

# **International Classification for Nursing Practice (ICNP)**



## **Technical Implementation Guide**

**International Council of Nurses**

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# 1 Introduction

## 1.1 About this guide

This guide seeks to provide an authoritative source of information to support the development and implementation of electronic record systems that use the International Classification for Nursing Practice (ICNP), a product and programme of the International Council of Nurses (ICN). ICNP is an integral part of SNOMED CT, a product that is owned and distributed by SNOMED International. Many countries are members of SNOMED International, and many more organisations and individuals hold affiliate licences, which permit the use of ICNP within SNOMED CT. SNOMED CT has its own guidance regarding implementation.

This guide seeks to support the use of ICNP independently from SNOMED CT i.e., use under a separate ICNP licence. Any reference to ICNP within this guide refers to ICNP as product that exists independently from SNOMED CT. The guide is particularly relevant to (a) system developers to ensure optimal deployment of ICNP within emerging and existing systems, and (b) health informatics specialists to ensure that the needs of potential users of those systems are fully met. Other people might find the guide useful in improving their technical understanding of ICNP.

## 1.2 About ICNP

ICNP is a standardised terminology that can support nursing practice and patient care worldwide. It accommodates both interface properties (to facilitate use at the point of care) and reference properties (to facilitate secondary use of data and harmonisation with other terminologies). It has been translated from English into a range of spoken languages.

ICNP appears within the Unified Medical Language System, it is recognised by a number of National Nurses' Organisations as a terminology that supports nursing practice, and it is a Related Classification within the World Health Organization Family of International Classifications.

A new release of ICNP is made available every year in alignment with the SNOMED CT release cycle.

ICNP is distributed as a simple comma separated values (.csv) table comprising:

- unique codes (from SNOMED CT i.e. SCTID)
- SNOMED CT preferred terms (with their associated semantic tags)
- ICNP preferred terms (the identical terms as the SNOMED CT preferred term but with the semantic tag removed)
- the associated SNOMED CT semantic tag (for example to allow sorting to reveal all nursing diagnoses - the finding, disorder and situation tags - or all nursing interventions - the procedure and regime/therapy tags).

# 2 ICNP implementation

## 2.1 Applications that use ICNP

ICNP is a global terminology that can support a range of different informational processes in health and social care. ICNP has been developed by nurses to support nursing practice and patient care worldwide. However, its reach goes beyond nursing in that it embodies content that is relevant and useful to other disciplines and other areas of health and social care practice.

While the use of ICNP in practice may be very diverse, there are currently four main application areas: (a) clinical recording; (b) data retrieval, aggregation, and analysis; (c) decision support and indexing; and (d) terminology tools. The way that ICNP is implemented within each of these application areas has implications for the resulting functionality (see also 2.2 Approaches to implementation).

### **2.1.1 Clinical recording**

ICNP is commonly used as the terminology component of electronic record systems. ICNP-enabled health record systems are required to provide services that allow for the entry, storage, and retrieval of ICNP entities. These systems may also be required to provide services that allow for the communication of ICNP entities between systems.

As ICNP has both interface and reference properties, it may be used within these systems as either:

- an interface terminology - providing ICNP expressions to users for selection. The ICNP entities may be stored as they are, or there may be local linkages between ICNP as an interface terminology and other standardised terminologies
- a reference terminology - providing local terms to users for selection, with local linkages to reference ICNP entities.

Terminology linkages would generally be defined and held locally within the host system.

### **2.1.2 Data retrieval, aggregation, and analysis**

ICNP supports the consistent recording of data about individuals and groups of individuals. This consistency in representation facilitates the analysis of data within individual records and from data warehouses. The use of ICNP does not obviate the need for (1) a robust locally defined model that specifies the content and structure of data required to enable the analysis i.e., an information model, and (2) the specification of queries that can be run against this information model.

Outside SNOMED CT, there are no hierarchical relationships between ICNP entities, which imposes limits on data aggregation (beyond individual ICNP entities).

### **2.1.3 Indexing and decision support**

ICNP can be used to support a number of knowledge resources such as electronic books and decision support protocols through coding or indexing of an external knowledge resource with ICNP entities. This might allow the activation of ICNP-encoded decision support protocols or context-sensitive access to an ICNP-indexed electronic reference book from within ICNP-enabled clinical applications.

