Nurse Sensitive Outcome Indicators II: How Nurse Staffing Committees Can Use Nurse Sensitive Quality Indicators to Determine Staffing Effectiveness

Hosted By: The Washington State, Ruckelshaus Nurse Staffing Steering Committee
Presenters

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Webcast Objectives

• Set the historical context
• Review key concepts from NSQI Webcast Part I:
• Describe how staffing committees can use NSQI
• Direction on:
  – Interpreting data
  – Creating reports
  – Benchmarking
Background Information

• History: Legislative Concerns
• Goal: Collaborative work on nurse staffing, including nurse sensitive outcome indicators
• Parties to the process:
  – SEIU 1199 Healthcare
  – United Staff Nurses Union 141 UFCW
  – Washington State Nurses Association
  – Washington State Hospital Association
  – Northwest Organization of Nurse Executives
The Legislation Requires all Hospitals in Washington to Implement:

- Hospital Based Nurse Staffing Committees
  - Composition – at least 50% bedside staff nurses
  - Create nurse staffing plans
  - Staffing plans reviewed and accepted or rejected by the CEO
  - Post staffing plans
  - Provide staffing information to the public
Memorandum of Agreement Includes the Following:

- Collection of data on Nurse Sensitive Quality Indicators (NSQI)
- Survey what indicators hospitals are collecting
- Identify and collect data on at least five NSQI to be collected by Washington hospitals and shared with their staffing committees
- Report nurse staffing as part of adverse events reporting
Washington State: Nurse Sensitive Quality Indicators

- Falls
- Falls with injury
- Pressure ulcers
- Nursing hours per patient day
- Skill mix
REVIEW:

NURSING SENSITIVE QUALITY INDICATORS: HISTORY AND DEFINITIONS OF THE INDICATORS
What Is the History of Nurse Sensitive Quality Indicators?

- In 1994, The American Nurses Association (ANA) started a long-term commitment to establish that patient care (quality and safety) was linked to nursing care.
- The purpose of this work was to educate nurses, consumers, and policy makers about nursing’s contribution to inpatient hospital care.
The first 15 Nursing Sensitive Measures undergo extensive review, evaluation, and consensus approval.
Centers for Medicare and Medicaid Services:
Non-Payment for “Never Events”

CMS declares there should not be payment for “never events”, like surgery on the wrong body part or mismatched blood transfusions, falls, or hospital acquired pressure ulcers.
What Does “Nurse Sensitive” Mean?

- Nurse sensitive quality outcomes are those patient outcomes that have been studied and found to be reliably linked to the presence or “dose” of nursing care.
- You are looking only at information that has been shown to have a direct effect on patient outcomes--specifically, falls and pressure ulcers.
National Quality Forum (NQF)-endorsed Nursing-Sensitive Measures

Currently there are 15 Nationally Recognized Nurse Sensitive Indicators:

1. Failure to rescue
2. Pressure ulcer prevalence
3. Falls
4. Falls with injury
5. Restraint (vest and limb) prevalence
NQF-endorsed Nursing-Sensitive Measures cont.

6. Urinary catheter-associated UTI (ICU)
7. Ventilator-associated pneumonia (ICU)
8. Central line catheter-associated BSIs (ICU)
9. Smoking cessation counseling for AMI
10. Smoking cessation counseling for heart failure
NQF-endorsed Nursing-Sensitive Measures

11. Smoking cessation counseling for pneumonia
12. Skill Mix
13. Nursing care hours per patient day
14. Practice environment scale-nursing work
15. Voluntary turnover
How Staffing Committees Can Use NSQI Data
Getting Your Committee Started

• Inquiring Members of the Committee Want to Consider:
  – What questions do we want to ask of our data?
  – What reports do we need to answer those?
  – What do we link patient outcomes to nurse staffing using data?
  – How can we use our data to ask additional questions, or to drill down to develop more in-depth understanding of how nurse staffing, processes of care, and patient outcomes may be linked in our setting?

• Understanding of quality care and how it is defined
Quality of Care: How is it Defined*

• By Structure - resource use or characteristics of the environment
• By Process - the tools and activities used to improve care (think of risk assessments, admission data bases)
• By Outcomes - Benefits to the patient; health and satisfaction of workforce

*Donabedian, 1980
Staffing Driven by Patient Needs: The Story of Your Unit

• Who are your patients?
• What are their needs?
• Collect information on:
  – ADT ratios/churn factor
  – Number of procedures
  – Whether you have outpatients or 23-hour stay patients
  – Is your census done at midnight?

