

Worldwide Release of SNOMED CT Nutrition Care Process Terminology Problem List

Lyn Lloyd, BHSc, RD*; William I. Swan, FAND; Sandra Jent, MHumNutr; Angela Vivanti, MAppSc, DHlthSc, FDA; Donna G. Pertel, MED, RD, LDN

THE NUTRITION CARE PROCESS Terminology (NCPT) has developed over nearly 20 years and is recognized as the global language of nutrition care. It serves as the standardized language for person-centered nutrition assessment, diagnosis, intervention and monitoring, and evaluation.¹ NCPT is used by dietitians and nutrition professionals in health care institutions, clinical settings, and education in more than 20 countries. The standardized nutrition terminology improves consistency of nutrition care and importantly enhances communication in nutrition care globally.² Recognizing the strength of NCPT, the next step was to include NCPT in the largest clinical terminology in the world.

International and US nutrition and dietetics professionals have worked for more than a decade on a strategy to enable worldwide electronic health record (EHR) exchange of nutrition information through inclusion of the standardized NCPT in the Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT). SNOMED CT, the largest clinical terminology in the world, commenced in 1965 as the Systematized Nomenclature of Pathology, and is still at the forefront of electronic coding and analysis of clinical health data.³ SNOMED CT facilitates the exchange of meaningful clinical health data (also called interoperability) by mapping nutrition-related SNOMED CT terms with defined concepts in other standardized languages such as the NCPT.

In April/May 2024, SNOMED CT will publish a list, or reference set, of NCPT diagnoses (also known as nutrition

problems) with its release. The collaboration between SNOMED International and the Academy of Nutrition and Dietetics (Academy) on the reference set brings important recognition and capabilities to the nutrition profession in demonstrating its vital place in medical care and supporting integration of nutrition into health care information technology. Examples of its usefulness:

- Dietitians can alert their information technology colleagues that the NCPT SNOMED CT reference set exists as the recommended concise list of nutrition problems for care documentation.
- Dietitians in the United States wishing to collaborate with Australia dietitians investigating the influence and cost-effectiveness of nutrition therapy on diabetes outcome measures such as glycemic targets, weight management, and cardiovascular risk factors within individualized treatment goals. This is feasible with the use of the SNOMED CT NCPT reference set because the concepts share a common meaning between countries.
- Different countries collaborating on research projects to understand the influence of culturally diverse diets on irritable bowel disease outcomes leading to more tailored nutrition recommendations for individuals worldwide.

Representatives of countries implementing NCP and its terminology have strived to ensure accurate and robust nutrition knowledge representation in SNOMED CT through agreed upon NCPT definitions and criteria for practice, quality improvement, and

research (www.nutritioncareprocess.org). This new terminology reference set tool can facilitate interoperability by easing electronic nutrition implementations with a concise list of nutrition problems accessible within a health terminology commonly used in EHR systems in more than 50 countries around the world. In addition to International Classification of Diseases and the Current Procedural Terminology, SNOMED CT is the coding terminology used for documenting clinical findings for the Global Malnutrition Composite Score stewarded by the Academy, the first electronic Clinical Quality Measure focused on nutrition.⁴

Although challenges exist to EHR communication at many levels, including between sites, services, government entities, and nations, the SNOMED CT nutrition diagnosis reference set is a major interoperability advancement that offers global meaningful nutrition data in EHRs. The initial nutrition reference set release contains nutrition problems (diagnoses), the most important data element for high quality nutrition care. NCPT concepts for nutrition assessment/monitoring and evaluation and nutrition intervention will be added to the nutrition reference set in 2025. The complete nutrition reference set will enable interoperable exchange with an internationally recognized nutrition and dietetics terminology to support person-centered care between health care information technology systems and across borders.²

These frequently asked questions are provided to address questions that professionals may have about the release. For further information on the NCP and NCPT, please visit cdrnet.org/nutrition-care-process-and-terminology and www.nutritioncareprocess.org

* Certified in New Zealand.

