

Despite Decreases, Nearly 4 in 10 Infants Are Cold When Admitted to the NICU

Background

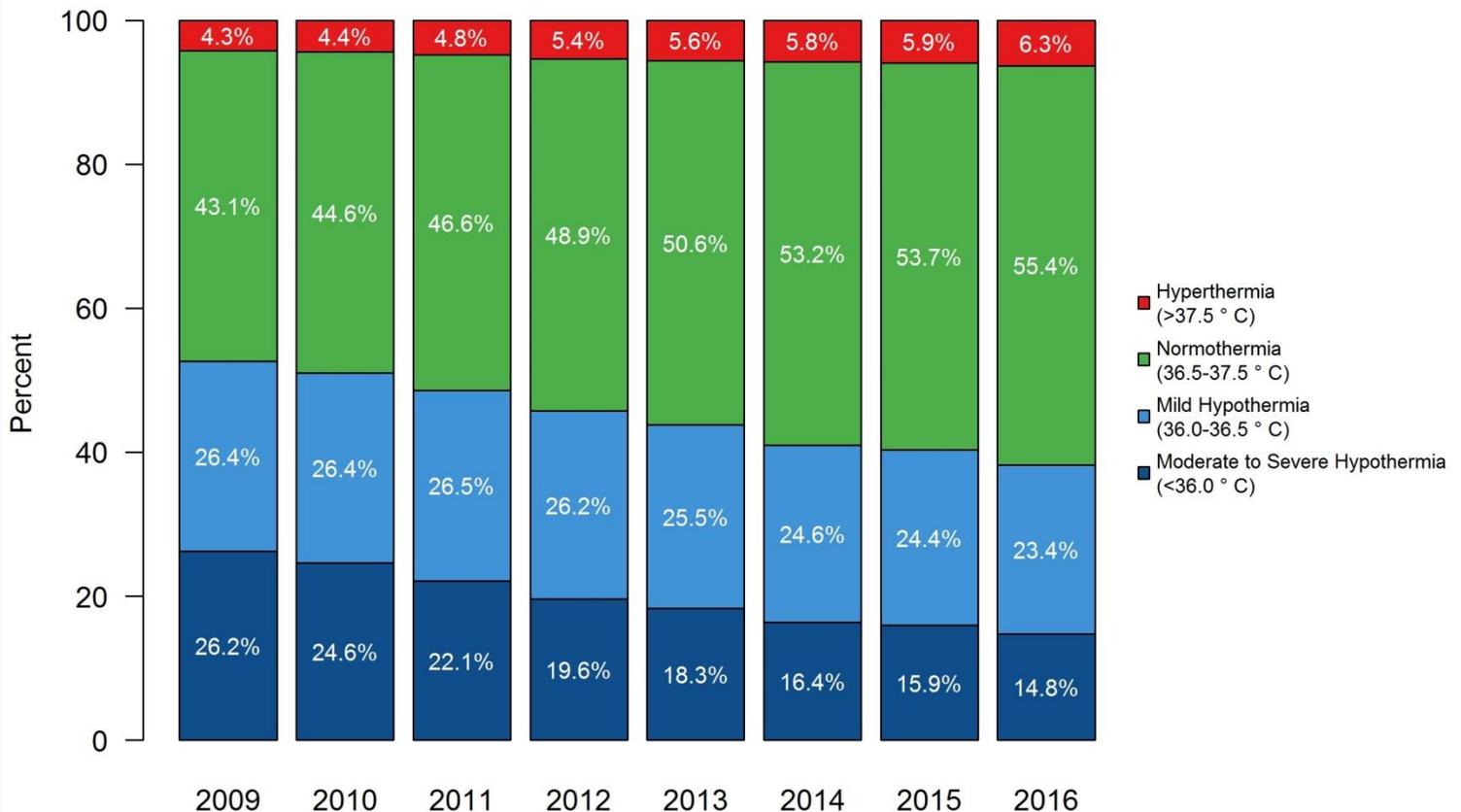
Very low birth weight (VLBW) infants frequently become hypothermic after birth, defined by the World Health Organization as an admission temperature less than 36.5 degrees Centigrade (36.5°C) (1). The goal of this analysis was to characterize admission temperatures to the neonatal intensive care unit (NICU).

