A CNS-Led Initiative to Prevent Aspiration Pneumonia

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Our Mission: To contribute to the health and well-being of area residents by providing quality healthcare in a caring, cost efficient and convenient manner through a coordinated program of prevention, diagnosis, treatment, rehabilitation and support.

1902 and 1907

- 299 Beds
- Private, Not-for-profit
- Stand-alone Hospital System

Today

115 Years of Service to the Community
Learning Objectives

• Summarize the effect dysphagia has on patient morbidity, mortality and patient safety.
• Identify the various populations at risk of aspiration pneumonia and discuss its impact clinical outcomes and operational effectiveness.
• List at least three strategies to reduce the incidence of dysphagia and aspiration pneumonia.
Dysphagia or Aspiration?

- Taber’s Medical Dictionary:
  - **Dysphagia**: Inability to swallow or difficulty in swallowing.
  - **Aspiration**: The inhalation of fluid or solid objects into the lower airways or lungs. This may occur in people with impaired gag reflexes or other swallowing disorders and also in neonates with meconium present in the amniotic fluid.
Dysphagia/ Aspiration

Advanced Studies in Medicine – 2004:
- Prevalence is > 20% in people over age 50.
- Nursing Home residents with > 60% patients with eating difficulty.

Medical/ Patient Implications
- Avoidance of eating
- Dehydration
- Respiratory infections
- Aspiration Pneumonia
- Death
- Increased cost of care
- Other Co-morbidities

Hospital Implications
- Increased mortality
- Increased hospital acquired conditions
- Increased length of stay
- Increased cost of care
Problem and Significance

• Aspiration pneumonia
• Associated with high morbidity and mortality
• Contributes to increased healthcare costs
• A preventable hospital-acquired infection
• Early identification of patients at risk
• Key to prevention
Problem and Significance

- Decreasing hospital-acquired aspiration pneumonia is a priority for the hospital
  - 20-65% mortality rate
  - Cost > $10,000 per case
  - Records reviewed from 07/2014 - 05/2015 = 29 cases

- **Our task:** Nursing leadership requested CNS team to address the issue of hospital-acquired aspiration pneumonia.
PICO/Practice Question

(P) Inpatients

(I) Aspiration risk assessment tool and aspiration precautions protocol

(C) Standard care which has no assessment/prevention protocol

(O) Reduced rate of aspiration pneumonia

Does implementation of a nurse-driven aspiration risk assessment tool and aspiration precautions protocol reduce the rate of hospital-acquired aspiration pneumonia in inpatients?
Synthesis of the Literature/Evidence

- Risk factors for aspiration pneumonia include increased age, stroke, altered mental status, poor oral hygiene, and gastroesophageal reflux (Shigemitsu and Afshar, 2007).

- Aspiration in the elderly is reported to be the primary mechanism for the development of pneumonia (Komiya, Ishii, and Kadota, 2014).

- Dysphagia in the elderly is often not recognized and poorly diagnosed and managed (Marik and
Synthesis of the Literature/Evidence

- Hinchey, et. al., (2005) reported that pneumonia rates at sites with a formal dysphagia screen was 2.4% versus 5.4% (P=0.0016) at sites with no formal screening process.

- Echevarria and Schwoebel (2012) developed an aspiration risk assessment tool and aspiration precautions protocol to identify aspiration risk factors and implement appropriate preventative interventions.
Project – The CNS Team

- CNS team reviewed aspiration pneumonia cases from the previous 10 months to ascertain trends/common causes.

