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The International Classification for Nursing Practice: A Progress Report

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This paper will review and report progress on the development of the International Classification for Nursing Practice. This project, begun in 1990 by the International Council of Nurses, aims to develop a standardised vocabulary and classification of nursing phenomena (nursing diagnoses), nursing interventions, and nursing outcomes which can be used in both electronic and paper records to describe and compare nursing practice across clinical settings. An Alpha Version of the Classification of Nursing Phenomena and Nursing Interventions was released for further development and field testing in 1996 and an outline for a Classification of Nursing Outcomes in 1997. Nurses around the world, and other classification experts, have been invited to participate in the development of the Beta Version which it is hoped will be ready for release in 1999.

The paper will outline some of the conceptual and methodological problems which have emerged during the development of the project to date, and will invite critique and participation in its further development.

Background

It is important that any data set concerned with health care should include nursing data. One challenge is to ensure that the minimum data sets now being developed in many countries include the essential nursing data elements[1]; the second is that the nursing data elements are expressed in a common nursing language.

Without a common language in which to describe it, we cannot compare nursing practice across clinical settings, client groups, geographic areas or time. We cannot identify the particular contribution of nursing within multidisciplinary health care. We cannot describe the differences between the practice of the expert professional nurse and the auxiliary[2].Increasing recognition of the need for a structured and uniform language which can be used to describe nursing practice has stimulated attempts in many countries to develop standardised languages and classifications. The need for an international as opposed to national system was recognised almost ninety years ago: a nurse who attended one of the earliest meetings of the International Council of Nurses, held in 1909 in Paris, wrote in her report[3]:

> "While attending a special meeting of the ICN in Paris, I was naturally at once struck by the fact ... that the methods and ways of regarding the various nursing problems were ... as foreign to the various delegations as were the actual languages, and the thought occurred to me that .... sooner or later we must put ourselves upon a common basis and work out what may be termed a ***nursing esperanto*** which would, in the course of time, give us a universal ***nursing language*** ...."

The International Classification for Nursing Practice project, begun in 1990 by the International Council of Nurses, aims to develop a standardised vocabulary and classification

of nursing phenomena (nursing diagnoses), nursing interventions, and nursing outcomes which can be used in both electronic and paper records to describe and compare nursing practice across clinical settings. An Alpha Version of the Classification of Nursing Phenomena and Nursing Interventions was released for further development and field testing in 1996 and an outline for a Classification of Nursing Outcomes in 1997. Nurses around the world, and other classification experts, have been invited to participate in the development of the Beta Version which it is hoped will be ready for release in 1999.This paper reviews and reports progress to date, and outlines some of the conceptual and methodological problems which have emerged during the development of the project.

Origins of the ICNP project

A resolution of the ICN's Council of National Representatives in 1989 asked that ICN encourage member National Nurses Associations (NNA's) to become involved in developing classification systems for nursing care, nursing information management systems and nursing data sets, and to provide tools that nurses in all countries could use to identify nursing practice and describe nursing and its contributions to health. Since then a great deal of work has been undertaken:

1991: A preliminary literature search and a survey to identify classification systems in use or being developed worldwide [4].

1992: A Technical Advisory Group of nurses from six countries (Israel, Nepal, Chile, Kenya, Jamaica and Japan) met to test the feasibility and applicability of the work at global level.
A review of ICD-10 and related WHO classifications to identify labels which are relevant to nursing [5].

1993: A first draft list of terms used in the nursing literature and existing classifications to describe nursing diagnoses, interventions and outcomes, was published[5].
Presentations at the ICN Congress held in Madrid demonstrated an overwhelming

1994: An Advisory Meeting on the Development of an Informational Tool to Support Community-Based and Primary Health Care Nursing Systems, held in Mexico, brought together nurses from nine countries in Africa and North and South America to explore the potential of the ICNP for nursing in primary health care.

