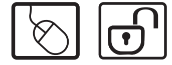
eat right.





# Toward Harmonization of the Nutrition Care Process Terminology and the International Classification of Functioning, Disability and Health—Dietetics: Results of a Mapping Exercise and Implications for Nutrition and Dietetics Practice and Research

QUALITY, CONTINUITY, AND safety are essential aspects of all health care interventions and are equally important in e-health care[†]. In addition, e-health is increasingly used in various settings and new models of care in European countries. The e-Health Governance Initiative founded by the European Union has worked to establish a common structure for e-health within Europe to facilitate quality health care within countries and across borders.[1,2] The Guidelines on Minimum/Non-Exhaustive Patient Summary Dataset for Electronic Exchange in Accordance with the Cross-Border Directive 2011/24/EU[1] indicate that member states wishing to engage in cross-border communication may perform mapping, transcoding, and translation activities to support such activity. A major theme of this initiative is the semantic and technical interoperability of data,[2] which is a high-priority target in nutrition and dietetics care as well.[3] To achieve interoperability of data, a standardized nutrition and dietetics terminology is essential and should be mandatory for documentation in electronic health records systems.[4]

Currently, two different nutrition and dietetics terminologies are used in Europe, namely the Nutrition Care Process Terminology (NCPT),[5] developed by the Academy of Nutrition and Dietetics, and the Classifications and Coding Lists for Dietetics (CCD),[6] developed by the Dutch Association of Dietitians, in collaboration with the Dutch Institute of Allied Health Care. The International Classification of Functioning, Disability and Health—Dietetics (ICF-Dietetics)[7] is the most important classification of the CCD.

The NCPT is based on the Nutrition Care Process and Model[8-11] and is designed to improve the consistency and quality of individualized or group care of individuals with any kind of nutrition-related problems and diagnoses. The NCPT defines standard terms for each step of the Nutrition Care Process and includes a reference manual providing definitions and important usage advice for each term.[5] The development and continuous dissemination of a standardized language covering the Nutrition Care Process began in 2003.[12] The fourth edition of this terminology was published in 2013.[13] Finally, the NCPT, the former International Dietetics and Nutrition Terminology, was published as an electronic version (eNCPT).[5] During the development of NCPT, the Academy of Nutrition and Dietetics began including the terminology in the Systematized Nomenclature of Medicine International and in Logical Observation Identifiers Names and Codes, and the International Classification of Diseases.[5]

Meanwhile, countries in Europe and worldwide, such as Sweden, Denmark, Norway, Switzerland, and Canada, have started to translate and implement the NCPT.[5] An advantage of the NCPT for

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[†]*The term* e-health care *refers to health care practice supported by electronic processes and communication such as electronic health records, which enables the communication of patient data between different health care professionals and Telemedicine (physical and psychological diagnosis and treatments at a distance).*

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the practicing registered dietitian nutritionist (RDN) is that it is a sophisticated and specific nutrition and dietetics terminology covering the whole Nutrition Care Process.

The CCD is a standardized nutrition and dietetics terminology consisting of different classifications and code lists, such as a classification to describe a person's functioning (ICF-Dietetics), a classification of procedures of RDNs, a classification of assistive products for RDNs, a classification of medical terms for RDNs, and several code lists.[6] The CCD has been developed to document the Dietetic Care Process,[14,15] which consists of referral and nutrition/dietetics screening, nutrition/dietetics assessment, dietetics diagnoses, treatment plan and intervention, evaluation and closing. In 1999, the first draft of the CCD[16] was developed, followed by a first version of the CCD[17] in 2003. In 2012, a revision was published.[6]

The ICF-Dietetics, as the main classification of the CCD, is based on the International Classification of Functioning, Disability and Health (ICF) and the biopsychosocial Model of the World Health Organization (WHO).[18,19] The ICF-Dietetics can be seen as a derivative of the ICF and contains most of the original ICF categories specified by the ICF code, title, description and inclusions and exclusions, and of added specific nutrition/dietetics categories. The advantage of the ICF is the applicability by different health professionals. In addition, the ICF helps to achieve a common understanding of assessment, intervention targets, and evaluation.[20] The joint use of the ICF and the International Classification of Diseases,[21] in order to complement medical diagnosis with information on functioning and health-related information, is recommended by WHO and is true for the ICF-Dietetics as well.

