Project Title

(Sustainability Phase) Improving Daily Out of Bed Activities for Spinal Cord Injured Patients at Tan Tock Seng Rehabilitation Center

Project Lead(s) and Members

Project Lead(s): Ong Chui Ni, Chloe Lin Na-Ling

Project Members: Dr Lui Wen Li, Padigos Honeylet, Portillo Liberty Conde, Cheryl Chan

Organisation(s) Involved

Tan Tock Seng Hospital

Healthcare Family Group(s) Involved in this Project

Allied Health, Nursing

Applicable Specialty or Discipline

Rehabilitation Therapy, Occupational Therapy, Physiotherapy

Project Period

Start date: Jul 2019

Completed date: Apr 2022

Aims

To increase the percentage of spinal cord injured patients to achieve daily 30-minute out of bed leisure activities at Rehab from median 29% to 70% over a sustained period.

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

This project is related to previous project of similar title from an earlier period (Jul 2019 – Dec 2019).

Accorded the NHG Quality Day 2022 (Category A: Improving and Sustaining Quality & Safety) Best Award

Project Category

Care & Process Redesign, Quality Improvement, Clinical Practice Improvement, Value Based Care, Length of Stay

Care Continuum, Rehabilitative Care

Keywords

Spinal Cord Injury, Hypoactive Lifestyle

Name and Email of Project Contact Person(s)

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Improving Daily Out of Bed Activities for Spinal Cord Injured Patients at Tan Tock Seng Rehabilitation Center (Sustainability Phase)

Ms Ong Chui Ni & Ms Chloe Lin Na-ling
Rehab at Ang Mo Kio (AMK)

Mission Statement

To increase the percentage of *spinal cord injured patients to achieve daily 30-minute out of bed #leisure activities at Rehab from median 29% to 70% over a sustained period.

*Spinal Cord Injured Patient: Patient who requires more than min assist (A1) for transfer to chair/wheelchair, including used of equipment (transfer board/hoist/sara steady).
Inclusion criterion: Medically stable, able to sit out for 30 minutes without postural hypotension issue.
Exclusion criterion: Medically unstable, presence of pressure sores.

#Leisure Activities: Any physical/leisure activities out of therapy time (eg. watch TV, reading book, having meals out of bed)

