

Project Title

The Impact of Continuity of Nutritional Care for Haemodialysis Patients from Acute to Community Setting
The National Kidney Foundation Singapore

Project Lead and Members

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Organisation(s) Involved

The National Kidney Foundation Singapore

Healthcare Family Group(s) Involved in this Project

Allied Health

Applicable Specialty or Discipline

Haematology, Nutrition & Dietetics

Project Period

Start date:

Completed date:

Aims

This study aims to:

Ensure at least 75% follow up rate for community haemodialysis patients requiring dietitian follow up post-hospitalisation and post-nephrologist outpatient review.

Show the impact of structured continuity of nutritional care for haemodialysis patients from acute hospital to community dialysis centre with significant improvement in their nutrition-related blood test markers (NBTM).

Project Attachment

See poster appended/ below

Background

See poster appended/ below

Methods

See poster appended/ below

Results

See poster appended/ below

Conclusion

See poster appended/ below

Project Category

Care & Process Redesign

Quality Improvement, Workflow Redesign

Keywords

Malnutrition, Haemodialysis patients, NBTM, Dietitian

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The Impact of Continuity of Nutritional Care for Haemodialysis Patients from Acute to Community Setting

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Grace Liew, Coryn Lee, Zet Hui Liang, Chooi Fong Yee

Introduction/Background

Malnutrition is common in haemodialysis patients and hospital inpatients. According to recent studies on malnutrition in acute care settings, the prevalence of malnutrition is 14.7-65% and approximately 50% of hospitalised patients are malnourished at discharge. Malnutrition is associated with negative clinical outcomes such as declined functional status and quality of life, increased morbidity and mortality, longer length of hospitalisation and higher readmission rates. It is critical to identify patients experiencing nutritional decline during hospitalisation and those at risk of malnutrition at discharge. Currently, there is no established structure for transitioning nutrition care for community dialysis patients from acute hospitals post-hospitalisation.

This collaboration represent the first local effort between acute and community settings to enhance the continuity of nutritional care for dialysis patients, facilitating early nutritional intervention for those who are malnourished or at risk of malnutrition.

Goal/Objective

This study aims to:

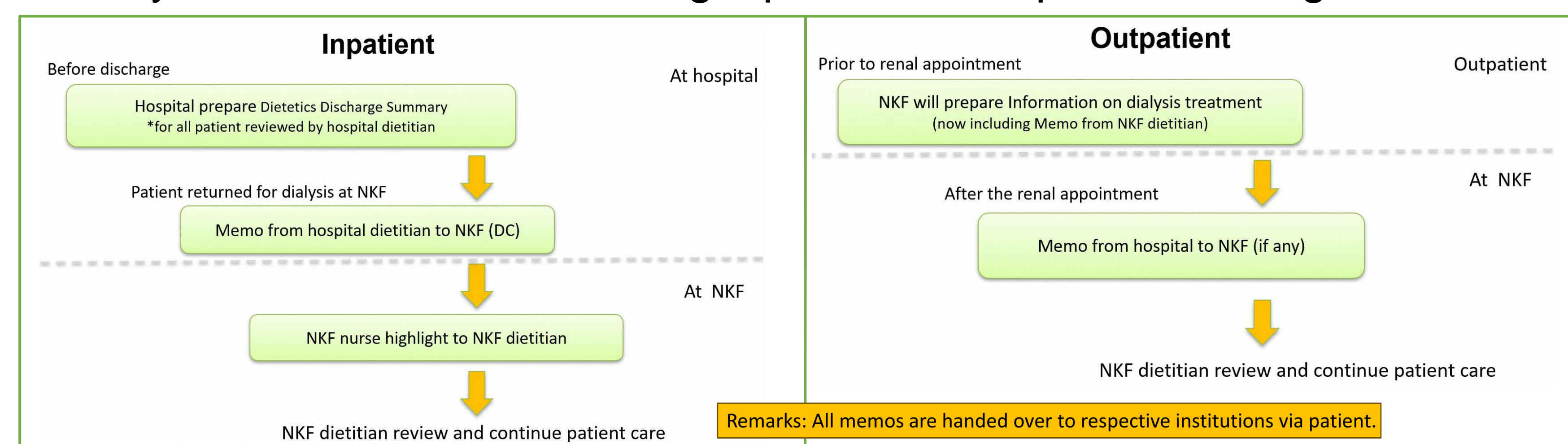
- Ensure at least 75% follow up rate for community haemodialysis patients requiring dietitian follow up post-hospitalisation and post-nephrologist outpatient review.
- Show the impact of structured continuity of nutritional care for haemodialysis patients from acute hospital to community dialysis centre with significant improvement in their nutrition-related blood test markers (NBTM).

