

Implementing a Skin Assessment Instrument to Distinguish between COVID-19 Skin and Deep Tissue Injury: A Doctor of Nursing Practice Project

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SCHOLARLY PRACTICE PROJECT TEAM

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INTRODUCTION & BACKGROUND

- COVID-19 infection complication results in unusual skin manifestations; some mimic a deep tissue injury (DTI), but may not be over pressure sites (Black & Cuddigan, 2020; Black et al., 2020)
- DTI (hospital-acquired pressure injury (HAPI) type) often avoidable = no Centers for Medicare & Medicaid Services (CMS) reimbursement

EBP FRAMEWORK: THE IOWA MODEL REVISED

1. Identify Triggering issues/opportunities
2. State the question or purpose (priority?)
3. Form a team
4. Assemble, Appraise, Synthesize body of Evidence (sufficient evidence?)
5. Design and pilot the practice change (change appropriate for adoption?)
6. Integrate & Sustain the Practice change
7. Disseminate Results

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STEP 1: TRIGGERING ISSUES/OPPORTUNITIES

- Wound Care Team Request
- No standardization
- Potentially erroneous DTI occurrences

STEP 1: TRIGGERING ISSUES/OPPORTUNITIES (CONT.)

Table 1.

Hospital HAPI Data Over Three Years

Year	DTI
2019	28
2020	64
2021	50

STEP 2: STATE THE QUESTION

In critically ill adult patients with diagnosed COVID-19 and a skin lesion, does the implementation of a skin assessment instrument aid nursing in the identification of deep tissue injuries versus COVID-19 skin manifestations?

STEP 3: FORM A TEAM

- Inpatient wound care team
- Medical Intensive Care Unit (MICU) nurses
 - Unit Leadership
 - Unit's Clinical Nurse Specialist
 - Unit's Shared Governance Chairs

STEP 4: ASSEMBLE, APPRAISE, & SYNTHESIZE BODY OF EVIDENCE

- 14 articles included in final analysis:
Level 3 and Level 5
Good quality
- Three themes identified:
Recognition, Assessment, Documentation

STEP 5: DESIGN & PILOT THE PRACTICE CHANGE

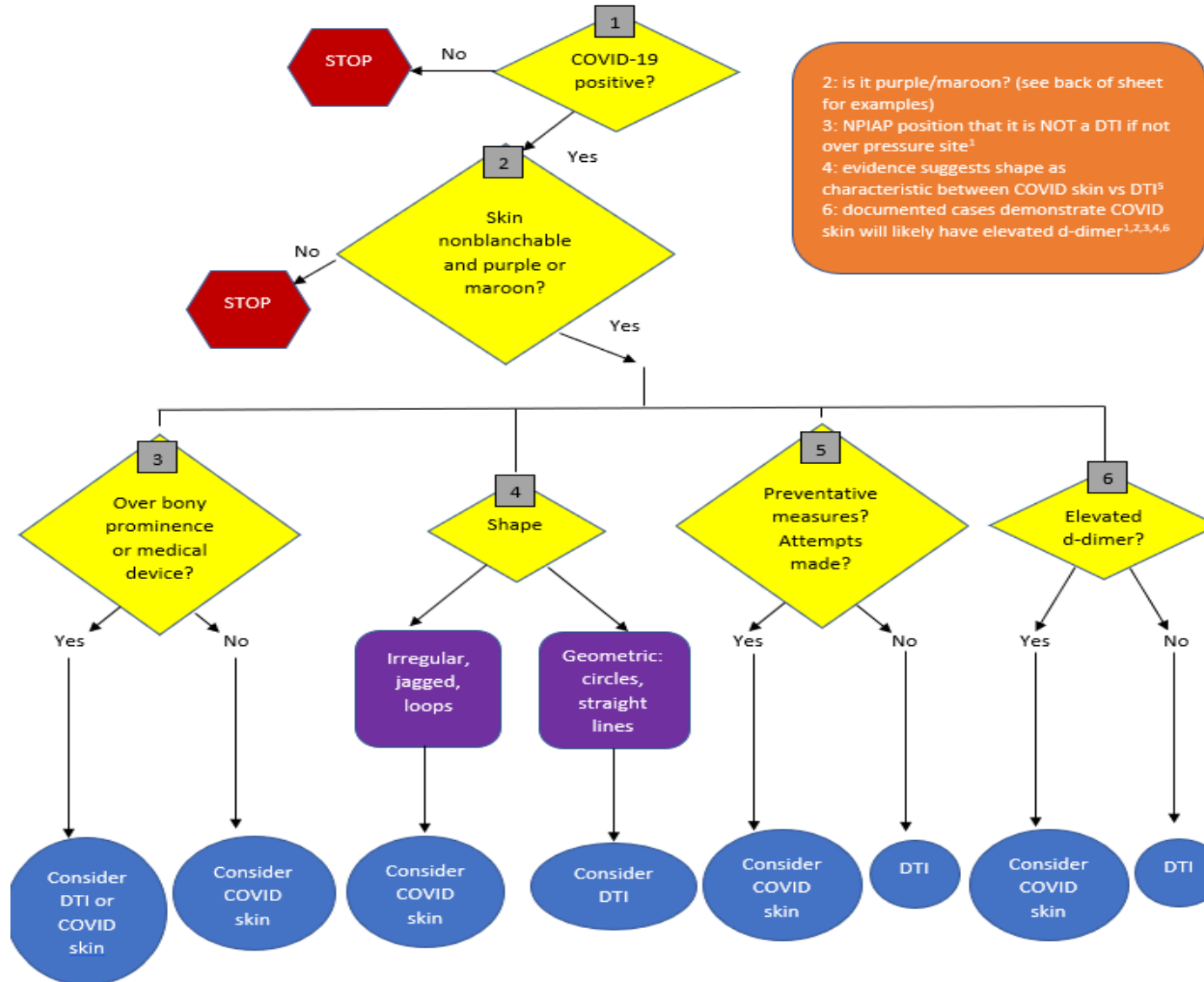
- Implementation of a skin assessment instrument to classify COVID-19 skin vs DTI in the critical care setting
 - Criteria: patients with COVID-19 & skin lesion
 - Pilot: First 2 forms completed
- Training: WOC team & practice site's clinical nurses
- Collaborate to integrate instrument into practice workflow
- Data collected 12 September 2022 to 12 February 2023

