Project Title

Providing Early Intervention For At-Risk Patients In ED Requiring Physiotherapy

Project Lead and Members

Project lead: Kelly Chan (PT),

Project members: Kamala Velu (ED CM), Ng Kai Xin (ED Ops), Lim Kian Chong (PT), Lai Weng Kin (PT), Ng Yan Jun (QII), Nurhaslindah Yahya (ED CM), Charlene Lim (ED CM), Dr. Colin Ong (ED)

Organisation(s) Involved

Ng Teng Fong General Hospital

Healthcare Family Group(s) Involved in this Project

Allied Health, Nursing, Medical

Applicable Specialty or Discipline

Quality Innovation & Improvement, Emergency Medicine, Physiotherapy

Project Period

Start date: Jan 2022

Completed date: Jun 2023

Aims

We aim to reduce the hospital admission rates by at least 25% (from 68.7% to 51.5%) for ED patients that meets the following criteria* by December 2023 while ensuring that the 72 hour re attendance rates do not increase

Background

See poster attached/ below

Methods

See poster attached/ below

Results

See poster attached/ below

Lessons Learnt

See poster attached/ below

Conclusion

See poster attached/ below

Project Category

Care & Process Redesign

Access to Care, Waiting Time, Quality Improvement, Clinical Practice Improvement

Keywords

Overcrowding, Admission Rate, Re-Attendance Rate, Self Management, At Risk Patients

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PROVIDING EARLY INTERVENTION FOR *AT-RISK PATIENTS IN ED REQUIRING PHYSIOTHERAPY

- ✓ SAFETY
- ✓ QUALITY
- ❑ PATIENT EXPERIENCE
- ❑ PRODUCTIVITY
- ❑ COST

MEMBERS:

Kelly Chan (PT), Kamala Velu (ED CM), Ng Kai Xin (ED Ops), Lim Kian Chong (PT), Lai Weng Kin (PT), Ng Yan Jun (QII), Nurhaslindah Yahya (ED CM), Charlene Lim (ED CM), Dr. Colin Ong (ED)

Define Problem, Set Aim

Problem/Opportunity for Improvement

There is an opportunity to reduce hospital admissions, bed occupancy rates and Emergency Department (ED) overcrowding through frontloading the Physiotherapy service and discharging patients from the ED itself. However, reducing admissions must be accompanied by low re-attendance rates in order for it to be considered good and effective ED care. We think this is possible for selected patients, who are empowered by physiotherapists with the right knowledge and self-management strategies to prevent them from re-attending ED.

Aim

We aim to reduce the hospital admission rates by at least 25% (from 68.7% to 51.5%) for ED patients that meets the following criteria* by December 2023 while ensuring that the 72-hour re-attendance rates do not increase. We believe that these group of patients are most amenable to rehabilitation by Physiotherapists in the ED setting: patients ≥65 years old with the following diagnoses:

| PT Diagnosis Codes	Diagnosis
W19, R29.6	Fall / Frequent Fall
S09.0	Head Injury
R42, H81.3	Vertigo/ Peripheral Vertigo/ Giddiness
M54.99, M54.5	Back pain/ Low back pain
T09.2	Back strain

Establish Measures

The admission and re-attendance rate for all ED patients that meets the above criteria was extracted as baseline data for comparison. The 2019 data (pre-covid-19) was referred to for a better representation of baseline as during Covid period, non-urgent cases were deferred to divert resources to critical care.

