

Lori D. Johnson, MSN, RN, CNRN
Clinical Educator

Paula Maddox, MSN, RN, CCRN
Clinical Educator

Theresa Rockhold, RN
Nurse Manager

ABSTRACT

In 2009, Trinity Medical Center of the Quad Cities, a 526-licensed bed, community hospital with campuses in both Illinois and Iowa, experienced a hospital-acquired pneumonia (HAP) rate of 0.54/1000 patient days. The majority of pneumonia cases were related to aspiration. HAP related to aspiration is a pneumonia that occurs 48 hours or longer after hospital admission and is caused by substances such as colonized oral secretions, food, and liquid inhaled through the oropharyngeal airway into the lungs resulting in inflammation. The impact of aspiration pneumonia affects both the patient and Trinity Medical Center.

In the fall of 2009, a new approach to decreasing the rate of aspiration pneumonia was taken. A multidisciplinary group comprised of nursing, speech pathology, respiratory therapy and infection prevention developed an Aspiration Precaution Bundle (APB). The bundle contains ten interventions that require nursing, respiratory therapy and speech therapy participation such as oral care every four hours, Acapella or PEP therapy and bedside swallow screening. In addition, a laminated sign was created to place in the patient room to remind the patient, family, and health care staff that the patient is at high risk for aspiration. The medical-surgical nurse is instrumental in assuring the APB is completed for all patients at risk for aspiration pneumonia.

The APB was implemented with education for six months on a 21-bed medical-surgical unit. All patients diagnosed with a neurological disorder, respiratory failure, altered mental status, and dysphagia were included in the trial. HAP decreased from a rate of 0.69/1000 patient days (nine months) on the test unit to zero where it remains to date. This reduction led to cost avoidance for the medical center of approximately \$135,000.

Based on the trial, the aspiration precaution bundle was implemented throughout the entire medical center on May 1, 2010.

ASPIRATION PRECAUTION

- Ensure Bedside Swallow Screen completed
If failed, physician order for speech consult/NPO status
- HOB elevated 30 degrees or greater
- Oral care every 4 hours
Brush teeth every 12 hour
- NO STRAWS
- Ambulate/up in chair TID and prn
- Sit upright 90 degrees for meals/snacks, if able
- Observe patient during meals (check temperature 60 minutes after meal for fever spike)
- Incentive Spirometry (IS), Acapella (preferred) or PEP Therapy
- Suction set-up in patient room
- Order Aspiration Precaution on SBAR

