

aspiration of endogenous or hospital-acquired oropharyngeal or gastric flora. Nosocomial pneumonias have been associated with more deaths than have infections at any other body site. However, attributable mortality rates suggest that the risk of dying from nosocomial pneumonia is affected greatly by other factors, including comorbidities, inadequate antibiotic treatment, and the involvement of specific pathogens (particularly *Pseudomonas aeruginosa* or *Acinetobacter*). Surveillance and accurate diagnosis of pneumonia have been problematic in hospitals because many patients, especially those in the intensive care unit (ICU), have abnormal chest roentgenographs, fever, and leukocytosis potentially attributable to multiple causes. This diagnostic uncertainty has led to a refocus from VAP to ventilator-associated events (VAEs), conditions, and complications, for which worsening physiologic parameters, such as oxygenation, are key metrics. VAEs occur in as many as 5–10% of patients using mechanical ventilators.

There is increasing interest in health care–associated pneumonia in patients who are on general wards or not receiving mechanical ventilation. Viral pneumonias, which are particularly important in pediatric and immunocompromised patients, are discussed in the virology section and in [Chap. 126](#).

Risk factors for nosocomial pneumonia include those events that increase colonization by potential pathogens (e.g., prior antimicrobial therapy, contaminated ventilator equipment, or decreased gastric acidity, which also may increase risk of colonization by antibiotic-resistant bacteria); those that facilitate aspiration of oropharyngeal contents into the lower respiratory tract (e.g., intubation, decreased levels of consciousness, or presence of a nasogastric tube); and those that reduce pulmonary defense mechanisms and permit overgrowth of aspirated pathogens (e.g., chronic obstructive pulmonary disease or upper abdominal surgery).

Several control measures can lessen risk for pneumonia ([Table 142-1](#)). Although the benefits of selective decontamination of the oropharynx and gut with nonabsorbable antimicrobial agents—a practice usually avoided in the United States because of concerns about antibiotic resistance—have been controversial, a randomized multicenter Dutch trial demonstrated lowered ICU mortality rates