Type of Measure	Measure
Outcome	Admission rate of patients intervened by PT within ED
Process	No. of patients intervened by PT within ED
Balancing	Re-attendance rate of patients intervened by PT within ED

Median admission rate for ED patients that fits criteria* in 2019 = **68.7%**

Target to reduce to 51.5% for patients intervened

Disposition (2019)
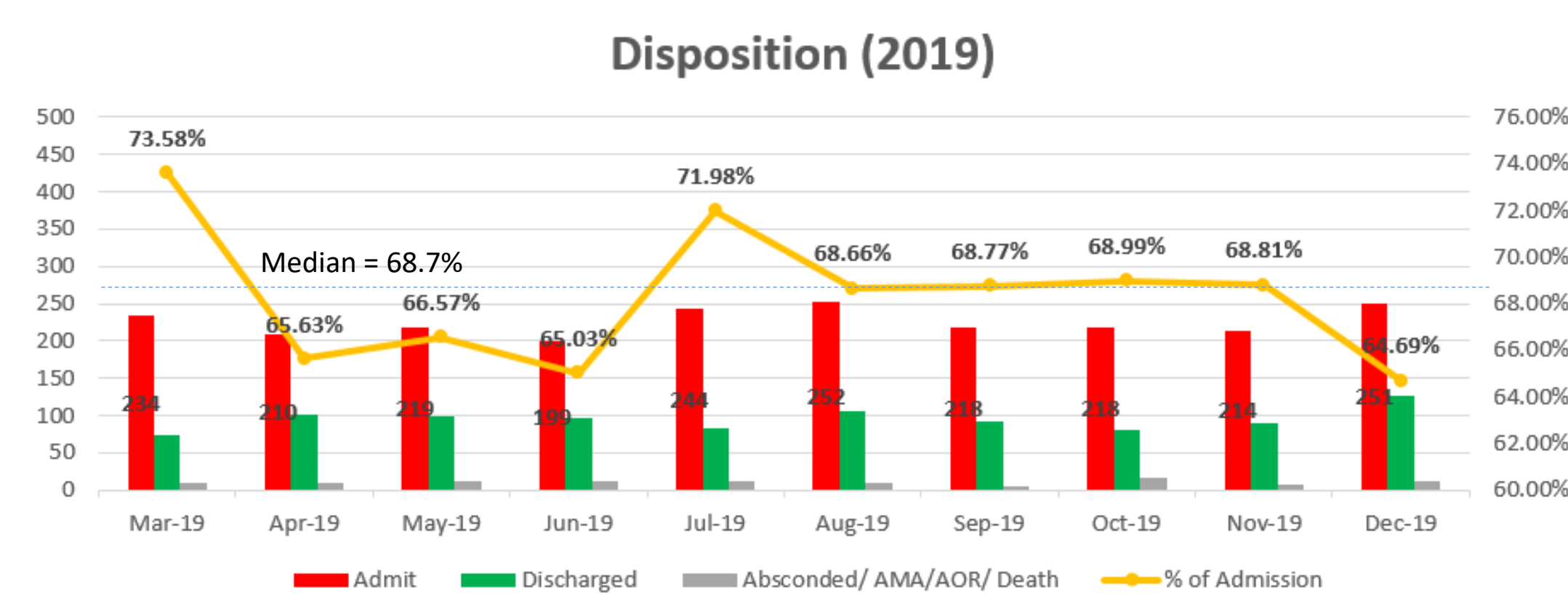
Median re-attendance rate for ED patients that fits criteria* in 2019 = **2.7%**