### **2.1.4 Terminology tools**

#### **2.1.4.1 Browsing ICNP**

The distribution of ICNP and any derived products, such as translations, allows users to explore ICNP either through a stand-alone browsing tool or as part of a larger application. Browsers will typically allow users to explore ICNP. Browsers that form part of larger ICNP-enabled applications may allow users to select ICNP entities, for example for entry into a clinical record or to access an ICNP-indexed external knowledge resource.

#### **2.1.4.2 Authoring ICNP**

ICNP relies on the input of many people across the world, for example via the content submission and review process, and through the work of translators. However, in order to ensure consistent version management, technical development of ICNP is the responsibility of ICN. All changes to ICNP are made under robust guidelines that form part of a broader

quality improvement process. **Ad hoc changes to ICNP, without consultation with ICN, are strongly discouraged.**

To ensure maximum compatibility with a range of applications, ICNP (and related products such as translations) is held and delivered as plain text in a generic comma separated values (.csv) file. For example, comma-separated values files can be opened and used directly within common spreadsheet applications.

## 2.2 Approaches to implementation

ICNP can be implemented in applications in different ways and to different degrees depending to a large extent on the intended use of the captured data.

### 2.2.1 Scope of ICNP

ICNP seeks to cover nursing diagnoses (which may also be used to represent nursing outcomes) and nursing interventions in entirety, accepting that this is a formative process, and that nursing covers a broad range of health care and is not a clearly bounded discipline.

### 2.2.2 Clinical context for ICNP

While ICNP covers diagnostic and interventional entities, it does not in general provide contextual information about those entities, for example the fact that a particular diagnosis is an intended outcome or goal, or the fact that a particular intervention is a planned intervention. This contextual information should be provided by the information model that is embedded within the application.

### 2.2.3 Extent of ICNP implementation

It is assumed that applications will be developed generally to manage ICNP expressions as pre-coordinated entities only (i.e., entities that conform to ISO 18104 with respect to diagnosis and intervention statements), although their augmentation via post-coordination is permissible (accepting that any subsequent normalisation might be problematic).

### 2.2.4 Entry, rendering, storage, retrieval, and communication of ICNP

Each entity within ICNP has an associated code (from SNOMED CT) that uniquely identifies the entity. There may be cases, for example in certain types of messages, where human interpretation is not necessary. However, in many cases, data transferred under ICNP is intended to be read. While entities will have a preferred term in the particular language of use, they may also have a synonym or set of synonyms that are defined and held locally. As synonyms, the meaning of terms associated with entities will be equivalent. However, it might be important to capture the original 'flavour' of the entered data. For example, a particular user group may be accustomed to a particular vernacular – the use of less familiar terms, even if they are the preferred terms, might make those terms more difficult for particular users to read. Therefore, where ICNP data is intended for human interpretation, it is recommended that both the code and original expression (either the preferred term or the synonym) are stored and communicated. For many applications, both for data entry and for retrieval, only the term itself will need to be displayed on the user interface but a link must be maintained to the original code.

## 3 Structure and content of ICNP

At the heart of ICNP are entities. These are representations of entities that may be of interest to nurses, other health care workers, patients, carers, and so on. Entities are accessed or interpreted by expressions or labels. Entities have additional unique associated identifiers which are numerical codes that are devoid of meaning. In order to

prevent misinterpretation of entities, the goal is for preferred terms to be self-explanatory – therefore there are no descriptions for ICNP entities.

## **4 ICNP in health records**

ICNP seeks to provide content. In relation to health records, it is important to note that ICNP intentionally does not attempt to represent contextual information such as ‘history of’ or instance-level data such as dates, times, other numerical information such as points on a numerical scale, the specific person recording or receiving care (other than general entities such as yesterday or child). To represent these entities would be out of scope for the terminology.

## **5 Change Management**

A robust change management process is in place, coordinated with SNOMED International, to direct and guide any necessary changes. While it would be possible for implementers of ICNP to make piecemeal changes from release to release of ICNP using information from the release file, a more practical solution, depending for example on local adaptations and/or extensions, would be to replace the release file in their entirety. This does not necessarily apply to local translations of ICNP. Translation is an ongoing process and there may be occasions where translations need to be updated mid-cycle without the need for changes to ICNP itself.

## **6 Contact**

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