chapter **43**

Immunizing Agents

Objectives

AFTER STUDYING THIS CHAPTER, THE STUDENT WILL BE ABLE TO:

1. Discuss common characteristics of immunizations.
2. Discuss the importance of immunizations in promoting health and preventing disease.
3. Identify authoritative sources for immunization information.
4. Identify immunizations recommended for children.
5. Identify immunizations recommended for adults.
6. Discuss ways to promote immunization of all age groups.
7. Teach parents about recommended immunizations and record keeping.

Critical Thinking Scenario

A young couple brings their 6-week-old infant to the clinic for a well-baby check and her required "shots." First, you examine the baby and talk with the couple about how new parenthood is going. Both seem very motivated to be good parents. They have lots of questions and ask whether all those shots are really necessary. The mother admits that she has always been afraid of shots and just can't watch her baby be hurt.

Reflect on:

- How you can acknowledge the mother's concerns without minimizing her feelings.
- Basic information regarding immunizations that every new parent should have.
- Teaching regarding what the parents may expect for 2 to 3 days after the injection and appropriate symptom management.
- The importance of keeping up-to-date immunization records.

OVERVIEW

Immune responses and types of immunity are described in Chapter 42. Many antigens that activate the immune response are microorganisms that cause infectious diseases. Early scientists observed that people who contracted certain diseases were thereafter protected despite repeated exposure to the disease. As knowledge evolved, it was discovered that protection stemmed from body substances called antibodies, and that antibodies could also be induced by deliberate, controlled exposure to the antigen. Subsequently, immunization techniques were developed.

Although immunizations against some diseases have long been used, the development of immunizing agents and recommendations for their use continue. Some recommendations and changes of recent years are summarized as follows:

- The American Academy of Pediatrics (*www.aap.org*) recommends that only the inactivated polio vaccine (IPV) be used in the United States. The oral vaccine used for many years contained live virus and caused viral shedding and a few cases of polio. The main disadvantages of IPV are that it must be injected and it is more expensive.
- Hepatitis B virus (HBV) infection can cause serious liver diseases such as acute and chronic hepatitis, cirrhosis, and hepatocellular carcinoma. Chronic carriers of HBV may be asymptomatic reservoirs for viral transmission. Children who become infected are at high risk of becoming chronically infected. Because of these circumstances, hepatitis B vaccine is now recommended for all newborns and for unimmunized children before starting school, as well as other at-risk groups. Overall, the goal is to achieve universal immunization, decrease transmission, and eradicate the disease.
- Everyone should be immunized against diphtheria and tetanus every 7 to 10 years for life.
- Strategies to promote immunization continue to evolve. One strategy is to combine vaccines so that only one in-