2212-2672/Copyright © 2024 by the Academy of Nutrition and Dietetics.
<https://doi.org/10.1016/j.jand.2024.01.008>

FREQUENTLY ASKED QUESTIONS ABOUT THE SNOMED CT NCPT REFERENCE SET

What Is a Reference Set?

A reference set is a group of concepts used for a particular purpose. They share a specific characteristic (eg, nutrition problems).

What Is the SNOMED CT NCPT Reference Set?

The initial reference set will contain the primary coding concepts from one of the most important aspects of the NCP, the nutrition problem (diagnosis) that nutrition and dietetics professionals are treating. The problems are from the 2020 NCPT, which is available at www.nutritioncareprocess.org.

A subsequent reference set update will contain all concepts that map, or are associated with, NCP terminology in SNOMED CT, specifically, nutrition assessment/monitoring and evaluation, nutrition diagnosis, and nutrition intervention concepts.

US and international nutrition and dietetics professionals volunteer their expertise and time to develop and maintain NCPT concepts and resources, which enable them to be included in SNOMED CT.

What Is SNOMED CT?

SNOMED CT is the most comprehensive international clinical health care terminology in use around the world, originating in 1965. This link provides basic information about SNOMED CT: <https://youtu.be/Eqx21OSrGU0>

SNOMED CT can be used in EHR systems supporting evidence-based practice. Most countries identify specific terminologies that can be used in their EHR systems, and SNOMED CT is the most widely used terminology across the globe. Inclusion and release of a reference set of nutrition concepts in SNOMED CT is an important recognition of the contribution of nutrition care to health care.

What Is the Current State of Including NCPT in SNOMED CT?

The majority of NCPT (ie, nutrition assessment/monitoring and evaluation, nutrition diagnosis, and nutrition

intervention) has been submitted to and is included in SNOMED CT.

Nutrition and dietetics professionals, including registered dietitian nutritionists (RDNs) and nutrition and dietetic technicians, registered (NDTRs), are encouraged to advocate for and use the NCPT as the terminology for a front-facing computer user interface with the SNOMED CT mappings behind the scenes for data analysis.

What Are the Benefits of a Nutrition Reference Set?

The reference set lists the discreet coding terminology for nutrition problems (diagnoses) for nutrition and dietetics professionals to use in EHRs. In other words, each concept has a distinct meaning.

Using a coding terminology, like SNOMED CT, helps promote care communication by using discreet concepts for meaningful exchange (interoperability) of nutrition content within and between health systems. This SNOMED video provides a brief introduction to why structured and coded data documentation and exchange is important: <https://youtu.be/xOTs13ChZxs>

A reference set can help guide quality measure developers and those implementing quality initiatives because it will ensure they properly constrains the quality measure and/or initiative value sets to only those codes available for use within the scope of the nutrition terminology.

A reference set may help data extraction for research purposes when used in conjunction with a formal research data model, such as Observational Health Data Sciences and Informatics (www.ohdsi.org/data-standardization/), Informatics for Integrating Biology & the Bedside (www.i2b2.org), and/or Observational Medical Outcomes Partnership (<https://fnih.org/observational-medical-outcomes-partnership-omop>).

To Whom Is the Reference Set Relevant?

A reference set is helpful to various stakeholders, including nutrition and dietetics professionals, other health professionals (eg, nurses and physicians), EHR implementers, SNOMED member country national release

centers, government and quality reporting entities, and researchers.

What's in It for Dietitians? For Other Professionals?

A reference set helps nutrition and dietetics practitioners speak the same language and also share nutrition results. A reference set also makes nutrition EHR implementations and updates easier by providing the exact list of concepts, in the case of the initial reference set release, to name nutrition problems (diagnoses). Furthermore, a reference set can help guide quality measure developers and those implementing quality initiatives because it will ensure they properly constrains the quality measure and/or initiative value sets to only those codes available for use within the scope of the nutrition terminology.

