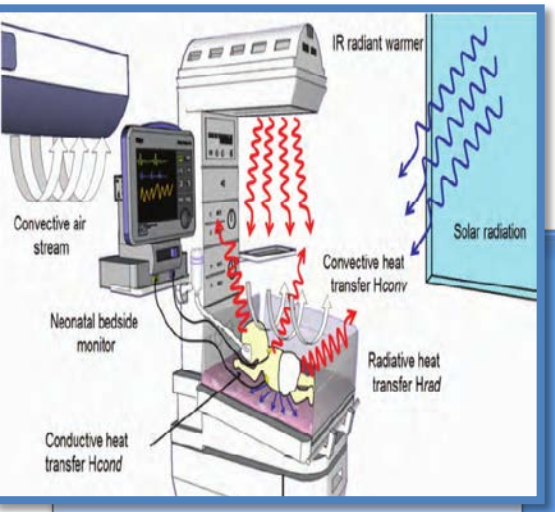
Neonatal Hypothermia Following Intra-hospital Transport within First Day of Life: Greater Awareness and Action Needed

Introduction



Neonatal hypothermia:

Temperature ≤36°C

Measures to prevent hypothermia immediately after birth

Hypothermia is common in infants undergoing intra-hospital transport

Increased morbidity & mortality among sick infants in SCBU or NICU

Special Care Baby Unit (SCBU)
Neonatal Intensive Care Unit (NICU)

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Objective

(1) Examine the occurrence of hypothermia among inborn infants at SCBU / NICU admission

Objective

(2) Determine the factors associated with hypothermia following intra-hospital transport

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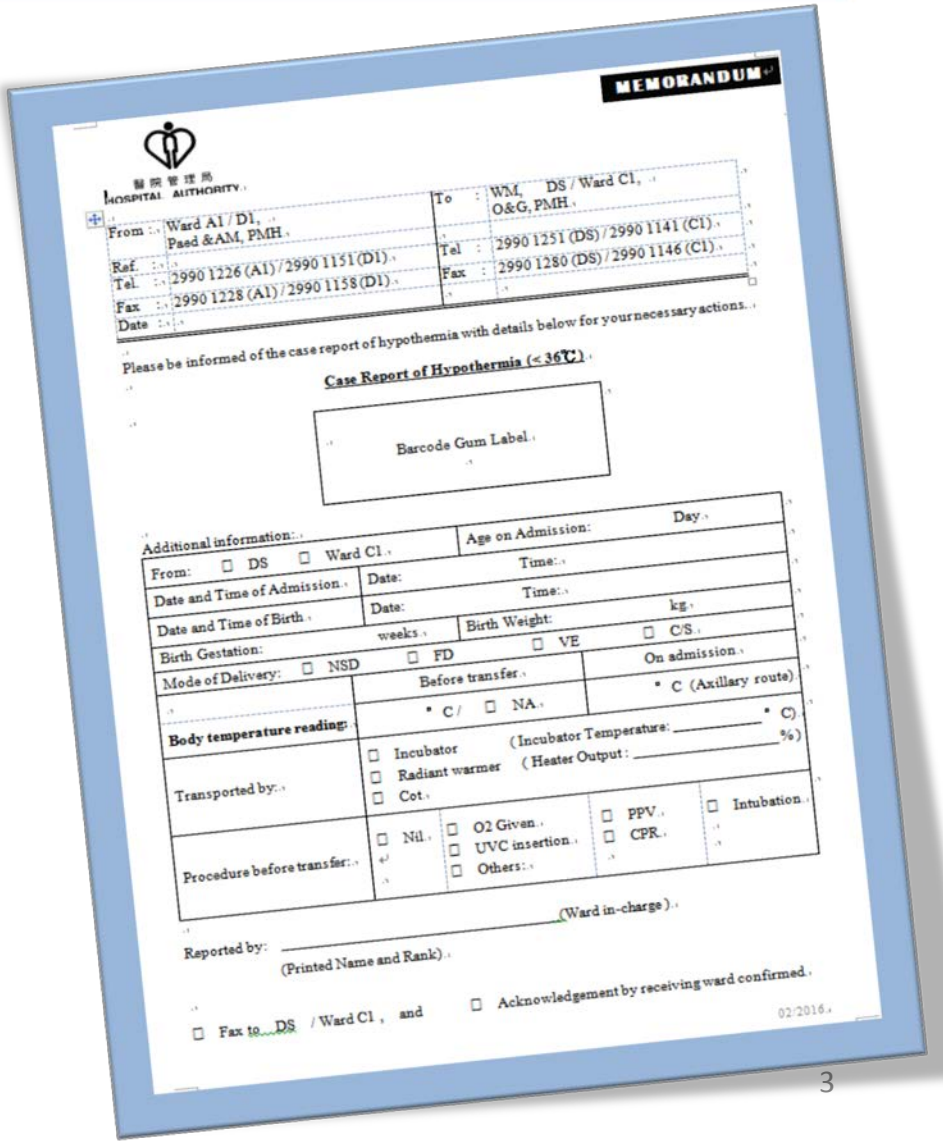
Methodology

