

Bibliographic Drug Information: A Guide for the Public Consumer

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Abstract

The present study provides for a research strategy, limited to print bibliographic sources, on obtaining basic and clinical information on pharmaceuticals. Selectively, 20 titles are described and discussed under four descriptive categories (Condensed General References, General Public Consumption, Adverse Reactions and Interactions, and Comprehensive Compendiums). This bibliographic framework is presented as a potential template for reference staff when assisting library users. The additional availability of these print sources in CD-ROM and online format are also noted.

Keywords: *Drugs; Medications; Patient information; Pharmaceuticals; Research strategies*

Introduction

The spiraling use of pharmaceuticals in modern societies has profound implications for the public consumer. Indeed, recent studies indicate that Americans are buying 5 billion nonprescription and 3 billion prescription medications a year (Neergaard, 2003; Schiff & Rucker, 1998). Data indicate that expenditures for over-the-counter remedies has increased from \$10 billion a year to \$20 billion since 1990, and from \$40 billion a year to \$161 billion a year for prescription drugs over the past decade (Fetto, 2003). Undoubtedly, such high usage of pharmaceuticals prompts many queries regarding the use of these medications by consumers. The task of addressing many of these queries can be quite daunting for the librarian who attempts to assist the public facing a voluminous literature base on pharmaceuticals. In fact, the proliferation of scholarly publications in this area continues to expand with revisions of texts in the drugs area, publication of new domestic and foreign specialty journals with a focus on pharmaceuticals, and the availability of various electronic sources such as CD-ROMs, online databases, and Internet resources. Such a large research base makes the task of information retrieval rather cumbersome, if not overwhelming.

Although there are a number of bibliographic guides on retrieval of information on drugs and pharmaceuticals (e.g., Boorkman, Huber, & Roper, 2004; Snow, 1999), the majority of these overviews on research strategies is written for the professional reference librarian or sophisticated medical researcher. More importantly, from a review of the literature, it appears that there are few guidelines on finding scholarly information on drugs specifically tailored for the lay public or non-medical library user. Thus, the purpose of the current article is to present a framework on retrieval strategies for obtaining **essential** bibliographic print sources on pharmaceuticals that should meet the needs of most library users and the public who seek basic information on drugs. The focus is on reference compendiums, books, and print versions of resources (note : some may also be available on CD-ROM or online databases).

The selection of print sources was based on a. popularity of reference source, b. recency of publication, c. availability of text, and d. ease of usage. Moreover, selection was limited to sources that are appropriate for the lay public; thus, advanced texts, written for advanced investigation (e.g., drug company researchers) or for select specialty use, are not presented. Classification of the print sources was based on the functional focus of the source according to the following four subjective categories: Condensed General Reference, General Public Consumption, Adverse Reactions & Interactions, and Comprehensive Compendiums (see Table 1).

Table 1 Selected “Popular” Print Sources on Pharmaceuticals or Drugs

Category	Main Attributes	Potential Drawbacks
Condensed General References		
<i>American Drug Index</i>	22,000 drugs described	Very brief descriptions
<i>Merck Index</i>	Includes bibliographic & patent references;	Technical language
	International coverage Includes botanical compounds	
<i>PDR</i>	Semi-annual updates; Enhanced with the <i>PDR Companion Guide</i>	Limited coverage; Technical language
<i>Pill Book</i>	Describes the most frequently prescribed drugs	Limited coverage
<i>USP Dictionary of USAN & International Drug Names</i>	Lists over 9,500 drug names; Nine useful appendixes	
General Public Consumption		
<i>Complete Guide to Prescription & Nonprescription Drugs</i>	Includes latest FDA approvals	
<i>Essential Guide to Prescription Drugs: Everything You Need to Know for Safe Drug Use</i>	Includes a survey of common diseases	Incomplete coverage

