Implementing SNOMED CT in Practice: A Beginner's Guide

Accessing Pharmacy Value Sets

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Pharmacy Health Information Technology Collaborative

Background

Clinical documentation is an integral but inconsistent component of providing patient care.[1,2,3,4] Electronic documentation consistency, standardization, and interoperability are essential to capitalizing on the next revolution in health care: data. Implementing these principles will yield robust provider access to secure patient data documented at every stage of the care continuum. Data will be leveraged to make optimal care decisions personalized to each patient and harnessed to unlock the power of studying populations.

SNOMED CT for Clinical Documentation

The path to leveraging health data begins with optimizing the integrity and availability of patient health information and clinical documentation. This information is typically represented as free text information within electronic progress notes, but must be codified into discrete data points. Discrete data can be shared between providers and across health care settings by applying electronic standards.

Standardization is vital to interoperability. Standardized coding terminologies (e.g., SNOMED CT) serve as universal languages for software systems. Each proprietary system vendor can map source code to standard data codes or build them directly into their product. Clinical document architecture standards (e.g., C-CDA, FHIR) are used to prepare the data for exchange. Information technology experts build protocols that collect and assemble the standard-based codes into standardized electronic documents. Standardized electronic documents can be received by software systems that follow these standards, often accomplished using a health information exchange (HIE) as a portal.

Software vendors that adopt these standards and demonstrate the ability to share and receive data via HIE are deemed "certified."[5] The Office of National Coordinator for Health Information Technology (ONC) oversees the Health IT Certification Program and grants certified status to vendors. The Centers for Medicare and Medicaid Services (CMS) provide eligible hospitals and eligible professionals (EPs) financial incentive to adopt certified Electronic Health Records (EHRs) and demonstrate their functionality in practice through the EHR Incentive Programs (e.g., Meaningful Use). Meaningful Use Stage 2 and the ONC Health IT Certification Program specify SNOMED CT as the coding language required for documentation of the patient problem list—a set of diagnoses and symptoms experienced by the patient. The customary fee-for-service payment model requires ICD-10 codes for paper-based and electronic claims submission. Many practice sites map ICD-10 codes to SNOMED CT to comply with both Meaningful Use and billing procedures.[6] As reimbursement evolves into an outcomes-focused model, SNOMED CT is becoming the gold standard for documenting diagnoses, procedures, and other clinical information.

Value Sets for Implementation

SNOMED CT and other electronic standards make health data exchange possible. Value sets are a selection of codes used for documenting clinical information within health care software. Instead of sifting through the 300,000+ codes that exist within SNOMED CT, a subset is developed to help vendors and frontline implementers know which codes to use within software fields for specific types of clinical documentation. An example of a value set is the Core Problem List.[7] When a physician identifies a disease, disorder, symptom, or similar issue, the provider picks from a list of problem codes, represented in the form of a value set that encompasses the majority of problems that may be discovered during a patient encounter. The Core Problem List value set must be implemented to meet Meaningful Use requirements and demonstrate interoperability. If all providers are populating the patient problem list, picking from the same value set of codes, data can be sent and received seamlessly across health information exchanges using the standards adopted by certified vendor systems.

Similar to the Core Problem List, pharmacy professionals need value sets for clinical documentation. For example, a list of codes for drug therapy problems (e.g., dose too low, additional therapy needed) and drug therapy recommendations (e.g. recommendation to increase dose, recommendation to start new medication) are needed to document clinical findings and actions taken during patient care. Value sets are used by implementers to build documentation workflows within EHRs and other software solutions to meet interoperability standards. To facilitate implementation, the ONC and National Library of Medicine (NLM) launched the Value Set Authority Center (VSAC).[8]

Standardized Documentation for Interoperability and Analytics

Value sets are the key to implementing clinical pharmacy documentation in a standardized way. Significant benefit is realized once data is exchanged with practice sites to facilitate continuity of care. Health Information Exchanges (HIEs), whether state or privately operated, follow data standards for sending and receiving information between providers using different vendor solutions. HL7 is a standard development organization that identifies specifications for health information data exchange. The current standard used in the health care industry is Consolidated Clinical Data Architecture (C-CDA) Release 2.[9, 10]

Standards provide a framework for pharmacists within a community pharmacy, private specialty clinic, outside primary care practice, or long-term care facility to access clinical information from a recent discharge note written by an inpatient pharmacist. Likewise, an emergency department pharmacist can access the active medication list and medication action plan a patient was following prior to a hospital admission.