- A prospective cohort included all inborn infants admitted to SCBU / NICU in a regional hospital from January 2016 to June 2016.
- Design a data collection form for recording relevant information and complete it immediately after admission



MEMORANDUM

HOSPITAL AUTHORITY

From :	Ward A1 / D1, Paed &AM, PMH	To :	WM, DS / Ward C1, O&G, PMH
Ref. :			
Tel. :	2990 1226 (A1) / 2990 1151 (D1)	Tel :	2990 1251 (DS) / 2990 1141 (C1)
Fax :	2990 1228 (A1) / 2990 1158 (D1)	Fax :	2990 1280 (DS) / 2990 1146 (C1)
Date :			

Please be informed of the case report of hypothermia with details below for your necessary actions.

Case Report of Hypothermia (< 36℃)

Barcode Gum Label

Additional information:

From: ☐ DS ☐ Ward C1 | Age on Admission: Day

Date and Time of Admission: Date: Time:

Date and Time of Birth: Date: Time:

Birth Gestation: weeks | Birth Weight: kg

Mode of Delivery: ☐ NSD ☐ FD ☐ VE ☐ C/S

	Before transfer	On admission
Body temperature reading:	° C / ☐ NA	° C (Axillary route)

Transported by: ☐ Incubator (Incubator Temperature: ° C) ☐ Radiant warmer (Heater Output : %) ☐ Cot

Procedure before transfer: ☐ Nil ☐ O2 Given ☐ UVC insertion ☐ Others: ☐ PPV ☐ CPR ☐ Intubation

Reported by: (Ward in-charge)

(Printed Name and Rank)

☐ Fax to DS / Ward C1 , and ☐ Acknowledgement by receiving ward confirmed.

02/2016

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Results

Patients' characteristics (N=833)		Count (%) / Mean ± SD
Full-term infants		483 (58%)
Birth weight (BW; kg)		2.57 ± 0.75
Gestation age (week)		36.53 ± 3.40
Body temperature (BT; ˚C)	Before transfer	36.96 ± 0.61
	On admission	35.39 ± 0.42

Significant drop by paired t-test

- **30% of the newborn infants (252 out of 833) transferred from the delivery suite or postnatal ward ⇨ moderate hypothermia on arrival of the SCBU or NICU necessitate active warming**
- **Vehicle for transport : incubators (95%) and cots**
- **Preterm infants and infants who were born by cesarean delivery ⇨ more likely to suffer from hypothermia.**
- **Significant correlation between BW and BT on admission (r=0.50, p=0.01) suggesting newborn infants with low BW were more vulnerable to hypothermia.**

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Conclusion

- A neutral thermal environment is essential to ensure minimum oxygen consumption and energy expenditure among sick newborn infants.
- Measures to avoid hypothermia is essential even during a short-distant transport and regular review to evaluating admission temperature is warranted.
- The study units are currently evaluating an evidence-based transport protocol emphasizing on thermal control to decrease the incidence of hypothermia.