

CHI Learning & Development (CHILD) System

Project Title

Occupational Therapy LIFE Programme for Stroke Patients

Project Lead and Members

Project lead: Ms Lim Yi Hui and Dr Deshan Kumar Rajeswaran

Project members: Dr Christopher Seet, Ms Heng Wei Ling, Ms Ebalan Ma Pamela, Ms

Tai Chu Chiau, Ms Cheryl Poh Jia Yi and Ms Gladys Lim Wei Tong

Organisation(s) Involved

Tan Tock Seng Hospital

Healthcare Family Group(s) Involved in this Project

Allied Health, Medical, Nursing

Applicable Specialty or Discipline

Neurology, Occupational Therapy, Physiotherapy, Rehabilitation Medicine

Project Period

Start date: October 2018

Completed date: December 2019

Aims

To increase the percentage of stroke patients* receiving the Occupational Therapy (OT) LIFE Programme in the Acute Stroke Unit (ASU) from 44.4% to 100% in 6 months

*Stroke patients who are:

- Medically stable
- Have an upper limb impairment
- Abletofollow1stepinstructions
- Intact safety awareness
- Able to tolerate and sustain upright sitting (supported) for >15 minutes



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Project Attachment

See poster attached/below

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

Additional Information

Accorded the NHG Quality Day 2021 (Category C: Developing a Flexible & Sustainable Workforce) Merit Award

Project Category

Care & Process Redesign

Quality Improvement, Workflow Redesign

Productivity, Cost, Manhour and Time Saving

Access to Care, Referral Rate



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Keywords

Stroke, Occupational Therapy, Referral

Name and Email of Project Contact Person(s)

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Occupational Therapy LIFE Programme for Stroke Patients



Ms. Lim Yi Hui ¹ & Dr Deshan Kumar Rajeswaran ²

Adding years of healthy life

¹ Department of Occupational Therapy | ² Department of Rehabilitation Medicine

Root Cause

Mission Statement

To increase the percentage of stroke patients* receiving the Occupational Therapy (OT) LIFE Programme in the Acute Stroke Unit (ASU) from

- 44.4% to 100% in 6 months *Stroke patients who are:
- Medically stable
- Have an upper limb impairment
- Able to follow 1 step instructions
- Intact safety awareness
- Able to tolerate and sustain upright sitting (supported) for >15 minutes

| Section 5: Hand Skills Dice Tower | 第五节:手部技能训练 |
|---|--|
| 1. Put your dice on the table. 2. Using your affected hand, stack the dice into a tower. Stabilise with your unaffected hand. 3. Using your affected hand. 4. Using your affected hand, un-stack the tower. Stack all dice twice Stack all dice 6 times Stack all dice 6 times | * 中央 |
| If this is easy: Use Chopsticks 1. Hold the pair of chopsticks with your affected hand 2. Use the pair of chopsticks to stack and unstack the dice tower. | 重复两次 重复三次 重复大次 |

| Team Members | | | |
|-----------------------------|---|--|--|
| Name | Designation | Department | |
| Ms. Lim Yi Hui | Senior Occupational Therapist (Sr OT) | Occupational Therapy (OT) | |
| Dr. Deshan Kumar Rajeswaran | Consultant | Rehabilitation Medicine | |
| Dr. Christopher Seet | Consultant | Neurology | |
| Ms. Heng Wei Ling | Nurse Clinician | Nursing | |
| Ms. Ebalan Ma Pamela | Senior Staff Nurse | Nursing | |
| Ms. Tai Chu Chiau | Senior Physiotherapist | Physiotherapy | |
| Ms. Cheryl Poh Jia Yi | Sr OT | ОТ | |
| Ms. Gladys Lim Wei Tong | Occupational Therapist | OT | |
| | Vis. Lim Yi Hui Dr. Deshan Kumar Rajeswaran Dr. Christopher Seet Vis. Heng Wei Ling Vis. Ebalan Ma Pamela Vis. Tai Chu Chiau Vis. Cheryl Poh Jia Yi | Senior Occupational Therapist (Sr OT) Or. Deshan Kumar Rajeswaran Or. Christopher Seet Ms. Heng Wei Ling Ms. Ebalan Ma Pamela Ms. Tai Chu Chiau Ms. Cheryl Poh Jia Yi Ms. Gladys Lim Wei Tong Senior Occupational Therapist Senior Occupational Therapist Occupational Therapist | |

