Transforming Nursing Data into Quality Outcomes

National Quality Forum: Nursing Sensitive Indicators and Information Technology

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The First National Conference
American Nurses Association

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University of Pennsylvania
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Celebrate the Progress

- I recall the first ANA conference calls on the idea and the first list of indicators… could it be done?
- Congratulations on over 1000 agencies participating in NDNQI and CALNOC.
- Wow, this FIRST conference has sold out capacity.
- The research and practice content at this conference is amazing and welcome.

Goal for Today

*Transforming Nursing Data into Quality Outcomes*

You will be able to recognize the importance of **nursing sensitive indicators** and how **information technology/systems** can contribute to **decision support**, collection and analysis of **essential nursing data**.
Presentation

- Overview of National Quality Forum and its work on the initial set of Nurse Sensitive Indicators.
- Brief description of a framework that can link best knowledge, decision support, clinical repositories and data analyses.
- Recommendations for next steps.

Make A Case For

- Research that will contribute measures of the most important aspects of nursing care.
- Harmonization of nursing measures between ANA NDNQI, CALNOC, NQF, JCAHO/JC, Magnet, & others.
- Nursing measures that should be part of broader topic areas, such as, coordination of care and chronic illness.
- Use of existing data warehouses to submit measure information.
Make A Case For

• Clinical information systems that will include “point of use” decision support and documentation that will yield good nursing data.
• Uniform implementation and collection of measures.
• Increased use of standardized terminology.
• Public reporting.
• Synergy between NDNQI, Magnet, EBN and Research.

NQF

National Quality Forum
and
Nursing Sensitive Indicators
Acknowledgement

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Mission

The primary mission of NQF is to improve American healthcare through the endorsement of consensus-based standards for measurement and public reporting of healthcare performance data that provides meaningful information about whether care is safe, timely, beneficial, patient-centered, equitable, and efficient.
Voluntary Consensus Standards

- Developed voluntarily and collaboratively by stakeholders.
- Widely used in non-healthcare enterprises.
- Have legal status.
- Must abide by the requirements specified in federal law and adhere to a specified process.

NTTAA and OMB Circular A-119

NQF endorses national voluntary consensus standards pursuant to the National Technology Transfer and Advancement Act (NTTA) of 1995 and OMB Circular A-119

- Defines five key attributes of a “voluntary consensus standards body” (i.e., openness, balance of interest, due process, consensus, appeals).
- Obligates federal government to adopt VCS in lieu of government-unique standards except where inconsistent with law or otherwise impractical.
- Encourages federal government to participate in standards setting.
Fundamentals of NQF Consensus

- NQF Steering Committee, Technical Panels
- Pre-work - measure identification, screening, evaluation, selection
- Draft consensus report
- Member/public comment period (30 days)
- Final consensus report (voting version)
- Report and ballot to NQF Members
- Member voting period (30 days)
- NQF Board consideration and endorsement
- Appeals

Overview of NQF Consensus Development Process

I. Consensus Standard Development
   - NQF program priorities
   - Specific project topics
      - Project Steering/Review Committee
      - Technical Advisory Panels
      - Draft recommendations
      - Review (Member and public)
      - Draft consensus standards
         - Member Council approval
         - Board endorsement
         - NQF-endorsed consensus standards
         - Update as warranted
         - Appeals

II. Review

III. Member Council Approval

IV. Board of Directors Endorsement

V. Evaluation
Selected Projects

- **Acute Care**
  - National Voluntary Consensus Standards for Nursing-Sensitive Care
  - National Voluntary Consensus Standards for Hospital Care
  - Cardiac Surgery
- **Other Settings of Care**
  - National Voluntary Consensus Standards for Nursing Home Care
  - National Voluntary Consensus Standards for Home Health Care

NQF-endorsed™
National Voluntary Consensus Standards for Nursing-Sensitive Care
NQF-endorsed™ NVCS for Nursing-Sensitive Care

- Purpose of consensus standards is to promote highest quality and outcomes.
- Consensus standards have been endorsed for public reporting.
- Represent processes and outcomes of care - and structural proxies for these - that are affected, provided, and/or influenced by nursing personnel.
- Evidence base links NQF-endorsed staffing consensus standards to acute care patient outcomes (e.g., pressure ulcers, restraint use).

Approach to Measure Screening, Evaluation & Endorsement

Step 1: Establish Purpose of Nursing Care Performance Measure Set: What should be the Steering Committee's explicitly stated purpose for the set? Should purpose statements be prioritized?

Step 2: Construct a framework for measurement that incorporates established purpose: On what principles should the framework be based?

Step 3: Identify Scope: What elements should drive the scope of this measure set (e.g., definition of nurse, scope of hosp services)?

Step 4: Establish Priorities: What kinds of measures should get high-priority attention?

