Review on Enhanced Nursing Care for patients requiring Non-Invasive Ventilation (NIV)

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Introduction
NIV has been shown to reduce intubation and in-hospital mortality in patients with acute exacerbation of COPD complicated by acute respiratory failure. Nurses can play an important role in initiation, monitoring, titration, optimizing patient’s comfort level and complications prevention when patients receive the NIV treatment. These factors significantly contribute to the success or failure of the NIV treatment. However, there is lack of local and limited international studies of adverse effects and complications such as mask related skin lesion for patients on NIV. A NIV program has been commenced to enhance nursing care for patients requiring NIV in five pilot hospitals where the NIV usage were 704 times for designated NIV beds and 1875 times for non-designated NIV beds in the Department of Medicine & Geriatrics since September 2013.

Objectives
To audit the compliance with the enhanced nursing care for patients requiring NIV To explore/ review the incidence rate of complications and discomfort To provide basis for local reference and bench mark

Methodology
Duration of Audit 18th November, 2013 to 15th December, 2013 Criterion-Based Audit With reference to NIV Nursing Guideline, an audit form was used for the audit topic. A guideline had been developed with reference to HAHO’s Nursing Specialty Guideline and update evidence in 2013. Enhanced nursing care focused on initiation of NIV, choice and fitting of ventilation mask, air-leak management, oxygen titration and assurance of patient-ventilator synchrony. Study Population Patients requiring NIV
were recruited. Some of them were allocated to designated NIV beds in the Department of Medicine & Geriatrics of the five pilot hospitals, namely PMH, POH, PWH, QMH & UCH. Sampling Consecutive cases with non-selected COPD patients were recruited during the audit period. 4. Method used in collection of data: Observation | Check Record | Ask Nurse | Ask Patient | Ask Family

**Result**

Result There were 88 cases and 78 consecutive cases audited from designated NIV beds and non-designated NIV beds respectively in December 2013. The compliance rate with the guideline was 98.51% verse 83.03% for designated NIV beds and non-designated NIV beds. The complications of mask related skin lesion, and self-reported adverse effects was, 2.27% verse 7.69% and 7.42% verse 10.78% for designated NIV beds and non-designated NIV beds respectively. Further analysis for data of a district hospital, the average length of hospital stay, NIV days and NIV hours were 8.28 verse 10.28, 6.04 verse 6.38 and 58.45 verse 91.18 for designated NIV beds and non-designated NIV beds respectively. The mean leak was significantly lower, 16.5 verse 24.6L/min (p-value< 0.01) for cases in designated NIV beds. Conclusion The audit showed good compliance with the enhanced nursing care, less complications and minimal discomfort for patients requiring NIV in designated beds when they were compared with non-designated beds and international studies. The results could be the basis for the development of key performance indicators and local benchmarking. Also, the enhanced nursing care could contribute to better clinical outcomes.