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# Endotoxin Overproduction of Enterobacter cloacae and Mortality Rate

To the Editor—We want to applaud the great work done by Arduino et al<sup>1</sup> in their article that established growth rates and endotoxin production in vitro in propofol using 10 clinically important microorganisms associated with outbreaks that have been implicated in extrinsic contamination of this intravenous anesthetic, as published by the Centers for Disease Control and Prevention in May and June 1990.<sup>2</sup> We would like to mention other studies that were reported after Arduino et al<sup>1</sup> to lend additional credence to their findings. According to the analysis by Arduino et al,<sup>1</sup> endotoxin was not detected in the gram-negative cultures at the start of the experiment, but after 24 hours, endotoxin production increased rapidly to a substantial level. Enterobacter cloacae was the best endotoxin producer of all of the microorganisms tested at all time points (2,412-4,820 ng/mL in 24 hours; 9,420-18,840 ng/mL in 48 hours; 7,360-14,720 ng/mL in 72 hours). Translating these results to clinical practice, 11 years later, Weist et al<sup>3</sup> reported outbreaks caused by multiple dose vials from 1983 to 2002, including 2 fatalities and 4 infected patients whose cases were associated with the administration of propofol contaminated by nothing more and nothing less than E. cloacae. Additionally, Mattner and Gastmeier<sup>4</sup> refer to E. cloacae and Serratia marcescens as the microbial species most commonly associated with death in the 7 reported outbreaks associated with propofol use.

We would again like to congratulate Arduino et al<sup>1</sup> for the practical knowledge generated by this study, which focused on specific strains that overproduce endotoxin, such as *E. cloacae.* Consequently, this species has been shown to be associated with a high mortality rate, as reported in several studies.<sup>3,4</sup>

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### Carolina Zorrilla-Vaca, MD;<sup>1</sup> Andrés Zorrilla-Vaca, MD<sup>2</sup>

Affiliations: 1. Health Faculty, University of Libre, Cali, Colombia; 2. Health Faculty, University of Valle, Cali, Colombia.

Address correspondence to Carolina Zorrilla-Vaca, MD, Diagonal 37, No. 3-29, Health Faculty, University of Libre, Cali 760026, Colombia (carito906@hotmail.com).

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## Different Compliance with Central Line Insertion Bundle between Intensivist and Nonintensivist Staff in Intensive Care Units

To the Editor-The use of central venous catheter (CVC) is increasing for monitoring hemodynamic status and providing venous access in the intensive care unit (ICU). However, as CVC use increases, complications of central line-associated bloodstream infection (CLABSI) after the insertion of CVCs increase as well and become another important cause of morbidity and mortality.<sup>1,2</sup> Therefore, several prevention efforts were developed to reduce the occurrence of CLABSI in the clinical setting of the ICU. "Insertion bundles" for reducing the risk of infection during the insertion of CVCs and "maintenance bundles' for minimizing the risk of infection for patients with CVCs are the 2 essential care bundles for prevention of CLABSI. CVC insertion is always performed by physicians in the ICU; however, ICU physicians may be intensivist or nonintensivist staff, and studies that compare CVC insertion bundle compliance of these 2 different types of physicians in the ICU are scarce. Therefore, this study was conducted to investigate the physician factors associated with CVC insertion compliance in the ICU.