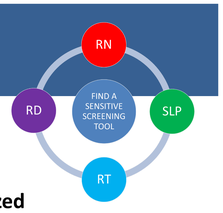
"To Eat or Not To Eat" Exploring a nursing bedside screening tool for patients post-extubation Quality Improvement Project (Ongoing)

Bambi Patterson, MCD CCC/SLP; Kenton Woo, MS CCC/SLP; Debora Stone, RN; Manning Kulis, RD; Dawn Krystiniak, LRT, RRT

BACKGROUND

- Evidence (Skoretz et.al.) reveals that patients receiving prolonged endotracheal intubation **(>48 hours)** are at higher risk for exhibiting Post Extubation Dysphagia (PED).
- Identification of patients demonstrating a greater risk, requires evaluations by Speech Language Pathology (SLPs) for assessment of dysphagia.
- Reportedly, several mechanisms of potential development of PED in critically ill patients (trauma, Neuromuscular weakness, altered sensation, impaired cognition, gastroesophageal reflux and dyssynchronous breathing and swallowing). (Brodsky el. al.)
- Limited hours of availability of SLP providers, resulted in delays in early risk identification and initiation of oral diets.
- Nursing staff inquiring about sensitivity of current process and need for swallow screening tool.

PURPOSE



Our goals:

- **Identify a nurse-driven protocol that could easily be utilized by the bedside nurse**.
- **Decrease delays in initiation of oral diets as appropriate**
- **Timely identification of signs and symptoms of dysphagia post-extubation (with appropriate referral to Speech Pathology as indicated)**

METHODS

Utilizing the PDSA model, our initial investigation compared our current practice with recently published protocols for screening of patients at risk of development of post-extubation dysphagia (PED). We gathered an interdisciplinary team to discuss needs and potential for implementation of an effective screening tool.

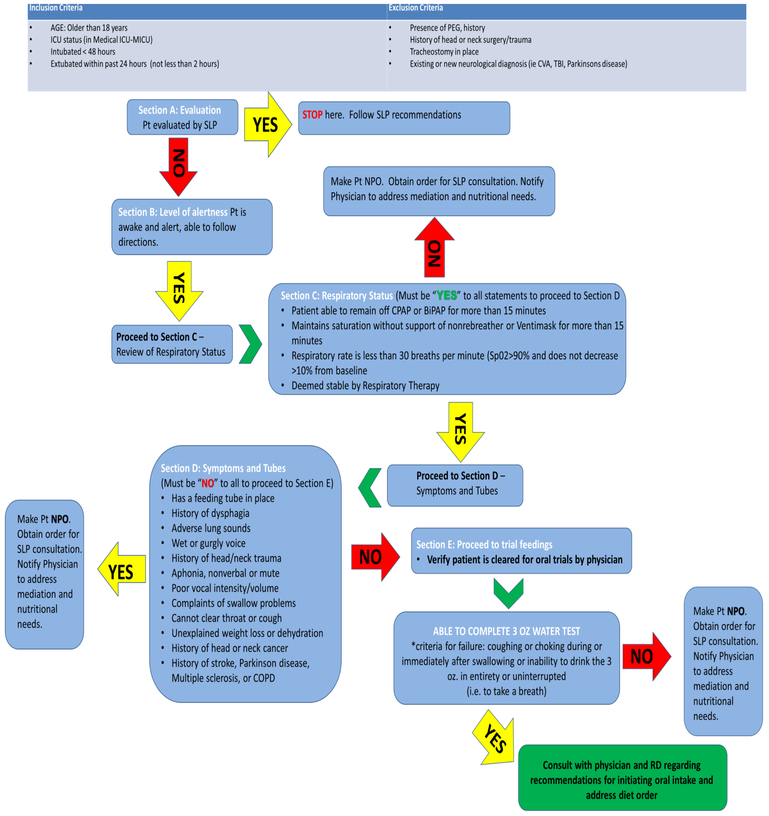
The choice was made to narrow our test field to the Medical ICU (MICU). A retrospective review of data was used to support our hypothesis of need. The primary points of review included:

- If and when oral intake was initiated post extubation
- The need for diet texture modifications with presence of suspected dysphagia
- If the patient was evaluated by the Speech Language Pathologist (SLP).

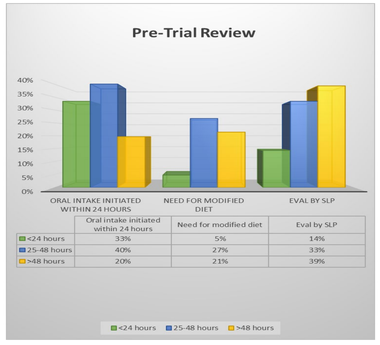
Collaboratively, we identified the need for adoption of a validated screening tool that could be administered by the bedside nurse, facilitating a more timely response with increased sensitivity for the post-extubation population. (Johnson et. al.)

