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Healthcare-Associated Infection Rates, Extra Length of Stay and Mortality in a Hospital of the Philippines. Findings of the INICC.

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OBJECTIVE:

Our goal was to determine the rate, extra length of stay (ELOS) and extra mortality of the healthcare-associated infections (HAI) in one intensive care unit (ICU) of a hospital member of the INICC in the Philippines.

METHODS:

An open label, prospective cohort, active HAI surveillance study was conducted on adult patients admitted to one tertiary-care ICU of the Philippines. The protocol, forms, and methodology implemented were developed by the INICC. The data collection was performed in the participating ICU. Data uploading and data analysis were conducted at INICC headquarters on proprietary software. Rates of HAI were recorded through applying the definitions provided by the Centers for Disease Control and Prevention (CDC) National Nosocomial Infection Surveillance (NNIS) system.

We analyzed the HAI rates, ELOS and extra mortality of patients with central vascular catheter-associated bloodstream infection (CVC-BSI), mechanical ventilator-associated pneumonia (VAP), and catheter-associated urinary tract infection (CA-UTI). Adult patients with HAI were considered cases, while those without HAI were considered controls. We calculated ELOS subtracting average length of stay (ALOS) of patients with and without HAI.

RESULTS:

From 2005 to 2006, we enrolled 115 patients, representing 908 bed days. The overall HAI rate was 25.2 (29/115) per 100 patients and 31.9 (29/908) per 1000 bed days. The CVC-BSI rate was 14.0 (5/356) per 1000 CVC days, the VAP rate was 27.4 (15/548) per 1000 device days, and the CA-UTI rate was 16.2 (9/557) per 1000 catheter days. Overall 50.0% of all HAI were caused by Enterobacteriaceae —30.8% of which were resistant to ceftriaxone, 25.0% and were resistant to ceftazidime; 25.0% were caused by Enterococcus sp.; and 25.0% by Corynebacter sp. The LOS of patients without HAI was 5.3 days; the LOS of patients with CVC-BSI was 18.0 days (RR, 3.37; 95% CI, 2.63-4.31; P,

0.00001), representing 12.7 extra days; the LOS of patients with VAP was 15.6 days (RR, 2.91; 95% CI, 2.41-3.51; P, 0.00001), representing 10.2 extra days; and the LOS of patients with CA-UTI was 8.8 days (RR, 1.64 ; 95% CI, 1.16-2.31; P, 0.0045), representing 3.4 extra days.

A total of 15 out of 86 (17.4%) patients without HAI died; 1 out of 4 patients (25.0%) with CVC-BSI died, the extra mortality of CVC-BSI being 7.6%, (RR, 1.43; 95% CI, 0.19 - 10.85; P, 0.7259); 2 out of 9 patients (22.2%) with VAP died, the extra mortality of VAP being 4.8%, (RR, 1.27; 95% CI, 0.29-5.57; P, 0.7470); none of the 4 patients (0.0%) with CA-UTI died, and because of this there was no extra mortality for CA-UTI.

CONCLUSION:

This study identified that CVC-BSI, VAP, and CA-UTI rates were high, and increased the length of stay of patients in ICUs from 3.4 to 12.7 days.