

## PREVENTION In, UTI Out

Potting, Rest, Exercise, Vitamins, Elimination, Nutrition, The 4-pt catheter care, Infection control, Offer fluids unless contraindicated, Nurse compliance

Angeli Oriola<sup>1</sup>, Noel Castro<sup>1</sup>, Jessie Manzano<sup>1</sup>, Albert Miranda<sup>1</sup>, Christopher Bareng<sup>1</sup>, Rosa Marie Duron<sup>1</sup>, Siow Yoon Ching<sup>1</sup>, Sam Goh<sup>1</sup>, Jennifer Loh<sup>2</sup>, Leong Chin Jong<sup>3</sup>

<sup>1</sup> St. Andrew's Nursing Home (Buangkok), <sup>2</sup> St. Andrew's Community Hospital, <sup>3</sup> Agency for Integrated Care

### BACKGROUND

Urinary tract infections (UTIs) are the second most common infection in the nursing home settings with an incidence of 0.3 and 0.8 cases per 1000 resident days.<sup>1</sup> Risk factors include advanced age, co-morbidities, incontinence and urinary catheter or diaper use. It is the most common cause of bacteraemia and unnecessary hospitalization for nursing home residents. UTIs can lead to serious complications such as reduced quality of life, increased frailty and healthcare costs for the nursing home residents.

At St. Andrew's Nursing Home (Buangkok), a 300-bed nursing home, there were 22 UTI cases between July and December 2019, with 77% (17 out of 22) requiring hospitalization. SANH(B) collaborated with AIC-QPD to embark on a quality improvement project to reduce the UTI incidences at the Nursing Home.

### OBJECTIVES

1. To reduce UTI incidence rate per 1000-resident days by over 20% over 3 years at the Nursing Home.
2. To train over 70% of care staff to be competent in UTI prevention and care.

### ANALYSIS

#### Problem Identification

Team members attended a 3-day training by the Agency for Integrated Care (AIC) with various Subject Matter Experts in 2020. An Ishikawa diagram was used to identify the root causes for the high UTI incidence rate (Fig. 1).

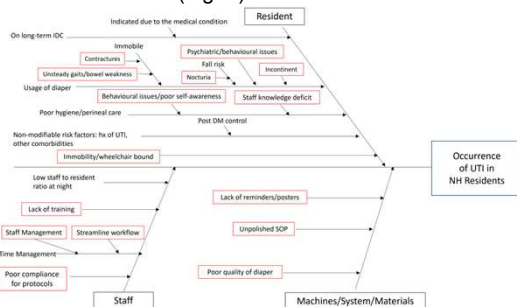


Fig. 1. Root cause analysis (RCA)

### SUSTAINABILITY

To maintain the sustainability of the project, the team continued with the following:

1. Monitoring of UTI cases in the nursing home on a monthly basis
2. Conducting IDC care competency training for old and new staff
3. Develop e-learning modules for ease of learning at own pace
4. Review and update SOP, including IDC and Diaper Care Bundles regularly

### REFERENCE

1. Genao, L., & Buhr, G. T. (2012). Urinary tract infections in older adults residing in long-term care facilities. *Journal of the American Medical Directors Association*, 20(4), 33.
2. Wasserman, S., & Messina, A. (2018). Chapter 16. Bundles in infection prevention and safety. In S. Wasserman (Ed.). *Guide to infection control in the healthcare setting*, 1-15.

### IMPLEMENTATION

#### Solutions Generation

The team then adopted the IHI Driver Diagram to generate the solutions and drive the change through regular sessions of literature search, group discussions and expert opinion (Fig. 2).

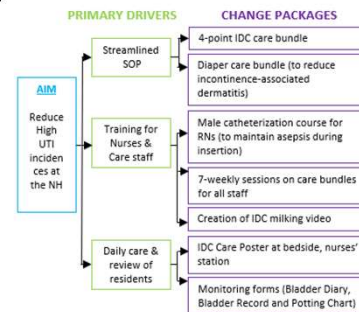
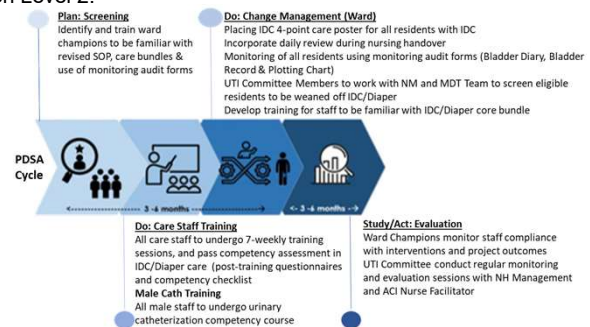


Fig. 2. Driver Diagram for Solutions Generation

#### Pilot Phase:

The project was piloted at 4 wards from 2020 to 2021: PDSA Cycle 1 in two wards on Level 5 and PDSA Cycle 2 in two wards on Level 2.



#### Execution & Evaluation Phase

- The interventions were then rolled out to the rest of the Nursing Home in 2021 to 2022.
- Monthly monitoring of UTI cases was submitted to AIC and case studies were discussed at regular NF visits for resident-centred interventions.

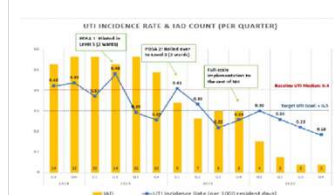
### RESULTS

#### Primary Outcome – UTI Incidence Rate

The project's goal was achieved as the UTI incidence rate for the whole nursing home was reduced by **41%** from 0.41 in March 2020 to 0.24 in Dec 2022.

#### Secondary Outcome – Staff Competency

**94%** of staff were trained on Continence Management, exceeding the 70% target. Staff gained knowledge on how to identify tell-tale signs of UTI and its management.



#### Other Benefits – IAD Cases

The project also achieved significant reduction in incontinence-associated dermatitis (IAD) by **86%** due to the introduction of diaper care bundle (from 57 cases in 2020 to 8 in 2022).