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Standards in Multi-professional Digital Documentation

Accurate formulation of diagnoses, interventions and outcome evaluations is essential for the quality and continuity of care. Is standardisation in the patient record the solution for efficiency and better interprofessional understanding?



Management, administration and health care workers need to support each other in the process toward the development of a system that can provide reliable and valid data.

Health care workers such as physicians and nurses constantly make knowledge and skill-based decisions on how to manage patients' (responses to) illness and treatment. Their diagnoses should be founded on the ability to analyse and synthesize patients' information and to make this information understandable for their health care colleagues. Accurate formulation of diagnoses, interventions and outcome evaluations is essential for the quality and continuity of care [1-5]. As stated by the World Alliance for Patient Safety [6], the lack of standardised nomenclature for reporting hampers good written documentation and may have a negative effect on patient safety internationally [7]. Only a few research studies are published related to the feasibility, reliability and validity of the content of classification systems for standardisation in electronically health records, although some reports are available. Based on a comparison of four classification systems, Müller-Staub [8] concluded that the NANDA-I classification is the best-researched and internationally most widely implemented classification system for nurses. Imprecise wording, lack of scrutiny, and expression of patient problems in terms of an incomprehensible diagnosis can have an undesirable effect on the quality of patient care and patient well-being [11,12]. Thereby, several authors have reported that hand written and digital patient records contain relatively few precisely formulated diagnoses, related factors, pertinent signs and symptoms, and poorly documented details of interventions and outcomes [13-15]. Is standardisation in the patient record the solution for efficiency and better interprofessional understanding?

Standardisation in clinical practice, what are we talking about?

The progress and research in standardisation is a new area of expertise worldwide, for health care workers as well as for computer specialists. Professionals in health care are confronted with terms as:

- DRG (Diagnose Related Groups)
- Diagnostic thesaurus (national lists and international classifications as ICD-10 or SNOMED CT)
- Software resources to combine standards (i.e. SNOMED CT, ICD-10 and DRG)
- DSM (Diagnostic and Statistical Manual of Mental Disorders)
- LOINC (Logical Observation, Identifiers, Names and Codes, based on laboratory methods)
- NANDA-I, NIC and NOC (diagnoses, intervention and outcome classification for nurses)
- Clinical pathways based on integrated standards (multidisciplinary)
- ICD (International Classification of Diseases): "WHO family of classifications" as:

- ICPC International Classification of Primary care
- ICF International Classification of Functioning
- ICF-CY International Classification of Functioning of Disability and Health for Children and Youth
- ICHI International Classification of Health Interventions
- ICPS International Classification of Patient Safety
- ICECI International Classification of External Causes of Injury

These international standardization developments are important and can contribute to better interprofessional understanding, input and output information research abilities, and in reducing the ability of misunderstandings based on inadequate use of written communication in health records.

What do health care workers need to know to understand the content of standards?

A brief overview and explanation of what can be found in standardized language for healthcare workers in the electronic patient record:

- Concepts, terms or labels (i.e. words as "pain" or "heart")
- Relationships between concepts (i.e. "heart", "pain" and "saturation")
- Definitions (i.e. of what is "low saturation" or "heart failure")
- Terminologies (i.e. how do we talk about it? i.e. Codex Medicus)
- Nomenclature (i.e. "acute" and "myocardial infarction") and rules how to use different terms put together (as in SNOMED)
- Specializations (subdivisions of a major concept into minor concepts)
- Taxonomies (knowledge of how to subdivide individuals or objects into groups)
- Code systems (a term, thesaurus, vocabulary, nomenclature or classification identified by a code (number)

These relatively new aspects related to standardization in interprofessional care are needed to become part of the new generations of health care workers education programs in universities and beyond.

How can we manage all the information in classification systems?