• Staffing for the unit should be set using these pieces of information
Differentiating PROCESS from OUTCOMES

Examples of Process Measures for Falls and Hospital Acquired Pressure Ulcers (HAPU):

- Screening on admission and risk scores
- Timeliness of admission screening and time since last assessment (shift checks, documentation?)
- Risk Scores
- Evidence of ongoing assessment
- Evidence that prevention protocols have been implemented
There Are Steps That Can Improve Accuracy of Process Measures

- Use common national definitions
- Use clearly defined and consistent processes to establish when activities are expected to be performed
- Ensure “inter-rater” reliability during data collection (training, teaching, Obs)
- Use standardized tools to ensure comparable factors (Braden, Schmid, etc.)
- Use of benchmarking
Focal Outcome Measures

• Committees will focus on common nursing outcome measures that have been repeatedly linked to nurse staffing; affirmed for public reporting, and selected for pay-for-performance—Hospital Acquired Pressure Ulcers, Falls, and Falls with Injury

• The measures have been used by CALNOC since 1996 and by NDNQI since 1997; they were affirmed by the NDNQI in 2004.
Hospital Acquired Pressure Ulcers

- According to the National Pressure Ulcer Advisory Panel (NPUAP), Pressure Ulcers are measured by **Incidence** and **Prevalence**

  - **Incidence** is the rate of new ulcers in a population over time—these data are either captured in systems daily or from discharge electronic coding extraction and usually reported as a # of patients per 1000 patient days.

  - **Prevalence** is the number of HAPU observed by inspecting every single patient at a point in time—the prevalence is a % of patients with HAPU and extrapolated to represent the overall HAPU in a specific setting.
Hospital Acquired Pressure Ulcer Indicator

Definition:

• Pressure Ulcers are measured as the percent of patients with stage I, II, III, IV and Un-stageable ulcers.
• CALNOC collects and reports both
• CALNOC benchmarking is performed against prevalence
Falls and Falls with Injury

• Falls are defined as “unplanned descent to the floor”

• The concern is of course with patient injury, but all falls in fact have a risk of injury

• While the fall is an outcome measure, many process measures are used to assess and mitigate risk
When You Gather All The Information About Your Unit...

- Ask, did it make sense to you? Do you think the staffing numbers reflect what you expected?
- How many falls have you had over the last few months?
- Are you finding, and documenting, pressure ulcers on admission and during the hospital stay? How many?
- Patient driven information sets the stage for determining staffing levels and types needed
Nursing Staffing Characteristics are Important Structural Measures

- Total nursing hours per patient day (HPPD)
  - RN HPPD
  - LPN HPPD
  - UAP HPPD
- Skill Mix
- % Agency Hours
- Turnover Rate
  - National Quality Forum
  - Magnet
- Job Satisfaction
- RN Characteristics
  - Education
  - Certification
  - Years of Experience
Nursing Staffing Characteristics

Problems exist in the measurement and benchmarking of nursing hours per patient day (HPPD) due to inconsistency in definition of terms, and inconsistency in “who” is included in the measurement of hours – including:

- Fixed vs. Variable FTE
- Direct vs. Indirect Nursing Hours
- Productive vs. Non-productive Hours
Using Data to Inform Staffing and Quality Decisions
A Continuous Process to Support Your Investigations

**Act**
- Decide what changes are to be made
- Arrange next cycle

**Plan**
- Aim
- Questions/predictions
- Plan to carry out cycle
- (who, what, when, where)
- Plan for data collection

**Storey**
- Complete data analysis
- Compare to predictions
- Summarize learning

**Do**
- Carry out the plan
- Document problems and observations
- Begin analysis of the data

First developed by Shewhart in the 1920s when working for AT & T.
Analysis of Variance

• When data is different than you expected
  – Could be quality outcomes data or
  – Staffing data

• When the data is different, what is the cause:
  – Special cause
  – Common cause
An Example of How to Decide If Something Is Really Changing
Trend Report with Control Limits by Total Facility - Monthly

Falls per 1000 Pt Days

From JANUARY 2008 To DECEMBER 2008

3: Total Facility

- Falls per 1000 Pt Days Unit Average (2.80)
- Falls per 1000 Pt Days (Variable)
- One Sigma Limit_Upper (Mean + 1 SD) (3.37)
- One Sigma Limit_Lower (Mean - 1 SD) (2.43)
- Two Sigma Limit_Upper (Mean + 2 SD) (3.83)
- Two Sigma Limit_Lower (Mean - 2 SD) (1.97)
- Three Sigma Limit_Upper (Mean + 3 SD) (4.30)
- Three Sigma Limit_Lower (Mean - 3 SD) (1.30)
Benchmarking and Reporting

- National Database of Nursing Quality Indicators
- Collaborative Alliance for Nursing Outcomes
- Washington State Hospital Association
NDNQI and CALNOC: Similarities

• CALNOC was one of 7 pilot studies that established NDNQI coding specifications in 1997. CALNOC was first nursing quality database.