1995: A similar workshop held in Taiwan brought together nurses from nine Asian and Pacific countries.
Funded by the European Union and led by the Danish Institute of Health and Nursing Research, the TELENURSE project began.

1996: The WK Kellogg Foundation granted funding to enable selected countries in Africa and Latin America to work on the development of the ICNP in primary health care.
Publication of the Alpha version consisting of a Classification of Nursing Phenomena (the phenomena which nurses diagnose) and a Classification of Nursing Interventions.[6]

1997: Publication of outline proposals for the classification of Nursing Outcomes[7]
Presentation of the work to date at the ICN Congress in Vancouver, Canada.

Goals

The goals of the project, which were set out in the initial proposal to the ICN Board of Directors[8], are:

1 To develop an ICNP with specified process and product components.
2 To achieve recognition by the national and international nursing communities.

3 To ensure that the ICNP is compatible with and complementary to the WHO Family of Classifications, and the work of other standardization groups such as the International Organisation for Standardization (ISO) and related groups including the Comites European de Normalisation (CEN), and to secure inclusion of ICNP in relevant classifications.
4 To achieve utilisation of ICNP by nurses at country level for the development of national data bases.
5 To establish an international data set and a framework that incorporates the ICNP, the nursing minimum data set, a nursing resource data set, and regulatory data.

These goals continue to provide the mission and the framework for the project

The Alpha Version

The Alpha Version has now been published in three formats : the official ICN document[6] which has been distributed to all National Nurses Associations and is availble fron ICN headquarters in Geneva, a version published for the purposes of the TELENURSE project[9], and on the Internet (http://www.nethotel.dk/dihnr/Telenurse/ICNP).

The ICNP differs from existing nursing classifications, and from most other classifications used in health care (eg ICD) because it is built according to rules of classification in which each concept is systematically defined by specifying the broader class of object to which it belongs (its *genus*) and the characteristics that distinguish it from other members of the genus (other *species*), and then placed within a hierarchy of *generic* **relations**. The division between the levels must be based on a specific *principle of division*, and each *species* of a *genus* must be distinguished from its neighbour *species by its own specific characteristic.*

The Alpha Version contains two of the three dimensions of nursing practice - a Classification of Nursing Phenomena, and a Classification of Nursing Interventions; proposals for the development of the third dimension (Nursing Outcomes) have recently been published[7]. The *Classification of Nursing Phenomena* is a *mono-axial classification*, that is, it uses just one dimension or *axis*. The Alpha Version *Classification of Nursing Interventions* is a *multi-axial classification.* The classifications are not yet comprehensive, and many conceptual, methodological and technical problems are still to be resolved.

The Classification of Nursing Phenomena

Classifications of nursing diagnoses have been developed in several countries. Probably the best known is the NANDA taxonomy[10] which has been translated into several languages, but two other classifications (the Omaha System[11], and the Home Health Care Classification[12] are included in the USA National Library of Medicine's Unified Medical Language System (UMLS), a classification of nursing diagnoses is currently being developed in Denmark, and another in the Netherlands, based on the WHO International Classification of Impairments, Disabilities and Handicaps (ICIDH). In the UK the Read Clinical Thesaurus includes similar terms. This list of examples is by no means exhaustive.

The term *nursing diagnosis* presents both conceptual and linguistic problems. One reason is that the *concept* of nursing diagnosis is not well established in all countries. The initial ICNP proposal recognised this problem. As the work developed, and in the light of the systems currently used, it became clear that until the concept of nursing diagnosis was more widely accepted and the term more precisely defined, a rather broader term should be chosen as the top term (the genus).Several alternatives were considered. It was recognised that in primary

health care in particular, the environment is an important focus for nursing concern and intervention, and it was also considered important to include conditions relating to "wellness", "enhancement of health potential", and the concept of "at risk", and to avoid the negative orientation associated with the term "problem".

