Project Title

Fall Prevention in Rehab Wards

Project Lead and Members

Project lead: NC Sreelekha Nair

Project members: SSN Satria Ayu Bin Ramjudi, SSN Sinny Sebastian, SSN Kristine Daet.

Dr Low Yee Hong, SEN Priya Rajendran, PT Sheyin, UNM Magdalene Lim(sponsor)

Organisation(s) Involved

Tan Tock Seng Hospital

Healthcare Family Group(s) Involved in this Project

Nursing, Medical, Allied Health

Applicable Specialty or Discipline

Rehabilitation Medicine

Project Period

Start date: September 2019

Completed date: February 2021

Aims

To reduce inpatient fall rate in Rehab Wards from current fall rate of 1.8/1000 patient days to 1.0/1000 patients days

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

Every healthcare worker plays a part in fall prevention.

Conclusion

See poster appended/ below

Additional Information

NHG Quality Improvement Award 2021: Developing a Flexible & Sustainable Workforce (Merit Award)

Project Category

Care & Process Redesign

Quality Improvement, Value Based Care, Safe Care, International Patient Safety Goal

Keywords

Improvement Tools, Affinity Diagram, Pareto chart, Plan Do Study Act, , Root Cause Analysis, High Fall Risk Cubicle, Reduce the Risk of Patient Harm Resulting from Falls

Name and Email of Project Contact Person(s)

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Fall Prevention in Rehab Wards

Ms Sreelekha Nair
Rehab at Ang Mo Kio (AMK)

Tan Tock Seng Hospital — National Healthcare Group

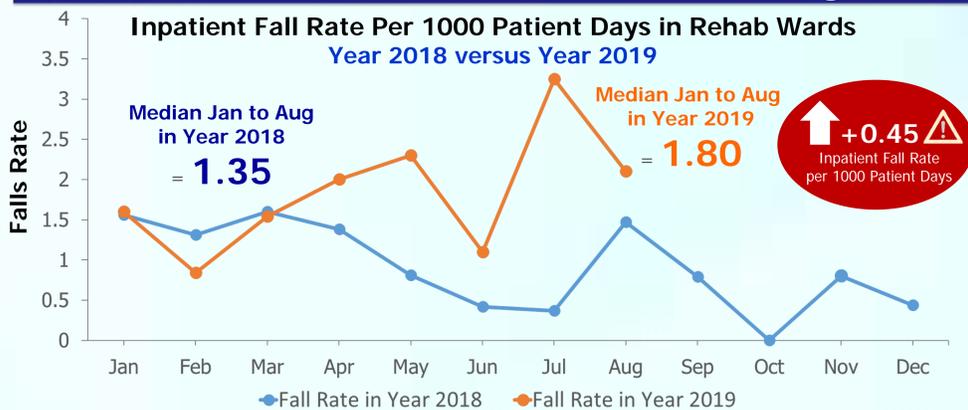**National Healthcare Group** — Adding years of healthy life

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Mission Statement

To reduce inpatient fall rate in Rehab Wards from current fall rate of 1.8/1000 patient days to 1.0/1000 patients days in 6 months
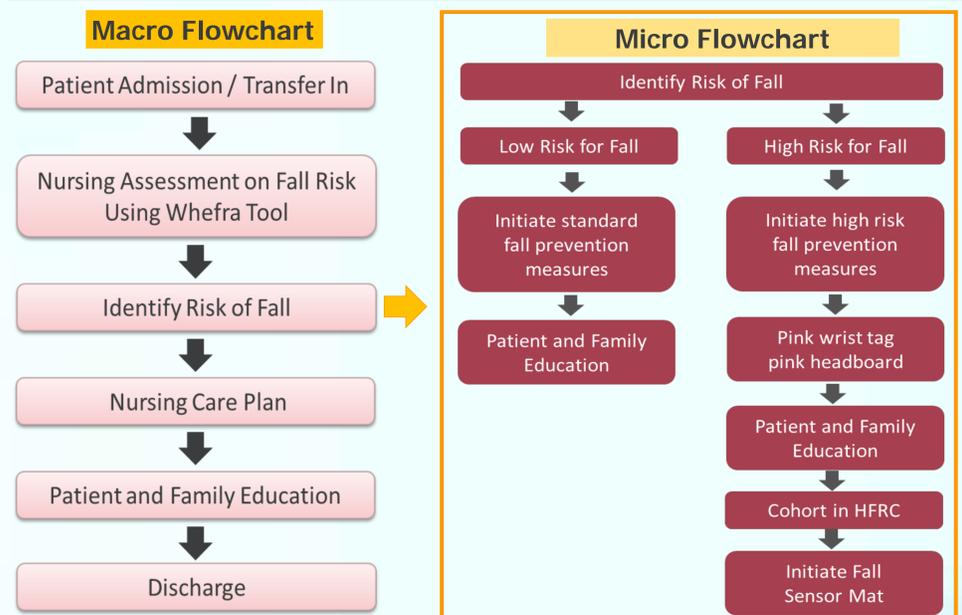
Team Members

