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

BACKGROUND

AUSNOC

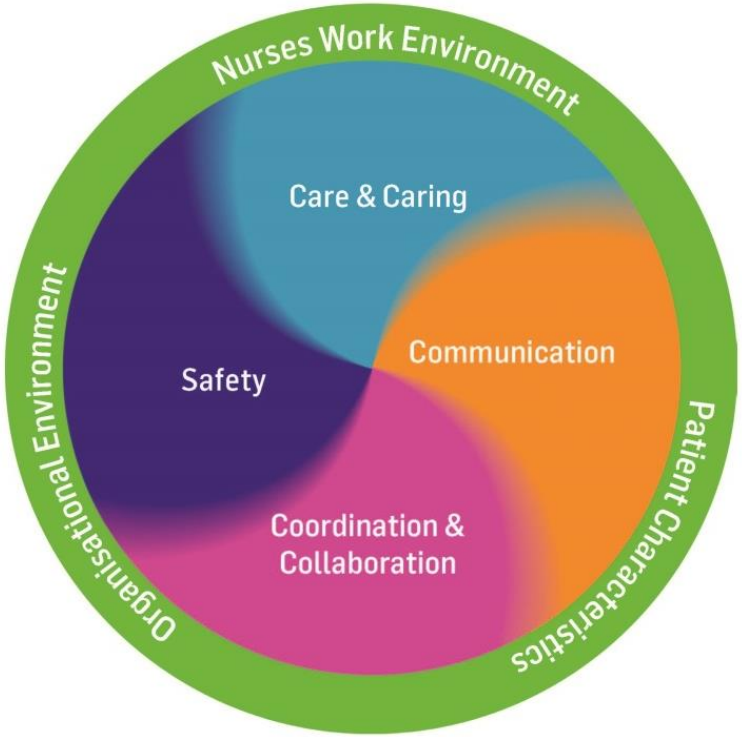
Australian Nursing Outcomes Collaborative (AUSNOC)

- 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)

MEASURING THE QUALITY & SAFETY OF NURSING CARE

AUSNOC



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

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ORIGINAL ARTICLE

WILEY Journal of Clinical Nursing

Measuring the outcomes of nursing practice: A Delphi study

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Aims and objective: To develop nursing-sensitive patient indicators to measure the outcomes of nursing practice.

Background: Nurses play an important role in the healthcare system, yet there is no consensus on how the impact of nursing work should be evaluated. Limited research has previously examined the views of clinical nurses on the important concepts for measuring nursing practice.

Design: A four-round modified Delphi survey sought opinions from patients and nurses about the relevant concepts and their relative priority as indicators of quality nursing practice.

Method: Round 1 comprised semi-structured interviews with patients and nurses to identify key concepts. Nurses were then asked to participate in three rounds of Delphi survey to identify and rate key concepts from which indicators were developed. Thematic analysis and descriptive statistics were used to analyse the data.

Results: By the end of Round 4, the process had generated 103 concepts and participants had agreed on eight overarching constructs, namely care and caring; communication; coordination and collaboration; safety; patient characteristics; workload; Nurses work environment; and organisational characteristics.

Conclusions: Consensus was achieved between nurses on the most important concepts, which can provide the basis for measuring the quality and safety of nursing practice in a comprehensive and holistic way.

Relevance to clinical practice: The identification of concepts that patients and nurses consider important for measuring nursing practice will guide the development of methods for evaluating nursing in the future. Ensuring that nursing practice is rigorously evaluated has the potential to identify opportunities to improve nursing quality, patient safety and improve health outcomes.

KEYWORDS
Delphi technique, nursing-sensitive indicators, nursing-sensitive outcomes, patient outcomes, quality, safety

AUSNOC

Sim, J, Crookes, P, Walsh, K & Halcomb, E (2018), Measuring the outcomes of nursing practice: A Delphi study, *Journal of Clinical Nursing*, 2018, 27, e368-e378. DOI: https://doi.org/10.1111/jocn.13971

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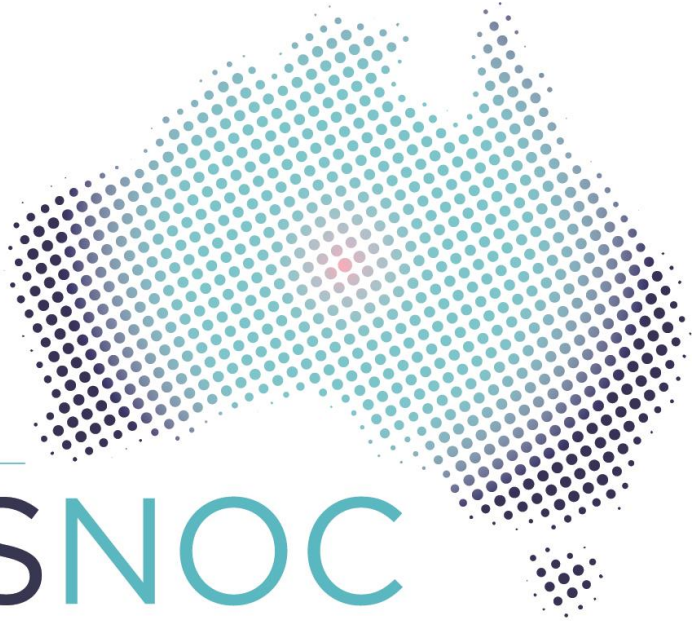

