

A Process Improvement Project Seeking to Reduce Pressure Injuries at a Pediatric Post-Acute Care Hospital

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Background

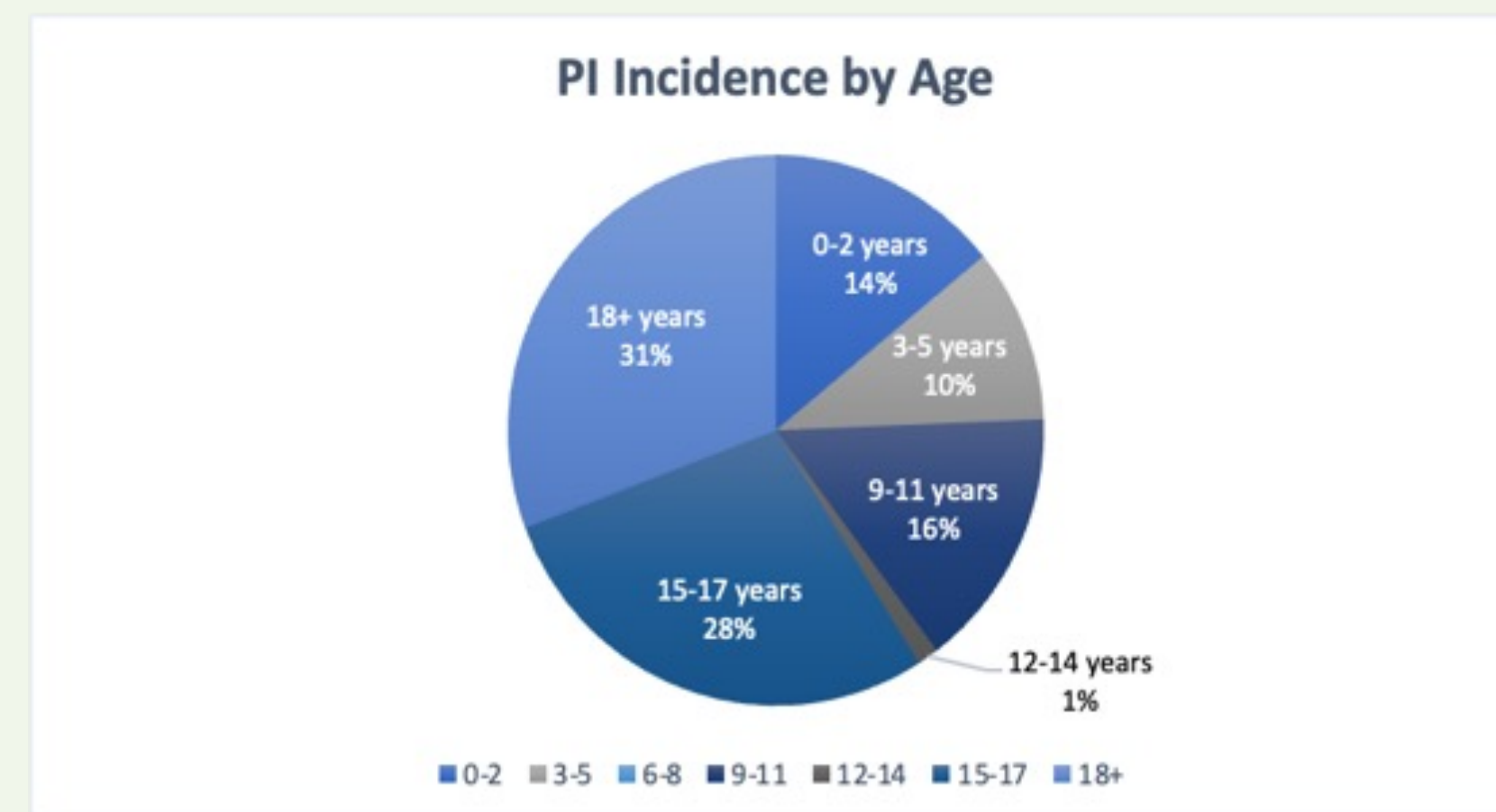
Pressure Injuries (PIs) among children using medical devices can be painful, disfiguring, and potentially life threatening.

A previous study indicates that among patients with prolonged stays (≥28 days) at a pediatric critical care unit, the incidence of PIs was as high as 55.55% (Bargos-Munárriz, M., Bermúdez-Pérez, M., Martínez-Alonso, A. M., García-Molina, P., & Orts-Cortés, M. I. 2020). At this pediatric post-acute care hospital, which serves medically complex patients, birth to 22 years old, 44% have respiratory needs (Dumas, Hughes & O'Brien, 2020). A Root Cause Analysis (RCA) triggered by two Stage 3 PIs led to a record review which confirmed 79 total PIs from January 1 2022 to April 30 2023. The BradenQD Scale is a widely used tool to determine PI risk and is included in the daily shift assessment at this hospital. Similar to other studies (Curley et al., 2018) there was concern for accuracy of predictability among our patient population.

