

# Medication Therapy Management Services Clinical Documentation: Using a Structured Coding System—SNOMED CT



Pharmacy Health Information  
Technology Collaborative



# Medication Therapy Management Services

## Clinical Documentation: Using a Structured Coding System—SNOMED CT

Pharmacy has been using computers for several decades in managing drug products, from dispensing medication to managing inventories. As the pharmacist's role in caring for patients expands beyond drug products and into medication therapy management (MTM) services, computer applications need to progress to assist in this patient care role. The introduction and consistent use of structured universal codes is one area critical to the expansion of documentation of these medication management services. The purpose of this document is to introduce the Systematized Nomenclature of Medicine—Clinical Terms<sup>1</sup>, or SNOMED CT—a universal clinical coding system for medicine—and to describe how it will be used to document MTM services. Pharmacists, electronic medical record vendors, medical quality organizations, and other interested parties may find it of value to review this document.

The Roadmap for Pharmacy Health Information Technology Integration in U.S. Health Care, developed by the Pharmacy Health Information Technology Collaborative, provides goals and recommendations for action. The fourth goal of the Roadmap is to ensure that health information technology (HIT) infrastructure includes and supports MTM services.<sup>2</sup> The development of a standardized coding system for MTM services and then adoption of this coding system by our MTM providers will be a significant step to ensure that the MTM documentation will be integrated with patients' electronic health records (EHR).

Structured coding formats are not new to health care and are used in many fields of medicine today. The International Classification of Diseases, 9th Revision (ICD-9) and Current Procedural Terminology (CPT) are two such structured coding formats. Both of these are considered "output" classification systems; they are not designed or intended to be used in the direct documentation of the patient's clinical care but to be used in external reporting requirements, such as measuring quality of care or processing claims for reimbursement.<sup>3</sup>

SNOMED CT is the clinical coding standard for the U.S. Government for the electronic exchange of health information and is a required standard in the interoperability specifications as defined by the U.S. Healthcare Information Technology Panel.<sup>1</sup> Unlike ICD-9 and CPT, SNOMED CT is considered an "input" coding system, to be used by clinicians to document patient care. Medication management services will have SNOMED CT available for use in documentation.

SNOMED CT is not a new clinical coding system but has been in development and revision since 1965, when it was started by the College of American Pathologists (CAP) and was called Systematized Nomenclature of Pathology. In 1999, a development effort formed between CAP and England's National Health Service. Out of this collaboration came the convergence of SNOMED RT (i.e., CAP) and the United Kingdom's Clinical Terms Version 3; the name was changed to SNOMED CT. In 2007, the SNOMED CT intellectual property rights were transferred from CAP to the SNOMED Standards Development Organization. This move resulted in the formal creation of the International Health Terminology Standards Development Organization (IHTSDO). The United States is a charter member of the IHTSDO. As of January 2012, 18 countries were members of IHTSDO and SNOMED CT had expanded its use to more than 50 countries. In the United States, the National Library of Medicine can create its own codes as part of the U.S. extension codes and provides the management for SNOMED CT.<sup>4</sup>



The years of development and revision of this SNOMED CT have resulted in a strong universal coding system to be used as the general terminology for the EHR. SNOMED CT is continually changing and being updated.

One of the great advantages of SNOMED CT is that it covers a broad range of health-related topics using scientifically validated information. It can be used to describe a patient's medical history, the details of an orthopedic procedure, the physician's impression of a patient's condition, and much more. SNOMED CT also provides the user with the ability to code the clinical situation at the appropriate level of detail for the clinical condition or situation of the patient. The ability to code at very specific or less specific levels is an option for the user.

In addition to the depth and breadth of coding detail, SNOMED CT can be tailored to meet medical specialties or subspecialties as they are needed. One of the specialties that recently has been added to SNOMED CT is a medication management category.

As stated on the IHTSDO website, "SNOMED CT provides the core general terminology for the EHR and contains more than 311,000 active concepts with unique meanings and formal, logic-based definitions organized into hierarchies."<sup>5</sup> An example of hierarchical structure for pharmacists providing medication reconciliation follows:

- Medication reconciliation - 430193006 (Parent Concept ID)
- Medication Reconciliation by pharmacist [procedure] - 428701000124107<sup>1</sup>

For SNOMED CT to provide the depth and breadth of clinical codes necessary to document the wide range of patient care services in a logical fashion, SNOMED CT was created with a sophisticated organizational structure that consists of three major components: concepts, descriptions, and relationships.

1. **CONCEPTS** represent the clinical ideas. Each concept has a unique numeric code known as a "concept identifier." These concepts are organized in hierarchies, from the general to the specific. This system allows clinical data to be recorded and then later accessed or aggregated at a more general level. There are many ranges of hierarchies used to organize these concepts. The concept headers include items such as clinical findings/disorders, procedures/interventions, body structures, organisms, pharmaceutical/biologic products, physical objects, environment/geographical location, and staging and scales, to name a few.
2. **DESCRIPTIONS** are the terms, names, or phrases assigned to a SNOMED CT concept. A concept can have several associated descriptions, each representing a synonym that describes the same clinical idea.
3. **RELATIONSHIPS** link each concept to other concepts with a related meaning. Hundreds of possible relationships are available for use and include terms such as, "is a" relationship, "causative agent" relationship, and "finding site" relationship. In the example of bacterial pneumonia, there "is a" relationship to pneumonia, the more general concept; there is a "causative agent" relationship to the concept of bacteria, and there is a "finding site" relationship to the concept of lung.

