## Project Title

Improve Percentage of Patients Achieving Desired Functional Outcomes when Receiving Home Exercise Programme at the Centre of Geriatric Medicine

## Project Lead and Members

Project lead: Rae Quek Li Qin

Project members: Dr Ong Eng Hui, Show Lei Ping, Goh Gek Hum, Jazel Kan Sze Mun

## Organisation(s) Involved

Tan Tock Seng Hospital

## Healthcare Family Group(s) Involved in this Project

Allied Health, Medical, Healthcare Administration, Nursing

## Applicable Specialty or Discipline

Physiotherapy, Geriatric Medicine, Operations

## Project Period

Start date: July 2021

Completed date: Mar 2022

## Aims

To improve percentage of patients with desired functional outcomes from 59% to 100% for patients solely receiving Home Exercise Programme (HEP) at the Centre for Geriatric Medicine, Tan Tock Seng Hospital within 6 months

## Background

See poster appended/ below

## Methods

See poster appended/ below

## Results

See poster appended/ below

## Lessons Learnt

Not Available

## Conclusion

See poster appended/ below

## Additional Information

Accorded the NHG Quality Day 2022 (Category B: Service Redesign & Delivery) Merit Award

## Project Category

Care & Process Redesign

Value Based Care, Functional Outcome

## Keywords

Geriatric Rehabilitation, Functional Decline

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

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# Improve Percentage of Patients Achieving Desired Functional Outcomes when Receiving Home Exercise Programme at the Centre of Geriatric Medicine

**Ms Rae Quek Li Qin, Department of Physiotherapy**

## Mission Statement

To improve percentage of patients with desired functional outcomes* from 59% to 100% for patients solely^ receiving Home Exercise Programme (HEP)+ at the Centre of Geriatric Medicine (CGRM), Tan Tock Seng Hospital within 6 months.

* Desired functional outcomes = Maintain or improve functional scores (5 times sit-to-stand & Gait speed)

^ Solely receiving HEP at CGRM = excluding those who are enrolled into additional centre-based or community-based rehabilitation programmes

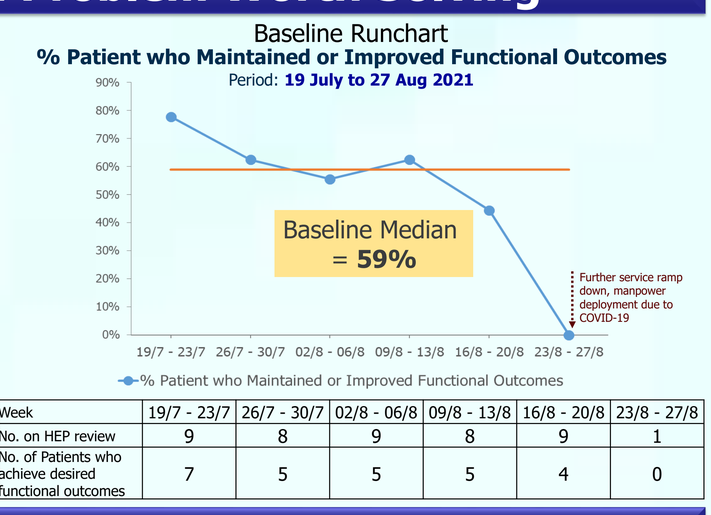
+ With a review interval of 6 weeks or less

## Team Members

| | Name | Designation | Department |
|---|---|---|---|
| **Team Leader** | Ms Rae Quek Li Qin | Senior Physiotherapist | Physiotherapy |
| **Team Members** | Dr Ong Eng Hui | Consultant | Geriatric Medicine |
| | Ms Show Lei Ping | PSA Supervisor | CGRM |
| | Ms Goh Gek Hum | Senior Staff Nurse | CGRM |
| | Ms Jazel Kan Sze Mun | Executive | Ops DICC |
| **Sponsors** | Dr Rani Ramason | Senior Consultant | Geriatric Medicine |
| | Ms Doris Yek Lee Ling | Nursing Manager | CGRM |
| | Mr Christopher Ng | Head | Physiotherapy |
| **Mentors** | Ms Shirlene Toh Ee Mui & Mr James Ang Wei Kiat | | |

