# A QI Project To Improve Patient Outcomes:



# PREVENTING TRACHEOTOMY RELATED SKIN BREAKDOWN

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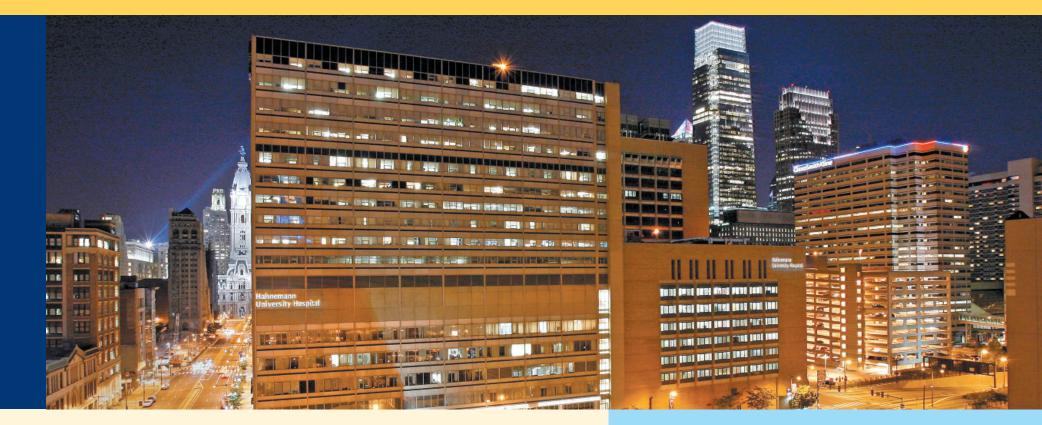
### BACKGROUND

Within a one year period there was an increased incidence of tracheotomy related skin breakdown while using only thin hydrocolloid under tracheotomies in an ICU step down unit. The ENT service stated a preference for use of thin hydrocolloid only to decrease

manipulation of the tracheotomy. A literature search revealed little existing research comparing the effectiveness of gauze versus thin hydrocolloid. The goal of this project was to prevent tracheotomy skin breakdown by improving current practice.

## **PURPOSE**

Under current practice, thin hydrocolloid is placed under a tracheotomy. The hypothesis was that split gauze worked better at preventing breakdown than the thin hydrocolloid. The goal was to collect data to measure the incidence of breakdown depending on which type of intervention was utilized.



#### DATA

#### **Patients With Thin Hydrocolloid Dressing**

	Date trach was placed	Break- down Date	Prealbumin (18-38)					
Admit Date			Close to admission		Close to breakdown		Nutrition	
			Date	Level	Date	Level		
8/12/11	8/22	09/12	8/22	3.9	9/12	13.6	PM Tube Feed; AM Pureed Diet	
8/17/11	9/7		8/25	15.7			Mech Chop	
7/24/11	POA		8/24	12.3			Continuous Tube Feed	
11/14/11	POA		11/15	17.6				
11/17/11	11/25	12/15	11/22	5.9	12/9	16.1	Continuous Tube Feed	
9/4/11	9/16	10/9	9/6	25.7	9/13	15.8	Continuous Tube Feed	
5/31/11	6/23		6/14	9.2			Continuous Tube Feed	
6/29/11	7/14		7/14	14			Continuous Tube Feed	
9/21/10	10/20		9/28	33			Continuous Tube Feed	
8/3/10	9/2	10/11	9/4	9.9	10/9	10.5	Continuous Tube Feed	
12/30/10	POA		1/13	14.3				
12/22/10	12/29		12/29	35.1				
1/11/11	1/13	2/7	1/12	18	2/19	9.4	Bolus feeds	
1/30/11	2/7		2/1	14.2			Continuous Tube Feed	
3/5/11	POA		3/8	14			Continuous Tube Feed	
1/24/11	2/9		3/6	13.6			Continuous Tube Feed	
4/21/11	4/30	5/5	4/22	9.5	5/5	21.8	Pureed/Thickend	
4/24/11	5/2		4/26	13.8			Continuous Tube Feed	
4/17/11	5/5		4/19	5.3			Continuous Tube Feed	



