Nurse Sensitive Indicators

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In this lecture

History of Nurse Sensitive Indicators

What are Nurse Sensitive Quality Indicators

Why are they important..

Learning Outcomes

To learn about

- The historical background of Nurse Sensitive Indicators

- What are Nurse Sensitive Indicators

- Why are Nurse Sensitive Indicators important for health care
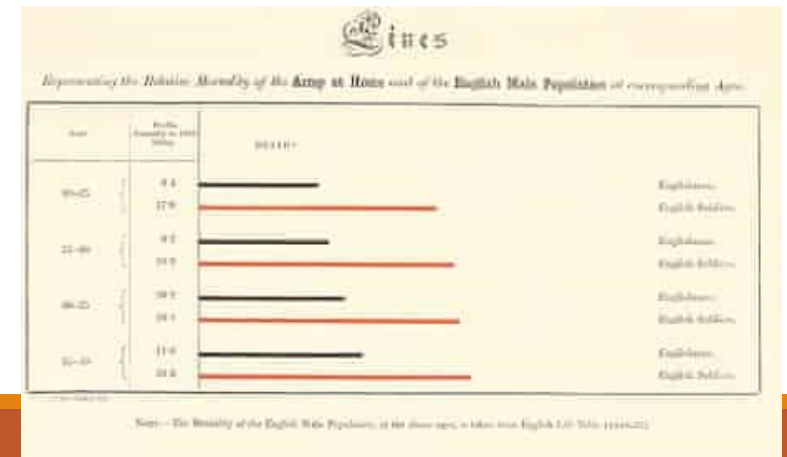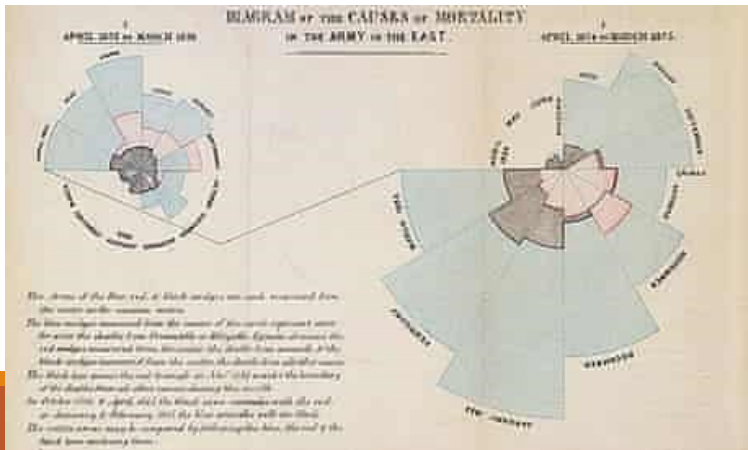
The History of NSI

Florence Nightingale

The need to measure the impact of nursing care on patient outcomes is not new.

Florence Nightingale recognized the need to evaluate the quality of nursing practice and began to measure patient outcomes using statistical methods in the 1850s *(Montalvo 2007, Burston et al 2013).*

FLORENCE NIGHTINGALE
AT FIRST HAND

LYNN MCDONALD

The Minimum Data Set (MDS) Movement 1970-1980

The Minimum Data Set Movement

There was little emphasis on outcomes measurement in nursing until the 1970s and 1980s when payers, prompted by escalating healthcare costs*, attempted systematic evaluations of the quality and cost of healthcare services.*

National organisations of health services (US/Europe) supported the development of Minimum Data Set (MDS) to facilitate these evaluations *(Hobbs, 2011).*

This Minimum Data sets defined the least amount of data needed to evaluate a specific service and established the first MDS to evaluate hospital services in 1974: the Uniform Hospital Discharge Data Set (UHDDS) *(Hobbs, 2011)* .

Donabedian's Quality Assessment Framework

Avedis Donabedian: the father of quality assurance and a poet Born in Beirut Lebanon, (1919-2000)