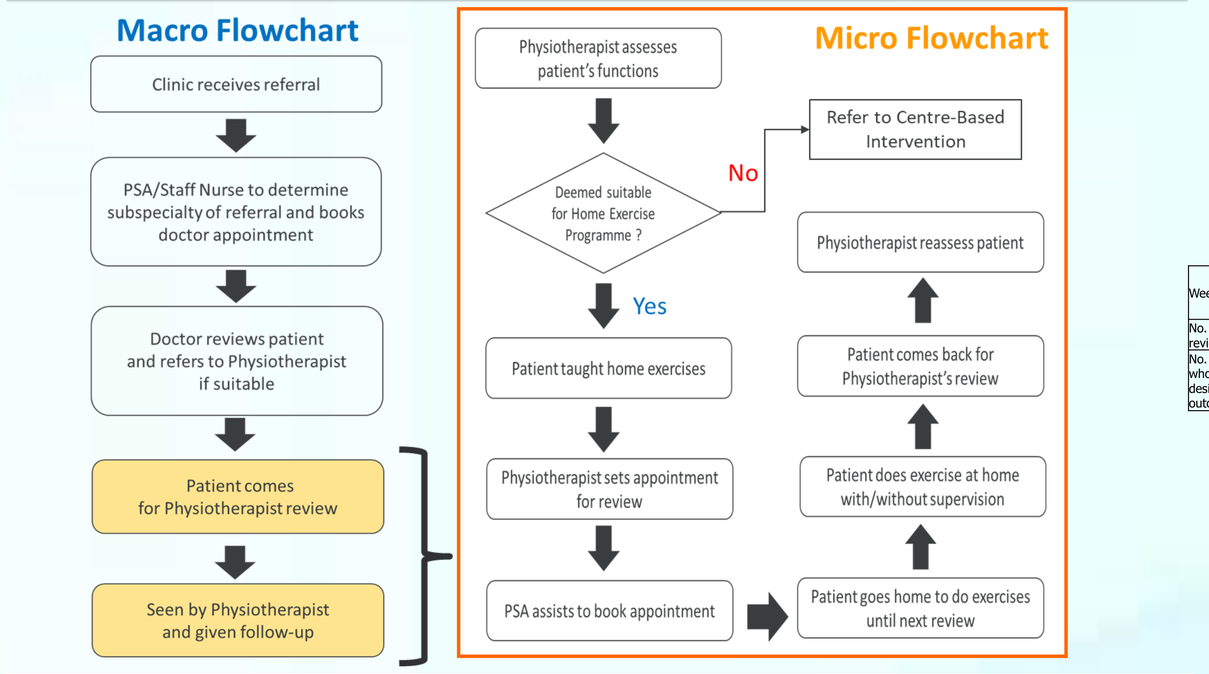
## Evidence for a Problem Worth Solving

The geriatric population is vulnerable to functional decline and hence the aim of geriatric rehabilitation is to restore and/or improve functions of the older adult. Patients with functional decline are shown to have higher admission rates, which adds on to the burden of healthcare costs.

