

A Multidisciplinary Clinical Pathway on Management of Acute Exacerbation Of Bronchiectasis

Albert Lim Yick Hou, Respiratory & Critical Care Medicine Department

Background

Clinical pathway (CP) for COPD, asthma, and heart failure has been in place for years and has helped patients and hospitals alike. However, the impact of a clinical pathway on managing acute exacerbation of bronchiectasis, which is a well known chronic illness, and is as old as COPD, Asthma, & Heart failure, is unknown. The hallmark of bronchiectasis is recurrent exacerbations with high morbidity and mortality. Management of acute exacerbation with hospitalisation is complex, requires multidisciplinary approach, and is costly. We decided to create & assess the usefulness of a CP for bronchiectasis.

Mission Statement

- To create an evidence-based care bundle
- To provide disease specific multidisciplinary (doctors, nurses, case manager, physiotherapists and pharmacists) care for patients with exacerbation of bronchiectasis
- To prevent delays, duplication of services & unnecessary costs
- To monitor clinical outcomes and variance management

Team Members

| Name | Designation | Department |
|---------------------------|---------------------------------------|----------------------|
| A/Prof John Abisheganaden | Head of Department (Sponsor) | Respiratory Medicine |
| A/Prof Albert Lim | Senior Consultant (Clinical Champion) | Respiratory Medicine |
| Lily Goh | Senior Nurse Clinician | Case Management Unit |
| Wong Yan Ping | Nurse Clinician | Case Management Unit |
| Quek Poh Seo | Advanced Practice Nurse | General Medicine |
| Kalaichelvi GG | Senior Nurse Manager (Unit) | Nursing Service |
| Shairilin Ishak | Nurse Clinician | Nursing Service |
| Lawrence Xu | Principal Physiotherapist | Physiotherapy |
| Mindy Tay | Senior Pharmacist | Pharmacy |

Evidence for a Problem worth solving

- 2010 – 2011 Health Information Services Data for (ICD 9: 494) Acute Exacerbation of Bronchiectasis
- Trends in Bronchiectasis Among Medicare Beneficiaries in the United States, 2000 to 2007 Epidemiology of Bronchiectasis, *Chest*. 2012;142(2):432-439

Current Performance of a Process

2011 TTSH Admissions for Acute Exacerbation of Bronchiectasis

| Admitting Discipline | Number of patients | Number of readmissions | Mortality Rate | ALOS |
|----------------------|--------------------|------------------------|----------------|------|
| RES | 242 | 11% | 3% | 6.5 |
| Overall | 299 | 9% | 3% | 6.8 |

Implementation

| Intervention | Period of Implementation |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Planning and Development Phase | April 2013 to September 2013 |
| Pilot Bronchiectasis CP in respiratory wards (Level 8) | November 2013 to April 2014 |
| Evaluate clinical outcomes and goals: <ul style="list-style-type: none"> ▪ Analyzed & presented pilot data to CP project team and respiratory department clinicians ▪ Modify CP and resubmission to Medical Records Committee for approval | April 2014 to October 2014 |
| Hospital wide implementation and education | November 2014 |

