



**Service Priorities and Programmes**  
**Electronic Presentations**

**Convention ID:** 263

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**Extension of Physiotherapy Service of Ventilatory Hyperinflation to PMH  
Respiratory Ward**

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**Keywords:**

Physiotherapy

Ventilatory Hyperinflation

Respiratory ward

**Introduction**

Ventilator hyperinflation (VHI) is a technique of delivering a larger than tidal volume breath, in a way simulating that of manual hyperinflation without disconnection of the ventilator circuit. Studies showed that it is safe and its treatment effects are comparable to that of manual hyperinflation, namely re-expanding atelectasis, improving respiratory compliance, enhancing the mobilization and removal of secretion. Indicated cases are those with high PEEP therapy, high FiO<sub>2</sub> requirement, those with multiple drug resistant infection and airborne diseases. The technique has been used by physiotherapists to treat indicated cases in ICU of Princess Margaret Hospital since September, 2014. Evaluation of the service in more than 200 episodes of application revealed that there were no adverse effect or complication. The VHI Physiotherapy service was extended to the respiratory wards of PMH after the endorsement of the unit in Dec 2016. All patients with the following indications (except those with contraindications in manual hyperinflation) will be treated with VHI:

**Objectives**

To evaluate the use of VHI as a technique of physiotherapy management to indicated patients.

**Methodology**

All patients with the following indications were treated with VHI

1. FiO<sub>2</sub> equals to or more than 0.6
2. Multi-drug resistance and/or airborne pathogens

The contraindications are the same as that for manual hyperinflation. The respiratory and haemodynamic parameters namely tidal volume, dynamic lung compliance, SpO<sub>2</sub>, heart rate and blood pressure are recorded before and after each VHI application. The parameters were compared for any significant difference.

## **Result**

From early Dec 2016 to early Dec 2017, 33 patients fitting the criteria selection were treated. A total of 646 times of VHI were given for secretion clearance. There is no significant difference in the haemodynamic and other respiratory parameters ( $p$  from 0.066 to 0.301). There was no report of complication or adverse effect after the intervention of the technique.