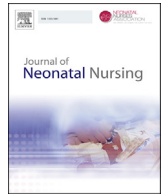




Contents lists available at ScienceDirect

Journal of Neonatal Nursing

journal homepage: www.elsevier.com/jneo

Original Article

Management of chronic lung disease infants in the community

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ARTICLE INFO

Article history:

Received 23 March 2017
 Received in revised form
 11 June 2017
 Accepted 16 July 2017
 Available online xxx

Keywords:

Home oxygen
 Management of infants on oxygen
 Neonatal nursing
 Chronic neonatal lung disease
 Bronchopulmonary dysplasia

ABSTRACT

The aim of this study is to review the current home oxygen weaning programme used in the past 6 years by the Community Neonatal Nurses, in order to improve or maintain current practice. The study was done retrospectively, by reviewing data of infants discharged from the neonatal unit based in London, United Kingdom and weaned off oxygen by the Community Neonatal Nurses. At least 65/108 (60%) infants were weaned off home oxygen within the 1st year of life.

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Introduction

Accordingly, around 85 000 people in England have home oxygen therapy, making it an average of 600 patients per primary care trust (now known as CCG) and only 4% are children (Primary Care Commissioning, 2011). Evidently, having home oxygen therapy costs England about £110 million each year, sadly at least 1/3 of the people with home oxygen therapy equipment do not use it (Primary Care Commissioning, 2011). Subsequently, since the introduction of the HOOF (home oxygen order form) in February 2006, there has been a drive to ensure secondary care health professionals are the main prescribers, as they tend to review these patients more often within a hospital or clinic setting (Wedzicha and Calverley, 2006). Primary care health professionals (with the knowledge and skills to do home oxygen therapy assessments) can also prescribe home oxygen therapy via the HOOF. It is important to note, that regardless of the way home oxygen therapy is ordered within the secondary or primary care it will continue to be funded by the Primary care services (CCG) (Wedzicha and Calverley, 2006). Indeed, the annual expenditures for home oxygen therapy in the UK and other countries including United States of America, tend to exceed the national budgets (O'Donohue and Plummer, 1995). It can be seen from the above analysis that without oxygen therapy, the medical costs of these patients would be greater, with increased

mortality and reduced quality of life (O'Donohue and Plummer, 1995).

The role of the community neonatal service was established to reduce length of stay, by discharging infants' early on home oxygen, with a diagnoses of chronic lung disease or any other nursing issues. Chronic Lung Disease/Bronchopulmonary Dysplasia is defined as "continued use of supplemental oxygen or respiratory support at 36 weeks post menstrual age" (Balfour-Lynn et al., 2009; Ambalavanan, 2014)). In addition to, Balfour-Lynn et al. (2009) and Ambalavanan (2014) definition the Badger System used by nearly all neonatal units in England to record all activity of the neonate stay on the neonatal unit, also identifies chronic lung disease as requirement of oxygen for more than 28 days of life. The above definition was also agreed by a group of health care professionals at the National Institute of Child Health and Human Development (NICHD) work shop in 2000, that chronic neonatal lung disease/BPD is a continues requirement for oxygen during the first 28 postnatal days among infants less than 32 weeks gestation (Britton, 2012). Although Balfour-Lynn et al. (2005) elaborates it as chronic neonatal lung disease with need of supplemental oxygen at various postnatal or postmenstrual ages, mostly affecting 10% of infants born less than 1500 g and premature. Therefore, the use of home oxygen therapy should be administered in non – emergency situation, in order to

1. To reduce or prevent pulmonary hypertension
2. To reduce airway resistance and promote growth

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<http://dx.doi.org/10.1016/j.jnn.2017.07.003>

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- To reduce associated risk of sudden unexplained death in infancy (Balfour-Lynn et al., 2009; McMorrow and Sweet, 2013).

Conversely, the National Guideline Clearinghouse (2006) defines non-emergency oxygen therapy as an administration of oxygen at concentrations greater than that in ambient air, with the intent of treating or preventing the symptoms and manifestations of hypoxia. To be able to understand these definitions, the use of home oxygen can be summarised as a therapy used to decrease the work of breathing by increasing alveolar oxygen tension (GOSH, 2016).

