

# Reduce Unplanned Self-Extraction of Indwelling Urinary Catheter by Patients

Dr Ho Peiying Esther

Department of Geriatric Medicine (GRM)

## Mission Statement

To reduce the number of unplanned self-extraction of indwelling urinary catheter by 50% (from 6 to <3 pull outs) among geriatric medicine patients admitted to Ward 7B and Ward 7D within 12 months.

## Team Members

	Name	Designation	Department
Team Leaders	Asst Prof Ho Peiying Esther	Consultant	Geriatric Medicine
	Ms Nio Bee Hong	Nurse Clinician	Ward 7D
Team Members	Dr Hernandez Herb Howard Cunanan	Senior Resident Physician	Geriatric Medicine
	Ms Nur Shahidah Bte Sulaiman	Nurse Clinician	Ward 7D
	Ms Loh Lik Xuan	Senior Staff Nurse	
	Ms Yartini A/P Kanasever	Senior Staff Nurse	Ward 7B
	Ms Ler Si Ying	Staff Nurse	
	Ms Rosmawati Binte Abdullah	Executive	Operations (DICC)

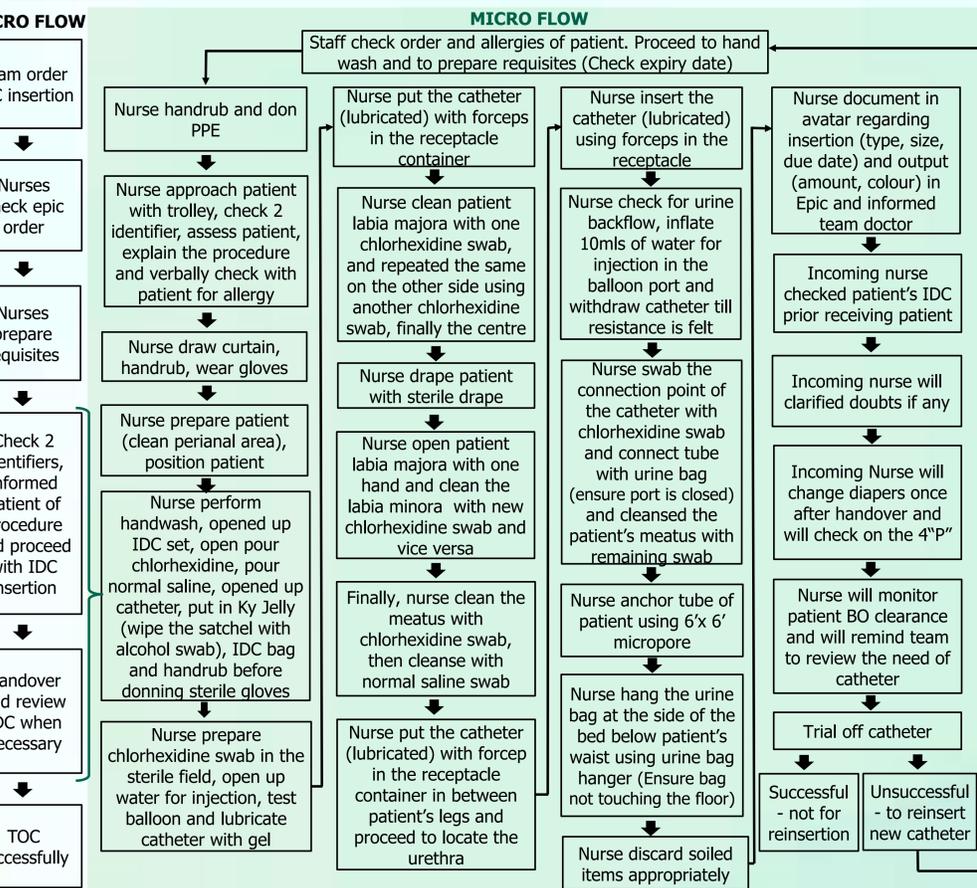
### Sponsors:

