

MyMedicationList: Integrating Personal Medication Records with Resources

Stuart J. Nelson, MD, FACMI, Kelly Zeng, MS, Olivier Bodenreider, MD, PhD
U.S. National Library of Medicine, National Institutes of Health, Bethesda, Maryland, USA

A record of current medications as well as prior medication history is useful information to an individual. MyMedicationList is a prototype application developed at the National Library of Medicine that helps users manage their medication lists and make the records readily available when needed. This personal medication list can be printed out and serve as a reminder to the individual for taking medications, or as reference information to support continuity of care at doctor's offices or hospitals. We present functionalities and features of MyMedicationList: adding, deleting, updating entries from the list; creating, saving, viewing the list; and storing the list in a standard format. In particular, we demonstrate the integration of personal medication records with a variety of resources. MyMedicationList is currently being tested with user groups. An early version of MyMedicationList is publicly available at <http://mml.nlm.nih.gov/>.

Patients are increasingly encouraged to take an active role in their health care, often by accessing and contributing to their health records. One contribution is maintaining a personal medication list, keeping medications updated and accurate. An accurate personal medication list integrates medication reconciliation as an element of continuity of care [1]. Patients' active participation in health care is sometimes hindered by the complexity of health records. *MyMedicationList* aims to make personal medication lists comprehensible, easy to maintain, and provide patients with optimal decision support by integrating personal medication records with resources including terminologies, drug labels, images, pictograms and doctors' prescriptions.

Integrate terminologies

Medication lookup in *MyMedicationList* is assisted by an auto-completion mechanism, through which standardized drug names and codes are retrieved from *RxNorm* [2], a controlled vocabulary of normalized names for clinical drugs. Users start medication lookup by entering the generic or branded name; corresponding clinical drugs and codes are then retrieved. Generic counterparts of branded drugs, which are available through *RxNorm* are also included in the personal medication lists. This facilitates variety of decision support processes, including checking that both branded and corresponding generic drugs are not on someone's current medication list. Data retrieval from *RxNorm*

is achieved through the web services API provided by *RxNav* [3].

Link to drug labels

Useful knowledge such as prescribing information and lists of adverse reactions are available to users of *MyMedicationList* by linking medications to *DailyMed* [4], an NLM website that provides information about marketed drugs, including the FDA approved labels, as well as links to other information sources.

Display images and pictograms

Potential users of a PHR might be diverse in education, literacy, age, ethnicity, and racial background. *MyMedicationList* aims to address needs for most user groups. One feature that is especially interesting to those with low literacy is that medications can be associated with images and instructions illustrated in pictograms. An image would capture the color, the size, the shape and the imprint of the drug. As all solid dose drugs require unique appearances, images can be used to identify most medications accurately. Pictograms, on the other hand, can be used to reduce medication administration errors as is indicated by several studies.

Towards e-prescribing

Early feedback of *MyMedicationList* indicates users prefer doctors' prescriptions be imported automatically into their medication lists rather than entered manually. In the near future, we plan to design an electronic prescribing tool via which doctors' prescription will be automatically incorporated with *MyMedicationList*, thus integrating patients' medication lists into clinicians' workflow.

References

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