HUMIDIFIED HIGH FLOW ON TRANSPORT

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OBSERVATIONAL STUDY

- Stable term and preterm infants
- Repatriation - road and flight transports
- Data collection - 20 month period

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BACKGROUND
HUMIDIFIED HIGH FLOW

- Established practice in neonatal intensive care units [NICU]
- Post extubation treatment
- Inadequate data for its use in extremely preterm infants with respiratory distress syndrome [RDS]
- Paucity of data for humidified high-flow [HHF] on transport

(Boyle et al., 2016; Roberts et al., 2016; Wilkinson, Anderson, O'Donnell, De Paoli & Manley, 2016)

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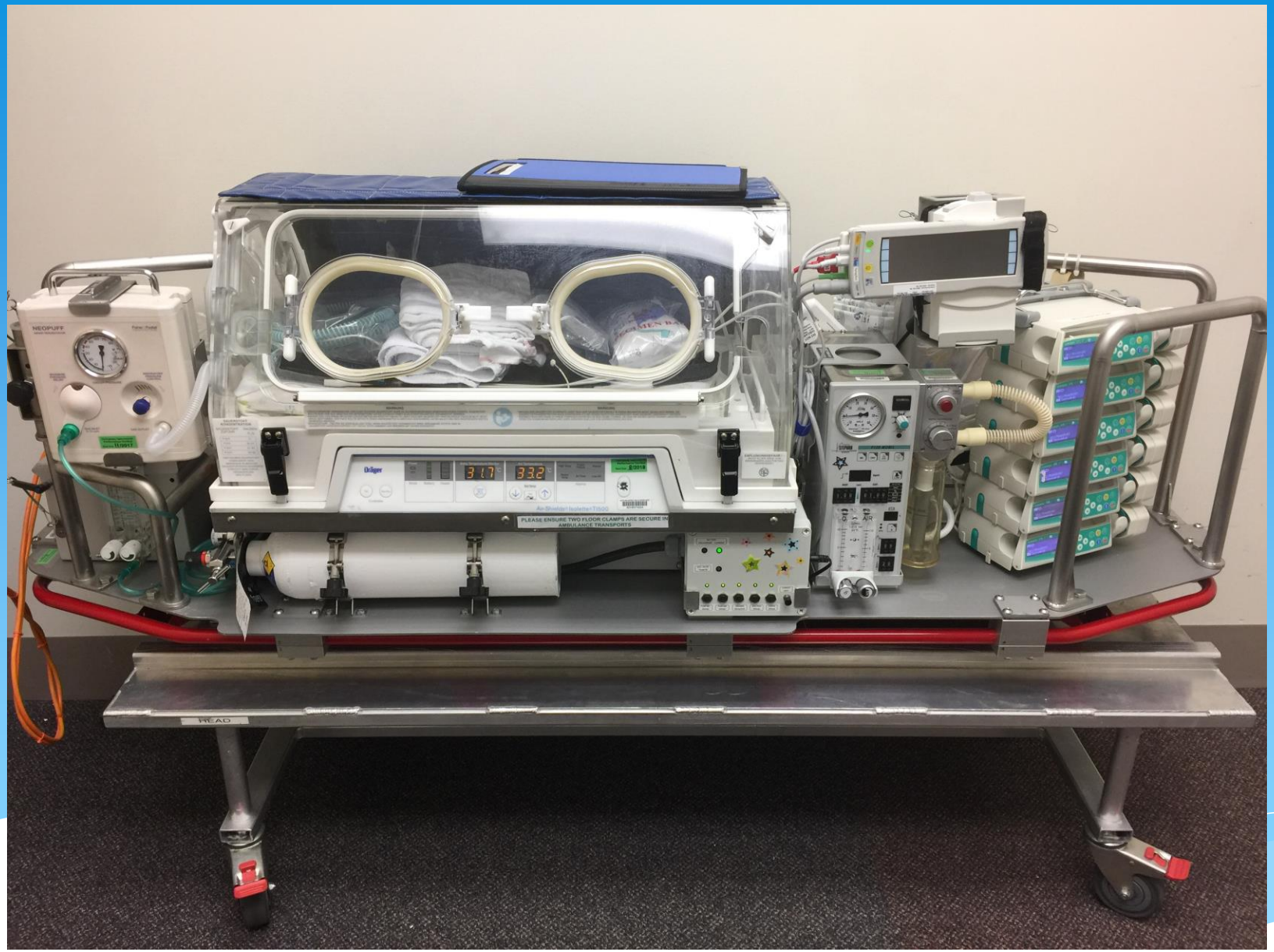