Each term in the classification is defined using the ***genus*** and ***species*** method already described. The definitions are recognised to be rather imprecise and are not sufficiently stipulative for clinical use. Alternative definitions are welcomed within the consultation process.

Choosing principles of division for the Alpha Version Classification of Nursing Phenomena was difficult. The overall principle of the foci of nursing intervention provides a conceptual linkage between the two classifications. The upper levels of the classification of nursing phenomena distinguish between phenomena pertaining to humans and phenomena pertaining to the environment. The Alpha Version conceptualises the family and the community as phenomena pertaining to the environment, but this is likely to be changed for the Beta Version. The principles of division are specified in the classification itself, but are incomplete. As in the case of the definitions, discussion of these principles of division, and suggestions for alternatives, are welcomed within the consultation process.

The Classification of Nursing Interventions

Classifications of ***nursing interventions*** have also been developed in several countries[11],[12,13,14]. There are differences in purpose, conceptualisation and categorisation of nursing interventions[15].

Many classifications of nursing interventions are conceptually limited to lists of tasks. However, nursing interventions cannot be understood without reference to nursing diagnoses; it is the nursing diagnosis which converts a basic task which anyone could do, into a nursing intervention which requires nursing knowledge and skill. This is one reason why the ICNP has always stressed the importance of linking its three dimensions.

Definitions of the term ***nursing interventions*** also differ. The initial proposal made clear that the ICNP should cover all aspects of nursing activity included in the ICN definition of nursing, which encompasses health promotion, the prevention of illness, and care of physically ill, mentally ill, and disabled people of all ages, in all healthcare and other community settings. Definitions which specify that nursing interventions are intended to achieve a ***patient*** outcome may exclude activities such as assessment, monitoring, and surveillance and also interventions which are directed at changing the environment. To achieve the necessary degree of inclusiveness, the definition of nursing intervention must include cognitive, affective and psycho-motor activities, and all levels of activity.

Deciding upon the principles of division for a classification of nursing interventions was even more difficult than for the classification of nursing phenomena. The Alpha Version of the Classification of Nursing Interventions is a multi-axial classification which uses the technique of *logical analysis*[16]. Using this method, six ***principles of division*** were identified:

- actions
- objects
- approaches
- means
- body sites
- time/place

Each principle of division is expressed as one axis of the classification of nursing interventions. Each axis is divided into classes of examples according to their specific characteristics.

Not all of the terms in the Classification of Nursing Interventions are yet defined. Only Axis A (action types) is defined below the first level, and these definitions will need to be further developed. Similarly, many of the principles of division are specified as "pragmatic".

A multi-axial classification has advantages over the mono-axial type in that it offers great flexibility because it allows an almost infinite number of combinations of terms. The disadvantage is that it is far more complicated, and difficult to use without a computer. Aspects of this classification are being tested in the TELENURSE project, and proposals to drop some axes and introduce others are already being considered for the Beta Version.

The Classification of Nursing Outcomes

The work on ***nursing outcomes*** is at a much earlier stage, but the project team's initial proposals are recently published in the International Nursing Review[7].

The ICNP team have drawn extensively on the work of the Alberta Association of Registered Nurses[17] · the American Nurses Association[18], Barriball and Mackenzie[19], Casey[20], Lang and Marek[21], Marek[22], Maas, Johnson and Moorhead[23], McCormick[24], Martin and Scheet[11], Saba[12], and Van der Bruggen and Groen[25]. ICN would be pleased if other work on classification of nursing outcomes could also be shared with the team.

There are several problems associated with the term "***outcome***" and its adjectives or modifiers. The term and definition which was used in the first Working Papers[5] were shown to be inadequate and were changed. the term "***patient outcome***" was rejected because some outcomes are related to families, groups, or the environment; Marek[22] pointed out that cost or resource use are also important outcomes. The term "***nursing outcome***" has been used to associate the outcome with *nursing* intervention, but it is difficult to attribute a particular outcome exclusively to the intervention of one member of the multidisciplinary healthcare team; the ICNP team prefer the team "***nursing sensitive patient outcomes***". Some outcomes may be unintended or dysfunctional; outcomes may also occur in the absence of a specific intervention; and assessment/monitoring/surveillance activities (eg in public health nursing) may not have a definable outcome at all.

