



1.4 Prescriptions and Drug Orders

GOAL This chapter presents the fundamentals of dispensing drugs for patients and the calculations encountered when compounding dosage forms for prescriptions and drug orders.

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OBJECTIVES

This chapter equips students to:

- Distinguish between a prescription drug order and a medical order
 - Describe the required components of a prescription and the information that must be included on the label of a dispensed container
 - Given a practitioner’s name and Drug Enforcement Administration (DEA) number, determine if the DEA number is valid
 - Explain how the directions for use of a prescription by a patient are stated on a prescription drug order
 - Given a prescription drug order and a corresponding label for that prescription, identify any transcription errors
 - List recommendations for reducing medication errors
 - Perform the necessary calculations for dispensing a compounded prescription drug order
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KEYWORDS

- Compounding
- DEA number
- Directions for use
- Medical order
- Medication error
- Prescription
- Prescription label

Importance for Medical Math and Clinical Practice

A *prescription*, in the most general terms, is a written plan of care created for a patient by a medical practitioner. The word also describes the process and the means of communicating the practitioner’s therapeutic or diagnostic intent. In current practice, electronic transmission is the most often used means to communicate the intent among healthcare providers, but a paper document may also be used. For the purposes of this chapter, the focus will be on an order for a patient’s drug. However, sometimes a medical order may be for a medical device that the patient uses to take a prescribed drug (e.g., syringes needed to inject a drug dose or an inhalation device to administer a dose of drug into the lungs), for a diagnostic test, for therapies other than pharmaceutical, and for other purposes.

It’s important for students to appreciate the complexity of the laws and regulations governing the various disciplines delivering healthcare. The descriptions in this chapter are intended as a composite of these rules and regulations. Readers must understand that specific requirements of, for example, a state board having authority over a medical discipline may amend these descriptions to suit regional requirements. Also, this book doesn’t describe the details of the settings in which prescriptions are created, transmitted, and used by a patient. One of those details is the distinction between a *prescription drug order* and a *medical order*. A prescription drug order is an example of a medical order. Perhaps the best way to illustrate this is to imagine two settings where healthcare occurs. In setting one, think of a patient (an outpatient) who is

going about life as usual living at home and visiting a practitioner for a specific health problem. In setting two, think of a patient (an inpatient) who is a resident of an acute- or chronic-care health facility. In the first case, patients are more-or-less dependent on themselves or family members to know what to do and carry out the prescription drug order. In the second case, patients are mostly dependent on others, and the facility maintains substantial moment-to-moment health information about patients. Each prescription drug order for an outpatient must contain substantial information (e.g., age, weight, sex, allergies, address, etc.). That same information does not need to be transmitted with each new medical order for an inpatient because the patient's medical record exists and contains it. Moment-to-moment changes in a patient's condition or response to medication are added to the medical record by contemporaneous notes of the individuals caring for the patient. However, both prescription drug orders and medical orders must contain specific complete information if a drug is to be dosed, which is the major discussion of this chapter. In the inpatient setting, a medical order may be written to modify an existing drug order, in which case this follow-up order may not have all the details of the original order.

Calculations—as simple as finding the total amount of a drug product to dispense or as complicated as compounding a finished product from a number of ingredients—are extremely important to correctly deliver an ordered drug for use by a patient. This chapter presents a number of medical math problems representing, in general, the nature of those encountered every day in medical practice. To make these calculations truly representative, students must understand the language and abbreviations that accompany orders for drugs. See Appendix A (Tables A-1 through A-4) for a fundamental glossary of the abbreviations. Regulatory mandates to *spell out everything* on a drug order are rapidly displacing much of this very old style prescription language, but it is still used.

The best way to learn the language of prescriptions is to carefully read the problems in this chapter before trying to solve them. This brings up a very important point when solving medical math problems. The very best advice is to read and re-read a problem before beginning to write a solution for it. For that matter, it is probably best to not even have a pen or pencil in your hand when beginning a problem. All too often, writing down something before carefully reading and visualizing a path to take toward a solution serves no purpose other than to confuse. Unlike a multiple-choice exam, going with your first thoughts often doesn't serve well for medical math. Something doodled on paper before formulating a staging path to take usually causes only confusion. Students often don't remember why they wrote the doodle, but it seems too important to ignore.

- Read and re-read carefully.
- Think and plan.
- Then, begin to write the stages for attacking the problem.

KEY CONCEPT

For difficult problems, write down what you need to find and the information you have.
