

A NICU quality initiative to improve admission temperature of preterm neonates < 32 weeks gestation

Sindhu S, Jeeva Sankar M, Ramesh Agarwal, Ashok Deorari, Vinod Paul Division of Neonatology, All India Institute of Medical Sciences, New Delhi

37

36.5

36

35.5

34.5

Background

- Preterm neonates are prone to very rapid heat loss due to their higher body surface area, immature skin and poor sub cutaneous fat
- Hypothermia is associated with increased morbidity like hypoglycemia, respiratory distress, more oxygen needs, metabolic acidosis.
- For every 1 C decrease in admission temperature the odds of late onset sepsis increases by 11% and odds of death increases by 28%

Problem identified

Among 8 neonates < 32 weeks gestation born in the year 2015, whose charts were reviewed retrospectively, the mean admission temperature was 35.5 C and only 12.5% had admission temperature in normal range 36.5-37.5 C

SMART AIM

To achieve an admission temperature of 36.5-37.5 C in ≥ 80 % of babies < 32 weeks gestation born at AIIMS over a period of 6 months by implementing a "golden hour bundle" through staff education and multiple PDSA cycles

Golden hour bundle focuses on thermoregulation, delayed cord clamping and gentle ventilation

Continued implementation Implementation Phase Baseline assessment Duration 3 months Duration 3 months Duration 3 months Study flow Implementation of golden No intervention Monthly audit and hour bundle feedback to health care **In-service training of staff** workers Pre- post test assessment to Staff appraisal in audit determine knowledge meet People Process transfer Lack of awareness-Team work residents and nurses Root cause Preparation Availability of staff for **Hypothermia** analyses transport at admission Fish Bone) Radiant warmer Transport Cold delivery room Cling wrap and incubator hats Equipment Environment Intervention Cycle 4 Previous + emphasis on warm transfer and Cycle 3 Team work preparation to admit Delivery room baby Cycle 1 Use ziploc temperature Cycle 2 Education bags and hat TO STATE 71 eligible neonates were admitted to NICU during study period Admission 37.5 36.1 C 35.9 C 36.3 C

Temp

Figure: Admission temperature of neonates

-Average Temp



Conclusion

temperature

Implementation of golden hour bundle led to improved admission temperature of neonates < 32 weeks gestation. Admission temperature of 36.5-37.5 C was noted in 28% of neonates at baseline and increased to 35% after intervention.