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**INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

WS/T 672-2020

**Conceptual data model of national health and population
information**

(English Translation)

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

Drafting organizations of this standard. National Health Commission Statistical Information Center, PLA Air Force Military Medical University, Huazhong University of Science and Technology Tongji Medical College, Shanghai Center for Disease Control and Prevention.

1 Scope

This standard describes the characteristics of information in the health and population fields, and specifies object classes and their attributes and relationships.

This standard applies to the formulation of information standards and the development and management of information systems in the fields of health and population.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this file. For undated references, the latest version (including all amendments) applies to this document.

GB/T 18391.3-2009 Information Technology Metadata Registration System (MDR) Part 3: Registration System Metamodel and Basic Properties (ISO/IEC 11179-3 IDT) GB/T 30107-2013 Health Informatics HL7 V3 Reference Information Model WS/T 671 National Health and Population Information Data Dictionary ISO/IEC 11179.Information

technology-Metadataregistries (MDR) Part 3: Registry metamodel and basic attributes
ISO/IEC 19501-1:2002 Information technology-Unified Modeling Language(UML)-part
1.Specification ISO/HL7 21731.2006Health informatics-HL7 version3-Reference
information model -Release 1 HL7 Version 3 Standard. Data Types-Abstract Specification,
Release 2

3.1 Terms and definitions

The following terms and definitions defined in GB/T 30107-2013 and GB/T 18391.3-2009 apply to this document. For ease of use, Some terms and definitions in GB/T 30107-2013 and GB/T 18391.3-2009 are repeatedly listed below.

3.1.1

Model

A manifestation of a domain that uses abstract methods to express related concepts.

[GB/T 30107-2013, definition 3.1.30] 3.1.2 Conceptual data model A data model that expresses abstract insights from the real world.

[GB/T 18391.3-2009, definition 3.2.5] 3.1.3 Class an abstraction of a certain time or concept in a specific application domain.

[GB/T 30107-2013, definition 3.1.6] 3.1.4 Superclass as a class that generalizes to one or more other classes (subclasses).

[GB/T 30107-2013, definition 3.1.51] 3.1.5 Subclass as a class that concretizes another class (super class).

[GB/T 30107-2013, definition 3.1.48] 3.1.6 Attribute Abstraction of the characteristics of the class.

[GB/T 30107-2013, definition 3.1.3] 3.1.7 Data type the structure format of the data contained in the attribute. It can constrain the set of attribute values that the attribute may take.

[GB/T 30107-2013, definition 3.1.13] 3.1.8 Generalization the association between two classes called superclass and subclass, where the subclass is derived from the superclass. Subclass not only inherits the super all properties of the class, including attributes, relationships, and state, and some new properties have been added to extend the performance of the parent class. Subcategory vision Look, the subclass is the reification of the superclass.

[GB/T 30107-2013, definition 3.1.18] 3.1.9 Specialization an association between two classes (called superclasses and subclasses, respectively), where the subclasses are derived from the class. Subclass inherits the properties of the class, Relationships and states can also add new properties to extend the performance of the parent class.

[GB/T 30107-2013, definition 3.1.41] 3.1.10 Coding system (Usually) Use short concept identifiers to indicate that the concept is a part of the system, and define a concept representation system for a unique concept code set.

[GB/T 30107-2013, definition 3.1.10]

3.2 Abbreviations

The following abbreviations apply to this document.

4 Overview of the conceptual data model of national health and population information

The main category of the national health and population information conceptual data model and the relationship with the lower category are the same as HL7 V3 RIM.

The conceptual data model of national health and population information is composed of 6 categories and 15 subcategories. Each category and subcategory has its own description attributes.

Attributes and relationships are all related to classes.

The conceptual data model of national health and population information is expressed in UML. The name of the class, if there is a corresponding class in HL7 V3 RIM, the naming in the model is adopted. If there is no corresponding class in HL7 V3 RIM, according to the meaning of the class, refer to the naming convention in this field or custom naming.

5 Illustration of the conceptual data model of national health and population information

The content of the conceptual data model of national health and population information is shown in Figure 1 (Chinese) and Figure 2 (English).

6 Classes and attributes in the conceptual data model of national health and population information

6.1.1 Description of entities

One or a group of natural things or organizations that participate in health-related activities as a role.

The entity is a generalization of the following classes.

6.1.2.1 Entity. Class code.. CS

Property description. The code of the class or category represented by the instance of the entity.

Restriction. It is specified by the vocabulary "entity class code and entity code" in the national health and population data dictionary.

Example. People, institutions, substances, places, etc., all belong to entities.

Basis. The set of codes representing everything in the world is huge. Therefore, the class code can represent all the entity hierarchy the sub-category can also represent the high-level classifier of the entity instance, so that the value range of the entity. Code attribute can be constrained.

6.1.2.2 Entity. Qualifying Code. CS

Attribute description. Indicates whether the entity is an instance of a certain type or a specific instance.

Restriction. It is specified by the vocabulary "Entity Qualification Code Code" in the National Health and Population Data Dictionary.

Example. a person (instance), a resident of a province (a type of person).

Basis. Entity can sometimes represent the information of a specific instance (the most common), or it can represent a quantifiable group of information with common characteristics or general information. This code is used to distinguish between these different representations.

6.1.2.3 Entity.Identification.. SETu003cIl\u003e

Attribute description. a unique identifier unique to the entity.

Basis. Assign a unique identifier to each entity to realize the correct identification of the entity during information communication. Because of different systems Maintaining different databases will inevitably produce different individual identifiers. Therefore, the entity identifier is only unique within the scope of the declaration.

6.1.2.4 Entity. Code.. CS

Attribute description. the specific category to which an instance of the entity belongs.

Restriction. It is specified by the vocabulary "entity class code and entity code" in the national health and population data dictionary.

Example. a medical building, a certain animal, blood collection tube, tissue section, etc.