	Name	Designation	Department
Team Leader	Ms Sreelekha Nair	Nurse Clinician	Previous at Rehab @ AMK Present at Level 7
Team Members	Mr Satria Ayu Bin Ramjudi	Senior Staff Nurse	Rehab @ AMK
	Ms Sinny Sebastian	Senior Staff Nurse	Rehab @ AMK
	Ms Kristine Daet	Senior Staff Nurse	Rehab @ AMK
	Dr Low Yee Hong	Senior Resident	Rehab @ AMK
	Ms Priya Rajendran	Senior Assistant Nurse	Rehab @ AMK
	Ms Tan Sheyin	Physiotherapist	Rehab @ AMK
Sponsor	Ms Magdalene Lim	Senior Nurse Manager	Rehab @ AMK
Mentor	Ms Goh Lee Lee		

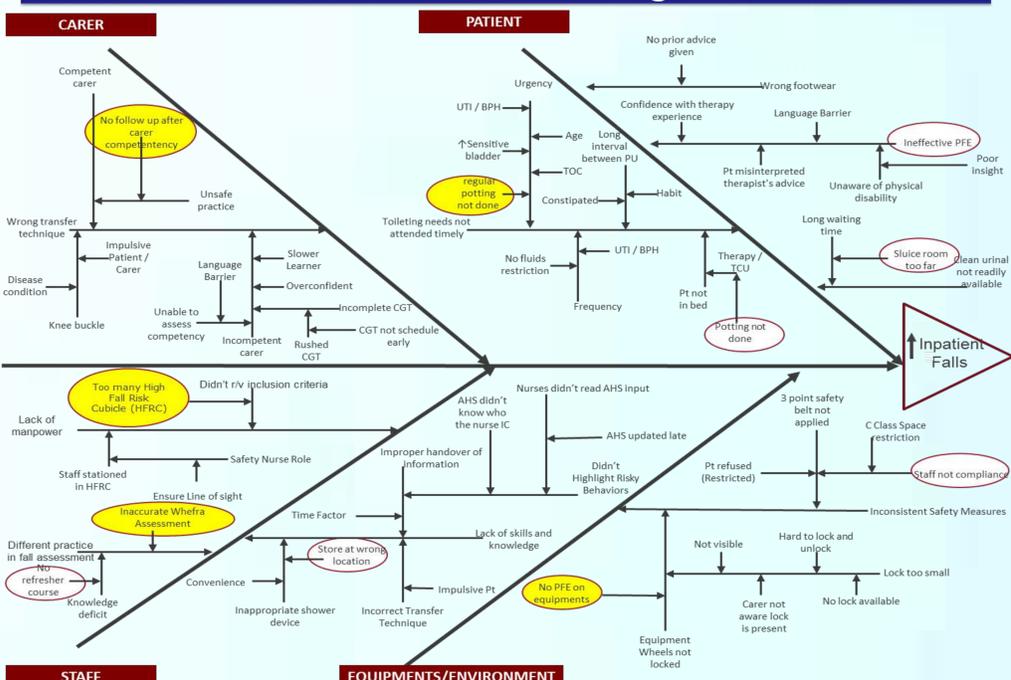## Evidence for a Problem Worth Solving
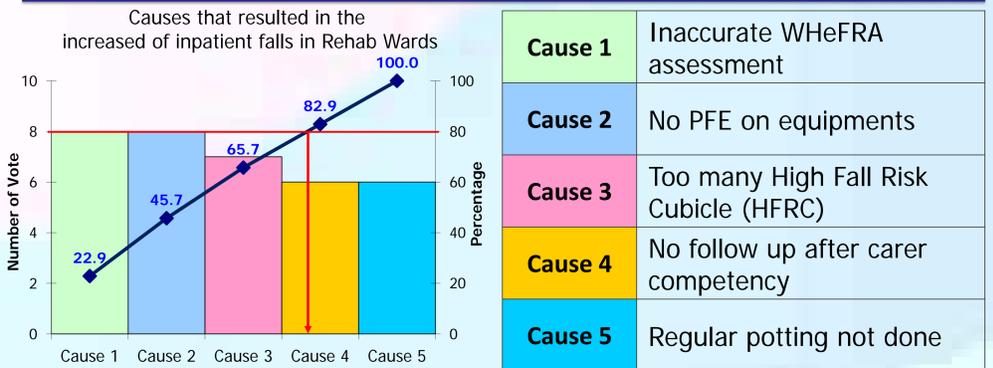
Inpatient Fall Rate Per 1000 Patient Days in Rehab Wards
Year 2018 versus Year 2019

