Nursing Informatics Standardized Terminologies

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Thank you for inviting me!

Topics

Nursing Informatics Roles

DIKW

Data extraction process

Nursing Process - why nurses document

Transition of paper to electronic documentation

Nursing Languages

Objectives

- Identify Nursing Informatics roles
- Identify the historical path of Nursing Informatics
- Identify data collection process
- Identify the path of transition for nursing documentation from paper to electronic
- Identify multiple nursing languages used in electronic documentation

Roles in Nursing Informatics

Informatics Nurse (IN) - Registered Nurse (RN) education level ADN/ASN, Diploma,BSN - entry level

Informatics Nurse Specialist (INS) - RN, education level MSN specialty, DNP/PhD - advanced level

ANCC offers Certification of Informatics Nursing for BSN level and above

Identify Nursing Informatics Roles

ANA, (2015)

Review Nursing Informatics Model

Metastructures: Data, Information, Knowledge, Wisdom - DIKW

Data

Information

Knowledge

Wisdom

McGonigle & Mastrian (2017)

Build for Data Extraction

What we know today is based off of what we learned yesterday

- Easier to pull detailed information from discrete data fields
- Harder to pull information from narrative data fields
- Original builds were mimics of paper documents
- Lessons learned gave us an entirely new approach.

Identify data collection process

What is a Good Question?

Questions with defined answers - multiple choice, yes/no, true/false

What is your favorite color? Red, Orange, Yellow, Green, Blue, Indigo, Violet

The sun rises in the east every morning: True/False

Coffee is the best drink in the world: Yes/No

Questions answered by narrative response are harder to capture data elements - but we are getting better.

How does that make you feel? I have such mixed emotions about this situation……..

Identify data collection processes

Does Patient Have an Advance Directive?

- ○ Yes
- ○ Yes, Obtained in Registration (Copy on Chart)
- ○ No
- ○ Unable Due to Patient's Condition

Type of Advance Directive

- ☐ Living Will
- ☐ Medical Durable Power of Attorney
- ☐ Advance Careplan
- ☐ Healthcare Agent
- ☐ Physician Order for Scope of Treatment (POST)
- ☐ Other:

Healthcare Agent or Power of Attorney Name

Location of Advance Directive

- ○ Copy Placed on Paper Chart
- ○ Copy Obtained from Previous Records
- ○ Scanned into EMR
- ○ Unable to Obtain Copy

