Service Priorities and Programmes

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Respiratory nurse-led service enhances effectiveness of non-invasive mechanical ventilation in general wards

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Introduction

Non-invasive ventilation (NIV) has revolutionized the treatment of respiratory failure patients. At North District Hospital (NDH), eight respiratory beds were designated for the care of mechanically ventilated patients since 2005. However, with advancing age and an increasing need for NIV support, many patients were left receiving NIV in general beds. In order to offer standardized and quality NIV care in general wards, a daily 'NIV round' was conducted by respiratory nurses. This outreach service provides support to general ward colleagues who have to take care of critically ill NIV patients.

Objectives

To evaluate the effectiveness of respiratory nurse-led NIV round in general wards

Methodology

During daily NIV rounds, respiratory nurse performs mask interface-fitting, inspects NIV circuit connections, assesses mask hygiene and monitors complications such as nasal bridge or facial skin sore. If necessary, NIV settings including oxygen concentration (FiO2), inspiratory positive airway pressure (IPAP), expiratory positive airway pressure (EPAP), respiratory rate(RR), rise time(RT) and inspiratory time(Ti) would be adjusted according to a local NIV titration protocol developed by respiratory physician. Nursing interventions are backed by respiratory specialists who perform weekly NIV rounds with nurse and are available for consultations.

Result

Fifty-seven patients were managed from July to December 2012 among seven medical wards. Twenty-four patients required further nurse-led NIV titration with adjustments made to IPAP, EPAP, RR, RT, Ti and FiO2. Twelve patients were under-ventilated, as reflected by low tidal volume (TV). Four patients' respiration was not synchronized with NIV. Weaning process was expedited for four patients. Three were found to have obstructive sleep apnoea. For one patient, both backup RR and TV were set too low. While 13 patients were eventually transferred to respiratory beds, 11 remained in general beds. Eight patients' blood gas results improved in either pH

or PCO_2 after nurse-led NIV titration. Under close collaboration with respiratory specialists and backed by an NIV titration protocol, experienced and trained respiratory nurses are empowered to have role expansion in the care of respiratory failure patients on NIV. As a result, patients continue to receive high quality care in general medical beds while ward colleagues benefit from specialist nursing support and guidance.