

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

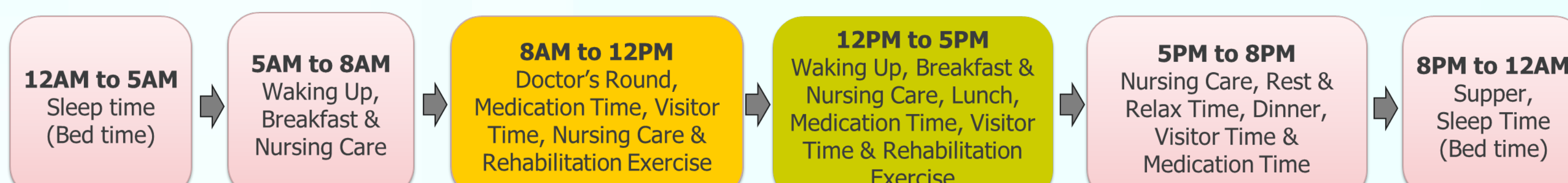
	Name	Designation	Department
Team Leaders	Ms Ong Chui Ni	Senior Physiotherapist	Rehab @ AMK
	Ms Chloe Lin Na-ling	Senior Occupational Therapist	
Team Members	Dr Lui Wen Li	Associate Consultant	
	Ms Padigos Honeylet	Staff Nurse	
	Ms Portillo Liberty Conde	Staff Nurse	
	Ms Cheryl Chan	Therapy Assistant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

Evidence for a Problem Worth Solving

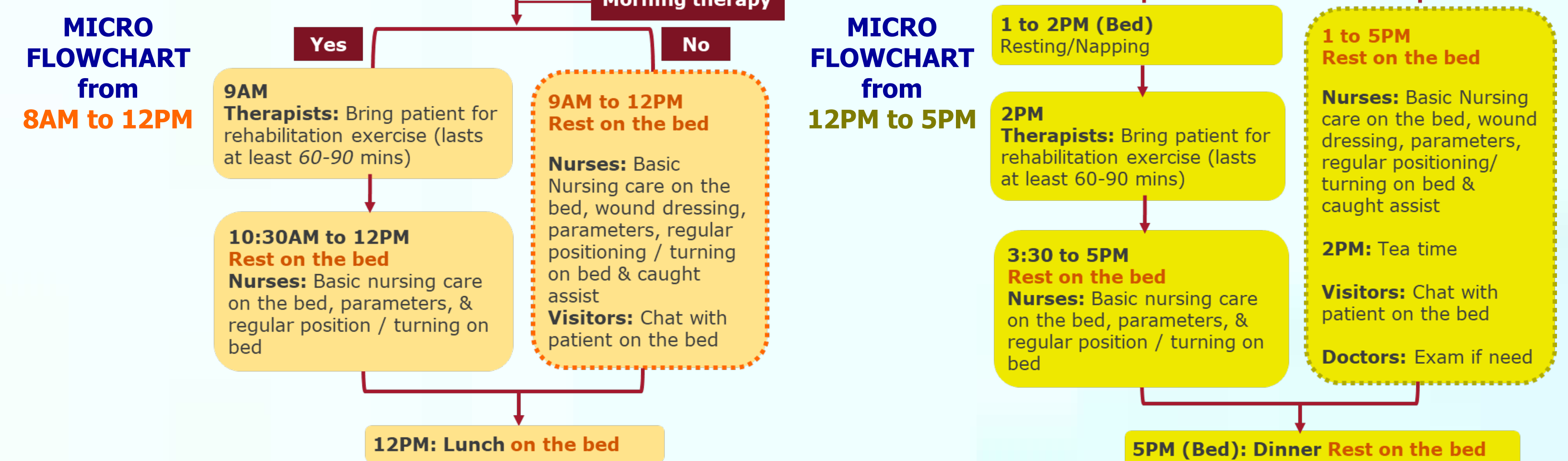
- Persons with spinal cord injury (SCI) are, more than the able-bodied population, at risk of developing a hypoactive lifestyle, with possible detrimental effects on physical fitness, social participation and quality of life.
- A hypoactive lifestyle can increase the risk of developing secondary health 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)
- Physical activity is low in the inpatient SCI rehabilitation setting outside of structured therapy (Dominik Zbogor, 2016)
- 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

