

# New drug information resources for pharmacists at the National Library of Medicine

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## Abstract

**Objective:** To provide an overview of selected drug information-related databases of the National Library of Medicine (NLM), with a focus on newer resources that support the professional information needs of pharmacists and other health care providers.

**Summary:** NLM, which is the world's largest medical library, provides an array of bibliographic, factual, and evidence-based drug, herbal remedy, and dietary supplement information resources. Five of the more recently introduced online resources include areas of particular importance to pharmacists, including a repository of current product labeling/package inserts, with automated search links to associated information resources; a portal to drug information that allows pharmacists to search multiple databases simultaneously and link to related medication and health care information resources; authoritative information on the effects of medications, herbal remedies, and dietary supplements in nursing infants and their mothers; comprehensive information, including a case registry, on the potential for liver toxicity due to drugs, herbal remedies, and dietary supplements; and a pill identification system with two intuitive search methodologies.

**Conclusion:** NLM provides several clinical–scientific drug information resources that are particularly useful in meeting the professional information needs of pharmacists.

**Keywords:** Drug information, evidence based, hepatotoxicity, lactation, package inserts, search portal, structured product labeling.

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The National Library of Medicine (NLM), located on the campus of the National Institutes of Health in Bethesda, MD, is the world's largest medical library, providing access to a vast collection of more than 19 million books, journals, manuscripts, and audiovisual items. In addition to on-site access to its collections, NLM provides information in an electronic format directly to end users, with the result that its online resources are searched billions of times each year by people around the globe. The library's mission also includes the support and conduct of research, development, and training in biomedical informatics and health information technology, and it is a leading global resource for genomic information.

Drug information was an important component of NLM's strategic focus beginning in 1967, when Congress provided funds to form a drug literature program (DLP) at the library. Professional pharmacy associations partnered with the program, providing key contributions toward organizing and making drug information more readily available to practitioners. DLP funding was unsustainable, however, and the program was disbanded.<sup>1,2</sup> Subsequently, drug information has been dispersed among a number of NLM health-related databases, and in more recent

years, NLM has sought to provide an array of new drug/medication information-related resources for health care practitioners, patients/consumers, and researchers. This more recent effort acknowledges the importance of drugs as the most critical medical intervention in treating patients, the increased complexity of drug therapy, and the ubiquitous nature of drug information that is now readily accessible to patients and health care practitioners. NLM's recent initiatives to provide more specialized drug information resources complement therapeutic information that is currently available in other health and medically related databases.

### Objective

Our goal is to describe NLM databases that support the drug information needs of pharmacists and other health care providers who practice in a range of professional settings, with an emphasis on those databases created in the previous several years. Guidance is provided on the drug information in the databases, as well as how to navigate these resources.

### Data sources

At least a dozen databases and data files containing drug information-related content are provided by NLM. These information resources and the type of data they provide are shown in Table 1.

Although they vary by type of data/database, a common characteristic of these databases is that they all incorporate data selection, organization, and search capability. All of the resources in Table 1 are freely accessible though the NLM homepage ([www.nlm.nih.gov](http://www.nlm.nih.gov); Figure 1), by clicking on "All NLM Databases & APIs" in the upper-left corner of the page display, under "Databases." Users will be taken to an A-to-Z listing with links and to an alphabetic list of the database names with associated links.

### Recently released databases

Some of the aforementioned databases have been in existence for many years, including *AIDSinfo*, *ClinicalTrials.gov*, *Hazardous Substances Data Bank*, *MedlinePlus*, and *PubMed/MEDLINE*, and these are discussed in detail in a previous article, along with other NLM resources.<sup>2,3</sup> For purposes of this review, five drug information databases are described that have been introduced in more recent years:

- DailyMed: repository of Food and Drug Administration (FDA) drug labeling
- Drug Information Portal: search gateway to drug information
- LactMed: drug effects on breast-feeding mothers and their infants
- LiverTox: drugs that induce liver injury
- Pillbox: pill identification system

### At a Glance

**Synopsis:** The National Library of Medicine (NLM) provides several clinical-scientific drug information resources that are particularly useful in meeting the professional information needs of pharmacists. Five of the more recently introduced online resources include areas of particular importance to pharmacists, including a repository of current product labeling/package inserts, with automated search links to associated information resources; a portal to drug information that allows pharmacists to search multiple databases simultaneously and link to related medication and health care information resources; authoritative information on the effects of medications, herbal remedies, and dietary supplements in nursing infants and their mothers; comprehensive information, including a case registry, on the potential for liver toxicity due to drugs, herbal remedies, and dietary supplements; and a pill identification system with two intuitive search methodologies.

**Analysis:** The newer NLM resources described here are authoritative, available without charge, readily accessible, and complement other reliable NLM resources that pharmacists have used for years. NLM will continue to consider other potential drug-related databases that would be of benefit to health professionals.

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