# A MULTI-CENTRE SERVICE EVALUATION of the use of HIGH FLOW NASAL CANNULA OXYGEN THERAPY in the MANAGEMENT of INFANTS WITH BRONCHIOLITIS

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#### INTRODUCTION

There is wide variability in the use of High Flow Nasal Cannula Oxygen therapy (HFNCO) in infants with bronchiolitis in the West Midlands; we present data that supports this hypothesis.

#### **Respiratory Support Post Highflow**



#### **RESULTS**

Data for 78 patients was analysed. Co-morbidities included; ex preterm (12.8%), cardiac disease (3.8%), chronic lung disease (2.5%).

NICE guidance still advocates the use of CPAP when low flow supplemental oxygen is not enough. Evidence is emerging that if used for the appropriate patient group, HFNCO could reduce the need for escalation of care to CPAP and or intubation and ventilation.<sup>1</sup>

1. Franklin et al, A Randomized Trial of High-Flow Oxygen Therapy in Infants with Bronchiolitis. NEJM. 2018. 378(12):1121-1131



#### METHOD

A multi-centre service evaluation of the use of HFNCO therapy for infants (<12months corrected gestational age) with a primary diagnosis of bronchiolitis. Escalation
Recovery

Ward	Patients (%)	Escalation (%)
area		
Ward	47 (60.3)	22 (46.8)
HDU	31 (39.7)	14 (45.1)

50% of patients (n=36) required escalation of care to at least CPAP, with one patient needing intubation and ventilation.

Median starting flow rate was 1.99L/kg (range 1.12-3.84), with maximum flow rates of 4.8L/kg being used. There was statistically significant improvement in HR and RR one hour after commencing HFNCO (p=0.033 and 0.003 respectively).

Feeding practices varied greatly; IV fluids only (53.2%), IV fluids and NG feeds (22.1%), NG feeds only (24.7%). If on IVF, 42.1% had >100% maintenance fluids and 31.5% were restricted to < 90% maintenance.

The clinical area HFNCO was delivered did not affect the need for escalation to higher levels of support. 11 patients (14.5%) required admission to PICU.

Retrospective data collection over a four-week period between 1st November 2017 and 31st January 2018. Patients were included if they were commenced on HFNCO therapy during the escalation period of their illness.

Data was collected on:

- ✓ patient demographics,
- ✓ co-morbidities,
- ✓ physiological parameters before and 1 hour after starting HFNCO,
- $\checkmark$  flow rates,
- ✓ clinical area HFNCO delivered,
- $\checkmark$  feeding practices
- ✓ patient outcomes.

Data collectors were recruited in 7 out of 13 potential hospitals in the West Midlands.



	Ν	Min	Median	Max
Age (weeks)	77	1.7	9.3	50.5
Weight (Kg)	76	2.50	4.91	10.88

#### CONCLUSION

Our data highlights the wide variation in practice in the use of HFNCO therapy across the West Midlands. This is likely due to the lack of national guidance and international consensus on what is the most beneficial way of using this relatively new method of support. Only with further research in this area will we be able to identify which patients benefit most and at what point it is most beneficial to start, in a cost-effective way.



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### Paediatric Research Across the Midlands

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