

Reducing the CAUTI Rate in Sengkang Community Hospital

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BACKGROUND

Catheter-associated urinary tract infection (CAUTI) is a significant cause of prolonged admission and antibiotic usage for patients in hospitals. They affect the rehabilitation efficiency of patients and a proportion of patients with CAUTI would progress to urosepsis, a dangerous life-threatening condition.

PROJECT AIM

To reduce the CAUTI rate in Sengkang Community Hospital (SKCH) to 1.0 per 1,000 catheter days within a year (from March 2022 to April 2023).

ANALYSIS

[1] Identifying the Problem Worth Solving

From our analysis for the period from March 2021 to February 2022, CAUTI rate was observed to be high - with 5 months out of a year higher than the national average (all CHs' average CY2020: 2.2 per 1,000 urinary-catheter day).

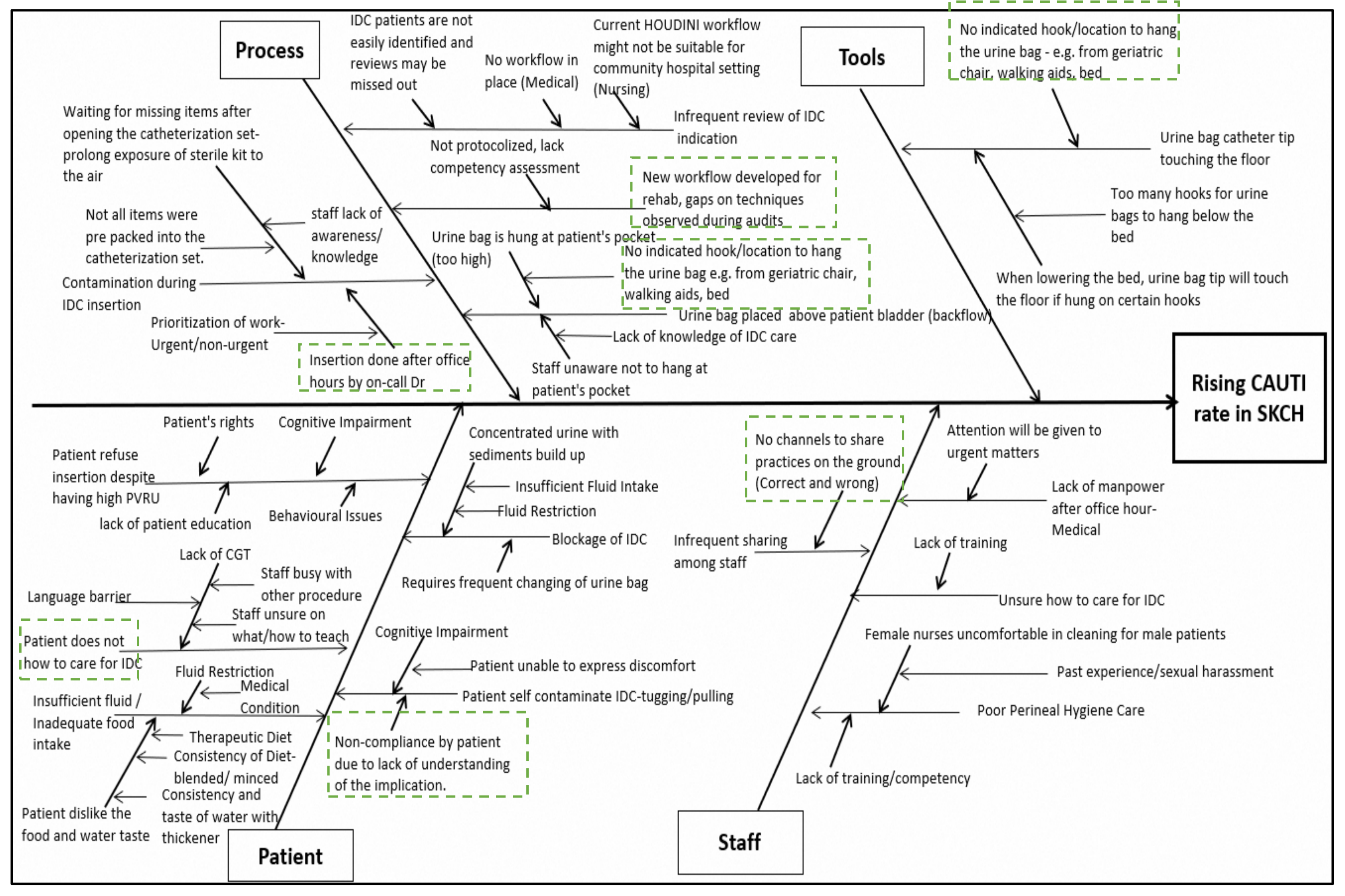
[3] Identifying Vital Few Root Causes

Voting was done to identify the vital few root causes:

Root Causes	Frequency	Cumulative %
Non-compliance by patient due to lack of understanding of the implication.	15	14%
Lack of patient education on care for IDC.	13	27%
No indicated hook/location to hang the urine bag e.g. from geriatric chair, walking aids, bed.	13	39%
New workflow not protocolised, lack competency assessment (Rehab).	11	50%
Lack of knowledge of IDC care (Backflow of IDC).	9	58%
No channels to share practices on the ground (correct and wrong).	9	67%
Prioritisation of work- urgent/non-urgent (Insertion of IDC during after-office hours).	9	75%
Staff lack of awareness/knowledge in IDC preparation.	8	83%
Lack of training- unsure on how to care for IDC (Staff).	6	89%
Not all items were pre-packed into the catheterisation set.	5	93%
No workflow in place (Medical).	4	97%
Current HOUDINI workflow might not be suitable for community hospital setting (Nursing).	3	100%
Too many hooks for urine bags to hang below the bed	0	100%

[2] Fishbone Diagram

The team conducted brainstorming to identify root causes contributing to the rising CAUTI rate in SKCH.