Transport Rig, NICU, Starship

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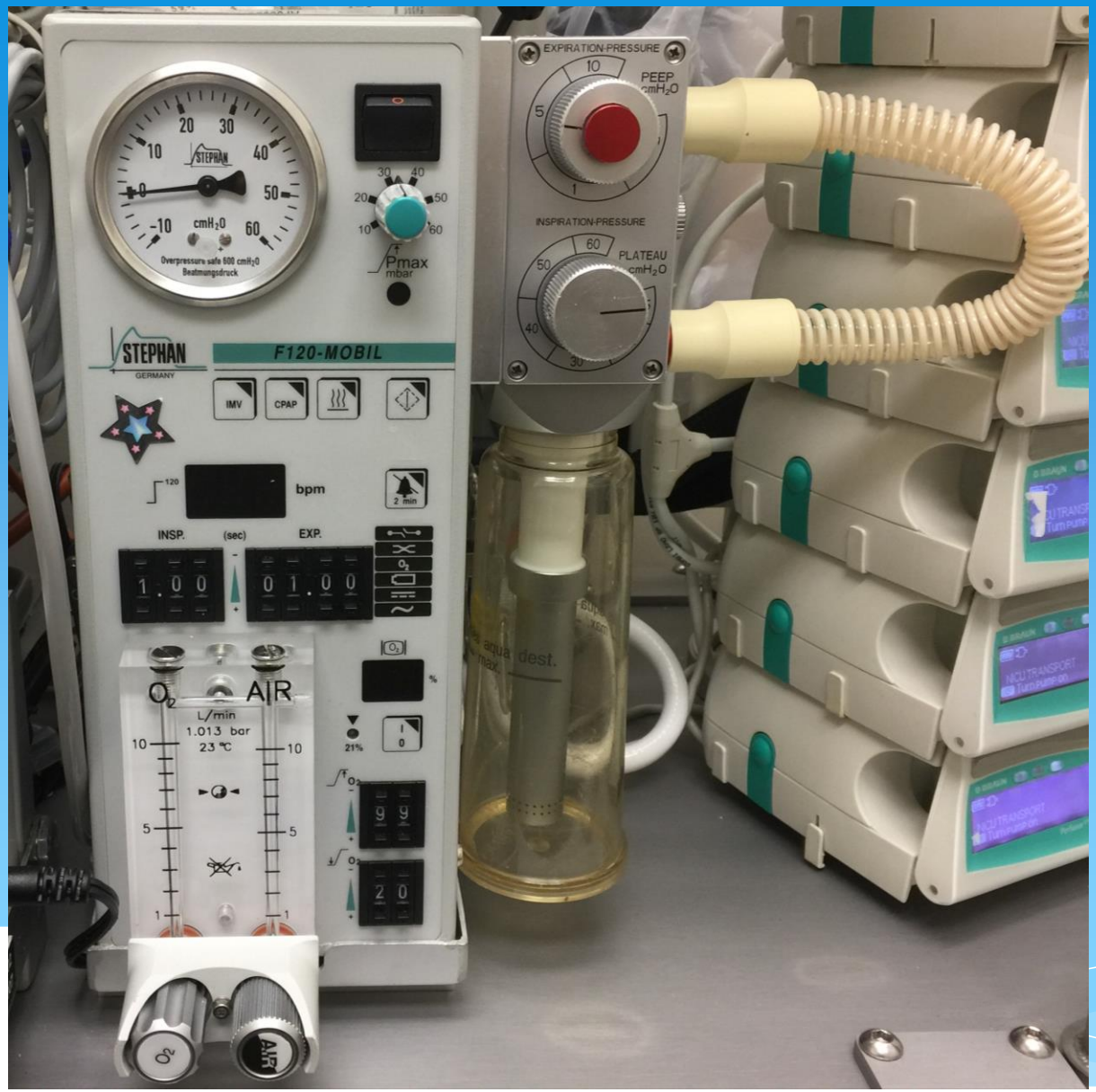