DTI VS COVID-19 SKIN MANIFESTATION

DTI	COVID Skin Manifestation
Discoloration of the skin (dusky/purple, red or maroon) & non-blanchable	Discoloration of the skin (purpuric lesions, necrotic) & non-blanchable
Over bony prominence or medical device	Both over bony prominence/medical device and not
Shape: circles, straight lines	Shape: irregular, jagged, loops
Skin temperature changes	Elevated d-dimer

INSTRUMENT

COVID Skin Manifestation vs DTI Form v. 2

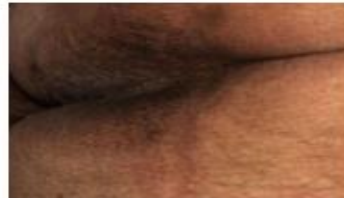


INSTRUMENT

COVID Skin Manifestation vs DTI Form v. 2

References & Photographs:

1. Black, J., Cuddigan, J., Capasso, V., Cox, J., Delmore, B., Munoz, N., & Pittman, J. on behalf of the National Pressure Injury Advisory Panel. (2020). Unavoidable pressure injury during COVID-19 crisis: A position paper from the National Pressure Injury Advisory Panel. <https://npiap.com>
2. Chand, S., Rrapi, R., Lo, J.A., Song, S., Gabel, C.K., Desai, N., Hoang, M.P., Kroshinsky, D. (2021). Purpuric ulcers associated with COVID-19: A case series. *Journal of the American Academy of Dermatology*, 11, 13-19. <https://doi.org/10.1016/j.jidcr.2021.01.019>
3. McBride, J.D., Narang, J., Simonds, R., Agrawal, S., Rodriguez, E.R., Tan, C.D., Baldwin, W.M., Dvornia, N., Krywanczyk, A.R., Fernandez, A.P. (2021). Development of sacral/buttock retiform purpura as an ominous presenting sign of COVID-19 and clinical and histopathologic evolution during severe disease course. *Journal of Cutaneous Pathology*, 1(7). <https://doi.org/10.1111/cup.14038>
4. Pontieri-Lewis, V., Emmons, K.R., Scardillo, J., Berke, C., Alexander, D., Bryant, D., Yates, S., Kent, D.J. (2021). COVID-19 skin manifestations: A guide for WOC nursing practice. *J Wound Ostomy Continence Nurs*, 48(5), 410-414. <https://doi.org/10.1097/WON.0000000000000809>
5. Swoboda, L. (2022). Cutaneous manifestations of COVID-19 in critical care. *AACN Advanced Critical Care*, 33(2), pp 186-195. <https://doi.org/10.4037/aacnacc2022483>
6. Young, S., Narang, J., Kumar, S., Kwizera, E., Malik, P., Billings, S.D., Ko, J.S. and Fernandez, A.P. (2020). Large sacral/buttocks ulcerations in the setting of coagulopathy: A case series establishing the skin as a target organ of significant damage and potential morbidity in patients with severe COVID-19. *Int Wound J*, 17: 2033-2037. <https://doi.org/10.1111/iwj.13457>



COVID-19 SKIN MANIFESTATIONS



Open-sourced photos

STEP 5: DESIGN & PILOT THE PRACTICE CHANGE (CONT.)