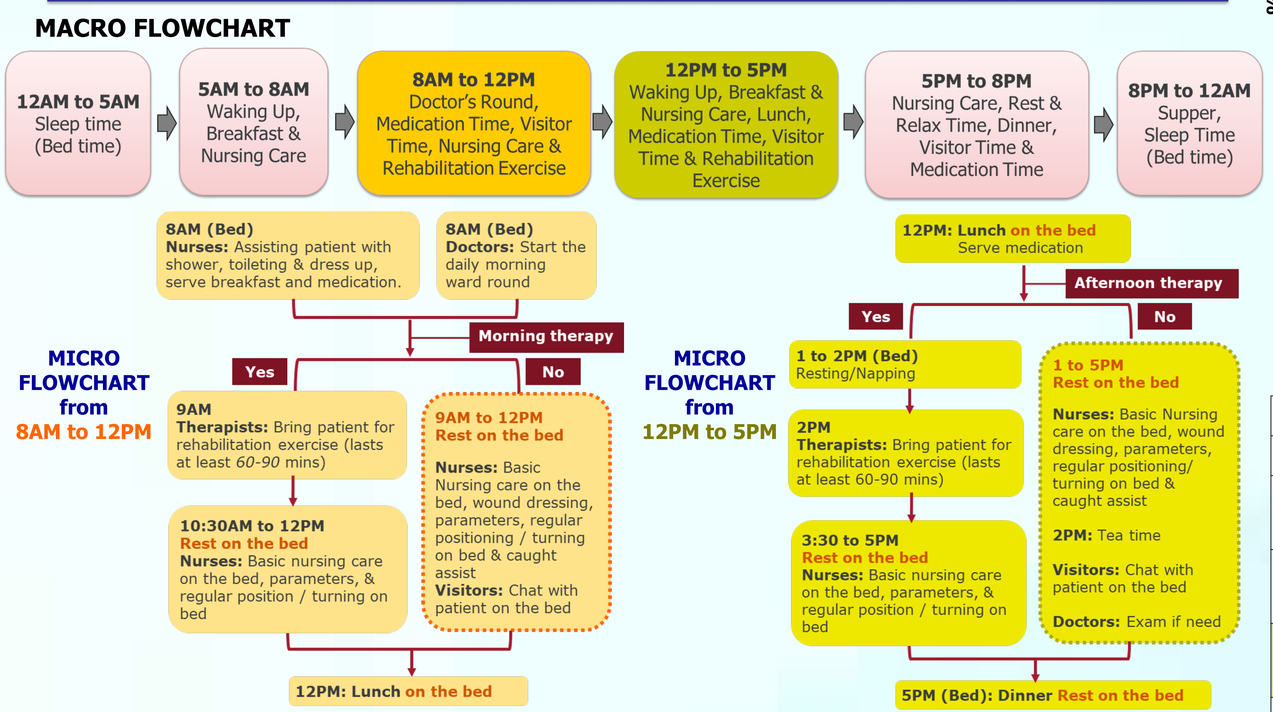
Team Members

	Name	Designation	Department
Team Leaders	Ms Ong Chui Ni	Senior Physiotherapist	Rehab @ AMK
	Ms Chloe Lin Na-ling	Senior Occupational Therapist	
Team Members	Dr Lui Wen Li	Associate Consultant	
	Ms Padigos Honeylet	Staff Nurse	
	Ms Portillo Liberty Conde	Staff Nurse	
	Ms Cheryl Chan	Therapy Assistant	
Sponsors	Ms Sharon Sew Woan Yeen & Ms Jeena James		
Mentors	Ms Senifah Bte Radi & Ms Lian Xia		