Problem Analysis

- **Problem:** Loss in follow up during transition from acute hospital to community dialysis centres
 - **WHY:** No proper platform to handover nutritional care after patient is discharged from acute hospital or post nephrologist appointment.
 - **WHY:** No protocol for memo to be provided when patient is discharged to community dialysis centres.
 - **WHY:** There is an assumption that community dialysis centre's dietitian will follow up accordingly.
 - **WHY:** Acute hospital have a lack of understanding regarding community dialysis dietitian's workflow.
 - **WHY:** There is lack of communication between acute hospital dietitians and nephrologists and community dialysis centre dietitians.
 - **Root cause:** No structured continuity of nutritional care for haemodialysis patients transitioning from acute hospital to community dialysis centres due to lack of communication between healthcare workers in both settings.
- **Problem:** Declined nutritional status in community dialysis patient's post-hospitalisation
 - **WHY:** Unable to early identify patients with declined nutritional status post-hospitalisation.
 - **WHY:** No handover on patient's nutritional status during-and post-hospitalisation.
 - **WHY:** No structured workflow to update or handover to respective dietitian for patient's follow up.
 - **WHY:** There is an assumption from acute hospital that community dialysis centre's dietitian will follow up.
 - **WHY:** Community dialysis centre's dietitian are not actively updated on patient's discharge or hospitalisation status.
 - **Root cause:** Lack of communication between institutions leading to loss in follow up for patients who are malnourished or at risk of malnutrition which causes decline in nutritional status.

