

Strategies and Tools for Creating a Common Nursing Terminology within a Large Health Maintenance Organization

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A common nursing terminology is essential for outcomes research, data comparability and clinical documentation in an electronic health record. Kaiser Permanente has recognized the need to develop a common nursing and medical terminology across the program. The Interregional Nursing Nomenclature Committee has developed a model for developing a common nursing terminology integrated with other healthcare terminologies.

Background

A common nursing nomenclature has been identified as necessary both within the United States as well as on an international level.^{1,2} This common nursing terminology is necessary for the nursing profession to achieve multiple objectives. These objectives include:

- to improve communication within nursing as well as between nursing and others,
- to describe nursing care across the continuum of care,
- to ensure comparability of nursing data,
- to assist with the allocation of resources to patients according to patient needs,
- to stimulate nursing research through data available in nursing and healthcare information systems,
- to provide data regarding nursing practice to influence health policy decisions, and
- to populate electronic clinical documentation systems (electronic health records) to improve both communication as well as data retrieval for both outcomes studies as well as decision support for the practising nurse.³

Formation of Interregional Nursing Nomenclature Committee

In May, 1995, a teleconference was held within the Kaiser Permanente Medical Care Program to provide an overview of national activities in the area of nomenclature development. Kaiser Permanente is the largest Health Maintenance Organization within the United States with over six million members nation-wide. After the conference, nursing representatives from three of the Kaiser regions, Northern California, Southern California, and Northwest, met to discuss alternatives on how to achieve a standard nursing terminology within the Kaiser Permanente organization.

These nursing representatives drafted a proposal for an interregional project for the standardization of nomenclature in the Divisions of Nursing. This proposal was presented to the Interregional Nursing Committee in July, 1995. The Interregional Nursing Committee (INC) is composed of identified nursing leaders from all eleven regions within the Kaiser Permanente organization. The proposal was reviewed by the committee and recommendations for clarity of the proposal were forwarded to the group. Agreement was reached by the INC that the concept of common nomenclature for interregional use was needed. It was also essential the nomenclature developed needed to be multidisciplinary, that is, understood by the entire health care team and not only the nurse

The group reconvened based on the feedback from the INC and established a succinct document which outlined the mission statement and goals and objectives of the Interregional Nursing Nomenclature Committee (INNC).

Our mission statement currently reads, the INNC, in support of program strategic objectives, is to develop and implement a convergent nursing terminology for the Kaiser Permanente Medical Care Program.

The goals agreed upon by the Committee are:

- to co-ordinate the process within and among Kaiser Permanente regions, by which a convergent nursing terminology is developed,
- to assure the convergent nursing terminology is of sufficient specificity and robustness to be useful for outcomes research, clinical care, identification of best practices, implementation of guidelines and the management of care,
- to assure the convergent nursing terminology will focus on human responses to actual or potential illness and provide shared meaning for specific nursing diagnoses, interventions, outcomes and patient intensity across all settings where nursing is practised.

Consensus was reached by the group on the objectives to achieve our goals. (see *Table 1*)

Table 1

Objectives of the Interregional Nursing Nomenclature Committee

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- To receive direction from and provide feedback to the Interregional Nursing Committee and to the Convergent Medical Terminology (CMT) Group
 - To define standards for the use of convergent nursing terminology and/or linkage of local terminology to the convergent terminology
 - To provide consultation and educational opportunities
 - To develop model educational programs
 - To recommend successful processes for implementation of convergent nursing terminologies by local groups
 - To act as a clearinghouse for terminology activities throughout the regions
 - To consult with projects introducing convergent nursing terminologies into developing paper based protocols and standards
 - To maintain a library of resources, sample documents, and expertise for use within and across the regions
 - To refer locally identified terminology linkage issues to the KRep/ CMT project for resolution
 - To maintain currency with state and national efforts in nursing terminology including those defining common outcome measures.
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Linkages with the Controlled Medical Terminology Project

At the same time that the nursing group was pulling together resources and discussing ways to achieve a common terminology, the medical groups within Kaiser Permanente were also launching a program wide effort to achieve a common medical terminology. This effort is partially funded by the National Library of Medicine and is being done in conjunction with Mayo Clinic. This project is the Convergent Medical Terminology (CMT) project and is utilizing a developmental tool from IBM called KRep. KRep is a knowledge representation tool that allows for graphical representation of modelling languages as well as subsumption of terms. This subsumption of terms allows for easier retrieval of data for outcomes research. The CMT has populated the KRep tool with the Systematized Nomenclature of Human and Veterinary Medicine (SNOMED).⁴

The INNC reached agreement that the Common Nursing Terminology needs to be integrated within the CMT. The CMT group was approached by a representative from INNC and the INNC work was adopted as part of the CMT project.

Selection of Nursing Terminologies

INNC reviewed the terminologies and classifications currently recognized within nursing in the United States. North American Nursing Diagnosis Association (NANDA), Nursing Interventions Classification (NIC), and terms for patient findings from SNOMED were selected as a base to begin our work. NANDA is currently contained within SNOMED and negotiations are underway to include other nursing classification systems to SNOMED.