Further benefits are realized through analytics. If all pharmacy providers are documenting care using standardized codes, the reported data will be consistent, allowing easier data aggregation for population health studies and benchmarking.

Accessing Value Sets & Implementing SNOMED CT Codes

The following steps are a basic guide to begin implementing SNOMED CT codes with a clinical practice site.

1. Know the clinical workflow.

It's important to know the steps taken when providing care before the development of a documentation strategy. An example is the Patient Care Process developed by The Joint Commission of Pharmacy Practitioners (JCPP).[11] The process is consensually recognized across the profession as applicable to any practice setting where pharmacists provide patient care and for any patient care service provided by pharmacists. It is important to obtain an understanding of steps taken by the provider accountable for medication-related outcomes.

2. Know the interventions.

What are the clinical steps being taken when providing patient care? Is a comprehensive medication review performed? Are drug therapy problems discovered? What actions are being taken to resolve medication therapy problems? Are modifications to therapy or other recommendations being made to a prescriber? These "findings" and "procedures" should be recorded as codified data for each encounter.

3. Discover pharmacy SNOMED CT codes and value sets.

The Value Set Authority Center houses value sets from all areas of the health care industry, including pharmacy. The tool can be accessed using a free Unified Medical Language System (UMLS) account from the National Library of Medicine.[12] Users should search value sets stewarded by "PharmacyHIT". The Pharmacy HIT Collaborative serves as a resource for SNOMED CT inquiries, requests for new SNOMED CT codes, and updates to pharmacy Value Sets.

4. Implement SNOMED CT value sets.

With workflow in mind, vendors and IT staff can begin integrating documentation codes into the patient care process. Implementers may want to experiment with documentation strategies such as flow sheets (typically used by nursing) or form templates with radio buttons, check boxes, or drop down menus. The main goal is capturing discrete data so it can be reported for analysis, trending, benchmarking, and data exchange.

5. Create SNOMED CT data reports.

The Enhanced Medicare Part D MTM Model program requires participants to document and report SNOMED CT codes as detailed data for each patient encounter.[13] Similar to data obtained on readmission rates, drug expenditures, e-prescriptions across clinic locations, or 10-day return to stock, reports can be designed to capture clinical data. Data should be pulled from the fields where SNOMED CT data is documented in the system.

6. Analyze the data.

Detailed clinical documentation data can lead to many insights. Interventions (e.g., patient education, medication synchronization, medication reconciliation) can be studied concurrently with specific disease state outcomes, such as readmissions, hemoglobin A1c levels, blood pressure, etc. Administratively, pharmacist productivity can be studied to discover how many patients are evaluated daily or how many drug therapy problems are discovered and resolved.

7. Exchange the data.

State, regional, and private HIE networks follow electronic protocols for sharing and receiving information. Implementers should work with local stakeholders, including state pharmacy associations, to investigate strategies for health information exchange. Consolidated Clinical Document Architecture (C-CDA) should be investigated.

8. Engage with the Pharmacy HIT Collaborative.

The Pharmacy HIT Collaborative was established by nine major pharmacy associations to ensure national HIT and interoperability initiatives are met. The Collaborative serves as a steward for the profession and works closely with federal partners. The Collaborative has several workgroups that pharmacy professionals can serve on through appointment by their professional pharmacy associations. The Collaborative works with workgroup members to produce guidance documents and educational materials to help members achieve standards implementation and interoperability. Resources and contact information can be found on the Pharmacy HIT Collaborative website.[14]

Current Landscape

Today, standards exist that allow any health professional to participate in health information exchanges. Hospitals, physician practices, and EHR vendors have lead this effort because of CMS financial incentive programs like Meaningful Use. The pharmacy industry has been slow to adopt exchange standards because pharmacists cannot participate in Meaningful Use as EPs, or providers as specified in the legislation. However, recent announcements from federal partners are shifting the paradigm.[15, 16]

SNOMED CT and value set implantation are vital to achieving interoperability, participating in health information exchanges, and developing a consistent documentation and reporting strategy for the profession of pharmacy. Pharmacy professionals should work closely with vendors, state and national pharmacy associations, the Pharmacy HIT Collaborative, and other stakeholders to develop a strategic plan for implementing data standards within software systems used to document patient care.

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Resources

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