Improvement of Inpatient Workflow in Management of Peritoneal Dialysis Patients

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Background of the Problem
Peritoneal Dialysis (PD) is the only established home based dialysis therapy available in Singapore. In February 2016, MOH has set up the Renal Failure Strategy Working Committee (RFSWC) to drive and promote PD for renal failure patients across the nation. The current SGH PD programme has approximately 400 patients and these patients are managed by nephrologists, 1 nurse clinician, 11 nurses. Apart from the in patient and on call service, PD nurses also provide out-patients services which include training new PD patients, assisting walk-in patients with PD-related problems, assisting doctors in running PD clinic, administering intravenous drug and other renal procedures including changing catheter transfer set, changing dressing at catheter exit-site and flushing catheter for new PD patients, and counselling patients and caregivers, tracking and follow up of PD patients at home in outpatient PD clinic. The current practice was flagged up for its continued relevance given that there is increasing workload demand based on current programme’s capacity and also organisation efforts on right sizing exercise and management of current resources to continue in improving care, productivity and efficiency.

Mission Statement
To optimise the PD inpatient workflow and improve the efficiency of the inpatient PD nurses

Analysis of Problem
General Timeline of PD Inpatient Nurse Schedule

- PD nurses are scheduled to report at 9AM PD centre
- All out patient PD nurses will be asked to help out if there are > 10 patients per PD nurse
- MD 8.30am, PD nurse will head to ward store to collect CAPD solution for the 1st round of CAPD
- Round of CAPD starts around 8.45am (15 minutes/round)
- After 1st round of CAPD, Disconnection and disposal for APD will follow (15 minutes/round)
- After APD, the nurse will top up APD solution for the night and CAPD solutions for the day (3rd, 4th round) at patient bedside
- Concurrently with taping up, they will also perform dressing set change for patient
- Between 12noon – 2pm, 2nd round of CAPD, where nurse will also do dressing set change
- Handover to afternoon shift PD nurse
- Lunch break at 2pm and follow up with paper work subsequently

Inefficiency in the workflow

<table>
<thead>
<tr>
<th>Time spent</th>
<th>Activity</th>
<th>Patient APD census</th>
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</thead>
<tbody>
<tr>
<td>8am – 9am</td>
<td>MD arrives</td>
<td>2nd round of CAPD</td>
</tr>
<tr>
<td>9am – 10am</td>
<td>PD nurse</td>
<td>Top up fluid at multiple patient's bedside</td>
</tr>
<tr>
<td>10am – 11am</td>
<td>Nurses</td>
<td>Taping up to Fluid at multiple patient's bedside</td>
</tr>
<tr>
<td>11am – 12pm</td>
<td>PD nurse</td>
<td>Perform PD Services for Inpatient</td>
</tr>
</tbody>
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Possible solutions
- Provide an instruction sheet on the APD machine
- Garner morning shifts to start earlier

Possible solutions
- Ask patients to perform their own CAPD to reduce the number of visits by nurses
- Ward nurses to perform PD service for patients

Disconnection and disposal for APD will follow

- Example of a typical morning shift load for PD nurses:
  - After Ward 42 nurses have taken over PD duty: W45, W47, W53, W55, W58 (9 APD, 3 CAPD)

Results
Tangible results
a) Number of calls received from doctors regarding patient’s APD readings
b) Total time saved from training of ward nurses to provide PD services

Intangible results
a) W42 nurses feedback that they have more control over the CAPD intervals and hence are able to plan better based on patient’s schedule of the day
b) PD disconnection is done earlier at 5-6am by the nurse instead of 9am by the PD nurse, hence patients are more at ease to move about with their daily activities.

Follow-up Plans
This proposal has provided an opportunity to upskill staff and expand their capabilities hence promotes staff satisfaction as confidence level increases when managing patients of PD therapy
The change in inpatient model of PD care will require buy-in from ground staff. Hence, since July 2015, a PD training programme has been set up by Institute of Advanced Nursing, supported by Renal APN and Speciality nurses. Till date, more than 300 nurses have been trained in SGH and about 150 nurses are working in the renal wards.
This initiative has successfully rolled out in February 2016 and April 2016 in 2 renal wards in SGH and plan is to roll out to the other medical wards and isolation facilities by 2020.