

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)

Adding years of healthy life

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.

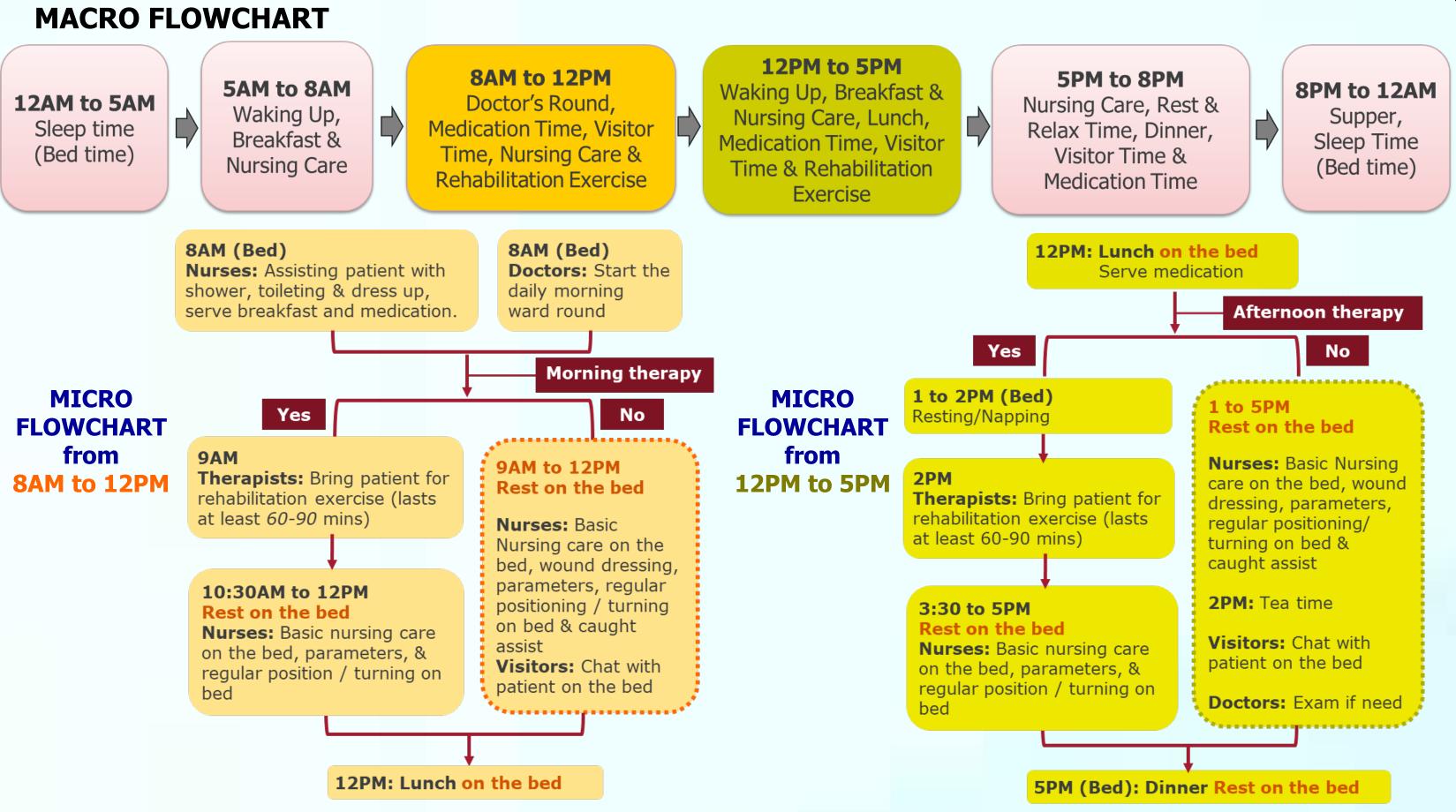
#Leisure Activities: Any physical/leisure activities out of therapy time (eg. watch TV, reading book, having meals out of bed)

Team Members											
	Name Designation										
Team	Ms Ong Chui Ni	Senior Physiotherapist									
Leaders Team Members	Ms Chloe Lin Na-ling	Senior Occupational Therapist									
	Dr Lui Wen Li	Associate Consultant	Rehab								
	Ms Padigos Honeylet	Staff Nurse	@ AMK								
	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 Ef	fect Diagram	
No update from team No formalize/SOP communication FAMILY DO NOT KNOW IF PATIENT FIT FOR SITTING No CGT Not main carer (waiting helper) No time to learn		demand	eak LACK OF MAN POWER Nursing schedule for sit out program is individualize and variable day to day
NO SPACE TO PARK WHEELCHAIR Equipment are shared Budget NO EQUIPMENT TO USE Patient safety (need to attend patient) Unable to Return after use Staff didn't return	Anxious no one to help patient PATIENTS REFUSE Fatigue/unwell Need to sit >30 min NO TIME FOR LEISURE Occupied by medical appt	depressed Medical Conditions (Psy) LACK OF MOTIVATION No social support system (Visitors/ Volunteers) No one to talk at ward PREFERS TO BE IN BED poor task endurance	SIT OUT OF BED FOR 30 MINS FOR LEISURE ACTIVITY