To assist in identifying **potential indicators**, **Donabedian's framework of quality assessment** has consistently been used.
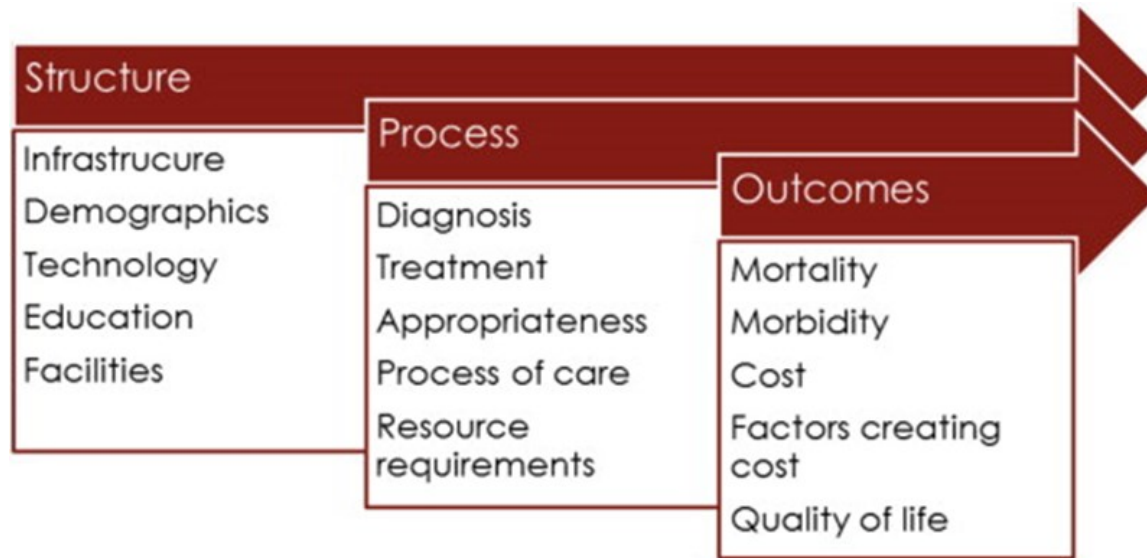
This framework explicates the relationship between the attributes of nurses providing the care (structure), the interventions of those nurses (process) and the outcomes for their patients *(Donabedian 1988).*

The American Nurses Association has grounded its work on developing NSI on this framework *(Gallagher & Rowell 2003, Doran, 2011).*
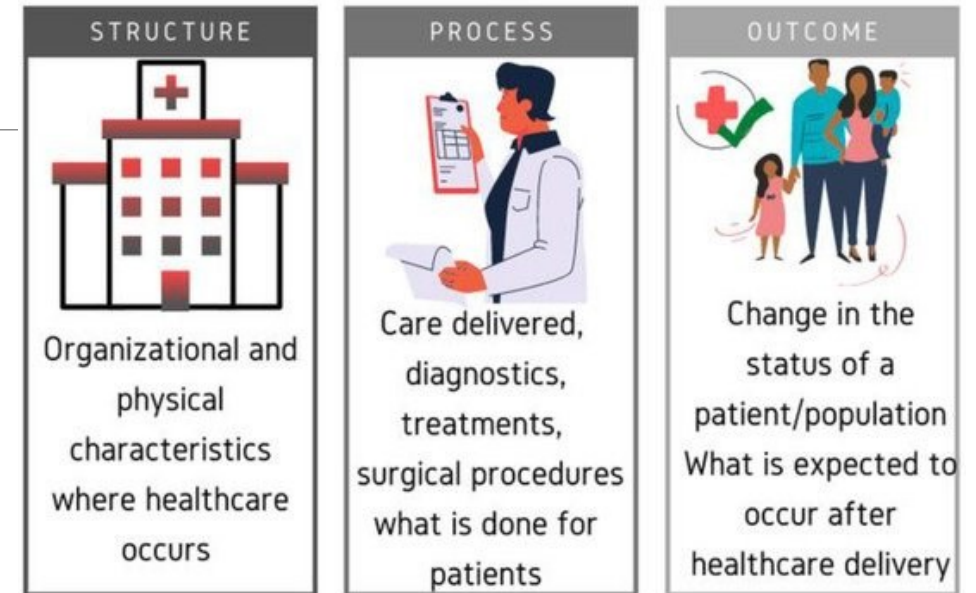
(Celebrating Avedis Donabedian's Seminal Article Published 50 Years Ago in The Milbank Quarterly)

Donabedian Model

(Lichter et al. 2015)

(Lopez-Hernandes et al. 2020)

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The outcome movement

The Quality and Safety initiative was launched to explore and identify the empirical linkages between nursing care and patient outcomes.

The Nursing Care Report Card (ANA,1995), proposed 21 measures of hospital performance with an established or theoretical link to the availability and quality of nursing services in acute care settings.