A reference set may help data extraction for research purposes when used in conjunction with a formal research data model, such as Observational Health Data Sciences and Informatics (www.ohdsi.org/data-standardization/), Informatics for Integrating Biology & the Bedside (www.i2b2.org), and/or Observational Medical Outcomes Partnership (<https://fnih.org/observational-medical-outcomes-partnership-omop>).

How Are Reference Sets Used?

Nutrition professionals, in collaboration with information technology professionals, use the nutrition reference set in EHR implementations and EHR revisions and/or updates. The initial reference set will help nutrition professionals and EHR implementers understand the specific nutrition and dietetic concepts to use in EHRs for a nutrition problem (diagnosis) list.

When Will the Reference Set Be Available?

The first reference set release, with nutrition problems (diagnoses), will be with the SNOMED CT April/May 2024 release.

When Will the Reference Set Be Updated?

The first update, in April/May 2025, will contain the SNOMED CT identifiers for all three NCP terminologies

(ie, nutrition assessment/monitoring and evaluation, nutrition diagnosis, and nutrition intervention), which will help with nutrition implementations and documentation of care provided in the NCP. Annual maintenance of the content is needed to ensure valid mappings when SNOMED CT content is changed or inactivated and/or when changes to NCPT content occur.

What Is the Content in a Simple Reference Set?

A simple reference set is a subset of SNOMED CT identifiers. These are numerical identifiers for computer readability. There are no descriptions that are human readable in a simple SNOMED reference set. Also, there is no mapping to the NCPT in the SNOMED CT NCPT simple reference set.

Using SNOMED CT identifier numbers only in the reference set means that each country can have human readable descriptions of SNOMED CT as US English and/or translated descriptions in their EHR systems based on their country's approach to displaying SNOMED descriptions and/or local terminology descriptions.

Does the Reference Set Replace the Need for the Academy's NCPT Terminology Hierarchy and Mapping Resources Provided in the NCPT (www.nutritioncareprocess.org)?

No. There are important reasons why the reference set does not replace the need for the resources in the NCPT (www.nutritioncareprocess.org):

- The Academy's terminology resources provide the NCPT descriptions that can be read by humans because the reference set only contains numerical values that can be read by a computer.
- NCPT resources help show the relationships between concepts, also called the terminology hierarchy.
- Mapping resources that are part of NCPT associate the SNOMED CT concept that can be read by people with the NCPT as the interface terminology.
- In addition to SNOMED CT, several NCPT concepts also have

Logical Observation Identifiers, Names, and Codes (loinc.org) mappings.

- The Academy's resources provide definitions and valuable information for using the NCP and NCPT to improve and demonstrate quality nutrition care.

Who Developed the Reference Set?

The nutrition problems (diagnoses) are derived from the NCPT, which is developed and maintained by US and international nutrition and dietetics professionals. It is available from the Academy at www.nutritioncareprocess.org. The tools used to create and distribute the reference set are developed and maintained by SNOMED International (snomed.org).

Who Is Responsible for Maintenance of the Reference Set?

The responsibilities are shared between the Academy/Commission on Dietetic Registration (CDR) and SNOMED International. The Academy and CDR maintain the NCPT and its definitions and resources, maintain maps between NCPT content and SNOMED CT terms, and maintain the SNOMED NCPT reference set content. SNOMED International maintains and distributes SNOMED CT and distributes the SNOMED NCPT reference set with SNOMED releases.

Is There an Opportunity to Provide Input on the Reference Set?

Yes! Questions and/or suggestions related to the reference set received by the Academy and CDR or SNOMED will be tracked via SNOMED's software tracking system. Academy and CDR staff are responsible for responding to queries. Questions received via NCP@eatright.org will be added to SNOMED's JIRA tracking system for a response as appropriate.

Can Professionals Who Have Used the Reference Share Their Experiences?

Yes! Groups are encouraged to share their experiences using the reference

set by submitting them to NCP@eatright.org.

What Are the Academy and SNOMED International Responsibilities Related to Their Respective Terminologies?

The nutrition content that the Academy submitted to SNOMED CT reflects the valuable contribution of nutrition to health care. SNOMED International is responsible for ownership, control, and distribution of SNOMED CT. The Academy is responsible for the ownership, control, and distribution of NCPT content and NCPT mappings to SNOMED CT concepts.

