Clinical Care Classification (CCC) System Seminar
University of Eastern Finland

- Kuopio Campus, Finland
- June 2, 2015
Education, Research & Future Uses of CCC System

- Virginia K. Saba, EdD, RN, FAAN, FACMI, LL
  - President & CEO, SabaCare Inc.
  - Adjunct Professor, Uniformed Services University (USU)
  - Distinguished Scholar, Emeritus, Georgetown University -SNHS
CCC System

Supports electronic capture of discrete patient care data for documenting the “essence of care” and measuring the relationship of nursing care to patient outcomes.
Education & Future Uses of CCC System
CCC & Nursing Education

- **Teach** Documentation of Nursing PoCs for EHRs/HITs
- **Monitor** Student Clinical Procedures via Hand Held Device
- **Design** & **Teach** Simulations of Clinical Nursing Practices
- **Online Testing** & **Evaluating** of Student Clinical Practices
Feeg Educational Demo Documenting Nursing Practice

- Feeg Desktop PC Demo v2.5 Demonstrates: “How to Document Nursing Practices Using CCC System & following Nursing Process 6 Steps”.
- CCC Concepts/Codes representing Knowledge-based Content are listed automatically based on NP Steps.
  \[ NP = S/S > DX > RX > OX \]
Student Tracking
Revise Web Site for CCC System Education

- New **Data Collection Tools** e.g. Moss & Dykes
- New **Mapping** CCC to SNOMED CT, ICNP, UMLS, etc.
- **New Demos** to Teach New Care Protocols e.g. Simulations
- **Support** CCC Users by Initiating an **Interactive Blog** (Future)
CCC System Data Collection
Electronic Tool

- **Moss** (UA-SON): “Representing Critical Care Data Using the CCC”. Developed Data Collection Tool for Timing Nursing Care observations.

- **Dykes** (Partners): Enhanced Moss Tool—Formula for coding times of double events. Nsg. Interventions/Actions times—e.g. “Perform & Teach Insulin Injection”.)
CCC Mappings to SNOMED CT

- CCC is Interface Terminology, Classified with a Framework, etc.
- SNOMED-CT is Reference Terminology – A Data Dictionary (Thousands of Terms) All Terms Integrated together-Minor Groupings
- Six Nursing Terminologies integrated in It
- Nursing Concepts are duplicates- multiple versions/ NOT defined, NOT Structured for Nursing Process or PoCs.
CCC – SNOMED CT

CCC Coded Concepts (Data) Map to SNOMED CT,(Reference Terminology) & Automatically Translates for Processing & for Electronic Transfer of Plan of Care (POC) Data to Another EHR as required for Meaningful Use (MU) Interoperability.
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<tr>
<th>VALUE</th>
<th>CODE</th>
<th>NAME</th>
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</table>
IHTSDO-New SNOMED

- International Health Technology Standards Development Organization
- New Global Owner of SNOMED CT
- NLM – US Member & Maintains SNOMED CT which is Free in USA &
- Required for MU certification
CCC Mappings to ICNP

- ICNP is Reference Terminology Unique for Nursing– Its Data organized by Chapters
  with based on like concepts.
- Concepts Map to CCC
- Example: CCC: Sleep Pattern Disturbance = ICNP: Impaired Sleep
CCC & ICNP Mappings Ongoing

- 2012: CCC System Harmonized with ICNP
- 2014: CCC Nursing Diagnoses (100%) Mapped to ICNP
- 2015: CCC Nursing Interventions Being Mapped to ICNP
- 2015/6: ICNP Catalogue / Coded Using as CCC Case Study
- 2015/6: CCC Nursing Outcomes be Mapped to ICNP
# Mapping CCC to ICNP Nursing Diagnoses

<table>
<thead>
<tr>
<th>CCC DIAGNOSIS (Version 2.5)</th>
<th>CCC Code</th>
<th>ICNP DIAGNOSIS BY CARE COMPONENT (2013 Release)</th>
<th>ICNP Code</th>
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<td>ACTIVITY ALTERATION</td>
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CCC/ICNP Mapping & SNOMED CT Problems

- CCC Pneumonia Case Study – Based on 6 Steps of Nursing Process (NP) & CCC Framework Structure
- SNOMED CT Concepts Mapped but NOT Defined NOT Structured with a Framework for Data Manipulation = Difficult to use.
- ICNP Concepts Mapped - Logical Categories
# Pneumonia PoC: CCC & ICNP

<table>
<thead>
<tr>
<th>Signs/ Symptoms</th>
<th>CCC Care Component</th>
<th>CCC Nursing Diagnoses &amp; Codes</th>
<th>ICNP Nursing Diagnoses &amp; Codes</th>
<th>CCC Expected Outcomes (Goals) &amp; Codes</th>
<th>ICNP Expected Outcomes (Goals) &amp; Codes</th>
<th>CCC Nursing Interventions/Actions &amp; Codes</th>
<th>ICNP Nursing Interventions &amp; Codes</th>
<th>CCC Outcomes &amp; Codes</th>
<th>ICNP Outcomes and Codes</th>
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<tbody>
<tr>
<td>Pain when coughing or deep breathing</td>
<td>Sensory: Q</td>
<td>Acute Pain: Q63.1</td>
<td>Acute Pain: 10000454</td>
<td>Improve Acute Pain: Q63.1.1</td>
<td>Improved Pain: 10027917</td>
<td>Assess Acute Pain Control: Q47.1.1</td>
<td>Assess Control of Pain 10002710</td>
<td>Acute Pain: Improved Q63.1.1</td>
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<td>Perform Medication Treatment: H24.4.2</td>
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Research & Future Uses of CCC System
Research Data & Analytics / CCC System