<i>Medication Teaching Manual: The Guide to Patient Drug Information</i>	Nontechnical monographs arranged by generic name; Includes cancer drugs & drug infusion instructions	
<i>PDR Family Guide to Prescription Drugs: America's Leading Drug Guide for Over 50 Years</i>	Emphasizes most popular Drugs; Good source for newer drugs	
<i>USP DI Vol. 2: Advice for the Patient (also: The Complete Drug Reference</i>	Annual, with bimonthly updates	
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Adverse Reactions & Interactions		
<i>Catalog of Teratogenic Agents</i>	Based on reactions of fetal exposure to almost 3,000 agents	
<i>Drug Interaction Facts</i>	Guideline on managing drug interactions	Only the most significant interactions are reviewed
<i>Drugs in Pregnancy & Lactation: A Reference Guide to Fetal & Neonatal Risk</i>	Includes coded risk factors & bibliographic references	
<i>Evaluations of Drug Interactions</i>	Bi-monthly updates includes references	Lacks brand name cross-references
<i>Meyler's Side Effects of Drugs: An Encyclopedia of Adverse Reactions & Interactions</i>	Critical review articles from the international literature; Updated by <i>Side Effects of Drugs Annual</i>	Selective coverage
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Comprehensive Compendiums		
<i>AHFS Drug Information</i>	Current evaluative Monographs; Includes off-label uses	Limited to better known drugs
<i>Martindale: The Complete Drug Reference</i>	International coverage; Herbal medicines included	
<i>Mosby's GenRx: A Comprehensive Reference for Generic & Brand Prescription Drugs</i>	Describes all FDA approved drugs	Limited to prescription drugs
<i>U. S. Pharmacopoeia</i>	Includes <i>The National Formulary</i>	Written for the health-care professional
<i>USP DI: U. S. Pharmacopoeia Dispensing Information (Vols. 1 & 3)</i>	Vol 3 includes the <i>FDA Orange Book</i>	Written for the health-care professional

Condensed General References

Many print sources are available for the public consumer, with several key, perennial compendiums the obvious place to find excellent, but brief, information. The following five titles are among the most useful for this purpose. Some claim that the *American Drug Index (ADI)*, published annually, provides the most complete and up-to-date listing of drugs and drug products in a single source. The *ADI* (also available on CD-ROM, <http://www.factandcomparisons.com>) has an

easy to use dictionary arrangement that provides over 22,000 prescription, generic and over-the counter drug monographs. Trade name entries include chemical names, strength, as well as dosage and usage information. Trade names, generic drugs and drug classes are cross-indexed for easy access, with background information on each drug. Particularly useful are the appendices that explain prescription abbreviations, normal values for laboratory tests, and the inclusion of an excellent pharmaceutical company directory that includes contact information. Additional appendices provide conversion factors for weights and measures, as well as additional pharmaceutical information.

Another excellent source is *The Merck Index* which includes over 4,000 drug and pharmaceutical monographs, as well as many additional monographs on chemicals and reagents. Over 10,000 total monographs are provided. The general consumer however, can glean much helpful information from the technical descriptions within these monographs. Detailed information, including formula and molecular structure, are provided for generic, brand and chemical products. Notably, 2,000 monographs are concerned with plants and natural products that are informative for those with an interest in herbal medicine. Moreover, extensive appended reference information is included with apothecary symbols and a register of drug companies. *The Merck Index* is published every 8 to 10 years, but is also available online through DIALOG with semi-annual updates.

Perhaps the best known condensed source is the annual (with bi-annual updates) *Physician Desk Reference (PDR)*, which has served healthcare workers and the public for over 50 years. Recently, this old stand-by source has become a “standard” in libraries. Originally published for physicians, the *PDR* has been expanded with several related titles, including the *Physicians Desk Reference Companion Guide* and the new *PDR Monthly Prescribing Guide* (both sources are updated monthly with the latest drugs to receive FDA approval, and are a distilled version of the original *PDR* with key facts on over 1,000 drugs). The *PDR Companion Guide* is especially informative about drug/drug interactions, drug/food interactions, side effects, therapeutic interactions, contraindications, international drug names, generic availability, drug identification codes and “off-label” treatments. Due to its popularity, the publisher has expanded the basic volume into numerous specialty and spin-off titles, such as *PDR Drug Guide for Mental Health Professionals*, *PDR Generics*, *PDR for Herbal Medicines*, *PDR Family Guide to Prescription Drugs* (see under General Public Consumption), *PDR for Nonprescription Drugs and Dietary Supplements*, *PDR Nurse’s Drug Handbook*, *PDR for Nutritional Supplements* and the very economical *PDR Pharmacopoeia Pocket Dosing Guide*. These specialized titles are particularly oriented for the public consumer.

