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RxNav: Towards an Integrated View on Drug Information

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RxNav[1] is a browser for *RxNorm*[2], a controlled vocabulary of normalized 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 (March 1, 2007) comprises 5,604 ingredients, 11,363 brand names, 13,509 clinical drug components, 17,726 clinical drugs, 14,064 branded drugs, 13,460 branded drug component, 8,311 clinical drug forms, 11,033 branded drug forms and 140 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.

RxNav was first developed as an interface to the *RxNorm* database and was thus restricted to displaying relations among drug names. However, besides terminology, other drug-related information could be displayed in and integrated through *RxNav*, including pharmacologic action, drug-drug interactions, indications and contraindications, adverse reactions, etc. RxNav could also provide better integration with other drug information such as the drug labeling resource *DailyMed*[3]. We give a brief review of some of the changes planned for *RxNav* in the near future, with the objective of ultimately providing an integrated view on drug information.

Equivalent names and codes

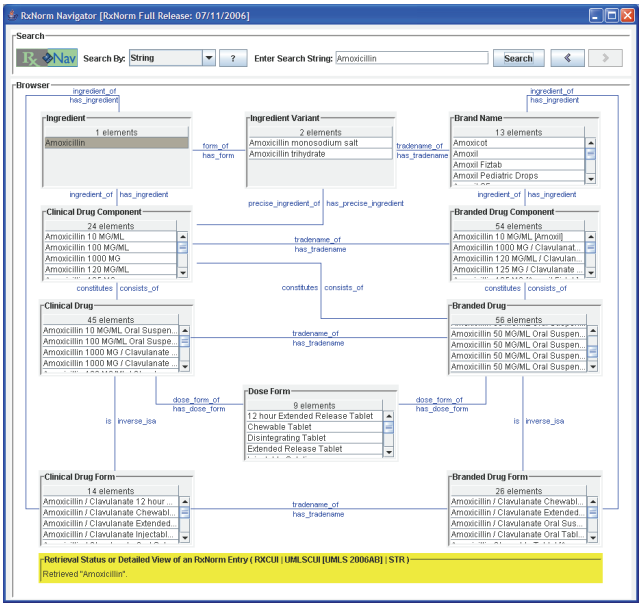
RxNorm covers many of the drug vocabularies commonly used and organizes the different names for a given drug entity into a concept. Because of intellectual property restrictions imposed by some sources, *RxNav* only displays the normalized name created by *RxNorm* for a given entity. A new function will soon be added to *RxNav*, allowing users who have obtained the required licenses to access the name of drug entities in specific sources to find equivalences between drug names across sources. Examples of equivalent names include “Acetaminophen”, “APAP”, and “Paracetamol”, whose corresponding equivalent codes include RXCUI:227257, BRAND_CODE:2177, etc.

Clinical information from UMLS source vocabularies

While most curated clinical information about drugs is compiled in proprietary knowledge bases, some of it is publicly available through resources such as the NLM’s *Medical Subject Headings* (MeSH) and the Veterans Administration’s *National Drug File Reference Terminology* (NDF RT). *MeSH* provides information about pharmacological action and *NDF RT* about indications and pharmacokinetics. Like *RxNorm*, both *MeSH* and *NDF RT* are source vocabularies in the *Unified medical Language System* (UMLS) Metathesaurus, making it easy to integrate the information they provide.

Links from RxNav to applications

Because it already provides an interface to drug names, with services such as specific spelling correction and correspondence between equivalent names, RxNav will provide an excellent entry point to applications such as the drug labeling resource *DailyMed* and medication list applications developed as part of personalized health records (e.g., *MyMedicationList*).



RxNav screenshot for Amoxicillin

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