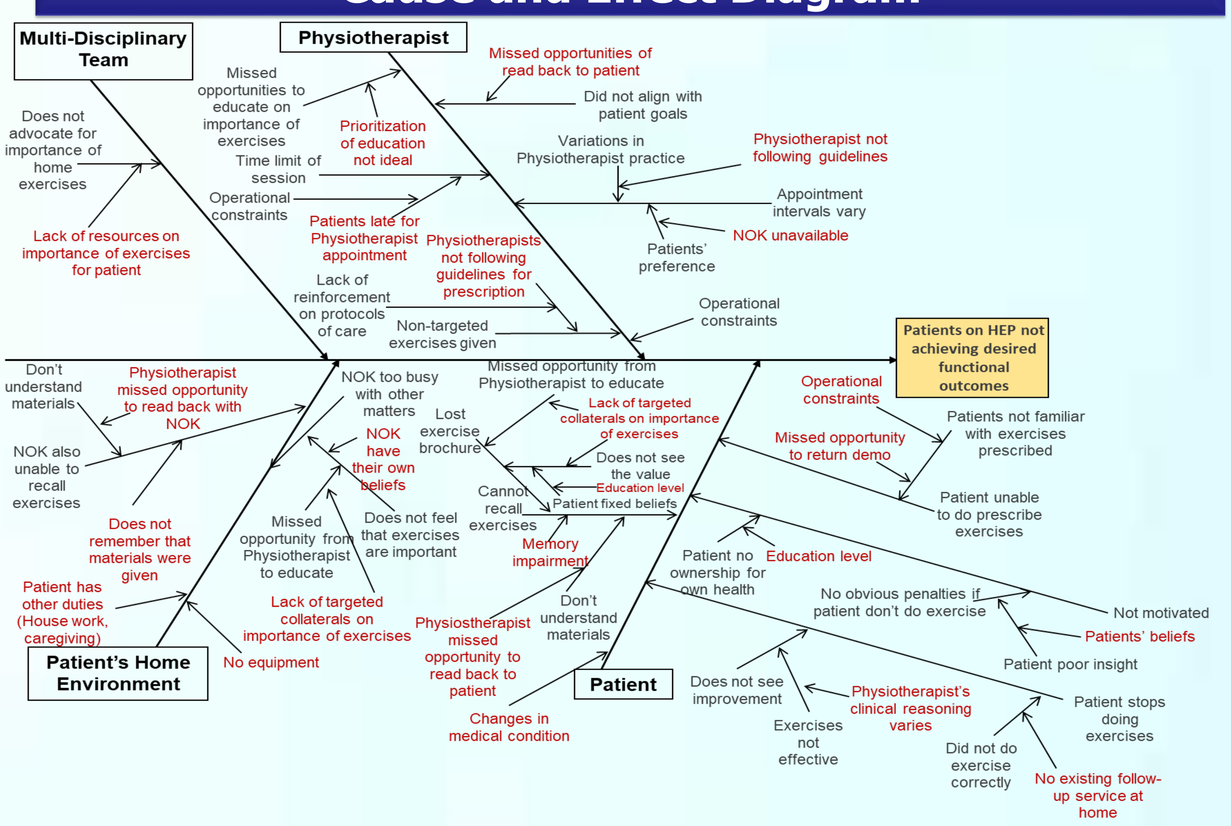



| Week | 19/7 - 23/7 | 26/7 - 30/7 | 02/8 - 06/8 | 09/8 - 13/8 | 16/8 - 20/8 | 23/8 - 27/8 |
|---|---|---|---|---|---|---|
| No. on HEP review | 9 | 8 | 9 | 8 | 9 | 1 |
| No. of Patients who achieve desired functional outcomes | 7 | 5 | 5 | 5 | 4 | 0 |

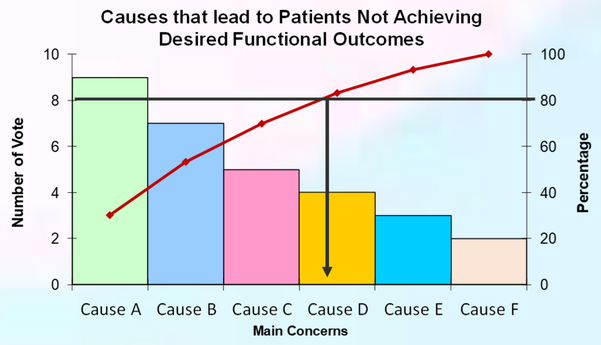
## Flow Chart of Process




## Cause and Effect Diagram




## Pareto Chart




| | |
|---|---|
| Cause A | Lack of resources on importance of exercises for patient (Multi-Disciplinary Team Category) |
| Cause B | No existing service for follow up at home (Patient Category) |
| Cause C | Physiotherapist varying clinical reasoning (Physiotherapist Category) |
| Cause D | Patient missed opportunity to return demo (Patient Category) |
| Cause E | Physiotherapist prioritization of education not ideal (Physiotherapist Category) |
| Cause F | Lack of reinforcement on priority of care for Physiotherapist (Physiotherapist Category) |