AUSNOC

... making **Nursing** matter

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PARTICIPATING HOSPITALS

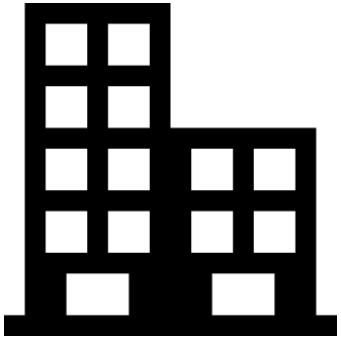
AUSNOC

Hospital A

280 beds

Private Hospital

NSW, Australia

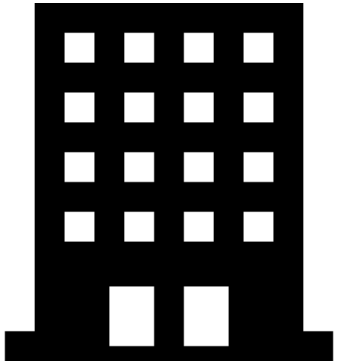


Hospital B

142 beds

Private Hospital

NSW, Australia



Hospital C

151 beds

Private Hospital

NSW, Australia

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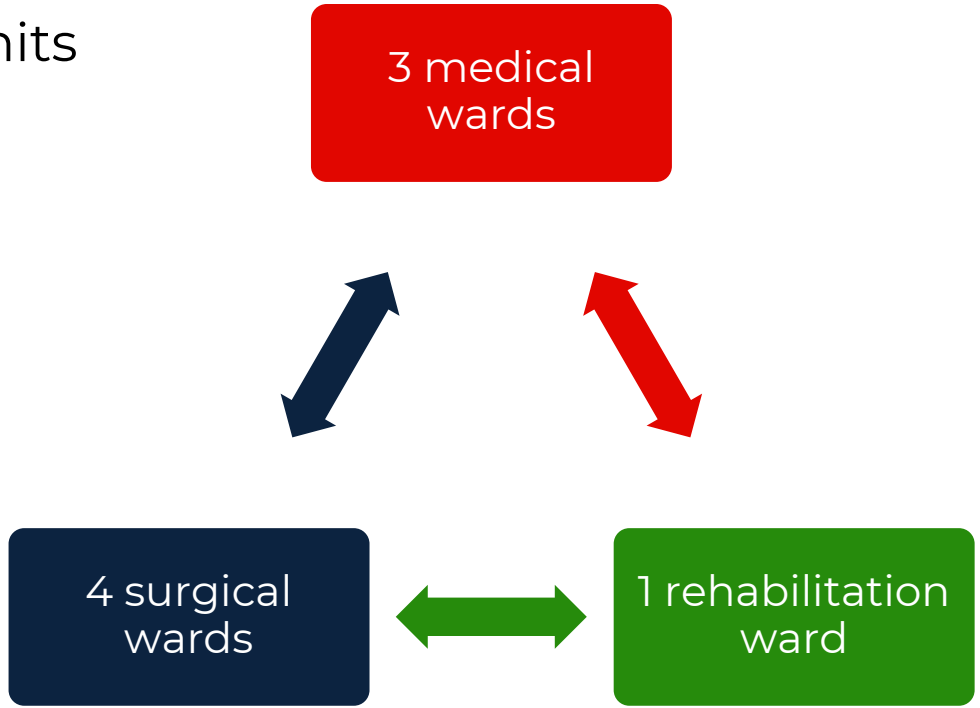
DATA COLLECTION

Participating units



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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

AUSNOC DATA REGISTRY

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 (!!!)

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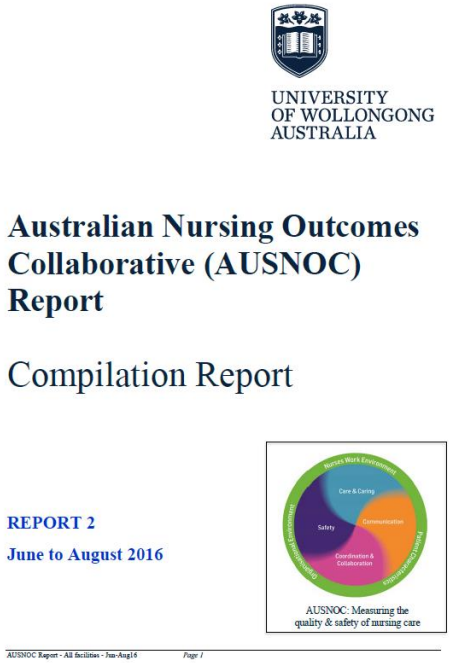
FINDINGS

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



FINDINGS

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

CARING ASSESSMENT TOOL ITEMS

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

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RESEARCH ARTICLE

WILEY NursingOpen

A psychometric analysis of the Caring Assessment Tool version V

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Abstract

Aim: The aim of this study was to examine the factor structure and construct validity of the Caring Assessment Tool version V (CAT-V) for patients in Australian hospitals.