The Pill Book (currently in its 11th edition, 2004) is a drug dictionary that is

useful to both the professional and lay public. This very popular title describes over 1,600 of the most prescribed FDA-approved drugs. Authored by a pharmacist, the *Pill Book* is subtitled, *The Illustrated Guide to the Most-Prescribed Drugs in the U. S.*, is easy for the consumer to understand and is particularly useful for identifying adverse reactions and side effects. Drugs are presented by generic name with excellent brand name cross-references (currently in its eleventh edition, 2004).

To identify over 9,500 nonproprietary drug names and related products identified by the United States Adopted Names (USAN) Council and the International Nonproprietary Names (INN) provided by the World Health Organization, the researcher should consult *The USP Dictionary of USAN and International Drug Names*. Included are nonproprietary names identified in the *United States Pharmacopoeia* and *The National Formulary* along with cross-references between the publications. *The USP Dictionary of USAN and International Drug Names* is an authoritative drug dictionary that provides monographs for all USANs named since 1961, as well as somewhat shorter monographs for the INNs since 1953. A convenient feature is the indexing of brand names, generic names, and codes within the monographs. Additionally, nine appendices provide further detailed information, including a list of brand names and a listing of pharmaceuticals and associated products by categories for which these drugs may be used. To keep abreast of the very latest adopted names, users should consult the monthly updates to the *USP Dispensing Information* entitled *USP DI Update*, discussed later, and the bimonthly issues of the *Pharmaceutical Forum*. *The USP Dictionary of USAN and International Drug Names* is also available online through DIALOG and STN (<http://www.cas.org/stn.html>).

Once the basic background information on a drug has been gleaned from the above titles, public consumers should then proceed to additional sources that are likely to yield more specific in-depth information targeted for the general consumer.

General Public Consumption

While the titles noted above provide an excellent starting point for basic, clinical information on drugs (e.g., alternate spellings and generic alternatives), they can be quite technical and overwhelm the public consumer. Fortunately, there are a number of pharmaceutical reference sources that meet the needs of the general consumer. An excellent guide to prescription and OTC drugs is the *Complete Guide to Prescription and Nonprescription Drugs*. The usefulness of this popular title is enhanced by the fact that it is written for the patient and is updated annually. Moreover, the *Essential Guide to Prescription Drugs* is also published annually for the general public and is particularly useful for researching generic equivalents, possible side effects, and information on many diseases.

Patients looking for information or instructions about their medications will

find the *Medication Teaching Manual: The Guide to Patient Drug Information* to be particularly helpful, since it attempts to answer questions that patients ask most often about their drugs. Over 650 drug overviews, or “monographs” are presented in very simple language for the general public and includes a section on how the patient can self-administer drugs that must be injected, a section on cancer chemotherapeutics, appendices that provide additional information for cancer patients, and instructions on administering eye drops, ear drops and the use of inhalers. The guidelines were developed under a federal action plan designed to improve communication between healthcare workers and their patients. The result has been an informative, user-friendly source. Another useful title for describing diseases and other health problems is *The PDR Family Guide to Prescription Drugs*. Naturally, it provides information on the most used prescriptions described in the *PDR*. In addition, drugs are arranged by brand names with cross references from generic names.