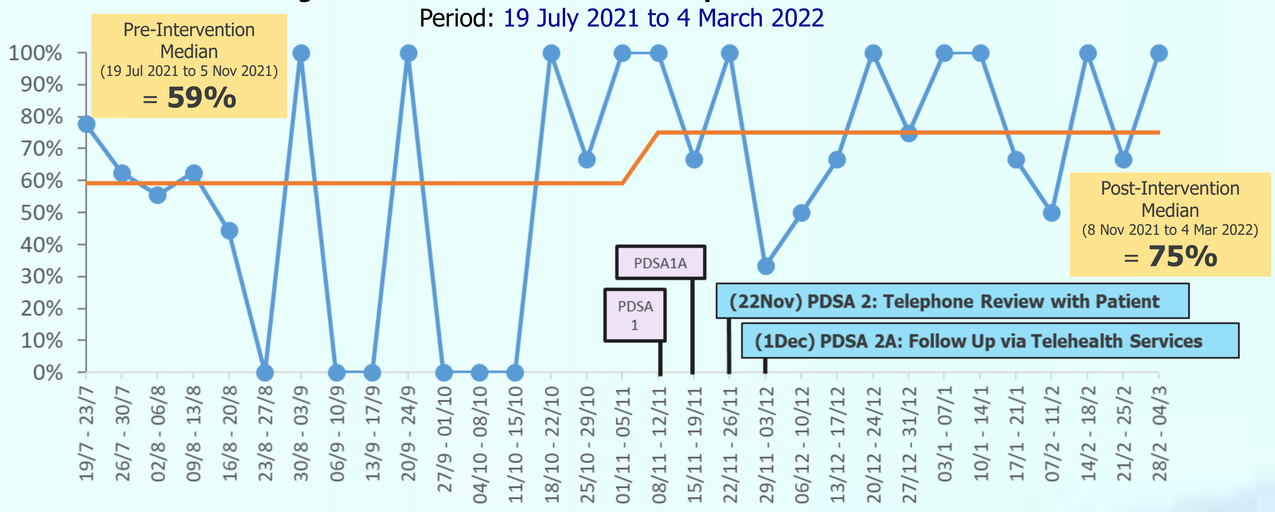
## Implementation

| Root Cause | Intervention | Implementation Date |
|---|---|---|
| **Cause A**: Lack of resources on importance of exercises for patient | **PDSA 1:** Physiotherapist to Use Common Resources to Educate Patients on Importance of Doing Exercises at Home | 11th November 2021 |
| | **PDSA 1A**: Create Just-In-Time Video Briefing for Physiotherapists Covering the Clinic to Watch | 17th November 2021 |
| **Cause B**: No existing service for follow up at home | **PDSA 2:** Telephone review to check patient understanding on the information shared at first visit | 22nd November 2021 |
| | **PDSA 2A**: Follow Up via Telehealth Services for Existing Patients who choose not to come back to hospital for review | 1st December 2021 |
| **Cause C**: Physiotherapist varying clinical reasoning | **PDSA 3:** Tutorial and case discussions of cases seen to seek alignment | 18th Mar 2022 (postponed due to conflicting requirements to manage COVID 19) |

## Results

**Percentage Patient who Maintained or Improved Functional Outcomes**

Period: 19 July 2021 to 4 March 2022

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No. on HEP review | 9 | 8 | 9 | 8 | 9 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 3 | 2 | 1 | 3 | 1 | 3 | 4 | 3 | 2 | 4 | 3 | 3 | 3 | 2 | 1 | 3 | 2 |
| No. of Patients who achieve desired functional outcomes | 7 | 5 | 5 | 5 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | 1 | 1 | 2 | 2 |

## Cost Avoidance

| Item | Before Intervention | After Intervention |
|---|---|---|
| No. of Emergency Department admits for Functional Decline from CGRM | 5 | 0 |
| No. of Bed Days Saved | (5 – 0) x 11 = 55 Days (Per Month)<br>55 x 12 = 660 Days (Annualized) | |
| Cost of Inpatient Stay Avoided | 55 x $1,114 = $61,270 (Per Month)<br>61,270 x 12 = $735,240 (Annualized) | |

Generally, Average Length of Stay for patient who are admitted to inpatient ward due to functional decline = 11 Days

Note: Unit cost for Inpatient Stay Per Day Per Patient = $1,114

## Problems Encountered

- PDSA Cycle 1 was affected as some stakeholders were not informed timely about the new interventions. It is thus important to have clear communication to all relevant and respective stakeholders during the implementation phase.
- Resource allocation to the project required careful deliberation due to the COVID 19 pandemic situation. The amount of resources that could be utilized was scarce, and needed in other COVID 19 efforts.

## Strategies to Sustain

- Ensure compliance to interventions by monthly to bi-monthly check-ins for Physiotherapists
- To continue track runchart and intervene timely when there are performance dips
- To continue to target the subsequent root causes