

Introduction

Based on a review conducted by PPLOG and Air Liquide UK in 2019, around 870 children or young person (CYP) living in London currently have Home Oxygen (HO) therapy prescriptions.

The data identified that 68% (542) of these CYP are of school age (4-17 years old) but only 14% (84) CYP have a HO account in an educational setting.

The aim of this study is to have an deep dive review of the various HO therapy prescriptions recorded within London's educational settings. The review will enable the opportunity to identify any gaps in service provision, unwarranted variation and gives recommendations to support local CYP healthcare services to make relevant safety and quality improvements.

Method

Air Liquide (AL) is the provider of HO in London region. A review of Air Liquide database was undertaken by AL Respiratory Nurse Advisor in October 2019, then peer reviewed by the PPLOG chair as a way of ratification. The final results were shared with Paediatric Pan London Oxygen Group (PPLOG) and London Oxygen Network.

Table 1: Breakdown of CYP in Educational Setting on oxygen therapy

CYP 4 -17 years of age	
Primary/Secondary School	23
Primary/Secondary (Special Needs)	56
Nursery	5
Total	84

Table 3: Clinical Code on Home Oxygen Order Form (HOOF)

Bronchiectasis	3
Chronic Neonatal Lung Disease	9
Interstitial Lung Disease	2
Neurodisability	20
Neuromuscular	7
Obstructive Sleep Apnoea Syndrome	2
Other Conditions	11
Other Primary Respiratory	10
Paediatric Interstitial Lung Disease	4
Paediatric Cardiac Disease	2
Palliative Care	8
Unknown	6

Table 2: School accounts Distribution across London

North Central London	13
North East London	22
North West London	13
South West London	18
South East London	18

Table 4: Equipment Type

Equipment Type	Number of modalities prescribed	Litres per Minutes (LPM)	Hours per Day (HPD)
Static concentrator	26	0.5 - 5 LPM	1-24 HPD
Static Cylinder	20	0.2-15 LPM	1-20 HPD
2 Litre Cylinder	56	0.2-15 LPM	0.5-12 HPD
1 Litre Cylinder	19	0.2-15 LPM	1-8 HPD

Results

The data identified that 68% (542) of these CYP are of school age (4 -17 years old) however only 14% (84) of these CYP have a HO account in an educational setting. Out of this overall total, 67% (56) of CYP are in a Special Educational Needs School with a higher proportion based in North East London. Evidently, 18% of CYP within this higher proportion lived in two CCG's under the North East London area. Therefore, about 1/5 of CYP in these two CCG are needing designated teams to review and reassess their HO prescriptions.

The review found that HO clinical codes are numerous as outlined in Table 3. Significantly, at least 1 in 5 CYP have been recorded under the clinical indication as Neurodisability.

The types of oxygen (O2) equipment prescribed are illustrated in Table 4. 25 (29.7%) CYPs have ambulatory equipment with a flow rate > 4HPD. This again highlights the importance of reviews, why these CYP did not move to concentrator or static cylinder. Finally, it was noted that one of the oxygen prescription's was from a Nursery setting dating back to 2011. Resulting in total costs of over £7800 based on today's cost.

Conclusions

Our study found that there is a significantly large number 542 of CYP of school age on Home Oxygen therapy. 16.2 %(92) CYP have a HOOF with no activity. Furthermore, around 41% (233) of school aged CYP have not had their prescription reviewed or updated in the last 5-10 years. The review found that there are broader issues within services especially relating to a lack of pathways and guidance.

Recommendations:

- Trust/ICS (newly formed Integrated Care Systems) to coordinate the removal of oxygen equipment when it is no longer required.
- Offer structured evidence based staff training and ongoing support
- ICS to fund further studies/service reviews in order to investigate the extent of the CYP oxygen therapy challenges faced by professionals in schools and commissioners to ensure that oxygen is used safely in all educational settings.
- ICS would need to fund for Paediatric HOSAR to lead and develop pathways to ensure the safety and quality of CYP on oxygen is not compromised.