



National Healthcare Group
POLYCLINICS

Nurse Initiated Bronchodilator Therapy At Woodlands Polyclinic

Dr Kung Jian Ming, NM Jia Shuli

National Healthcare Group Polyclinics



Adding years of healthy life

Mission Statement

To reduce time to nebulization for breathless patients with mild to moderate exacerbation of Asthma or Chronic Obstructive Pulmonary Disease (COPD) at Woodlands Polyclinic from 23 mins to less than 10 minutes over a 6 month period.

Team Members

	Name	Designation	Department
Team Leader	Dr Kung Jian Ming	Family Physician, Associate Consultant	Medical
	Jia Shuli	Nurse Manager	Nursing
Team Members	Wendy Ong	Senior Nurse Manager	Nursing
	Dr Neesha d/o Maganlal	Senior Family Physician	Medical
	Dr Tan En Yu	Senior Family Physician	Medical
	Dr Goh Kar Cheng	Family Physician, Associate Consultant	Medical
Sponsor	Dr Evan Sim	Family Physician, Principal Staff	Medical
Facilitators	Dr Tang Wern Ee	Family Physician, Senior Consultant	Medical

Evidence for a Problem Worth Solving

Breathless patients attending Woodlands Polyclinic with an exacerbation of Asthma or COPD experience a long waiting time before emergency bronchodilator nebulization. During this crucial time window, they may potentially deteriorate. The baseline time from initial nursing triage to time of bronchodilator administration (time to nebulization) was 23 minutes.

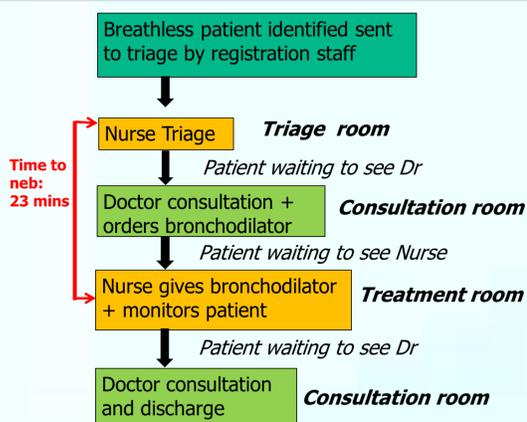
Studies show that nursing initiated bronchodilator administration significantly reduced the time to nebulization in the Emergency Department setting¹.

¹Qazi K et al. J Emergency Nurs. 2010 Sept;36(5):428-33

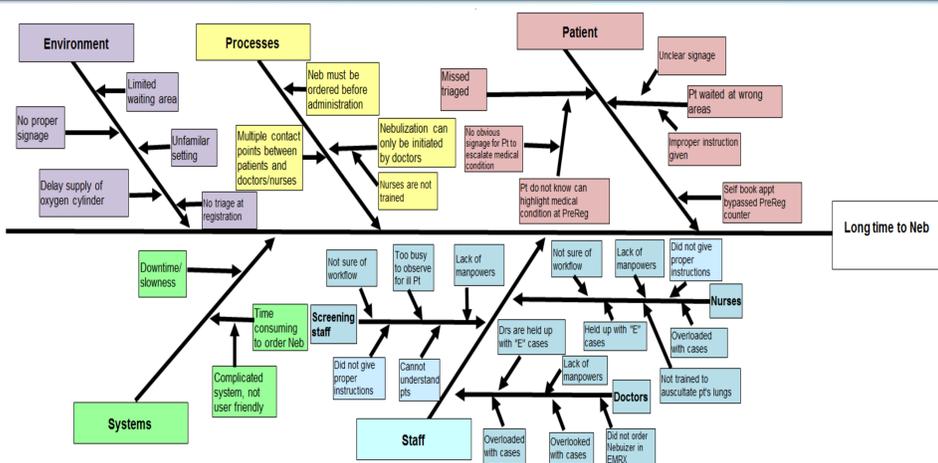
Current Performance of a Process

Patients with acute Asthma or COPD exacerbation had to move through multiple contact points in the care process before receiving nebulization. Doctors had to order nebulization treatment before nurses could administer the medication. While nurses are trained to do a triage, they are not empowered to initiate treatment for patients with Asthma or COPD exacerbation.