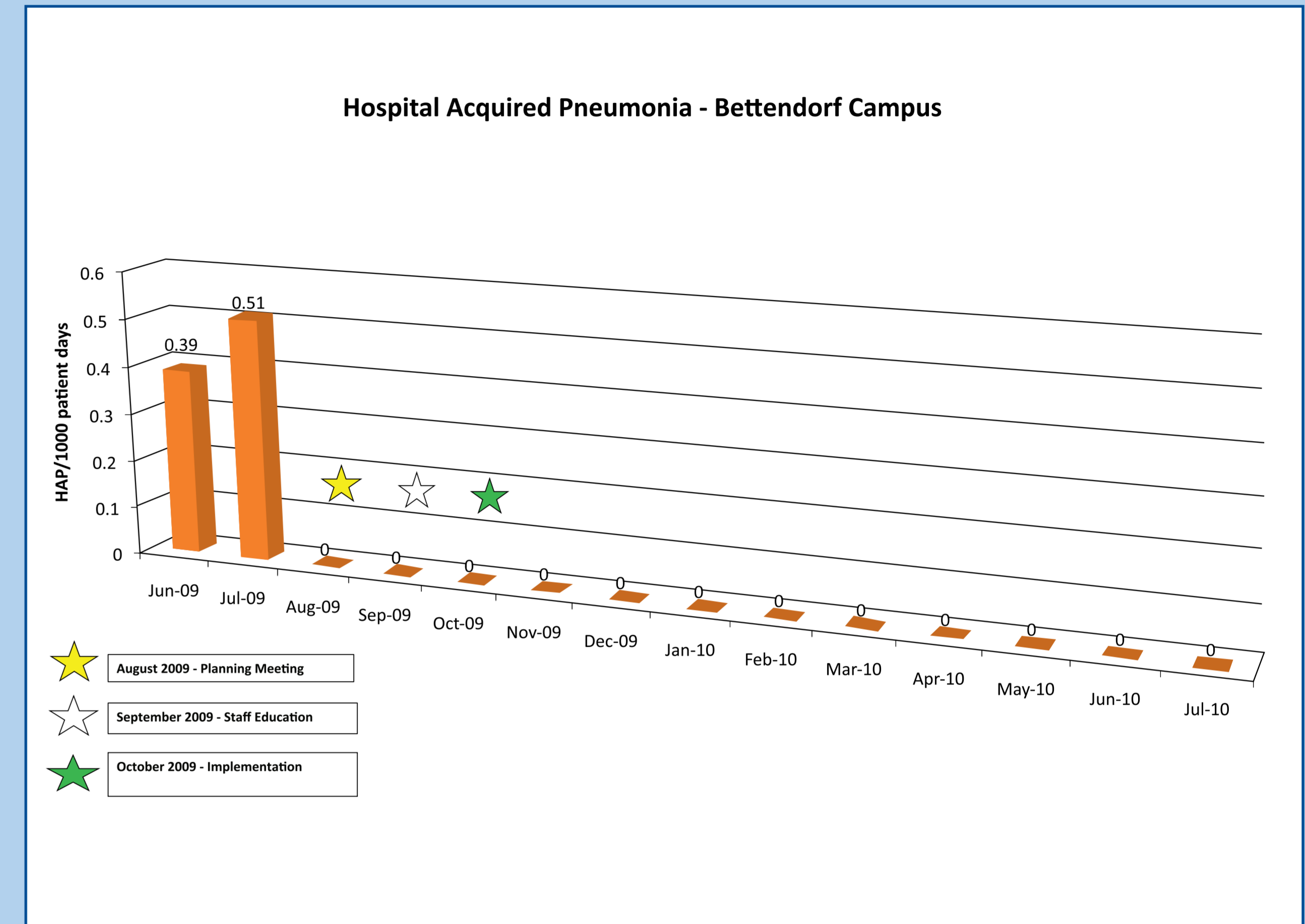
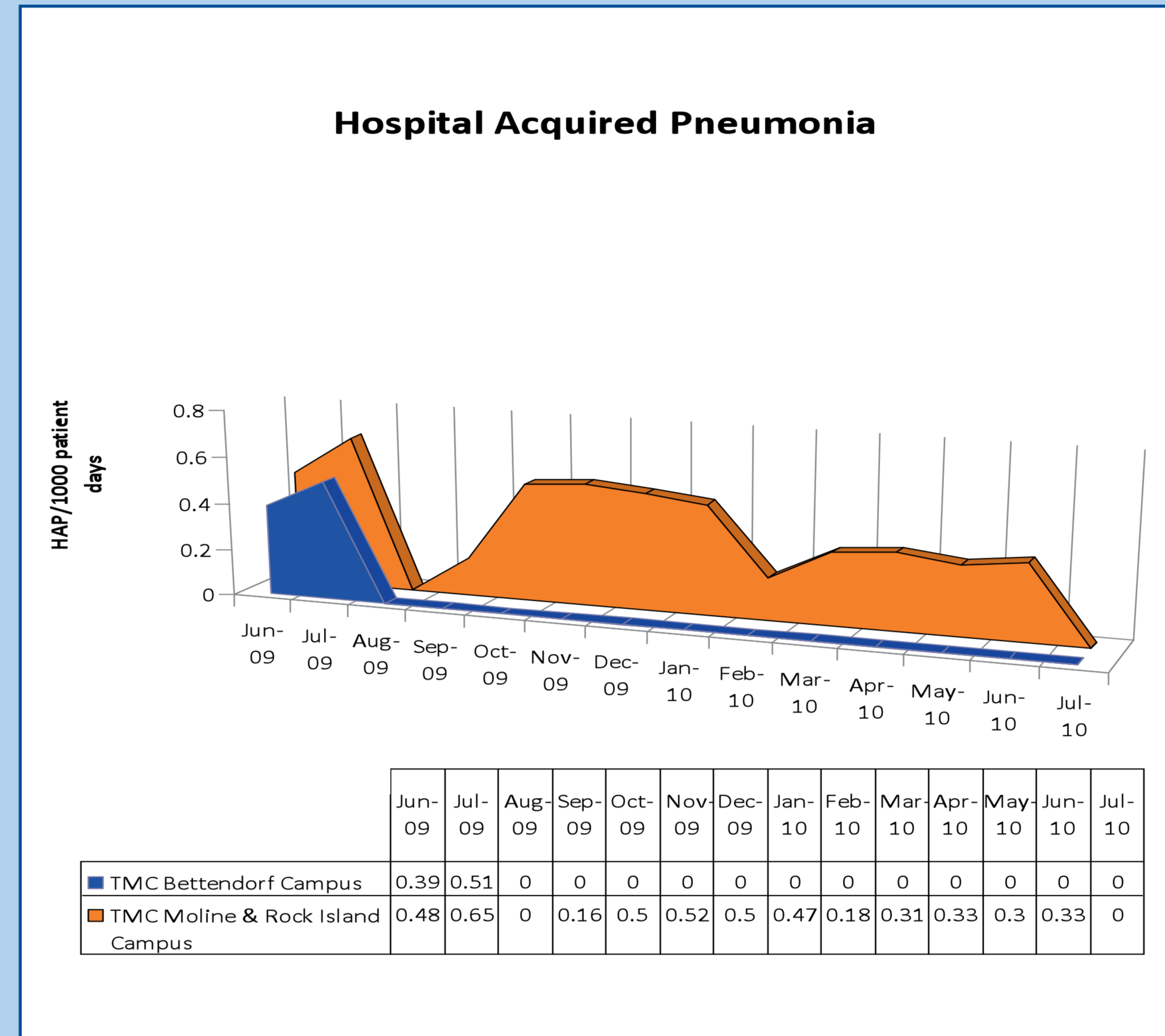
Bedside Swallow Screen

