

The Jackson/Cubbin Skin Risk Assessment Tool: Implementing an Evidence-Based Practice Change Initiative in the Intensive Care Unit

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Background

- Annually, over 2.5 million acute care patients in the United States of America suffer pressure injury formation.
- Pressure injury contributes to approximately 60,000 deaths and each pressure injury has the potential cost over \$70,000 to treat.²
- Hospital Acquired Pressure Injuries (HAPI) cost the United States healthcare system over \$26.8 billion annually.²
- Critical care nurses at MedStar Washington Hospital Center use the Braden Scale as a standard of care. This tool does not comprehensively consider supportive treatment modalities and patient status which predispose patients to develop pressure injuries.
- Current evidence demonstrates that the Jackson/Cubbin Scale carries superior positive predictive validity in Intensive Care Unit (ICU) patients.

PICOT & Objectives

PICOT Question:

Does use of the Jackson/Cubbin Skin Risk Assessment Tool every shift more accurately predict adult intensive care patients' risk for Hospital Acquired Pressure Injuries (HAPI), therein reducing the HAPI incidence and prevalence rates when compared to the Braden Skin Risk Assessment Tool?

Objective #1: Increase the implementation of pressure injury prevention interventions after application of the Jackson/Cubbin Scale for patients deemed "at risk", "high risk", and "very high risk."

Objective #2: Decrease HAPI prevalence rates for pilot units after implementation of the Jackson/Cubbin Scale.

Objective #3: Compare the assessment data between Jackson/Cubbin Scale and the Braden Scale.

Objective #4: Increase the practicing satisfaction of the professional critical care nurse through use of the Jackson/Cubbin Scale over current standard of care.

Methods

Design:

- This is an evidence-based practice (EBP) project.
- For the aim of comparing the HAPI prevalence and number of nursing preventive interventions, a pretest-posttest, different subject design was used to measure the impact of implementing the Jackson/Cubbin Scale compared to the project site's standard of care.
- For the aim of comparing the two skin assessment tools, a same subject crossover design was used.

Setting:

- Two Intensive Care Units at a Level I Trauma Center in Washington, DC.

Sample:

- All adult patients experiencing acute critical illness requiring admission to the ICU were included for recruitment.
- Any patient with a pre-existing HAPI before the change initiative implementation and any patient with a length of stay shorter than 24 hours were excluded.
- Statistical power analysis yielded a goal sample size of 128 (64 for pre, and 64 for post). Due to rapid recruitment, a total of 128 post-implementation patients were recruited, which strengthened statistical analysis.

Intervention:

- Competency-based evaluation was used to train and determine nurses' ability to correctly apply the Jackson/Cubbin Scale.
- Trained nurses completed the Jackson/Cubbin Scale using a paper tool at the beginning of their shift and completed the Braden Scale in the electronic health record at the end of their shift to minimize rater bias.

The Jackson/Cubbin Scale Skin Risk Assessment Tool

Age	Weight	General skin condition	Mental condition	Mobility
<40	4 Average weight	4 Intact	4 Awake and alert	4 Fully ambulant
40-55	3 Obese	3 Red skin	3 Agitated/restless/confused	3 Walks with slight help
55-70	2 Cachectic	2 Grazed/excoriated/skin	2 Apathetic/sedated but responsive	2 Very limited/chairbound
>70	1 Any of above and oedema	1 Necrosis/exuding	1 Coma/unresponsive/unpurposeful movements	1 Immobile/bedrest