Step 5: Evaluate candidate measures within framework via standard criteria AND to determine “nursing sensitivity” (> 50 candidates evaluated)

Step 6: Recommend nursing care measures (N=13)

Final Steps: Public Comment, Voting, BOD Endorsement (BOD) of NVCS (N=15)
1. Failure to rescue (death among surgical inpatients with treatable serious complications)
2. Pressure ulcer prevalence
3. Falls
4. Falls with injury
5. Restraint (vest and limb) prevalence
6. Urinary catheter-associated UTI - ICU
7. Central line catheter-associated BSIs - ICU
8. Ventilator-associated pneumonia - ICU

9. Smoking cessation counseling for AMI
10. Smoking cessation counseling for pneumonia
11. Smoking cessation counseling for HF
12. Skill mix
13. Nursing care hours per patient day
14. Practice Environment Scale-Nursing Work Index (PES-NWI)
15. Voluntary turnover
JCAHO/JC

• Implementation Guide for the NQF Endorsed Nursing-Sensitive Care Performance Measures (2005)
  – Provides detailed specifications for the 15 NQF endorsed measures.
  – Available on the JC Connect Web site.

NQF as a Lever in Implementation

• Advocates for federal government adoption based on supporting legislation and policy.
• Promotes the use of NVCS by key stakeholders and NQF Members.
• Supports the inclusion in national public reporting activities (e.g., Hospital Quality Alliance).
• Tracks implementation by hospitals and identifies successes and challenges.
• Identifies technical issues and other barriers to uniform implementation.
• Supports future improvements and enhancements to the set.
### NQF ‘Nurse Tracking’ Project

- 1-year project funded by RWJF to track adoption of NQF’s NVCS for nursing-sensitive care
- Outreach to hospitals via semi-structured telephone interviews and web-based survey
- Synthesis will result in better understanding of challenges, barriers, opportunities, and leverage points for implementation
- Feedback from hospitals is essential

### Increase Quality of Data and Accessibility of Benchmark Data

**If Embedded in the Computerized Information System**

- ANA National Database for Nursing Quality Indicators
- Magnet Topic Areas
- National Quality Forum National Voluntary Consensus Standards for Nursing-Sensitive Care: An Initial Performance Set
- CMS Pay for Performance Indicators
Norma M. Lang
Principal Investigator/ Project Leader

Knowledge-Based Nursing Initiative

A Partnership funded by
Aurora Health Care
Cerner Corporation
University of Wisconsin-Milwaukee
College of Nursing

Acknowledgement

Many stakeholders including researchers, practicing nurses, administrators, technology experts and others.

Dr. Mary Hagle, Researcher from Aurora Health Care who is at this meeting.
Goal:
Infuse evidence-based nursing content within the workflow to influence clinical decision making, populate data repositories and improve patient care across all venues.

<table>
<thead>
<tr>
<th>Aurora</th>
<th>Cerner</th>
<th>UWM</th>
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</thead>
<tbody>
<tr>
<td>Results of nursing care with patients</td>
<td>Application Solutions, Knowledge Tools</td>
<td>Research expertise</td>
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</table>

What?

- To what extent can the nursing knowledge/evidence be made “actionable”?
- (Consider the presentations at this meeting on pressure ulcers and falls)
- To what extent can actionable recommendations be imbedded in an electronic decision support system?
- To what extent can data be extracted from clinical and administrative data bases and warehouses?
Conceptual Framework:

Evidence-Based Decision Support Process Using an Information System

**Integrated Healthcare System & Community (Patients/Physicians)**

**Clinical Information System & Infrastructure**

(Decision Support / Documentation)

- Patient Assessment
- Nursing Diagnosis
- Nursing Intervention
- Nurse-Sensitive Outcome

**Clinical Data Repository**

- Actionable Interdisciplinary Knowledge
- Referential Interdisciplinary Knowledge

**Clinical Knowledge Management**

- Standardized Language Management (CMT, SNOMED-CT, ICNP)

**Data Warehouse**

- Clinical Data Repository
- Research
- QI
- Reports

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**Measures and Practice Knowledge**

- Measures give us benchmarks on certain aspects of care, sometimes process and sometimes outcomes
- If the measure is not achieved, the next step is to find out why and to fix/change something
- For that reason, the data base for practice includes assessment, problem, intervention and outcome data.
- In addition, structural data are needed about nurses and organizational factors.
- Donabedian’s framework still holds!!
### National Quality Indicators

