Project Title

A Nurse-Led, Physician-Supervised: One-Stop Rapid Access Chest Pain Clinic for Expedited Diagnosis of Coronary Artery Disease

Project Lead and Members

Project lead: Toh Lay Cheng

Project members: Dr Pipin Kojodjojo, Christina Khoo, Ang Soon Hock, Lynn Chen

Organisation(s) Involved

Ng Teng Fong General Hospital

Aims

By June 2019, the project team aims to reduce costs to the system for patients with onset of chest pain by 40%.

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

The setup of the Rapid Access Chest Pain Clinic led by nurses, supervised by cardiologists with single-clinic visits (combining investigations and consultation reviews) helped to address the long lead times to diagnosis and costs for patient

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign

Keywords

Ng Teng Fong General Hospital, Value Based Care, Cost Effectiveness, Rapid Access Chest Pain Clinic

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A NURSE-LED, PHYSICIAN-SUPERVISED: ONE-STOP RAPID ACCESS CHEST PAIN CLINIC FOR EXPEDITED DIAGNOSIS OF CORONARY ARTERY DISEASE

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- ☐ SAFETY
- ☐ PRODUCTIVITY
- ☑ PATIENT EXPERIENCE
- ☑ QUALITY
- ☑ VALUE

Define Problem/Set Aim

Opportunity for Improvement

Before April 2019, the cost of treating a polyclinic referral for a patient with onset of chest pain at was $696. In addition to high costs to the system, this contributes to long lead times to diagnosis, and overcrowding of cardiology clinic slots.

Clinical characteristics of patients	Total of 30 Attended (8 DNA)
Age	49.5+-27.5 (22-77)
Female	13(44%)
Male	17(56%)
Chinese	22(73%)
Malay	5 (17%)
Indian	3(10%)
Hypertension	4 (13%)
Diabetes	2 (6%)
Smoker	4(13%)
FH for CAD	8(26%)
Hyperlipidaemia	5(17%)
ETT perfomed	25
Negative	23 (92%)
False Positive (further testing showed normal coronaries)	1(4%)
Equivocal (further testing showed normal CT Calcium Score)	1(4%)
Nuclear Studies (further testing showed non-ischaemia)	4 (13%)
COROS (Triple vessels disease, underwent CABG)	1 (4%)

Aim

By June 2019, the project team aims to reduce costs to the system for patients with onset of chest pain by 40%.

Establish Measures

Outcome measure: Cost savings to system for treating a polyclinic referral for a patient with onset of chest pain ($). This is defined as the monthly cost incurred by Ng Teng Fong General Hospital (NTFGH) in the future state process minus the cost incurred by NTFGH in delivering the current state process, multiplied by the number of patients seen.

Process measure: No. of visits to consultant review.

Balancing measure: % definitive diagnosis for patients on a single visit from time of referral.
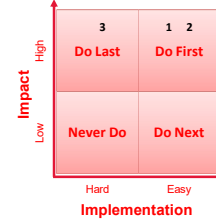
Analyse Problem

Current state

Process Analysis (Waste)

Future state
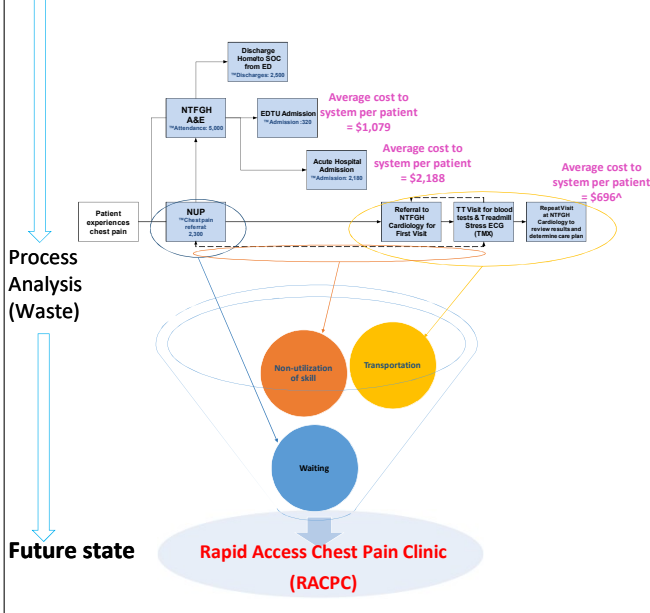
Select Changes

**What are the probable solutions?**

Following the root cause analysis, project team identified 4 change ideas that would need to be incorporated into the RACPC:

1. Enable direct polyclinic referrals within same day
2. Nurse-led, Cardiologist-supervised clinic
3. Single clinic visit for blood tests, treadmill, and consultant review

Test & Implement Changes

CYCLE	PLAN	DO	STUDY	ACT
1	Between April to June 2019, the project team piloted RACPC with a polyclinic in Pioneer.	The test change was carried out as planned. Open dialogue and consistent engagement with polyclinic colleagues was critical to success.	The test change had a positive impact on the outcome and process measures. 100% of patients also had a definitive diagnosis within a single visit.	The project team has adopted the RAPAC. This will be spread to a second polyclinic Jurong East for the next PDSA cycle in September 2019.

Outcome measure: Cost savings to system

Process measure: No. of visits to consultant review
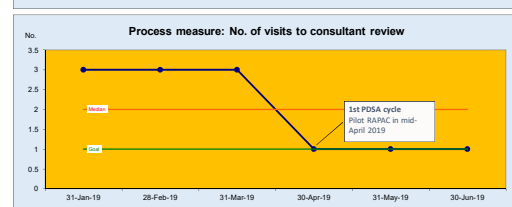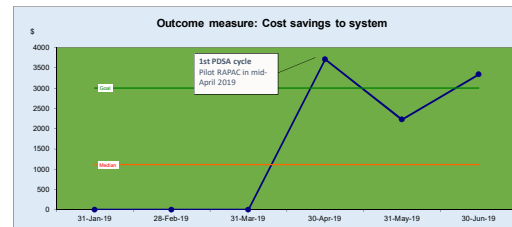
Spread Change/Learning Points

RACPC is a cost-effective alternative for treating patients polyclinic referral for a patient with onset of chest pain, and is a well-established model in the United Kingdom. At NTFGH, per-patient cost savings to the system were at $371 for the subgroup of patients who would have otherwise visited the Cardiology clinic. This would be higher at $754 for another subgroup of patients visiting the emergency department.

Central to the success of the RACPC were the "nurse-led, cardiologist-supervised clinic" and "single-visit clinic" change ideas, since these directly addressed the wastes identified in our problem analysis. Given the success of our test change (including positive feedback from patients and colleagues), we will be spreading change to another polyclinic in Sep 2019.

The Project Team would like to express thanks to Cardiac Diagnostic Team and A34 Nurse for their support in setting up the clinic