- **Research Data Coding** is a precise operation that needs careful consideration and presents the research with challenges that warrant technical and cognitive applications. (Feeg, 2015).
Computer Literacy - Online Nursing Literature

- **MeSH**: MEDLINE – PubMed: NLM
  - Indexing & Searching - Subject Headings
  - Selected Nursing Literature
- **CINAHL**: Cumulative Index for Nursing & Allied Health Literature
  - All Nursing Literature
- Other Bibliographic Systems:
  - ERIC, Psychological Abstracts, Social Science Citations, Dissertation Abstracts etc.
CCC Terminology Concepts & Codes

- CCC Concepts Indexed in CINAHL
- CCC Concepts Integrated into NLM-UMLS Metathesaurus
- CCC Uses UMLS Terms for Mapping Non-Coded Details
- CCC Concepts Used as Search Terms for STT-Virginia Henderson Library- Nursing Research Literature
CCC Terminology Coding Model

Enterprise Terminology Services

Clinical Care Classification System

- Care Patterns
- Care Components
- Diagnoses
- Core Interventions

Detailed Concepts: Problems/Interventions/Actions

SNOMED-CT
ICNP
ICD, LOINC, etc

1 Mappings to PNDS, NANDA, NIC, NOC
National Nursing Outcome Studies

- Big Data Conference: Univ. of Minn. Proposing Big Data Studies
  - 10 Group Work focus on Specific Topic
  - Not Terminology Specific
- White Papers Leading to Research
National Nursing Outcomes Studies

Regional Data Warehouse

Regional Data Warehouse

Regional Data Warehouse

Regional Data Warehouse

National Data Warehouse

Super-aggregate of coded patient care data, nursing-sensitive outcomes from multiple enterprises

Coded patient care data

Advise Congress Regarding Nursing Resources

Taylor, 2006
Nursing Research Study \ Using CCC at HCA

- HCA- Comparative Research Study
  2 HCA Hospitals: Meditech 6.0 & EPIC
  - Compare Diagnoses/Problems
  - Compare Goals & Outcomes
- Can Generate New Concepts
Revise Web Site for CCC System

- Make Web Site Interactive with Blog
- Make Web Site Accessible to International Community.
- Use User Meetings to Share Uses & Applications.
- Encourage Legislatures & Professional to Use CCC System for Health Policy Requirements
What is the CCC System?

- CCC is **Nursing Terminology for Documenting Nursing Practice following Nursing Process 6 Steps**
- CCC represents **ICD & CPT for Clinical Nursing Practice**
- CCC 4 Action Types Unique Nursing Intervention Qualifiers
Invitation

Clinical Care Classification (CCC) System
User Meeting
December 3 & 4, 2015
Web Site Suggestions

Hand in Suggestions
CCC System

Supports electronic capture of discrete patient care data for documenting the “essence of care” and measuring the relationship of nursing care to patient outcomes.
CCC Web Site

- Contact: <vsaba@worldnet.att.net>
- http://www.sabacare.com
- http://www.clinicalcareclassification.com
Examples PoC

HCA Screens
Medicom Screens
CCC System & Healthcare Corp of America (HCA)

- CCC PoC is Implemented in Meditech 6.0 & EPIC EHR/HIT Systems.
- PoC documents CCC Concepts/Codes Following Nursing Process Steps
CCC System & Healthcare Corp of America (HCA)

- CCC PoC is Implemented in Meditech 6.0 & EPIC EHR/HIT Systems.
- PoC documents CCC Concepts/Codes Following Nursing Process Steps
### Plan of Care

#### Physiological problem/alteration in:

- Neurological
- Cardiac
- Respiratory
- Ventilatory weaning
- Gastrointestinal
- Bowel elimination
- Renal
- Urinary elimination
- Musculoskeletal
- Skin integrity
- Peripheral vascular
- Endocrine
- Immunologic response
- Thermoregulation
- Growth and development

#### Psychological problem/alteration in:

- Communication

#### Functional problem/alteration in:

- Fluid volume

#### Health behavior problem/risk:

- [ ]
Plan of Care

Fluid Volume Alteration

1. Deteriorating
2. Improving/Resolving
3. Stabilizing/Maintaining

Fluid volume alteration problem expected to: Improve/Resolve *

Fluid volume alteration problem is:

Fluid volume alteration problem has:

Fluid volume alteration problem comment:
Teach/Educate

Physiological Topics:
1. Bowel/Gastric
2. Cardiac
3. Life cycle
4. Metabolic regulation
5. Physical regulation
6. Respiratory
7. Skin integrity
8. Tissue perfusion
9. Urinary

Follow-up Topics:

Physiological Topics:
- Cardiac care

Psychological topics:

Functional Topics:

Health behavior topics:

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CCC System & Medicom System

- CCC is Integrated into Interactive Database - Quippe
  - Supports Data Entry & Documentation into a Single Process.
  - Links Patient S/S to CCC System Concepts following Nursing Process.
  - Being Implemented in Bumrungrad International Hospital, Bangkok, Thailand
  - (1,000 Bed Hospital)
Nursing Process Documentation: Assessment