Common Nursing Terminology for Clinical Information Systems

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Abstract

The lack of professional agreement upon chosen terminology in nursing detracts from the role of Clinical Information Systems (CIS) as central repositories of patient health records. The purposes of this paper are: (1) Identification of common terminology for clinical nursing information in CHS according to the following stages: patient history of health and illnesses; nursing assessment; nursing interventions and outcomes. (2) Implementation of the common terminology into computerized applications in several nursing settings. The sample included 224 nurses divided into four groups. Each group was asked to identify the common initial data for patient history and nursing interventions, based on professional experience, expertise, clinical standards and organizational / legal policy. The identification of nursing assessments and outcomes was done according to evidenced-based Clinical Guide-Lines (CGL) for each nursing setting. The CGL were chosen as a source for assessment and outcome classification for two main reasons. First, the CGL include criteria of the clinical state by the degree of severity base, which are acceptable and comprehensible to other disciplines within the healthcare system. Second, the lack of evidence-based researches related to clinical nursing outcomes. Results: Standard patient history of health and illnesses (admission and discharge) was developed for all departments in the hospital with flexibility to add any specific clinical data upon requirement. A total of 62 nursing assessments / outcomes were identified from the CGL in the four chosen nursing settings. 43 (70%) nursing assessments / outcomes were common both for nursing practice in hospitals and community clinics. 30 (40%) were implemented in the community clinics CIS application, 19 (31%) in the oncology CIS application, and 16 (26%) in the delivery CIS application. The groups identified a total of 70 nursing interventions. 49 (70%) nursing interventions were common both for nursing practice in hospitals and community clinics. 59 (84%) were implemented in the community clinics CIS application, 18 (26%) in the oncology CIS application, and 29 (41%) in the delivery CIS application. For summary, the definition process, including computerization, spread across four years. The community CIS application serves about 1500 clinics in CHS Israel (which employs about 2500 nurses). The admission and discharge CIS application serves 7 general hospitals, and is currently implemented in the internal and surgical departments (about 30 departments, 35 average beds each). The oncology CIS application is implemented in two oncology centers, and the delivery CIS application will soon be implemented in 8 hospitals.

Keywords:
Terminology; Clinical Health System; Patient Records; Nursing; Guideline; Application
1. Introduction

In recent years, Clinical Information Systems (CIS) have been developed progressively as a “collection of various information technology applications that provides a centralized repository of information related to patient care across distributed locations.” [6 pp 63]. The CIS include clinical documents recorded by various healthcare agents such as physicians and nurses. The main advantage of CIS is the capability to share and exchange essential information between different healthcare providers in a safe and secure manner. Today, hospitals and community health services (e.g., Clalit Health Services - CHS) are forced to rely upon various applications customized for different areas of clinical expertise. Needless to say, each application has its own approach for structuring health records.

To enable a productive exchange of clinical information between caregivers in every clinical setup, it is essential to adopt a common terminology. Several studies addressed this issue in medicine and nursing [1, 2, 3, 4, 5]. Common terminology is important for medico–legal, quality management, education, research, policy development, health service management and finance management.

There are more than five different applications in our health organization - CHS (that includes 14 hospitals and more than 1600 community clinics). The lack of standardization led us into developing a common nursing terminology.

The purpose of this paper is twofold:

1. Identification of common terminology for clinical nursing information in CHS Israel according to the following stages: patient history of health and illnesses; nursing assessment; nursing interventions and outcomes.
2. Implementation of the common terminology into computerized applications in several nursing settings.

2. Materials and methods

The development process for a common nursing terminology initiated in four nursing settings: hospital admission and discharge, delivery unit, oncology unit and community health clinics.

In order to identify the terminology related to patient history of health and illnesses, and nursing interventions, registered nurses from 50 community clinics (only clinics responsible for over 7,000 insured residents) and 14 hospitals were included in our sample. Overall - a total of 224 nurses working in selected clinical fields: 100 from community clinics and 124 from hospitals (admission and discharge=64, delivery=22, internal medicine=28, oncology=10). A demographic breakdown of participant nurses showed 100% full time employees; 87% were female. The average age was 40 years (s.d.= 9.7); average tenure in the required clinic / department was 10.6 years (s.d.= 8.3). 75% had a B.A. degree or higher.