Stephan F120 mobile transport ventilator, NICU, Starship

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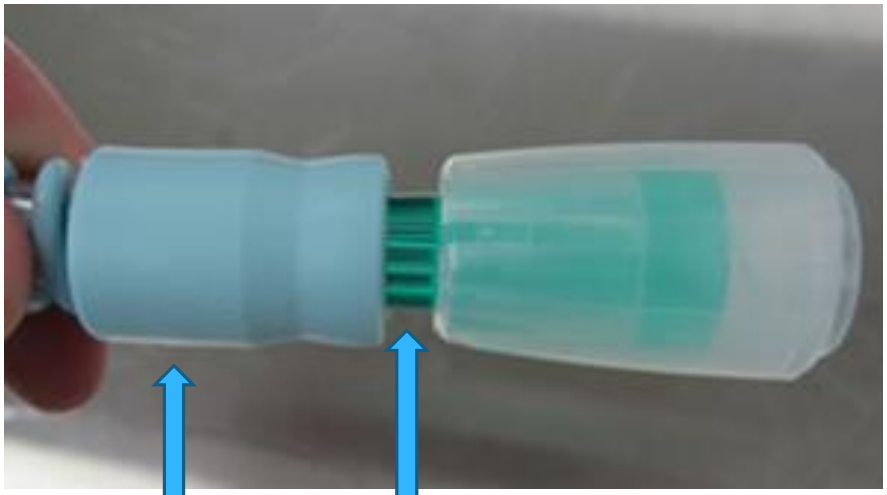
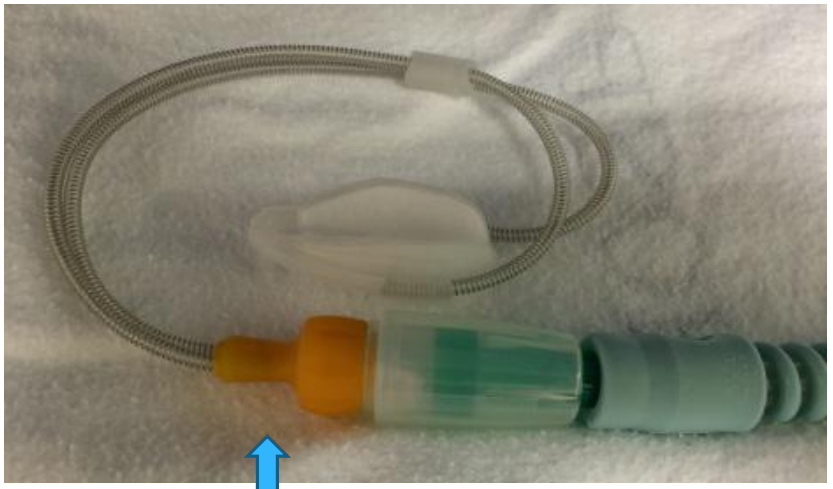
VENTILATOR TUBING ADAPTIONS



Inspiratory arm

Optiflow adapter tubing



Fisher & Paykel Optiflow circuit

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HUMIDIFICATION

Device	Flow (L/min)	Oropharyngeal Temp (^{0} C)	Oropharyngeal RH(%)
Continuous positive airway pressure [CPAP]	8L	33.5	90.6
High-flow nasal cannula	7L	33.5	85.0
High-flow nasal cannula	4L	33.1	80.9

(Roberts, 2015)

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AIM

- Investigate stability of stable preterm infants who meet eligibility criteria for transport on HHF, during and up to 48 hours post transfer.

(M Buksh, S Wilson, personal communication, February 17, 2016)

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ELIGIBILITY CRITERIA

- ~ 32 weeks Corrected Gestational age [CGA]
- Stable on Humidified High Flow for at least 48 hours prior
- FiO_2 <30%
- Both Medical and Nursing Teams in agreement
- Receiving 6L or less of HHF
- Consider transfer on CPAP if
  - > 6L/min HHF
  - clinically fragile

(ADHB Newborn Guidelines, 2016; Roberts et al., 2016)

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DEMOGRAPHIC CHARACTERISTICS OF BABIES n=42

Gestation at birth - median (range)	29 (24 - 40[3])
Birth weight	1208gms (500-4520gms)
Gestation at transfer	34wks (31.1 - 42 weeks)
Weight at transfer	2008gms (1100 – 4600gms)