Content of Advance Directive

Natural Death/Comfort Measures

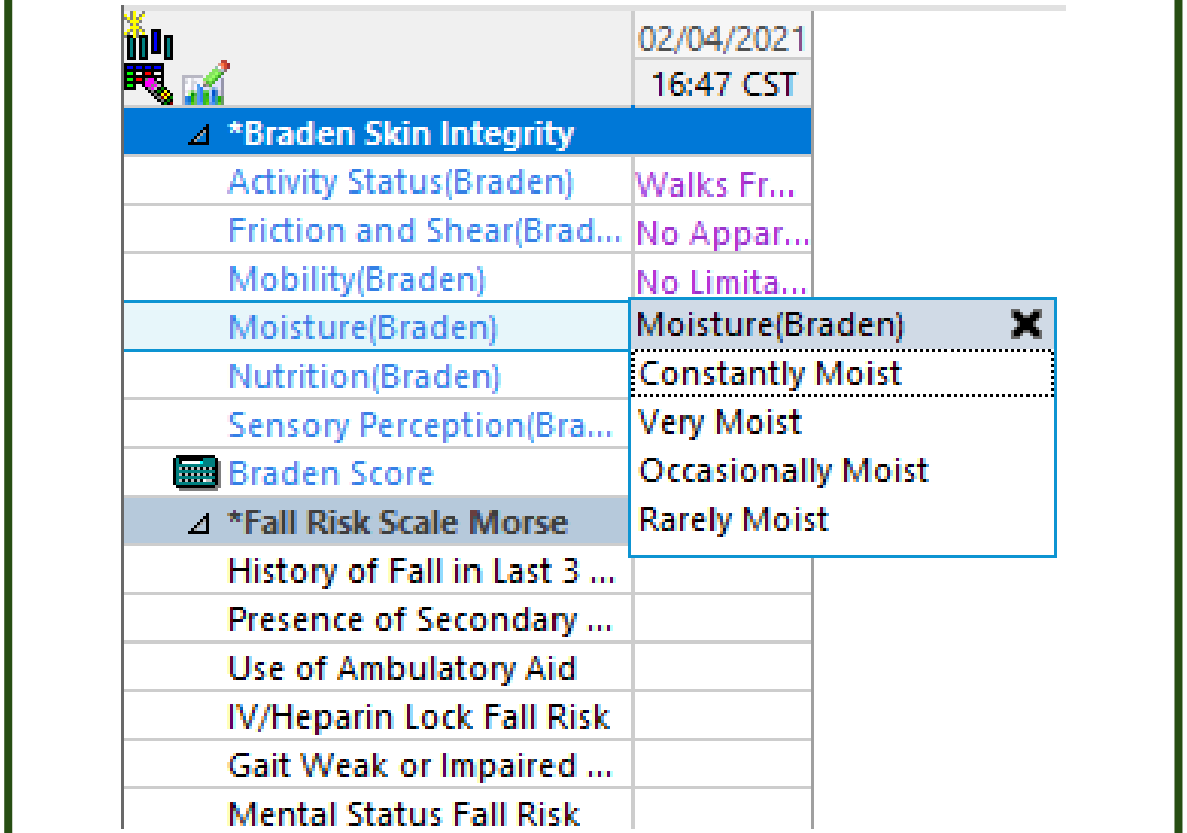
- ○ Yes
- ○ No

Resucitation (CPR)

- ○ Yes
- ○ No

Life Support/Other Artificial Support (e.g. Ventilator, Dialysis)

- ○ Yes
- ○ No


02/04/2021
16:47 CST
*Braden Skin Integrity
Activity Status(Braden)
Walks Fr...
Friction and Shear(Brad...
No Appar...
Mobility(Braden)
No Limita...
Moisture(Braden)
Nutrition(Braden)
Sensory Perception(Bra...
Braden Score
*Fall Risk Scale Morse
History of Fall in Last 3 ...
Presence of Secondary ...
Use of Ambulatory Aid
IV/Heparin Lock Fall Risk
Gait Weak or Impaired ...
Mental Status Fall Risk
Moisture(Braden)
Constantly Moist
Very Moist
Occasionally Moist
Rarely Moist

Why do Nurses Document?

Nursing Process

Assess

Diagnose (Nursing Diagnosis)

Identify a Goal (Outcome)

Plan (Nursing Care Plan)

Implement Plan (Interventions)

Evaluate - present evidence through documentation

Identify the historical path of Nursing Informatics

Transition from Paper to Electronic Documentation

- Original paper documentation was all narrative documentation
- Paper templates with “additional notes” for those items that did not fit in the notes
- Generations of templates, templates for different units, and types of Nursing
- Conversion to electronic documentation was attempt to copy existing templates
- We got smarter - technology became more flexible
- Electronic documentation became “Point of Care” (POC) because it was done at the bedside
- Dependency on hardware (next lecture topic)

ID the path of transition for nursing documentation from paper to electronic

Strategy of Nursing Languages

Recognize Nursing Languages - if used in a strategic manner - can provide:

- Better and more timely communication (better build & POC)
- Collect higher quality of data for statistical analysis
- Identify potential research problems/questions for current/future improvement
- Potential to validate nursing care as a chargeable service

NANDA, NOC, NIC

North America Nursing Diagnosis Association - that name became NANDA International

Nursing Diagnosis only

Nursing Outcomes Classifications (NOC)

Nursing Interventions Classifications (NIC)

Hebda et al. (2019)

NANDA Domains (13)

Domain 1: Health Promotion - Health Awareness and Health Management

Domain 2: Nutrition - Ingestion and Digestion

Domain 3: Elimination/Exchange - Urinary Function and Gastrointestinal Function

Domain 4: Activity/Rest - Sleep and Rest

Domain 5: Perception/Cognition - Attention and Orientation

Domain 6: Self-Perception - Self-Concept and Body Image

NANDA Domains cont.