- Adapted the aspiration risk assessment tool developed by Echevarria and Schwoebel (2012) to include common causes identified in record review.
Additional Common Causes

- 29 records reviewed
  - 18 (62%) were altered mental status
  - 7 (24%) were GI related
    - Pancreatitis
    - Cholecystitis
    - PUD and/or reflux
  - 6 (21%) had a fall prior to admission
  - 4 (14%) were alcohol related
Project – The CNS Team

• Formed a multidisciplinary team to implement adapted tool
  • Nursing
  • IT
  • Speech Therapy
  • Clinical Education Center
Implementation Process

- A one month pilot (with paper) was implemented
  - Nurses, CNAs, and dietary techs were educated on the process
- 18-bed Telemetry unit
- A total of 118 patients were screened
  - 26 were placed on aspiration precautions
  - 4 were referred to and seen by speech therapy
Implementation Process

• The team decided to implement second pilot on a 32-bed Medical-Surgical unit
• Goal: to incorporate a wider range of diagnoses
• A total of 37 patients were screened over 2 weeks
• Aspiration precautions were implemented on 11 patients
• 4 patients referred to and seen by speech therapy
Implementation Process

• Multidisciplinary team
• Ensured online documentation worked
  • Risk assessment tool
  • Aspiration precautions protocol
• Speech Therapy
• Hired additional staff to accommodate the expected increase in speech therapy consults
Implementation Process

- Nurses, CNAs, and dietary techs were educated
- Computer-based learning module
- Verbal reinforcement at huddles
Part 1

Risk Assessment: Check all that apply

**NEUROLOGIC:**
- Decreased level of consciousness
- Altered mental status, confusion, dementia
- Diagnosis of history of stroke with residual
- Neurodegenerative disease (ALS, Parkinson’s)
- ETOH/ substance abuse
- Fall immediately prior to admission
- Syncopal episode or loss of consciousness immediately prior to admission

**GASTROINTESTINAL**
- Unable to perform oral hygiene
- Poor dentition
- Full assist with meals (requires help eating)
- Presence of a nasal, gastric, or feeding tube
- Current pancreatitis, cholecystitis, PUD, and/or reflux

**RESPIRATORY**
- Tracheostomy

NONE OF THE ABOVE APPLY Initials: ___________

If ONE or more indicators are checked:
- Initiate Aspiration Precaution Protocol
- Complete Functional Assessment
Part 2:
Functional Assessment

**Functional Assessment: Check all that apply**

- Difficulty maintaining sustained level of alertness
- Shortness of breath or oxygen desaturation during or after oral intake
- Difficulty chewing or sealing lips around cup, straw, or utensil
- Gagging or coughing during oral intake
- Voice changes/wet sounding voice during oral intake

- **NONE OF THE ABOVE APPLY** Initials: _______

If ONE or more indicators are checked:
- Maintain Aspiration Precautions protocol
- Remove all foods and liquids
- Initiate NPO status
- Consult Speech
Aspiration Precautions sign placed at head of bed

Aspiration Precaution Protocol

Place “Aspiration Precautions” sign above the patient’s bed.

Maintain HOB at 45 degrees or higher at all times, unless otherwise contraindicated. (If patient’s head of bed is flat, maintain tube feedings off).

Maintain HOB at 90 degrees when eating or drinking. *If eating, patient should be observed closely during meals.*

Maintain operating suction readily available.

Provide oral care each shift.

If NPO, place NPO sign over bed/outside of room.

Aspiration Precautions should be communicated during hand-off communication.

Provide patient and/or family with education regarding aspiration precautions and educational hand-outs from *Micromedex*.

If patient is suspected to have aspirated, notify physician immediately and initiate speech therapy consult.
Issues Addressed

• Determined through record reviews that some staff were not completing Part 2, Functional Assessment, as designed.

• No option for patients immediately post-op that could not be assessed upon arrival to unit due to lingering sedation
Issues Addressed

- ICU had no option for mechanically ventilated patients
- Staff checked “None of the above” for this assessment
- Team added “Unable to assess” (ex. NPO, Intubated, Anesthesia)
- Checking “Unable to assess” triggers automatic reassessment the following morning at 1100
## Risk Assessment Tool

### Part 1: Risk Assessment

#### Part 1: Check all that currently apply

- [ ] Decreased Level of Consciousness
- [ ] Altered Mental Status, Confusion, Dementia
- [ ] History of Stroke with Residual
- [ ] Neurodegenerative Disease (ex: ALS, Parkinson’s)
- [ ] ETOH/Substance Abuse (Current Admit)
- [ ] Fall Immediately Prior to Admit
- [ ] Syncopeal Episode/Loss of Consciousness Immediately Prior to Admit
- [ ] Unable to Perform Oral Hygiene
- [ ] Poor Dentition
- [ ] Full Assist with Meals (Requires Help Eating)
- [ ] Presence of Gastric or Feeding Tube
- [ ] Current Pancreatitis, Cholecystitis, PUD, and/or Reflux
- [ ] Tracheostomy
- [ ] None