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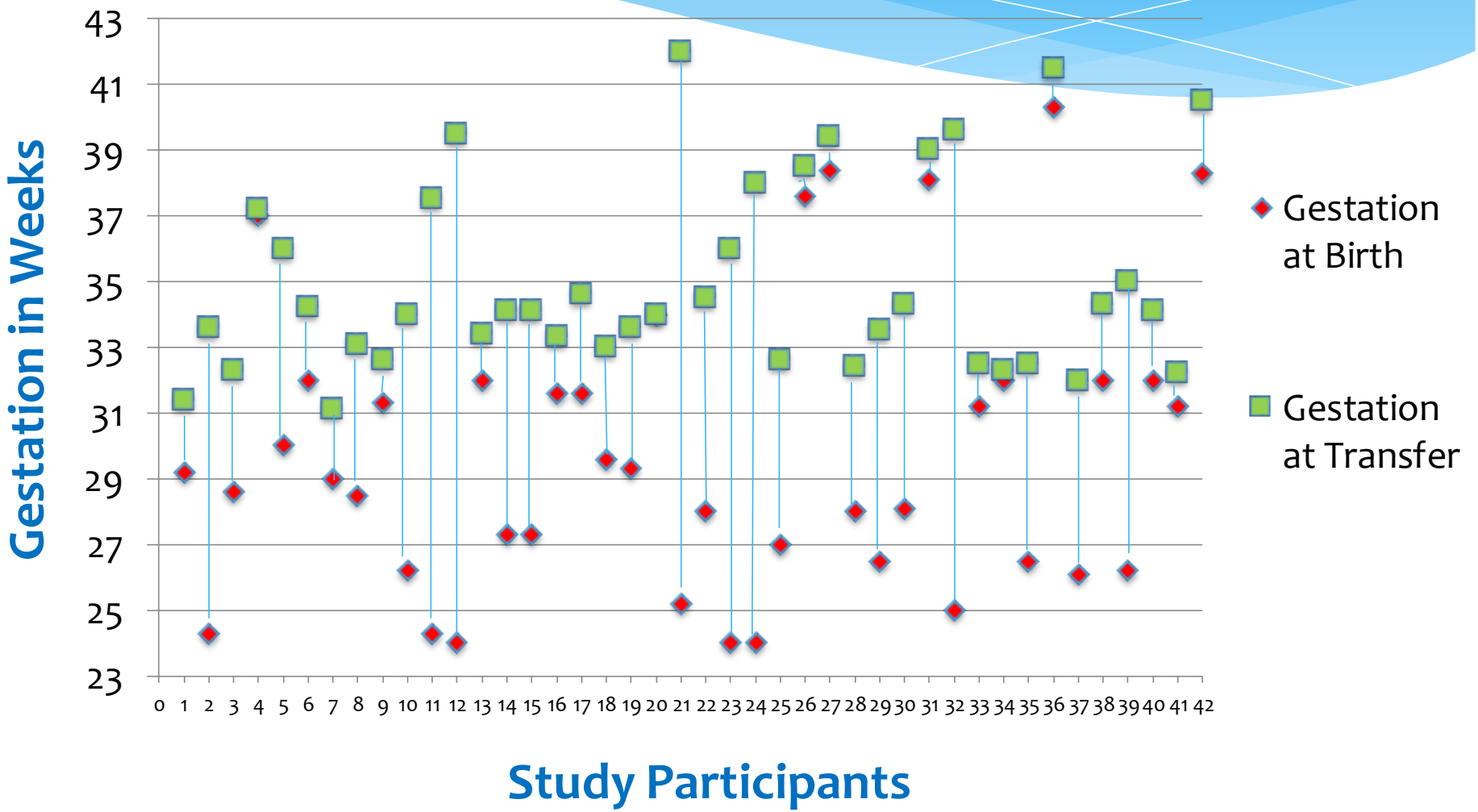
