
Information

Chapter Outline

- Information
- Common References
- Other References
- The Internet
- Technician References

Drug Information

- Thousands of new drug related articles and books published yearly.
- Many new drugs added to the pharmacy shelves yearly.
- Difficult to keep abreast on all new information released.
- Information resources called drug information are needed.

Type of References

- **Primary Literature**
 - Includes original research reports and found in scientific journals.
 - Provides direct access to the most current information.
 - e.g. The Journal of Pharmacy Technology

Type of References

- **Secondary Literature**
 - Summarizes information contained in professional and scientific journals.
 - Similar to an index at the end of a book or bibliography.

Type of References

- **Secondary Literature**

- Also called abstracting services, indexing or bibliographic service.
- e.g. Drugdex and Index Medicus are abstracting services that summarize information contained in types of professional and scientific journals.
- <http://www.nlm.nih.gov/medlineplus/>

Type of References

- **Tertiary Literature**
 - Includes textbooks, monographs, standard reference books and review articles.
 - These are the most commonly used references in the pharmacy.

Type of References

- **Tertiary Literature**
 - Easy and convenient.
 - No single tertiary reference contains all the information.
 - References may be published one or more years after the original literature and may no longer be current.

Material Safety Data Sheets-MSDS

- Contains information on
 - Proper handling of a specific chemical.
 - Protective measures on handling a specific chemical.
 - What to do in case of exposure to hazardous chemicals.

MSDS

- The Occupational, Safety, Health Administration (OSHA).
 - Mandates that all chemicals have an MSDS.
 - <http://www.sciencelab.com/msds.php?msdsId=9922771>

References on Legal Aspects

- **United States Pharmacopoeia Drug Information (USP DI) Volume III**
 - Approved Drug Products and Legal Requirements contains the USP and NF drug standards, dispensing requirements, and relevant state and federal legal requirements.
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References on Legal Aspects

- **Pharmacy Law Digest of Facts and Comparisons**
 - Provides information on controlled substance, pharmacy inspection, drug control, business laws, and contains addresses of the boards of pharmacy.

Common Drug References

- U. S. Pharmacopeia (USP DI) and National Formulary (NF)
- Official legal standards for drugs in the U.S.
- Established by the United States Pharmacopeial Convention (USP).
- Both are revised every 5 years.
- Printed in a combined edition with the United States Pharmacopeia and the National Formulary(USP–NF).

Drug Facts and Comparisons

- The most common drug reference used in community pharmacy settings.
- Contains information about prescription and OTC products.
- Presented in easy-to-use comparative tables.
- Used to COMPARE medications in the same therapeutic class.

Drug Facts and Comparisons

- A loose-leaf edition provides the most up-to-date drug reference through monthly updates.
- The drug information is also available online and with monthly and annual CDs through Facts and Comparison 4.0.

Martindale, The Complete Drug Reference

- Formerly, Martindale, The Extra Pharmacopoeia.
 - Contains **international** drug monographs with drug names, manufacturers, country of origin, active constituents, and licensed indications.
 - **Use to research foreign drugs.**
-

The American Hospital Formulary Service

- Accepted as the source of comparative, unbiased, and evidence-based drug information.
 - Groups drugs by therapeutic use.
 - Updated electronically and in an annual print update.
 - Used when investigating off-label medication indications.
 - PDA and Desktop formats are available.
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Handbook on Injectable Drugs

- Collection of monographs on commercially available parenteral drugs.
 - Includes information on preparation, storage, administration, compatibility, and stability of injectable drugs.
 - Available through ASHP in print and CD formats.
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Red Book: Pharmacy's Fundamental Reference

- A guide to accurate product information and prices on prescription drugs, OTC items, and reimbursable medical supplies.
 - Provides the latest pricing information, nationally-recognized AWP's and suggested retail prices for OTC products.
-

Red Book: Pharmacy's Fundamental Reference

- Contains NDC numbers for all FDA-approved drugs, buying groups and billing standards, directories for manufacturers, wholesalers and third party administrators.
- Guide to herbal medicines, common lab values, drug interaction information and product listings for patients with special needs.

American Drug Index

- Published by Facts and Comparisons
- Provides quick access to a comprehensive list of drugs and drug products.
 - Drug names are cross-referenced with monographs providing generic pronunciations, manufacturer, strength, composition, package size, dosage forms, uses, and common abbreviations.
- Used to find trade and generic names.