Median Jan to Aug in Year 2018 = **1.35**

Median Jan to Aug in Year 2019 = **1.80**

⬆ **+0.45** ⚠ Inpatient Fall Rate per 1000 Patient Days

Legend: Fall Rate in Year 2018 — Fall Rate in Year 2019

TTSH inpatient fall rate target = 1.0/1000 patients days

Flow Chart of Process

Macro Flowchart

Patient Admission / Transfer In → Nursing Assessment on Fall Risk Using Whefra Tool → Identify Risk of Fall → Nursing Care Plan → Patient and Family Education → Discharge

Micro Flowchart

Identify Risk of Fall

- Low Risk for Fall → Initiate standard fall prevention measures → Patient and Family Education
- High Risk for Fall → Initiate high risk fall prevention measures → Pink wrist tag pink headboard → Patient and Family Education → Cohort in HFRC → Initiate Fall Sensor Mat

Cause and Effect Diagram

CARER — Competent carer, No follow up after carer competency, Unsafe practice, Wrong transfer technique, Disease condition, Knee buckle, Impulsive Patient / Carer, Language Barrier, Slower Learner, Overconfident, Unable to assess competency, Incomplete CGT, Incompetent carer, Rushed CGT, CGT not schedule early, Lack of manpower, Too many High Fall Risk Cubicle (HFRC), Didn't r/v inclusion criteria, Staff stationed in HFRC, Safety Nurse Role, Ensure Line of sight, Inaccurate Whefra Assessment, Time Factor, Store at wrong location, Different practice in fall assessment, No refresher course, Knowledge deficit, Convenience, Inappropriate shower device, Incorrect Transfer Technique, Impulsive Pt, No PFE on equipments

PATIENT — No prior advice given, Urgency, Wrong footwear, UTI / BPH, Confidence with therapy experience, Language Barrier, ↑Sensitive bladder, Age, Long interval between PU, Ineffective PFE, TOC, Pt misinterpreted therapist's advice, Poor insight, Constipated, Habit, Unaware of physical disability, regular potting not done, Toileting needs not attended timely, No fluids restriction, UTI / BPH, Therapy / TCU, Long waiting time, Sluice room too far, Frequency, Pt not in bed, Mean urinal not readily available, Potting not done

Inpatient Falls

STAFF — AHS didn't know who the nurse IC, Nurses didn't read AHS input, AHS updated late, Improper handover of information, Didn't Highlight Risky Behaviors, 3 point safety belt not applied, C Class Space restriction, Pt refused (Restricted), Staff not compliance, Inconsistent Safety Measures, Not visible, Hard to lock and unlock, Lock too small, Lock not available, No lock available, Carer not aware lock is present, Equipment Wheels not locked

EQUIPMENTS/ENVIRONMENT

Pareto Chart

Causes that resulted in the increased of inpatient falls in Rehab Wards

Cumulative %: 22.9, 45.7, 65.7, 82.9, 100.0

Cause 1	Inaccurate WHeFRA assessment
Cause 2	No PFE on equipments
Cause 3	Too many High Fall Risk Cubicle (HFRC)
Cause 4	No follow up after carer competency
Cause 5	Regular potting not done

Implementation

Root Cause	Intervention	
Cause 3: Too many High Fall Risk Cubicle (HFRC)	**PDSA 1**: Reduce High Fall Risk Cubicles to 1 per wing Implementation Date: 1 Sep 2019	PATIENT SAFETY PATROL STAY IN
Cause 1: Inaccurate WHeFRA Assessment	**PDSA 2A**: Refresher on WHeFRA assessment based on internal audit (classroom sharing) Implementation Date: 2 Oct 2019 **PDSA 2B**: Fall Ra-Ra to reinforce practices and initiatives Implementation Date: 1 Nov 2019	

Results

Inpatient Fall Rate Per 1000 Patient Days in Rehab Wards
Period: Jan 2019 to Aug 2020

Pre-Intervention Median (Jan to Aug 2019) = **1.80**

Post-Intervention Median (Aug 2019 to Aug 2020) = **0.99**

PDSA 1: Reduce High Fall Risk Cubicles to 1 per wing

PDSA 2A: Refresher on WHeFRA assessment based on internal audit (classroom sharing)

PDSA 2B: Fall Ra-Ra to reinforce practices and initiatives

COVID-19 Outbreak, Nurses deployed to acute care areas

Cost Avoidance

	Year 2018	Year 2019	Year 2020
Number of Level 3 Injury related to Falls	1	0	0
Impact	Patient stayed in hospital for another 3 weeks then transferred to Nursing Home	-	-
Cost Avoidance	(3 weeks x 7 Days) x $1,114 = **$23,394**		

Note: Unit Cost for Inpatient Stay Per Day Per Patient in TTSH = $1,114

Problems Encountered

1. Need to do multiple sharing to reach out to large group of nurses
2. Every healthcare workers play a part in fall prevention

Strategies to Sustain

1. Continue monthly random audit on WHeFRA documentation
2. Unit based orientation for new joiners in the department on new initiatives for compliance
3. Active screening and cohorting of high fall risk patients to fall risk cubicle
4. 6 Monthly Fall Ra-Ra