Extensive laboratory evaluation is not indicated in children who have uncomplicated diarrhea and no evidence of dehydration, because most diarrheal illnesses are self-limiting. Laboratory tests are indicated for children who are severely dehydrated and receiving IV therapy. Watery, explosive stools suggest glucose intolerance; foul-smelling, greasy, bulky stools suggest fat malabsorption. Diarrhea that develops after the introduction of cow's milk, fruits, or cereal may be related to enzyme deficiency or protein intolerance. Neutrophils or red blood cells in the stool indicate bacterial gastroenteritis or IBD. The presence of eosinophils suggests protein intolerance or parasitic infection. Stool cultures should be performed only when blood, mucus, or polymorphonuclear leukocytes are present in the stool, when symptoms are severe, when there is a history of travel to a developing country, and when a specific pathogen is suspected. Gross blood or occult blood may indicate pathogens, such as *Shigella, Campylobacter,* or hemorrhagic *Escherichia coli* strains. An enzyme-linked immunosorbent assay (ELISA) may be used to confirm the presence of rotavirus or *Giardia* organisms. If there is a history of recent antibiotic use, test the stool for *C. difficile* toxin. When bacterial and viral culture results are negative and when diarrhea persists for more than a few days, examine stools for ova and parasites. A stool specimen with a pH of less than 6 and the presence of reducing substances may indicate carbohydrate malabsorption or secondary lactase deficiency. Stool electrolyte measurements may help identify children with secretory diarrhea.

The serum bicarbonate (HCO_3) may be useful when combined with other clinical signs. In the presence of metabolic acidosis an anion gap may be helpful to distinguish between types of metabolic imbalance. Obtain a complete blood count (CBC), serum electrolytes, creatinine, and BUN in the child who has moderate to severe dehydration or who requires hospitalization. The hemoglobin, hematocrit, creatinine, and BUN levels are usually elevated in acute diarrhea and should normalize with rehydration.

Therapeutic Management

The major goals in the management of acute diarrhea include assessment of fluid and electrolyte imbalance, rehydration, maintenance fluid therapy, and reintroduction of an adequate diet.