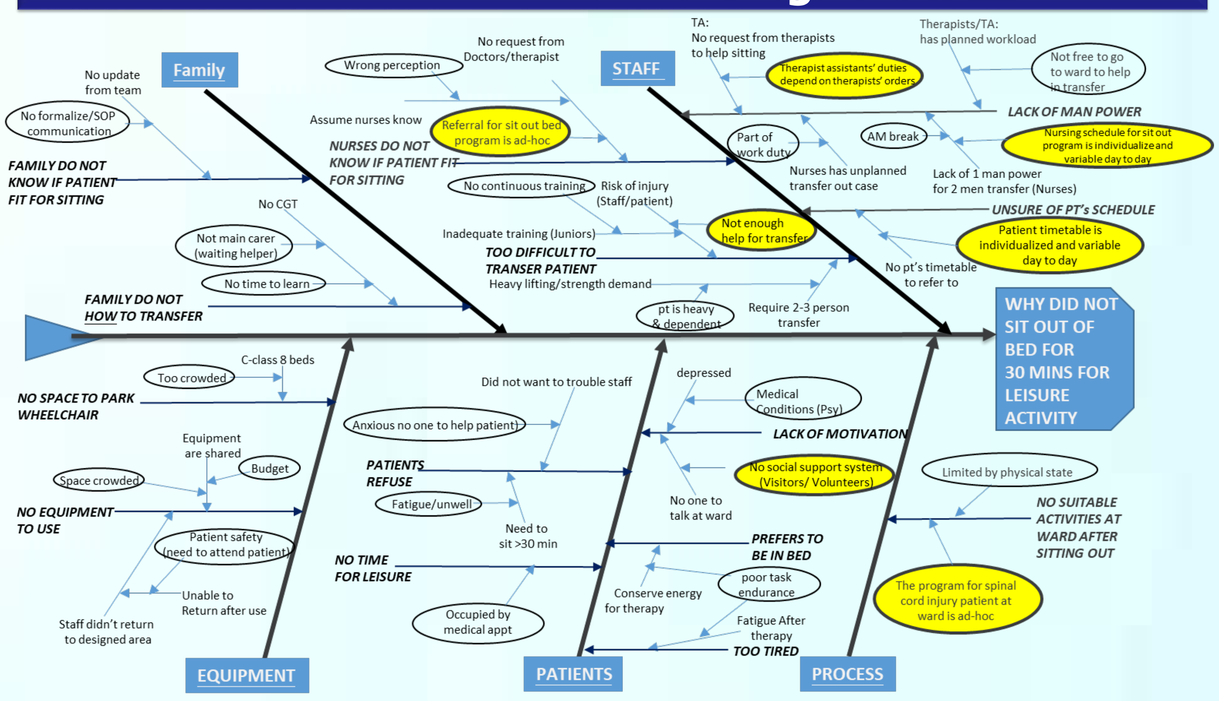
Evidence for a Problem Worth Solving

1. Persons with spinal cord injury (SCI) are, more than the able-bodied population, at risk of developing a hypoactive lifestyle, with possible detrimental effects on physical fitness, social participation and quality of life.
2. A hypoactive lifestyle can increase the risk of developing secondary health problems later in life, such as cardiovascular disease and diabetes.
   - Cardiovascular disease is one of the major causes of morbidity and mortality in persons with SCI. (Manns PJ, 1999; Noreau L, 1993)
3. Physical activity is low in the inpatient SCI rehabilitation setting outside of structured therapy (Dominik Zbogar, 2016)
4. A person with SCI participates in some form of LPTA (LTPA; defined as any physical activity that people choose to do during their spare time) for an average of about an hour per day (median ~ 30 minutes). (Spinal Cord Injury Research Evidence)

