National Nursing Informatics Deep Dive Pre-Conference Program

Standardized Terminologies

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Disclosure

I have no relevant financial interest to disclose nor am I endorsing any commercial products identified in this presentation.
Presentation Objectives

• Identify standards in general life and implications if they did not exist
• Describe the similarities and differences in ANA recognized nursing terminologies and data sets
• Discuss benefits of standardized nursing terminologies
• Provide resources and tools for teaching nursing terminologies
Key Messages

• Nursing terminologies are essential to communication
• All disciplines need standardized data
• All health care settings should implement an ANA recognized nursing terminology
• Sharable and comparable nurse-sensitive data
  • More than EHR
• Secondary use of data requires standardized data
  • Comparison of EBP
  • Knowledge discovery

Common Daily Standards

• Standards - rules, guidelines, consensus or characteristics about services, products, processes, or systems

• Standards are important for clear communication, safety, consistency, and promotion of research and development
Classification – Terminology - Nomenclature

• System of names or terms, organized by rules for a particular purpose
• May include
  • Term
    • Conceptual Definition
      • Code to represent the “thing”
• Different ways to represent the organization
  • Hierarchy

Name another classification
# Common Medical Data Standards

<table>
<thead>
<tr>
<th>Category</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diseases</td>
<td>ICD-9-CM; SNOMED CT; ICD-10-CM</td>
</tr>
<tr>
<td>Procedures</td>
<td>CPT, HCPCS, ICD-9 (10), SNOMED-CT</td>
</tr>
<tr>
<td>Medications</td>
<td>RxNorm, NDF-RT, NDC</td>
</tr>
<tr>
<td>Laboratory orders/results</td>
<td>LOINC</td>
</tr>
<tr>
<td>Vital Signs</td>
<td>LOINC</td>
</tr>
<tr>
<td>Images</td>
<td>DICOM</td>
</tr>
<tr>
<td>eClinical Quality Measures</td>
<td>LOINC (assessments), SNOMED-CT (problems, interventions)</td>
</tr>
<tr>
<td>Health Information Exchange</td>
<td>HL7</td>
</tr>
</tbody>
</table>
If we cannot name it [nursing], we cannot control it, teach it, finance it, research it, or put it into public policy. – N. Lang

Until lions have their historians, tales of the hunt shall always glorify the hunters. ~ African Proverb
What is the focus for health?

- Medicine
- Nursing
What do nursing terminologies represent?

- Diagnosis & treatment of human responses to actual or potential health problems
- Bio-psycho-social-cultural-social-spiritual phenomenon
- Context of care
- Client
- Many specialties, settings
- Local to global
Nursing Minimum Data Set (NMDS)

# Nursing Management Minimum Data Set (NMMDS) (Workforce Data)

## Environment
1. Facility Unique Identifier
2. Nursing Delivery Unit/Service
3. Patient/Client Population
4. Volume of Nursing [Care] Delivery Unit/Service
5. Method of Care Delivery
6. Client Accessibility
7. Clinical Decision Making Complexity
8. Environmental Complexity
9. Autonomy
10. Accreditation/ Certification/ Licensure

## Nurse Resources
13. Staffing
14. Satisfaction
19. Nurse Demographics
20. Clinical Mental Workload
21. Environmental Conditions
22. EHR Implementation Stages

## Deprecated Data Elements
7. Clinical Decision Making Complexity
8. Environmental Complexity
11. Management Demographic Profile
12. Staff Demographic Profile

## Financial Resources – Not updated
15. Payer Type
16. Reimbursement
17. Nursing Delivery Unit/Service Budget
18. Expenses

[http://z.umn.edu/nmmds](http://z.umn.edu/nmmds)

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Standardized Terminologies
## ANA Recognized Nursing Terminologies

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCC</td>
<td>Clinical Care Classification</td>
<td><a href="http://www.sabacare.com/">http://www.sabacare.com/</a></td>
</tr>
<tr>
<td>LOINC</td>
<td>Logical Observation Identifiers Names and Codes</td>
<td><a href="http://loinc.org/">http://loinc.org/</a></td>
</tr>
<tr>
<td>NIC</td>
<td>Nursing Intervention Classification</td>
<td><a href="http://www.nursing.uiowa.edu/cncce/nursing-interventions-classification-overview">http://www.nursing.uiowa.edu/cncce/nursing-interventions-classification-overview</a></td>
</tr>
<tr>
<td>NOC</td>
<td>Nursing Outcome Classification</td>
<td><a href="http://www.nursing.uiowa.edu/cncce/nursing-outcomes-classification-overview">http://www.nursing.uiowa.edu/cncce/nursing-outcomes-classification-overview</a></td>
</tr>
<tr>
<td>SNOMED-CT</td>
<td>Systematized Nomenclature of Medicine Clinical Terms</td>
<td><a href="http://www.ihtsdo.org/">http://www.ihtsdo.org/</a></td>
</tr>
</tbody>
</table>
Health Information Exchange

Nursing Minimum Data Set

- PNDS
- CCC
- ICNP

Nursing Diagnoses
- SNOMED CT
- NANDA
- Omaha System

Nursing Interventions
- SNOMED CT
- NIC
- NOC
- Omaha System

Nursing Outcomes
- SNOMED CT
- Omaha System

Nursing Assessments
- LOINC
- SNOMED CT - Answer
Benefit of Standardized Language

- Collect & analyze uniform information about nursing’s contribution to patient care
- Build nursing data in data warehouses
- Improve nursing care through outcome evaluation
- Build evidence for expert practice
- Assist administrators in planning more effectively for staff and equipment services
- Provide information for the formulation of organizational and public policy concerning health

