

What Do You Know About Pharmacy Compounding?

In the past, Compounding Was Pharmacy! Throughout history, pharmacists have had to compound drugs for individualized dosages for patients when they were prescribed by physicians. In the early 1900s, however, the pharmaceutical industry began manufacturing a myriad of drugs and dosage forms for patients and the need for compounding diminished. Since the late 1900s, however, a lot has changed and the pharmaceutical industry no longer supplies all the medications needed by patients.

Pharmacy Compounding is important for the following reasons:

1. **LIMITED DOSAGE STRENGTHS:** The pharmaceutical industry supplies only limited strengths of drugs. One size does not fit all and it is often *necessary* to change the strength of a drug for patients, through compounding.
2. **LIMITED DOSAGE FORMS:** The pharmaceutical industry supplies only limited dosage forms; generally only an oral solid (tablet or capsule) and/or injection are manufactured. This does not address the needs of children, premature infants, the elderly, and special needs patients. In fact, Congress has made it possible for the industry to obtain additional patent protection if they manufacture a pediatric (children's) form of the drug, but most companies still do not do this because it is not economically feasible for them; therefore, compounding is necessary.
3. **HOME HEALTH CARE:** A significant percentage of the needs of home healthcare patients are satisfied by compounded medications, including, as an example, total parenteral nutrition (intravenous fats, sugars, and amino acids) necessary for the healing of colon disorders post-operatively. These patients cannot be satisfactorily medicated or sustain a nutritional status needed for healing with manufactured dosage forms.
4. **HOSPICE and PALLIATIVE CARE PATIENTS:** End-of-life therapy involves the compounding of many, many different and unique dosage forms to allow patients to live out their lives free of pain and discomfort. Many combinations of drugs are used for these patients who cannot swallow medications and who don't have the muscle mass that is required to receive multiple injections each day. Other methods include compounded medications for oral inhalation, nasal administration, topical/transdermal, and rectal use.
5. **DISCONTINUED DRUGS:** The pharmaceutical industry has discontinued thousands of drug products over the past 25 years, many due to economic considerations. These were very effective and important medications. The only way they are now available is through pharmacy compounding.
6. **DRUG SHORTAGES:** With over 70% of all bulk drug chemicals being imported for the U.S. pharmaceutical industry and for compounding, commercially manufactured drugs become unavailable for various reasons. In many cases, these can be compounded to help "bridge the gap" until the commercial product comes back on the market.
7. **INTRAVENOUS ADMIXTURES IN HOSPITALS:** Many, if not most, of the lifesaving intravenous drugs given in hospitals and clinics are compounded. This saves the hospital personnel time and the

patient multiple injections or administrations. It is hard to imagine being in the hospital without intravenous admixtures being available.

8. **ORPHAN DRUGS:** When physicians prescribe drugs that are not on the market, they may be available as orphan drugs, either commercially or compounded.
9. **SPECIAL PATIENT POPULATIONS:** Included here would be *pain management* patients, *bioidentical hormone replacement therapy (BHRT)* patients, *sports injury* patients (professional, collegiate, olympic and other amateur athletes), *dental* patients, *dermatological* patients, *environmentally and cosmetic sensitive* patients, and other patients who are being treated successfully with compounded medications prescribed by physicians. In fact, *cancer treatment* often involves compounded “cocktails”, or mixtures of cancer drugs that would be unavailable if they could not be compounded. Specialty compounded drugs for eye surgery, bone surgery, etc. would not be available.
10. **NEW THERAPEUTIC APPROACHES:** If a physician desires to use a medication that is successfully used in other countries but is not commercially available here, that physician can prescribe a compounded formulation of the medication for patients. An FDA-approved oral therapy prescribed as a topical gel for arthritis treatment to avoid gastric bleeding could reduce the overall cost of health-care by avoiding hospitalization from a gastric bleed.
11. **VETERINARY COMPOUNDING:** Animals can be grouped into various categories, including small, large, herd, exotic, and companion groups. There are actually relatively few medications available for animals, and those medications that are available are for specific species and diseases. In most cases, for an animal to be satisfactorily treated, a compounded medication may be necessary.
12. **CLINICAL STUDIES:** Pharmacists compound drugs that are not commercially available that are used in various clinical studies.
13. **NUCLEAR COMPOUNDING:** A radioactive source is “tagged” to a compound that circulates throughout the body and eventually concentrates in the organ under exploration. With over 100 different types of nuclear procedures performed every day, the most commonly performed procedure is organ imaging; to determine blood flow and function of the heart, blockage of the gallbladder, measure lungs for respiratory and blood-flow problems, bones for fracture, infection, arthritis or tumor, bleeding of the bowel, locate the presence of infection, measure thyroid function, and to determine the presence or spread of cancer.