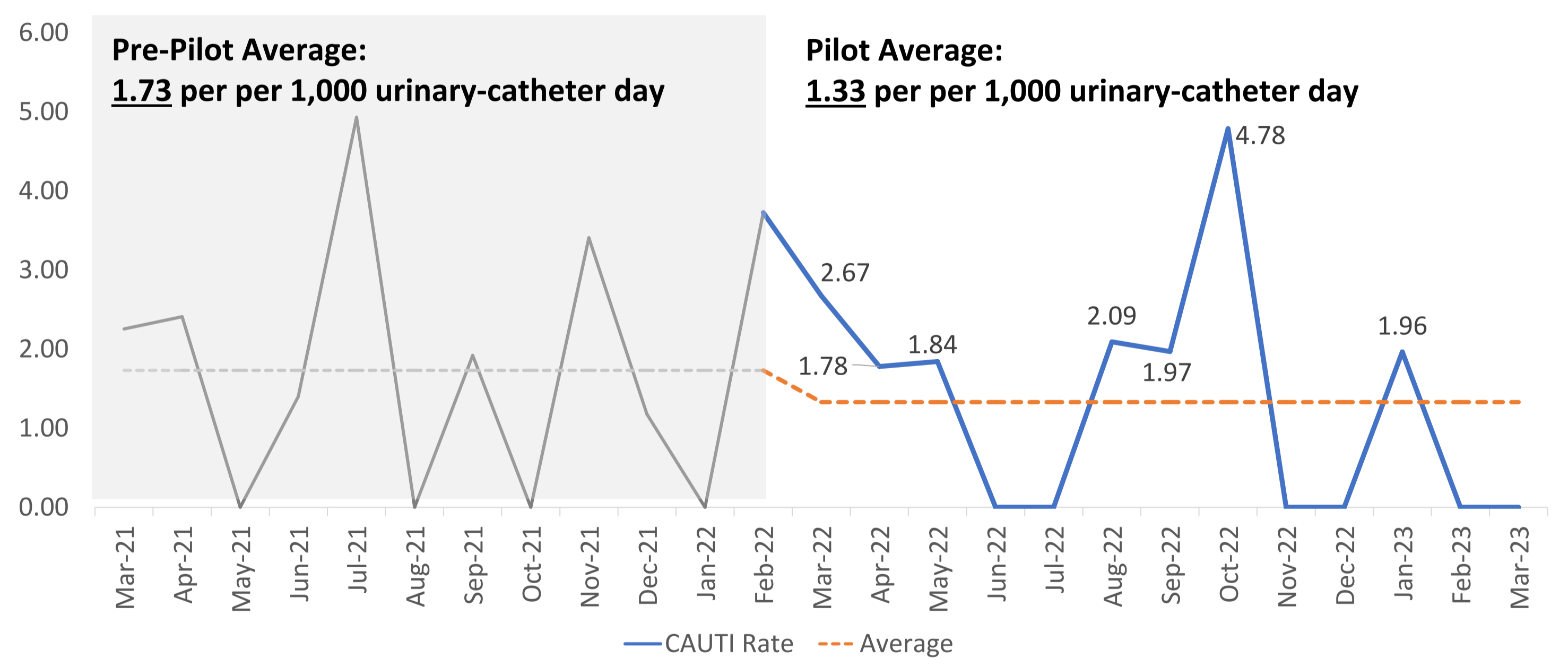
SOLUTIONS

Interventions focus on the maintenance of catheter hygiene as well as to remove catheters early when not indicated

Interventions
<p>Start CAUTI round for patients on IDC</p> <p>PDSA 1: Frequent round by various department members (Feb 22)</p> <ul style="list-style-type: none"> To check if IDC is hanging correctly or secured properly and if urine bag has been emptied when it is half full To ensure proper handling IDC during transport or mobile <p>PDSA 2: CAUTI round (Mar – Jul 22)</p> <ul style="list-style-type: none"> Doctors review all cases and remind team if TOC plan is absent. Highlight case for discussion and conduct RCA for CAUTI cases. <p>PDSA 3: Restarted CAUTI round (Dec 22)</p> <ul style="list-style-type: none"> CAUTI champions/IPCLO to follow CAUTI rounds, to create more awareness/ownership on good IDC care.
<p>Work on staff training and competency</p> <p>PDSA 1: Created training competency checklist (Mar 22) - All registered nurses (annual assessment) via Wizlearn e-learning</p> <p>PDSA 2: Trained Rehab CAUTI champions to drain IDC (May 22)</p> <p>PDSA 3: HOUDINI training provided by SGH doctor (Jun 22)</p> <p>PDSA 4: Conducted one to one competency for all staff by CAUTI champions (Aug 22)</p> <p>PDSA 5: CAUTI eLearning for SKCH nurses (Sep 22)</p> <p>PDSA 6: Revised CAUTI audit checklist (Maintenance & Insertion) (Nov 22)</p>
<p>Revised the IDC workflow (Dec 22)</p>
<p>Enhancement to SCM to have auto calculation of the IDC due date to ease administrative burden for nurses (Dec 22)</p>
