Nursing-sensitive patient outcomes: An Australian case study on developing a data registry for measuring the quality and safety of nursing practice

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AUSNOC DATA REGISTRY

Purpose of this presentation

To describe the development, testing and implementation of a data registry of nursing-sensitive indicators for measuring the quality and safety of nursing practice in three hospitals in Australia using a multi-site, cross-sectional design.
DATA REGISTRY DEVELOPMENT

Aim of the AUSNOC data registry

Focuses on structure, process and outcome data to:

- Provide action-able data for unit and hospital managers;
- Evaluate evidence-based decisions about nurse staffing, nursing processes, and improvements to patient outcomes; and
- Provide data to influence decision-making about patient care
Australian Nursing Outcomes Collaborative (AUSNOC)

- Based on PhD project “Measuring the quality & safety of nursing care”
- Indicator set and data registry development
- Feasibility testing in 3 Australian hospitals
- Findings and future expansion

- Ethics approval (HE15-425)
A conceptual framework for the measurement of the quality and safety outcomes of nursing care
AUSNOC

... making Nursing matter
PARTICIPATING HOSPITALS

Hospital A
280 beds
Private Hospital
NSW, Australia

Hospital B
142 beds
Private Hospital
NSW, Australia

Hospital C
151 beds
Private Hospital
NSW, Australia
DATA COLLECTION

Participating units

- 3 medical wards
- 4 surgical wards
- 1 rehabilitation ward
AUSNOC DATA REGISTRY

Indicators and instruments:

- Nurse staffing (**hourly data** on number of staff & skill mix)
- Patient flow (**hourly data** on admissions, discharges, transfers)
- Adverse events (pressure injuries, falls, medication errors, staph aureus bloodstream infections, restraint)
- Processes of care (hand hygiene, risk assessment procedures falls & pressure injuries, patient identification, communication)
- Patient Satisfaction and Patient Experiences of Care
- Patients perceptions of Caring (Caring Assessment Tool)
- Nurses perceptions of their practice environment (Nursing Work Index - Revised: Australian [NWI-R:A]) and safety assessment questionnaire

A conceptual framework for the measurement of the quality and safety outcomes of nursing care
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Reliability

• Administrative data audited
• Adverse event data checked via review of ICD-10-AM coded data
• Observational audits (training, established tools, independent auditor)
• Pressure injuries identified using International EPUAP/NPUAP/PPPIA Classification system
• Hand Hygiene Australia methodology

Validity

• Established indicators (NDNQI/CALNOC/RN4CAST)
• Administrative data screened for outliers
• Caring Assessment Tool – psychometric testing completed
• NWI-R:A – established validity (5 subscales that make up the PES-NWI)
• Participation in observational audits – 91 to 100%
AUSNOC DATA REGISTRY

Data Collection

AUSNOC Consultative group formed (Nursing leaders, key contact at each site, executive sponsor, data system architect & research team)

**Administrative data**
- Data codebook
- 1 Month of trial data (excluded from analysis)
- Audit of administrative data using codebook
- Adverse event data audited against ICD-10-AM

**Observational audits**
- Independent auditors
- Training on PI classification
- Full skin inspection
- Processes of care
  - Pressure Injuries
  - Falls Prevention
  - Patient Identification

**Surveys**
- Validated tools
- Caring Assessment Tool – online data collection via iPad
- NWI-R:A
- Press Ganey™ Patient Experience Surveys
- Safety Attitudes Questionnaire
FINDINGS

Developmental Phase 1:

- Workshops with key stakeholders at each hospital
  - Developed data definitions, and
  - Achieve consensus on collection methods
- Data codebook developed

- Lengthy process but very valuable to share ideas and existing practices
FINDINGS

Developmental Phase 2:

- Identification of administrative data from
  - Inpatient administrative systems
  - Human Resource systems
  - Risk Management systems
- Manual transfers and auditing of data against data codebook
- Automation of monthly data delivery via Secure File Transfer Protocols (SFTP)
- Observational tools were developed and pilot tested
- Cross-sectional surveys were developed and pilot tested (!!!)
FINDINGS

Developmental Phase 3:

- Data reporting systems developed
- Quarterly benchmarked reports developed following consultation with stakeholders
- Reporting was labour intensive and time consuming (!!!)
- Data presentation evolved over the course of the project
- Customised data for accreditation and government reporting
Administrative data in 2016

- 65,000 bed days
- 12,654 admissions
- 12,627 discharges
- 22,956 transfers

- 370 adverse events
  - 66 Hospital Acquired Pressure Injuries
  - 254 patient falls
  - 50 medication errors

- 69,120 hours of staffing analysed for each hour of staffing by …
  - Numbers of staff
  - Skill mix
  - Nursing Hours Per Patient Day
1. Help me to believe in myself
2. Make me feel as comfortable as possible
3. Support me with my beliefs
4. Pay attention to me when I am talking
5. Help me see some good aspects of my situation
6. Help me feel less worried
7. Anticipate my needs
8. Allow me to choose the best time to talk about my concerns
9. Are concerned about how I view things
10. Seem interested in me
11. Respect me
12. Are responsive to my family
13. Acknowledge my inner feelings
14. Help me understand how I am thinking about my illness
15. Help me explore alternative ways of dealing with my health problem/s
16. Ask me what I know about my illness
17. Help me figure out questions to ask other health professionals
18. Support my sense of hope
19. Respect my need for privacy
20. Ask me how I think my health care treatment is going
21. Treat my body carefully
22. Help me with my special routine needs for sleep
23. Encourage my ability to go on with life
24. Help me deal with my bad feelings
25. Know what is important to me
26. Talk openly to my family
27. Show respect for those things that have meaning to me
Caring Assessment Tool

- 27 items
- 2 subscales
- Overall $\alpha = 0.98$
  - Nurse Patient Communication $\alpha = 0.96$
  - Feeling “cared for” $\alpha = 0.97$

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## ESTIMATED FINANCIAL SAVINGS

### Hospital acquired pressure injury

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<td>$2,747</td>
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(Nguyen et al. 2015)

### Falls

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<th>Increased length of stay (compared to no fall)</th>
<th>Additional hospital costs (2015 $AUD)</th>
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<td>In-patient fall (no significant injury)</td>
<td>8 days</td>
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<tr>
<td></td>
<td>$6,669</td>
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<tr>
<td>In-patient fall (with injury)</td>
<td>12 days</td>
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<td>$11,396</td>
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(Morello et al. 2015)
FINDINGS

Data Collection Burden

- Administrative data collected with no burden on clinical staff
- Surveys
  - Caring Assessment Tool – all discharged patients
  - NWI-R:A – lower response rates than anticipated (43%)
  - Press Ganey™ Patient experience Surveys – used retrospective data
  - Safety Attitudes Questionnaire - lower response rates than anticipated (43%)
- Pressure Injury Prevalence & Processes of Care Observational Audits
  - Time consuming (16 hours) & costly
  - Changes in processes of care led to significant improvements
IMPLICATIONS FOR PRACTICE

- AUSNOC data registry can be feasibly collected in the Australian healthcare system
- Structure, process and outcome data can be collected on a set of indicators that explore the constructs of
  - Care and caring
  - Communication
  - Coordination and collaboration; and
  - Safety
- Large scale evaluation is required to determine the cost versus benefit of AUSNOC data registry
REFERENCES


Any questions?

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