

**Subject Category:** Healthcare-Associated Infection (HAI) Surveillance

**Abstract Number:** SG-APUSIC1100

**Healthcare-associated infections in COVID-19 patients in Vietnam: Are we able to respond better?**

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**Objectives:** Studies have revealed that a relatively high incidence of severe infection and mortality in COVID-19 patients is attributed to healthcare-associated infections (HAIs). We implemented a study in 2 field hospitals dedicated to COVID-19 treatment in Da Nang, Vietnam (July–August 2020), and Ho Chi Minh City, Vietnam (August–October 2021), to identify pathogens, risk factors, and outcomes associated with HAIs. **Methods:** We applied a prospective study tool to estimate HAI incidence among 1,454 patients. HAIs are diagnosed and ascertained using surveillance criteria established by the US Centers for Disease Control and Prevention. All patients hospitalized for COVID-19 for at least 2 days were enrolled in this assessment of HAI risks, pathogens, and outcomes. **Results:** Among 1,454 sampled patients, 391 patients had 423 HAIs (27.1%). The highest proportion occurred in ICUs, with 422 HAI patients (34.1%). Pneumonia (n = 331, 78.3%) and bloodstream infections (n = 55, 13.1%) were the most common HAIs. Multidrug-resistant (MDR) bacteria, such as *Klebsiella pneumoniae* (27.9%) and *Acinetobacter baumannii* (25.3%), were the most commonly isolated organisms. Ventilators and central venous catheters were independently associated with HAIs. Regarding the mortality rates, 55% of deaths occurred in intensive care units. Patients with HAIs (70.3%) were twice as likely to die compared to patients without HAIs (38.8%). HAIs leading to septic shock caused almost triple mortality (n = 58, 90.6%) compared with non-HAI patients (n = 412, 38.8%). HAIs prolonged hospital stay: 24.7 days for patients with HAIs and 19.1 days for patients without HAIs (P < .001). **Conclusions:** Patients with COVID-19–related critical illnesses are at high risk of HAIs from multidrug-resistant (MDR) bacteria. HAIs prolong hospitalization, whereas HAIs with septic shock almost tripled mortality. Guidelines and procedures to prevent and control HAIs caused by MDR bacteria as well as training and monitoring on aseptic-compliant techniques during invasive clinical procedures are needed.

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**Long-term effect of a bundled care program in reducing central-line-associated bloodstream infections**

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**Objectives:** Central-line-associated bloodstream infection (CLABSI) has been the leading cause of healthcare-associated infections (HAIs) in the

intensive care unit (ICU) setting. Previous studies have shown that a care bundle is effective in reducing CLABSI rates; however, the data on long-term sustainability and cost savings of bundled care are limited. **Methods:** From January 2011 to December 2020, a prospective surveillance was performed to monitor CLABSI at a university hospital in northern Taiwan. To reduce the CLABSI rate, a hospital-wide bundled care program for CLABSI prevention was implemented in 2013. We evaluated the long-term effect of the care bundle on CLABSI incidence and length of stay in the ICU. **Results:** During the study period, the overall CLABSI incidence decreased from 8.22 per 1,000 catheter days before the care bundle was implemented to 6.33 per 1,000 catheter days in 2020 (P for trend < .01). The most common pathogens causing CLABSI were gut organisms (1,420 of 2,363, 60.1%), followed by environmental organisms (734 of 2,363, 31.1%) and skin organisms (177 of 2,363, 7.5%). The decreasing trend was statistically significant in the incidence of CLABSI caused by skin organisms (P for trend < .01), but not in the incidence of CLABSI caused by environmental organisms (P for trend = .86) or gut organisms (P for trend = .06). In the multivariable analysis, implementation of this care bundle was independently associated with a decrease in the CLABSI rate (RR, 0.77; 95% CI, 0.66–0.88). Compared with patients without CLABSI, patients with CLABSI had a longer average ICU length of stay (27 vs 17 days). **Conclusions:** A sustainable reduction in the incidence of CLABSI caused by common commensals could be achieved through a cost-saving bundled care program.

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**The role of infection control activities on healthcare-associated infections during 2017–2021 at intensive care units in Cho Ray Hospital**

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**Objectives:** Healthcare-associated infections (HAIs) are one of the greatest challenges and concerns in Vietnam and around the world. Many studies have shown that HAIs may result in an increase in hospital length of stay, antibiotic use, multidrug-resistant organism (MDROs) infections, treatment costs, and mortality. Therefore, in the past 5 years, the Department of Infection Control of Cho Ray Hospital has carried out many infection and prevention control (IPC) activities to reduce the rates of HAI and MDRO infection. We evaluated IPC activities and results achieved in these efforts at Cho Ray Hospital during 2017–2021. **Methods:** We described the implemented IPC activities and retrospectively collected data from HAIs surveillance reports during 2017–2021 for 3 intensive care units (ICUs): ICU-B, ICU-D, and the NICU. **Results:** In the past 5 years, we implemented synchronous IPC activities, including promoting hand hygiene training and surveillance, environmental cleaning surveillance, carrying out improvement projects such as a ventilator-associated pneumonia (VAP) prevention bundle, an MDRO prevention bundle, and an environmental cleaning quality improvement project. Many positive results were achieved, although a slight increase in the HAI incidence occurred in 2021 due to the COVID-19 pandemic. Overall, the hand hygiene compliance rate increased from 49.7% to 83.8%. The rate of HAIs per 1,000 patient days decreased steadily from 5.4 to 2.4. The VAP rate fell from 30.5 to 17.2 per 1,000 patient days, and the central-line-associated bloodstream infection (CLABSI) rate decreased gradually from 5.4 to 2.4 per 1,000 patient days. The catheter-associated urinary tract infection (CAUTI) rate decreased from 2.9 to 0.9 per 1,000 patient days, and the MDRO infection rate decreased significantly from 32.7 to 11.3 per 1,000 patient days. **Conclusions:** The synchronous implementation of HAI prevention bundles promoting hand hygiene and environmental