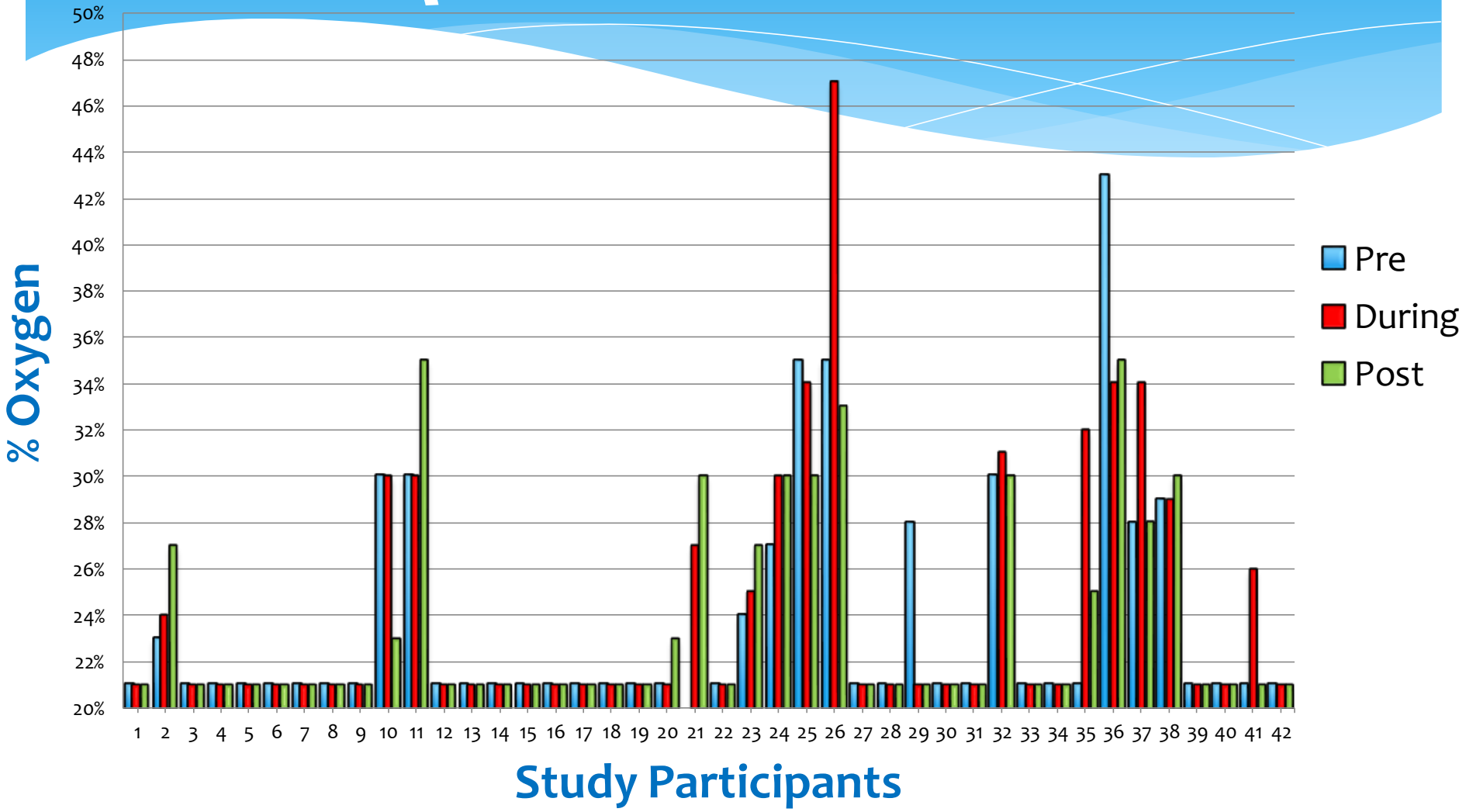
GESTATION OF INFANTS TRANSFERRED



