Nursing Quality Metrics

Donna Diers, RN, PhD
MidCentral DHB
Palmerston North, New Zealand
October 13, 2011
Nursing Quality Metrics

Canada: **C-HOBIC** (Canadian Health Outcomes for Better Information and Care)*

- **Acute care**
  - ADL; Bladder continence; Pain (frequency/intensity); Fatigue; Dyspnea; Nausea; Falls; Pressure ulcers; Therapeutic Self Care (TSC)
  - All converted to scores: range 0-67; higher = dependent

- **Long term care/Complex Continuing Care**
  - Same fields without TSC.

* [www.cna-aiic.ca/c-hobic/about/default_e.aspx](http://www.cna-aiic.ca/c-hobic/about/default_e.aspx)
Nursing Quality Metrics

**NDNQI:** The National Database of Nursing Quality Indicators (www.nursingquality.org)

Other indicators
- NSQIP and specialty-specific indicators
- Epidemiology - reportable conditions
- Healthy People 2020
- Patient Satisfaction surveys
- Employee opinion surveys
- Outcomes Potentially Sensitive to Nursing (OPSN)
NDNQI: The National Database of Nursing Quality Indicators

Proprietary product of the American Nurses’ Association in collaboration with the University of Kansas School of Nursing (since 1998)

NDNQI indicators are part of the National Quality Forum

Associated with the Magnet Hospital Program
Present Indicators (2011-12)

- Nurse staffing
- RN Education/Certification
- Nurse Turnover
- Falls
- Pressure ulcers
- Restraint use
- Physical/sexual assault
- Peripheral Intravenous (PIV) Infiltrations (peds only)
- Pain Assessment/Intervention (AIR) cycles (peds only)
Present Indicators (con’t)

- Healthcare –associated infections
  - Central Line Associated Blood Stream Infections
  - Umbilical Catheter Associated Blood Stream Infections
  - Catheter Associated Urinary Tract Infections
  - Ventilator Associated Pneumonia (newborns only)
NDNQI services

- **Unit-level** comparison data, deidentified, data suppressed if < 5 cases or units reporting
- Benchmarks to academic medical centers, hospitals with beds > 500 and/or Magnet hospitals
- Quarterly reports benchmarked to mean, median, 25% and 75%
- Staff support; client input; data available for research
- **Cost:** >$10,000 per hospital per year
Details

- Unit level data by **unit type**
  - Adult Critical Care
  - Adult Step Down
  - Adult Medical
  - Adult Surgical
  - Adult medical/surgical combined
  - Adult (physical) rehab

(con’t)
Unit types (con’t) Adult only

Adult Medical
  Cardiac
  Neurology
  Oncology
Adult surgical
  Cardiothoracic
  Neurosurgery
  Orthopedic
Adult Medical/surgical
  Cardiac
  Neuro/Neurosurgery
  Oncology
Unit types (con’t) Adult Only

- Burn Unit
- Cardiotoracic ICU
- Coronary ICU
- Medical ICU
- Neuro ICU
- Pulmonary ICU
- Surgical ICU
- Trauma ICU
Unit types con’t

- Pediatric Critical Care
- Pediatric Step Down
- Pediatric Medical
- Pediatric Surgical
- Pediatric Med-Surg combined
- Pediatric Rehab
- Level I, II, or III Neonatal
- Well baby nursery
- Adult Psychiatric
- Geripsych
- Child and/or Adolescent Psychiatric
- Other psychiatric
- Critical Access Unit
- Obstetrics
- Emergency Department

Issue: fit with individual hospital’s units
Nurse staffing metrics: 1

Nursing Hours Worked per Patient Day by job category
RN
LPN/LVN
Unlicensed assistive personnel
Total

Only “productive” hours counted

“Patient days are adjusted for short stay patients when hospitals are able to do so.”

Requires census three times/day
Nursing staffing metrics: 2

Skill mix: distribution of nursing hours by job category

% RN
% LPN/LVN
% UAP

“Agency hours” are included and then separated by job category
RN Education

% BSN or higher degree

% with national certification

Issue: collecting and updating this information and attributing nurses to units
Patient Metrics: Falls

Falls (by unit) per 1,000 patient days
Injury falls per 1,000 patient days (all fall categories)
% of falls that were moderate or greater injury
Falls characteristics (assisted/unassisted)/1,000 pt days
Nursing process for fall prevention
  Prior fall risk assessment
  Risk assessment within last 24 hours
  At risk
  At risk and fall protocol
Restraints in use at time of fall
Patient Metrics: pressure ulcers

All collected by prevalence study once per quarter

% of patients with pressure ulcers
% of patients with hospital acquired pressure ulcers
% of patients with hosp. acq. PU Stage II and above
% of patients with UNIT acquired PU
% of patients with UNIT PU Stage II and above

Pressure ulcer prevention for patients at risk (24 hrs)

  Skin assessment, pressure reducing surface, repositioning, nutritional support, moisture mgmnt
Process Metrics: Restraints

% of patients with physical restraint (prevalence)

Restraint characteristics:
- Limb
- Vest
- Limb and vest

Medical/surgical indications for restraint
Behavioral indications for restraint
Clinical justification for restraint