Organizational-Focused Structural Indicators

Nurse Staffing Characteristics
Number of Nursing Staff
- Number of RN+LPN
Nurse Staffing Ratio
- Ratio of patients to RNs+LPNs
- Ratio of patients to RNs
Nurse Staffing Levels-NCHPPDs
- Ratio of RNs to total nurses
- NCHPPD-total nurses
- NCHPPD-RN
- NCHPPD-RN/NCHPPD-total nurses (RN proportion/RN skill mix)
Nurse Staffing Qualifications
- Nurse experience
- Nurse education
Hospital Characteristics
- Work schedule
- Patient acuity
- Patient turnover
- Work environment
- Nurse autonomy
- Case mix

Nursing-Focused Process/Intervention Indicators
- Treatment and Procedures
- Pain Management
- Maintenance of Skin Integrity
- Patient Education

Nurse-Focused Outcome Indicators
- Nurse Job Satisfaction
- Nurse Reported Quality of Care
- Nurse Burnout
- Nurse Turnover

Patient-Focused Outcome Indicators

Nosocomial Infections
- UTI
- Hospital-acquired pneumonia
- Wound infection
- Hospital-acquired sepsis
- Respiratory tract infection
- General/Undefined infections
Mortality
Pressure Ulcer
FTR
Patient/Family Satisfaction
Patient Falls
Patient Falls with Injury
MAE
DVT/Pulmonary Embolism
LOS
Physical Restraint Use
ADE
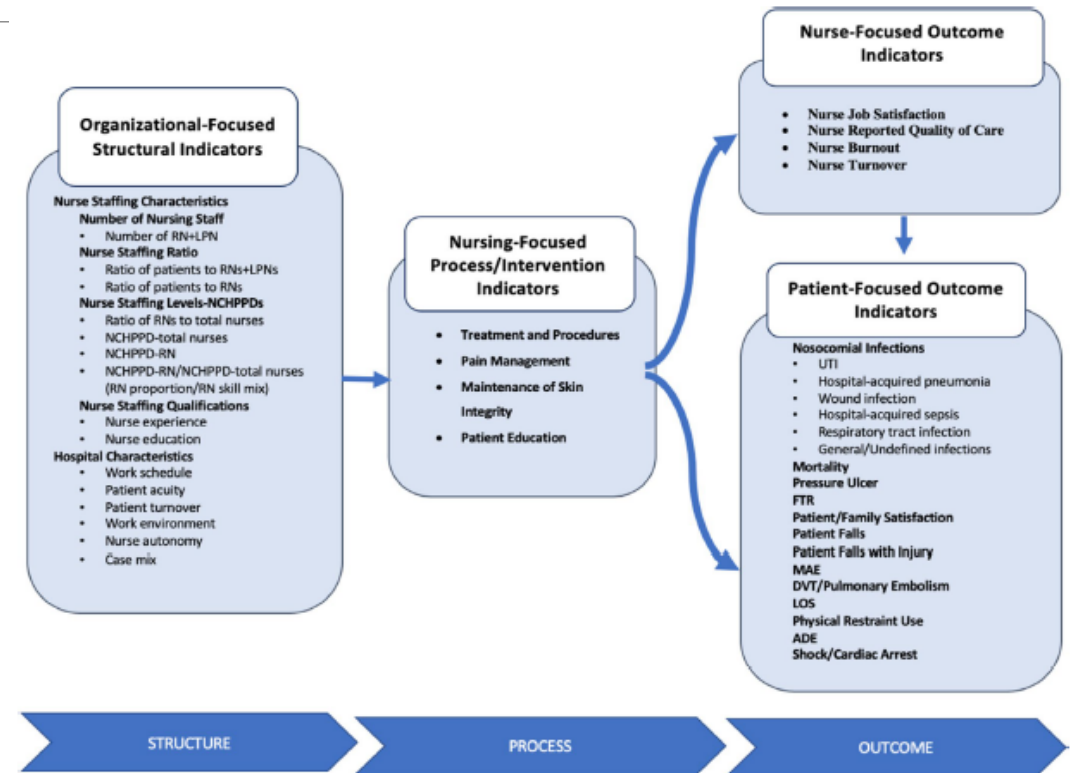**Shock/Cardiac Arrest**

STRUCTURE → PROCESS → OUTCOME

FIGURE 1 Conceptual framework. Developed by combining Donabedian's model, The National Quality Forum, and American Nurses Association frameworks (ANA, 1995; Donabedian, 1980; NQF, 2004). ADE, Adverse Drug Events; DVT, Deep Venous Thrombosis; FTR, Failure to Rescue; LOS, Length of Stay; MAE, Medication Administration Error; NCHPPD, Nursing Care Hours per Patient Day; RN, Registered Nurse; LPN/LVN, Licensed Practical/Vocational Nurse; Total Nurses, RN + LPN+UAP; UAP, Unlicensed Assistive Personnel; UTI, Urinary Tract Infection. Work schedule refers to the night shift, missed work hours

Concerns for Patient Safety

International reports highlighted concerns for patient safety compounded by increasing health care costs and patient expectation, demanded that healthcare providers demonstrate the quality of care delivered.

