**Electronic Nutrition Care Process Record System Functional Profile**

**Based on ISO/HL7 10781 – Electronic Health Record System Functional Model, Release 2.0.1**

**Overview**

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# Preface

1. Notes to Readers

This is Release 2 of the Electronic Nutrition Care Process Record System Functional Profile (ENCPRS-FP). The ENCPRS-FP R2 is based on, and conformant with, the HL7 International EHR-S Functional Model and Standard (EHR-S FM) Release 2.0.1, July 2017. This document is the culmination of many years of extensive work by private and public industry representatives and other stakeholders diligently working to identify and document the functional requirements for EHR systems that support the dietetics practitioner community and represents industry consensus on those requirements. This document is being submitted for a Normative ballot by the ENCPRS R2 project and balloted by the HL7 Electronic Health Records Work Group and HL7 International, Inc.

1. Contents

This release includes the following documents:

1. Overview (this document) for reference
2. ENCPRS FP – a profile of ISO/HL7 10781 EHR-S FM. Functions and criteria are ordered according to EHR-S FM sections and subsections.
3. Acknowledgements

The ENCPRS R2 Project was sponsored and facilitated by:

* Academy of Nutrition and Dietetics
* HL7 Electronic Health Records Work Group
* Health Level Seven International, Incorporated (HL7)

These organizations are indebted to the following project facilitators and project participants for their contributions to the Dietetics and Nutrition domain in the U.S. and the International community and for the materials presented in this profile.

The ENCPRS Functional Profile R2 project is comprised of subject matter experts in the field of Dietetics and Nutrition Care. Decisions made by this project team were reviewed and commented on by an International group of key stakeholders whose opinions and requirements have been taken into consideration while developing this functional profile. The ENCPRS Functional Profile project would also like to express appreciation for the work of many talented individuals who contributed to the HL7 International EHR –S Functional Model R2, upon which this work is based. This R2 project is sponsored by the Interoperability and Standards Committee and Nutrition Care Process Research Outcomes Committee of the Academy of Nutrition and Dietetics.

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# Overview

## EHR/Nutrition Care Process (ENCPRS) Functional Profile: Introduction

The ENCPRS Functional Profile project of the Academy of Nutrition and Dietetics’ Nutrition Care Process Research Outcomes committee (formerly known as the Nutrition Care Process-Standardized Language committee) and Interoperability & Standards Committee is intended to provide high-level requirements necessary for using electronic health record data for Dietetics and Nutrition Practice using the Nutrition Care Process, and to further provide a roadmap toward a process of integrating the environment that provides data collection for both patient care in dietetics and nutrition care and for the purpose of dietetics and nutrition practice-based research. This functional profile is aimed at encouraging EHR vendors to incorporate functions into their products that are necessary to utilize the Electronic Health Records as a direct data source for patient care using the Nutrition Care Process and is intended to provide one overall view of the needs of dietetics and nutrition practice with respect to electronic patient records.

The project is aimed at developing a Functional Profile that identifies critical capabilities for the performance of nutrition services utilizing EHR systems. This work will establish conformance to the HL7 International EHR-S Functional Model Release 1, under the advice and direction of the HL7 International EHR Work Group. A set of requirements is developed for using E HR systems in the documentation of the Nutrition Care Process. These requirements have been mapped into this functional profile and identify those portions of the HL7 EHR-S Functional Model that apply to patient care in the Nutrition Care Process, and further identify additional functionality toward facilitating ease of use for those involved in patient care in the Nutrition Care Process, thus providing EHR vendors with conformance criteria that are specific to regulated tasks within the Nutrition Care Process in the HL7 International formats.

## Background: HL7 International and the EHR Work Group

Founded in 1987, Health Level Seven (HL7) International is a not-for-profit health care standards development organization (SDO) accredited by the American National Standards Institute (ANSI). While traditionally involved in the development of messaging standards used by health care systems to exchange data, HL7 International has begun to develop other standards related to health care information systems. In 2002, a newly formed HL7 International EHR Special Interest Group began development of a functional model for EHR systems. The Group was subsequently promoted to a full Technical Committee (EHR TC) and eventually renamed as the “EHR Work Group”.

In 2004, the HL7 International Work Group published the Electronic Health Record System Functional Model and Standard (EHR-S FM) as a Draft Standard for Trial Use (DSTU)—a reference list of functions that may be present in electronic health records systems. The EHR-S FM underwent membership-level ballot in September 2006 and January 2007, and it was approved as standard in February 2007. In 2009, it was approved as an International standard by the International Organization for Standardization (ISO).

In 2014, the HL7 International Electronic Health Records Work Group updated the EHRS-FM to Release 2.

The EHR Work Group intends that unique functional profiles be developed by subject matter experts in various care settings to inform developers, purchasers, and other stakeholders of the functional requirements of systems developed for these domains.

## Functional Profile: Definition, Scope, Objectives

The EHR-S FM lists the set of all functions that could be present in various EHR systems. Any given EHR system will demonstrate the existence of one or more functions (i.e., a subset) from the entire list (i.e., the superset) of EHR-S FM functions. This subset of functions characterizes the type of system being defined and is referred to as a “functional profile”. The EHR WG intends that unique functional profiles be developed by subject matter experts in various care settings to inform developers, purchasers, and other stakeholders of the functional requirements of electronic systems developed for specific health care domains. The ENCPRS is one such functional profile.

## Defining the Scope

The scope of the ENCPRS Functional Profile Project is to create a functional profile that conforms to the HL7 International EHR-S FM. The HL7 International EHR-S FM defines a standardized set of the functions that may be present in EHR systems. A Functional Profile is defined as a subset of functions of the EHR-S FM that lists the functions that are required or desired for implementation in certain EHR systems or health care delivery settings, or for other purposes.