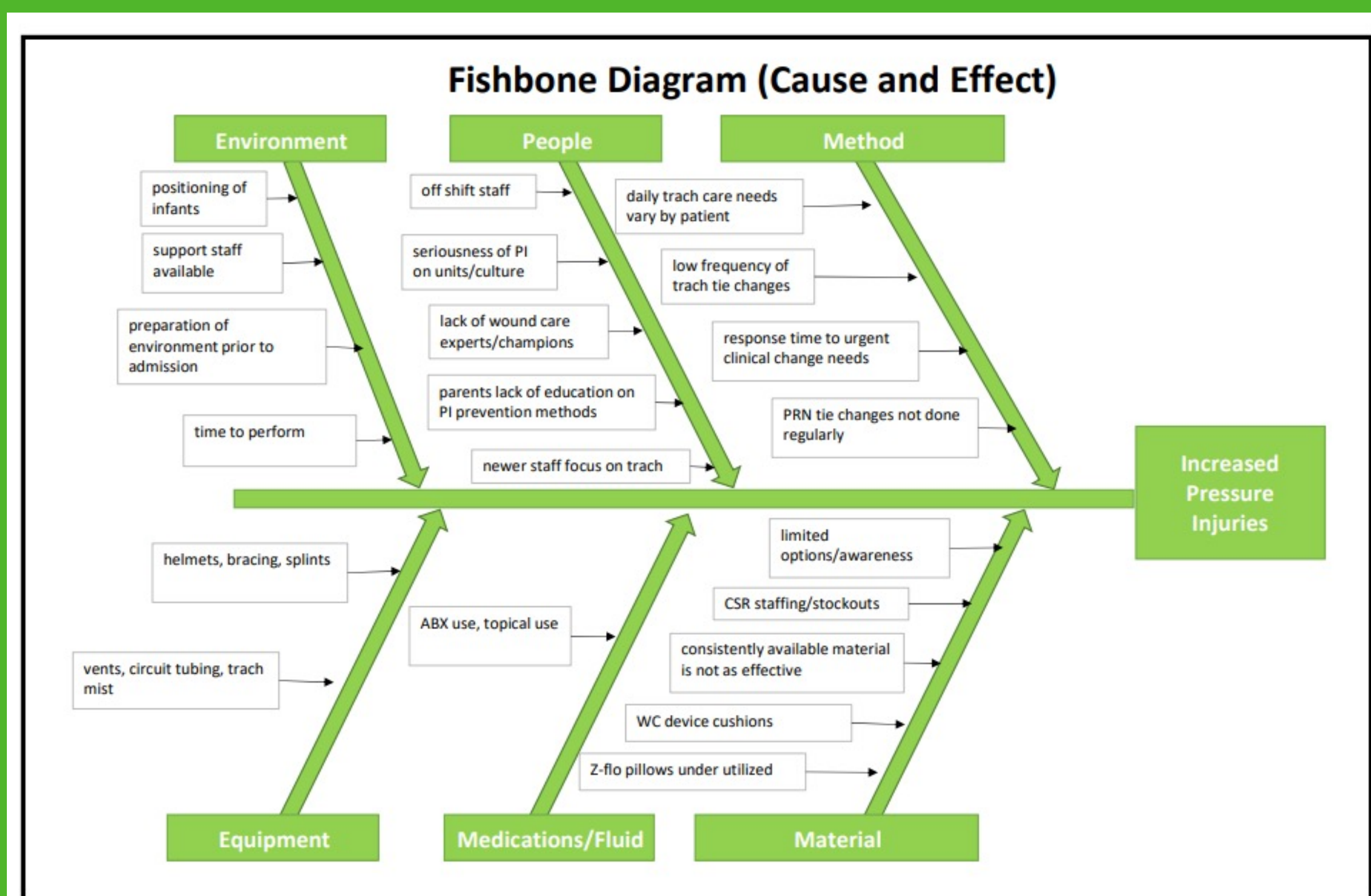
The Performance Improvement Project's aim was to discern patterns of PIs among this patient population, assess areas for improvement, and support interventions.



Patients with Stage III+ Pressure Injuries to posterior neck, underneath trach ties



Pressure injuries stratified by age to determine highest risk patients



Used fishbone diagram to prioritize our specific needs

Methods

Multiple interdisciplinary efforts occurred simultaneously. An RCA drove a response to immediate issues. The creation of a Performance Improvement Committee, who worked alongside members of the Wound Care Team, explored a broader perspective of the problem. This work was supported by the efforts of visiting Doctorate of Nursing Practice (DNP) students.

The Performance Improvement Committee and Wound Care Team assessed the extent of PIs in this pediatric population using:

1. Fishbone diagram to prioritize needs
2. Gap analyses
3. Ongoing run charts for the rates of PI
4. New data collection tool
5. Audits of Electronic Health Record (EHR) documentation
 - o PI Scoring tool – Braden QD
 - Subscores
 - o Multidisciplinary documentation
 - Staging of wounds
 - Communication and escalation
6. Retrospective chart review
 - o Surveillance dashboard vs. EHR

Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24
0.35	0.31	0.68	0.42	0.35	0.42	0.48	0.48	0.48	0.48	0.28	0.34	0.34	0.34	0.21	0.21

Key:
Above threshold
Between threshold and target
Exceeds target

Rolling Averages* of Stage 3+ PIs from October 2022 to January 2024
 *Rolling averages are determined using 12 months sum of pressure injuries divided by 12 months sum of patient days x1,000. A significant improvement is seen across the year.