Domain 7: Role Relationship _ Caregiving Roles and Role Performance

Domain 8: Sexuality - Sexuality Identity and Sexual Function

Domain 9: Coping/Stress Tolerance - Post-Trauma Responses and Coping Responses

Domain 10: Life Principles - Values and Beliefs

Domain 11: Safety/Protection - Infection and Physical Injury

Domain 12: Comfort - Physical Comfort and Environmental Comfort

Domain 13: Growth/Development - Growth

Hebda et al. (2019);McGonigle & Mastrian (2015)

Let’s build a NANDA based Plan of Care

NANDA is based in 13 Domains

Pt - 85 yo Female, frail, COPD, uses O2, heart disease, chronic pain, lives alone, polydrug

Domain 1. Health promotion

Health Awareness and Health management - Risk for Falls

Nursing Outcomes Classifications (NOC)

Domain 1: Functional Health

Domain 2: Physiological Health

Domain 3: Psychosocial Health

Domain 4: Health Knowledge and Behavior

Domain 5: Perceived Health

Domain 6: Family Health

Domain 7: Community Health

31-37 classes that are measurable

Add NOC

The outcome is hospital based, but expands to the home.

Domain 1: Functional Health Class: Mobility

Pt will:

- Patient will not fall while in the hospital
- Patient will verbalize the need to use safety measures to prevent falls
- Patient will demonstrate selective prevention measures
- Patient will understand the risk for a fall in the home
- Identify and implement strategies to increase safety/prevent falls in the home

Outcomes are about assessment - how do you assess “understand”? Change understand to demonstrate/verbalize - and action that can be assessed.

Nursing Interventions Classification (NIC)

Domain 1; Physiological: Basic

Domain 2: Physiological: Complex

Domain 3: Behavioral

Domain 4: Safety

Domain 5: Family

Domain 6: Health System

Domain 7: Community

Intervention is any treatment based on the professional clinical judgement and knowledge that a nurse performs to enhance the patient's outcome. There are approximately 542 NIC.

Add NIC to NOC

Interventions are the tasks that are put in place to achieve the NOC

Patient will not fall while in the hospital

- Fall risk program in place - Safety Domain 1
- Patient education with verbal return of instructions - Behavioral Domain 3
- Bedside commode if appropriate - Safety Domain 1
- Bed rails up, call light within reach -Safety Doman 1
- Bed in lowest position - Safety Domain 1
- Staff responds to call light as soon as possible - Safety Domain 1

Please do not let a list limit interventions - create interventions as you need them

Take credit for interventions that are done

NIC

Patient will verbalize the need to use safety measures to prevent falls

- Patient education with verbal return of instructions - Behavioral Domain 3
- Staff responds to call light as soon as possible - Safety Domain 4

Patient will demonstrate fall prevention measures

- Call light within reach at all times - Safety Domain 4
- Patient education with verbal return of instructions - Behavioral Domain 3
- Document call light use - Safety Domain 1
- Document request for assistance - Safety Domain 1

NIC

Patient will identify and implement strategies to increase safety/prevent falls in the home

- Patient education with verbal return of instructions
- Verbal recall from patient of strategies that will be implemented at home:
  - Use of walker when ambulating - Physiological Complex & Behavioral - Domains 2&3
  - Remove all rugs - Safety & Family - Domains 4 & 5
  - Secure all cords that are a trip hazard - Safety & Family - Domains 4 & 5
  - Remove clutter - Safety & Family - Domains 4 & 5

