

Reducing admission hypothermia in the Neonatal ICU and Special Care Nursery for Very Low Birth Weight(VLBW) and Extremely Low Birth Weight (ELBW) Babies

Hospital Miri Quality Improvement
Project

June 1 2011

Who is at risk?

- Preterm infants
 - ≤ 32 weeks gestation, ≤ 1500 g birth weight

Literature Review

- PICO
- Hypothesis

PICO

- **Patient population:** babies $\leq 1500\text{gm}$ or ≤ 32 weeks' gestation at birth
- **Intervention:** Implementing a new 'Intervention bundle' protocol for maintaining temperature from birth till admission to the NICU/SCN
- **Comparator:** Earlier practice of routine thermal care
- **Outcome:** Incidence of Hypothermia in VLBW/ELBW

Hypothesis

- Implementation of a protocol comprising additional measures to reduce heat loss will decrease the incidence of hypothermia in very low and extremely low birth weight infants in the Newborn Special Care Unit.

Literature review

Sources:

- The Cochrane library 2010, issue 3
 - Interventions to prevent hypothermia at birth in preterm and/or low birthweight infants (review)
- Malaysian Perinatal Care Manual
 - Neonatal Care (Section 5) was referred to

Literature Review

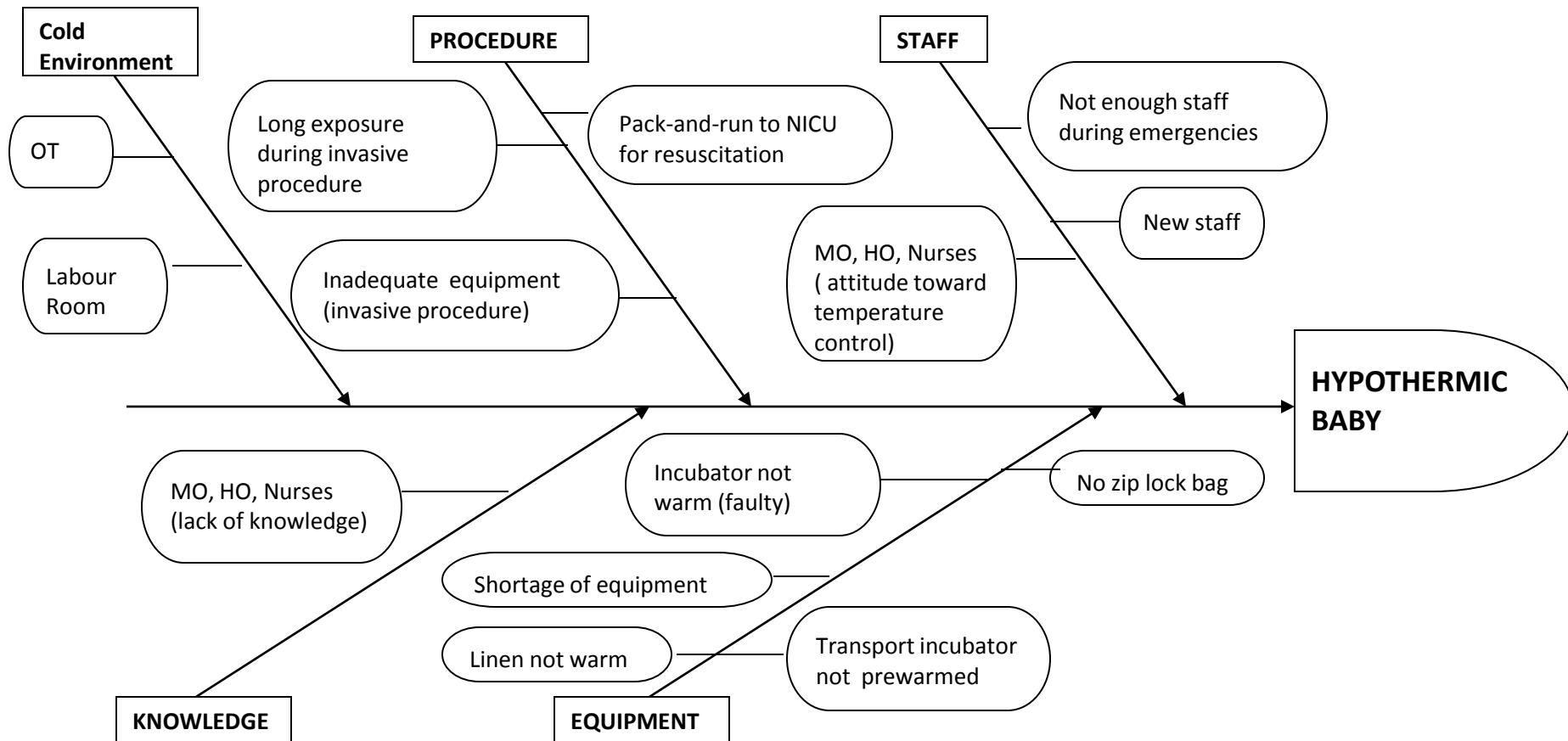
Interventions considered:

1. Plastic wrap/Ziploc bag
2. Head cover
3. Hoods/Heat shields
4. Transfer in a warmed transport incubator

Interventions selected:

- Ziplock (plastic) bag
- Consistent/mandatory use of transport incubators for transfers