The ICNP team decided to follow the work of Marek, and Maas, Johnson and Moorhead, and others in conceptualising outcome as a change in a state which can be measured along a continuum, rather than as an (achieved) goal. However, the way in which this concept is expressed must take account of the fact that stabilisation, maintenance of steady state, (ie no change) or prevention are also legitimate nursing goals; definitions which assume positive change do not allow for outcomes such as peaceful death.

It has been suggested[26] that nursing-sensistive patient outcomes are merely the resolution of nursing diagnoses. In this case a separate classification of nursing outcomes might be unnecessary. It is hoped that eventually the nursing outcomes will relate directly to nursing phenomena listed at all levels in the Classification of Nursing Phenomena, but it is recognised that this may not be possible at this stage because the Alpha version of the classification of nursing phenomena is itself immature and likely to be changed. Moreover the concept of nursing phenomena does not include all of the relevant outcomes identified in the literature

Any outcome to be measured requires a measurement scale. Martin and Scheet used a five-point Likert scale recorded as a numerical score. Maas and Johnson have developed 18 five-point likert scales to measure their 150 outcomes. Saba uses three modifiers (improved/stabilised/deteriorated) to code the expected outcome/goal.

The ICNP team currently propose a five point nominal scale which uses the following categories:

prevented:	the phenomenon which constituted a risk or a potential health problem did not become actual;
resolved:	the phenomenon which constituted an undesirable state or condition, or an actual health problem, disappeared or was removed;
improved:	the phenomenon changed and improved;
stabilized:	the phenomenon ceased to change;
deteriorated:	the phenomenon changed and worsened.

Testing the Alpha Version

The Alpha Version is currently being tested in various ways, and further participation is welcomed[27]. All member National Nurses Associations have been asked for feedback, and documentation for submission of new terms and changes to existing terms is available. A process for managing feedback is being developed.

In Europe the TELENURSE project has enabled the Alpha Version to be translated into several languages and is testing aspects of the use of ICNP in electronic patient records.

Validation studies are being undertaken at Marquette University and by individual researchers in several countries.

The ICNP Country Project, funded for three years by the W. K. Kellogg Foundation, will assist ICN to focus particularly on describing nursing practice in community-based practice and primary health care. Country work groups in several countries of Africa and Latin America will explore and develop new processes and look critically at the nature and structure of ICNP as well as contributing new terms. The project also includes publication of a Newsletter to disseminate information and ideas.

Preparing the Beta Version

The emerging Beta Version, which is scheduled for release early in 1999, is available in its developmental form on the Internet: (http://www.nethotel.dk/dihnr/Telenurse/ICNP/beta).

The development team is continuing to meet, and some important steps towards a Beta version have been made:

* The Beta Version will be coded (the Alpha Version is not coded) using a non-hierarchical coding system.
* The Classification of Nursing Phenomena will be converted to a multi-axial classification, which will distinguish between the phenomena to be diagnosed and the diagnostic judgement, and will allow change in each phenomenon to be recorded.
* The Classification of Nursing Interventions will be refined; some axes may be dropped and others introduced, and the definitions and principles of division will be refined.
* The parts of both classifications which relate to primary health care, and to the nursing of

groups as opposed to individuals (eg family and community nursing) (WHO 1974) will be expanded)

* Further consideration will be given to the classification of nursing outcomes, including the possibility of linkage with the Classification of Nursing Phenomena.

Conclusion

The task of developing the International Classification for Nursing Practice is enormous, but it is fundamental to the continued development and recognition of nursing. It is the kind of project that never ends but for which there is a timely beginning - now. With justification it has been called "Nursing's Next Advance".

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