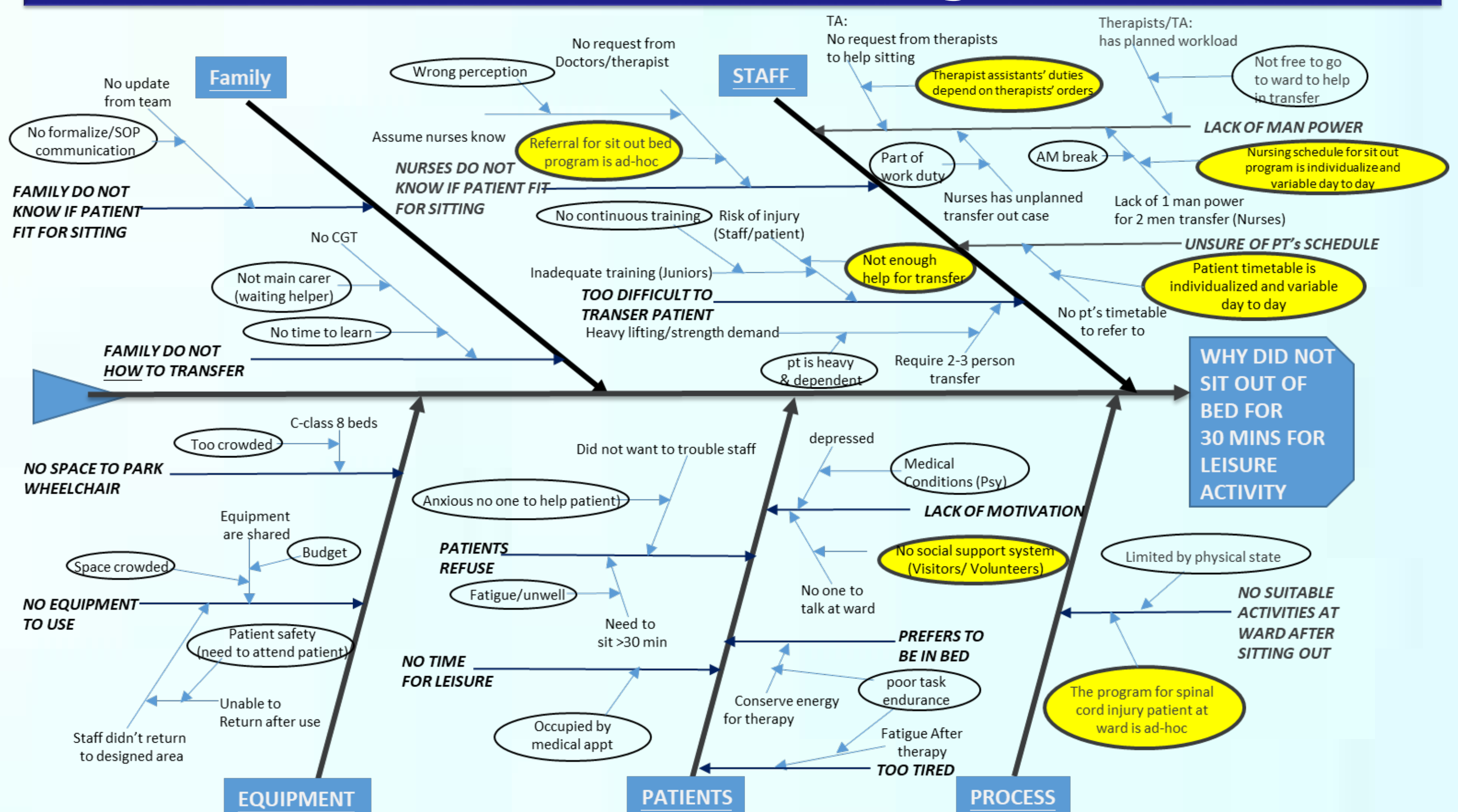
MACRO FLOWCHART



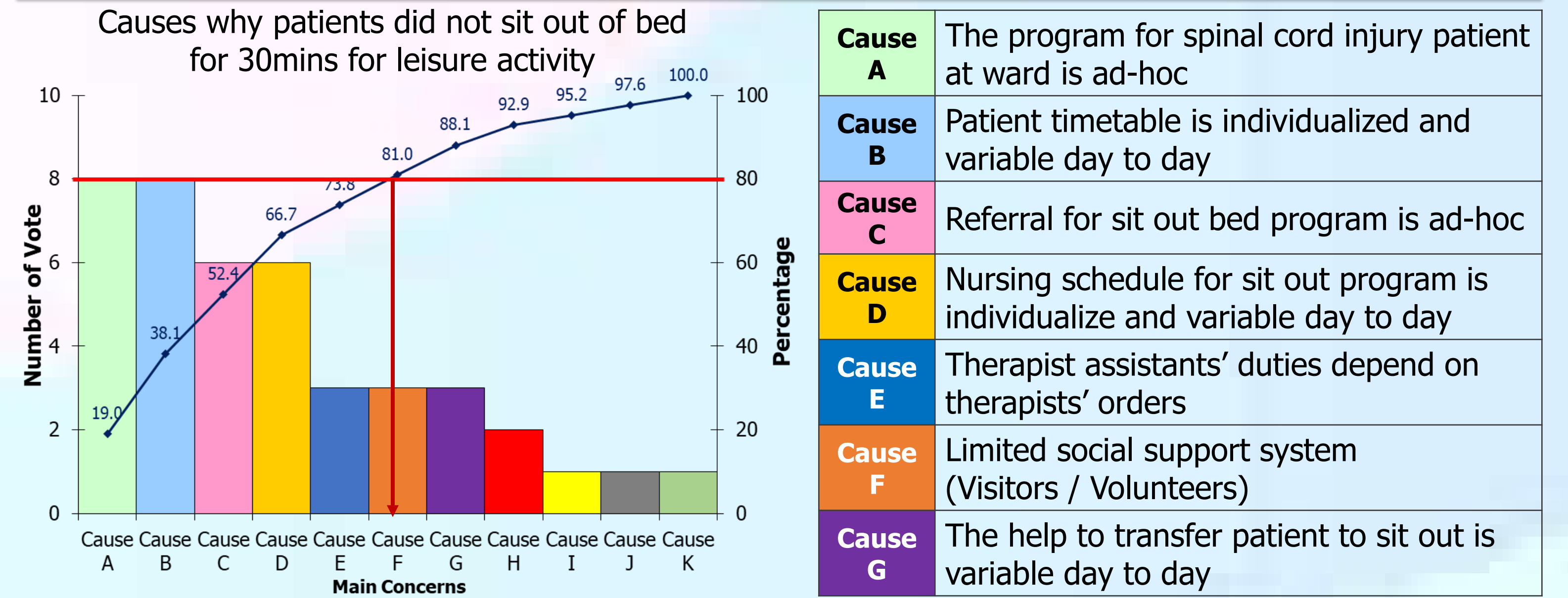
MICRO FLOWCHART from 8AM to 12PM



Cause and Effect Diagram



Pareto Chart

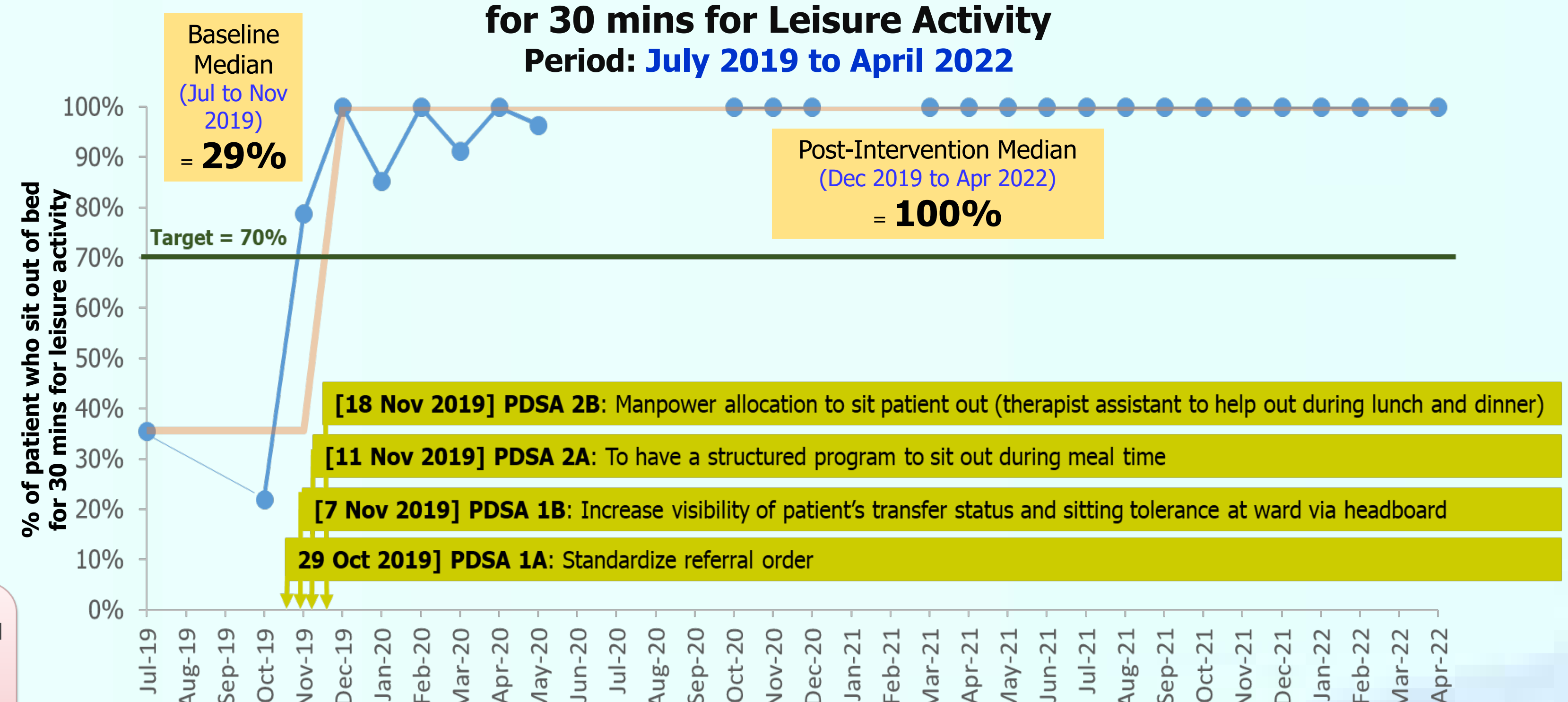


Implementation

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 PDSA 1B: To increase visibility of patient's transfer status and sitting tolerance at ward	29 Oct 2019 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 PDSA 2B: Manpower allocation to sit patient out (therapist assistant to help out during lunch and dinner)	11 Nov 2019 18 Nov 2019

Results

Monthly Runchart: Percentage of Patient who Sit Out of Bed for 30 mins for Leisure Activity



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	13	82	91	58	16	31	70	54	31	35	7	14	49	42	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	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

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

Strategies to Sustain

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