

## Documents

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**Risk factors for mortality over 18 years in 317 ICUs in 9 Asian countries: The impact of healthcare-associated infections**

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**Abstract**

**Objective:** To identify risk factors for mortality in intensive care units (ICUs) in Asia. **Design:** Prospective cohort study. **Setting:** The study included 317 ICUs of 96 hospitals in 44 cities in 9 countries of Asia: China, India, Malaysia, Mongolia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand, and Vietnam. **Participants:** Patients aged >18 years admitted to ICUs. **Results:** In total, 157,667 patients were followed during 957,517 patient days, and 8,157 HAIs occurred. In multiple logistic regression, the following variables were associated with an increased mortality risk: central-line-associated bloodstream infection (CLABSI; aOR, 2.36; P <.0001), ventilator-associated event (VAE; aOR, 1.51; P <.0001), catheter-associated urinary tract infection (CAUTI; aOR, 1.04; P <.0001), and female sex (aOR, 1.06; P <.0001). Older age increased mortality risk by 1% per year (aOR, 1.01; P <.0001). Length of stay (LOS) increased mortality risk by 1% per bed day (aOR, 1.01; P <.0001). Central-line days increased mortality risk by 2% per central-line day (aOR, 1.02; P <.0001). Urinary catheter days increased mortality risk by 4% per urinary catheter day (aOR, 1.04; P <.0001). The highest mortality risks were associated with mechanical ventilation utilization ratio (aOR, 12.48; P <.0001), upper middle-income country (aOR, 1.09; P =.033), surgical hospitalization (aOR, 2.17; P <.0001), pediatric oncology ICU (aOR, 9.90; P <.0001), and adult oncology ICU (aOR, 4.52; P <.0001). Patients at university hospitals had the lowest mortality risk (aOR, 0.61; P <.0001). **Conclusions:** Some variables associated with an increased mortality risk are unlikely to change, such as age, sex, national economy, hospitalization type, and ICU type. Some other variables can be modified, such as LOS, central-line use, urinary catheter use, and mechanical ventilation as well as and acquisition of CLABSI, VAE, or CAUTI. To reduce mortality risk, we shall focus on strategies to reduce LOS; strategies to reduce central-line, urinary catheter, and mechanical ventilation use; and HAI prevention recommendations. © The Author(s), 2022. Published by Cambridge University Press on behalf of The Society for Healthcare Epidemiology of America.

**Index Keywords**

adult, aged, Article, artificial ventilation, Asia, cancer surgery, catheter associated urinary tract infection, catheter related bloodstream infection, childhood cancer, China, cohort analysis, controlled study, economic aspect, female, hospitalization, human, India, intensive care unit, length of stay, major clinical study, Malaysia, male, middle income country, Mongolia, mortality, mortality risk, multicenter study, Nepal, Pakistan, Philippines, prospective study, risk factor, Sri Lanka, Thailand, university hospital, Viet Nam, catheter infection, child, cross infection, health care delivery, risk factor, urinary tract infection, ventilator associated pneumonia; Adult, Catheter-Related Infections, Child, Cross Infection, Delivery of Health Care, Female, Hospitals, University, Humans, Intensive Care Units, Pakistan, Pneumonia, Ventilator-Associated, Prospective Studies, Risk Factors, Urinary Tract Infections

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