- Patient is NPO including medications until swallow screen completed
- STOP swallow screen at any FAIL. Keep patient NPO and notify physician for Speech consult and NPO order. Place on Aspiration Precautions.
- Completed by RN/LPN
- Prior to swallow screen:
- Patient HOB at 90 degree upright position (if possible)
- Oral suction available

	PASS	FAIL
Complete in order		
1. Alert and follows simple commands	<input type="checkbox"/>	<input type="checkbox"/> STOP
2. No reported or assessed aspiration pneumonia (per CXR or history) or significant weight loss	<input type="checkbox"/>	<input type="checkbox"/> STOP
3. Clear strong voice and vocalizes on command	<input type="checkbox"/>	<input type="checkbox"/> STOP
4. No presentation of slurred or garbled speech	<input type="checkbox"/>	<input type="checkbox"/> STOP
5. The patient produces strong cough on command	<input type="checkbox"/>	<input type="checkbox"/> STOP
6. The patient can manage secretions (no drooling)	<input type="checkbox"/>	<input type="checkbox"/> STOP
7. No delay in swallowing (10 seconds or greater), no cough or voice quality changes, during or after the patient swallows: a) sip of water from a cup without a straw (one small sip then a larger sip) and b) Three continuous water swallows from a cup without a straw. Patient must meet all criteria of this section to pass.	<input type="checkbox"/>	<input type="checkbox"/> STOP
8. The patient chews a cracker (one small then one larger piece): a) after food bolus is formed, there is no noted delay in swallowing (greater than 10 seconds), no cough or voice quality changes. and b) no difficulty in chewing or manipulation of food (no food remained between the teeth and cheek after eating, under tongue, or on the roof of the mouth, patient chewed food completely without effort, patient could move food to molars, no loss of food out of mouth, no delay in generating a swallow). Patient must meet all criteria of this section to pass.	<input type="checkbox"/>	<input type="checkbox"/> STOP
9. No complaints about drinking at the end of swallow screen	<input type="checkbox"/>	<input type="checkbox"/> STOP

IF PASS: contact physician for a diet order (preferably soft diet with thin liquids) and PO medications.
IF FAIL: contact physician for NPO order including medications and for a Speech consult. Place on Aspiration Precautions.

Nurse Signature _____ Date _____ Time _____
#7141-NC-1107, Rev. 4/10



CONCLUSION

Hospital Acquired Pneumonia (HAP) may be prevented by health care staff using a bundle of best practice interventions. The Aspiration Precaution Bundle (APB) was developed as a tool for staff to use to reduce or prevent the occurrence of hospital-acquired pneumonia. Prior to the implementation of this bundle, significant staff education was performed. The goal of the education was for staff to recognize patients at risk for aspiration and support best practice interventions for aspiration prevention. The medical unit at the Bettendorf Iowa campus was the trial unit for approximately nine months. With noted success on the trial unit with zero HAP's reported, health care staff at all campuses were educated and the aspiration bundle was implemented.

Since the implementation of the APB, hospital-acquired pneumonia occurrences have decreased significantly with the Bettendorf campus reporting zero HAP's for the last twelve months. The other two campuses combined have reported only one occurrence after implementation of the APB.

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Aspiration Precaution Bundle Implementation Timeline