Design: Secondary analysis of CAT-V surveys from the Australian Nursing Outcomes Collaborative (AUSNOC) data set was used. The CAT was originally developed in the United States of America.

Methods: The 27-item CAT-V was administered to patients prior to discharge from eight wards in three Australian hospitals in 2016. The psychometric properties of the CAT were evaluated using item analysis and exploratory factor analyses.

Results: Item analysis of surveys from 476 participants showed high levels of perceived caring behaviours and actions. Exploratory factor analysis revealed a two-factor structure consisting of: Nurse–patient communication; and Feeling *cared for*. The CAT-V is a reliable and valid instrument for measuring patients' perceptions of the attitudes and actions of nurses in Australia.

KEYWORDS
caring, Caring Assessment Tool, empathy, factor analysis, instrument development, nurse–patient relations, nursing, nursing care

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Caring Assessment Tool

- 27 items
- 2 subscales
- Overall ∝ = 0.98
  - Nurse Patient Communication ∝ = 0.96
  - Feeling "cared for" ∝ = 0.97

Sim, J, Lapkin, S, Joyce, J, Gordon, R, Kobel, C & Fernandez, R (2019), A psychometric analysis of the Caring assessment Tool version V, *Nursing Open*, 6, 1038-1046.
DOI: https://doi.org/10.1002/nop2.286

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ESTIMATED FINANCIAL SAVINGS

Hospital acquired pressure injury

	2013 $AUD / patient
Stage 1 Pressure Injury	$2,747
Stage 2 Pressure Injury	$10,347
Stage 3 Pressure Injury	$17,442
Stage 4 Pressure Injury	$22,467

(Nguyen et al. 2015)

Falls

	Increased length of stay (compared to no fall)	Additional hospital costs (2015 $AUD)
In-patient fall (no significant injury)	8 days	$6,669
In-patient fall (with injury)	12 days	$11,396

(Morello et al. 2015)

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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

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DOI: 10.1111/jan.13967

ORIGINAL RESEARCH:
EMPIRICAL RESEARCH – QUANTITATIVE

JAN WILEY

Development of a data registry to evaluate the quality and safety of nursing practice

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An internal grant from the School of Nursing at the University of Wollongong was used to develop data collection methods and support data analysis.

Abstract

Aim: To describe the development, testing, and implementation of a data registry of nursing-sensitive indicators for measuring the quality and safety of nursing practice.

Background: Recent research has established causal links between nurse staffing and patient outcomes. Unit level data is necessary for implementation of evidence-based strategies on nurse staffing and nursing care processes.

Design: Multi-site, cross-sectional design.

Methods: Retrospective data were collected from administrative data sets on nurse staffing, patient flow, and adverse events in three hospitals in 2016. Periodic observational surveys on pressure injury prevalence, hand hygiene practices, and documentation of processes of care were also conducted. Prospective data were collected from patients at time of discharge using the Caring Assessment Tool. Nurses' perceptions of their practice environment were assessed using the Nursing Work Index – Revised: Australian. Data from annual Press Ganey® surveys on patient satisfaction/experience were obtained.

Results: The Australian Nursing Outcomes Collaborative (AUSNOC) data registry was developed in three phases. Phase 1 involved development of a data codebook; phase 2 involved development and testing of data collection methods; and phase 3 involved development of data reports and data dissemination strategies. This paper gives an overview of these phases and includes a summary of the descriptive statistics from the indicator set.

Conclusion: Unit level data is pivotal for measuring the quality and safety of nursing care. Data from the Australian Nursing Outcomes Collaborative (AUSNOC) can be feasibly collected and used to benchmark nursing performance, evaluate patient outcomes, and identify areas for practice improvement.

KEYWORDS
data registry, evaluation, nursing, nursing-sensitive indicators

AUSNOC

Sim, J, Joyce-McCoach, J, Gordon, R & Kobel, C (2019), Development of a data registry to evaluate the quality and safety of nursing practice, *Journal of Advanced Nursing*, 2019, 75, 1877-1888.
DOI: https://doi.org/10.1111/jan.13967

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Any questions?

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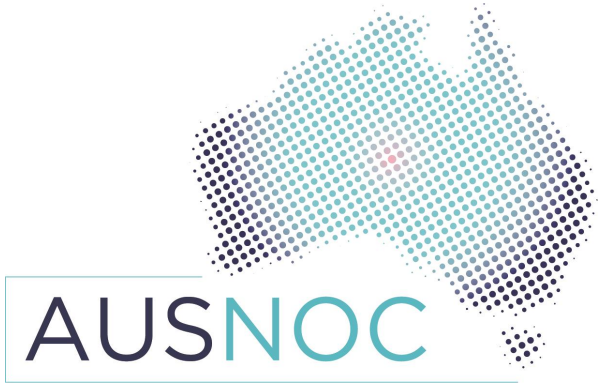

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