NANDA, NOC, NIC - NNN Linkage

NANDA, NOC, NIC are linked to other recognized languages

SNOMED CT - provides a common language electronic health applications

Problems

		Last Reviewed	Name of Problem	Annotated Display	Vocabulary	Code	Classification	Responsible Provider
	Dx	02/04/2021	At risk for falls	Potential for falls	SNOMED CT	208683018	Nursing	
	Dx	02/04/2021	Fragile skin	Skin fragility	SNOMED CT	369470014	Nursing	
	Dx	02/04/2021	Employed	Activity for income	SNOMED CT	337378016	Nursing	
	Dx	02/04/2021	Social exclusion	Social exclusion or r...	SNOMED CT	169464017	Nursing	
	Dx	02/04/2021	Diabetic on diet only	Diet-controlled dia...	SNOMED CT	264679015	Nursing	

Transition to Electronic Health Record

Transitioning to electronic documentation established a need for defined standardized nursing terminologies

1973 - NANDA & Omaha System

1977 - Nursing Minimum Data Set (NMDS)

1986 - ANA recognized and promoted computer technology for nurses

1990 - NMDS recommended by ANA

1991 - Nursing Informatics became a nursing subspecialty by the ANA/CCC developed

2004 - Office of the National Coordinator (ONC) was established

2006 - President George W. Bush executive order

Identify the path of transition for nursing documentation from paper to electronic

Transition to EHR cont.

2007- Clinical Care Classification (CCC) recommended

2008 - ANA published the 1st edition of the Scope and Standards of Practice - Nursing Informatics

2009 - American Recovery and Reinvestment Act (ARRA) and Health Information Technology for Economic and Clinical Health (HITECH) Act

2011 - Meaningful Use Stage 1 - Data Capture

2014 - Meaningful Use Stage 2 - Advanced Clinical Practice

2015 - ANA 2nd edition of Scope and standards of Practice - Nursing Informatics

2018 - Meaningful Use Stage 3 - Promoting Interoperability

2021 - ANA 3rd edition of Scope and Standards of Practice - Nursing Informatics - tentatively due for publish

Clinical Care Classification (CCC)

- Develope by Dr. Virginia Saba and staff at Georgetown University School of Nursing (1991)
- Developed to embrace the Nursing Process (six steps)
- Developed with the use of “live” patient care data
- Uses nursing diagnoses and outcomes that are linked to interventions
- Facilitates Point of Care (POC) documentation
- Linked through SNOMED-CT coding
- Free with permission from sabacare.com