CCD for Transitions of Care

- Continuity of Care Document (CCD)
- Important for hand-offs of current problems/ S&S as well as planned care
- Data standards are specified for US e.g.
  - SNOMED-CT for problems and procedures (interventions)
  - LOINC for assessments
  - RxNorm for medications
  - Etc
Vision for Nursing Data in a Clinical Data Warehouse

Clinical Data
NMDS

Other Data Sets

Management Data
NMMDS

Continuum of Care
Teaching Tools & Resources
Report on Terminology

- Purpose: Describe the nursing terminologies to be familiar with these
- Students select/ assigned/ sign up for a terminology
- Describe the purpose of the terminology
- Provide a brief history of the terminology
- Identify any information systems that include the terminology for practice
- Identify three studies using the terminology
- Reflect on your impression about the usefulness of the terminology for practice

Nursing Terminologies to Support Nursing Practice (J. Warren)

Clinical Care Classification

- Health Pattern (4)
  - Care Component (21)
    - Diagnoses (176)
    - Interventions (201)
      - Goal/Outcome (3)
      - Actions (4)
Example Diagnoses

- Urinary Elimination
- Urinary Elimination Alteration
- Reflex Urinary Incontinence
- Stress Incontinence
- Urinary Retention
CCC Nursing Interventions

• Problem – Urinary Elimination Alteration

• Intervention is a combination of 1 of 4 action types + Intervention term
  • Assess (Monitor/ Observe/ Determine)
  • Perform (Direct Care)
  • Teach (Instruct/ Educate)
  • Manage (Refer/ Care Coordination)

• Example with Bladder Care
  • Assess Bladder Care
  • Perform Bladder Care
  • Teach Bladder Care
  • Manage Bladder Care (i.e. ordering home supplies)
CCC Goals/Outcomes

• 1 of 3 qualifiers
  1. Improve (d)
  2. Stabilize (d)
  3. Deteriorate (d)

• Example with Urinary Elimination Alteration

<table>
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<tr>
<th>Goal</th>
<th>Outcome</th>
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<tr>
<td>1. Improve</td>
<td>2. Stabilized</td>
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</table>
Care Planning & Case Studies

• Use case studies and write a brief care plan using a nursing terminology
  • Problem
  • Intervention
  • Expected outcome

• Resource for case studies
  • Actual student experiences
  • Omaha System Website – 8 case studies
    • [http://www.omahasystem.org/casestudies.html](http://www.omahasystem.org/casestudies.html)
  • Sabacare.com
  • Student text book (website resources)

• What did students learn (ease of use, ability to find terms, user friendliness, recommendations for the future)
Case Study Exercise: Pneumonia

Mr. Jones, age 70, was admitted to a unit complaining of acute pain when coughing and/or deep breathing. He has shortness of breath when he walks more than 20 feet. Mr. Jones’s physician diagnosed his patient as having pneumonia and ordered oxygen therapy, antibiotic injection, pain medication, and inhalant mist.

Signs & Symptoms (Assessment)
• Acute pain on coughing
• Shortness of breath when walking more than 20 feet
• Temperature of 102°F
• He lives alone in a 1 bedroom low income apartment
Assignment

• Identify problems
• Identify interventions
  • Action + intervention term
• Establish goals
• Evaluate actual (pretend)
Standards Websites

• National Library of Medicine (NLM) – UMLS Metathesaurus (Unified Medical Language System)
  • https://uts.nlm.nih.gov/home.html

• Health Information Technology and Health Data Standards - NLM
  • http://www.nlm.nih.gov/healthit.html

• Office of the National Coordinator (ONC)
  • http://www.healthit.gov/providers-professionals/standards-interoperability
Welcome to the UTS

The UMLS Terminology Services (UTS) allows you to:

- New to the UMLS? Start here.
- Read up on individual sources in the Source Documentation.
- Review training materials with links to the Webcasts, Tutorials, and short Quick Tours.
- See the UMLS Homepage.

of SNOMED CT

- Query data remotely via Web Services (see API Documentation).
- Complete UMLS Annual Report and SNOMED CT® Affiliate Reports.

UTS Terminology Services (UTS) provide both web interfaces as well as Web Services to search and retrieve UMLS data.

We welcome you to contact us with your comments and suggestions to improve the UTS.
Sherlock Holmes

• Break students up into groups of 4-5
• They can use websites, books, articles, UMLS
• Use a case study and have students extract or determine problems, interventions, and outcomes
• Each person in the group (or group of students) selects a terminology
  • Omaha System, CCC, ICNP, [NANDA, NIC, NOC], SNOMED-CT, LOINC, PNDS
• Students find the concepts (or not) in their terminology
• Have them write (or report in class) – what terminology, purpose, structure, number of concepts, findings
• Compare results – name of concept (term), definition
• Discuss their experience – what did they learn, what do they recommend for practice in the future
Creative Videos

• Have students select a nursing terminology
• Create a video demonstrating knowledge of the terminology
  • https://www.youtube.com/watch?v=fXe6hxG2h9M
• Identify key points to cover in the video
  • What is it?
  • Purpose
  • Example of terms, definitions, codes
  • Structure
  • References for use in practice/ research
Create Puzzles to Match


Puzzle Example
Teaching Resources: Streaming Video

1. https://www.youtube.com/watch?v=g7D6pm_bLyU
2. https://www.youtube.com/watch?v=ppQsD4ciwwU
3. https://www.youtube.com/watch?v=RK_8mzzYKwM
4. https://www.youtube.com/watch?v=wrye21wx4t4
5. https://umconnect.umn.edu/p80637886/
6. https://www.youtube.com/watch?v=6vSbgCHuUh8#t=29

1. Data standards
2. Nursing terminologies
3. Omaha System - Basics
4. Introduction to CCC
5. Nursing data sets and terminologies
6. LOINC Introduction
Reference

Questions?
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