**Thin Hydrocolloid** 

**Patients With Gauze** 

Date	trach was	down Date		se to ssion	Close to breakdown		Nutrition	
			Date	Level	Date	Level		
7/21/11	8/24	Unsure (10/24)	8/16	16.2	9/1	18.5	Continuous Tube Feed	
9/22/11	POA		9/23	8.7			Continuous Tube Feed	
12/25/11	POA			None			Continuous Tube Feed	
11/26/10	12/16		12/7	10.8			Continuous Tube Feed	
12/21/10	POA		12/24	10.5			Continuous Tube Feed	
1/19/11	2/3		1/21	19.9			Continuous Tube Feed	
2/22/11	3/3		3/1	8			Continuous Tube Feed	
5/16/11	5/19		5/17	12			Continuous Tube Feed	
7/27/11	8/11		8/2	4.9			Continuous Tube Feed	
4/6/11	POA		4/7	21.9			Nighttime Tube Feed	
9/4/11	POA			None			Nighttime Tube Feed	
9/23/11	POA		9/25	30.4			Nighttime Tube Feed	
12/5/11	POA		12/7	33.6			Nighttime Tube Feed	
1/19/11	3/21		1/29	9.6			Tpn	
4/11/11	POA	POA	4/13	8.0			Continuous Tube Feed	
5/12/11	POA	none	5/17	13.1			Continuous Tube Feed	
4/10/11	POA		4/13	11.6			Continuous Tube Feed	
4/5/11	4/4		5/3	9.3			Continuous Tube Feed	
5/13/11	POA		5/25	7.4			Continuous Tube Feed	
9/24/11	POA		9/27	7.6			Renal Diet	
5/21/11	POA			None			Continuous Tube Feed	
6/9/11	6/27	7/14	6/14	10.3	7/13	11.9	Continuous Tube Feed	
2/25/11	4/7		3/21	9.3			Nighttime Tube Feed, Renal	
6/13/11	7/12		6/14	22.5			Tpn/cont tf	
8/2/11	POA		8/10	5.3			Continuous Tube Feed	
3/13/11	POA		4/2	10.1			House/Nighttime Tube Feed	

#### **METHODS**

A quantitative descriptive randomized study involving a total of 45 patients comparing the use of thin hydrocolloid versus split gauze under tracheotomies. If the patient's tracheotomy was placed by ENT, nurses used thin hydrocolloid underneath and if general surgery placed the tracheotomy then the nurse used the split gauze underneath. The following information was collected for all patients with tracheotomies: patient name, date the tracheotomy was placed and who placed it. Signs were placed at the bedside denoting which dressing to use for individual patient. Tracheotomy skin checks were implemented weekly and any tracheotomy breakdown that occurred was noted. All data was stored in a secure locked office.

#### RESULTS

Out of the 45 patients that were evaluated during the study, thin hydrocolloid was used on 24 patients and split gauze on 21 patients. From this study, results noted that the incidence of breakdown was much higher when using Thin Hydrocolloid dressing (32%) than using Gauze (10%). Further analysis looked at nutritional status by looking at the patient's prealbumin level. Investigators went back and recorded each patient's prealbumin level closest to admission

**Total Patients Total Patients** 12% 6% Without Trachs Without Breakdown Breakdown Total Trachs With Breakdown Breakdown 88% 94% February 2012 – June 2012 **August 2011 – January 2012** 

and if they acquired breakdown then the prealbumin level closest to their date of breakdown. There was no significant difference in prealbumin levels with those that developed tracheotomy related skin breakdown compared to those who did not develop breakdown.

#### DATA COLLECTION FORM

#### **PCU Tracheostomy Rounds**

Date	Patient Sticker	Type/Size	Dressing	Secretions	Breakdown	Wound Care Notified
	Dressing Ty	ype: 1=gauze	2=duodots	3=nothing	4=marathon	

### CONCLUSIONS

The results support the use of split gauze under tracheotomies as more effective in preventing skin breakdown than the thin hydrocolloid. Limitations of the quality study were: physician preference, original tracheotomy ties not being changed within 7 days and tracking length of patient stay in relation to breakdown.

### **REFERENCES**

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