## Project Title

Addressing Feeding Related Errors and Dysphagia Management in an Inpatient Hospice

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## Organisation(s) Involved

Assisi Hospice, Singapore University of Technology and Design, National Cancer Centre Singapore

## Healthcare Family Group(s) Involved in this Project

Allied Health

## Applicable Specialty or Discipline

Palliative Care

## Aim(s)

Aim to reduce feeding related errors in our inpatient service to less than 15 in each feeding observation domain (FOD)

## Background

See poster appended/ below

## Methods

See poster appended/ below

## Results

See poster appended/ below

## Lessons Learnt

This project allowed the team to work with different stakeholders to improve on dysphagia management in Assisi Hospice. With the buy in of staff, we were able to successfully implement various measures to reduce feeding related errors and adverse outcomes, hence improving the quality of life of our palliative care patients. Regular meetings with ground staff, ongoing education and working towards a common goal were key factors contributing to the success of this project.

## Conclusion

See poster appended/ below

## Additional Information

Community Care Excellence Awards 2022: Clinical Quality Gold Award

## Project Category

Care & Process Redesign

Quality Improvement, Workflow Redesign, Clinical Practice Improvement, Lean Methodology

## Keywords

Standardization, Dysphagia Management, Ishikawa Diagram

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CommunityCare EXCELLENCE AWARDS 2022

# Addressing Feeding-related Errors and Dysphagia Management in an Inpatient Hospice

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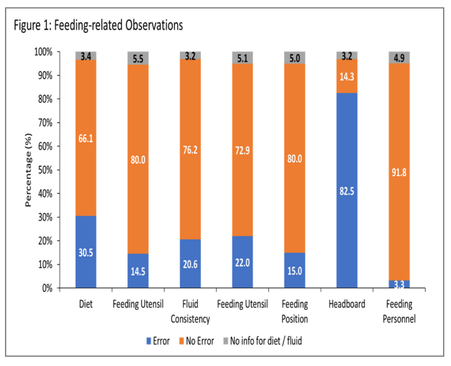
## BACKGROUND AND MISSION STATEMENT

Dysphagia occurs in up to 79% of palliative care patients and adversely affects quality of life and health outcomes[1]. Tan et. al reported a 57% compliance rate with prescribed dysphagia management in their inpatient hospice[2]. Assisi Hospice is an 85-bedded inpatient service, caring for patients with a life-limiting illness and a likely prognosis of 3 months or less. This quality improvement project aims to reduce feeding-related errors in our inpatient service to less than 15% in each feeding observation domain (FOD).

## ANALYSIS OF PROBLEM

A baseline FOD audit of 63 patients was conducted from 13-24 July 2020. Data collected included diet and fluid served, respective utensils used and headboard information. Discrepancies were noted in 52 (82.5%) headboards, 19 (30.5%) diets and 13 (20.6%) fluids served; and 14 (22.0%) patients were served using the wrong utensils for fluids. (Fig. 1)

Figure 1: Feeding-related Observations




Inpatient nurses were invited to participate in an online survey in February 2021 to understand the current practices of feeding and knowledge of the meal ordering system (MOS). Seventy-five out of 102 nurses completed the survey which showed that there was currently no standardisation of meal ordering amongst nurses.

## METHOD

An Ishikawa diagram was used to determine the root causes of feeding-related errors. (Fig. 2) Multi-voting was conducted between team members and the top root causes were identified following a Pareto Chart analysis. (Table 1)

