immunizations.

Because allergic reactions can occur after injection of vaccines, take the appropriate precautions. (See the Safety Alert box earlier in this chapter.)

One of the most important features of injecting vaccines is adequate penetration of the muscle for deposition of the drug intramuscularly and not subcutaneously (depending on the manufacturer's recommendation for administration). The use of appropriate needle length is an essential component of administering vaccines. In two studies, the use of longer needles significantly decreased the incidence of localized edema and tenderness when vaccines were administered to a group of infants (Diggle and Deeks, 2000; Diggle, Deeks, and Pollard, 2006) (see Translating Evidence into Practice box). Similar findings have been recorded for children 4 to 6 years old receiving the fifth DTaP vaccine (Jackson, Yu, Nelson, et al, 2011). In some studies, the site of administration influenced pain perception and localized reactions. Cook and Murtagh (2006) found that administration of the pertussis vaccine in the ventrogluteal muscle in children 2 months old to 18 months old was safe and had few localized reactions in comparison to anterolateral thigh administration. Junqueira, Tavares, Martins, and colleagues (2010) found that administration of the hepatitis B vaccine in the ventrogluteal muscle (versus anterolateral thigh) of 580 infants resulted in a lower incidence of fever and localized reactions.

Translating Evidence into Practice

Appropriate Site, Technique, Needle Size, and Dosage for Intramuscular Injections in Infants, Toddlers, and Small Children*

Ask the Question

In infants, toddlers, and small children what is the best site, technique, needle size and gauge, and dosage for intramuscular (IM) injections?

Search for the Evidence