Four groups of nurses in the above clinical fields were formed. Each group of participants was asked to identify the common initial data for patient history and nursing interventions. The identification was based on professional experience, expertise, clinical standards, and organizational / legal policy.

The identification of nursing assessments and outcomes was done according to evidenced-based Clinical Guide-Lines (CGL) for each nursing setting. The CGL were chosen as a source for assessment and outcome classification for two main reasons. First, the CGL include criteria of the clinical state by the degree of severity based on objective scales, which are acceptable and comprehensible to other disciplines within the healthcare system.
Second, the lack of evidence-based researches related to clinical nursing outcomes. We’ve used the same criteria for assessment and outcomes under the assumption that comparison of health status before and after intervention should be done by similar indicators (reassessment). Furthermore, reassessment by itself reflects the outcomes - improvement or retreat in health condition.

3. Results

*Standard nursing record related to patient history of health and illnesses* (admission and discharge) was developed for all departments in the hospital with flexibility to add any specific clinical data upon requirement. The following screenshot demonstrates a menu for patient history health record.

![Figure 1 – Patient History Health Record Menu](image)

**Assessment and Outcome Classification**

A total of 62 nursing assessments / outcomes were identified from the CGL for the CIS applications in the four chosen nursing settings. 43 (70%) nursing assessments / outcomes were common both for nursing practice in hospitals and community clinics. 30 (40%) were implemented in the community clinics CIS application, 19 (31%) in the oncology CIS application (10 common and 9 specific), and 16 (26%) in the delivery CIS application (10 common and 6 specific).
The next two screenshots demonstrate an example of one specific nursing assessment/outcome and one common.

**Figure 2 - Specific Example of Nursing Assessment / Outcome - Nursing Delivery**

**Figure 3 – Common Example of Nursing Assessment / Outcome – Pain**
Nursing intervention classifications

The groups for the CIS applications in the four chosen nursing settings identified a total of 70 nursing interventions. 49 (70%) nursing interventions were common both for nursing practice in hospitals and community clinics. 59 (84%) were implemented in the community clinics CIS application, 18 (26%) in the oncology CIS application (13 common and 5 specific), and 29 (41%) in the delivery CIS application (18 common and 11 specific).

Implementation

The community CIS application serves about 1500 clinics in CHS Israel (which employs about 2500 nurses). The admission and discharge CIS application serves 7 general hospitals, and is currently implemented in the internal and surgical departments (about 30 departments, average of 35 beds each). The oncology CIS application is implemented in two oncology centers, and the delivery CIS application will soon be implemented in 8 hospitals.

There are 5 different software infrastructures in CHS Israel hosting clinical applications. Computerized implementation of the joined terminology has been achieved through a cross-infrastructure communication system able to collect clinical information from each application and present it in a unified form. This interface enables caregivers to share and exchange patient data regardless of patient location.

4. Conclusion

The definition process, including computerization, spread across four years. Nurses report very high satisfaction of the application, mainly derived from the common terminology allowing them to share and exchange information related to the same patients between different departments of hospitals and clinics.

In spite of numerous publications of common nursing terminology in the literature, still, there is no acceptable version of international language in nursing. Each country makes the effort to develop a terminology customized for its own requirements. Notably, there is a wide similarity between the different developments, which can be explained by the global likeness of health problems, health needs and interventions, also seen in the mass acceptance of the international CGL for these issues.

The progress of technology is highly rapid, and the nursing profession found itself unprepared by professional conceptualization.

Nevertheless, it is impotent to continue such trials, for hope that in the future, it will be a wide spectrum of trials that will cover all nursing fields. After gathering sources and proper examination, a true base of common terminology in nursing could be established.

5. References


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