Re-attendance Rate (2019)
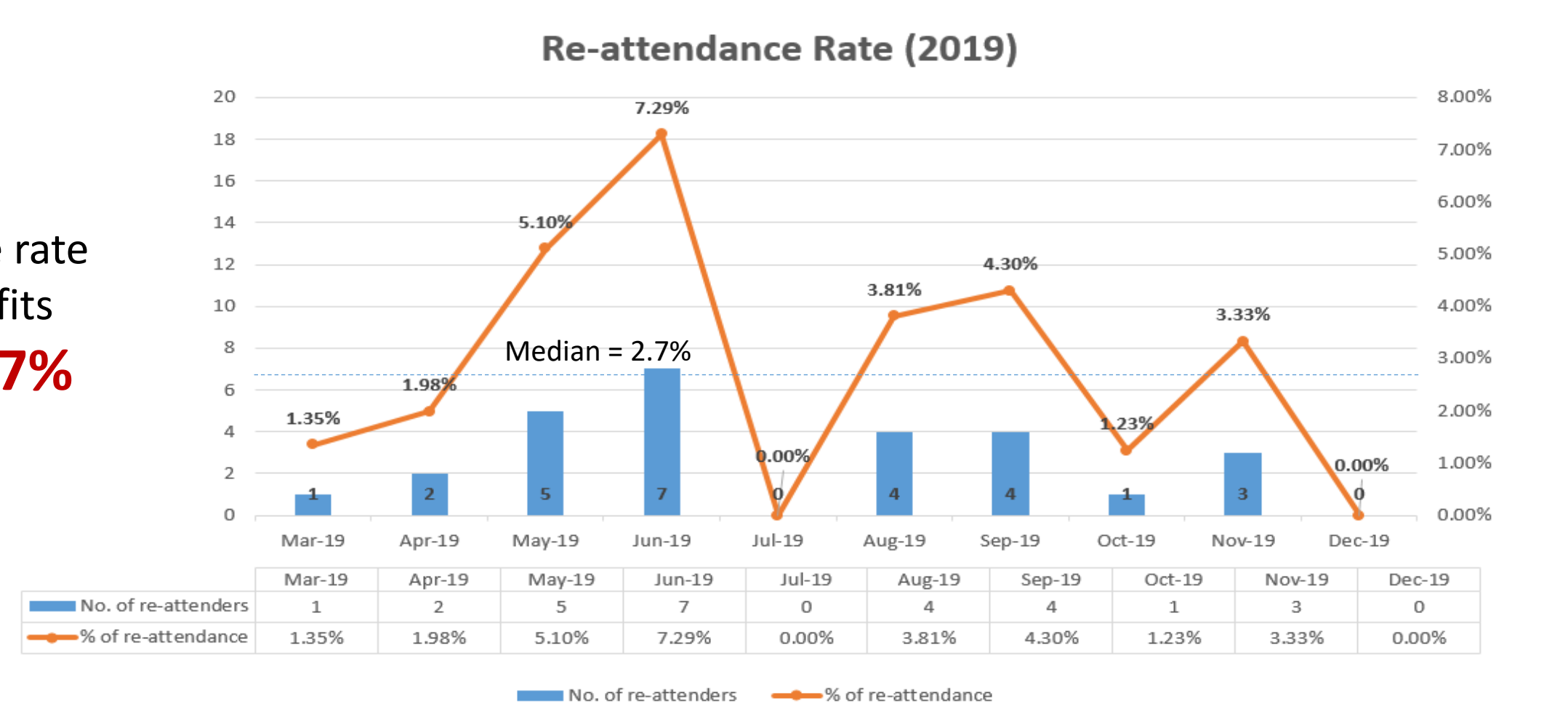
Analyse Problem