The ENCPRS FP will facilitate the point-of-contact or point-of-care capture of data utilized and created within the Nutrition Care Process via EHR systems. The ENCPRS project is U.S. focused and will initially specify the functional requirements needed to support messaging of data among the medical team including physicians, nurses, pharmacists, dietitians, and supportive personnel practicing nutrition care in the U.S among providers in various locations including private and government health care systems and federal and state agencies.

## Achieving the Objective

Domain experts from the dietetics and nutrition care community have provided their subject matter expertise and recommendations into this ENCPRS Functional Profile for EHR systems by:

Listing the subset of EHR-S FM functions that touch the Nutrition Care Process domain;

* Clarifying the application of those functions towards the Nutrition Care Process domain with descriptive text, examples, and conformance criteria;
* Naming specific data elements that are required for the Nutrition Care Process domain;
* Referencing and providing direction to authoritative sources specific to the Nutrition Care Process domain;
* Clarifying the relative urgency for the various Nutrition Care Process domain-related functionality (by ascribing what host systems **SHALL**, **SHOULD**, or may do);
* Clarifying the recommended immediacy of the various Nutrition Care Process domain-related functionality (by ascribing Essential-Now, Essential-Future, and Optional attributes to the functions);
* Clarifying the technical meaning of the Nutrition Care Process domain-related data elements (so that the data elements are perceived in a more uniform manner by the various data-collectors and data-users);
* Clarifying the workflow and business rules of the data-collection and data-reuse activities (providing uniform and meaningful data across all stakeholder groups).

# Process and Charge (Reference)

## Funding and Resources

The Academy of Nutrition and Dietetics provided funding for development of the ENCPRS Functional Profile R2 with the assistance of member volunteers. Funding support also included working group face-to- face meetings as well as teleconference support for the volunteer members. Consulting services were contracted through Constable Consulting, Inc. for project planning, direction, oversight, and technical assistance.

## Project Team Composition

The project team for ENCPRS Functional Profile R2 was composed of members from a cross-section of stakeholders in Dietetics and Nutrition Practice, including public health, long term care, acute care, acute care in an academic teaching environment, and information technology in both acute care and long-term care environments, and including software developers and subject matter experts.

## Reporting and Collaboration

The co-facilitators collaborated with the EHR WG regarding issues, guidance, tooling and support and provided regular meetings and teleconferences with the project team for the ENCPRS Functional Profile R2 and the International Confederation of Dietetic Associations.

## Availability of the ENCPRS Functional Profile

The ENCPRS Functional Profile R2, once approved, will be registered on the HL7 International website. Note: Other EHR-S FM – based profiles are also located on that website, all of which are free of charge: <http://www.hl7.org/implement/standards/product_matrix.cfm?ref=nav>

# Use of the ENCPRS Functional Profile (Reference)

The ENCPRS Functional Profile R2 is intended to be used by any EHR system, for the exchange of information between providers who are involved with patient care using the Nutrition Care Process. Stakeholders include: hospitals, primary care offices, emergency departments, long term care facilities, clinics, home care providers, and nutrition and dietetics private practitioners.

## International stakeholder consideration

To meet the needs represented by the project team members in the U.S. the volunteers endeavored to consider the needs of future stakeholders. It is the intention that the ENCPRS Functional Profile will be tested by the International community to allow expansion of the ENCPRS Functional Profile to meet the future needs of the International community.

## Likely Implementation Approaches

* The ENCPRS Functional Profile will likely be implemented in one or more of the following ways: The ENCPRS Functional Profile **MAY** be embedded within EHR systems. That is, EHR systems will be enhanced to provide/include Dietetics and Nutrition Practice functionality within that EHR system.
* The ENCPRS Functional Profile **MAY** result in a standalone Dietetics and Nutrition Practice EHR system component. That is, a vendor or provider will create a standalone application that performs Dietetics and Nutrition Practice functions, and the resulting application will be integrated into other systems by means of system-interfaces.

# Overview and Definition of a Functional Model (Normative)

The EHR-S Functional Model is composed of a list of functions, known as the Function List, which is divided into seven sections: Overarching, Care Provision, Care Provision Support, Population Health Support, Administrative Support, Record Infrastructure and Trust Infrastructure.

|  |
| --- |
| **Overarching (OV)** |
| **Care Provision (CP)** |
| **Care Provision Support (CPS)** |
| **Population Health Support (POP)** |
| **Administrative Support (AS)** |
| **Record Infrastructure (RI)** |
| **Trust Infrastructure (TI)** |

##### Figure 1: Function List Sections

Within the seven Sections of the Functional List the functions are grouped under header functions which each have one or more sub-functions in a hierarchical structure.

## Sections of the Function List

The seven sections of the function list reflect content of the Interoperability Model, now integrated in the Functional Model, and input from several profiles if the R.1.1 version of the Functional Model. Below is a summary description of each of the seven sections:

**Overarching:** The Overarching Section contains Conformance Criteria that apply to all EHR Systems and consequently must be included in all EHR-S FM compliant profiles.

**Care Provision:** The Care Provision Section contains those functions and supporting Conformance Criteria that are required to provide direct care to a specific patient and enable hands-on delivery of healthcare. The functions are general and are not limited to a specific care setting and may be applied as part of an Electronic Health Record supporting healthcare offices, clinics, hospitals and specialty care centers.

**Care Provision Support:** The Care Provision Support Section focuses on functions needed to enable the provision of care This section is organized generally in alignment with Care Provision Section. For example, CP.4 (Manage Orders) is supported directly by CPS.4 (Support Orders).

