



Service Priorities and Programmes
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Implement centralization of non-invasive ventilation (NIV) machines service in acute Medical & Geriatrics (M&G) TMH

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Introduction

Chronic Obstructive Pulmonary Disease (COPD) is one of the leading causes of worldwide mortality and it is expected that the prevalence is more than double by 2030. Patients in advanced stage of COPD or other chronic lung diseases mostly have recurring respiratory decompensation and serious breathlessness. They need regular hospitalization to take care of the diseases. NIV is evidence based treatment of acute exacerbation COPD, respiratory failure due to various causes, heart failure and step down from invasive mechanical ventilator. NIV machines were scattered in different M&G wards. It is lack of coordination, difficult to check machine stock and maintenance standard not uniform. Nurses need perform NIV cleaning, maintenance and battery charging in various wards and standard cannot be guaranteed.

Objectives

To enhance standard of NIV machine and safety to patients

Methodology

Recruit PCAII staff for centralization NIV service, nurse provides training and monitor performance of the PCA II. PCAII will be responsible for performing function checking of machine, distribution of machines to wards when need, management of accessories, machines after use cleaning and charging. They also provide NIV round for acute M&G wards such as mask fitting, oral& facial care. Their role will include recording and clinical duties related to NIV setup and observation.

Result

There were 170 patients with 114 male and 56 female recruited during 28th August 2017 to 31st December 2017 inclusively. The mean age was 68.13 (range 30-95). Majority of these patients were COPD (43.53%). The remaining were CHF (25.29%), obstructive sleep apnea (2.35%), restrictive lung disease (1.18%), APO (9.41%), MND (4.71%), Bronchiectasis (4.71%) and others chronic disease (8.82%). After implemented CNIVS, the rate of mask related skin lesion was reduced from

6.5% to 2.4%. PCAII provide NIV round such as oral care to prevent drying and thickening of oral secretions. PCAII also determine appropriate interface type & right size to patient. As a result, the average air-leak was lower than before CNIVS.

CNIVS provide better maintenance standard for reducing risk to patients due to machine failure or battery failure. CNIVS reduce workload of M&G nurses in check stock for NIV machines, cleaning and management of accessories. CNIVS maintain quality, standard and utilization of NIV machines. The service ensures staff easy availability of NIV when need.