MAXIMUM OXYGEN REQUIREMENT ON HHF



MAXIMUM OXYGEN REQUIREMENTS DURING AND AT 48 HOURS POST TRANSPORT

	FiO_2 During Transport	FiO_2 48 hrs Post Transfer
Increased	21% (n = 9)	19% (n = 8)
Decreased	2% (n = 1)	9.5% (n = 4)
Unchanged	76% (n = 32)	71% (n = 30)

- 34 babies (81%) were either unchanged or had a reduced oxygen requirement at 48hrs

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MAXIMUM FLOW DURING AND AT 48 HOURS POST TRANSPORT

	Maximum Flow During Transport	Maximum Flow 48 Hours Post Transport
Increased	9.5% (n = 4)	16% (n = 7)
Decreased	2% (n = 1)	28% (n = 12)
Unchanged	90% (n = 38)	45% (n = 19)
Low Flow	0	2% (n = 1)
Off	0	7% (n = 3)

- 35 babies (83%) at 48 hours post transfer were either unchanged, had their flow reduced or were off High Flow

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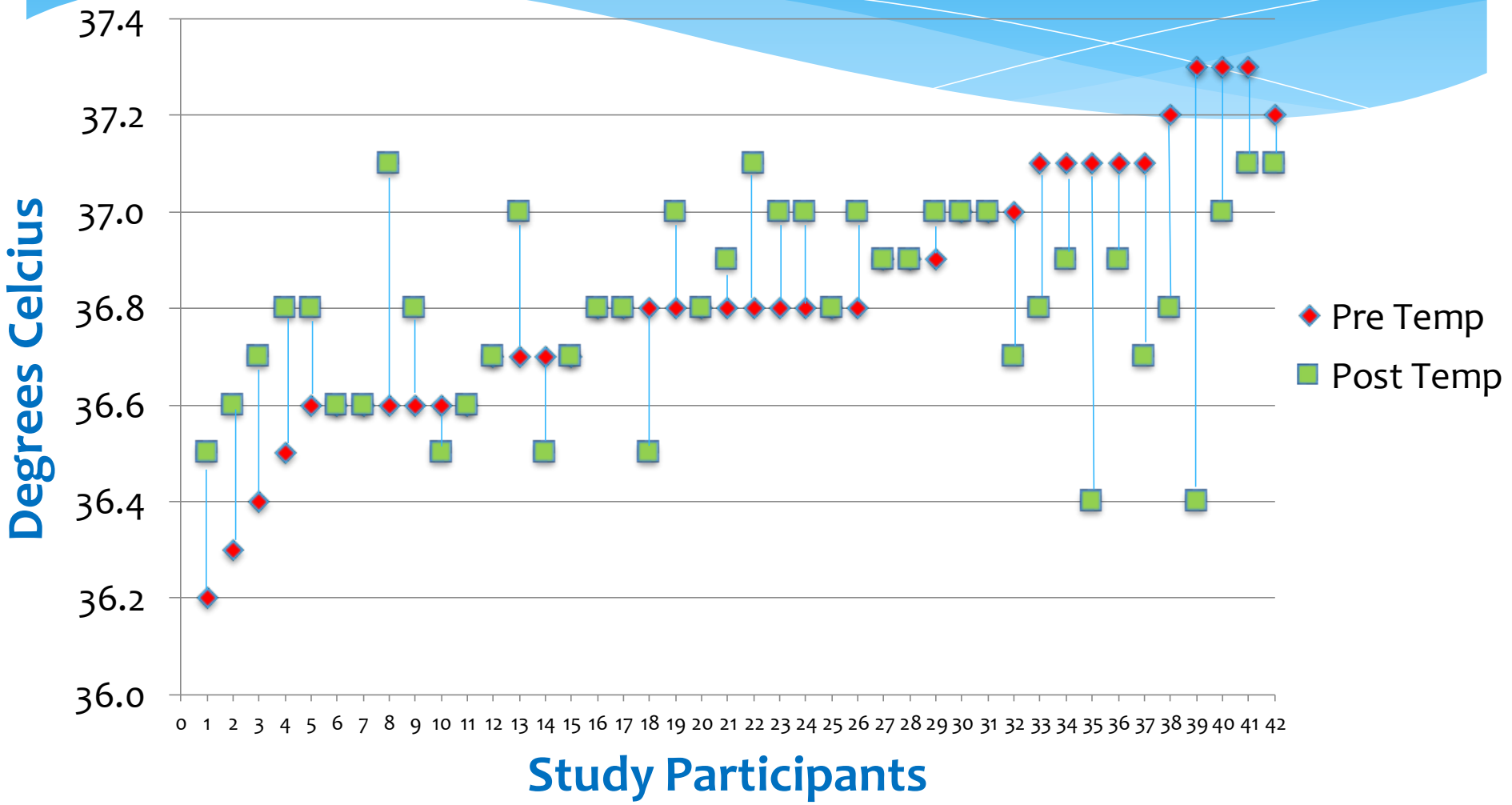
TEMPERATURE



CONCLUSION

* **Humidified high flow nasal cannula oxygen / air is a safe and effective method of respiratory support during neonatal transport in this group of stable term and preterm infants.**

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ACKNOWLEDGMENT

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