Figure 2: Ishikawa diagram

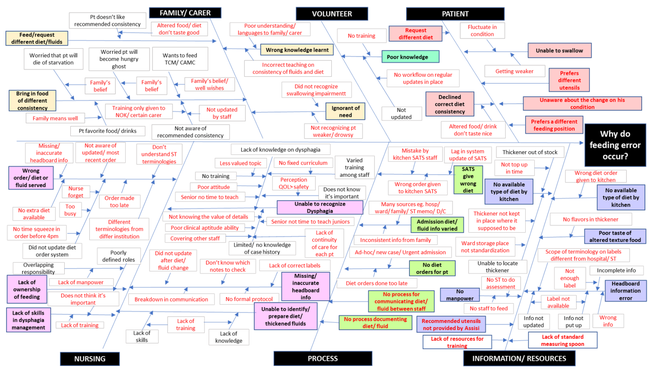



Table 1: Root Cause and Proposed Interventions

| Root Cause | Proposed Interventions |
|---|---|
| 1. Missing/ inaccurate headboard info<br>2. No formal process for updating diet/fluid on headboard on admission<br>3. Headboard not updated after changes made<br>4. Varied information between different sources of information (eg. Discharge summary/ family/ ST memo)<br>5. Nurses unaware of new diet/fluid orders | • Create new headboard labels<br>• Create workflow for updating headboard |
| 6. Use of different terminologies across institutions | Prepare a list of commonly used terminologies. |

## STRATEGY FOR CHANGE & MEASUREMENT FOR IMPROVEMENT

Standardised headboard labels and workflow for updating diet/fluid headboard information were created and commenced in February 2021. A workgroup with ward champions was created on 5 March 2021. Workflows for meal ordering pertaining to planned admissions from hospital, home and urgent admissions were created and implemented on 19 April 2021. (See Table 2)

Table 2: Project timeline

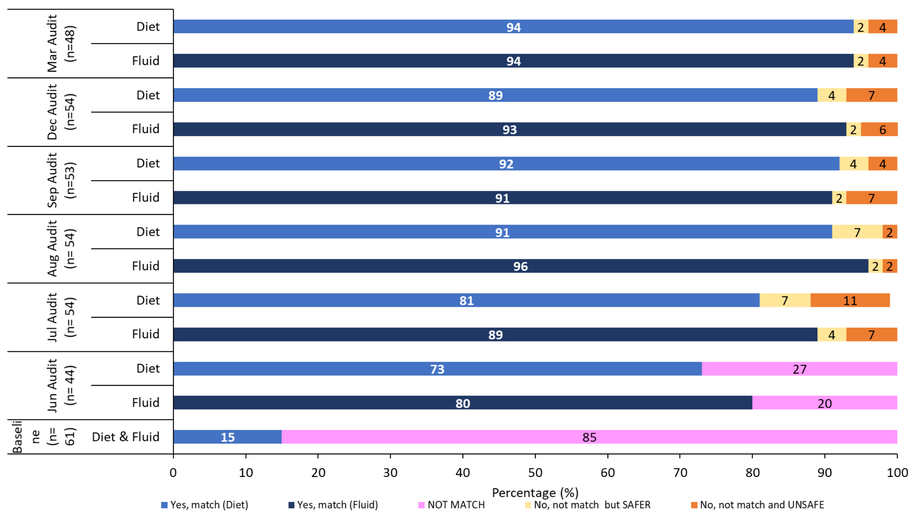
| Year | Date | Event |
|---|---|---|
| 2020 | 13-24 Jul | Baseline Audit completed |
| | Sep – Nov | a. Ishikawa Diagram<br>b. Pareto Chart<br>c. Identify root causes |
| 2021 | 1 Feb | a. Standardisation of headboard labels<br>b. Standardisation of workflow for updating headboard label |
| | 18 Feb - 2 Mar | Nurses completed Meal ordering & Feeding Questionnaire |
| | 5 Mar | Workgroup with ward champions formed |
| | 19 Mar | Audit results presented during nursing meeting |
| | 19 Apr | Workflows for meal ordering System (MOS) implemented for:<br>a. Planned hospital admission<br>b. Planned home care admission<br>c. Urgent admission<br><br>Resource file with the following was prepared for each ward:<br>a. Diet alternatives<br>b. Diet terminologies<br>c. Diet downgrade |
| 2021 | 7 Jun | 2nd audit conducted including - Documentation of diet and fluid on referral, nursing handover and patient transfer forms |
| | 18 Jun | Audit results presented during nursing meeting |
| | 23 Jun | Reinforced to home care team on completing documentation of diet and fluid on patient transfer form |
| | 30 Jun | Liaised with Operation Department:<br>a. Purchasing of teaspoons and smaller bore straws<br>b. To provide extra pureed fruit as necessary |
| | 16 Jul | Updated Psychosocial Team about project & utensil headboard |
| | 19 Jul | 3rd Audit conducted |
| | 19-23 Jul | Rolled out utensil headboards to all wards |
| | 29 Jul | Updated Pastoral Care about project & utensil headboard |
| | 11 Aug | 4th Audit conducted |
| | 23 Aug | In-house training by Speech therapist – attended by interdisciplinary team |
| | 13 Sep | 5th Audit conducted |
| | 4 Oct | Chopped diet commenced on wards |
| | 6 Dec | 6th Audit to be conducted |

