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Researchers find gram-negative rods in two Philippine neonatal intensive care units

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Researchers at Boston University School of Medicine (BUSM) have found a high frequency of multidrug-resistant Gram-negative rods (GNRs) in two of the largest neonatal intensive care units (NICUs) in the city of Manila, Philippines. Improved infection control methods could reduce the vast number of hospital acquired neonatal infections. The BUSM study appears online in the journal *Infection Control and Hospital Epidemiology*.

According to researchers, hospital acquired infections have emerged as a significant health problem in developing areas. Neonatal mortality accounts for more than one third of all global child deaths each year. Sepsis is a leading cause of death within the first month of life and is often acquired through unhygienic care practices in healthcare facilities, which frequently have limited emphasis placed on standard infection control measures.

Over a 10-month period, BUSM researchers conducted studies for colonization and bloodstream infections with gentamicin or third generation cephalosporin-resistant GNR among all NICU infants weekly and then on the day of discharge. Researchers found a total of 1,997 resistant GNRs colonizing 1,831 neonates. Results also showed that 376 newborns became bacteremic with a total of 437 GNRs.

The most common GNR species identified were Klebsiella, Acinetobacter, Pseudomonas aeruginosa and Enterobacter. A high proportion of colonization and bacteremia at the two NICUs was with

non-intestinal GNRs. Factors significantly associated with increased risk of bacteremia were mechanical ventilation and prematurity. Additionally, colonization with a resistant GNR was an independent risk factor for bacteremia.

"Colonization with a resistant GNR was an independent risk factor for sepsis," said senior author, Davidson Hamer, MD, associate professor of international health and medicine at Boston University School of Public Health, and director of Boston Medical Center's Travel Clinic. "The unusually high intensity of colonization pressure and disease with multidrug-resistant GNRs at these two NICUs constitutes an emerging health care crisis in the developing world."

Source: Boston University Medical Center