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THE COLD STANDARD: KEEPING CHILDREN WARM BEFORE HOSPITAL

Evaluating Temperature Monitoring and Thermal Management in Paediatric Patients Managed by a UK HEMS Team

AFFILIATIONS

1: South Tyneside and Sunderland NHS

Foundation Trust

2: North West Air Ambulance

3: Royal Manchester Children's Hospital

LIST OF REFERENCES



NORTH WEST AIR AMBULANCE

Provides pre-hospital critical care in North West England. Their operational area includes dense cities and large rural areas. Air and road travel.¹

THERMAL MANAGEMENT

Hypothermia (<35°C) is an independent predictor of trauma mortality. In medical patients, it increases metabolic demand and accelerates physiological decline.⁹

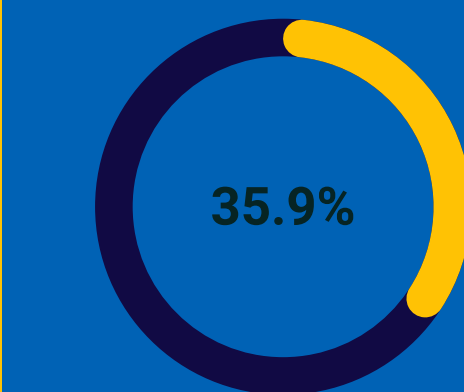
PAEDIATRIC PATIENTS

Physiological vulnerabilities of children, such as a higher surface area-to-body weight ratio⁴, mean they are more susceptible to hypothermia.

METHODS

- 1 year retrospective analysis of patient data from HEMSBase, NWAA's electronic patient record.
- Patients <17 years old
- 114 patients included
- Primary outcome measure: documentation rate of core body temperature on HEMSBase

KEY FINDINGS



Temperatures documented in 35.9% (n= 41) of cases



28.6% of blood transfusion recipients (n= 2) had temperature recorded. 57% (n= 4) had warming documented



7.9% (n= 9) of the cohort experienced hypothermia



44.4% (n= 8) of patients with sequential readings got colder during treatment/transit

DISCUSSION

Pre-hospital constraints provide unique challenges for real-time documentation. High cognitive load and documentation barriers result in proactive warming without recorded monitoring data.

WHERE NEXT? AGE-SPECIFIC THERMAL MANAGEMENT PATHWAY

NEONATES

- Continuous monitoring
- Active warming
- Warmed IV fluids

INFANTS AND CHILDREN

- Sequential monitoring
- Active warming if high risk
- Consider warmed crystalloid

ADOLESCENTS

- Use adult thermal management principles
- Consider warmed crystalloid

Explore continuous non-invasive monitoring for awake patients. Post-implementation audit of pathway.