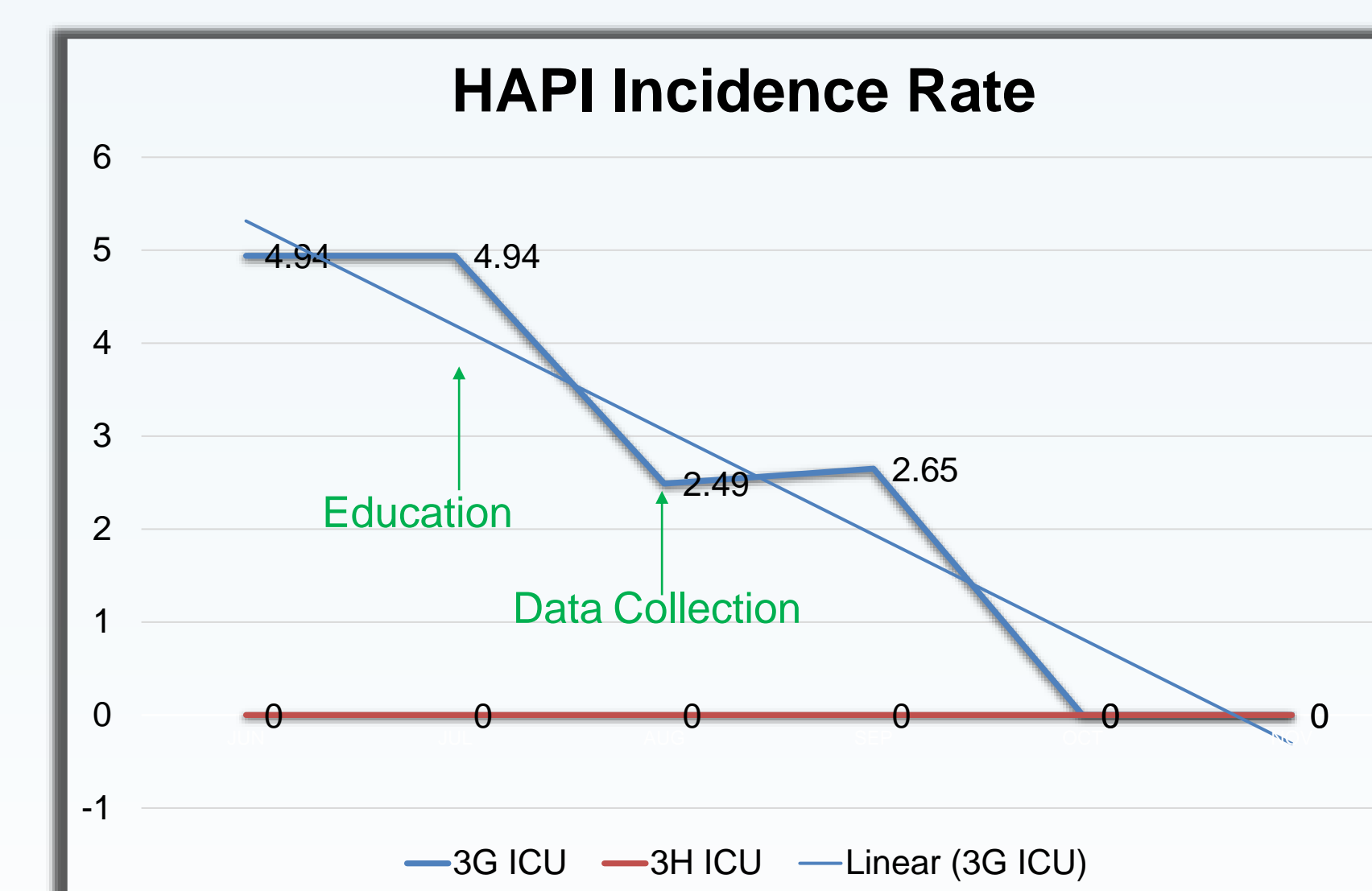
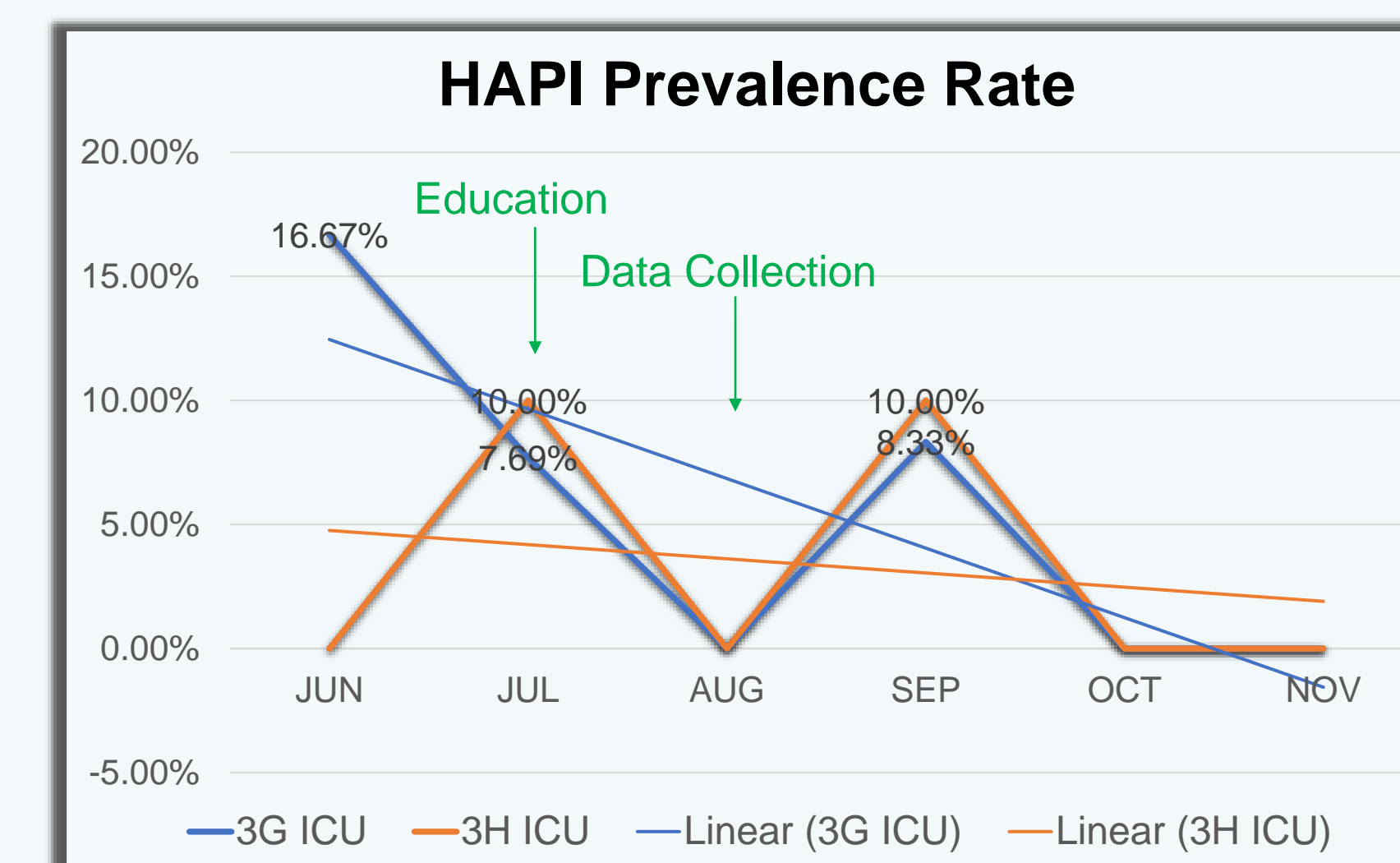
Haemodynamic status	Respiration	Nutrition	Incontinence	Hygiene
Stable without inotropic support	4 Spontaneous	4 Full diet + fluids	4 None/anuric/catheterised	4 Competent in maintaining own hygiene
Stable with inotropic support	3 CPAP/T-piece	3 Light diet/oral fluids/enteral feeding	3 Urine	3 Maintaining own hygiene with slight help
Unstable with inotropic support	2 Mechanical ventilation	2 Parenteral feeding	2 Faeces	2 Requires much assistance
Critical with inotropic support	1 Breathless at rest/on exertion	1 Clear IV fluids only	1 Urine + faeces	1 Fully dependant