**Population Health Support:** The Population Health Support Section focuses on those functions required of the EHR to support the prevention and control of disease among a group of people (as opposed to the direct care of a single patient. This section includes functions to support input to systems that perform medical research, promote public health, & improve the quality of care at a multi-patient level

**Administrative Support:** The Administrative Support Section focuses on functions required in the EHR-S to enable the management of the clinical practice and to assist with the administrative and financial operations. This includes management of resources, workflow and communication with patients and providers as well as the management of non-clinical administrative information on patients and providers.

**Record Infrastructure:** The Record Infrastructure Chapter consists of functions common to EHR System record management, particularly those functions foundational to managing record lifecycle (origination, attestation, amendment, access/use, translation, transmittal/disclosure, receipt, de- identification, archive…) and record lifespan (persistence, indelibility, continuity, audit, encryption). RI functions are core and foundational to all other functions of the Model (CP, CPS, POP, AS).

**Trust Infrastructure:** The Trust Infrastructure Chapter consists of functions common to an EHR System infrastructure, particularly those functions foundational to system operations, security, efficiency and data integrity assurance, safeguards for privacy and confidentiality, and interoperability with other systems. TI functions are core and foundational to all other functions of the Model (CP, CPS, POP, AS and RI).

## Functional Profiles

While the Functional Model **SHOULD** contain all reasonably anticipated EHR-S functions, it is not itself intended as a list of all functions to be found in a specific EHR-S. Functional Profiles **SHOULD** be used to constrain the functions to an intended use. This document defines the Functional Model and describes the general use of profiles and priorities (See 1.4 Anticipated Uses). In the aggregate, the Functional Model is intended to include the superset of functions from which a subset can be generated by the user. This subset created by the user illustrates what is needed within an EHR-S. Only a subset of the superset of functions will apply to any particular EHR-S Profile.

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| --- | --- |
|  | **Profiles** |
| **Overarching (OV)** |
| **Care Provision (CP)** |
| **Care Provision Support (CPS)** |
| **Population Health Support (POP)** |
| **Administrative Support (AS)** |
| **Record Infrastructure (RI)** |
| **Trust Infrastructure (TI)** |

##### Figure 2. Profiling from the EHR-S FM.

Figure 2 shows that a profile would include all 7 sections of the Functional Model, however it may not be necessary to include all the functions and criteria within each section. A profile may include additional functions and criteria to meet the requirements of the profile.

The Conformance Clause is a high-level description of what is required of profiles and implementations. It, in turn, refers to other parts of the standard for details. The Conformance Clause describes concepts critical to the understanding and implementation of the Functional Model, such as: ‘What is a profile? What are Conformance Criteria? Or How do you know what is mandatory versus optional? A Conformance Clause can also provide a communication between the implementers (vendors) and users (buyers) as to what is required, and gives meaning to the phrases, “conforming profile” and “conforming EHR system”. Additionally, it serves as the basis for testing and certification activities which may be performed by organizations external to HL7.

Refer to the Conformance Clause, section 7, for additional information related to the rules for selecting and adding Conformance Criteria in the development of a Functional Profile.

# Conformance Clause (Normative)

This profile is based on HL7 International EHR-S Functional Model, Release 2.0.1, July 2017.

Key to the Functional Model and derived profiles is the concept of conformance which may be defined as “verification that an implementation faithfully meets the requirements of a standard or specification”. A profile can be said to conform to the functional model if it adheres to the defined rules identified by the functional model specification. The ENCPRS Functional Profile adheres to the defined rules of the EHR –S FM. Thus, an EHR system may claim conformance to the ENCPRS Functional Profile if it meets all the requirements outlined in this profile.

## Scope and Field of Application

The ENCPRS Functional Profile applies to EHR systems. This profile makes no distinction regarding implementation of the functions. That is, the functionality described in this functional profile may be covered by a single system or by a system of systems.

## Functional Priorities

Each function in the profile is assigned a single priority as follows:

|  |  |  |
| --- | --- | --- |
| **EN** | **Essential Now** | Indicates that the implementation of the function is mandatory and **SHALL** be implemented in EHR systems claiming conformance to this profile. |
| **EF (yyyy)** | **Essential Future** | Indicates that the function has significant importance but is not widely available. The function will become mandatory and **SHALL** be implemented in EHR systems claiming conformance to this profile by the end of the year (yyyy) identified. |
| **O** | **Optional** | Indicates that, while the function may have value to some  organizations, it is not viewed as being essential. |
| **N/A** | **Not Applicable** | Function not applicable and is rejected for purposes of the  ENCPRS Functional Profile. |

## Normative Language

The key words **SHALL**, **SHALL** NOT, **SHOULD**, and **MAY** in this document are to be interpreted as described in HL7 International EHR-S Functional Model, Release 2.0.1, June 2017 Conformance Clause:

|  |  |
| --- | --- |
| **SHALL** | Indicates a mandatory requirement to be followed (implemented) in order to  conform. Synonymous with ‘is required to’ and ‘must’. |
| **SHALL NOT** | Indicates a prohibited action. Synonymous with ‘prohibited’ and ‘must not’. |
| **SHOULD** | Indicates an optional recommended action, one that is particularly suitable, without  mentioning or excluding others. Synonymous with ‘is permitted and recommended’. |
| **MAY** | Indicates an optional, permissible action. Synonymous with ‘is permitted’. |