<p>Created IDC acronym expansion for doctors to increase TOC rate for short term catheters (Feb 23)</p>

PROJECT'S IMPACT

SKCH CAUTI RATE - REHAB & SUBACUTE
Pre-Pilot: Mar 21 - Feb 22; Pilot: Mar 22 - Apr 23



A general downtrend of CAUTI cases was observed in the last 6 months prior to conclusion of the QI project. The average CAUTI rate decreased from 1.73 (Mar 21 to Feb 22) to 1.33 per 1,000 catheter days (Mar 22 to Apr 23). The average rate has even gone down to **0.62 per 1000 catheter days** in the last 6 months – surpassing our initial target by far!

This highlights the importance of continuation of measures to maintain awareness of best practices on the ground, including regular refresher training and visual aids/reminders, as well as regular CAUTI rounds.

SUSTAINABILITY AND SPREAD

Sustainability of best practices is an important tenet for CAUTI prevention. The results show that a combination of refreshing catheter handling skills and maintaining the practice of optimising early trial off catheter can reduce the CAUTI rate. **Re-training and refresher interventions** have been weaved into nursing staff's e-Learning modules, whilst the CAUTI round and audits are ongoing and continuing initiatives. Monthly review of the CAUTI rate is also instituted to ensure performance is monitored and early interventions can be taken if upward trends are observed.

The team will also be **sharing best practices and working towards spreading the initiatives** across the other two community hospitals under SingHealth Community Hospitals.