use Maturity-Sensitive Index for Nursing*

Statewide Survey Assessing the Experience of Nurses with their Clinical Information System

Demographic Information Instrument Part B

In my facility, the Electronic Health Record (EHR):

1. Includes a computerized provider order system for directly entering medication orders
2. Initiates alerts when a medication order results in a possible drug-drug interaction
3. Initiates alerts when a medication order results in a possible drug-allergy interaction
4. Captures and displays Demographic Data
5. Maintains an active list of patient problems and diagnoses

# Clinical Information System Implementation Evaluation Scale (CISIES)

Please respond to the following questions:

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Somewhat Disagree</th>
<th>Somewhat Agree</th>
<th>Agree</th>
<th>Strongly Agree</th>
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<tr>
<td>01. Overall, I prefer using the system than the old way of doing things</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>02. I can depend on the accuracy of the system</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>03. The training I received was adequate</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>04. I feel confident in my ability to assist others in using the system.</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>05. Adequate resources were available when I was learning to use the system</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>06. I feel the use of the system has improved the quality of patient care</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>07. The use of the system reduces errors</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>08. The system is more efficient than the old way of doing things</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>09. The system has improved my practice</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>10. The system allows me to spend more time on other aspects of patient care</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</table>

© Texas Nurses Association, 2015
Response  Trend and Demographics
Study Responses Sept 2014-Feb 2015

Total N=1,177

TNA-TONE Survey Response 6 month Period

TNA-TONE Push #1

TNA-TONE Push #2

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Rural and Urban Represented

Rural respondents were 52.7% acute care & 10.2% ambulatory

Urban respondents were 52.7% acute care & 11.5% ambulatory
Meaningful Use Maturity-Sensitive Index for Nursing (MUMSI)*:
Covariate Controlling for Maturity of the EHR


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Meaningful Use Maturity-Sensitive Index for Nursing

Sample of 3 of the 24 Item scale aligned with Meaningful Use Stage 1 Measures
0.889 Cronbach’s Alpha
Mean of 56.53 (SD 13.85)
Range 0 - 72

Content Validity using Lynn’s method

Lynn, M.R. “Determination and Quantification of Content Validity.” *Nursing Research* Vol. 35 No. 6 (1986)

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Clinical Information System Implementation Evaluation Scale©
(Gugerty, B.)
### CISIES 37 Survey Questions

Cronbach’s Alpha 0.881

**49.8% Strongly agree or Agree**

*That the system is more efficient than the old way of doing things*

**16.2% disagree or strongly disagree**

---

**R08. The system is more efficient than the old way of doing things**

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**R09. The system has improved my practice**

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<td>11.2</td>
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**R10. The system allows me to spend more time on other aspects of patient care**

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<td>Total</td>
<td>1177</td>
<td>100.0</td>
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</tr>
</tbody>
</table>
Positive, Neutral and Negative Satisfaction are Equally Distributed
CISIES Distribution: How satisfied are nurses in Texas with EHRs?

- < 0.5 CISIES Indicates Dissatisfaction
- 0.5-1.99 Indicates Neutral or Not Completely Satisfied
- 2-5 Indicates Satisfied

Differences in Satisfaction with EHRs related to MU maturity.

The MUMSI was calculated for all respondents based on 24 questions related to MU. The index score mean =56.53, median=59, range 0-72 (highest score possible).


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Overall satisfaction with your CIS/EHR?

66% higher odds of being satisfied if urban (OR 1.65, 95% CI 1.145, 2.401)
Overall satisfaction with your CIS/EHR?

© Texas Nurses Association, 2015
Overall satisfaction with your CIS/EHR?

Magnet Status

© Texas Nurses Association, 2015
Overall satisfaction with your CIS/EHR?
Overall satisfaction with your CIS/EHR?

50% Direct Patient Care?

Do you provide direct patient care 50% of the time?

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Overall Satisfaction and Nurses Age:
Older nurses compared to younger nurses are less likely to be satisfied

Controlling for MU maturity, nurses 51-60 years are 36% (OR .431, 95% CI .227, .817, \( p = .01 \)) less likely to be satisfied and nurses greater than 61 years are 68% less likely to be satisfied (OR .321, 95% CI .149, .690, \( p = .004 \))
Nurses in practice for ≤ 5 years compared to all other groups: nurses in practice for 6-10 years are 78% more likely to be satisfied with their EHRs, while other groups were not significantly different with respect to satisfaction (OR 1.783; 95% CI 1.088, 2.923, p=.022).
Overall satisfaction with your CIS/EHR?

Once the maturity of the EHR is taken into account there is no significant difference in any of the EHRs reported.

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Nurses are 2.8 X more likely to be satisfied when drug-drug and allergy alerts are not present (OR 2.815, 95% CI 1.591, 4.981 p<.001)

When alerts are present for clinical decisions and standards nurses are 2.76 X more likely to be satisfied compared to nurses who indicate the functionality is not present (OR 2.758, 95% CI 1.666, 4.566)
Qualitative Survey Data

Themes

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<th>Word Count</th>
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<td>Information</td>
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<td>7.0%</td>
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<tr>
<td>Time</td>
<td>41</td>
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<tr>
<td>Physicians</td>
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Thematic Content Analysis

- Most effective in identifying concepts and themes
- Focus groups conducted to examine text themes
- Further detailed analysis with four examiners examined detailed text to reach consensus on subcategories
Narrative Themes Regarding Nurse Experiences with CIS/EHR

**Major and Minor Themes**

- **System and Minor Themes**
  - System design/usability
  - Interoperability
  - Patient safety and quality
  - Documentation/legality
  - Time
  - Ns-pt time reduced/inefficiency
  - Support
  - IT, administrative, competency
  - Workflow
  - Med admin, work-arounds
  - Distress
  - Aggravation, voice not heard
  - Communication
  - Reduced consultation among clinicians
## Evidence-Based Approach: Relationship Between Survey Factors and Potential Action Items

<table>
<thead>
<tr>
<th>Theme</th>
<th>Potential Action Items/Interventions</th>
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</thead>
<tbody>
<tr>
<td>System design/usability</td>
<td>Utilize satisfied characteristics to improve dissatisfied &amp; utilize dissatisfied characteristics to inform improvement strategy</td>
</tr>
<tr>
<td>Patient safety and quality/legality</td>
<td>Integrate with relationship to design/usability</td>
</tr>
<tr>
<td>Time: away from patient care delivery</td>
<td>Focus groups exploring clinician-based solutions</td>
</tr>
<tr>
<td>Time: inefficiency</td>
<td>Focus groups exploring designer-based solutions (vendor and IT implementation)</td>
</tr>
<tr>
<td>Support</td>
<td>Assess/deploy needed resource support throughout organization</td>
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<tr>
<td>Workflow</td>
<td>Institute leadership-adopting a culture of improvement related to health IT</td>
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<tr>
<td>Distress</td>
<td>Provide collegial approach, interprofessional solutions and openly monitor progress</td>
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<tr>
<td>Communication</td>
<td>Emphasize open, consistent, throughout organization</td>
</tr>
</tbody>
</table>
Projected Timelines

- **June-Aug 2015**: Analysis, Summarize Findings & Prepare Report
- **Sept 2015**: Report to TNA/TONE Boards with recommendation on high level priorities based on the evidence
- **Oct-Dec 2015**: Formulate Intervention Strategies based on the evidence
- **Jan-Dec 2016**: Deploy Strategies Across Texas
- **Oct-Dec 2017**: Target Follow-up Study to determine impact of interventions
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