There is serious opposition against the implementation of classification systems from healthcare workers who may have the opinion that their autonomy is no longer guaranteed. Since, their findings and interventions have, in some way, 'to fit in the standardized documentation system'. This may hamper fine tuning for individual care and patient-centered reports, as they bring up. This reasonable resistance can be supervised to let health care workers experience the benefits from the standards and to provide possibilities for free text as well. And, to give health care workers an important role in the implementation phase. Some suggestions are to be made:

- Make an overview of all standards you need in your own health care situation based on a multi-professional discussion and internal research
- Make an overview of what is the aim of each standard you want to use in your organization (e.g. a diagnoses standard as NANDA-I differs from the one for ICF; both can be chosen and integrated in a system for input and output information, but they serve different purposes)
- Make a clear view of distinctions in standards you want to use
- Make a clear overview of standards already integrated
- Make a "quick reference card" to be able to understand in a few words what the key issues are of each standard, and to be able to explain it to healthcare professionals in a well organized discussion [16]

What are ongoing future needs in standardization in the electronic documentation system?

Diagnosis Related Groups (DRG) called 'SwissDRG' are used in Switzerland since 2012. DRGs offer possibilities such as establishing nation wide databases incorporating medical data for cost and quality analyses. However, evaluation studies have shown that DRG implementation can affect quality, staffing and organisation of nursing care. By reducing hospital lengths of stay (LOS), nursing care supporting patients' needs in the healing process is substantially reduced. Early discharge depends on clear communication about nursing diagnoses and interventions [19].

Classifications such as the NANDA-I Diagnoses, Nursing Interventions Classification (NIC) and Nursing Outcomes Classification (NOC) help nurses to plan and consistently document care. The combination of nursing diagnoses along with DRGs allows a full

description of patients' overall treatment needs.

Implementation of NANDA-I diagnoses, related interventions and nursing outcomes has demonstrated efficiency in exchanging patient information on an inter-institutional level and connections between DRGs and nursing diagnoses were presented along with data for measuring quality of care across hospitals. These results are in line with a study by Welton & Halloran [17]. By adding nursing diagnoses to DRGs, the explanatory power (R^2) and model discrimination (c statistic) improved by 30%. Nursing diagnoses provided significant explanations for the outcome variables LOS, ICU LOS, total costs, probably of death and discharge to a nursing home ($P \leq .0001$) [17]. The most prevalent nursing diagnoses, the performed nursing interventions and achieved patient outcomes were evaluated in the SoH documentation system. Nevertheless, what goes into the system must be relevant and precise, since electronic nursing documentations need to be reliable. Individual nurses – not the electronic system – are accountable for deriving and documenting accurate nursing diagnoses, related interventions and nursing-sensitive patient outcomes [7,16,18]. Electronic nursing documentation facilitates nurses in critically evaluating the care plans based on a structured and legibly documented nursing Resources to reduce the lack of precision of diagnostic reports, as for instance computer generated standardized nursing care plans, may support nurses in their administrative work [13]. The development and implementation of electronic documentation resources and pre-formulated templates have demonstrated positive influences on the frequency of diagnoses documentation. Studies have shown that time needed to obtain nursing diagnoses was, using a computer aid, significantly shorter. Classification structures, e.g. the NANDA-I classification are helpful in combination with applicable electronic resources leading to more accurate diagnoses documentation [18].

Management, administration and health care workers need to work together to come to new knowledge based information as from allied research and best practices. They need to support each other in the process toward the development of a system that can provide reliable and valid input and output data. Successful cooperation depends on:

- Supporting system developments and in depth research towards the influence and the effect of a uniform use of language in general and specific clinical situations;
- Supporting recordkeeping close to the main source (patient and healthcare professional);
- Supporting recordings of data easy to find;
- Supporting multiple use of data; (input and output data use)
- Using search terms per domain;
- Using software resources for deriving diagnoses, interventions and outcome evaluations;
- Developing decision support tools based on intelligent expert systems for choosing accurate nursing diagnoses, linked with effective interventions and achievable, desired patient outcomes
- Connecting national and international standard development in (research) projects [16].

And by making well balanced choices in the near future instead of waiting another century for the best to come ...

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