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Creation, Validation and Prospective Application of a Peri-Operative Risk Assessment and Intervention Protocol


Cleveland Clinic Akron General
Akron, Ohio


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PODIUM PRESENTER:

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- 511-bed community teaching hospital
- Magnet® designated facility
- NICHE designated hospital
- Level I trauma center
- Certified stroke center

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Objectives

- Describe the process of developing and validating the risk assessment measure
- Discuss results of prospective application of the peri-operative pressure injury risk assessment protocol

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Impetus

- Overall PI numbers declining; surgically-related PIs increasing
- 2012: 39% of all patients who developed a hospital-acquired pressure injury (HAPI) had a surgical procedure
- 2013: 69% of all patients who developed a HAPI had a surgical procedure

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Root Cause Analysis (RCA)

- Audit of surgical patients with a Hospital Acquired Pressure Injury in 2012
- Common Risk indicators identified included:
 - 37% - Diabetes
 - 48% ≥ 70 yrs. of age
 - 39% of pts. with PIs/ surgery ≥ 2 hrs.
 - 92.5% had Braden score of 18 or below
- No consistently applied PI risk assessment/ interventions identified in the perioperative operative area
- Literature review revealed no validated measure

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Risk Assessment Measure

All physician consented patients (excluding local anesthesia) will be assessed for the following risk indicators:	Yes	No
Previous surgery this admission		
Diabetes		
Braden Score ≤ 18		
Age ≥ 70		
Pre-existing pressure injury		
Surgical time ≥ 4 hrs.		

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Testing Validity

- Consult Statistician
- Random sample of 350 surgical patients
- Retrospective application of measure
- Test overall predictive ability of tool
- Determine cost implications

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Statistical Analysis

- Retrospective application of risk assessment measure correctly identified 14 of the 15 patients who developed a HAPI.
 - Overall sensitivity to identify patients at risk of developing PI requiring intervention = 93.3% (95%CI: 68.0% - 99.0%)
- Of those who did not develop a PI: 115 had a risk score of 0, indicating minimal risk. 220 patients were identified as being at risk who did not go on to develop a HAPI.
 - Specificity 34.3% (95% CI: 29.3% - 39.7%)

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Cost Analysis

220 patients were identified as being at risk who did not develop a HAPI

Of those....110 were considered high risk...requiring application of a multilayered silicone dressing

Cost of dressing = \$10.00 each.

Cost to treat high risk patients in this study with dressing = \$1100.00

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Revised criteria for application of dressing:

- Decreased Braden score from 18 to 16
- Increased OR time from 240 minutes to 300 minutes
- Reapplied risk assessment measure to sample; retained ability to capture those who developed HAPI (14/15)
- Reduced number requiring silicone dressing by 29% (from 110 to 78)
- For a cost savings of \$320.00 for the silicone dressing.

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Conclusions

- Statistically significant risk factors: Diabetes, Braden lower than 16, multiple surgeries same admission
- Tool accurately identifies those who do not develop a HAPI
- May over identify those at risk who do not go on to develop a pressure injury
- Prospective study needed to determine overall impact of assessment and prevention interventions

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Prospective Application of a Perioperative Risk Assessment and Intervention Protocol

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Interventions/patients at risk

- Repositioning/self
- Turn q 2 hrs.
- Confirm pressure relieving surface in O.R.
- Complete Post-Op-Peek form
- Off-load heels
- Head donut in O.R.
- Monitor pressure points

Interventions/at high risk

- In addition to at risk interventions:
- Multilayer silicone foam border dressing
 - Sacrum
 - Trochanter/non-operative
 - Stage 1 or 2 PI

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Communication tool

- Risk assessment
- Intervention guide
- Vehicle to ensure communication
- Instructions on when to remove silicone foam dressing
- Travels with chart to receiving unit

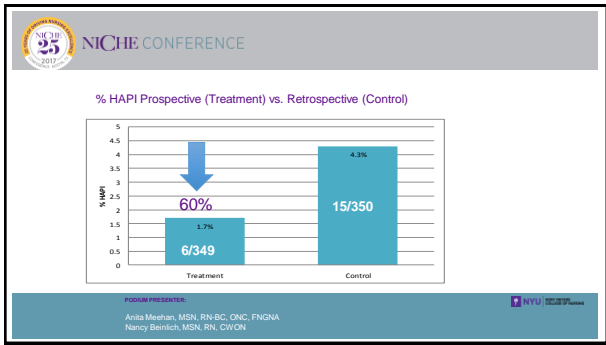
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Characteristic	Treatment (N=349)	Control (N=350)	Significance (p-Value)
Age (years)	66.7 (12.5)	66.6 (19.7)	<.001
Gender			
% Male	52.1 (n=182)	50.0 (n=175)	.570
% Female	47.9 (n=167)	50.0 (n=175)	
% Diabetes	52.7% (n=184)	37.4 (n=131)	<.001
% Prior Surgery	3.4% (n=12)	20.3 (n=71)	<.001
% Pressure Ulcer at Admission	4.3% (n=15)	6.0 (n=21)	.309
Surgery Time (minutes)	229.1 (110.9)	146.5 (104.4)	<.001
Braden Score	19.7 (5.7)	19.2 (5.5)	<.001
% HAPU*	1.7% (n=6)	4.3 (n=15)	.047

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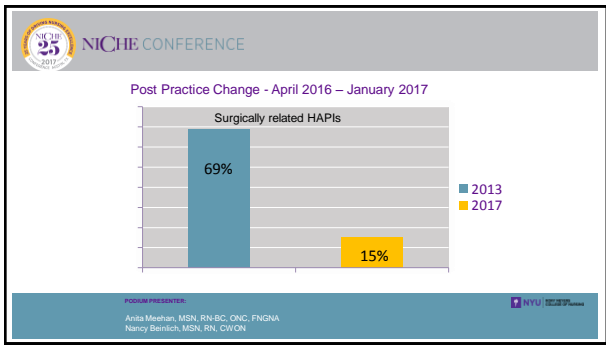


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Implications for Practice

- This protocol is now standard of care in our perioperative area
- Risk assessment protocol is embedded in the peri-operative nursing policy and EMR documentation
- Affords the ability to continue to monitor outcomes

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Control/ongoing protocol evaluation

- 11 surgical patients developed PIs
- The tool identified 10/11 at being at high risk
 - Braden \leq 16
 - Scheduled surgery \geq 5 hours
- Only 1 patient developed a PI within 72^o of surgery

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Next Steps

- Plans are underway to conduct a retrospective analysis in a larger hospital setting to further test validity of tool
- Results recently published in AORN journal—December, 2016
- Interest from hospitals in other states to participate in validation and implementation of the risk assessment measure and protocol

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Thank You! Questions?

"Never underestimate the power of a small group of dedicated people to change the world.....indeed it is often the only thing that ever has."

Margaret Mead

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