

**Project Title**

Integrated Care for Advanced REspiratory Disorders (ICARE)

**Organisation(s) Involved**

Tan Tock Seng Hospital

**Project Period**

Start date: 10-2016

**Project Category**

Clinical Improvement, Care Redesign

**Keywords**

Tan Tock Seng Hospital, Care & Process Redesign, Clinical Improvement, Patient-Centred Care, Palliative Care, Palliative Medicine, Chronic Care, Chronic Disease Management, Palliative Rehabilitation, Pulmonary Rehabilitation, Integrated Care for Advanced Respiratory Disorder, Comprehensive Assessment Template, Chronic Lung Diseases, Acute Exacerbations, Unplanned Readmissions, Functional Incapacitation, Psychosocial Distress, Cost Effectiveness, Self-Management, Reduce Length of Stay, Community-based Healthcare, Improve Quality of Life , Evidence-based Intervention, Multidisciplinary Interventions, Patient Empowerment, Pharmacological Interventions, Non-pharmacological Interventions, Cross-disciplinary Collaboration, Patient Education, Staff Education, Staff Competency

**Name and Email of Project Contact Person(s)**

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# Asian Hospital Management Awards

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## Clinical Service

This award recognises programs of patient-centred care with a focus on clinical practice improvement with little or no capital outlay. The project could have been completed in any of the specialised areas of hospital management e.g. nursing, laboratory, radiology or in specialty clinics such as eye centre, renal centre etc. More weight is given to projects where clinical outcomes are measured and how well are these measurements used – or how involved were the physicians in the project.

### Project Title:

**Integrated Care for Advanced Respiratory Disorders (ICARE)**

### Date Project Started:

**Oct 1<sup>st</sup>, 2016**

### Department Name:

**Department of Palliative Medicine, Tan Tock Seng Hospital.**

### Names of Key Staff Involved in this Project (Maximum 512 Characters)

#### **Dr Neo Han Yee**

Adjunct Assistant Professor, LKC School of Medicine  
Consultant, Department of Palliative Medicine  
Consultant, Department of Geriatrics Medicine  
Deputy Co-Chairperson, Clinical Ethics Committee, Tan Tock Seng Hospital

**1. Provide some background as to how the project originated e.g. what problem/opportunity were you faced with. Max 350 words**

Chronic lung diseases such as COPD, bronchiectasis and interstitial lung disease are global causes of severe morbidity and mortality. Patients are recurrently hospitalised for acute exacerbations, during which they suffer significant deconditioning and are discharged home with diminished capacities for self-care. Frequently, patients avoid exercises at home due to dyspnea, thereby perpetuating a spiral of functional decline. This leads to a vicious cycle of unplanned readmissions, incremental functional incapacitation, progressive social isolation and mounting psychosocial distress. Avoiding visits to the emergency room proves almost impossible for patients and family members who are overwhelmed by panic during an exacerbation of breathlessness, and who for years have been conditioned to rely on acute hospital care when they are in crisis. Consequently, enormous healthcare resource is expended, particularly in the last year of life.

There is mounting international interest to redesign palliative-care services to better address the multi-dimensional unmet needs in these patients. To date, three breathlessness intervention services (BIS) have been described in medical literature (two in UK and one in Canada). All three are outpatient services which reported improvement in symptom relief. However only one could show cost-effectiveness.

ICARE is the first BIS in the region. It is designed based on a paradigm construct termed "Palliative Rehabilitation" that integrates pulmonary rehabilitation, chronic disease self-management and palliative care into a holistic model of service delivery. Unlike its overseas contemporaries that provide outpatient support, ICARE proactively enrolls patients admitted to the tertiary hospital for acute exacerbations and transfers them to the community hospital for inpatient rehabilitation. In so doing, ICARE: (i) reduces length of stay (LOS) at the acute-care hospital; (ii) promotes early initiation of palliative care alongside chronic disease management; (iii) delivers patient-centered rehabilitation; and (iv) effect transference of palliative medicine competencies from specialist-heavy tertiary institutions to community-based healthcare partners.

ICARE aims to:

- Improve the quality of life of patients by alleviating breathlessness, anxiety, depression and other distressing symptoms through evidence-based and multidisciplinary interventions.
- Deliver patient-centered rehabilitation that promotes social re-integration.
- Empower patient and family to gain self-mastery over chronic, debilitating breathlessness and reduce unplanned hospitalisations for non-infective exacerbations.

2. Describe what was required to address the aforementioned problem/opportunity. Outline what your targets/goals were and whether any approach was outlined to correlate this program with better clinical service from the patient's perspective. Also, provide an overview of the team that was put together to undertake this and how involved the physicians were in the project. **Max 250 words**

ICARE was construed after extensive literature review and cross-specialty discussions. Its multi-disciplinary team comprises a family physician, ward nurses, physiotherapists, occupational therapists, medical social workers, care-coordinators and dieticians native to the community hospital, and an external palliative physician who comes once weekly to facilitate the multidisciplinary meeting.