Results:

- Adherence
- Congruence
- General Feedback
- Cost Savings

STEP 5: DESIGN & PILOT THE PRACTICE CHANGE (CONT.)

Adherence = **100%**

Congruence = **50%**

4 patients with skin lesion & COVID- 19

2 WOC and RN congruence

2 WOC and RN incongruence

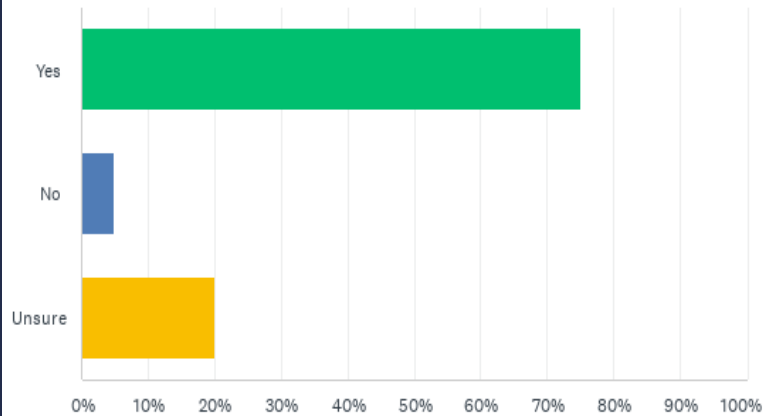
1 Dark Skin Tone*Equity & Ethics

1 Moisture Assoc. Skin Damage

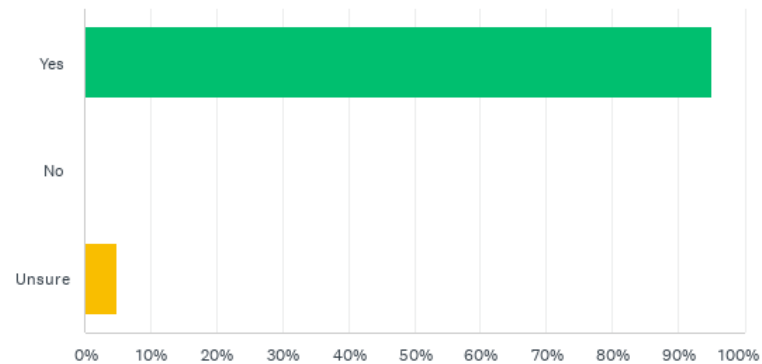
STEP 5: DESIGN & PILOT THE PRACTICE CHANGE (CONT.)

Feedback:

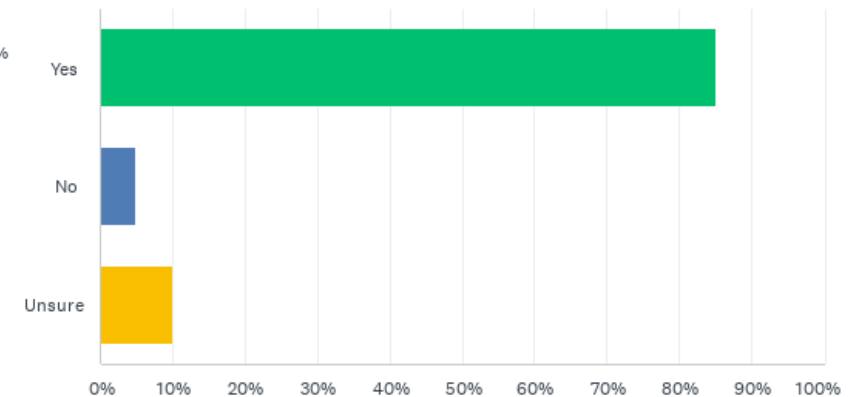
Q1 Was the algorithm format helpful?



Q2 Were the pictures informative?



Q3 Were the written notes helpful?



STEP 5: DESIGN & PILOT THE PRACTICE CHANGE (CONT.)

Cost Savings	Total HAPI	Notes	Total Cost
With Intervention	14	total HAPIs on unit practice site at end of intervention	\$872,242
Without Intervention	16	total HAPIs on unit practice site if no use of standard work form	\$996,848
Total Savings		= without intervention – with intervention	\$124,606

STEP 6: INTEGRATE & SUSTAIN THE PRACTICE CHANGE

- Fills Practice Gap: facilitates identification & treatment of wounds
- Accessible: upload into Wound Care Team's electronic repository
- Sustainable: Wound Care Team plans continued use and to adapt as needed for skin conditions

STEP 7: DISSEMINATE RESULTS

- Results to practice expert team
- Submission to Libra Repository
- American Nurse Journal
- Army Nurse Corps Association Convention –
Poster Presentation

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 - UVA SON Librarian
- Ivy Hinton, PhD
 - UVA SON Data Analysis and Interpretation Coordinator

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QUESTIONS?