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# A cost-benefit analysis of choosing non-instrumental bedside screening in patients with low risk factors for PED not meeting the CMS criteria of PMV (prolonged mechanical ventilation)



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## Introduction

Swallow studies are performed on all patients postextubation to screen for postextubation dysphagia (PED) [1]. Studies have shown that risk factors associated with the development of PED include: Stroke, neuromuscular disease, low GCS, advanced age, prolonged mechanical ventilation, preexisting CHF, forced supine position, presence of tracheostomy, NG tube placement, history of head and neck cancer, and recent TEE [2]. As a result, clinicians are more inclined to request more expensive instrumental assessments before allowing patients to eat if they required mechanical intubation longer than one week regardless if they have any risk factors or not. This often leads to delays in patients receiving adequate nutrition and added costs for most parties involved. Most of the literature search reveals that very little is known about the benefits of doing more advanced evaluations in low risk patients.

## Background

Assessment of patients suspected of having swallowing disorders is accomplished by both clinical bedside swallowing assessments by speech-language pathologist (SLP), modified barium swallow test (MBS), videofluoroscopy (VFS), and fiberoptic endoscopic evaluation of swallowing (FEES) [3]. Clinical and bedside evaluations typically precede the physiologic examinations and in various hospitals it is protocol to wait 24 hours before swallow study assessment. This will be a cost-benefit analysis of instrumental examinations in low risk patients not meeting the CMS criteria for PMV. CMS defines PMV as greater than 21 days of mechanical ventilation for  $\geq 6$  hours per day [4].

## Methods

This will be a secondary analysis of existing data (de-identified). The HCA corporate database will be queried.

### Inclusion criteria:

- Age 20-55
- Sex: M & F
- Endotracheal tube
- Laryngeal mask

### Exclusion criteria:

- Hx of Stroke
- Neuromuscular disease
- Low GCS
- Advanced age
- Prolonged mechanical ventilation (PMV is defined by CMS as greater than 21 days)
- Preexisting CHF
- Forced supine position
- Presence of tracheostomy
- NG tube placement
- hx of head and neck cancer
- Recent TEE

Variables on which data will be collected:

Demographics (Age, Gender, Race, tobacco use), discharge diagnosis, procedures, treatments, labs, vitals, encounters, Glasgow coma scale, duration of intubation, lag time between extubation and swallow study, type of swallow assessment performed, and swallow assessment results.

## Next Steps

1. In addition to seeking expert advice from a statistician, we plan to run a logistic regression analysis to determine if there is a correlation between duration of intubation and first-time swallow study pass rate.
2. With the variables collected we will also be able to determine if there are any that may be contributing to failures of swallow evaluation.
3. From this information we will be able to assess the benefits of more advanced swallow evaluations in our low risk patient population.

## Project Goals

The goal of our research is to determine if there is a benefit to using non-instrumental screenings for PED in low risk patients. This will be identified through first-time swallow study pass rate in the included populations. Having the ability to choose non-instrumental screenings in low-risk patients could decrease the lag time in receiving adequate nutrition, while lowering patient and hospital resource costs.

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