*(clinical indicators / topics for acute care)*

<table>
<thead>
<tr>
<th>National Quality Forum (NQF)</th>
<th>National Database of Nursing Quality Indicators (NDNQI)</th>
<th>Magnet Topics</th>
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<tbody>
<tr>
<td><strong>Patient-centered outcome measures:</strong></td>
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<td><strong>Patient injury rates (falls occurrence)</strong></td>
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<tr>
<td>• Falls prevalence</td>
<td>• Falls</td>
<td>• Pressure ulcer prevalence</td>
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<td>• Falls with injury</td>
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<tr>
<td>• Pressure ulcer prevalence</td>
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<tr>
<td>• Failure to Rescue</td>
<td>• Hospital-acquired pressure ulcers</td>
<td></td>
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<tr>
<td>• Restraint prevalence</td>
<td>• Pediatric pain assessment, intervention, reassessment (AIR) cycle</td>
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<tr>
<td>• Urinary tract infection</td>
<td>• Pediatric peripheral intravenous infiltration</td>
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<td>• Central line catheter-associated blood stream infection</td>
<td>• Psychiatric physical / sexual assault</td>
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<tr>
<td>• Ventilator-associated pneumonia</td>
<td>• NEW in 2007 – restraint use</td>
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Research presented here at this meeting. I reviewed all of the abstracts and had the intent to synthesize the knowledge especially for pressure ulcers and falls (the most frequent topics), but failed to be able to do so.
Developing and Embedding
ACW Nursing Knowledge

Select Phenomenon of Concern
- Define phenomenon
- Identify questions to be answered

Using standardized terminology
(e.g., NANDA, NIC, NOC, Omaha, ICNP, SNOMED-CT)

Using standardized terminology

Generate Referential Knowledge
- Gather evidence
  - Research articles
  - National guidelines
  - Existing patient care documents
    (IPOCS, order sets, teaching records, protocols, etc)
  - Quality measures/indicators
  - Standards from professional organizations
  - Review literature
  - Analyze each reference
  - Make evidence table
  - Synthesize evidence

Using standardized terminology

Transform to Actionable Knowledge
- Patient Assessments
- Nursing Diagnoses/Problem ID
- Nursing Interventions
- Nurse-Sensitive Outcomes

Integrate Knowledge into Intelligent Systems
- Electronic documentation with decision support tools (e.g., alerts, smart templates, referential knowledge with links)

Selected Data Elements for Clinical Decision-Making Workflow

- Screen all patients on admission for fall risk factors
- Identify probable fall risk
- Patient does not fall

High risk of falls

- Communicate with care providers regarding high risk for falls
- Provide patient/family education about fall risk factors
- Collaborate with physician about appropriate referrals
- Consult with pharmacist regarding medications that may increase fall risk

- For patients with positive screen for probable fall risk, complete “Focused Fall Risk Assessment” using a valid and reliable tool
Creating Synthesis Flow Charts
(Visio)

Evidence-based recommendation in Cerner PowerChart Screen
Summary of Referential, Actionable & Executable Knowledge

Referential Knowledge Generation → Referential Knowledge Synthesis

Translate to Actionable Knowledge Tools → Build in Executable Knowledge Tools

Opportunities:
Clinical Data Entry, Storing, Transfer, and Retrieval

Integrated Healthcare System (Patients/ Clinicians)

Clinical Data Repository

Outcomes Evaluation, Research, QI, & Reports

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What’s in Your Data Warehouse?

- Usable Nursing Data?
- Assessment data?
- Problem identification data?
- Intervention data?
- Nursing sensitive outcome data?

Can the Nursing Data be Retrieved?

- How are the data retrieved for reports, quality improvement, and research?
- Can the ANA NDQI, NQF and other data be retrieved from the organization’s clinical repository or data warehouse?
- Can the data be analyzed to answer the queries?
What about Other Data?

**Integrating Clinical Data Created from Various Information Systems**

- CPOE (Computerized Physician Order Entry)
- eMAR (Electronic Medication Administration Records)
- EHR (Electronic Health Records)
- Laboratory Results
- Administrative, Human Resources, Payroll and Cost Accounting

Identifying Nursing Impact on Outcomes & Pay for Performance

- History & Admission Assessment
- Nsg. Diagnosis/Problem Identification
- Focused Assessment Related to PoC
- Selection of Nursing Intervention
- Nurse-Sensitive Outcome Assessment

CMS/Premier/NQF/IHI/NDNQI
- Discharge Instruction
- Readmission Rate
- Mortality
- LOS

Impact Analysis
Summary of Recommendations

• Synthesize research adding to the number and clarity of indicators and the nursing that supports them.

• Harmonize the nursing measures among ANA NDNQI, NQF, JC, Magnet and others.

• Recommend nursing as part of all developing measures for chronic illness, coordination of care, etc.

• Build nursing measures into computerized clinical information systems and data warehouses so that nursing data are automatically collected at the point of use and nursing information is readily available.

• Use standardized terminology and codes for nursing data.

• Develop synergy between Quality Indicator work, Magnet studies, evidence-based efforts and research.

• Work with NQF to have ANA NDNQI and CALNOC be the implementers of the NQF nursing related measures.

• Keep up the good work!!!
Thank You

Questions?

Summary of Recommendations

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