• Both CALNOC and NDNQI are engaged in the collection, reporting, and study of the impact of staffing on nursing sensitive quality indicators.

• Core indicators (Falls, HAPU, and Nurse Staffing variables) are aligned; CALNOC and NDNQI are highly collaborative in ensuring data can be passed between databases.

• CALNOC and NDNQI share a commitment to ensuring nursing’s measures are adopted and used at the national level.
## NDNQI and CALNOC: Examples of Differences From the User Perspective

<table>
<thead>
<tr>
<th>NDNQI</th>
<th>CALNOC</th>
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<tbody>
<tr>
<td>• Data entry is line by line or XML file upload.</td>
<td>• Data entry via automated Excel files using email or scannable forms for HAPU.</td>
</tr>
<tr>
<td>• NDNQI reports are pre-set as quarterly for 8 quarter trends.</td>
<td>• CALNOC flexible reporting options enable users to choose the month and year(s) of their reports with no restrictions.</td>
</tr>
<tr>
<td>• NDNQI does not provide total facility statistics.</td>
<td>• CALNOC provides total facility summary statistics.</td>
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<tr>
<td>• NDNQI education is via web tutorials, webinars or annual conference.</td>
<td>• CALNOC will pass through data to NDNQI at the request of members hospitals.</td>
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<td></td>
<td>• CALNOC education uses all NDNQI methods, plus customized programs delivered regionally or on site as members request.</td>
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Prioritization of the Information

Narrow the focus to important indicators to monitor benchmarks they are compared to.

- Prioritization decisions should come from the information about your units that you discovered when you asked the key question: who do we care for?
- Also, this will be driven by your statewide process.
Common Comparison Reports

“A picture is worth a thousand words”

Creating your report........

CALNOC
Collaborative Alliance for Nursing Outcomes
Examples of Data Reporting

• **Common (Comparison) Reports**
  – Visual comparison of hospitals (bar graphs) showing each hospital’s performance

• **Summary Statistics For All Indicators**
  – Data by hospital size and unit type
  – Includes mean, median, quartiles

• **Hospital and Unit Specific Reports**
  – Benchmarking Reports with Comparison Quartiles
  – Trend Reports
  – Staffing Effectiveness Reports (2 indicators)

Understanding Data “Spread”

Percentile:

- The percentage of a distribution (responses or values) that are equal to or below that number.
- A value on a scale of 100
- For Example: a score in the 75th percentile means 75% of the scores are equal to or below that score
- Common in growth charts and testing scores.
Percentiles & Quartiles

- 0% to 20%: 25% of data
- 20% to 40%: 25% of data
- 40% to 60%: 25% of data
- 60% to 100%: 25% of data

50th Percentile is the Median

Inter-Quartile Range

CALNOC
Collaborative Alliance for Nursing Outcomes
There Are Many Ways to Display the Data: What Makes Sense?

• Charts and graphs can be useful to transform numbers, and statistics, into an image.

• The next slide displays a comparison graph from the CALNOC website for med/surg units in hospitals 100 beds and less.
Monitoring your own performance over time compared to CALNOC averages. Data table also provided with graphs.
Trend Reports

• Key to monitoring prioritized indicators over time.
• Very important to understand performance direction (up, down, flat or stable).
• Help hospitals understand their ongoing performance over time by watching the slope of the line.
• CALNOC Trend Reports
  – Both the facility average and CALNOC average for the selected time period are shown by lines across the graph.
  – The report includes a table listing the actual numeric rates for each month.
Number of Patients per Caregiver for Medical/Surgical Units
All Hospitals Reporting
1998-2005

Decrease over time; stable since Q3 2004

Watch the slope of the line to understand if performance is improving, declining, or stable compared to YOURSELF each quarter.
Total Hours per Patient Day
Medical/Surgical Units—All Hospitals Reporting
Quartile Trends: 1999-2005

Relative performance may change compared to the group even though actual performance has been stable.
Performance: Your average, monthly rates, compared to CALNOC Average
Nursing Related Structural Indicators That Influence Outcomes

• There are likely to be nurse staffing and skill mix differences among units, and among hospitals.
• Monitoring key outcomes will enable evaluation of unit level performance based on key metrics, (i.e., Fall Rate, Hospital Acquired Pressure Ulcers).
• Benchmarking (comparing) your unit and hospital performance internally and with other hospitals externally, over time, will provide a context for interpreting performance trends; comparative excellence and sources of BEST practices.
Benchmarking Nurse Sensitive Quality Indicators
What is a “Benchmark”? 