Subsequently, the INNC will follow the model of distributed development currently being utilized by the CMT group and will use KRep for modeling of the common nursing terminology.⁵

Modeling of Common Nursing Terminology

The modeling, strategies and tools being utilized in the CMT project were reviewed. to assure that the nursing modeling would integrate well. Currently, the CEN standard for operative procedures out of Europe has been adapted,⁶ as well as Laboratory Observation Identifier Names and Codes (LOINC) roles and facets for laboratory procedures.⁷ Roles are utilized in concept definitions to describe relationships with other concepts. While facets attach to concepts or roles information which cannot be expressed with roles and which have no impact on the classification.⁸

Table 2 provides a preliminary listing of roles for modelling NIC.

Table 2

Preliminary Listing of Roles

Is-A
Related-To
Has-Equipment
Has-Body-Site
Has-Approach
Specimen-Role

Table 3 demonstrates some of the proposed facets for modelling NIC.

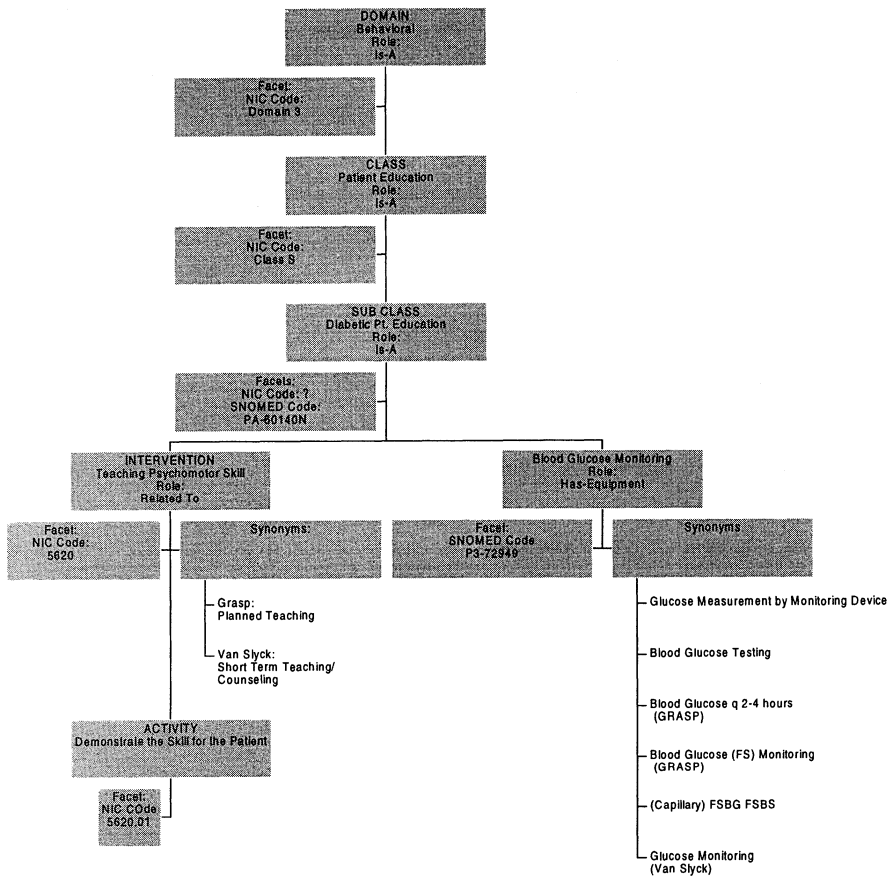
Table 3

Proposed Facets

NIC Code
SNOMED Code
CPT-4 Code
ICD-9 Code
Complete Name
Preferred Name
Synonyms

A proposed model for NIC was developed by the INNC. Figure 1 demonstrates the beginning of that model.

Figure 1
Proposed Kaiser Permanente Model for NIC



The model as shown in Figure 1 looks at the structure of NIC, allows for activities to be mapped to interventions, interventions mapped to either a NIC class or subclass, and then the NIC class to be mapped to the NIC domain. Activities that are found in multiple NIC interventions will be mapped to both with one code applied. A subclass was added to allow for protocols or guidelines to be mapped to a specific area. The NIC class by itself did not allow, for example, a group of activities such as diabetic patient education to be easily aggregated and retrieved.

Lessons Learned

The INNC has learned some valuable lessons in the evolution of this project. One of the first groups we engaged was nursing leadership within the organization on an interregional level. Without their support, the project would not have proceeded this far. The INNC needed to create a business case for continuing work with this project. It was also important to link with the CMT project so that an integrated approach versus a fragmented, discipline specific approach could be achieved. In order for the INNC to reach our goals, we needed to utilize the strategies and tools that were already in place within the CMT project.

The INNOC needed to tie our project with the quality initiatives within the organization as well as those external to the organization. It is important that the terminology be modeled so that data can be easily retrieved and be comparable across the Kaiser Permanente program.

Next Steps

The INNOC is now seeking the resources to perform the modelling work to be done. Initially the INNOC expects registered nurses within several of our regions to model the terminology. The INNOC is also exploring as a next step the linkage of our work with an outcomes taskforce project, Health Status Outcomes Dimensions (HSOD).

Kaiser Permanente is seeking to enhance our clinical information systems as well as our outcome reporting and data comparability. This is a movement forward for all healthcare organizations within the United States. The INNOC within Kaiser Permanente has built the beginnings of a foundation to create a common integrated healthcare terminology that is robust enough for clinical documentation, but is modeled so that retrievability and comparability of data is possible across the organization.

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