Table 3: Monthly audits for concurrence between prescribed diet/fluid and diet/fluid served

| N | Audit - Diet served | Matched | Not matched | Not matched but SAFER | Not matched and UNSAFE |
|---|---|---|---|---|---|
| n= 45 | March 22 | 87 | 14 | 7 | 7 |
| n= 52 | December 21 | 92 | 8 | 4 | 4 |
| n= 49 | September 21 | 82 | 18 | 14 | 4 |
| n= 44 | August 21 | 86 | 13 | 11 | 2 |
| n= 49 | July 21 | 90 | 10 | 6 | 4 |
| n= 37 | June 21 | 84 | 16 | 8 | 8 |
| n= 57 | Baseline | 68 | 32 | NA | NA |
| **n** | **Audit - Utensil used for diet** | **Matched** | **Not matched** | **Not matched but SAFER** | **Not matched and UNSAFE** |
| n= 22 | March 22 | 100 | 0 | 0 | 0 |
| n= 21 | December 21 | 100 | 0 | 0 | 0 |
| n= 21 | September 21 | 100 | 0 | 0 | 0 |
| n= 12 | August 21 | 92 | 8 | 0 | 8 |
| n= 20 | July 21 | 70 | 30 | 5 | 25 |
| n= 20 | June 21 | 80 | 20 | 0 | 20 |
| n= 52 | Baseline | 85 | 15 | NA | NA |
| **n** | **Audit - Fluid served** | **Matched** | **Not matched** | **Not matched but SAFER** | **Not matched and UNSAFE** |
| n= 46 | March 22 | 91 | 9 | 2 | 7 |
| n= 54 | December 21 | 100 | 0 | 0 | 0 |
| n= 47 | September 21 | 91 | 9 | 0 | 9 |
| n= 40 | August 21 | 100 | 0 | 0 | 0 |
| n= 44 | July 21 | 91 | 10 | 5 | 5 |
| n= 37 | June 21 | 89 | 11 | 3 | 8 |
| n= 61 | Baseline | 79 | 21 | NA | NA |
| **n** | **Audit - Utensil used for fluid** | **Matched** | **Not matched** | **Not matched but SAFER** | **Not matched and UNSAFE** |
| n= 23 | March 22 | 87 | 13 | 0 | 13 |
| n= 28 | December 21 | 86 | 14 | 0 | 14 |
| n= 18 | September 21 | 89 | 11 | 0 | 11 |
| n= 24 | August 21 | 79 | 21 | 0 | 21 |
| n= 19 | July 21 | 68 | 32 | 11 | 21 |
| n= 26 | June 21 | 69 | 31 | 0 | 31 |
| n= 56 | Baseline | 77 | 23 | NA | NA |

Monthly audits for concurrence between headboard information, prescribed diet/fluid and diet/fluid served were conducted from June. Documentation of relevant diet and fluid information on referral, nursing handover and patient transfer forms was audited from 7 – 11 June 2021. Results of the monthly data are shown in Table 3 and Figure 3.

Figure 3: Concurrence between headboard and prescribed diet and fluid




## DISCUSSION

Following the implementation of the new headboard labels and workflows for MOS, accuracy of headboard diet and fluid information improved from 15% to more than 70% in the first audit in June, and further improved to 80% or more in the subsequent audits. Documentation of pre-admission diet and fluid improved with increased awareness of dysphagia and MOS workflow, achieving 100% for patient transfer form, 83% for nursing handover form and more than 70% for referral form in the September 2022 audit. As utensil recommendations were often difficult to remember and contributing to feeding errors, a separate utensil headboard was implemented in July 2021. This intervention increased the concurrence between prescribed utensils and utensils used to more than 85% in the March 2022 audit.

Staff may downgrade the diet or fluids while awaiting speech therapy review or during clinical deterioration, resulting in a mismatch between served and prescribed diet and fluid. This is documented as 'Not match but safer'. Clear documentation and proper assessment of those served less safe diet and fluid options are necessary to contextualise these choices and minimise adverse outcomes.

