INCREASING PERCENTAGE OF ACUTE MILD STROKE PATIENT ACHIEVING INDEPENDENT WALKING AT DISCHARGE FROM ACUTE STROKE UNIT

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Mission Statement

To increase percentage of *acute mild stroke patient achieving at least **independent indoor walking at discharge from Acute Stroke Unit (ASU), from 42% to 67% in 6 months

*Acute stroke determined by radiological finding (acute infarct or hemorrhage with motricity index leg ≥ 57 (hip flexion, knee extension and ankle dorsiflexion of the paretic leg), good sitting balance > 30 seconds, unable to walk independently and able to obey 2 commands (NIHSS LOC commands)

**Patient can transfer, turn and walk independently on level ground, but requires supervision or physical assistance to negotiate any of the following: stairs, inclines, or uneven surfaces. Walking aid can be used.

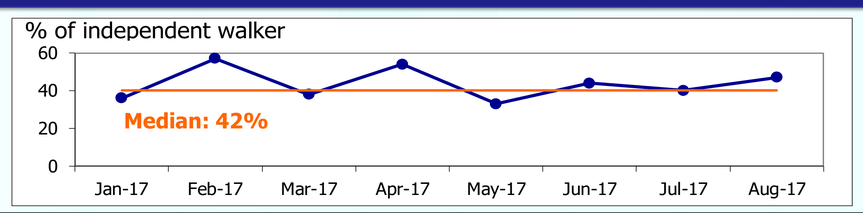
Team Members

	Name	Designation	Department
Team Leader	Christina Chia Hui Ling	Senior Physiotherapist	Physiotherapy
Team Members	Tai Chu Chiau	Senior Physiotherapist	Physiotherapy
	Goh Lee Yin	Senior Physiotherapist	Physiotherapy
	Joanna Tay	Ward Resource Nurse	Nursing
	Devon Chng	Staff Nurse	Nursing
	Trudy Teh Jia Yi	Occupational Therapist	Occupational Therapy
	Zhang Yanxia	Nurse Clinician	Nursing
	Carol Tham Huilian	Associate Consultant	Neurology
Facilitator	Jayachandran Balachandran	Principal Physiotherapist	Physiotherapy

Evidence for a Problem Worth Solving

Physical activity levels are low in people with acute stroke with 22.8 hours of sedentary time (Fini et al, 2017). In A Very Early Rehabilitation Trial (AVERT Phase II RCT 2011), 67% of stroke patients were able to achieved unassisted walking at 2 weeks after stroke. In the ASU in TTSH, median 42% of mild acute stroke patient achieved at least independent indoor walking on discharge from ASU with median hospitalisation stay of 7 days.

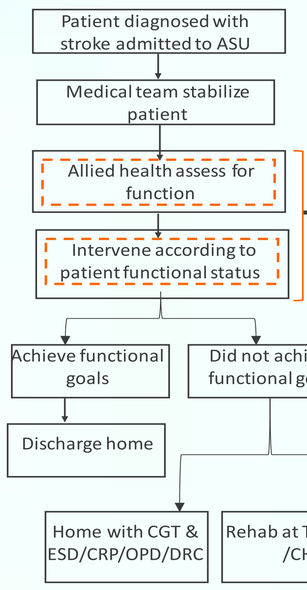
Current Performance of a Process



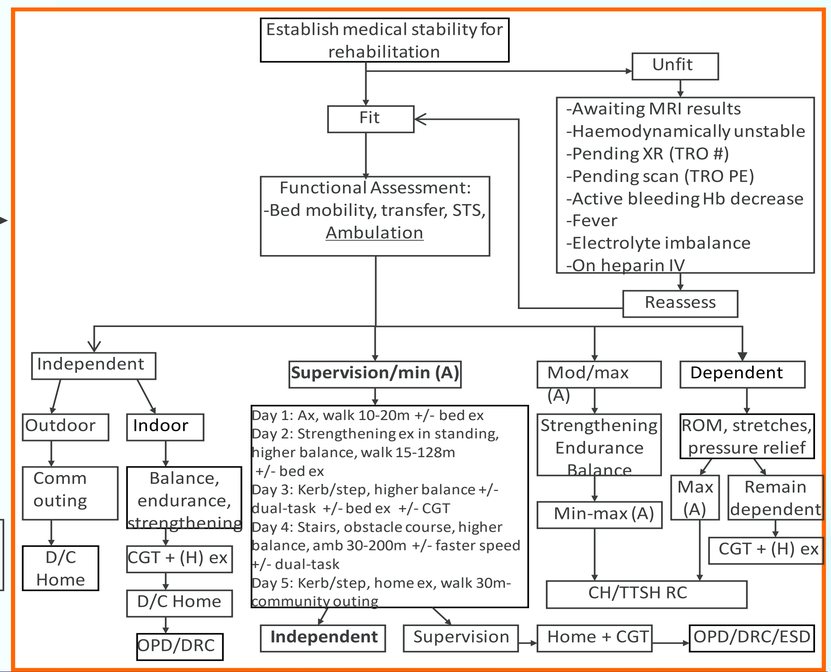
	Jan 17	Feb 17	Mar 17	Apr 17	May 17	Jun 17	Jul 17	Aug 17
No. of independent walker	4	8	5	7	5	4	2	8
No. of eligible stroke patients	11	14	13	13	15	9	5	17
% of independent walker	36	57	38	54	33	44	40	47