## Claiming Conformance to the Profile

The following provisions apply to claims of conformance to the ENCPRS Functional Profile:

|  |  |
| --- | --- |
| **Systems claiming conformance to this Profile SHALL** | * Implement all functions designated Essential Now. * Fulfill (i.e., meet or satisfy) all the **SHALL** criteria for each implemented function. |
| **Systems claiming conformance to this Profile MAY** | * Implement functions designated Essential Future. * Fulfill any of the **SHOULD** or **MAY** criteria associated with an implemented function |
| **Systems claiming conformance to this Profile SHALL NOT** | * Negate or contradict defined functionality of this profile when   including additional functionality beyond what is specified in this profile. |
| **Derived profiles claiming conformance to this Profile SHALL** | * Inherit all functions designated Essential Now * Inherit all **SHALL** criteria for functions included in the derived profile * Follow the rules for profiles in Section 6.7.1 of the HL7 International EHR-S Functional Model standard. * Adhere to the rules for creating new functions in 6.7.2 of the HL7 International EHR-S Functional Model standard |
| **Derived profiles claiming conformance to this Profile MAY** | * Change **SHOULD** criteria to **SHALL** and **MAY** criteria to **SHOULD** |
| **Derived profiles claiming**  **conformance to this Profile SHALL NOT** | * Change the function’s name or statement. |
| **Assumptions and Limitations** | * We highly recommend that the EHR system operate in an environment that has controls to prevent or mitigate the effects of viruses, worms, or other harmful software code. * We additionally recommend mapping the data outputs from an EHR system used for the practice of dietetics and nutrition to concepts published in the current edition of the Nutrition Care Process Terminology (NCPT) Reference Manual. This manual is published electronically as eNCPT and is updated annually. An abridged print copy is available. The Nutrition Care Process Model provides a framework for the specialized terminology used in each of the 4 steps of the Nutrition Care Process: Assessment, Diagnosis, Intervention, and Monitoring & Evaluation. The Nutrition Care Process is a comprehensive conceptual model for the practice of dietetics and nutrition within all components of healthcare and will ensure harmonization among the relevant HL7 standards and across all healthcare systems. This harmonization between dietetics and nutrition practice and health care will be achieved by mapping the NCPT to other health care terminologies. |

# Standard Use of Terms in Functions and Criteria (Reference)

Consistent use of terminology used in the model’s conformance criteria is important to ensure interpretation of the conformance criteria’s intent in defining and applying the functionality. The following verb hierarchy chart, adapted from the EHR-S FM *How to Guide for Creating Functional Profiles*, illustrates the hierarchy of nomenclature. The levels in the hierarchy are granular and have a parent-child relationship. If the parent term is not used, then the respective verbs in the child will be cited individually in the criterion. If the term “Manage” is used, all of the applicable verbs included in the table are encompassed in that criterion.

Authors are responsible for determining whether one or more of the sub-verbs are not appropriate for a given function and must write conformance criteria that constrain the use of the verb hierarchy according to the intent of the profile being created.