Probably the single best source for presenting drug information for the general consumer is the *USP DI: United States Pharmacopoeia Dispensing Information, Volume 2: Advice for the Patient*. This second volume in a three-volume set, is expressly written for the non-professional with concise monographs on prescription drugs and selected OTC preparations. These Monographs are based on the more technical information presented for the professional in volume 1 (*Drug Information for the Health Care Provider*). Each monograph indicates proper dosage, storage, precautions, and side effects with indexing by brand and generic names. A “Medical Chart” consisting of color photos of the most frequently prescribed medicines is included (Snow, 1999). Furthermore, monthly updates for subscribers keep this source at the top of many researchers’ list. Another version of the *USP DI: Volume 2*, is the popular *Complete Drug Reference*, published annually by Consumer Reports. Unfortunately, this publication does not provide monthly updates, hence lacking research findings on the very latest drug releases. However, over 11,000 over-the-counter and prescription drugs are described with proper dosage, side effects, and precautions. Although written for the public, it is more comprehensive than the *PDR* (Mullay & Schlicke, 1999).

Adverse Reactions and Interactions

A critical concern to parents is the fact that most dosing information on drugs is oriented toward adults. Thus the potential impact of adult doses on a fetus is a major source of parental worry. Fortunately, the *Catalog of Teratogenic Agents* is an excellent source for obtaining information on more than 3,000 agents, including chemicals, drugs, environmental exposures, and viruses that may produce negative effects on human reproductive organs, the fetus, or the breast-feeding infant. Based on research from around the world, this fascinating ready reference source includes many agents that have not been proven in the literature to cause negative effects, as

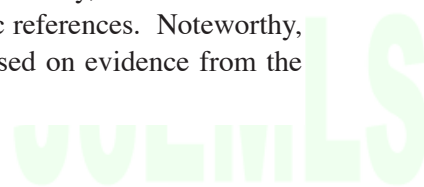
well as those that are contraindicated. Over 40 chemicals are shown to cause specific birth defects in humans and 1,200 in animals. The publisher, Johns Hopkins University Press (<http://www.pres.jhu.edu/index.html>), claims that this is the most comprehensive one-volume guide of its kind, and is a standard guide for pregnant women. Quarterly updates are available on CD-ROM.

An additional helpful guide on interaction concerns is *Drug Interaction Facts* (also available on CD-ROM, <http://www.factsandcomparisons.com>). This is an easy to use source on major drug interactions that provides indexing in one alphabet for generic and brand name drugs. Major interactions are highlighted in the index with bold face type. This loose-leaf service that is updated with quarterly replacement pages, includes drug monographs that contain summaries of interactions and appropriate interventions. Excellent bibliographical references are also provided.

Yet another quarterly updated service for drug interactions is *Drugs in Pregnancy and Lactation: A Reference Guide to Fetal and Neonatal Risk*. The information in this unique source is based on clinical trials and national surveys dealing with the effects of drugs on the fetus and neonates. Nearly 1,000 monographs provide potential risk information, particularly concerning drugs consumed during breast-feeding. Helpful bibliographical references are also provided. This source is published for the physician as well as the consumer, with a quarterly updating subscription service also available. The latest edition is also published as an E-Book and in CD-ROM by Lippincott Williams and Wilkins (<http://www.lww.com/index.html>).

For the public consumer seeking a comprehensive source of prescription and over-the-counter drug interaction information, *Evaluations of Drug Interactions* may well be the best resource. This voluminous loose-leaf service provides bi-monthly updates on the latest drug interaction information and is easy to use for the non-professional. Drug interactions are described in monographs that are arranged by generic name and include details of each interaction, treatment options and medical references. Interactions are summarized in user-friendly tables.

An extremely informative source, *Meyler's Side Effects of Drugs*, is published as a new edition every 3-4 years with annual updates entitled *Side Effects of Drugs Annual*. However, new editions do not completely replace previous editions. For this reason previous editions retain some usefulness. Drug monographs, based on pharmaceutical similarities, are presented along with how these may deviate from their intended function. Indexes provide access to the monographs by generic names and side effects. Whereas chapters are devoted to a myriad of topics such as information on herbs, vitamins and nutritional data. Additionally, coded references are included within the discussions to recent bibliographic references. Noteworthy, evaluations related to the level of risk of many drugs based on evidence from the scientific literature are particularly informative.



