



Exploration of the Accuracy and Precision of the Scott Triggers™ Instrument in Predicting Postoperative Pressure Ulcer Development

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INTRODUCTION

- Hospital acquired pressure ulcers (HAPU) continue to pose a significant health problem in the US, affecting up to 3 million adults in acute care facilities at a cost of up to \$11 billion, annually.
- Surgical patients are thought to be at elevated risk for pressure ulcer development due to a combination of physiological, non-physiological, and surgical/anesthesia related factors; however, a preoperative Braden Score may not accurately reflect postoperative risk.
- The Scott Triggers™ scale shows great potential as a preoperative predictor of postoperative pressure ulcer development (PPUD), but has not been tested for accuracy and precision.

Selected Demographics

	n
Male	3082
Female	3902
Native American	86
African American	252
Latino	72
Caucasian	4906
Unspecified	1668
Median Age (IQR)	60 (40 – 73) years
Median Surgery room time (IQR)	85 (47 – 137) minutes
ASA Score < 3	1960
ASA Score ≥ 3	5024
Pressure Ulcers	116

RESEARCH QUESTION

- Is there a change in pressure ulcer risk that occurs in the operating room?
- Is there a relationship between the preoperative risk factors in the Scott Triggers™ tool and postoperative pressure ulcer development?

PURPOSE

- The purpose of this retrospective, exploratory study was to investigate the accuracy and precision of the Scott Triggers™ instrument in predicting postoperative pressure ulcer development in a large, heterogenous surgical patient population.

SCOTT TRIGGERS™

- Age >62
- Albumin <3.5
- ASA Score ≥3
- Time on the table ≥3 hr

	n= 6984	%
Age ≥ 62	3363	48.2%
ASA ≥ 2	5024	71.9%
Surgery time > 180 minutes	1181	16.9%

Patients receive 1 point for each trigger. A score of ≥ 2 is at high risk for pressure injury.

Linear Regression for a change in Braden Score (+ means increase in score / - means decrease in score)

	Multivariate Analysis (95% CI)	p - value
Age, 10 year increments	-0.1 (-0.1 - -0.1)	< 0.01
ASA < 3	Reference	
ASA ≥ 3	-0.6 (-0.7 - -0.5)	< 0.01
Time in the OR, 10 minute increments	-0.1 (-0.1 - -0.1)	< 0.01
Serum Albumin	Not routinely ordered	

Cardiovascular surgery patient 48 hours after surgery. Note characteristic butterfly shape.



METHOD

- Retrospective exploratory design
- Purposive, convenience sample
- Electronic medical record abstraction of 15,500 adult inpatient stay
- Study group – 6984 records had both preoperative and postoperative Braden Scores

COMPARISON

How well does the Scott Triggers™ Score compare to the postoperative Braden Score?

- $n = 6984$ for correlation analysis
- $r = 0.64887$
- $p = <0.0001$

CONCLUSIONS

- The significant change in Braden Score from the preoperative measurement to the postoperative measurement suggests that going to surgery increases pressure ulcer risk
- There is a moderate correlation between Scott Triggers™ and postoperative Braden Score.
- Because there was insufficient Albumin data, we were only able to measure 3 of the 4 Scott Triggers™. The three triggers that we measured seem to be implicated in the risk for surgical pressure injury development.
- Because the incidence of pressure ulcer development was so small, our data does not support that the Scott Triggers™ tool predicts pressure ulcer development

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- Change in Braden Score from Preoperative to Postoperative
- Represents a clinically significant increase in pressure injury risk

n = 6984	Preoperative	Postoperative	Change	p-value
Median Braden Score (IQR)	19 (4)	18 (5)	0 (2)	<0.01
Mean Braden Score (SD)	19 (3)	18 (3)	-1 (3)	