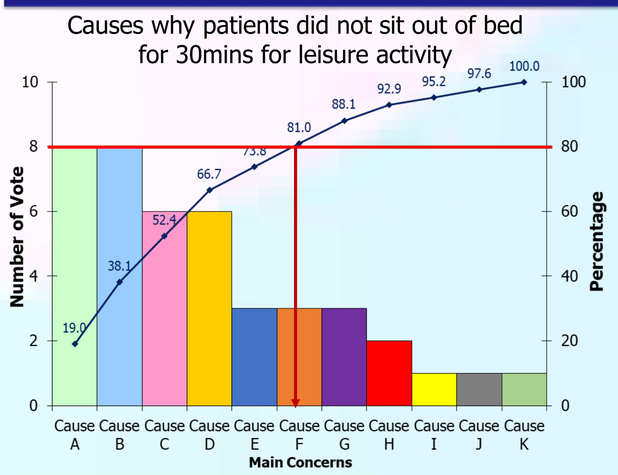
Flow Chart of Process



Cause and Effect Diagram



Pareto Chart



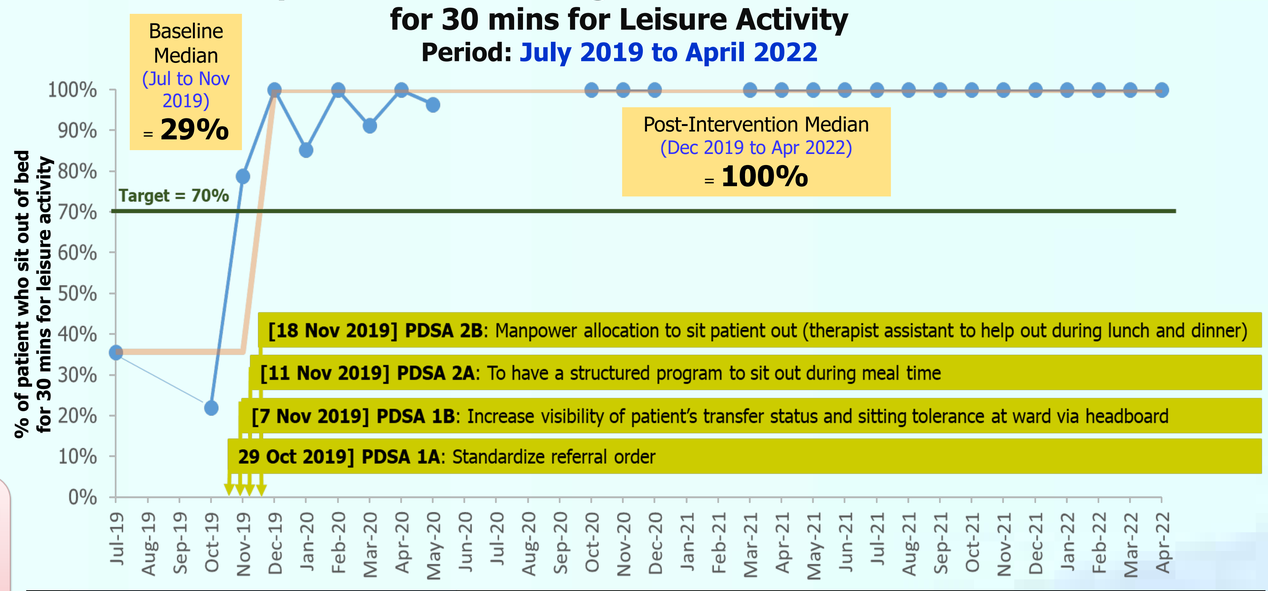
Cause A	The program for spinal cord injury patient at ward is ad-hoc
Cause B	Patient timetable is individualized and variable day to day
Cause C	Referral for sit out bed program is ad-hoc
Cause D	Nursing schedule for sit out program is individualize and variable day to day
Cause E	Therapist assistants' duties depend on therapists' orders
Cause F	Limited social support system (Visitors / Volunteers)
Cause G	The help to transfer patient to sit out is variable day to day

Implementation

Root Cause	Intervention	Implementation Date
Cause C: Referral for sit out bed program is ad-hoc (Nurse unsure if patient is fit to sit out of bed)	**PDSA 1A**: Standardization of order referral - improving communication between different professionals	29 Oct 2019
	PDSA 1B: To increase visibility of patient's transfer status and sitting tolerance at ward	7 Nov 2019
Cause A: The program for spinal cord injury patient at ward is ad-hoc	**PDSA 2A**: To have a structured program to sit out during meal time	11 Nov 2019
	PDSA 2B: Manpower allocation to sit patient out (therapist assistant to help out during lunch and dinner)	18 Nov 2019

Results

Monthly Runchart: Percentage of Patient who Sit Out of Bed for 30 mins for Leisure Activity
Period: July 2019 to April 2022



	Before COVID											During COVID																							
Month	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22
No. of patient sitting out	37	Diagnostic Phase		13	82	91	58	16	31	70	54	COVID-19 Outbreak				31	35	7	COVID-19 Outbreak		14	49	42	28	28	42	56	35	28	42	21	21	35	35
No. of eligible patient	104			59	104	91	68	16	34	70	56					31	35	7			14	49	42	28	28	42	56	35	28	42	21	21	35	35

Cost Savings

	Pre-Intervention	Post-Intervention
Average length of rehab stay (Per Patient)	73 days	69 days
Average length of rehab stay saved (Per Patient)	69-73 **= -4 days**	
Cost of inpatient stay (Per Patient)	73 x 334 = $24,382	69 x 334 = $23,046
Cost Savings (Per Patient)	$23,046 - $24,382 **= -$1,336**	
Assume No. of Patients under Rehab Spinal Cord Injury CPIP in 1 year = 17		
Total length of Rehab stay saved (Annualized)	-4 days x 17 **= - 68 days**	
Cost Savings (Annualized)	-$1,336 x 17 **= - $22,712**	

Lessons Learnt

1. It's important to listen to ground challenges and to implement solutions that facilitate work processes
2. Multidisciplinary collaborative approach will enable us to look at problems from different perspectives
3. To rely on system level changes rather than people driven changes

Strategies to Sustain

1. Involve all stakeholders and taking a collaborative approach eg. Sit out by therapist and return to bed by nurses (creating a work process)
2. Engaging patient/family member is one of the most important driver for a successful program
3. To prompt a sit out of bed culture for patients