RxNav: A Progress Report

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RxNav[1] is a browser for *RxNorm*[2], the NLM repository of standard names for clinical drugs. *RxNav* displays links from clinical drugs, both branded and generic, to their active ingredients, drug components and related brand names. The current dataset comprises 5,546 ingredients, 7,718 brand names, 21,511 clinical drug components, 27,195 clinical drugs, 11,271 branded drugs, 12,598 clinical drug forms, 8,785 branded drug forms and 117 dose forms. *RxNorm* is one of a suite of designated standards for use in U.S. Federal Government systems for the electronic exchange of clinical health information.

Since its introduction at Medinfo 2004, *RxNav* has undergone a series of improvements on its data format, functionality and architecture.

Data format. To reflect *RxNorm* data accurately and to accommodate the need for weekly updates, *RxNav*'s data backend now reads the *RxNorm* release file directly. It is no longer extracted from the Unified Medical Language System® (UMLS®) whose *RxNorm* data update is one release cycle behind the *RxNorm* release file. However, *RxNorm* and the Metathesaurus share the same data format (UMLS Rich Release Format).

Functionality. The most important functionality added recently is spell checking on users' input. Other improvements to the interface include adding navigation buttons and making the component table resizable. Illustrated in the example shown in Figure 1 is the search result on the term "amoxicillin" (retrieved from the misspelled input term "amoxilin").

Architecture. *RxNav* is a Java-based, standalone application. Its architecture uses a number of open-source software components including Apache, Axis and Tomcat, and intends to be flexible, extensible and efficient. The spell checking module, provided in the form of a registered web service, can be discovered and used by other applications.

In the future, an API that provides fine-grained control over RxNorm data retrieval will be provided. Such API will return only the data the clients wish to retrieve in a format that requires little or no processing. It will be efficient enough to be used by devices whose computing resources are limited (e.g., PDAs), as well as integrated into clinical applications.

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[1] http://mor.nlm.nih.gov/download/rxnav/
[2] http://www.nlm.nih.gov/research/umls/rxnorm_main.html

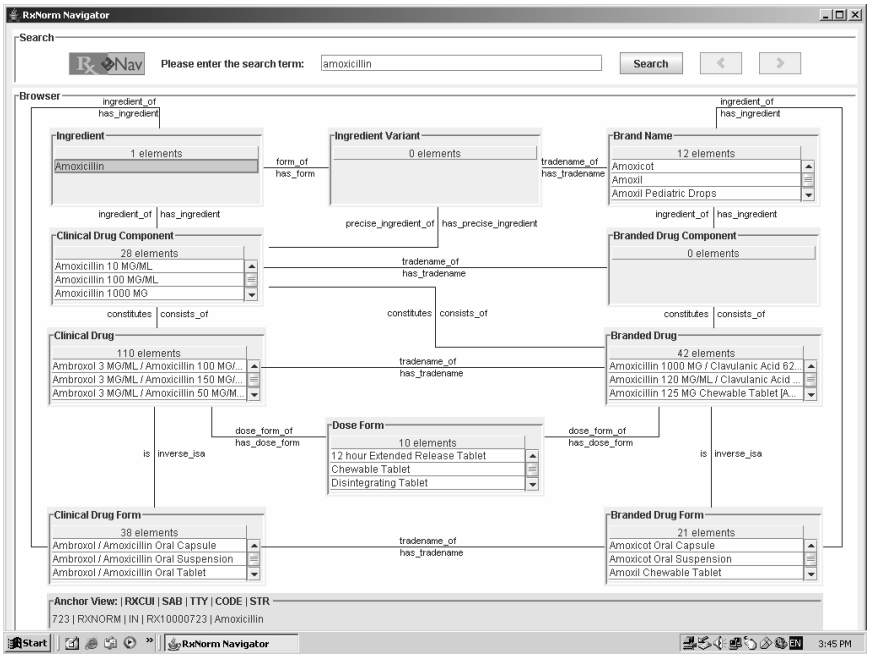

Figure 1— RxNav screenshot for Amoxicillin