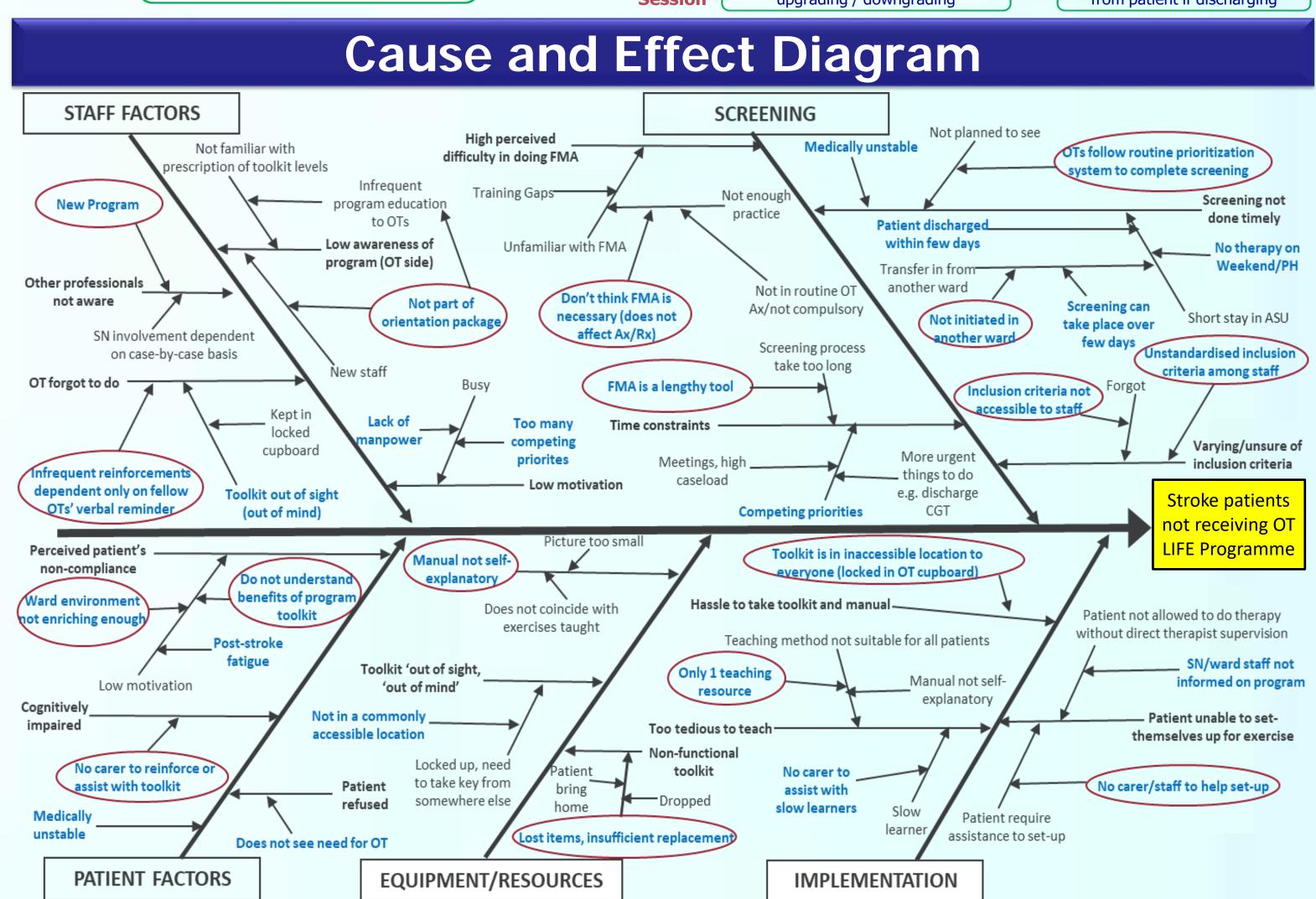
Mentors: Dr. William Chan & Mr. Christopher Ng

Sponsors: Dr. Tjan Soon Yin, Ms. Florence Cheong & Ms. Chia Pei Fen

Evidence for a Problem Worth Solving

- 1. Stroke is the 3rd leading cause of long term disability in Singapore (Ministry of Health Singapore Burden of Disease Study, 2010).
- 2. More than 70% of individuals experience upper limb (UL) impairments post stroke (Kwakkel et al., 2003).
- 3. According to National Clinical Guidelines for Stroke, it is recommended that stroke rehabilitation should provide every opportunity for patients to practise graded & repetitive UL functional movements, through supplementary UL programmes designed to maximise rehabilitation time and recovery (National Clinical Guidelines for Stroke, 2016; AHA/ASA Guidelines, 2016).
- 4. The Graded Repetitive Arm Supplementary Program (GRASP) is a recommended UL supplementary programme developed in Canada that had demonstrated improved use of the weaker UL in ADLs, reaching and grasping. With GRASP, significant gains were also maintained at 5 months post stroke. OT LIFE, culturally adapted from the GRASP programme, was introduced in TTSH in 2017 to improve local stroke rehabilitation practice.
- 5. Baseline data showed that majority of stroke patients who will benefit from OT LIFE did not receive the recommended programme intervention. Only 44.4% of eligible patients received the recommended intervention.