Despite the complexity of the SNOMED CT coding system and the vast array of coding possibilities using SNOMED CT, these codes should be quite easy for clinical health care providers to use. The actual SNOMED CT code that represents each clinical element will not be visible to the clinician; however, the clinician will see descriptions of clinical content to select from and use.



The use of SNOMED CT in documenting health care has the potential to create benefit for the patient and for the greater health care environment.

#### Unique patient benefit:

- SNOMED CT will improve the recording of EHR information because it will provide a strong foundation for clinical coding. Through the use of SNOMED CT, clinical information can be consistently, reliably, and comprehensively recorded and stored as part of the EHR. This benefit should help provide more complete information regarding items such as the patient's medical history, medication history, illnesses, lab values, and other important health information.
- SNOMED CT will improve communication among health care providers because it provides a consistent universal coding language for the interoperability of different health information systems and facilitates continuity of care for patients across different times, settings, and providers.

#### Greater health care environment benefit:

- SNOMED CT can be used to facilitate decision support, statistical reporting, outcomes measurement, public health surveillance, health research, and cost analysis to help make strong population-based analyses possible.
- SNOMED CT can serve as a foundation for health care organizations to conduct outcomes research, evaluate the quality and cost of care, design effective treatment guidelines, and meet other quality development needs.
- SNOMED CT has the potential to be mapped to other health coding schemes such as ICD-9 CM. This feature is important because many existing EHR systems contain clinical information encoded using ICD-9 CM and it would be desirable to have this legacy ICD-9 CM data translated to SNOMED CT.

Specifically, SNOMED CT documentation for MTM services will allow pharmacists to document the clinical care that is provided. Within the SNOMED CT for MTM, there are two categories of coding: Encounter Based Coding and Intervention Based Coding.

Encounter Based Coding consists of coding elements that are required to be entered only once for an MTM services encounter. The elements include the reasons or indications for the MTM visit and a description of the services that were provided. Multiple subheading options that are more specific are available for use for coding when appropriate.

The reasons for MTM services (general headings) include the following:

1. Referral to MTM service with multiple subheading options available
2. Complications for medication therapy with multiple subheading options available

The MTM services that are provided (general headings) include items such as the following:

1. Comprehensive medication therapy review
2. Targeted medication therapy review
3. Personal medication record preparation



4. Personal medical record provision to patient
5. Medication-related action plan preparation
6. Medication-related action plan provision to patient
7. Pharmacist consultation with health care provider
8. Patient education

Intervention-Based Coding for MTM documentation using SNOMED CT will allow pharmacists to document the drug therapy problems they identify during the medication regimen assessment. The seven drug therapy problem categories are available for use in documenting and using SNOMED CT. A practitioner will likely use the intervention-based coding several times during the documentation of clinical notes for a patient with multiple medications.

Intervention Based Coding will also provide the necessary SNOMED CT codes to document the patient's care plan or medication action plan. The actions the pharmacist and patient agree to do in order to resolve the drug therapy problems, to achieve the goals of therapy, and to prevent new drug therapy problems can be coded using the SNOMED CT coding system.

The implementation of SNOMED CT codes into MTM services documentation is important for pharmacists, for patients, and for the greater health care environment. Establishing the standard MTM electronic documentation using the same clinical coding foundation as other health care providers will help ensure the integration of MTM services documentation into the meaningful use of the EHR and the national HIT interoperable framework.

MTM providers who want to use SNOMED CT codes to document care should contact their pharmacy management system or electronic medical record vendor. Ask if the SNOMED CT new Release Format 2 (RF2) is available for use and, if it is not, request that it be made available to your pharmacy or facility. The RF2 contains the MTM-specific SNOMED codes. Using SNOMED CT codes to document pharmacists' patient care services will assist organizations in defining the value of pharmacists' services.

## Endnotes

- 1 National Library of Medicine. SNOMED Clinical Terms. Accessed at [www.nlm.nih.gov/research/umls/Snomed/snomed\\_main.html](http://www.nlm.nih.gov/research/umls/Snomed/snomed_main.html), December 11, 2012.
- 2 2011 Pharmacy e-Health Information Technology Collaborative. The Roadmap for Pharmacy Health Information Technology Integration in U.S. Health Care. Accessed at [www.pharmacyhit.org/pdfs/11-392\\_RoadMapFinal\\_singlepages.pdf](http://www.pharmacyhit.org/pdfs/11-392_RoadMapFinal_singlepages.pdf), December 10, 2012.
- 3 Bowman S. Coordination of SNOMED-CT and ICD-10: Getting the most out of electronic health record systems. Perspectives in Health Information Management Spring 2005 (May 26, 2005). Accessed at [http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1\\_027171.pdf](http://library.ahima.org/xpedio/groups/public/documents/ahima/bok1_027171.pdf), [DATE].
- 4 International Health Terminology Standards Development Organization. SNOMED CT. Accessed at [www.ihtsdo.org/snomed-ct/](http://www.ihtsdo.org/snomed-ct/), December 10, 2012.
- 5 International Health Terminology Standards Development Organization. About SNOMED CT. Accessed at [www.ihtsdo.org/snomed-ct/snomed-ct0/](http://www.ihtsdo.org/snomed-ct/snomed-ct0/), December 10, 2012.





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