(Cubbin & Jackson, 1991, p. 42)

Results

Outcome #1: 100% of patients had multiple pressure injury prevention interventions in place. Retrospective review of nursing documentation revealed a 21.6% increase in application of pressure injury prevention interventions for patients scoring "at risk", "high risk", and "very high risk," according to the Jackson/Cubbin Scale.

Outcome #2:



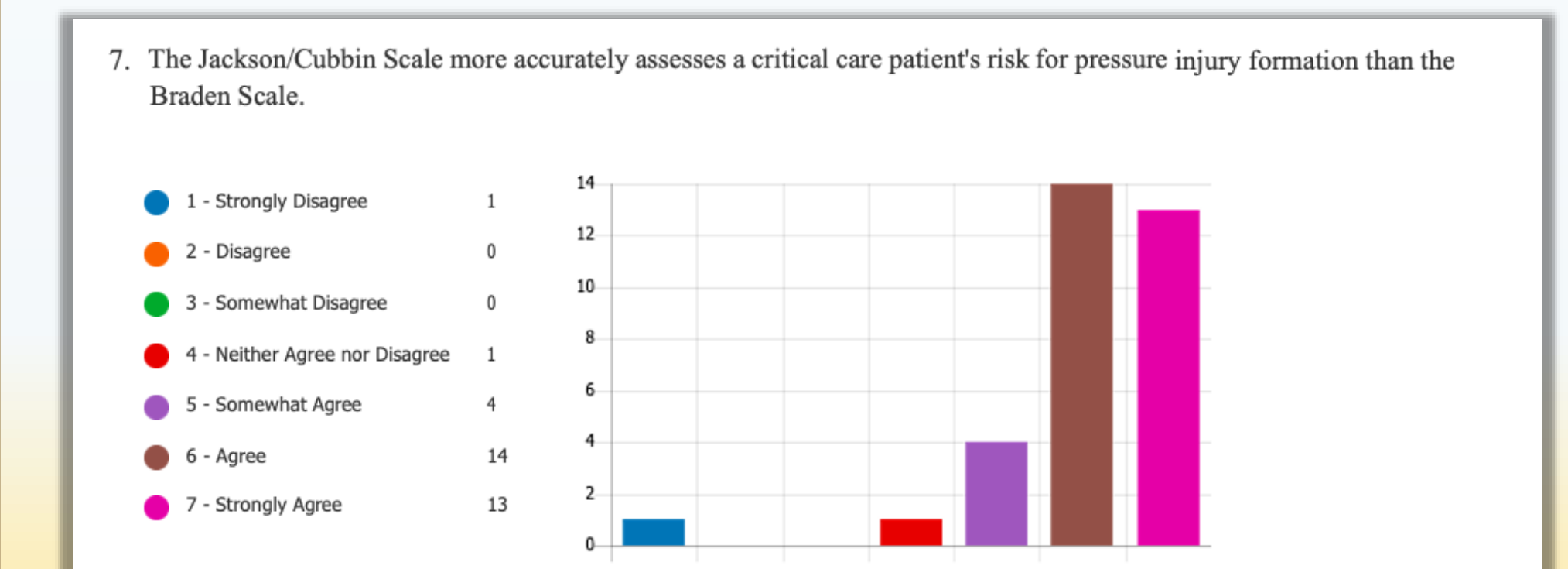
Outcome #3: The Pearson correlation was performed to compare the Braden and Jackson/Cubbin Scales. A significant correlation was observed ($r = 0.794$; $p < 0.001$). Additionally, chi-square, phi, and Cramer's V tests indicate the Jackson/Cubbin Scale's greater capability to identify patients at "high risk" and "very high risk."

Comparison of the Identification of Patients with Risk

	Braden	Jackson/Cubbin
No risk	36 (11.8%)	50 (16.4%)
At risk	177 (58.2%)	49 (16.1%)
High risk	80 (26.3%)	102 (33.6%)
Very high risk	11 (3.6%)	103 (33.9%)
Total	304	304

Results

Outcome #4: Post-implementation survey results indicate that most nurses perceive the Jackson/Cubbin Scale more accurately assesses a critical care patient's risk for pressure injury formation than the Braden Scale.



Conclusions

- The Jackson/Cubbin Scale performed superiorly to the Braden Scale, identifying larger subsets of patients at high risk and very high risk for pressure injury formation.
- This informed nurses of the urgent need for application of pressure injury prevention interventions.
- Concurrently observed with this pilot were reduced HAPI prevalence and incidence rates, which continue to decrease or remain at very low levels within the pilot ICUs.
- Due to these favorable outcomes, an expansion of this project to include all ICUs at the practice site is merited to assess if this scale has favorable impact on all subspecialties of critical care.
- Transitioning standard of care from the Braden Scale to the Jackson/Cubbin Scale will be decided pending the outcomes of an expanded pilot.

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References

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