Saba, 2012

CCC Hierarchical Framework

4 Healthcare Patterns

Health Behaviors

Functional

Medication

Activity

Safety

Fluid/Volume

Health Behaviors

Nutritional

Self Care

Psychological

Cognitive/Neuro

Coping

Role Relationship

Self Concept

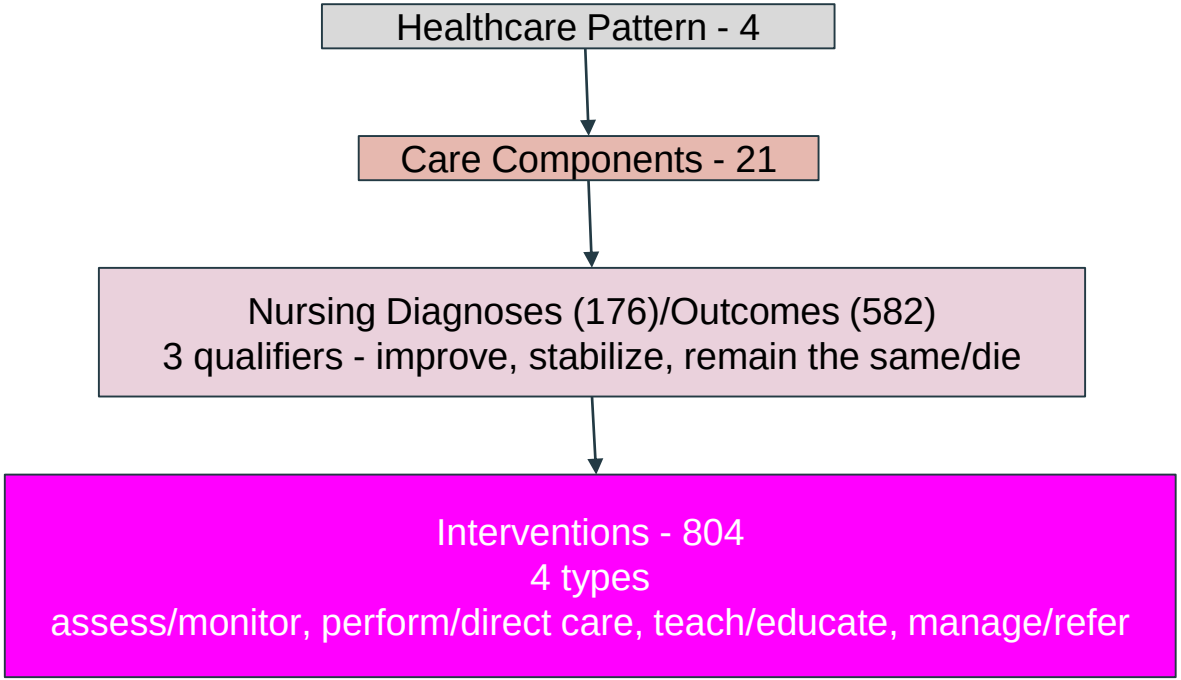
Care Component Classes - under each Healthcare Pattern

Physiological

- Cardiac
- Metabolic
- Life Cycle
- Skin Integrity
- Respiratory
- Tissue Perfusion
- Bowel/Gastric Urinary
- Physical Regulation

Care Component Classes - under each Healthcare Pattern

CCC Framework



CCC linkage

CCC is recognized by International Organization for Standardization Technical Committee: Health Informatics (ISO)

CCC is mapped to SNOMED CT codes

Data Extraction Triggers

Nursing Diagnosis by care component - letter Nursing Diagnosis - two digits
Nursing Outcomes by major category - 1 improve, 2 Stable, 3 Deteriorate
Nursing Interventions by Nursing Diagnosis letter and action type digit indicator

Example of CCC documentation

Assessment - Respiratory [L]
Diagnosis - Respiratory Alteration [L26.0]
Outcomes Identification - Stabilized [L26.0.2
Implementation - Perform Pulmonary Care L36.0.2
Breathing Exercises - L36.1
Inhalation Therapy - L36.3
Evaluation - Stabilized [L26.0.2]
Evidence - [documentation] Ribs splinted for coughing bed elevated 30 degrees -or- not coughing, able to get out of bed, etc.

Recognize how nursing process is applied electronic documentation

Multiple Nursing Languages in Nursing Documentation

12 Standardized Nursing Terminologies recognized by ANA

Three types of languages - Interface, Minimum Data Sets, and Reference Terminologies

Reference Terminologies:

SNOMED CT - Systematized Nomenclature of Medicine Clinical Terms

LOINC - Logical Observation Identifiers Names Codes

ABC Codes - Alternative Billing Codes

Minimum Data Sets:

NMDS - Nursing Minimum Data Set

NMMDS - Nursing Management Minimum Data Set

Standardized Nursing Terminologies

Interface Terminologies (8):

We have talked about four of these already - NANDA, NOC, NIC & CCC

Omaha System

ICNP - International Classification for Nursing Practice

PNDS - Perioperative Nursing Data Set

HL7 - Health Level Seven codes

CPT - Current Procedural Terminology

ICD10 - International Classification of Diseases, 10th revision

Identify multiple nursing languages used in electronic documentation.

Houston et al. (2015), Saba & McCormick (2011),

Questions?


WHY?
WHAT?
WHERE?
WHEN?
How?
WHAT? How? WHY?
WHO?
WHERE?
How? WHO?
WHAT? How? WHY?
How?

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