• In non-health terms, it is a standard, norm, or “yard-stick” to judge one's performance as an individual or company. 

• It is a standard measurement or metric used to evaluate the performance of any entity, from schools to stock portfolios. 

• Allows a hospital to build on nationally accepted definitions.
Benchmarking Reports

• These should be available at the individual unit level:
  – This information can compare performance within the facility, by unit, and externally with other “like” hospitals.
  – Be sure to review the real information, such as the number of falls that actually occurred on a unit, not just the calculated rates, such as *how many Falls did we have last month?*
  – These reports are a valuable way to examine patient level outcomes.
<table>
<thead>
<tr>
<th>Unit Level Report</th>
<th>Benchmark S.</th>
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<tbody>
<tr>
<td>Date - 08/15/2007</td>
<td></td>
</tr>
<tr>
<td><strong>Unit</strong></td>
<td><strong>Unit Type</strong></td>
</tr>
<tr>
<td>5-SE</td>
<td>Medical Surgical Units</td>
</tr>
<tr>
<td>A. % of Pt. with any Ulcers</td>
<td>Medical Surgical Units</td>
</tr>
<tr>
<td>B. % of Pt. with Stage II + Ulcers</td>
<td>Medical Surgical Units</td>
</tr>
<tr>
<td>C. % of Pt. with Hospital Acq. Press. Ulcers (All Stages)</td>
<td>Medical Surgical Units</td>
</tr>
<tr>
<td>D. % of Pt. with Hospital Acq. Press. Ulcers Stage II+</td>
<td>Medical Surgical Units</td>
</tr>
<tr>
<td>E. % of Pt. with Hospital Acq. Press. Ulcers Stage III+</td>
<td>Medical Surgical Units</td>
</tr>
<tr>
<td>F. % of Pt. with Ulcer Risk Assess Documented w/in 24 hours of admission</td>
<td>Medical Surgical Units</td>
</tr>
<tr>
<td>G. % of Assessed Pt. Identified &quot;At Risk&quot; for Ulcers At Admission</td>
<td>Medical Surgical Units</td>
</tr>
<tr>
<td>H. % “At Risk” Pts with Ulcer Prevention Protocol in Place at Survey</td>
<td>Medical Surgical Units</td>
</tr>
</tbody>
</table>
Staffing Effectiveness Will Put The Pieces Together

• Exploring How Nurse Staffing May Impact Outcomes in Your Setting.
  – Again, based on your patients, your unit characteristics, and your staff and skill mix.
• Monthly performance on both variables for both the unit and also the total CalNOC average.
• Can be generated for the total facility, by unit type, or for individual units.
• Slope of the lines and bars for averages helps analyze if performance is improving, declining, or stable compared to past performance on the bar & line graphs.
Using the Data for Policy Setting and Decision Making

• One hospital discovered they were having problems with falls, and they were able to watch the trends, and evaluate activities (bed alarms) or staff changes (in unlicensed personnel) that had been instituted during that same period.
Staffing Effectiveness Report by Unit – Monthly

Falls per 1000 Pt Days

From JANUARY 2007 To JULY 2008

Unit Name: AOU

Percent Other (Unlicensed) Hours of Care

Time Series (Month)

Falls per 1000 Pt Days Unit Average (3.56)
Percent Other (Unlicensed) Hours of Care Unit Average (36.06)
Falls per 1000 Pt Days CalNOC Average (3.29)
Percent Other (Unlicensed) Hours of Care CalNOC Average (23.23)
Falls per 1000 Pt Days (Variable1)
Percent Other (Unlicensed) Hours of Care (Variable2)
Communicating Your Findings: How This Data Can Help

• Using nationally recognized terms and definitions decreases subjectivity, and improves the ability to compare data.
• Data is non-emotional, patient focused, and fact based.
• This is the language that is used in health policy and by hospital administration.
• This levels the playing field!
Questions and Comments
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