A screenshot of a cell phone

Description automatically generated

## Glossary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **TERM** | | | | **DEFINITION** | |
| **Academy of Nutrition and Dietetics**  **Evidence-Based Nutrition Practice Guidelines (EBNPG)** | | | | EBNPGs are statements and treatment algorithm which are developed using the process of asking questions, systematically finding research evidence, and assessing its validity, applicability and importance to food and nutrition practice decisions. The guidelines are designed to assist the RD/RDN or DTR/NDTR team or other intended users and patient/client in making decisions about nutrition care in specific disease states or conditions in typical setting[.](https://www.andeal.org/) [Academy of Nutriton and Dietetics List of Definitions](https://www.eatrightpro.org/-/media/eatrightpro-files/practice/scope-standards-of-practice/academydefinitionoftermslist.pdf), [accessed June 6, 2018](https://www.andeal.org/). | |
| **Anthropometric Measurements** | | | | Anthropometric measurements are a set of noninvasive, quantitative techniques for determining an individual’s body fat composition by measuring, recording, and analyzing specific dimensions of the body, such as height and weight; skin-fold thickness; and bodily circumference at the waist, hip, and chest. | |
| **Bioelectric Impedance** | | | | Bioelectrical impedance analysis (BIA) is a commonly used method for estimating body composition. BIA determines the [electrical impedance,](http://en.wikipedia.org/wiki/Electrical_impedance) or opposition to the flow of an electric current through body tissues which can then be used to calculate an estimate of [total body](http://en.wikipedia.org/wiki/Total_body_water) [water](http://en.wikipedia.org/wiki/Total_body_water) (TBW). TBW can be used to estimate fat-free body mass and, by difference with body weight, [body fat.](http://en.wikipedia.org/wiki/Adiposity) | |
| **Body Surface Area (BSA)** | | | | The measured or calculated surface of the human body. | |
| **Calorie Count** | | | | The process of estimating one’s caloric intake via direct and indirect observation over a defined period of time as calculated by a nutrition professional. | |
| **Comparative Standards** | | | | Reference standard by which nutrition assessment or nutrition monitoring and evaluation data will be compared | |
| **Decision Support Algorithms** | | | | An interactive decision support system designed to assist health professionals with decision making tasks including diagnosis and treatment by linking health observations with health knowledge to influence health choices by clinicians for improved patient health care | |
| **Diet** | | | | A diet consists of the diet codes, supplements, and preferences effective at a given time. These three specifications govern which goods a patient will receive. Diets generally do not have a stated ending time to ensure that the patient always receives food (Ref: HL7 Glossary, Jan 2010) | |
| **Diet Code** | | | | A diet code defines which foods a patient may receive; a patient must have at least one diet code to receive food. (Ref: HL7 Glossary Jan 2010) | |
| **Dietary Orders** | | | | An order for a patient diet. A patient may have only one effective diet order at a time. (Ref: HL7 Glossary Jan 2010) | |
| **Diet Order** | | | | Specification for food to be served the patient based on patient medical diagnosis or  condition. | |
| **DXA Scan** | | | | Dual-energy X-ray absorptiometry (DXA, previously DEXA) is a means of measuring [bone](http://en.wikipedia.org/wiki/Bone_mineral_density) [mineral density](http://en.wikipedia.org/wiki/Bone_mineral_density) (BMD). Two [X-ray](http://en.wikipedia.org/wiki/X-ray) beams with differing [energy levels](http://en.wikipedia.org/wiki/Energy_level) are aimed at the patient’s [bones.](http://en.wikipedia.org/wiki/Bone) When [soft tissue](http://en.wikipedia.org/wiki/Soft_tissue) absorption is subtracted out, and the [BMD](http://en.wikipedia.org/wiki/Bone_mineral_density) can be determined from the absorption of each beam by bone. | |
| **Dietary Reference Intakes (DRI)** | | | | Set of nutrient-based reference values established by the Institute of Medicine used to plan and assess nutrient intakes of healthy people. DRI’s are a set of four reference values: Estimated Average Requirements (EAR), Recommended Dietary Allowances (RDA), Adequate Intakes (AI), and Tolerable Upper Intake Levels (UL). | |
| **Dietetic Technician, Registered (DTR)** | | | | See Nutrition and Dietetics Technician, Registered. | |
| **Drug-Food Interaction** | | | Physiological effect when some drugs and certain foods/nutrients are taken together. | |
| **Electronic Analysis of Dietary Intake** | | | Automated analysis of nutrient intake performed by programmable electronic devices. | |
| **Enteral Nutrition** | | | Enteral nutrition: A way to provide food through a tube placed in the nose, mouth, the  stomach, or the [small intestine.](http://www.medterms.com/script/main/art.asp?articlekey=5512) | |
| **Evidence-Based** | | | A protocol-driven, transparent process which includes pre-defined criteria for searching and sorting the scientific literature; critical appraisal of methodological rigor of each included study; extracting, summarizing, and synthesizing the evidence; and grading the overall  quality and consistency of the body of evidence. | |
| **Food** | | | A food is any substance – whether processed, semi-processed, or raw—that is intended for human consumption, and includes drinks, chewing gum, food additives, and dietary supplements. Substances used only as drugs, tobacco products, and cosmetics (such as lipcare products) that may be ingested are not included. Ref: Boyce et al. Guidelines for the  Diagnosis and Management of Food Allergy in the United States: Summary of the NIAID- Sponsored Expert Panel. USDHHS, Dec 2010. | |
| **Food Allergy Terms** | | | | |
|  | **Allergic Sensitization** | Allergic **sensitization** (as evidenced by the presence of allergen-specific IgE (sIgE) to food allergens without having clinical symptoms on exposure to those foods, an sIgE-mediated FA requires *both* the presence of sensitization *and* the development of specific signs and symptoms on exposure to that food. Sensitization alone is not sufficient to define FA.  Ref: Boyce et al. Guidelines for the Diagnosis and Management of Food Allergy in the United States: Summary of the NIAID-Sponsored Expert Panel. USDHHS, Dec 2010. | | | |
|  | **Food Allergen** | **Food allergens** are defined as those specific components of food or ingredients within food (typically proteins, but sometimes also chemical haptens) that are recognized by allergen-specific immune cells and elicit specific immunologic reactions, resulting in characteristic symptoms.  Ref: Boyce et al. Guidelines for the Diagnosis and Management of Food Allergy in the United States: Summary of the NIAID-Sponsored Expert Panel. USDHHS, Dec 2010. | | | |
|  | **Food Allergen Cross-reactivity** | A phenomenon called **cross-reactivity** may occur when an antibody reacts not only with the original allergen, but also with a similar allergen. In FA, cross-reactivity occurs when a food allergen shares structural or sequence similarity with a different food allergen or aeroallergen, which may then trigger an adverse reaction similar to that triggered by the original food allergen.  Ref: Boyce et al. Guidelines for the Diagnosis and Management of Food Allergy in the United States: Summary of the NIAID-Sponsored Expert Panel. USDHHS, Dec 2010. | | | |