What Can Nutrition and Dietetics Professionals Do to Promote the Adoption and Use of the SNOMED NCPT Reference Set?

Professionals in health care settings need to contact individuals in their organization who are responsible for EHRs and quality management initiatives to advise them of this important development. Standardization of approaches to care through the NCP and discreet terminology in the NCPT and SNOMED NCPT reference set improve efficiency of care, promote clear communications in care documentation and reports, and supports high quality nutrition and health care. New implementations and/or updates to current EHRs with the SNOMED NCPT reference set are advised. Professionals in technology settings can inform leaders in their organizations about the availability of the SNOMED NCPT reference set.

References

1. Swan WI, Vivanti A, Hake-Smith NA, et al. Nutrition Care Process and Model update: toward realizing people-centered care and outcomes management. *J Acad Nutr Diet.* 2017;117(12):2003-2014.
2. Swan WI, Pertel DG, Hotson B, et al. Nutrition care process (NCP) update part 2: developing and using the NCP terminology to demonstrate efficacy of nutrition care and related outcomes. *J Acad Nutr Diet.* 2019;119(5):840-855.
3. Cornet R, de Keizer N. Forty years of SNOMED: a literature review. *BMC Med Inform Decis Mak.* 2008;8(Suppl 1):S2.
4. Hospital Inpatient Quality Reporting (IQR) Program in the FY 2023 Inpatient Prospective Payment System (IPPS) Final Rule. Centers for Medicare and Medicaid (CMS). Accessed January 17, 2024. <https://public-inspection.federalregister.gov/2022-16472.pdf>

AUTHOR INFORMATION

L. Lloyd is a past chair and current member of the Commission on Dietetic Registration Nutrition Care Process and Terminology Committee (NCPTC); a member of the NCPTC International Subcommittee; a member of the Systematized Nomenclature of Medicine Nutrition and Dietetics Clinical Reference Group; and advanced practitioner-renal dietitian, Te Toka Tumai, Te Whatu Ora — Health New Zealand, Auckland, New Zealand. W. I. Swan is a past chair of the Academy of Nutrition and Dietetics Nutrition Care Process Research Outcomes Committee; a member of the Systematized Nomenclature of Medicine Nutrition and Dietetics Clinical Reference Group; and a retired dietitian based in Rancho de Taos, NM. S. Jent is a vice chair of the Commission on Dietetic Registration NCPTC; a member of the NCPTC International Subcommittee; a member of the Systematized Nomenclature of Medicine Nutrition and Dietetics Clinical Reference Group; and deputy head, Bachelor in Nutrition and Dietetics, Bern University of Applied Sciences, Bern, Switzerland. A. Vivanti is a past chair and current member of the Commission on Dietetic Registration NCPTC; a member of the NCPTC International Subcommittee; a member of the Systematized Nomenclature of Medicine Nutrition and Dietetics Clinical Reference Group; and a research and development dietitian, Department of Nutrition and Dietetics, Princess Alexandra Hospital, Brisbane, Queensland, Australia; and a research and development dietitian, School of Human Movement and Nutrition Studies, University of Queensland, Queensland, Australia. D. G. Pertel is co-chair, Systematized Nomenclature of Medicine Nutrition and Dietetics Clinical Reference Group and director, Nutrition Care Process and Terminology, Commission on Dietetic Registration, Academy of Nutrition and Dietetics, Chicago, IL.

Address correspondence to: Donna G. Pertel, MEd, RD, LDN, Commission on Dietetic Registration, Academy of Nutrition and Dietetics, 120 S Riverside Plaza, Suite 2190, Chicago, IL 60606-6995. E-mail: ncp@eatright.org

STATEMENT OF POTENTIAL CONFLICT OF INTEREST

No potential conflict of interest was reported by the authors.

FUNDING/SUPPORT

There is no funding to disclose.

AUTHOR CONTRIBUTIONS

All authors contributed equally to this work.