

Benchmarking Non Invasive Ventilation Facilities in Paediatric Wards Across London Hospitals

Dr Ella Neil, Dr Kirti Singhal, Dr Nicholas Prince

Introduction

Non-invasive ventilation is an important mode for managing Paediatric Respiratory diseases. While it is relatively easy to set up, it requires advanced experience in managing acute Paediatric respiratory illness, adequate technical monitoring and a high staff/patient ratio¹. We hypothesised that there is a wide variation in NIV facilities and admission and transfer criteria for NIV across London hospitals which can have significant impact on the health and safety of children and young people.

Aim

- To identify the Non-Invasive ventilation facilities available in Paediatric wards across all South London hospitals
- To benchmark safe staffing ratios for NIV admissions in Paediatric wards, as well as admission criteria for tracheostomy patients to Paediatric wards.

Method

We designed a questionnaire to send out to Training Programme Directors across secondary and tertiary hospitals in London. We collected data on the availability of HDU/PICU facilities in these hospitals as well as any designated HDU beds in the Paediatric wards. We also collected data on the number of CPAP and HFNC machines available for use in the wards, maximum number of patients admitted at a time on NIV, and the admission criteria for these patients. Facilities for admission of tracheostomy patients, with or without ventilatory requirement, were also assessed.

Results

- Among the 16 hospitals that responded to our questionnaire, there was a wide variation in the NIV facilities, as well as protocols for Paediatric wards.
- While most of the District General and Tertiary Care hospitals admitted patients on NIV based on staffing ratios and bed capacity, St George's (n=53) was the only tertiary hospital that strictly restricted the number of patients on NIV to only two. Among the other tertiary hospitals that responded to our survey, King's (n=36) and Evelina (n=122) had no upper limit, while St Mary's (n=39) admitted a maximum of six patients on NIV to wards at a time.
- Evelina was the only tertiary hospital to admit patients on CPAP to ward, while this was a common trend in the DGHs without a PICU.
- While most of the hospitals admitted tracheostomised patients on the wards, only five hospitals (Evelina, St Mary's, Kingston, Whittington, North Middlesex) admitted tracheostomy-ventilated patients to ward.

*n= number of beds

Discussion

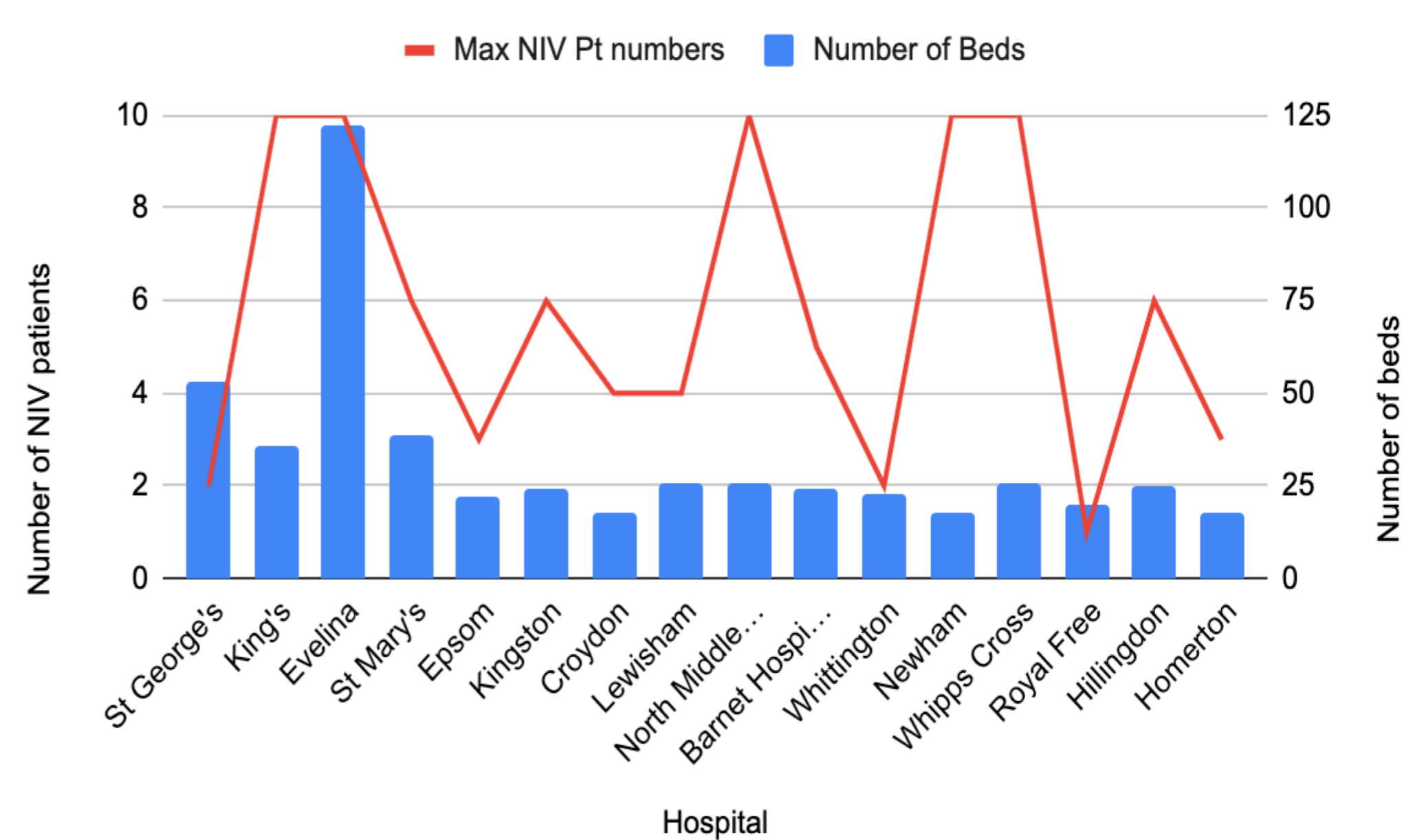
There is a need for a uniform protocol for admission and management of patients needing NIV in Paediatric wards across London. This will be important for safe service provision and will need training of staff in setting up and managing patients on NIV, as well as recognising danger signs and need for escalation to PICU/STRS.