- Adj Asst Prof Tan Huei Nuo (Head & Senior Consultant, Geriatric Medicine)
- Ms Hnin Nwe Oo (Deputy Director of Nursing, Nursing Service)

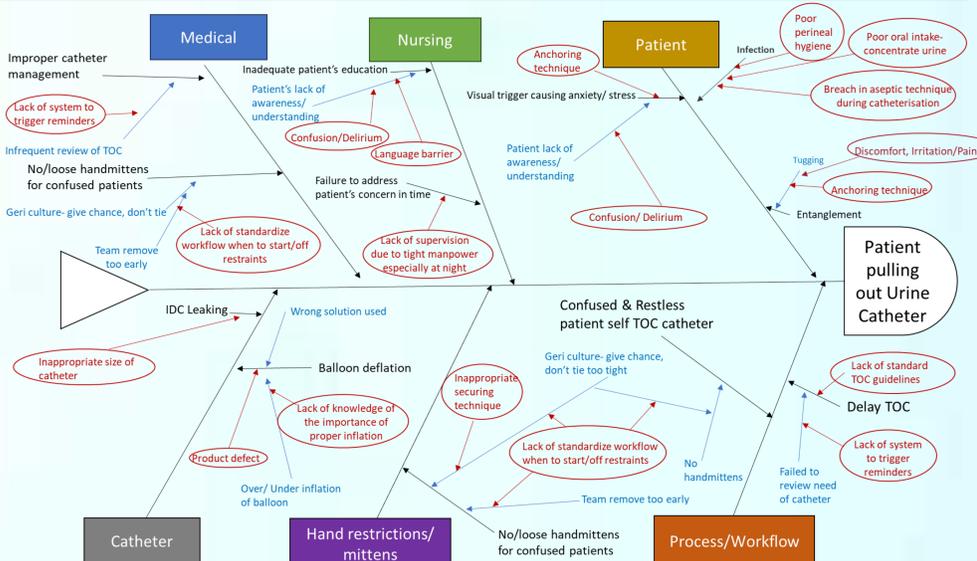
## Evidence for a Problem Worth Solving

- Within TTSH, Geriatric Medicine ranks second among all medical disciplines in the frequency of indwelling catheter (IDC) dislodgement incidents.
- The majority of Geriatric Medicine patients are located on Level 7, where the more complex and behaviourally challenged cases are concentrated.
- Between 2022 and 2023, IDC dislodgement incidents among Geriatric Medicine patients on Level 7 increased by 80%, rising from 5 to 9 cases. This notable upward trend underscores the need for targeted interventions to mitigate risks of this incidents, ensure patient safety and enhance IDC management protocols.

