internationally. Countries not having a national pharmacopeia frequently adopt one of another country for use in setting and regulating drug standards. Selection of the pharmacopeia is usually based on geographic proximity, a common heritage or language, or a similarity of drugs and pharmaceutical products used. For example, Canada, which does not have its own national pharmacopeia, has traditionally used USP–NF standards. The Mexican pharmacopeia (*Farmacopea de los Estados Unidos Mexicanos*) and the Brazilian Pharmacopeia (*Farmacopeia Brasilieira*) are the only other actively maintained pharmacopeias in this hemisphere. The Brazilian Pharmacopoeia is part of the MERCOSUR Pharmacopoeia, comprising Argentina, Brazil, Paraguay, and Uruguay (7).

Standards Set Forth in FDA-Approved New Drug Applications

In the United States, in addition to the official compendia, some initial drug and drug product standards and assay methods are established as set forth in new drug applications approved by the FDA (see Chapter 2). The manufacturer must rigidly adhere to these initial standards to maintain product quality and continued FDA approval for marketing. Ultimately, these or subsequently developed standards are adopted as new monographs by the USP–NF.

International Organization for Standardization

The International Organization for Standardization (ISO) is an international consortium of representative bodies constituted to develop and promote uniform or harmonized international standards. Representing the United States in the consortium is the American National Standards Institute.

Among the various ISO standards used in the pharmaceutical industry are those in the series ISO 9000 to ISO 9004. Included here are standards pertaining to development, production, quality assurance (QA), quality control (QC), detection of defective products, quality management (QM), and other issues, such as product safety and liability. Industry compliance with the standards is voluntary. However, many firms find it advantageous to their business to comply with ISO standards and to be identified within their industry as having an internationally recognized QM system. Some companies choose to become ISO certified through a rigorous evaluation and accreditation process (8).

DRUG REGULATION AND CONTROL

The first federal law in the United States designed to regulate drug products manufactured domestically was the Food and Drug Act of 1906. The law required drugs marketed interstate to comply with their claimed standards for strength, purity, and quality. Manufacturers' claims of therapeutic benefit were not regulated until 1912, when the passage of the Sherley Amendment specifically prohibited false claims of therapeutic effects, declaring such products misbranded.

THE FEDERAL FOOD, DRUG, AND COSMETIC ACT OF 1938

The need for additional drug standards was tragically demonstrated in 1938. The then-new wonder drug sulfanilamide, which was not soluble in most common pharmaceutical solvents of the day, was prepared and distributed by an otherwise reputable manufacturer as an elixir using as the solvent diethylene glycol, a highly toxic agent used in antifreeze solutions. Before the product could be removed from the market, more than 100 persons died of diethylene glycol poisoning. The necessity for proper product formulation and thorough pharmacologic and toxicologic testing of the therapeutic agent, pharmaceutical ingredients, and the completed product was painfully recognized. Congress responded with the passage of the Federal Food, Drug, and Cosmetic Act of 1938 and the creation of the FDA to administer and enforce it.

The 1938 Act prohibits the distribution and use of any new drug or drug product without