It is important to note, that the benefits of discharging a baby on home oxygen therapy, would be

- Reduced hospital length of stay
- Improve the quality of life and psychological impact for infants, parents and the rest of the family
- It is cost effective, as it reduces the cot space capacity on the Neonatal Unit
- Family friendly, minimum equipment within the home setting (Balfour-Lynn et al., 2005; MacLean and Fitzgerald, 2006).

Objective

The aim of this study is to review the current home oxygen weaning programme used in the past 6 years by the Community Neonatal Nurses, in order to determine how infants were successful weaned off home oxygen therapy before the age of 1 year. Secondly, to determine the percentage of infants discharged on home oxygen therapy that failed the current weaning programme and were handed over to the children's home care team. Final, to produce a current evidence based home oxygen weaning programme that could serve as a potential best practice for all community neonatal teams/children's home care teams to adapt within their nursing services.

Method

The study was done retrospectively, by reviewing the data collected through the community neonatal home oxygen data records and annual community reports over the last 6 years, of all infants discharged from the Neonatal Unit with home oxygen therapy. Unfortunately, due to minimum access to the Children

Home Care Team records, the study only collected data about weaning off home oxygen therapy for the infants that would have been under their follow up service. The author set a data collection form with specific questions for example, the gestation age of the infants, date of birth, date of discharge etc. (Please see Figs. 1–4). The set questions for the data collection form were identified through a literature review via different scholar internet databases. The questions were piloted for their validity and reliability through using data from previous years before the community neonatal service was established. The data was analysed focusing on different aspects of the data collection 1. Number of infants weaned off oxygen within the 1st year 2. Number of infants discharged from the neonatal unit on home oxygen therapy and follow up by children home care team/community neonatal nurses 3. The gestational age at birth 4. Length of days on low flow oxygen.

Results

Accordingly, in the years' 2005 to 2009 a mean of 10 infants per year were discharged from the neonatal unit, with follow up nursing support from the children's home care team. However, when the community neonatal service was established in 2009, in the years' 2010 to 2015 a mean of 18 infants were discharged from the neonatal unit, with 62.5% followed up by the Community Neonatal Nurses and 32.6% followed up by the children's home care team because the infants lived out of area. As a result, only 9.6% were handed over at a year old to the local children's home care team after failing the community neonatal service home oxygen weaning programme.

Evidently, 17.3% infants under the community neonatal nurses were weaned off oxygen within 2 months of Neonatal Unit discharge. At least 28.8% infants under the community neonatal nurses were weaned off oxygen within 4 months of Neonatal Unit discharge. Thirdly, 6.7% infants under the community neonatal nurses were weaned off oxygen within 6 months of Neonatal Unit discharge. Lastly, 9.6% infants under the community neonatal nurses were weaned off oxygen within 12 months of Neonatal Unit discharge. To sum up, over 62% infants were weaned off oxygen before a year old.

Discussion

The results of our study indicate that by having a community neonatal team, there is immediate reduction of hospital length of

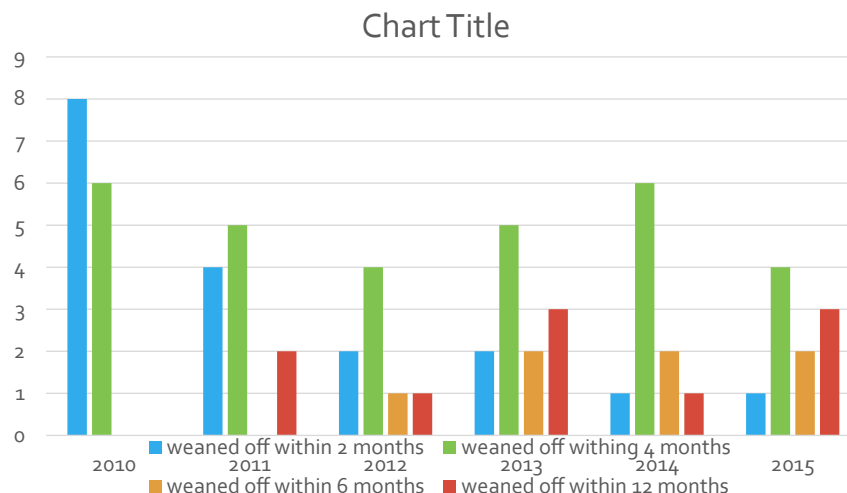


Fig. 1. Weaned off oxygen within the first year.

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