Results

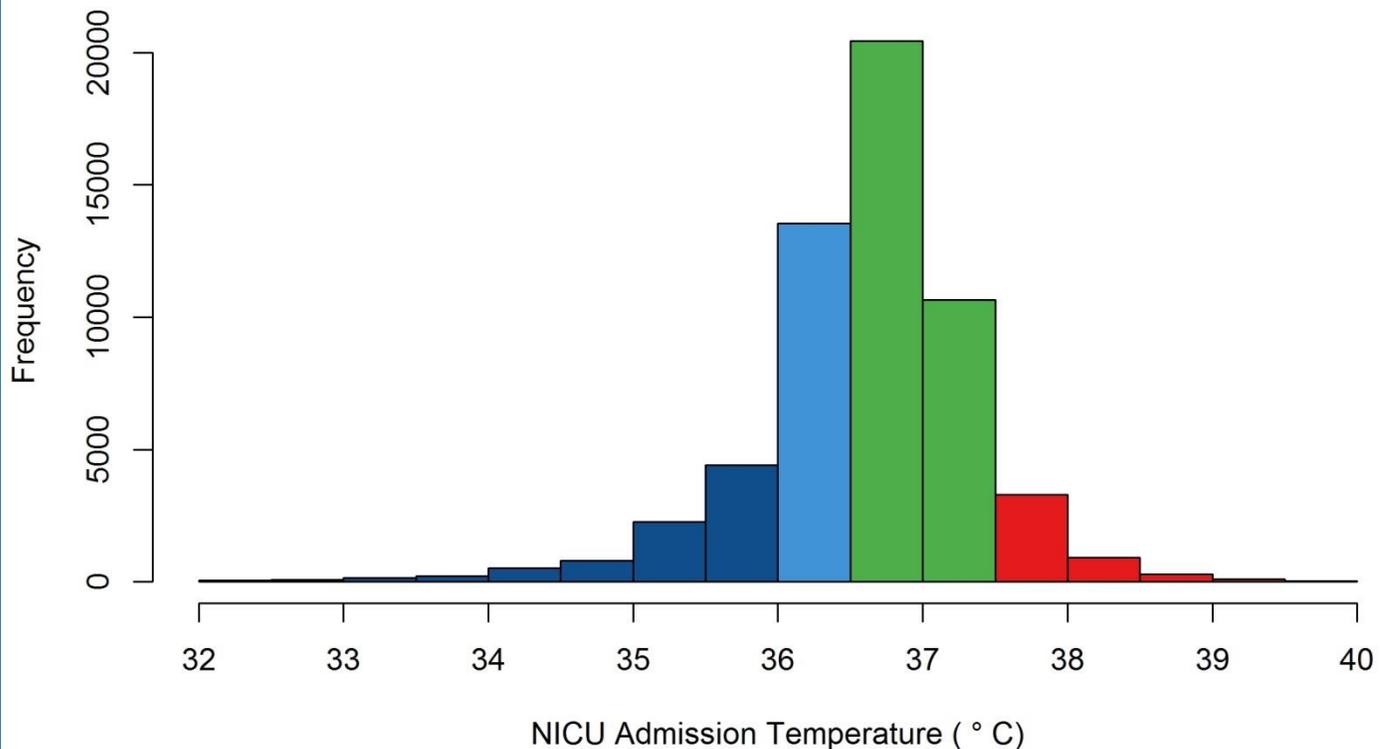
We examined 454,617 VLBW infants who survived at least 12 hours in a NICU at 1112 hospitals from 2009 to 2016. Infants who die within 12 hours of admission are less likely to have their temperature measured and have substantially higher rates of hypothermia, which is why they were excluded.

From 2009-2016, rates of admission temperatures <36.5°C decreased from 52.6% to 38.2%

**Temperature at NICU admission by year
(excluding early deaths)**



Distribution of admission temperature for infants in 2016 (excluding early deaths)



Commentary

Seminal studies in neonatal medicine demonstrated the profound effect of maintaining a neutral thermal environment and preventing hypothermia (2). Multiple modalities are available to help prevent hypothermia (3) and quality improvement using these modalities has proven to reduce rates of hypothermia (4). The recent Vermont Oxford Network Heat Loss Prevention (HeLP) Trial demonstrated that immediate use of plastic wrap prevented hypothermia in extremely low birth weight infants but did not decrease death as in earlier studies, where, perhaps, the differences in the temperature environments were more profound (5). Of some small concern is that these modalities must be introduced with care, as a small number of infants “overshoot” the mark and become hyperthermic, with the attendant risks.

References

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4. Harer MW, Vergales B, Cady T, Early A, Chisholm C, Swanson JR. Implementation of a multidisciplinary guideline improves preterm infant admission temperatures. *J Perinatol*. 2017 July 20; epub ahead of print.
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Your VON Data in Action

This report is made possible by Vermont Oxford Network members who voluntarily contribute data in a global effort to improve the care of high-risk newborns. Log on to Nightingale to view your own center’s data and benchmark against this NICU by the Numbers report.