Target for service development- The PICU GIRFT report indicated that St George's Hospital admitted far more low acuity patients to their PICU than comparator centres. This is something that needs to be addressed, considering the PICU here caters to all of South-West London.

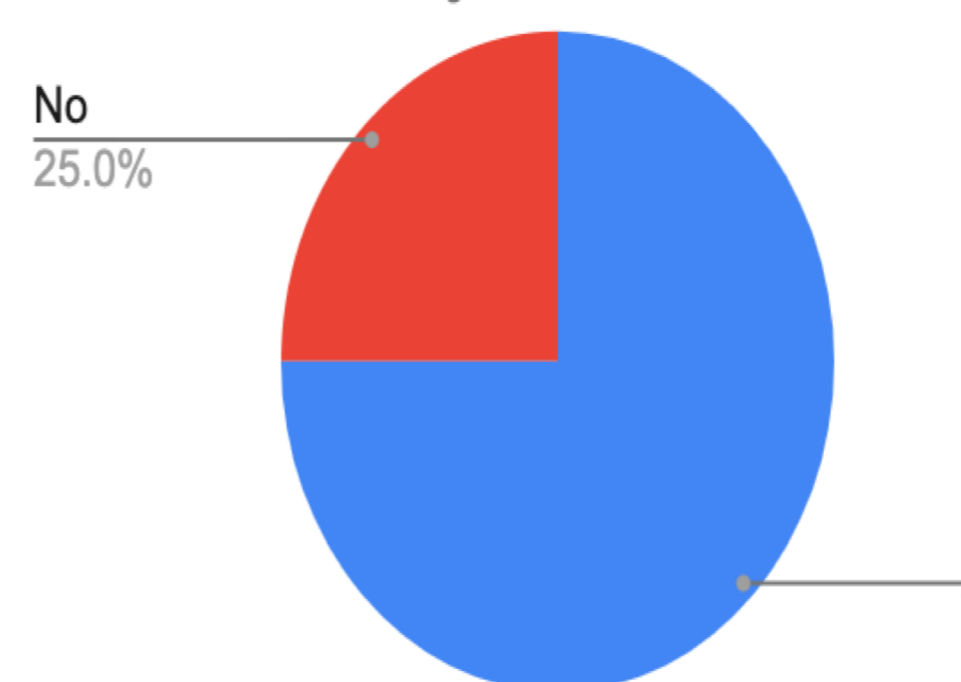
References

1. Milési C, Boubal M, Jacquot A, et al. High-flow nasal cannula: recommendations for daily practice in pediatrics. *Ann Intensive Care*. 2014;4:29. Published 2014 Sep 30. doi:10.1186/s13613-014-0029-5

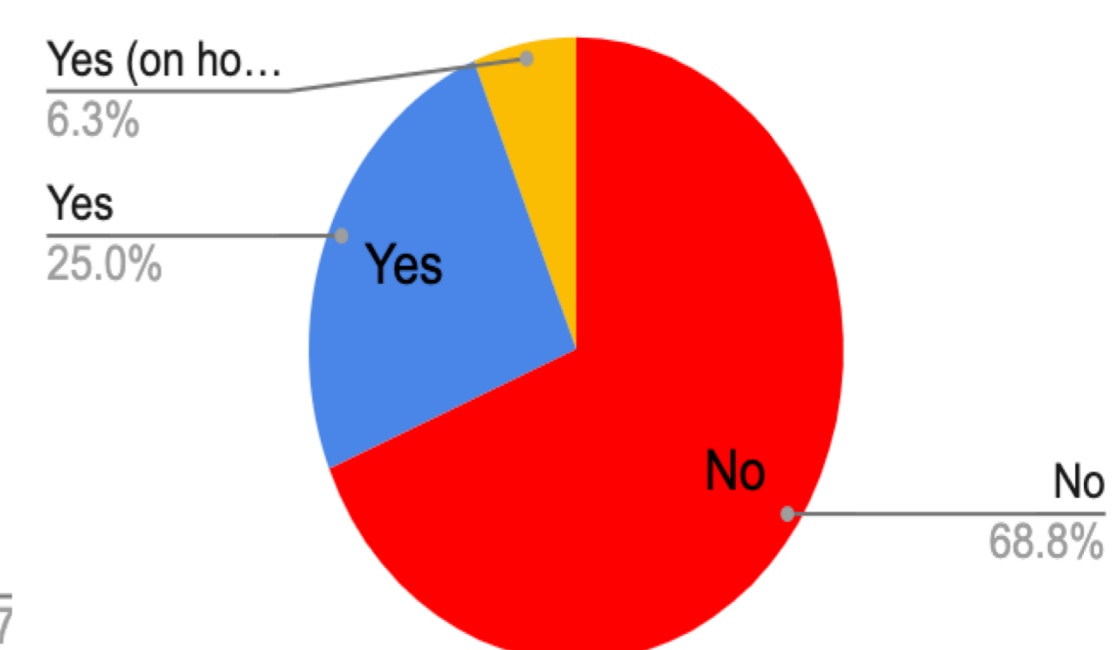
Number of Beds and Max Patient numbers admitted on NIV



Tracheostomy on ward



Trache-vent on ward



PICU facilities, CPAP and HFNC machines for ward use