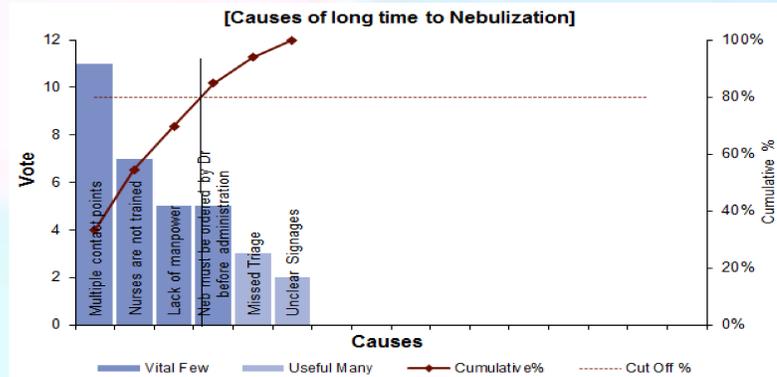
Flow Chart of Process



Cause and Effect Diagram



Pareto Chart



Implementation

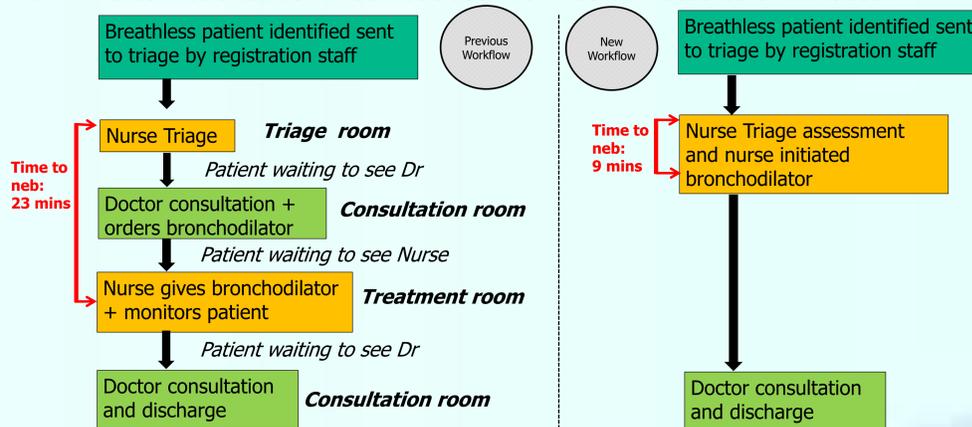
Five nurses who had undergone advanced diploma in nursing in critical care & medical-surgical care were selected to undergo NIBT training at Woodlands Polyclinic. A structured NIBT training programme was piloted to equip the nurses with the necessary skills to:

- Clinically assess (including lung auscultation) a patient presenting with shortness of breath/ wheeze/ cough
- Appropriately identify if a patient has an acute exacerbation of asthma/ COPD and assess severity
- Initiate bronchodilator therapy when indicated

This training included one month of pre-clinical training and four months of clinical training including summative and formative assessments.

Results

1. Time to nebulization was reduced from 23 minutes to 9 minutes.



2. NIBT audit of 66 patients triaged by NIBT-trained nurses post roll-out showed all patients were appropriately triaged and when bronchodilator was given, it was appropriately administered by the nurses.

Shortness of breath patients triaged by NIBT nurse		Total patients	
NIBT given by nurse	Appropriate	31	
	Not appropriate (e.g. not in inclusion criteria but neb still given)	0	
NIBT not given by nurse	Not in inclusion criteria (24)	Hx IHD/CCF/CMP	11
		Not treated in NHGP before	9
		Pregnant	2
	No wheeze heard by nurse (11)	Presents with chest pain	2
		Appropriate/ Dr heard no wheeze	11
	Not Appropriate/ Dr sent for neb	0	

3. A survey conducted post roll-out showed that the NIBT-trained nurses were confident in their knowledge and clinical skills after training. A survey conducted amongst doctors showed they were also confident with the nurses skills with NIBT. Surveys amongst patients who had received emergency bronchodilator from the nurses showed good feedback with the workflow and experience.

Cost Savings

Estimated projected cost savings for the Polyclinic is \$1790 per year. Projected estimated cost savings for 6 NHGP Polyclinics would be \$10740 per year.

Strategies to Sustain

A yearly competency assessment for NIBT-trained nurses will be conducted. More nurses will be trained and NIBT workflow will be spread to all other NHGP Polyclinics.