## SUSTAINABILITY

A follow up audit over 9 months showed and sustained reduced feeding related error of less than 15% in inpatient service. (Figure 4 & Figure 5)

Figure 5: Tracking error rate - concurrence between headboard and prescribed diet

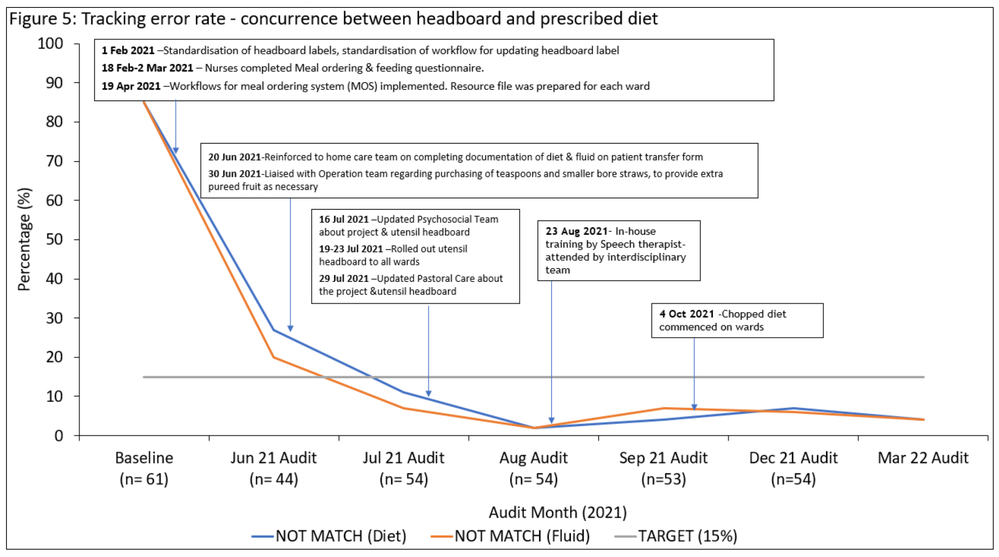
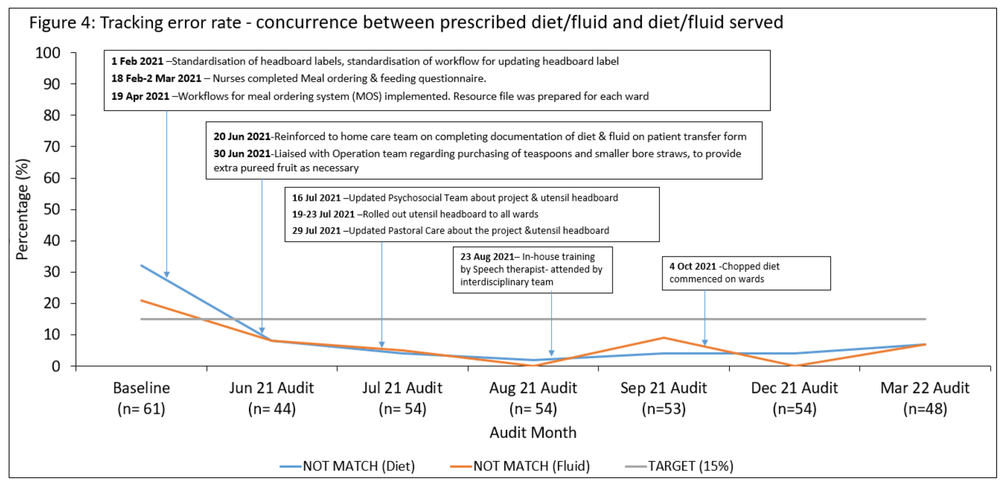



Figure 4: Tracking error rate - concurrence between prescribed diet/fluid and diet/fluid served




## CONCLUSION

In conclusion, many stakeholders are involved in preventing feeding-related errors. Ongoing dysphagia education and reinforcement of workflows are important aspects to improve patient care and safety. Standardisation of processes has since been adopted as part of standard hospice workflow via 3 monthly audit and incident reporting.

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*Project Poster for Community Care Excellence Awards, Quality Productivity Forum 2022*
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