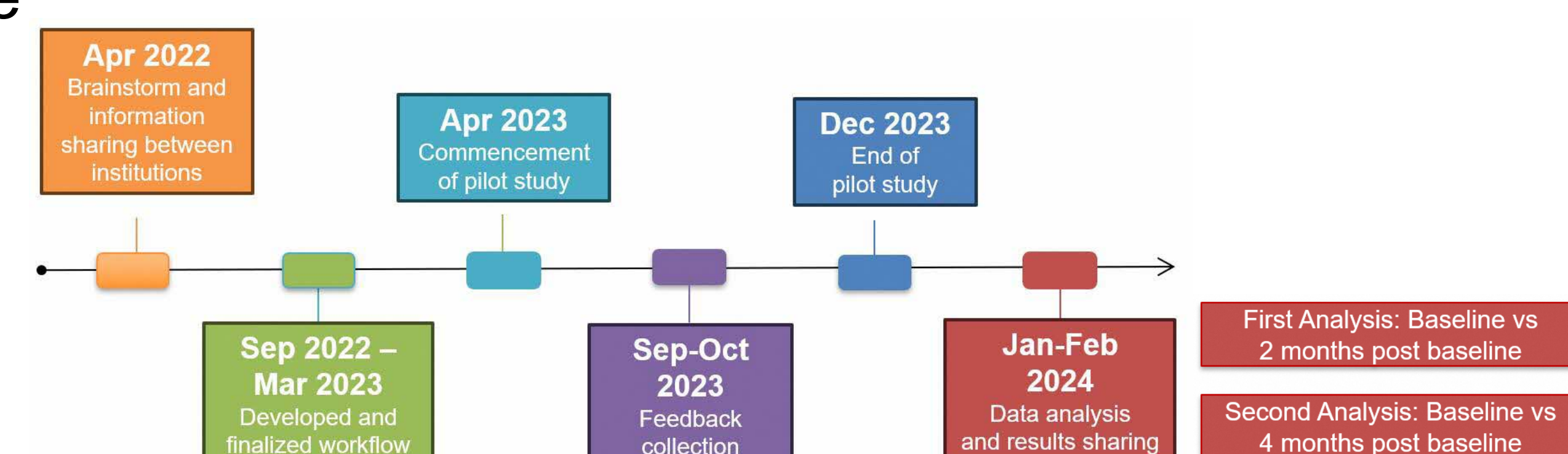
Implementation Plan

1. Workflow for acute hospital dietitians to send memo to community dialysis centre dietitians during inpatient or outpatient settings:



2. Workflow for community dialysis dietitian to follow up:
 - Patients who were diagnosed as at risk of malnutrition or malnourished upon discharged or identified at risk of malnutrition by community dialysis dietitian will receive follow-up session with dietitian at community settings.

3. Project Timeline



Benefits/Results

- A total of 63 memos received from 17 April to 16 November 2023 with 100% follow up rate. This met our initial goal of 75% follow up rate. The study population had a mean age of 68 years (± 13), 57% were male, with dialysis vintage of 5.4 years (± 5.3).
- A total of 29 patients were included in the analysis. Patients demonstrated improvement in all NBTM at 2 months post-baseline compared to baseline levels ($p > 0.05$). At 4 months post-baseline, statistically significant improvements were seen in all NBTM (**Table 1**).
- Among these 29 patients, 9 patients were diagnosed as malnourished or at risk of malnutrition, 14 patients were well nourished, 6 patients had no nutrition status upon discharged.
- Patients who were at risk of malnutrition or malnourished ($n=9$) received community dialysis dietitian follow-up post-discharged showed improvements but statistically insignificant in all NBTM at 2 months and 4 months post-baseline compared to baseline levels (**Table 2**).
- Through receiving memos upon their discharge, community dialysis dietitians have a better understanding of patients' nutritional condition and care plan thus providing timely follow up to patients as needed.
- Through this initiative, we observed a reduced readmission rate within 30 days post-discharge for these 29 patients (31%) as compared to 35% reported in literature.

Table 1: NBTM of discharged patients and its trends ($n=29$)

Indicator	Baseline	Post 2 months	p-value	Post 4 months	p-value
Alb (g/L)	36.7 \pm 4.6	37.4 \pm 5.3	0.20	38.6 \pm 4.3	0.008*
nPCR (g/kg/day)	0.85 \pm 0.25	0.89 \pm 0.24	0.11	0.95 \pm 0.28	0.01*
Pre-urea (mg/dL)	91.8 \pm 32.6	96.1 \pm 31.1	0.27	103.3 \pm 35.1	0.04*

* P-value < 0.05 shows statistical significance.

Table 2: NBTM of patients at risk of malnutrition/malnourished + receiving NKF dietitian intervention ($n=9$)

Indicator	Baseline	Post 2 months	p-value	Post 4 months	p-value
Alb (g/L)	34.4 \pm 6.3	35.6 \pm 7.6	0.51	38.2 \pm 5.8	0.06
nPCR (g/kg/day)	0.77 \pm 0.30	0.80 \pm 0.24	0.63	0.90 \pm 0.28	0.09
Pre-urea (mg/dL)	80.8 \pm 39.7	83.8 \pm 31.0	0.70	97.7 \pm 37.9	0.10

Sustainability & Reflections

- Other actions required to meet objective and ensure sustainability:
 - i. A larger sample size with longer study duration.
 - ii. Comprehensive dietitian follow-up plans.
 - iii. Regular reinforcement to dialysis centres regarding workflow.
- 1 in 3 haemodialysis patients are at risk of malnutrition or malnourished post-hospitalisation.
- This collaboration showed continuity of nutritional care for haemodialysis patients upon discharge with improvement in all NBTM.