Drug References

The Merck Index

- Encyclopedia of chemical substance data including stability and other properties.
- Use The Merck Index when information on chemical attributes of drugs is needed.
- Printed edition includes a companion CD.

The Merck Manual

- Contains information on the signs and symptoms of diseases, drug reactions, medical emergencies, clinical procedures, and more.

The Physician's Desk Reference

- Information similar to the pharmaceutical manufacturer's drug package inserts since manufacturers prepare the essential drug information found in the PDR.
- Contains:
 - Drug usage information and warnings, drug interactions, and full size color photos of drugs.
 - PDR electronic library & CD (requires membership).

<http://labeling.pfizer.com/ShowLabeling.aspx?id=587>

The US Pharmacist's Pharmacopeia

- Comprehensive information for pharmacy, veterinary, and other health care professionals on compounding, packaging, labeling, and storage of pharmaceutical preparations.
 - Published bi-annually with five interim supplements.
 - Available on the USP website or in PDF downloads.
 - **Use USP to prepare for regulatory surveys and to comply with standards of practice regarding compounding sterile and non-sterile preparations.**
-

FDA Electronic Orange Book

- Common name for the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations.
- Determines the therapeutic equivalence of brand and generic drugs.
- Code A drugs documented as equivalents.
- Code B drugs documented as nonequivalent.

<http://www.accessdata.fda.gov/scripts/cder/ob/default.cfm>

Other References

- Professional Practice Journals - Official publications reflecting standards of practice.
 - *Today's Technician*
 - *American Pharmacist*
 - *American Journal Health-System Pharmacists*
 - *Journal of American Pharmacist's Association*

Trade Journals

- Published commercially for pharmacist and contain advertising materials.
 - American Druggist
 - Pharmacy Times
 - US Pharmacist
 - Community Pharmacist

Newsletters

- Published rapidly and frequently.
- Useful source of current information.
 - The Medical Letter
 - The Pink sheet
 - Pharmacist's Letter
 - Pharmacy Technician's Letter

Textbooks

- Handbook of Nonprescription Drugs: An Interactive Approach to Self Care
- Goodman and Gilman's The Pharmacological Basis of Therapeutics
- Remington, The Science and Practice of Pharmacy

Indexes of Primary Literature

- Primary literature accessed by printed indexes, abstracts, CD and online database searching.
- Index
 - Data structure that improves the speed of data retrieval operations on a database table.
- Index services
 - Micromedex - full-text databases covering drug information, toxicology, and critical care.
 - Clinical Pharmacology Online - full-text database covering drug information extensively.

PDA's – Smart Phones

- 1996 - original Palm Pilot™ introduced.
- Downloads information from the Internet.
- Provides drug information to patients and health care professionals.
- Touch screen data entry, memory card/slot for data storage, wired or wireless connectivity.
- Mobile phones, media players, and web browsers capability.
- Online Pharmacy software available from variety of sources.

The Internet

- World Wide Web (www)
- Modem
- Browser - a software program that allow users to view Web sites.
- Internet Service Provider (ISP) – A company that provides access to the Internet.
- URL (Uniform Resource Locator) – Web address.
- Search engine - Software that searches the web for information related to criteria entered by the user.

Technician References

- American Association of Pharmacy Technicians
- National Pharmacy Technician Association
- Pharmacy Technician's Letter
- Journal of Pharmacy Technology
- Today's Technician

Terms to Remember

- 1. Abstracting services**
- 2. Browser**
- 3. Digital subscriber line**
- 4. HIPAA**
- 5. Internet service provider**
- 6. Modem**
- 7. Off-label indication**
- 8. “Orange book”**
- 9. Smart Phone**
- 10. Primary literature**
- 11. Search engine**
- 12. Secondary literature**
- 13. Tertiary literature**
- 14. Trade journals**
- 15. Uniform resource locator (URL)**
- 16. World wide web**

- www.medscape.com
- www.epocrates.com
- www.powerpak.com
- <http://pharmacistsletter.com>
- www.pharmacytechniciansletter.com
- <http://www.mass.gov/eohhs/provider/licensing/occupational/pharmacy/>

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