Factors Contributing to Hypothermia



Proposed Protocol/Checklist

CHECKLIST FOR RECEIVING PREMATURE BABIES

V3.docx

Outcome Measures

- Skin/Axillary temperature on admission to NICU/SCN
- Skin/Axillary temperature 1 hour post-admission to NICU/SCN
- Skin/Axillary temperature 2 hours post-admission to NICU/SCN

Secondary Outcome Measures

- Incidence of Hypothermia in the 6 hours of life
- Incidence of Hyperthermia

Magnitude of the problem

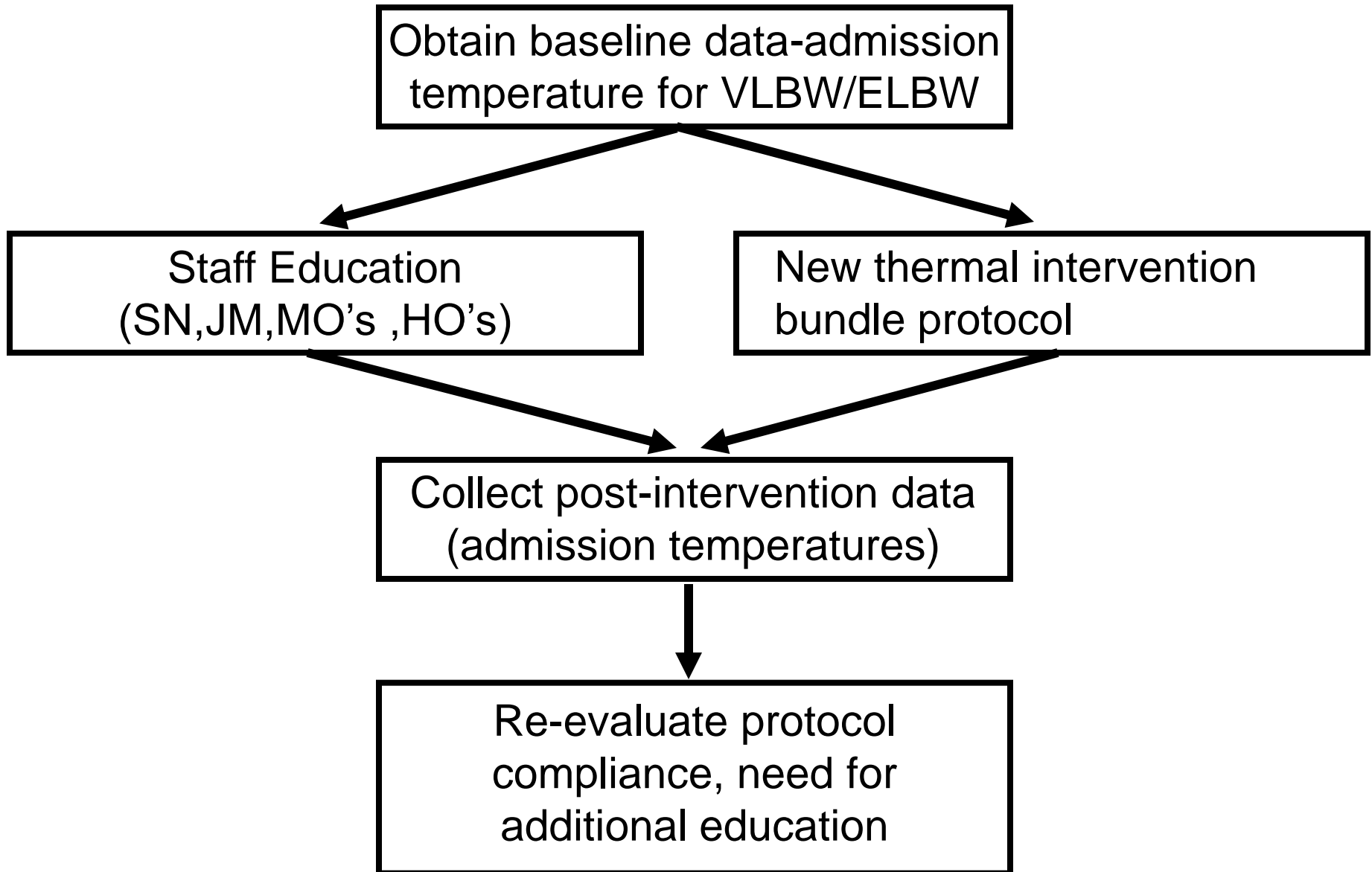
WHO Definition of Hypothermia

- Skin temperature $<36^{\circ}\text{C}$
- Core/rectal temperature $<36.5^{\circ}\text{C}$

Data from MNNR 2009

- No. babies admitted $<1500\text{g} = 60$
- No. babies hypothermic (skin $< 36^{\circ}\text{C}$) on admission = **52 (87.5%)**

Conceptual Model



Team Members

- Team leader: Dr Teh Siao Hean
- Systems leaders: NICU Sister Rosalind Deng
- Technical Experts
 - Dr Teh Siao Hean
 - SN Monica Gupi
- Day-to-day Leaders
 - NICU nursing staff

PDSA Cycle

1. May-November 2011

- P Establish baseline (prevalence of hypothermia from MNNR data)
- D Develop intervention bundle and checklist, staff education
(as of June 2011)
- S Admission temperatures, staff compliance
- A Problems at multiple levels –adherence to protocol

THANK YOU