Flow Chart of Process Initial Assessment Day 0: Admission into 10B session History Taking Micro **Ward Orientation Flowchart** by Staff Nurse Physical Ax Sensory Ax Perceptual Ax OT Assessment Clerking by Doctor and Met following criteria? Cognitively intact (follow >1 step instructions, good safety awareness) Stabilization by Medical and Presence of UL impairment (MMT >2, impaired gross & fine motor / Team **Intervention** Macro Good static sitting balance **Flowchart** Blanket screening Separate by PT/OT Continue routine therapy Fugl Meyer Assessment (FMA) Session Prescribe appropriate OT LIFE Level Assessment and Intervention by PT/OT Teach patient/family exercises and logging Team decide on discharge plan OT inform SN that Leave toolkit and patient is on OT LIFE programme log sheet with patient Discharge Retrieve toolkit Check compliance, review for from patient if discharging upgrading / downgrading



Pareto Chart Fugl Meyer Assessment (FMA) in screening Not Receiving OT Life Programm Cause A process is lengthy Only 1 teaching resource Cause B Toolkit in inaccessible location Cause C Infrequent reinforcement Cause D Cause E Unstandardised inclusion criteria amongst staff Manual not self-explanatory **Cause F** No carer / staff to help with set-up Cause G

Implementation Intervention Implementation Date PDSA 1A: Implement Alternative Screening: Chedoke Staging (shorter, part of routine assessment, no extra equipment

Fugl Meyer
Assessment
(FMA) is a lengthy tool

PDSA 1A: Implement Alternative
Screening: Chedoke Staging (shorter, part of routine assessment, no extra equipment needed)

PDSA 1B: Implement Multi-Disciplinary
Screening

18 Feb 2019

25 Mar 2019

Stone (Able to make a User-Quick tight fist) **Paper** friendliness: Full finger Reference Words to extension & Guide abduction without **Pictures** finger flexion) **Scissors** (Full opposition of thumb to LF)

Results

Percentage of Stroke Patients in OT LIFE Period: October 2018 to December 2019 1st report of 'insufficient Spread to all wards including Sub Acute Sustainability Phase Mean: 84.2% Median: 87.5% All 3 misses due to insufficient kits (highest number) Baseline Of the miss cases post May 19: Mean: 44.4% 47.4% (9 out of 19) were due to the Median: 45% insufficient kits to loan out (Levels 3, 2) **CPIP 6 months Project Phase** Sustainability Phase

Cost Savings Pre **Post** Item **Outcome** Intervention Intervention Per Patient | Mean Time Taken (mins) -19 **Estimated Manhour** -\$24.51 Cost Saved (\$) \$28.38 \$3.87 *1.29 weighted average cost/min **Annualized** | Mean Time Taken (mins) 5808 792 -5016 (264 **Estimated Manhour** patients Cost Saved (\$) \$7,492.32 \$1,021.68 -\$6,470.64 per year) *1.29 weighted average cost/min

6 of patients in OT LIFE 33.3% 60% 50% 50% 40% 33.3% 70% 81.8% 80% 100% 87.5% 100% 90.9% 100% 83.3% 90% 100% 88.9% 80% 85.7% 85.7% 70% 87.5% 40% 100% 100% 100% 60% 88.9% 66.76

Lessons Learnt

- 1. Concepts in quality improvement and methodology
- 2. Systematic approach to addressing gaps in healthcare delivery
- 3. Value of multi-disciplinary thinking and brainstorming

Strategies to Sustain

- 1. Increase number of OT LIFE kits (specifically levels 2 and 3)
- 2. Implement teaching videos to cater to the wide learning and communication needs of patients
- 3. Engage management on the cost savings achieved with a view towards training therapy assistants to carry out the programme
- 4. Educate other healthcare staff about the OT LIFE programme on a regular basis / via visible platforms to create conscious awareness
- 5. To help with patient compliance and motivation
 - Common gym space areas for therapy assistants to supervise patients in the OT LIFE programme on a daily basis