To measure nurses' contribution to patient outcomes, nurse-sensitive indicators (NSI) have been identified and used by both health care organisations and researchers.

[Wilson et al. 1995, Institute of Medicine (IOM)1999, 2001],

National Database of Nurse Quality Indicators (NDNQI)

Established by the American Nurses Association

Mission: *to help nurses to improve patient safety and quality improvement efforts by providing research based national comparative data on nursing care and the relationship to patient outcomes*

Most Magnet designated Hospitals submit their data to NDNQI

Most common indicators studied and followed are:

Pressure ulcers,

Urinary Tract Infections,

Falls

Readmissions

Nurse Sensitive Indicators

What they are

Nurse Sensitive Indicators

Nursing-sensitive indicators (NSIs) are: *the criteria for changes in a person's health status that nursing care can directly affect, and they form the foundation for monitoring the quality of nursing care* (Afaneh et al. 2022).

Nurse Sensitive Indicators (NSI)

To measure nurses' contribution to patient outcomes, Nurse-Sensitive Indicators (NSI) were identified and used by both healthcare organizations and researchers.

The term NSI originated in 1996 to signify patient-related outcomes that are affected by nursing care *(Maas et al. 1996).*

Defining potential indicators, demonstrating an association between the indicator and nursing care is complex.

This involves the ***collection and analysis of data*** on indicator and nursing outcomes

Studies and Systematic Reviews are conducted to identify indicators relevant for specific fields of nursing care.

Here a few studies and reviews shown…

Nurse Sensitive Indicators

The objectives to:
1 Provide an overview of the key studies examining NSI.
2 Discuss issues related to the study of NSI.
3 Discuss considerations regarding the selection, reporting and sustainment of NSI.

REVIEW

Nurse-sensitive indicators suitable to reflect nursing care quality: a review and discussion of issues

Sarah Burston, Wendy Chaboyer and Brigid Gillespie

Aims and objectives. To review nurse-sensitive indicators that may be suitable to assess nursing care quality.

Background. Patient safety concerns, fiscal pressures and patient expectation create a demand that healthcare providers demonstrate the quality of nursing care delivered. As a result, nurse managers are increasingly encouraged to provide evidence of nursing care quality. Nurse-sensitive indicators are being proposed as a means of meeting this need.

Design. Literature review.

Methods. A review of the literature was conducted using CINAHL and MEDLINE from 2002–2011. Key search terms were nurs* and sensitive indicators, outcome measures, indicators, metrics and patient outcomes.

Results. Most of the research has examined the relationship between nursing structural variables and patient outcomes in and have explored potential indicators for specific patient groups and nursing roles. When using nurse-
issues concerning the selection, reporting and sustained use are important for nurse managers to

Conclusion. Evidence for the nurse-sensitivity of some commonly used indicators is inconsistent due to the disparity in definitions used, data collection and analysis methods. Further research on the application and implementation of these indicators is required to assist nurse managers in attempting to quantify the quality of nursing care. Nurses need to continue to strive to achieve agreement on the definitions of indicators, gather strong consistent evidence of nurse-sensitivity, resolve issues of regular data collection and consider selection, reporting and sustainment when implementing nurse-sensitive indicators.

Relevance to clinical practice. Once identified, nurse-sensitive indicators can be applied for quality improvement purposes, but consensus is required to fully realise their potential. Nurse managers need to be aware of the factors that can influence the use of indicators at unit level. Strategies need to be implemented to promote these indicators becoming integrated with routine nursing care.

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Most common indicators studied and followed are:
Falls
Pressure Ulcer
Medication errors
Mortality (13 studies)
Urinary Tract Infections (5 studies)

Author (year of publication):
- Blegen et al. (2011)
- Trinkoff et al. (2011)
- Patrician et al. (2011)
- Sidani and Doran (2010)
- Mark and Harless (2010)
- Shuldham et al. (2009)
- Harless and Mark (2010)
- Chaboyer et al. (2010)
- Meyer et al. (2009)
- Van den Heede et al. (2009)
- Thomas-Hawkins et al. (2008)
- Friese et al. (2008)
- Al-Kandari and Thomas (2008)
- Sales et al. (2008)
- Cho et al. (2008)
- Hamilton et al. (2007)
- Stone et al. (2007)
- Tourangeau et al. (2007)