We identified necessary modifications to our current screening process to include key parameters addressing respiratory function, vocal quality, and contraindications prior to initiation of oral intake trials.

The QI project was introduced to the Research council with approval to initiate trial use once RN staff were educated on the tool. The proposed population reviewed included those who met the criteria: Adult, MICU, intubated <48 hours.



Based upon validated screening tool used by permission of authors, Johnson et.al.



	Oral intake initiated within 24 hours	Need for modified diet	Eval by SLP
<24 hours	33%	5%	14%
25-48 hours	40%	27%	33%
>48 hours	20%	21%	39%

Review of pre-pilot data

- **107 patients reviewed**
- **(MICU, Adult, S/P intubation)**
- **March 2023-May 2023**

Divided patient profiles into 3 categories for identified risk of development of post extubation dysphagia (PED)

- **<24 hours**
- **25-48 hours**
- **>48 hours**

Review of current research identifies **Key Questions** regarding screening of Post Extubation Dysphagia (Marvin, S. 2022)

- **"WHO"** – all patients intubated greater than 24 hours?
- **"WHEN"** – a minimum of 2 hours post extubation?
- **"HOW"** – 3 ounce water test vs Clinical bedside swallow evaluation?

We would add

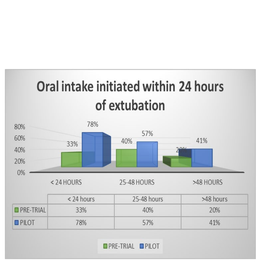
- **"BY WHOM"** – Nursing screening protocol vs Speech Language Pathology (SLP)

RESULTS

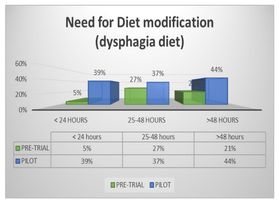
Following the completion of education regarding the screening tool with nursing staff, pilot use of the tool was implemented in the MICU with patients meeting inclusion criteria (Johnson et. al.)

Data obtained (June 2023-August 2023) upon review of **87** patients extubated in the MICU revealed these key findings:

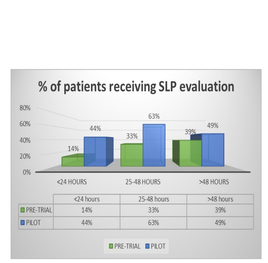
- Increase in number of patients initiating oral intake within 24 hours of extubation
- Increased number of patients receiving SLP evaluations
- Increased identification of need for modified diets (emphasizes sensitivity of tool to guide further recommendations)
- Working correlation of "need for diet modification" in identification of signs of dysphagia



	< 24 hours	25-48 hours	>48 hours
PRE-TRIAL	33%	40%	20%
PILOT	78%	57%	41%



	< 24 hours	25-48 hours	>48 hours
PRE-TRIAL	5%	27%	21%
PILOT	39%	37%	44%



	<24 hours	25-48 hours	>48 hours
PRE-TRIAL	14%	33%	39%
PILOT	44%	63%	49%

CONCLUSIONS

As a result of the preliminary findings, the following areas were identified as opportunities for further consideration:

1. Need survey of nursing confidence in identification of pts at risk and need for SLP referral
2. Provide ongoing education regarding the delivery of the 3 oz. water test
3. Expansion of current implementation to include additional ICU areas (SICU, NSCU, TICU and Cardiac Care)
4. Need for continued education to physician partners in implementation of algorithm for ordering screening vs evaluation

REFERENCES

Dobak S, Kelly D. Tough Pill to Swallow: Postextubation Dysphagia and Nutrition Impact in the Intensive Care Unit. Nutr Clin Pract. 2021 Feb;36(1):80-87. doi: 10.1002/ncp.10602. Epub 2020 Nov 26. PMID: 33242222

Marvin, S. (2022). Evaluation and treatment of post-extubation dysphagia: the importance of the speech pathologist in the intensive care unit. Perspectives of the ASHA Special Interest Groups, 7(1), 174-180. https://doi.org/10.1044/2021_persp-21-00041

Skoretz SA, Flowers HL, Martino R: The incidence of dysphagia following endotracheal intubation: a systematic review. *Chest* 2010;137:665–73

Brodsky MB, Pandian V, Needham DM. Post-extubation dysphagia: a problem needing multidisciplinary efforts. Intensive Care Med. 2020 Jan;46(1):93-96. doi: 10.1007/s00134-019-05865 Epub 2019 Nov 25. PMID: 31768568; PMCID: PMC7219527

Johnson KL, Speirs L, Mitchell A, et al. Validation of a postextubation dysphagia screening tool for patients after prolonged mechanical ventilation. Figure. *American Journal of Critical Care*. 2018;27(2):89-96. ©2018 by the American Association of Critical-Care Nurses. All rights reserved. Used with permission.

PATHWAY DESIGNATED