|  | **Food Allergy** | A food allergy is an adverse health effect arising from a specific immune response that occurs reproducibly on exposure to a given food.  Ref: Boyce et al. Guidelines for the Diagnosis and Management of Food Allergy in the United States: Summary of the NIAID-Sponsored Expert Panel. USDHHS, Dec 2010. | | | |
|  | **Food Intolerance** | Non-immunologic adverse reactions are termed **food intolerances.** For example, an individual may be allergic to cow’s milk (henceforth referred to as milk) due to an immunologic response to milk protein, or alternatively, that individual may be intolerant to milk due to an inability to digest the sugar lactose. In the former situation, milk protein is considered an allergen because it triggers an adverse immunologic reaction. Inability to digest lactose leads to excess fluid production in the gastrointestinal (GI) tract, resulting in abdominal pain and diarrhea.  Ref: Boyce et al. Guidelines for the Diagnosis and Management of Food Allergy in the United States: Summary of the NIAID-Sponsored Expert Panel. USDHHS, Dec 2010. | | | |
| **Food and Drug Interactions** | | | Physiological effect caused by an interaction from the combination of a certain drug and food/nutrient. | |
| **Food Preferences** | | | Preferences consist of likes, dislikes, substitutions, and complementary foods. Preferences are diet orders, effectively from the patient, but transmitted from the ward. They are subject to change. Preferences are independent of the diet order and do not change when the order changes. Per HL7 Glossary (Jan 2010) Preferences: (related to Dietary Orders) | |
| **Growth Charts** | | | Series of percentile curves that illustrate the distribution of selected body measurements in children and used as a tool that contributes to forming an overall clinical impression for the child being measured. <http://www.cdc.gov/growthcharts> | |
| **Indirect Calorimetry** | | | Indirect Calorimetry is the measurement of the amount of heat generated in an oxidation reaction by determining the intake or consumption of oxygen or by measuring the amount of carbon dioxide or nitrogen released and translating these quantities into a heat equivalent. | |
| **International Dietetics and Nutrition Terminology (IDNT)** | | | See Nutrition Care Process Terminology. | |
| **Medical Nutrition Therapy** | | | Medical nutrition therapy (MNT) is an evidence-based application of the Nutrition Care Process. The provision of MNT (to a patient/client) may include one or more of the following: nutrition assessment/reassessment, nutrition diagnosis, nutrition intervention and nutrition monitoring and evaluation that typically results in the prevention, delay or management of diseases and/or conditions. [Academy of Nutriton and Dietetics List of Definitions](https://www.eatrightpro.org/-/media/eatrightpro-files/practice/scope-standards-of-practice/academydefinitionoftermslist.pdf), accessed June 6, 2018 | |
| **No Known Drug Allergies (NKDA)** | | | Ch Direct Care Functions/Pg 22. Typical notation is NKA, which covers all allergy  processes. | |
| **Nutrient Intake Analysis** | | | Analysis of nutrient intake for an individual over a specified time period; sometimes limited to “calorie count”. | |
| **Nutrient Intake or Infusion** | | | An individual’s total intake of food and beverage, including water, in a specified time period. | |
| **Nutrition and Dietetics Technician, Registered (NDTR)** | | | The Nutrition and Dietetics Technician, Registered (NDTR) is defined by the Commission on Dietetic Registration as an individual who has met current minimum requirements through one of three routes: 1. Successful completion of a minimum of an Associate degree granted by a U.S. regionally accredited college or university, or foreign equivalent and completed a minimum of 450 supervised practice hours through a Dietetic Technician Program accredited by Accreditation Council for Education in Nutrition and Dietetics (ACEND) of The Academy of Nutrition and Dietetics (Academy). Accesses July 26, 2016. 2. Successful completion of a Baccalaureate degree granted by a U.S. regionally accredited college or university, or foreign equivalent; met current academic requirements (Didactic Program in Dietetics) as accredited by ACEND of the Academy; successfully completed a minimum of 450 supervised practice hours under the auspices of a Dietetic Technician Program as accredited by ACEND. 3. Completed a minimum of a Baccalaureate  degree granted by a U.S. regionally accredited college or university, or foreign equivalent; successfully completed a Didactic Program in Dietetics as accredited by ACEND of the Academy. Those with the four year degree could also choose BS-DTR or BSNDTR. In all three routes, the individual must successfully complete the Registration Examination for Dietetic Technicians and remit the annual registration maintenance fee. To maintain the NDTR credential, the NDTR must comply with the Professional Development Portfolio (PDP) recertification requirements (accrue 50 hours of approved continuing professional education every five years). Reference: Commission on Dietetic Registration. <https://www.eatrightpro.org/-/media/eatrightpro-files/practice/scope-standards-of-practice/academydefinitionoftermslist.pdf>, accessed June 6, 2018 | |
| **Nutrition-focused Physical Findings** | | | Findings from a nutrition-focused physical exam, interview, or the medical record including muscle and subcutaneous fat, oral health, suck/swallow/breathe ability, appetite, and affect. | |
| **Nutrition Care Process Terminology (NCPT)** | | | NCPT is the standardized terminology used to support nutrition and dietetics practice | |
| **Nutrition Assessment** | | | The first of four steps in the Nutrition Care Process. Nutrition Assessment is a systematic method for obtaining, verifying, and interpreting data needed to identify nutrition-related problems and their causes. Swan WI, Vivanti A, Hakel-Smith N, 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 | |
| **Nutrition Care Plan** | | | A formal statement of the nutrition goals and interventions prescribed for an individual using the data obtained from a nutrition assessment. The plan should include statements of nutrition goals and monitoring/evaluation parameters, the most appropriate route of administration of nutrition therapy, method of nutrition access, anticipated duration of therapy, and training and counseling goals and methods. | |
| **Nutrition Care Process** | | | The Nutrition Care Process is a systematic approach to providing high quality nutrition care. The NCP consists of four distinct, interrelated steps: Nutrition Assessment, Nutrition Diagnosis, Nutrition Intervention, and Nutrition Monitoring and Evaluation.  <https://www.ncpro.org/pubs/idnt-en>, accessed June 6, 2018. | |
| **Nutrition Decision Support Rules** | | | Rules are the steps in the process of forming a clinical nutrition decision and are identified in the nutrition decision support work-flow document. | |
| **Nutrition Diagnosis (Problems List)** | | | A nutrition diagnosis identifies a nutrition problem that a food and nutrition professional is responsible for treating independently. Nutrition Diagnosis is a critical step between nutrition assessment and nutrition intervention. This Step 2 in the nutrition care process results in the nutrition diagnosis statement (see Problem, Etiology, and Signs and Symptoms). [Academy of Nutrition and Dietetics List of Definitions](https://www.eatrightpro.org/-/media/eatrightpro-files/practice/scope-standards-of-practice/academydefinitionoftermslist.pdf), accessed June 6, 2018. | |