Flow Chart of Process

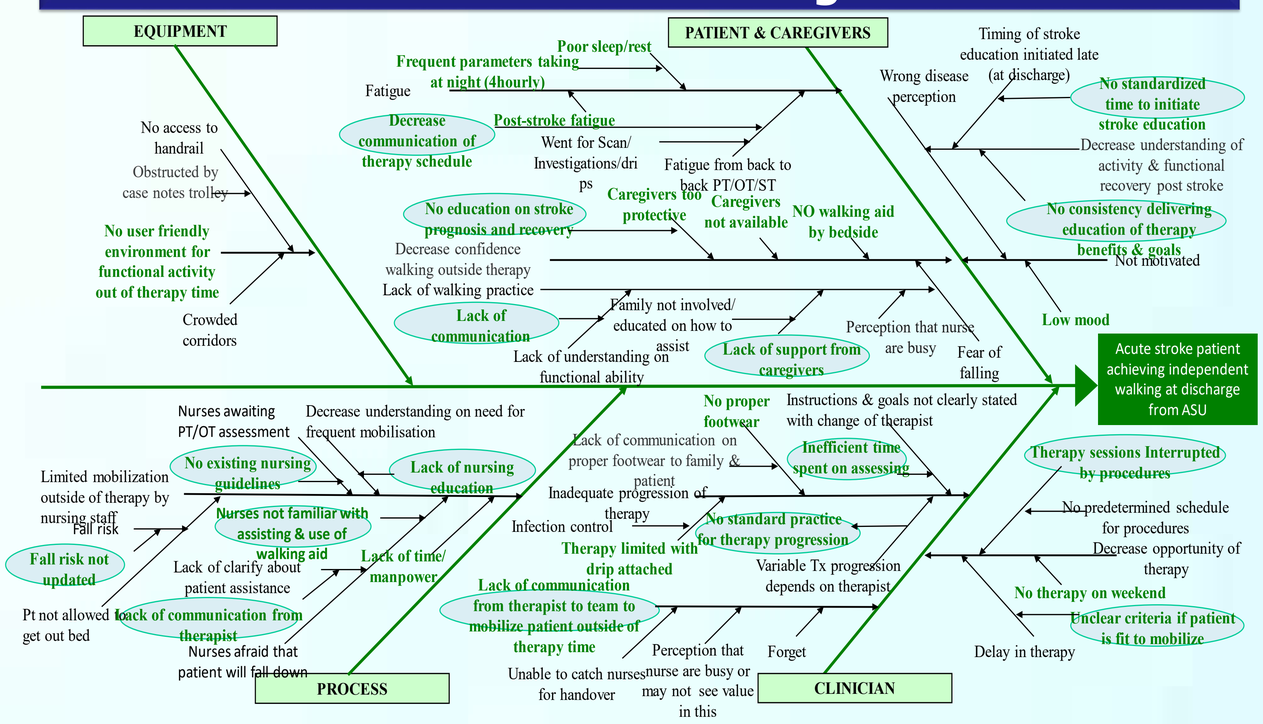
MACRO FLOW



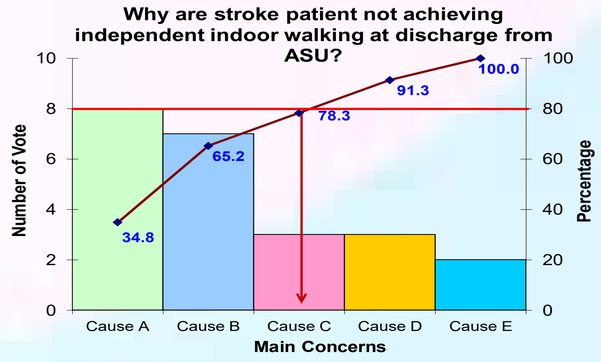
MICRO FLOW:



Cause and Effect Diagram



Pareto Chart

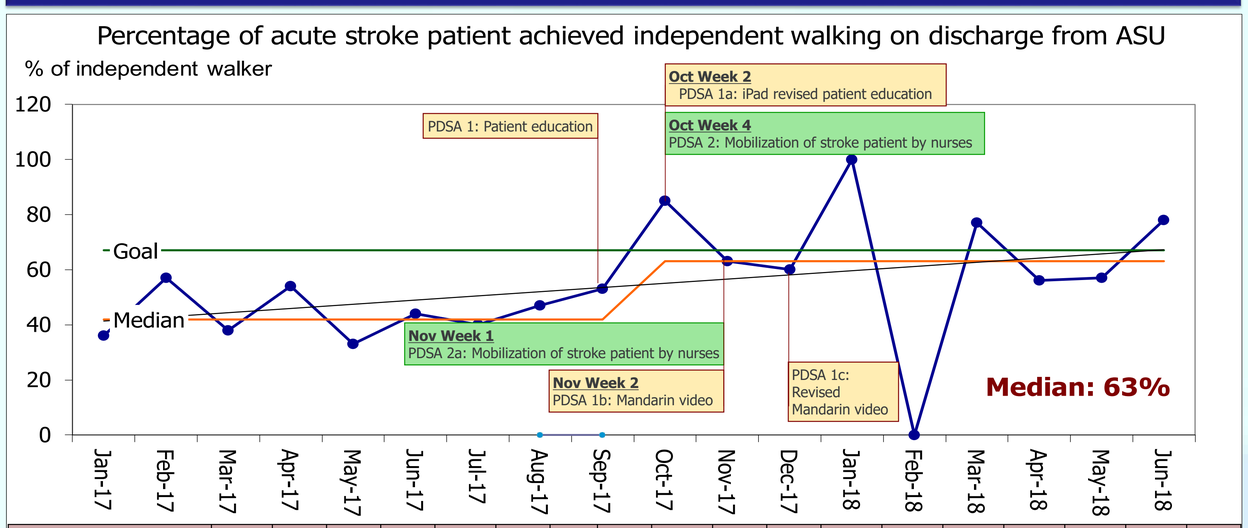


A	No consistency in delivering stroke education on therapy benefits and functional recovery goals
B	Lack of communication from therapist to team about functional ability
C	Nurses not familiar with mobilisation techniques a use of walking aid for stroke patient
D	No involvement of caregivers to provide support & assistance

Implementation

PROBLEM	INTERVENTIONS	DATE OF INTERVENTION
No consistency in delivering stroke education on therapy benefits and functional recovery goals	Develop patient educational tool: • Orientate therapist to the educational materials • Stroke rehabilitation education using a flipchart **(PDSA 1)** • iPad video education **(PDSA 1a)** • Mandarin translation **(PDSA 1b)**	21 Sept 2017
Lack of communication from therapist to team about functional ability	Standardized understanding and mode of communication	
Nurses not familiar with mobilisation techniques and use of walking aids for stroke patients	• Education on nursing role in functional recovery and neuroplasticity following recommendations from national clinical guideline for stroke • Manual handlings and safe use of walking aids for mild stroke patients • Trial of Gaitbelt	23 Oct 2017

Results



	Jan 17	Feb 17	Mar 17	Apr 17	May 17	Jun 17	Jul 17	Aug 17	Sept 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	Mar 18	Apr 18	May 18	Jun 18
No. of independent walker	4	8	5	7	5	4	2	8	10	11	10	3	9	0	10	5	4	7
No. of eligible stroke patients	11	14	13	13	15	9	5	17	19	13	16	5	9	3	11	9	7	9
% of independent walker	36	62	33	64	39	44	40	53	53	85	63	60	100	0	91	56	57	78

- 63% of acute mild stroke patients achieved independent walking at discharge from baseline 42%.
- 70% of acute mild stroke patients were discharge to home, an improvement from 50%. There was no change in the length of stay pre and post intervention phase.

Cost Savings

- System saving (Per bed-day): $657
- Discharge home: 20% increase = ~2 patients
- Cost Saving 1 week: $10,347.75
- Projected Cost Saving (1 year): $496,692

Problems Encountered

- Eligible patient who follow only 1 step commands with reduced cognition are not able to understand stroke education fully
- Eligible patient with safety awareness issues are not able to achieve target.
- Updated headboard to improve handover and communication not sustainable

Strategies to Sustain

- Sub analysis to include patients who are able to follow at least 2 steps of commands consistently
- Exercise handouts and caregivers education and involvements
- Regular communication through roll call, clear documentation and handover