Programme consists:

- Physical rehabilitation guided by patient-centric objectives derived using the Canadian Occupational Performance Measure (COPM). This enables individuals to prioritize rehabilitation objectives relating to everyday living – self-care, leisure and productivity.
- Applying a schematic template – **C**omprehensive **A**ssessment **T**emplate (COAT), to identify and monitor treatment response of 12 common physical, psycho-spiritual and social conditions associated with chronic dyspnea.
- Pharmacological interventions including opioids, anxiolytics and anti-depressants for treatment of dyspnea, anxiety and depression respectively.
- Non-pharmacological interventions - breathing exercises, relaxation therapies, activity pacing and energy conservation techniques.
- Dietician assessment and nutritional augmentation.
- Art therapy for patients exhibiting psycho-existential distress.

Upon discharge, all patients are referred to community-based services most befitting their individual needs. These include palliative home-care, hospice day-care, as well as transitional living facilities. Additionally, a dedicated ICARE palliative outpatient clinic continues to follow-up on their care.

Following measures are monitored to audit programme efficacy:

- Functional improvement (on arrival and upon discharge from ICARE)
  - ➔ Modified Barthel Index (MBI) - ability to self-care
  - ➔ Six-Minute Walking Distance (6MWD) - exercise capacity
- Hospitalisations for respiratory aetiologies (6-months before and 6-months after ICARE)
  - ➔ Number of admissions
  - ➔ Total length of stay (days) in acute-care hospital

**3. Outline the steps or stages of the project and how these were executed by the team. Max 200 words**

ICARE was designed after cross-disciplinary discussions between palliative, respiratory and geriatrics specialist as well as Ren Ci Community Hospital's doctors, nurses, therapists and social workers. Interventions were streamlined into routine work processes to minimise disruption to existing workflows. Educational talks were organised to apprise the multi-disciplinary team regarding the profile of target patients, their unique multi-dimensional needs, and strategies to empower patients to cope during episodes of breathlessness. In particular, team members were updated on the latest evidences regarding the use of opioids and benzodiazepines for breathlessness, so as to address deep-seated misperceptions such as addiction, reliance and respiratory suppression. Evidences for non-pharmacological interventions were shared and eventually integrated as part of the programme's interventions.

A 2-bed pilot unit was set-up to build both competencies and confidence of staff. Documents were designed to ensure a systematic approach at identifying and addressing patients' multidimensional needs. This includes the COmprehensive Assessment Template (COAT), that enables the team to screen and monitor treatment response of 12 comorbid conditions associated with chronic dyspnea. Concerns, misunderstandings and fears of team members were addressed during weekly multi-disciplinary meetings led by a palliative consultant. After 4 months, the pilot unit expanded to its current 8-bed capacity.

**4. Demonstrate the results of the project and how this was beneficial for the patients. How did you measure this? Present quantifiable information such as before and after measurements and percentage improvement. Max 200 words**

**Healthcare Resource Utilisation**

- 30-day readmissions for primary respiratory condition fell (28% to 15%)
- Comparing 6 months preceding ICARE admission and ensuing 6 months upon ICARE discharge:
  - Median number of acute-care hospital admissions fell (2 to 1). In patients with  $\geq 3$  admissions before ICARE, ICARE reduces 3.5 admissions in the ensuing 6 months.
  - Median length-of-stay (LOS) in acute-care hospitals (for all respiratory causes) was reduced by 15 days in the ensuing 6 months. In those with  $\geq 3$  admissions before ICARE, ICARE reduces LOS by 22 days in the ensuing 6 months.

**Clinical Issues**

On average, each individual has 5.7 items identified by COAT. After interventions, more than 75% of patients showed improvement or resolution of physical and psychological issues.

**Functional Improvement**

- Mean 6MWD improved (137m to 178m), with greatest improvement observed in the frailest patients (pre-ICARE 6MWD $<$ 100m) (6MWD improved by 50m). This translates to significantly greater capacity to perform activities of daily living (ADLs) and participate in meaningful social events.
- Mean MBI increased by 12 points, with greatest improvement seen in the frailest patients (MBI 30-60) (mean MBI scores increased by 20). This grossly translates to 50% improvement in four of ten ADLs.

5. Please give any other information, including third party testimonial regarding your project which you think would help convince the judges that this project (or program) should win this category. **Max 300 words**

We have attached three documents in support for our application:

1. Measurable Results of ICARE
2. Two testimonials provided by stakeholders:
  - i. Assoc. Prof. John Abisheganaden.  
Head & Senior Consultant, Department of Respiratory & Critical Care Medicine  
Clinical Director, Case Management Unit  
Tan Tock Seng Hospital
  - ii. Dr Lee Liang Tee  
Senior Consultant, Geriatrics Medicine  
Clinical Director, Ren Ci Hospital