| **Nutrition Intervention** | | | The third step in the Nutrition Care Process is defined as purposefully planned actions intended to positively change a nutrition-related behavior, environmental condition, or aspect of health status for an individual (and his/her family or caregivers), target group, or the community at large. It consists of two components: planning and implementation. [Academy of Nutrition and Dietetics List of Definitions](https://www.eatrightpro.org/-/media/eatrightpro-files/practice/scope-standards-of-practice/academydefinitionoftermslist.pdf), accessed June 6, 2018. | |
| **Nutrition Monitoring and Evaluation** | | | The fourth step in the Nutrition Care Process is Nutrition Monitoring and Evaluation. Nutrition monitoring is the preplanned review and measurement of selected nutrition care indicators of patient/client’s status relevant to the defined needs, nutrition diagnosis, nutrition intervention, and outcomes. Nutrition evaluation is the systematic comparison of current findings with the previous status, nutrition intervention goals, effectiveness of overall nutrition care, or a reference standard. [Academy of Nutrition and Dietetics List of Definitions](https://www.eatrightpro.org/-/media/eatrightpro-files/practice/scope-standards-of-practice/academydefinitionoftermslist.pdf), accessed June 6, 2018. | |
| **Nutrition Order Sets** | | | A standard diet and related orders protocol to be followed for a specific condition or circumstance; e.g., following an emergency procedure or surgery for a person diagnosed with diabetes. | |
| **Nutrition Prescription** | | | The client’s tailored recommended dietary intake of energy and/or selected foods or nutrients based on current reference standards and evidence based nutrition practice guidelines and related to the client’s health condition and nutrition diagnosis | |
| **Nutrition Progress Notes** | | | Content entered into the medical record documenting changes in nutritional intake or status; may be structured or unstructured formats. | |
| **Nutrition Quality of Life** | | | Extent to which the Nutrition Care Process impacts a patient/client’s physical, mental, and social well-being related to food and nutrition. | |
| **Nutrition Referral** | | | To send or direct to a qualified nutrition expert (i.e., RDN or NDTR) for nutrition assessment, diagnosis, intervention or monitoring and evaluation. | |
| **Nutrition Related Factors** | | | Factors that are related to nutrition and may be intake/clinical/behavioral in nature: nutrient intake, foods consumed, frequency of food consumption, co-morbid conditions such as diabetes, or obesity, any chronic infections such as tuberculosis, repeated acute infections such as acute diarrhea, respiratory infections, hormonal dysfunctions such as that of the thyroid gland, environmental (socioeconomic status, work-related factors, cultural practices), appetite, taste, availability of food, mood (psychological state), and knowledge/attitudes. | |
| **Nutrition Screening** | | | Nutrition screening identifies and refers individuals who already have or are at risk of nutrition-related problems, who are appropriate for nutrition care services and who would benefit from participation in the Nutrition Care Process. Swan WI, Vivanti A, Hakel-Smith N, 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. | |
| **Nutritional Supplement** | | | A preparation intended to supplement the diet and provide [nutrients,](http://en.wikipedia.org/wiki/Nutrient) such as [vitamins,](http://en.wikipedia.org/wiki/Vitamin) [minerals,](http://en.wikipedia.org/wiki/Dietary_mineral) [fiber,](http://en.wikipedia.org/wiki/Dietary_fiber) [fatty acids,](http://en.wikipedia.org/wiki/Fatty_acid) or [amino acids,](http://en.wikipedia.org/wiki/Amino_acid) that may be missing or may not be consumed in sufficient quantity in a person's [diet.](http://en.wikipedia.org/wiki/Diet_(nutrition)) Referenced in the HL 7 Glossary: “Supplements: Supplements provide a mechanism for giving any additional desired foods to a patient. Supplements are foods given to a patient regardless of their diet codes. These foods are part of the patient’s diet without being restricted by any other part of the order.” | |
| **Nutrition Support** | | | The provision of enteral or parenteral nutrients to treat or prevent malnutrition. Nutrition Support therapy is part of Nutrition Therapy which is a component of medical treatment that can include oral, enteral, and parenteral nutrition to maintain or restore optimal nutrition status and health. | |
| **Patient Reported Outcome Measures** | | | Measurement instruments that patients complete to provide information on aspects of their health status that are relevant to their quality of life, including symptoms, functionality and physical, mental and social health. | |
| **Parenteral Nutrition** | | | The delivery of nutrients for assimilation and utilization by a patient whose sole source of nutrients is via solutions administered intravenously, subcutaneously, or by some other non- alimentary route. The basic components of TPN (total parenteral nutrition) solutions are protein hydrolysates or free amino acid mixtures, monosaccharides, and electrolytes. Components are selected for their ability to reverse catabolism, promote anabolism, and build structural proteins. [www.Reference.MD](http://www.reference.md/) | |
| **Physical Activity** | | | Any bodily movement produced by skeletal muscles resulting in energy expenditure<http://www.health.gov/dietaryguidelines> | |
| **Physical Function** | | | Basic activities of daily living (eating, dressing, toileting, transferring, bathing, and  continence) [www.ncbi.nlm.nih.gov/pubmed/20974088](http://www.ncbi.nlm.nih.gov/pubmed/20974088) | |
| **Problem, Etiology, Signs or Symptoms (PES Statement)** | | | Statement used in documentation of the Nutrition Diagnosis is composed of three distinct components: Problem, Etiology, and Signs or Symptoms. Swan WI, Vivanti A, Hakel-Smith N, 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. | |
| **Reference Standards** | | | A basis of value established for the measure of quantity, weight, extent or quality, (e.g., weight standards, standard solutions). | |
| **Registered Dietitian (RD)** | | | See Registered Dietitian Nutritionist | |
| **Registered Dietitian Nutritionist (RDN)** | | | The Registered Dietitian Nutritionist (RDN) is defined by the Commission on Dietetic Registration as an individual who has met current minimum (Baccalaureate degree granted by a U.S. regionally accredited college or university, or foreign equivalent) academic requirements with successful completion of both specified didactic education and supervised-practice experiences through programs accredited by The Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics, who has successfully completed the Registration Examination for Dietitians and remitted the annual registration fee. To maintain the RDN credential, RDN must comply with the Professional Development Portfolio (PDP) recertification requirements (accrue 75 units of approved continuing professional education every five years). | |
| **Standard Protocol** | | | Approved model or template for a set of procedures; e.g., nutrition assessment incorporates patient history of food intake and activity, blood laboratory reports, medical diagnosis in a  previously tested and accepted format. | |