Results

Figure 1: Bronchiectasis Patients ALOS for CP and non CP

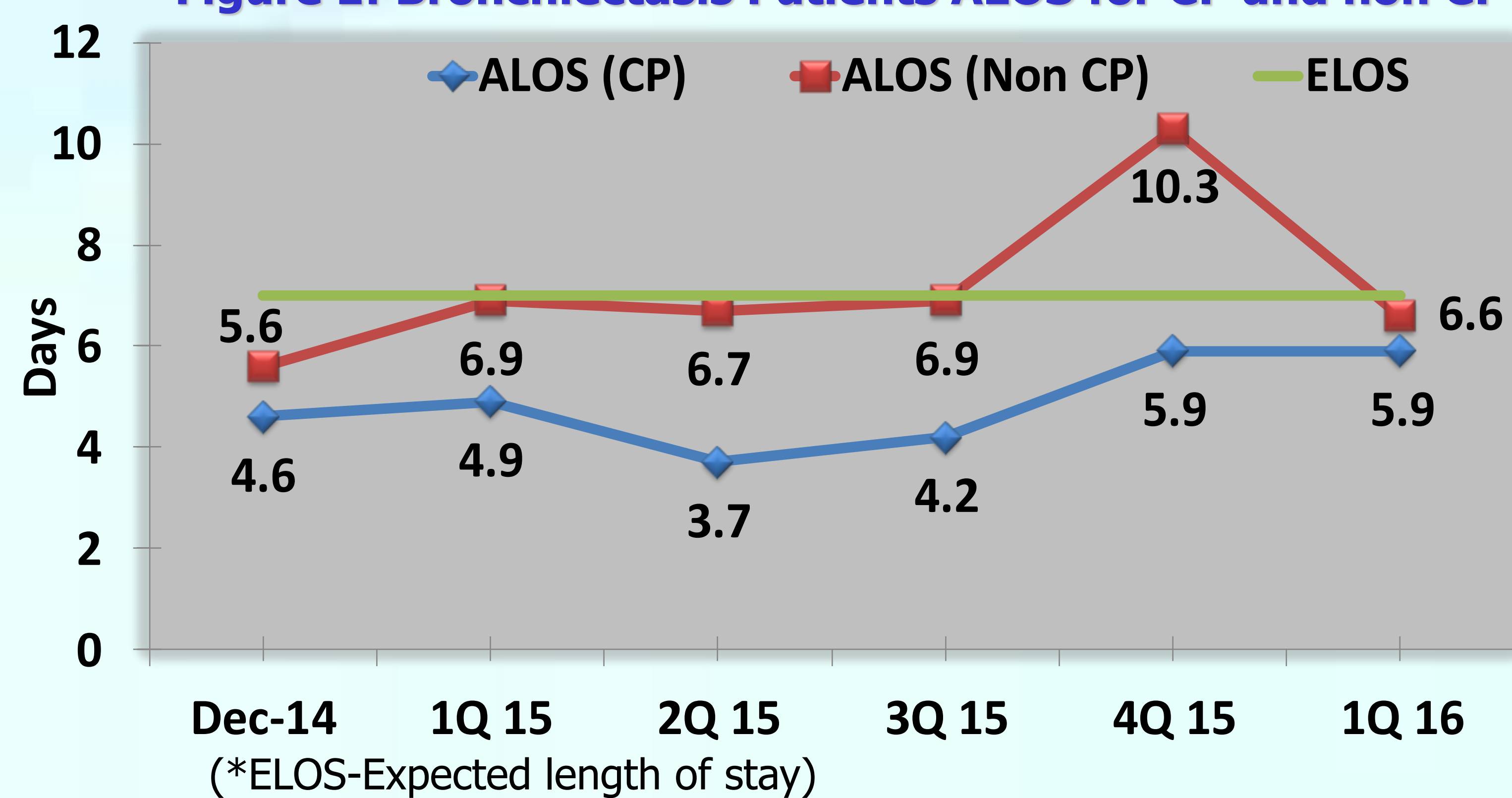


Figure 2: Comparison of average length of stay (ALOS)