Issue: combine with PU prevalence? Indications definitions
Nurse Turnover

- Nursing Unit turnover rate as % of employed FTE
- Nursing Unit turnover rate as % of employed staff
- Voluntary nursing unit turnover rate by job class
- Average years of tenure of staff who leave

- Controllable/uncontrollable reasons (only for Magnet)
Physical/Sexual Assault

- Injury assault rate per 1,000 patient days
- Total assault rate
- Patient characteristics (age, gender, involuntary admission)
- Characteristics of injury assaults
  - Median time since admission
  - % within 24 hours of admission
  - % repeated assaults
- Mean number of assault victims per episode
- % nurse victims
Assault con’t

- Job classification of injured persons (incl. visitor)
- Injury level most severely injured person (RN, non RN)
- Characteristics of nurse victims
  - Years psych nursing experience
  - % with assault management training
- Post assault interventions
- Restraint types and duration of restraint and seclusion
Peripheral IV infiltration

Prevalence study

- % of PIV sites with infiltrations
- Peripheral IV characteristics
  - Total patients with PIV
  - % of patients with > 1 PIV site
  - % of PIV sites with a vesicant solution
  - IV site distribution

Issue: combine with PU and restraint prevalence?
Pain Assessment/AIR Cycles

Quarterly one-day retrospective chart review

- Average number of pain assessments per patient
- Nursing process for patients assessed for pain
  Number of pain assessments
  Percent of cycles completed
  Components missing from incomplete cycles
- Pain intervention profile
Healthcare associated Infections

- Central line associate blood stream infections (CLABSI) per 1000 Central line days

- CLABSI by birthweight category
  - <750 gm
  - 751-1000 gm
  - 1001-1500 gm
  - 1501-2500 gm
  - >2500 gm

Issue: how get central line days if no EMR?
Healthcare associated infections (con’t)

- Umbilical catheter associated blood stream infections per 1000 umbilical catheter days
- Same birthweight categories
Healthcare associated infections (con’t)

- Non-umbilical central line associated blood stream infections per 1000 non-umbilical central line days

- Same birthweight categories
Healthcare associated infections (con’t)

- Catheter associated urinary tract infections (CAUTI) per 1000 catheter days
- Ventilator associate pneumonia (VAP) per 1000 ventilator days
- VAP by birthweight categories
Where are we going with this?
The Very Big Picture

WORKLOAD

NURSING RESOURCES

Working Environment

PATIENT OUTCOMES

Nurse Outcomes

Organizational Outcomes
Data on Nursing Resources I

- Nursing hours (caregiver hours) per patient day
  Payroll or rostering system
  By shift, day of week
- Nursing qualifications (degrees, experience, certification)
  Need to build data systems for this
- Vacancies and turnover
  HR data systems
Data on Nursing Resources II

- Support available:
  - Non-licensed staff
  - Access to specialized nurses/NP’s
  - Ward secretarial support
  - Facilities support
  - Business support

*Payroll, rostering, HR systems*
Data on Nursing Workload I

- “Acuity” measurement
  *Homegrown or purchased systems*
- “Churn”
  *Patient activity systems*
- Number of patients in isolation
  *EMR; hospital epidemiology; prevalence study*
- Number of different case types (DRGs)
  *NZHIS submission? Unit level data?*
Data on Nursing Workload II

- Number of physicians or physician teams
  \textit{EMR or patient medical records}
- Presence of learners (housestaff; nursing students)
  \textit{Personnel records}
- Psychiatric or substance abuse secondary diagnoses
  \textit{EMR or medical records coding}
- Number of patients awaiting placement
  \textit{EMR or retrospective discharge and LOS data}

Etc. Etc.
Data on the Working Environment

- Nursing Work Index (NWI) or similar surveys
- Geography of the unit
- Perception of potential for violence/assault
- Organizational “health” (from observation)
- Leadership
- Interprofessional relationships
- “Economics” of the unit – over/under budget?
- Employee satisfaction surveys
- Etc. Etc.
Data on Process

- Evidence based practice protocols/guidelines
- Models of care
- QI/process improvement strategies/tactics
- Patient/family orientation
- Cultural safety
- Interdisciplinary rounds
- Shared governance
- Etc. Etc.
Data on Patient Outcomes

- Adverse events
- Nursing-sensitive measures
  - NDNQI-type measures
  - Initiation of breast feeding
  - Waiting times in ED
  - Antibiotics before surgery or C-section
  - Readmission rates
- Outcomes Potentially Sensitive to Nursing (OPSN)
- Patient satisfaction
Data on Nurse Outcomes

- Intent to stay/leave the position (surveys)
- Intent to stay/leave nursing (surveys)
- Employee satisfaction surveys
- Work injuries
- Assaults/patient violence toward staff
- Time to fill vacant positions
- Leadership turnover
Etc. etc.
Data on Organizational Outcomes

- Length of stay
- Readmission rates
- Transfers to other facilities
- Ambulance diversions
- ED waiting times
- Cost per case
- Cost per day
- Results of inspections
- Etc. Etc.
WORKLOAD

Working Environment

NURSING RESOURCES

PATIENT OUTCOMES

PROCESS

Nurse Outcomes

Organizational Outcomes
Questions?

Comments?
Thank you for your attention