Lumbar puncture should generally be avoided in meningococcal septicemia, as positioning for the procedure may critically compromise the patient's circulation in the context of hypovolemic shock. Delayed lumbar puncture may still be useful when the diagnosis is uncertain, particularly if molecular diagnostic technology is available.

In other types of focal infection, culture and PCR analysis of normally sterile body fluids (e.g., synovial fluid) may aid in the diagnosis. Although some authorities have recommended cultures of scrapings or aspirates from skin lesions, this procedure adds little to the diagnostic yield when compared with a combination of blood culture and PCR analysis. Urinary antigen testing also is insensitive, and serologic testing for meningococcal infection has not been adequately studied. Because *N. meningitidis* is a component of the normal human nasopharyngeal flora, identification of the organism on throat swabs has limited diagnostic value, but strains identified in the nasopharynx in the context of a probable case are likely to be those responsible for disease.

TREATMENT

Meningococcal Infections

Death from meningococcal disease is associated most commonly with hypovolemic shock (meningococcemia) and occasionally with raised intracranial pressure (meningococcal meningitis). Therefore, management should focus on the treatment of these urgent clinical issues in addition to the administration of specific antibiotic therapy. Delayed recognition of meningococcal disease or its associated physiologic derangements, together with inadequate emergency management, is associated with poor outcome. Since the disease is rare, protocols for emergency management have been developed (see *www.meningitis.org*).

Airway patency may be compromised if the level of consciousness is depressed as a result of shock (impaired cerebral perfusion) or raised intracranial pressure; this situation may require intervention. In meningococcemia, pulmonary edema and pulmonary oligemia (presenting as hypoxia) require oxygen therapy