Using the drivers diagram, the team analysed and designed 7 change concepts to address the issue. The change concepts were then ranked and implemented according to the Impact vs Implementation matrix.
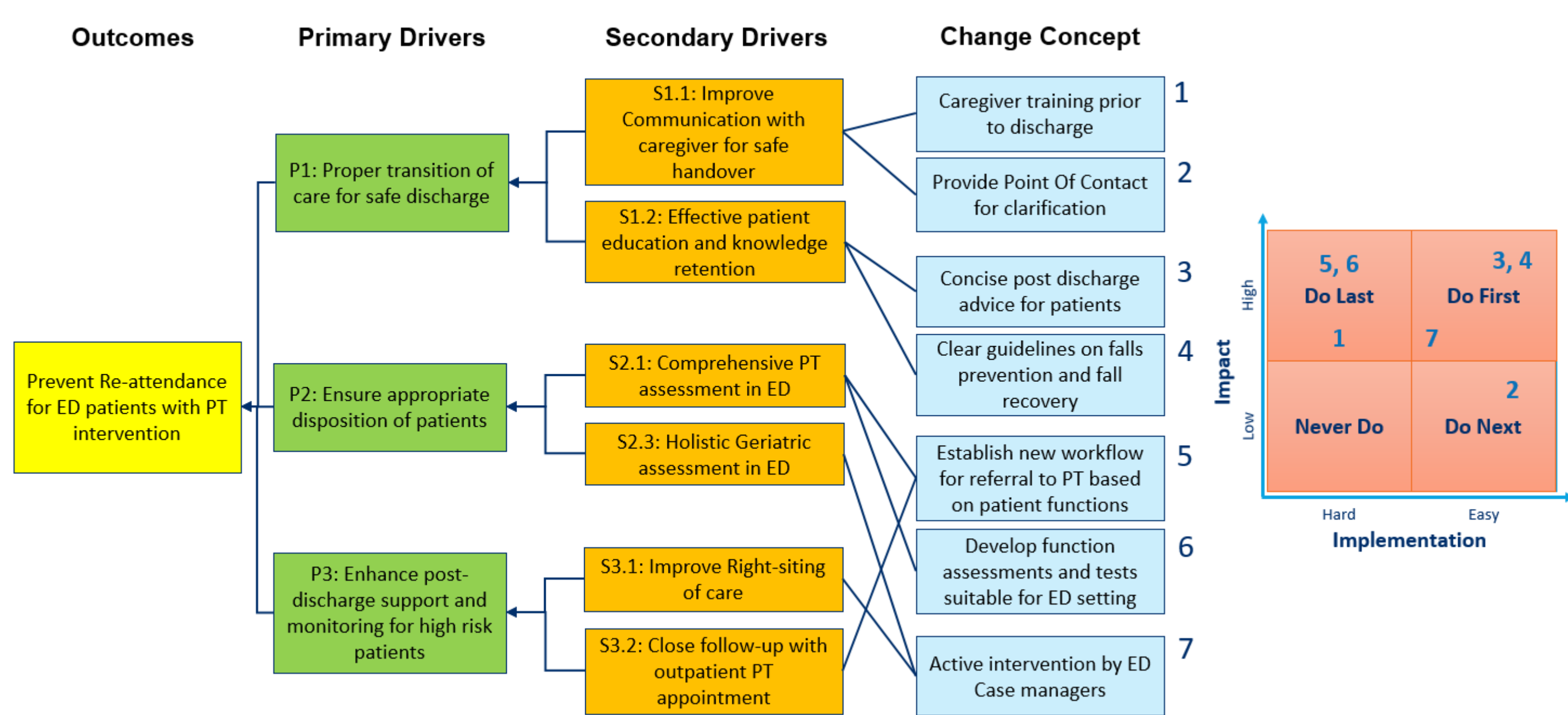
Spread Changes, Learning Points

