



Tan Tock Seng HOSPITAL

# Peri-easy Dialysis Trolley in Ward 9A

## Suemmayah Nasir, Shinta Jap, Senifah Radi & Tan Ai Seoh

### Ward 9A



Adding years of healthy life

### Mission Statement

- To maintain ergonomics and efficacy of nurses whilst draining effluent bag upon completion of Automated Peritoneal Dialysis (APD).
- Before the implementation of the Peri-easy Dialysis Trolley, time, effort and manual labour were needed to transport and drain the effluent fluid after peritoneal dialysis. There were also risks of spills and splashes of effluent during transportation and drainage of the effluent bag.
- With the Peri-easy Dialysis Trolley, the nurses' ergonomics is maintained as no lifting is required. Time management and utilisation is maintained as the nurses can focus on other chores. Incidences of spillage and splashes are minimised, thus reducing the nurses to exposure of body fluids.
- This project commenced on May 2013 and was completed in 2014 with nil incidences of muscle strain associated with APD.
- This project is in line with the hospital's goals of promoting a safe working culture for its employees and reducing workplace associated injuries.

### Team Members

|              | Name            | Designation        | Department |
|--------------|-----------------|--------------------|------------|
| Team Leader  | Suemmayah Nasir | Senior Staff Nurse | Ward 9A    |
| Team Member  | Shinta Jap      | Senior Staff Nurse | Ward 9A    |
| Facilitators | Senifah Radi    | Unit Nurse Manager | Level 9    |
|              | Tan Ai Seoh     | Nurse Manager      | Ward 9A    |

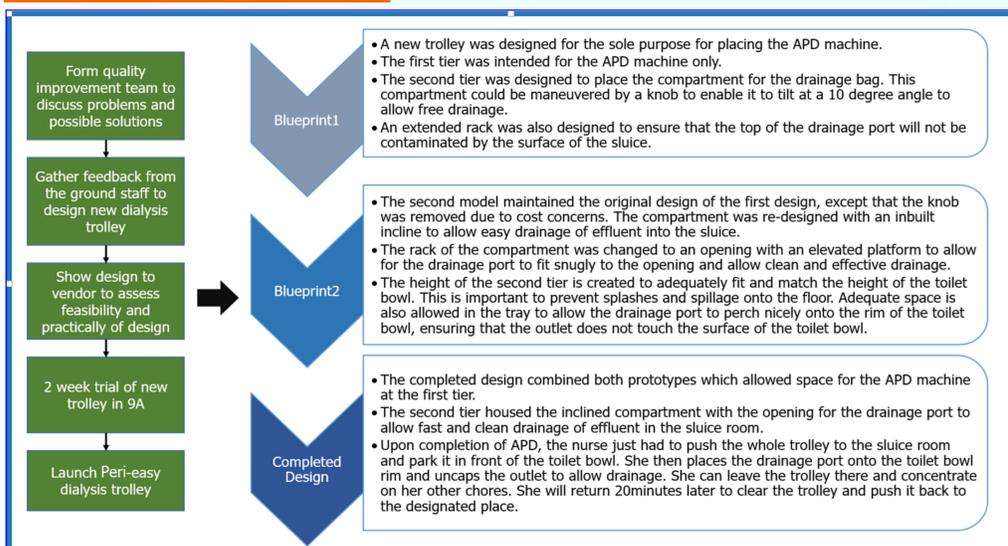
### Evidence for a Problem worth solving

- Staffs take approximately 25 minutes to push the APD trolley to the sluice room and manually lift and drain the effluent bag
- The time needed for this could be better utilized for other nursing duties
- Each effluent bag fills up to 15L and this repetitive motion of draining the bag, coupled with poor ergonomics and muscle strain may lead to occupational hazards
- Poor handling of the effluent bag put the staff at risks of accidental exposure to body fluids of spills and splashes

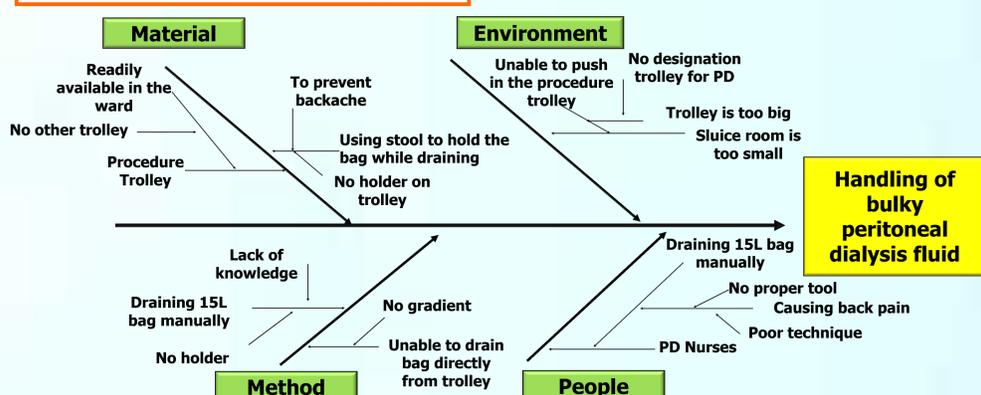
### Current Performance of a Process

- Staffs have verbalized muscle strain and fatigue in draining the APD effluent bag
- There have been no reported splash incidences as staffs have taken adequate precautions to prevent this. However, this is an identified hazard in the department.
- Spills have occurred in the sluice room due to muscle fatigue. This utilizes more time and manpower, which could be used for direct patient care

### Flow Chart of Process



### Cause and Effect Diagram



### Implementation

| Problem  | Intervention  | Date of implementation |
|--|---|------------------------|
| Big and heavy effluent bag strains the back and causes muscle fatigue                          | Designing the compartment tray to house the drainage bag frees the nurse from doing manual lifting          | May 2012 to May 2013   |
| Effluent bag is unstable when full and may fall off the trolley                                | Compartment is designed to place and stabilize effluent bag during transport and drainage                   |                        |
| Poor time management as effluent bag drains 15L of effluent fluid in approximately 20 minutes. | The compartment has an incline which enables drainage by gravity. Staff need not standby at the sluice room |                        |
| Risk of spills and splashes when draining effluent   | The opening at the compartment is adequately sized to enable drainage without splashes or spills            |                        |
| Risk of contaminating drainage outflow port when it touches rim of toilet bowl                 | The height of the second tier is fitted the same height of the rim of toilet bowl.                          |                        |

### Pre-Intervention



### Post-Intervention



### Results

With the Peri-easy Dialysis Trolley:

- No incidences of muscle strain and bad posture. Ergonomics is maintained as no lifting is required
- Less time-consuming and nurses can focus on other chores
- Prevention of spillage and splashes, thus reduction of exposure to body fluids
- Less manpower hours needed as staff need not standby to manually drain the effluent bag
- Tidiness is maintained as trolley is designed for proper placement of drainage bag

### Problems Encountered

- Lack of experience and knowledge in designing a new trolley
- Unsure of avenues for help in fabricating prototypes
- Costs of implementation and planning and budget allowed
- Efficacy and practicality in the completed design
- Sustainability of prototype after launch
- Compliance of staff towards new trolley and buy-in of staff towards a new process and equipment

### Strategies to Sustain

The Peri-easy Dialysis Trolley is still very much in use since its successful launch. There have been no reported hazards related to APD effluent drainage. Staffs have better time management and utilization. Plans for continuous improvement include looking into further enhancements to create an even better trolley.