### Part 2: Aspiration Risk Functional Assessment

Sit patient upright at 90 degrees. Have patient seal lips around cup or straw and drink 3 oz of water. Monitor for shortness of breath, desaturation, gagging, coughing, or voice changes during or after oral intake.

#### Part 2: Check all that currently apply

- [ ] Difficulty Maintaining Sustained Level of Alertness
- [ ] Shortness of Breath or Oxygen Desaturation During or After Oral Intake
- [ ] Difficulty Chewing or Sealing Lips Around Cup, Straw or Utensil
- [ ] Gagging or Coughing During Oral Intake
- [ ] Voice Changes/Wet Sounding Voice During Oral Intake
- [ ] Unable to Assess (ex. NPO, Intubated, Anesthesia)
- [ ] None
## RN Dashboard

<table>
<thead>
<tr>
<th>Feeding</th>
<th>Diet</th>
<th>Asp Prec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Soft...</td>
<td>Mechanical soft [diet]</td>
<td>Asp Prec</td>
</tr>
<tr>
<td>Supervision wit...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crushed, In Pur...</td>
<td></td>
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Issues Addressed

• Nursing staff were not hanging Aspiration Precautions sign at HOB
  • Nurse informed during random rounding that sign was not in place
  • Continues to be a problem
    • Working with IT to add a “pop-up” when protocol initiated ask nurse: “Did you place sign at HOB”
Issues Addressed

• Speech Therapy not placing sign at HOB with recommendations from evaluation
  • Worked with manager to address issue which resulted in significant improvement
Findings/Outcomes

- All inpatients are assessed using the Aspiration Risk Assessment Tool and Aspiration Precautions Protocol
- Those patients identified as having a “high” risk for aspiration are correctly referred to speech therapy 100% of the time
Findings/Outcomes

• Speech therapy consult is completed < 24 hours 90%

• Random observation of Aspiration Precautions signs posted remains < 50%

• Random observation of Speech Therapy recommendations posted at head of bed greatly improved after intervention
### + Modified Barium Swallow Study

* Recommendations include:
  - Liquids consistency
  - Solids consistency
  - Suggested method of pill administration
  - Swallow instructions
  - Aspiration precautions
  - Supervision/assistance with meals
  - Use of straws
  - Elevation of HOB

<table>
<thead>
<tr>
<th>Total number of aspiration screens</th>
<th>3,079</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Functional Assessment (from + aspiration screen)</td>
<td>583</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluated by Speech Therapy</th>
<th>&lt;24 hours after screen</th>
<th>NPO/MBSS</th>
<th>Other Recommendations</th>
<th>Cleared</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>525</td>
<td>181</td>
<td>218</td>
<td>98</td>
</tr>
<tr>
<td></td>
<td>90% (87.1%)</td>
<td>31% (29%)</td>
<td>37.4% (40.8%)</td>
<td>16.8% (16.3%)</td>
</tr>
<tr>
<td>Not seen in 24 hours without note</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not seen at all (+ functional assessment)</td>
<td>7</td>
<td></td>
<td></td>
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</tbody>
</table>
Outcome

Total Aspiration Pneumonia Cases

- 2014: 58 cases
- 2015: 40 cases
- 2016: 31 cases
- 2017: 6 cases
Recommendations for Future

• Why do a few patients continue to be seen in > 24 hours?

• Continue to collect data on hospital-acquired aspiration pneumonia rates.

• Continue to educate nursing staff on the importance of posting the Aspiration Precautions sign so all staff who enter room are aware.

• Continue random observational audits of signage and “just-in-time” teaching for nursing staff.
Recommendations for Future

Bottom line:

Monitor for decreased rates of aspiration pneumonia
References