PATIENTS

PROCESS

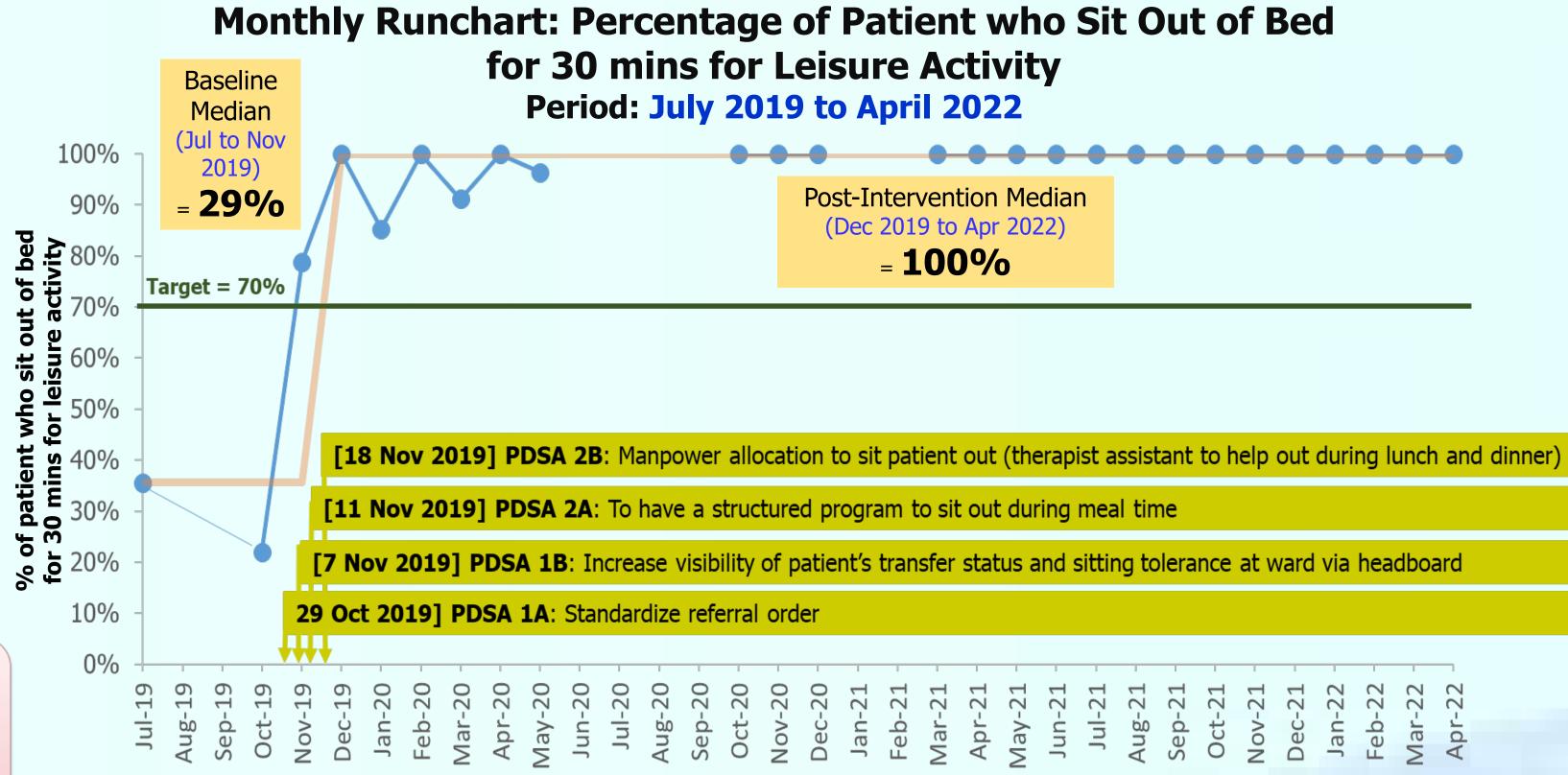
to designed area

EQUIPMENT

Pareto Chart Causes why patients did not sit out of bed Cause The program for spinal cord injury patient for 30mins for leisure activity at ward is ad-hoc **Cause** Patient timetable is individualized and variable day to day Cause Referral for sit out bed program is ad-hoc 60 Cause Nursing schedule for sit out program is individualize and variable day to day 40 💆 Therapist assistants' duties depend on therapists' orders Limited social support system (Visitors / Volunteers) Cause 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	PDSA 1A: Standardization of order referral - improving communication between different professionals	29 Oct 2019						
(Nurse unsure if patient is fit to sit out of bed)	PDSA 1B : To increase visibility of patient's transfer status and sitting tolerance at ward	7 Nov 2019						
Cause A: The program for spinal	PDSA 2A: To have a structured program to sit out during meal time	11 Nov 2019						
cord injury patient at ward is ad-hoc	PDSA 2B: Manpower allocation to sit patient out (therapist assistant to help out during lunch and dinner)	18 Nov 2019						

Results



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		Diagn		13	82	91	58	16	31	70	54		COVI			31	35	7		D-19	14	49	42	28	28	42	56	35	28	42	21	21	35	35
No. of eligible patient	104	Pha	ase	59	104	91	68	16	34	70	56		Outb	огеак		31	35	7	Outb	reak	14	49	42	28	28	42	56	35	28	42	21	21	35	35
	Cost Savings																																	

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- = -4	-73 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 I	injury CPIP in 1 year = 17	7						
Total length of Rehab stay saved (Annualized)	-4 day = - 68	s x 17 B days						
Cost Savings (Annualized)		6 x 17 2,712						

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