Comprehensive Compendia

There are numerous extensive compendiums from which to choose and the ones outlined here are among the ones the authors feel are best bets for garnering background information on pharmaceuticals. Published annually by the well respected American Society of Health-System Pharmacists, with quarterly supplements, is *AHFS Drug Information*. This drug compendium emphasizes the most used prescription and over-the-counter drugs in the U.S., and includes off-label uses.

A second excellent broad-ranging compendium is *Martindale: The Complete Drug Reference*, now in its 33rd edition (also available online through DIALOG and on CD-ROM (<http://www.pharmpress.com>). International evaluative information and encyclopedic facts are provided in this old stand-by, originating in Great Britain, that was previously published under the title *Martindale: The Extra Pharmacopoeia*. This extensive source includes 5,300 drug monographs, 200 herbal monographs, 95,000 preparations, 32,000 references, and a listing of 7,800 manufacturers. Chapters are arranged by therapeutic use and are followed by relevant drug monographs that include off-label uses and bibliographic citations that supplement the drug reviews. Access to the contents is enhanced by an extensive and user-friendly index.

Mosby's GenRx: A Comprehensive Reference for Generic and Brand Prescription Drugs is an excellent annual source for all FDA-approved prescription and generic drug products (later editions are now also available on CD-ROM and as an E-book, <http://www.mosby.com/>). Off-label uses are listed at the top of many of the drug monographs, although precautions and dosages for such uses are omitted since this information is not allowed in FDA-approved labeling information. However, off-label uses are included in the index. Many additional elements are included, such as best selling drugs, cost, price and insurance information. In all, over 30,000 drugs are listed along with all United States drug brand names from all previous editions of this source, as well as drug names (but not monographs) from many foreign countries. A list of "withdrawn drugs" is included.

No discussion of drug compendia can be complete without reference to *The United States Pharmacopoeia* and *The National Formulary*, and *The USP DI: United States Pharmacopoeia Dispensing Information*. The first two titles are the nationally recognized drug compendia in the U.S. that merged in 1979 into one volume (now 3 volumes) which provides detailed drug standards on labeling and storage requirements. *The United States Pharmacopoeia* (<http://www.usp.org/>) portion contains drug monographs and "standards on 3,800 medicines, dietary supplements, and other health care products." Prescription and nonprescription drug standards are included as well as off-label uses. *The National Formulary* portion provides background information and standards for products not described in *The*

United States Pharmacopoeia, such as chemical additives and substances used to dilute drugs. While this source provides detailed standards and useful information for analyzing drugs, it is too technical for most non-professionals. Fortunately, in order to expand on prescribing and dispensing information, the private publisher (United States Pharmacopoeial Convention) of this source has produced the 3-volume work entitled the *USP DI: United States Pharmacopoeia Dispensing Information*. This additional title provides detailed information concerning prescribing, dosing, dispensing and side effects that is largely lacking in the original pharmacopoeia. Volume 1 is written for the health care professional and has the subtitle "Drug Information for the Health Care Provider". It covers almost 12,000 generic and brand name drug products. Volume 2, subtitled "Advice for the Patient" was described above under the category "General Public Consumption" and is user-friendly for the non-professional. Volume 3 is subtitled: "Approved Drug Products and Legal Requirements", and includes the catalog of FDA approved drugs entitled the Orange Book (<http://www.fda.gov/cder/ob/>), as well as selected pharmaceutical laws and regulations. Thus, the 3-volume set includes very technical drug coverage of information that is readily understood by the patient. Published annually, this broad-ranging reference is updated monthly by *USP DI Update*.

Conclusion

With continuing advances in the medical field, information on medications and newly approved pharmaceuticals will surely proliferate at a rapid pace. It is imperative that library staff rely on an efficacious framework for guidance on bibliographic information and literature for both the professional and the general public. This article provides a practical and effective research strategy for the patient-consumer when reliable information and critical literature on medications and drugs are needed. The 20 reference sources outlined by the authors should meet the needs of library end-users and provide a concise bibliographic guide for library reference staff.

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