# Components of ENCPRS Functional Profile (Reference)

Each function in the ENCPRS Functional Profile is identified and described using a set of elements or components as detailed below.

**Type**

**Priority**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ID** |  |  | **Name** | **Statement**  **/Description** | **See Also** | **Conformance Criteria** | **Row**  **#** | **FM Source** | | |
| **ID**  **#** | **Criteria**  **#** | **Criteria Status** |
|  |  |  |  |  |  |  |  |  |  |  |

## Function ID

This is the unique identifier of a function in the Function List (e.g., CP.1.1) and should be used to identify uniquely the function when referencing functions. The Function ID also serves to identify the section within which the function exists (CP = Care Provision Section) and the hierarchy or relationship between functions (CP.1.1 is at the same level as CP.1.2, CP.1.1 is also a parent of CP.1.1.1 and child of CP.1. In many cases the parent is fully expressed by the children.

## Function Type

Indication of the line item as being a Header (H), Function (F), or Conformance Criteria (C).

## Function Priority

Indication that implementation of the function is Essential Now (EN), Essential Future (EFxxxx), Optional (O), or Not Applicable (N/A). The definitions for these priorities are found above.

## Function Name

The name of the Function (*Example: Entity Authentication*). Functions inherited from the HL7 International EHR-S Functional Model retain the Function Name as stated in the model. Names for new functions are added by the authors of the ENCPRS.

## Function Statement

Brief statement of the purpose of this function (*Example: Authenticate EHR-S users and/or entities before allowing access to an EHR-S*). Functions inherited from the HL7 International EHR-S Functional Model retain the Function Statement as shown in the model. Statements for new functions added by the authors of the ENCPRS are shown in blue font.

## Description

Detailed description of the function, including examples if needed (Example: Both users and applications are subject to authentication. The EHR-S must provide mechanisms for users and applications to be authenticated. Users will have to be authenticated when they attempt to use the application, the applications must authenticate themselves before accessing EHR information managed by other applications or remote EHR-S.) Functions inherited from the HL7 International EHR- S Functional Model retain the portions of the Description shown in the model that are relevant to the dietetics and nutrition practice

## Conformance Criteria

This element displays valuable statements used to determine whether a particular function’s requirements are met. (*Example: The system* ***SHALL*** *authenticate principals prior to accessing an EHR-S application or EHR-S data*).

# References

Academy of Nutrition and Dietetics. Evidence Analysis Library® Evidence-Based Nutrition Practice Guidelines. <http://www.adaevidencelibrary.com/default.cfm?library=EBG>

* A synthesis of the best, most relevant nutritional research on important dietetics practice questions in an accessible online subscription format.
* Nutrition Practice Guidelines developed and published are based on expert analysis of reviewed literature.

American Medical Informatics Association (AMIA) [http://www.amia.org](http://www.amia.org/)

* AMIA is the professional home for biomedical and health informatics. AMIA is dedicated to promoting the effective organization, analysis, management, and use of information in health care in support of patient care, public health, teaching, research, administration, and related policy. Members at AMIA advance the use of health information and communications technology in clinical care and clinical research, personal health management, public health/population, and translational science with the ultimate objective of improving health. AMIA has various workgroups including Clinical Research Informatics (CRI) working group.
* The CRI Working Group's mission is to advance the discipline of Clinical Research Informatics (CRI) by fostering interaction, discussion and collaboration among individuals and groups involved or interested in the practice and study of CRI, and to serve as the home for CRI professionals within AMIA.

Health Level Seven International (HL7) [http://www.HL7.org](http://www.hl7.org/)

* HL7 Electronic Health Record System (EHR-S) Functional Model Release 1.1 (Sep 2010)

HIPAA (Health Insurance Portability and Accountability Act) <http://www.hhs.gov/ocr/privacy/index.html> [http://healthit.hhs.gov/portal/server.pt/community/healthit\_hhs\_gov onc/1200](http://healthit.hhs.gov/portal/server.pt/community/healthit_hhs_gov__onc/1200)

* US Health Information Privacy

*Online Version:* Academy of Nutrition and Dietetics. Nutrition Terminology Reference Manual (eNCPT): Dietetics Language for Nutrition Care. [www.ncpro.org](http://www.ncpro.org)

* Online subscription version of the standardized language used for the Nutrition Care Process, updated annually.

International Standards Organization (ISO) [www.ISO.org](http://www.iso.org/)

* ISO/TR 20514: Health informatics, Electronic health record, Definition, scope and context. 2005-10-17

Nutrition Care Process and Model Update: Toward Realizing People-Centered Care and Outcomes Management. Swan WI, Vivanti A, Hakel-Smith NA, Hotson B, Orrevall Y, Trostler N, Beck Howarter K, Papoutsakis C. Journal of the Academy of Nutrition and Dietetics 2017;117(12):2003-14. doi: 10.1016/j.jand.2017.07.015

Nutrition Care Process Part II: Using the International Dietetics and Nutrition Terminology to Document the Nutrition Care Process. J Am Diet Assoc. Aug 2008; 108(8):1287-1293.

* Published articles documenting the history, development and use of the Nutrition Care Process and standardized language.

US Health and Human Services (HHS) National Institute of Health (NIH): https://www.[hhs](https://www.hhs.gov/hipaa/for-professionals/special-topics/research/index.html).gov/hipaa/for-professionals/special-topics/research/index.html

* The Health Insurance Portability and Accountability Act (HIPAA) Privacy Rule is the first comprehensive US Federal protection for the privacy of personal health information. Research organizations and researchers may or may not be covered by the HIPAA Privacy Rule. This website provides information on the Privacy Rule for the research community.