

12.2.1 3M Health Information Systems

3M Health Information Systems provides intelligent tools to help compile and use health information for better clinical and financial performance. Best known for market-leading coding system and ICD-10 expertise, 3M Health Information Systems also delivers innovative software and consulting services for clinical documentation improvement, computer-assisted coding, case mix and quality outcomes reporting, mobile physician solutions, and a robust healthcare data dictionary and terminology services to support the Electronic Healthcare Record.¹

For more information please visit <http://www.3m.com/>.

The 3M Healthcare Data Dictionary (HDD) is a controlled medical vocabulary server. The HDD has been continuously expanded and maintained for over 15 years, both as a standalone product and embedded within several of 3M's core products and services. The 3M HDD enables mapping and management of medical terminologies, integration of content and standardization of healthcare data. The 3M Healthcare Data Dictionary incorporates a selection of standard healthcare terminologies, including (but not limited to) SNOMED CT, LOINC, RxNorm, ICD-9-CM and ICD-10-CM.

Concepts in the HDD are grouped and organized using both hierarchical and non-hierarchical relationships. One of the hierarchical relationships in the HDD is SNOMED CT's 'is a' relationship which allows users to programmatically use and analyze SNOMED CT concepts captured at various levels of granularity. The analytics capabilities of the HDD are also extended through the use of other relationship types.

Data Warehousing

The content within the HDD makes a key contribution to analytics in several settings. For example one large academic research institution uses the HDD to integrate over 100,000 medication concepts from disparate systems for comprehensive data assimilation. Many of the medication concepts are mapped to RxNorm codes and linked through a 'has ingredient' relationship to SNOMED CT codes.

The 3M HDD has a knowledge base and poly-hierarchical structure that defines the relationships between each clinical drug. Figure 12.2.1-1 shows the relationships that exist for Ramipril including the links to SNOMED CT content, which can be used to query the data warehouse. The knowledge base allows the hospital's researchers to customize their searches by various levels of granularity and organize their clinical content into meaningful relationships.

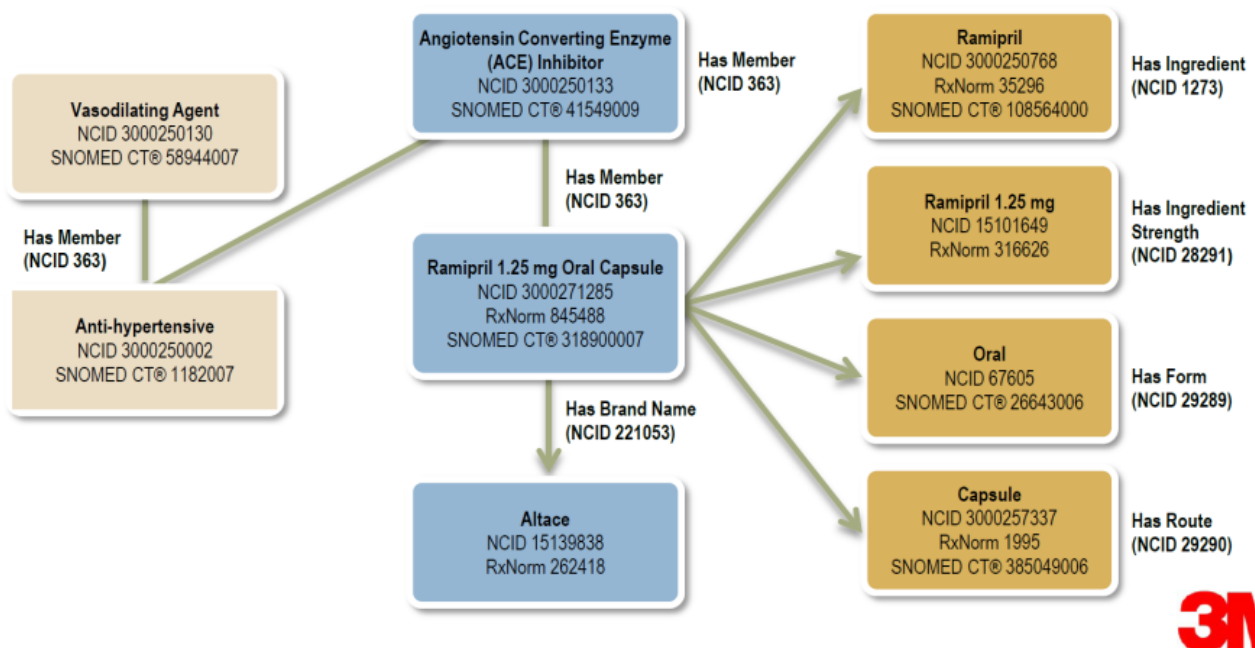


Figure 12.2.1-1: 3M HDD - Application of a knowledge base and hierarchies

The HDD supports researchers in performing data mining by:

- Extracting and mapping clinical metadata using a streamlined, systematic approach;
- Translating diverse clinical terminologies using a coded medical vocabulary;

Footnotes

RefNotes

- 1 http://solutions.3m.com/wps/portal/3M/en_US/Health-Information-Systems/HIS/