Project Title

Implementation of Continuous Saline Infusion for Patients Receiving Heparin-Free Haemodialysis

Project Lead and Members

Project lead: Radha

Project members: Sui Qian, Chew Li Ping

Organisation(s) Involved

Ng Teng Fong General Hospital

Aims

The project team seeks to reduce the average number of nurses' trips from 7 times to 1 time for each patient receiving Heparin-Free HD by May 2019

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Lessons Learnt

Communication strategies are important to have effective change. Using informal roll-calls and sought feedback to, and throughout implementation. This ensures consensus building at all levels. It is also important to continuously refine our criteria based on literature and clinical observation to improve consistency of clinical outcomes

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign

Keywords

Ng Teng Fong General Hospital, Quality Improvement, Improvement Tools, Root Cause Analysis, Heparin-Free hemodialysis, Care & Process Redesign

Name and Email of Project Contact Person(s)

Name: Noor Hazlin M Anuar

Email: noor_hazlin_mohd_anuar@nuhs.edu.sg

IMPLEMENTATION OF CONTINUOUS SALINE INFUSION FOR PATIENTS RECEIVING HEPARIN-FREE HAEMODIALYSIS

MEMBERS: RADHA, SUI. Q., CHEW. L. P.
KIDNEY UNIT, NG TENG FONG GENERAL HOSPITAL

- ☑ SAFETY
- ☑ PRODUCTIVITY
- ☐ PATIENT EXPERIENCE
- ☐ QUALITY
- ☐ VALUE

Problem and Aim

Problem

Between May 2018 to Nov 2018, Renal Nurses made an average of 7 trips per patient receiving Heparin-Free hemodialysis (HD), to perform the intermittent flushing procedure. These trips take time away from care provision and have implications for patient safety; over peak periods and manpower shortages, some nurses may miss performing intermittent flushing.

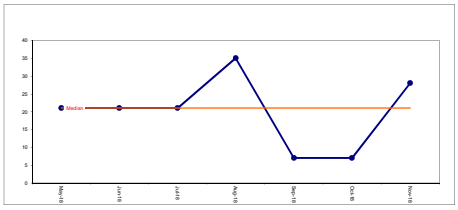
Aim

The project team seeks to reduce the average number of nurses' trips from 7 times to 1 time for each patient receiving Heparin-Free HD by May 2019.

Establish Measures

Outcome measure: Nurses' trips per patient receiving Heparin-Free HD

This is defined as the total number of trips made by nurses (numerator), divided by the total number of patients (denominator). The baseline was 7 trips from May to Nov 2018.



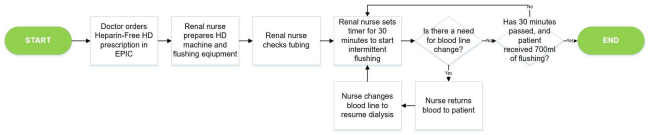
Balancing measure: % of patients receiving a Grade 1 clinical outcome

This is defined as the number of patients achieving a Grade 1 clinical outcome (numerator), divided by the total number of patients. The baseline was 0% from May 2018 to Nov 2018.

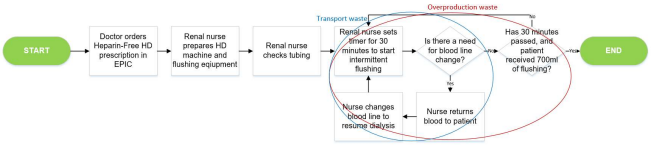
Grade	Clinical outcome
1	No clotting of ECC
2	Slightly streaky dialyzer, presence of fibrin in venous bubble trap (VBT)
3	Streaky dialyzer, clots present in VBT, but can still continue with dialysis
4	ECC clotted. Dialysis ceased

Analyse Problem

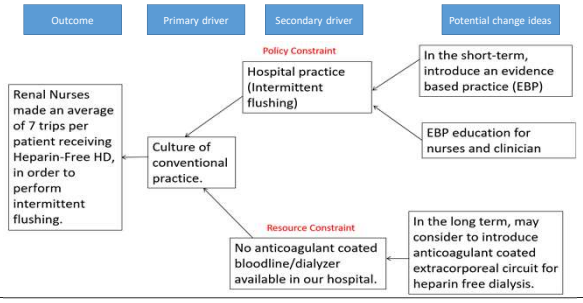
Process map



Waste identification

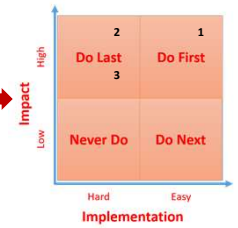


The project team identified overproduction and transportation wastes in the process. However, through brainstorming and voting, we found that the root cause of the problem and corresponding waste was a culture of conventional practice.



Select Changes

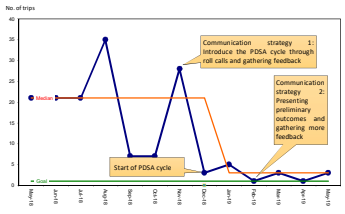
Root Cause		Potential change ideas
Culture of conventional practice	1	In the short-term, introduce an evidence based practice (EBP)
	2	In the long term, may consider to introduce anticoagulant coated extracorporeal circuit for heparin free dialysis.
	3	EBP education for nurses and clinician



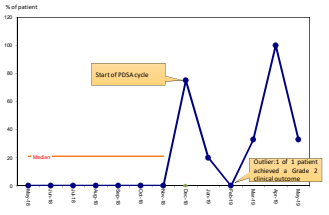
Test & Implement Changes

CYCLE	PLAN	DO	STUDY	ACT
1	Project team identified continuous flushing as a well-studied, feasible evidence based practice and implemented within Kidney Unit in Dec 2018.	Between Dec 2018 to May 2019, staff reduced the number of trips, less missed flushing, and improved clinical outcomes and patient experience.	Data showed a clear downward trend for the outcome measure, indicating that the change ideas were effective. In addition, we observed upward trends in our balancing measure, indicating superior clinical outcomes for patients. Communication strategies were key to effective change, as annotated in our run chart.	We will adopt continuous flushing into our daily practice and will continue to refine the criteria to ensure greater consistency of Grade 1 clinical outcomes. The project team is planning the next PDSA cycle for the other 2 change ideas.

Outcome measure:
Nurses' trips per patient receiving Heparin-Free HD



Balancing measure:
% of patients receiving a Grade 1 clinical outcome



Spread Change/Learning Points

Kidney Unit has adopted the first change idea for continuous flushing, given the clear evidence for effectiveness in both outcome and balancing measures. As part of our spread strategy, we will be engaging senior management for feedback and endorsement, as well as helping to facilitate the adaptation of these change ideas into similar wards.

Key learning points:

1. Communication strategies are crucial to effective change. We used informal roll-calls and sought feedback prior to, and throughout implementation. This ensured consensus building at all levels.
2. EBP provides feasible alternatives to current practices, however longstanding. In line with this, we will continue to refine our criteria based on literature and clinical observation to improve the consistence of Grade 1 clinical outcomes, even as we enter our next PDSA cycles and spread change.

Ng Teng Fong General Hospital
Jurong Community Hospital
Jurong Medical Centre
Members of the NUHS