Indicators:
- Falls
- Pressure ulcer
- Upper GI bleed
- Medication errors
- Central line infection
- Pneumonia
- Respiratory tract infection
- Urinary tract infection
- Wound infection
- Failure to rescue
- Sepsis
- Mortality
- Shock/cardiac arrest
- Deep vein thrombosis
- Postop respiratory failure
- CNS comps
- Metabolic derangement
- Length of stay
- Ventilator acquired pneumonia
- Postoperative infection
- Functional status
- Self care
- Patient complaints

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NSI

This systematic review addresses this need by encompassing studies investigating nursing-sensitive indicators in both general and acute care hospitals within the last twenty years (1997–2017). (Oner et al. 2020)

Nursing-sensitive indicators for nursing care: A systematic review (1997–2017)

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Abstract

Aim: To provide a systematic review of the literature from 1997 to 2017 on nursing-sensitive indicators.

Design: A qualitative design with a deductive approach was used.

Data sources: Original and Grey Literature references from Cochrane Library, Medline/PubMed, Embase, and CINAHL, Google Scholar Original and Grey Literature.

Review methods: Quality assessment was performed using the NIH Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies.

Results: A total of 3,633 articles were identified, and thirty-nine studies met the inclusion criteria. The quantitative assessment of investigated relationships in these studies suggests that nursing staffing, mortality, and nosocomial infections were the most frequently reported nursing-sensitive indicators.

Conclusion: This review provides a comprehensive list of nursing-sensitive indicators, their frequency of use, and the associations between these indicators and various outcome variables. Stakeholders of nursing research may use the findings to streamline the indicator development efforts and standardization of nursing-sensitive indicators.

Impact: This review provides evidence-based results that health organizations can benefit from nursing care quality.

The main findings

The most frequently used terms
were patient outcomes,
nursing staffing,
mortality,
adverse event,
medication error,
pneumonia,
failure to rescue and
pressure ulcer in
the summaries of the studies of
nursing-sensitive indicators
in the last twenty years.

(Oner et al. 2020)

The independent variables that exhibited the
most consistent results were the ratio of
patients to Register Nurses' (RNs), Register
Nurse (RN) proportion and nurse education
within all the nursing-sensitive indicators
(Oner et al. 2020)

The dependent variables that exhibited the most
consistent results were mortality and nosocomial
infections within all the nursing-sensitive
indicators.

(Oner et al. 2020)

Nurse Sensitive Indicators

The high numbers and similarity of nursing-sensitive indicators call for better standardization efforts of nursing-sensitive indicators

When did we begin to embrace these indicators as conditions that we could change by the care that we give?

References

- Montalvo I (2007) The national database of nursing quality indicators (NDNQI). Online Journal of Issues in Nursing 12, doi: 10.3912/OJIN. Vol12No03Man02.

- Burston et al. Nurse-sensitive indicators suitable to reflect nursing care quality: a review and discussion of issues. Review J Clin Nurs. 2014 Jul;23(13-14):1785-95. doi: 10.1111/jocn.12337. Epub 2013 Sep 14.

- Donabedian A (1988) The quality of care, how can it be assessed? Journal of the American Medical Association 260, 1743–1748.

- Gallagher & Rowell (2003) Claiming the future of nursing through nursing sensitive quality indicators. Nursing Administration Quarterly 27, 273–284.

- Doran DM (2011) Nursing Outcomes: The State of Science, 2nd edn. Jones & Bartlett LLC, Sudbury, MA.

- American Nurses Association. (1995). Nursings report card for acute care. Washington, DC: American Nurses Publishing.

- Lichter D. 2015. How (and why) do quality improvement professionals measure performance? International J. Pediatric and Adolescent Medicinehttp

- Donabedian A. 1980 Explorations in quality assessment and monitoring: the definition of quality and approaches to its assessment. Ann Arbor, MI: Health Administration Press; 1980.

- Wilson et al. (1995) The quality in Australian healthcare study. Medical Journal of Australia 182, 458–476.

- Maas M, Johnson M & Moorehead S (1996) Classifying nursing sensitive patient outcomes. Journal of Nursing Scholarship 28, 295–301.

- Oner et al. Nursing-sensitive indicators for nursing care: A systematic review (1997-2017) Review Nurs Open . 2021 May;8(3):1005-1022. doi: 10.1002/nop2.654. Epub 2020 Oct 15.

Questions?

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FOR THE
ATTENTION!