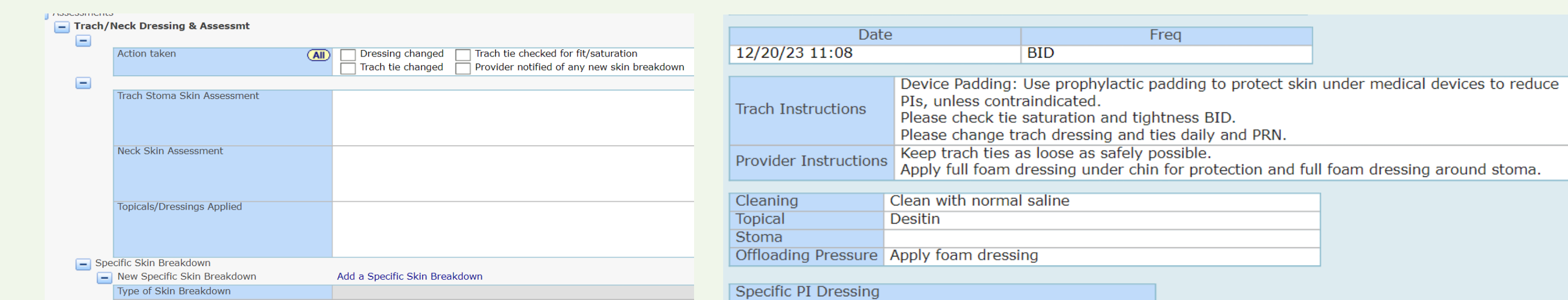
Patient Age (in years)	Initial PI Documentation	Day of Pressure Injury	Braden QD Score		PI Stage	PI Location	Medical Device	Provider Order/Nursing Documentation about PI Care/Intervention
			AM	PM				
19	8/5/2022	-3	11	11	--	right neck	--	Yes
		-2	11	11	--	right neck	--	
		-1	11	11	--	right neck	--	
		0	11	11	--	right neck	tracheostomy ties	
		1	11	11	3	right neck	tracheostomy ties	
		2	11	11	3	right neck	tracheostomy ties	
19	1/10/2023	3	11	11	3	right neck	tracheostomy ties	Yes
		-3	10	10	--	--	--	
		-2	10	10	--	--	--	
		-1	10	10	--	--	--	
		0	10	10	2	tracheostomy stoma	--	
		1	10	10	2	tracheostomy stoma	--	
2	10	10	2	tracheostomy stoma	--			
3	10	10	2	tracheostomy stoma	--			

Data collection tool created by DNP Students

Implementation Strategies

Key stakeholders involved: Wound Care Certified Nurse Leader, Nurse Risk Manager, Nurse Educators, Advance Practice Nurses, and Physiatrist

- A record review shaped the vision of both the current and the improved state (ongoing)
 - Audits of RN/MD communication
 - DNP record review
- Annual Nursing Skills Day – individual review and quiz (Initiated Mar '22)
- Addition of nutritional consult to Wound Care Team (May '22)
- Creation of PI admission huddle, skin breakdown escalation tool; practice alerts sent (Mar '23)
- Nurse orientation – direct education with Wound Care Certified Nurse (Initiated May '23)
- Removal of Q4H skin checks for high-risk patients (not aligned with SPS standards) (Aug '23)
- Process change: introduced dedicated Wound Care iPad for bedside nurses to directly upload photos to EHR (Nov '23)
- Roll-Out of PI Bundle and Revised Documentation (Dec '23)
 - Trach and neck assessment
 - Shift/Weekly Nursing Assessment
 - Provider documentation
 - Respiratory Therapist Shift Checks
- Initiation of multiple audit methods (Mar '24)
 - PI Bundle: K-Cards (one on one assessment and auditing by trained Skin Champions)
 - Trach/Neck Intervention: electronic auditing



Examples of changes made to documentation to improve trach tie care (Left: Nursing documentation, Right: Provider Order)

Conclusions

Through multidisciplinary review, this pediatric post-acute care hospital found that pressure injury prevention and education were much needed. Efforts have been made to address this area for improvement. Due to increased awareness, changes in documentation and communication, this hospital anticipates lowered rolling averages of PIs and therefore, reduced patient harm.

References

Bargos-Munárriz, M., Bermúdez-Pérez, M., Martínez-Alonso, A. M., García-Molina, P., & Orts-Cortés, M. I. (2020). Prevention of pressure injuries in critically ill children: A preliminary evaluation. *Journal of Tissue Viability*, 29(4), 310–318. <https://doi.org/10.1016/j.jtv.2020.08.005>

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