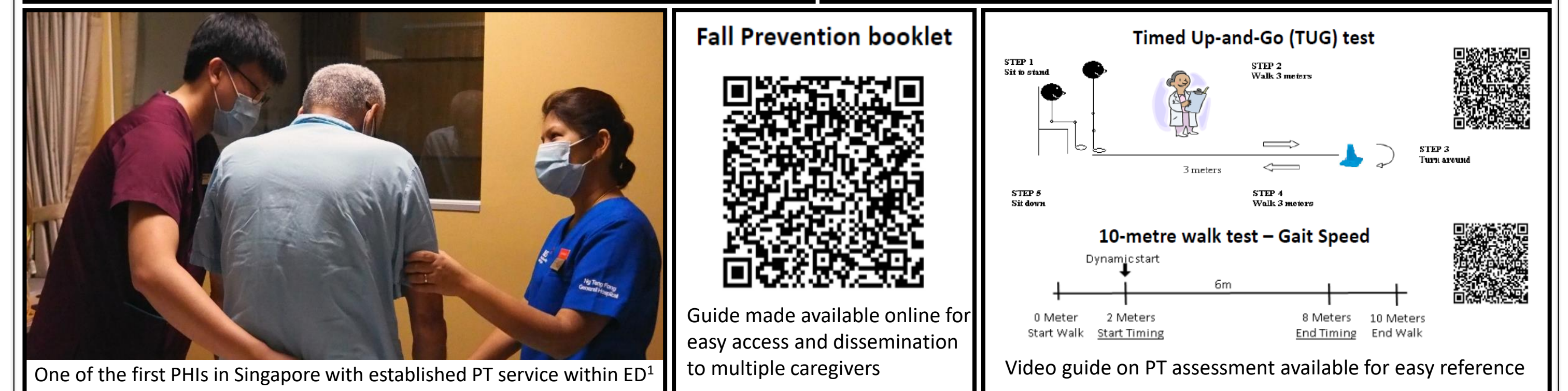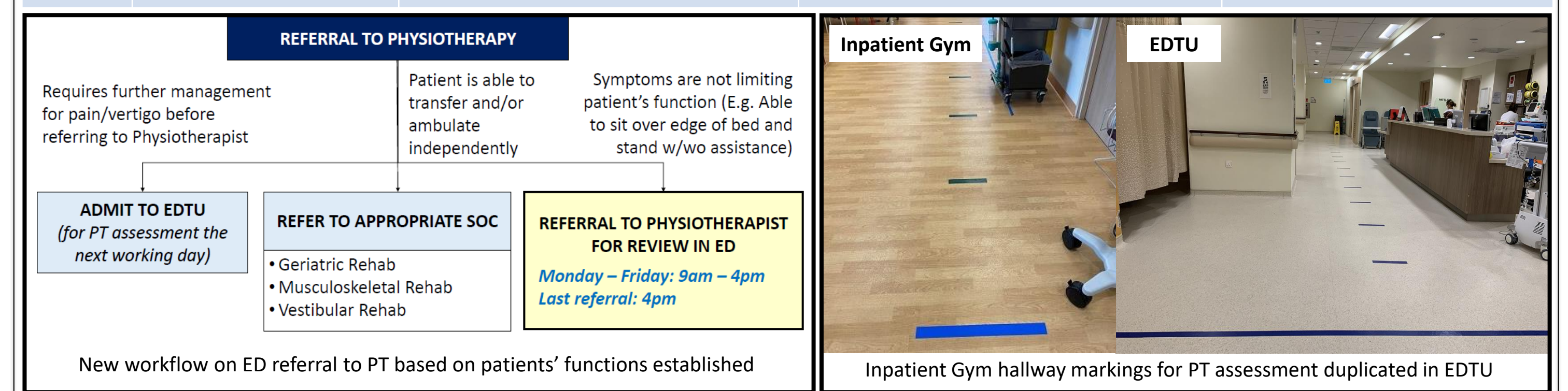**What are/were the strategies to spread change after implementation?**
- NTFGH is one of the first PHIs in Singapore with established PT service within ED[1]. Success and efforts were publicized through mass media to raise awareness and garner support.

What are the key learnings from this project?
- Be flexible and open minded to develop creative solutions that differs from the conventional methods of delivering care
- Effective use of technology to improve accessibility of information and ensure sustainability
  → Falls prevention Guidelines and post-discharge advices made available online facilitated updating of information and allow easy dissemination to patients and multiple caregivers
  → Video demonstration on how to perform PT assessment guides new nurses/ case managers and reduces time required for repeat trainings