The ICF-Dietetics is currently used by dietitians in the Netherlands and Belgium. It has been accepted by the Dutch WHO Collaborating Centre for the Family of International Classifications solely. Due to its multidisciplinary applicability of the ICF, Austria and other European Countries (eg, Germany) are considering implementing the ICF-Dietetics.

The aims of this article were to describe and discuss how interoperability and harmonization could influence nutrition/dietetics practice and research on the one hand, and, on the other hand, provide information on a unidirectional mapping exercise from the NCPT to the ICF-Dietetics.

## PRACTICE IMPLICATIONS

The use of a standardized terminology will enhance communication, transparency, and measurability of the care process and its evaluation in terms of reimbursement and payment systems.[22] Moreover, a standardized terminology enables the comparison and interpretation of health care results or different studies across countries and would allow the creation of a new body of knowledge on effectiveness and efficiency of nutrition and dietetic care.[12,22,23]

Thus, a consequent use of a standardized terminology within countries is an important step in quality nutrition/dietetics care. Inadequate or inconsistent documentation of the nutrition/dietetics care process with ambiguous terminology or different meanings of terms will have a negative impact on quality.[22,23] Furthermore, documented care data are comparable only if the terms used to describe the care process have the same definitions and understanding among RDNs. This makes data pooling meaningful at both national and international levels. These are prerequisites for making quality health care available to every person in future. Therefore, interoperability and harmonization of the nutrition and dietetics terminologies are needed.

### What Is Interoperability?

The European Committee for Standardization defines *interoperability* as a process in which "an application can accept data from another and perform a specified task in an appropriate and satisfactory manner (as judged by the user of the receiving system) without the need for extra operator intervention."[24] Furthermore, semantic interoperability "means that data shared by systems are understood by these at the level of fully defined domain concepts." This includes that the meaning of exchanged information is unambiguously interpretable.[24]

Prerequisites for semantic interoperability and data sharing are a standardized terminology and a corresponding classification. For example, in a cross-border setting, it is agreed that it is necessary to have structured and coded data for identified fields.[1]

### What Is Harmonization?

In the context of this article, two definitions of *harmonization* were considered that have been proposed by the International Organization for Standardization: concept harmonization and term harmonization.

*Concept harmonization* means "the reduction or elimination of minor differences between two or more closely related concepts, without transferring a concept system to another language."[25] It involves the comparison and matching of concepts and concept systems in one or more languages or subject fields by describing similarities and differences. *Term harmonization*, on the other hand, "refers to the designation of a single concept (in different languages) by terms that reflect similar characteristics or similar forms." Term harmonization is possible if the concepts that the terms represent are almost the same or very similar.[25]

### Why Are Interoperability and Harmonization Important to the Profession of RDNs?

Electronic data storage and processing and exchange of data within a country as well as across country borders are increasingly important topics in health care. These issues are primarily driven by high quality, continuity, and quantity aspects—for example, big data initiatives.[1] Currently, health insurance and population-based data sets are increasingly used to enhance clinical practice and research in order to answer advanced clinical questions that can only be analyzed based on large data sets. RDNs should keep on track with this health information technology developments and changes.

RDNs apply the Nutrition/Dietetic Care Process in their clinical practice. This process was designed to improve consistency and quality of nutrition/dietetics care, as well as to assess outcomes.[9,13] Semantic interoperability of data is necessary to link the Nutrition/Dietetic Care Process to a valid outcome management system. To achieve semantic interoperability, a standardized nutrition and dietetics terminology as well as a coding system for documentation are needed.

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