

Nurse understaffing increases infection risk in VLBW babies

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Very low birth weight infants, those weighing less than 3.25 pounds, account for half of infant deaths in the United States each year, yet a new study released in today's issue of *JAMA Pediatrics* documents that these critically ill infants do not receive optimal nursing care, which can lead to hospital-acquired infections that double their death rate and may result in long-term developmental issues affecting the quality of their lives as adults.

These vulnerable infants are the highest risk pediatric patients in hospitals and account for half of all [infant deaths](#) in the country each year. These hospital-acquired infections afflicted 13.9 percent of these frail infants in 2009, the last year reported in the study.

The lead authors, based at the University of Medicine and Dentistry of New Jersey- School of Public Health and the University of Pennsylvania School of Nursing, studied very [low birth weight](#) infants cared for in 67 [Neonatal Intensive Care](#) Units (NICU).

"One-third of NICU infants were understaffed, according to current guidelines. Understaffing varies further across acuity levels with the greatest fraction of understaffed infants (92 percent) requiring the most complex critical care, translating into a needed 25% increase in the numbers of nurses," wrote co-[principal investigators](#) Jeannette A. Rogowski, PhD, the University Professor in [Health Economics](#) at the UMDNJ-School of Public Health and Eileen T. Lake, PHD, RN, FAAN, associate director of the Center for Health Outcomes and Policy

Research at the University of Pennsylvania School of Nursing.

The researchers noted that infection caused four to seven days of longer hospitalization with associated increased costs, notably to Medicaid.

"Under recent changes in Medicaid policy, hospitals will no longer be reimbursed for the costs associated with these infections," said Lake.

"Sadly, because Medicaid is the largest payer for [premature newborns](#), the additional costs may lead hospitals to further cut the nursing staff, leading to a cycle of infection and mortality that could impact even more of these fragile infants."

"These are the first data that demonstrate the extent of adherence to national staffing guidelines and the shortfall is dramatic," said Rogowski.

"Fewer nursing hours could lead to less time devoted to cleaning and maintaining intravenous catheters used to deliver medications thus leading to the higher rates of infection."

The researchers examined data from 67 NICUs involving 4,046 nurses and 10,394 infants in 2008 and 3,645 nurses and 8,804 infants in 2009-10. The research was funded by the National Institute for Nursing Research and the Robert Wood Johnson Foundation.

Provided by University of Pennsylvania School of Nursing

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