Ng Teng Fong General Hospital

Jurong Community Hospital

Test & Implement Changes

CYCLE	PLAN	DO	STUDY	ACT
1 Change concept 3 & 4	Revision and active distribution of existing guides to patients/ NOKs for better understanding and knowledge retention	1. PT developed a new concise post discharge advice and falls prevention guideline 2. ED Case Managers (CM) and nurses actively distributes the guide to patients/NOKs upon discharge	Following feedback were collected for patients/NOKs and staff: 1. Images are unclear after printing (black and white) 2. Guide is misplaced by NOK or not handed over when caregiver is changed 3. Too many pages (10pgs) to be printed (waste of resources).	**ADAPT** The team made softcopies available online subsequently for easy access and dissemination to multiple care givers. Images are in colour, clear and can be magnified.
2 Change concept 5 & 7	Establish new workflow for referral to PT based on patient's functions	1. Referral process and criteria is established 2. Communication channel (Tiger Text chat group) between ED and PT is created 3. Workflow is drafted and reviewed by ED clinicians and PT.	1. ED Clinicians and PT are both receptive to the new workflow 2. Lack of mobility aids in ED and assessment facilities reduced efficiency of assessment (PT had to borrow equipment from ward and bring to ED)	**ADOPT** Workflow was approved and broadcasted to ED clinicians. The team also intends to explore ways to improve efficiency of assessment.
3 Change concept 2, 6 & 7	Improve efficiency and provide holistic care in ED with CM intervention	1. ED CMs identify suitable patients for early PT intervention 2. ED CMs then facilitate and coordinate PT referrals 3. Patients/NOKs are offered CM contact no. for post-discharge support if needed	1. Re-attendance rate was monitored closely between Jan-Jun 22 and remained 0% for intervened patients. 2. The Re-attendance rate for all ED patients (include those wo intervention) is at 2.56%.	**ADOPT** The team concluded that CM intervention, coupled with PT assessment in ED is successful in preventing re-attendance for ED patients and continued to explore ways to improve sustainability and efficiency.
4 Change concept 5 &7	Facilitate mobility assessment within ED to improve efficiency	1. 9 types of mobility aids required for ED-specific PT assessment were procured and stored in EDTU for easy access 2. Visits made to Inpatient Gym & JCH Rehab to observe assessment and setup	1. The team finalized on using 10m walk test (10MWT) and timed-up-go (TUG) test to assess patients in ED. 2. To improve efficiency and sustainability, the team intends to train ED CMs and nurses on how to perform the above assessments. This helps early identification of patients with fall risk and also determine if early PT intervention in ED is necessary.	**ADOPT** 1. FM engaged to setup markings in EDTU to facilitate the tests. 2. PT will also develop a new competency assessment to train ED CM and nurses
5 Change concept 1 & 7	Training of ED CMs and nurses to ensure sustainability	A comprehensive training program including Geriatric screening and Physiotherapy assessment has been crafted for ED nurses. This will enable them to assess patients holistically.	As of Jun 23, 14 CM and ED nurses have completed the training and competency assessment.	**ADOPT** ED nurses will continue to be scheduled for the competency and Caregiver training in batches (on-going). Next training is scheduled to be in Aug 23.

New workflow on ED referral to PT based on patients' functions established

Inpatient Gym hallway markings for PT assessment duplicated in EDTU

One of the first PHIs in Singapore with established PT service within ED[1]

Fall Prevention booklet
Guide made available online for easy access and dissemination to multiple caregivers

Timed Up-and-Go (TUG) test
10-metre walk test – Gait Speed
Video guide on PT assessment available for easy reference

Outcome

Significant reduction in admission rate (from 68.7% to 40.2%) for patients intervened between January 2022 - June 2023. Our target to reduce admission rates is exceeded and low re-attendance rate (0% 72-hr re-attendance) for intervened patients is also consistently met.