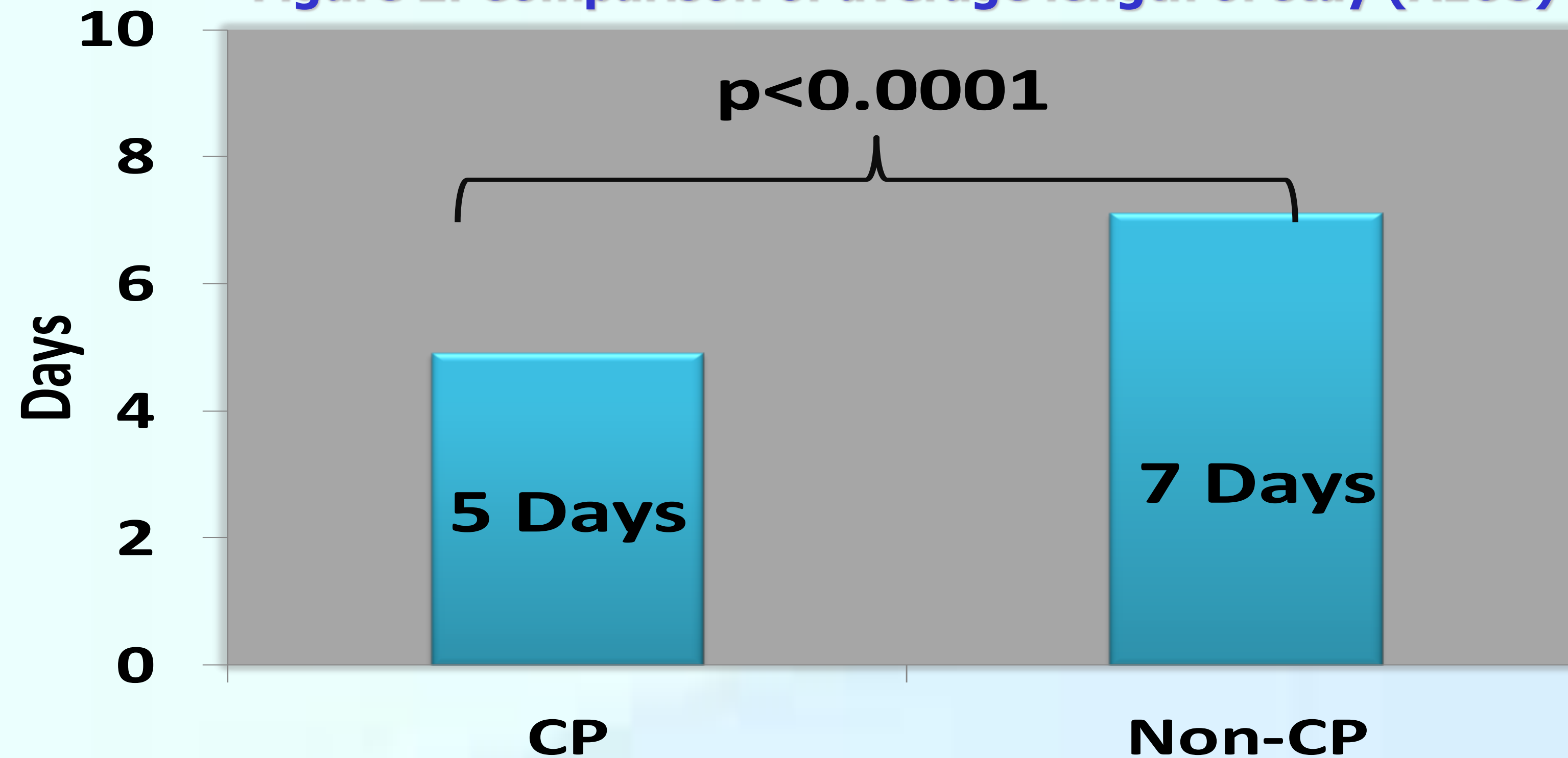
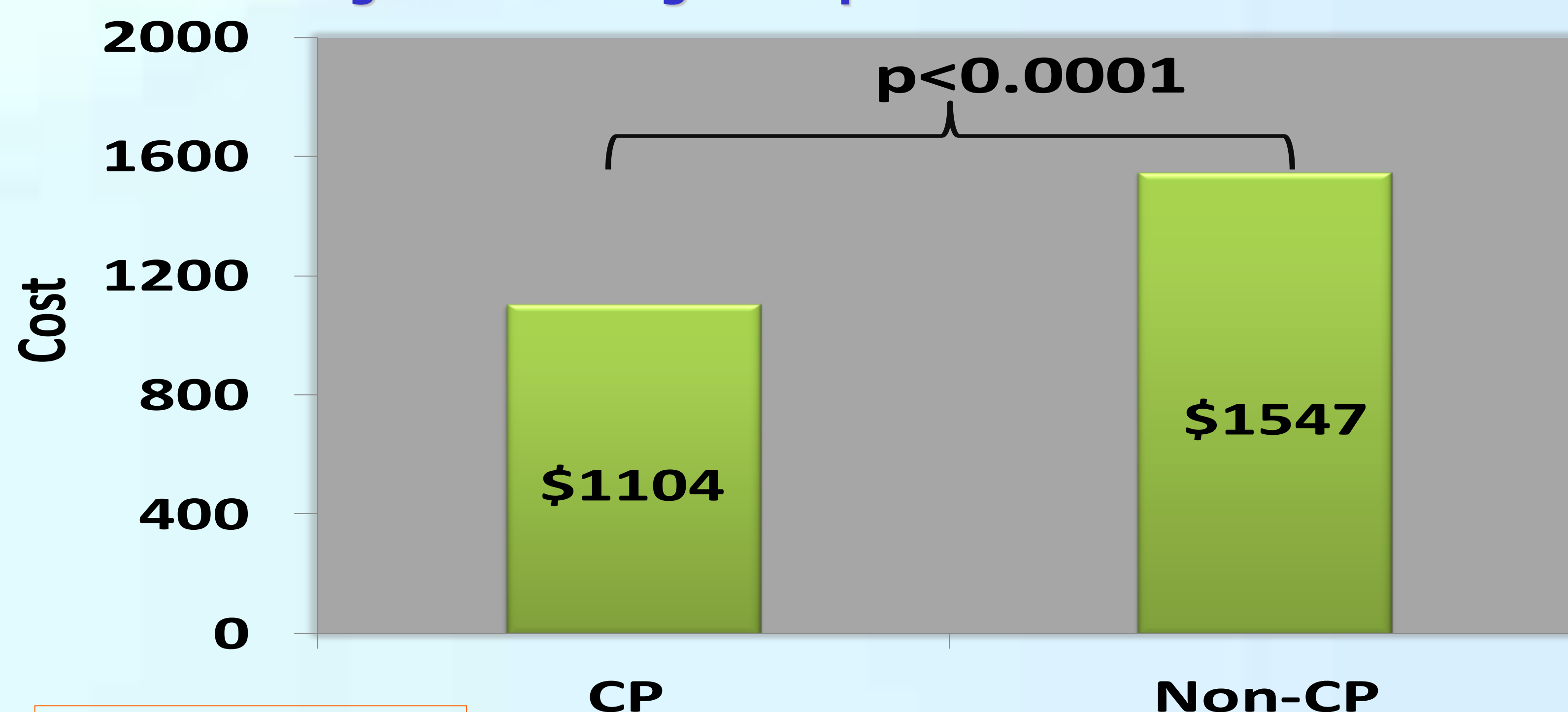


Figure 3: Average cost per C class admission



Cost Savings

The potential cost savings for patients on the CP was **SGD \$53,924** (ie. **SGD\$443** per patient per admission)

Strategies to Sustain

- To reinforce to team on current interventions in place
- To brief medical officers every 6 months on clinical pathway in Respiratory MO orientation
- To review clinical pathway every 2 years for best evidence based practice