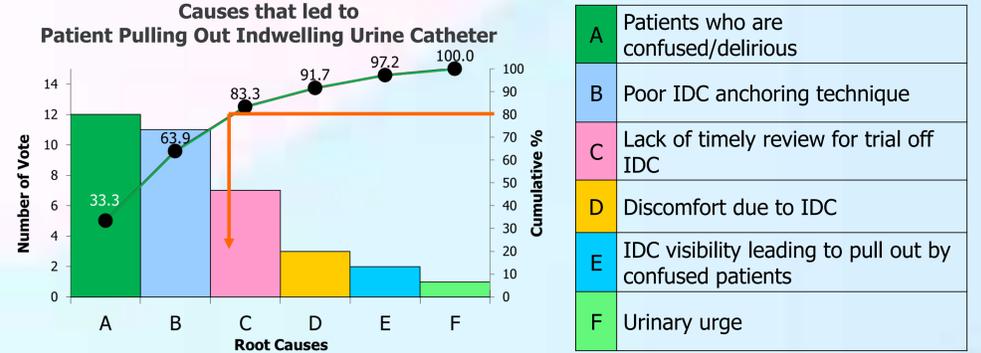
## Flow Chart of Process



## Cause and Effect Diagram



## Pareto Chart



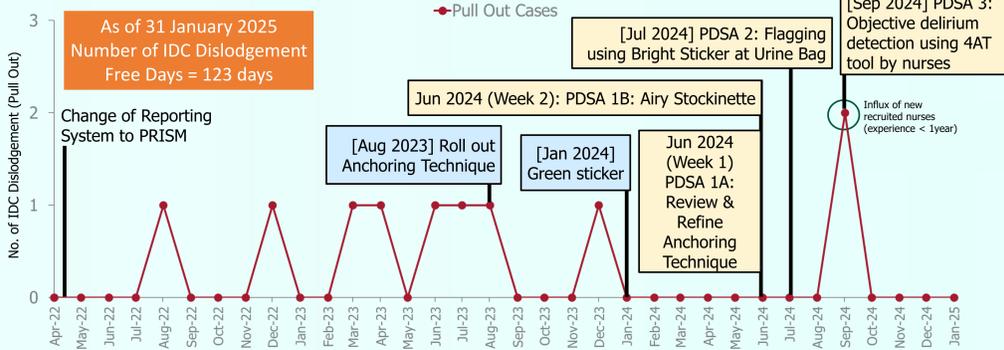
## Implementation

Root Cause	Intervention	Implementation Date
<b>Cause B:</b> Poor IDC anchoring technique	Refinement to anchoring technique (stocking, hand mittens)	Jun 2024
<b>Cause C:</b> Lack of timely review for trial off IDC	Flagging using Bright Sticker at Urine Bag	Jul 2024
<b>Cause A:</b> Patients who are confused/delirious	Objective delirium detection using 4AT tool by nurses	Sep 2024

## Results

### IDC Dislodgement (Pull Out) for GRM Discipline in Ward 7B and Ward 7D

Period: April 2022 to January 2025



No. of Pull Out Cases	Year 2022 (Apr-Dec)	Year 2023 (Jan-Dec)	Year 2024 (Jan-Dec)
	2	6	2

## Cost Savings

Breakdown	Male IDC	Female IDC
Nurse Clinician will be activated to investigate incident: Investigation and reporting in system approximately take 20mins	\$1.57 x 20 = \$31.40	\$1.57 x 20 = \$31.40
Registered Nurse (RN) will need to type in report, notify Doctor to review, raise PRISM (Assist in investigation and reporting 20mins without disturbances)	\$0.97 x 20 = \$19.40	\$0.97 x 20 = \$19.40
RN insertion (Female Patient): 20mins	\$1.41 x 5 mins = \$7.05 Rest is assisted by nurse like preparing trolley and requisites (\$0.97 x 10mins = \$9.70) = \$16.75	\$0.97 x 20 = \$19.40
Doctor need to reinsert IDC (Male Patient)	IDC Set: \$14.83 Catheter: \$20.70 Chlorhexidine sachet: \$0.64 Lignocaine Gel: \$6.43 Net dressing (Anchoring): \$1.65 = \$44.25	IDC Set: \$14.83 Catheter: \$20.70 Chlorhexidine sachet: \$0.64 Lubricant Gel: \$0.30 Net dressing (Anchoring): \$1.65 = \$38.12
<b>Total Cost (Per Patient)</b>	<b>\$110.80</b>	<b>\$108.32</b>

## Problems Encountered

- Despite standard training protocols, inconsistent application of mittens among new nurses have been observed, particularly in the care of confused patients with risk of IDC dislodgement. This highlights an opportunity to strengthen reinforcement strategies and bedside practices to enhance patient safety.
- Original stickers proved ineffective due to small size and poor adhesion. We had to implement larger and more secure stickers to improve reliability.

## Strategies to Sustain

- Updates about QI project in MO orientation program.
- New nurse will be trained in Unit Based Orientation for both 4AT and IDC management.
- Champions will be nominated in each ward who will reinforce practice.
- Champions will monitor pull out rate and present rates during level KPI presentation.

## Lessons Learnt

- Essential elements of quality improvement.
- To initiate a change in practice requires patience, time and teamwork.
- Sustainable culture change typically requires a minimum of three months, supported by ongoing reinforcement and consistent engagement at the ground level.