No. of patients Intervened vs Admission Rate

Median Admission rate for intervened patients = **40.2%** *reduced by 41.5%!!!*
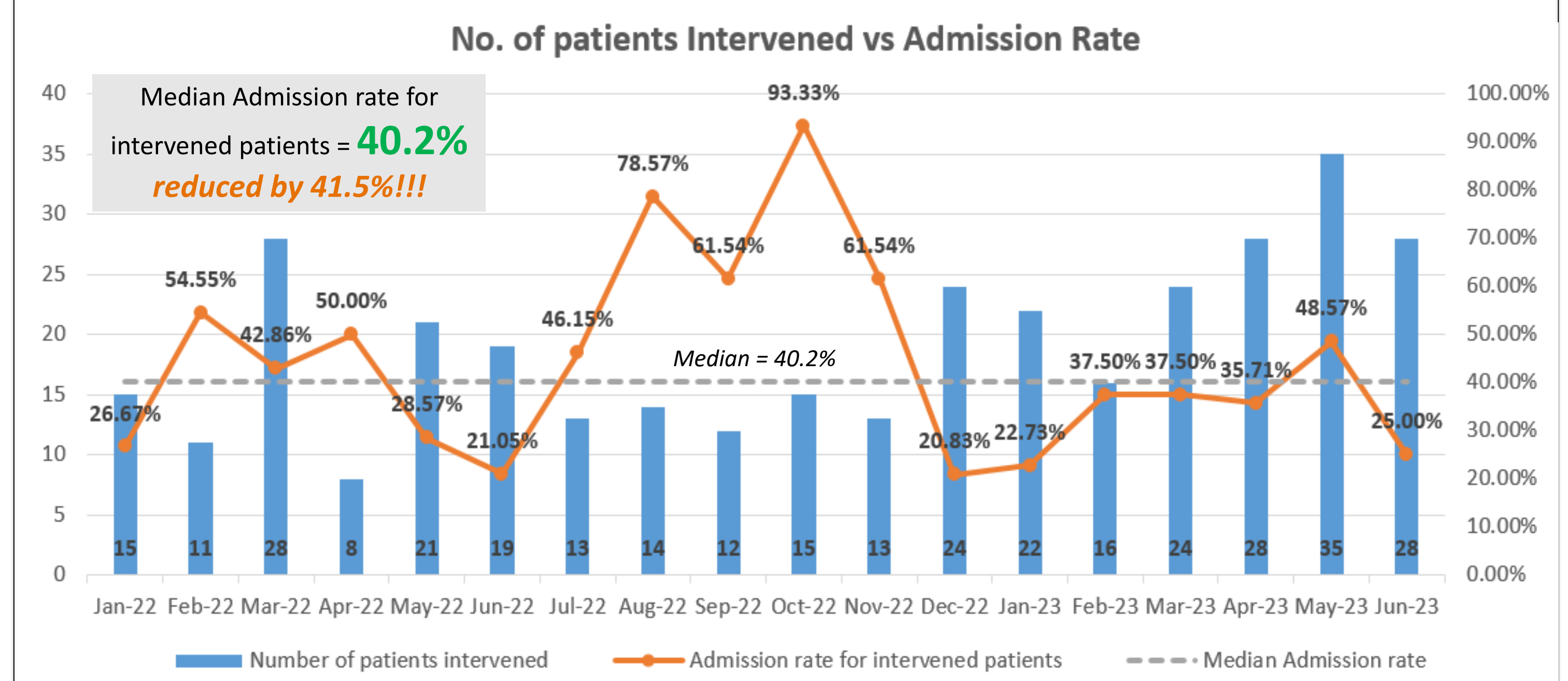
Month	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23
Admission rate of patients intervened	26.67%	54.55%	42.86%	50.00%	28.57%	21.05%	46.15%	78.57%	61.54%	93.33%	61.54%	20.83%	22.73%	37.50%	37.50%	35.71%	48.57%	25.00%
No. of patients intervened	15	11	28	8	21	19	13	14	12	15	13	24	22	16	24	28	35	28
Re-attendance rate of patients intervened	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Median No. of patients intervened = 18
Median Re-attendance rate = 0%

Reference
1. www.straitstimes.com: Physiotherapists at TTSH emergency department reduce wait time and staff workload - https://www.straitstimes.com/singapore/physiotherapists-at-ttsh-emergency-department-reduce-wait-time-and-staff-workload