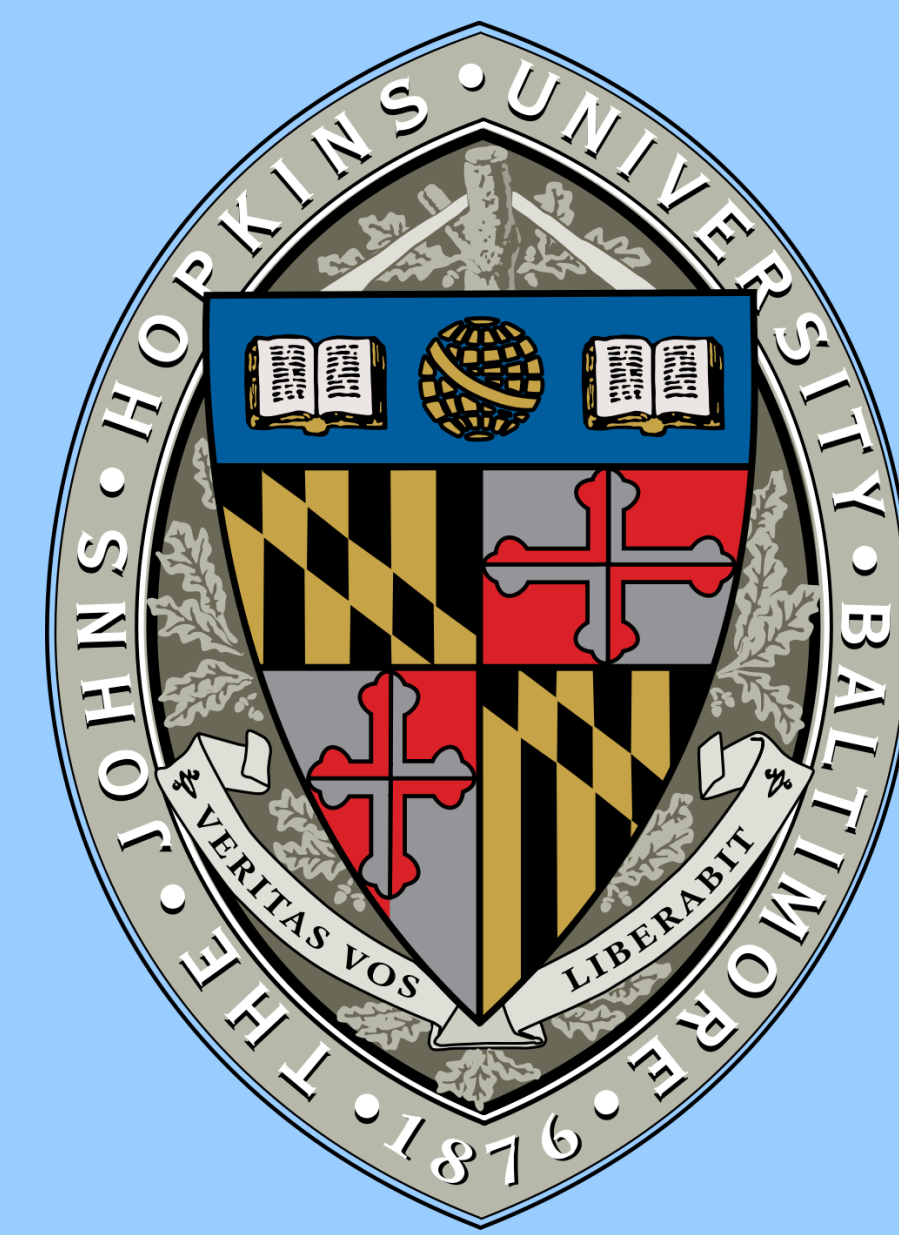


“Turning Tuesdays”: A Skin Injury Prevention Audit Tool

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1 Background

The main purpose of the Skin Injury Prevention quality and safety improvement project for the Pediatric Intensive Care Unit (PICU) at Johns Hopkins Hospital, was the development and implementation of a skin care audit tool designed to assess skin injury risk and prevalence in the pediatric critical care population. Preventing skin injury in the pediatric intensive care population is an important responsibility of the nurses care for a patient as highlighted in a 2006 study performed by Noonan, Quigley and Curley for three reasons. First, when a patient is immobile and physiologically unstable he or she is at an increased risk for skin breakdown. Second, specific therapies and medical device placement, deemed necessary for the care of patient, can contribute to skin breakdown. Third, the cost of skin breakdown in a hospitalized patient is immense in both the context of the actual financial cost to the hospital and the additional suffering of the patient

The decision to build this project came from inconsistencies in Braden Q score documentation completed by the unit nurses. The Braden Q Scale, developed by Quigley and Curley (1996), is a “widely used, valid, and reliable pediatric-specific pressure ulcer risk assessment tool.” The scale is so effective that it has been built into the hospital’s medical charting system as a necessary nursing documentation site under Treatments and Cares within each patient’s profile. The inconsistent documentation sparked further conversation regarding proper use of skin injury prevention interventions.

PICU nurses have a list of interventions and access to materials that can be used if a patient is determined to be at high-risk of skin injury based on his or her Braden Q score. Some of these items include (but are not limited to):

- a two-hour turning schedule
- special mattresses designed to reduce the pressure normally experienced by the body when lying in bed
- use of Z-flo (a fluidized positioner aid that can mold to the shape of the patient’s body for pressure relief and is offered in two different sizes: 7x10 inches for under the head or 25x36 inches for larger body surface areas).

Unfortunately, within the medical chart, these interventions are not documented in the same place and sometimes are not documented at all. Insert the need to unite the Braden Q documentation with specific intervention documentation in order to track the care of the high-risk patient.

2 Methods

Although each PICU patient is at risk for skin injury, a smaller, more specific population within the unit was identified as being high-risk for the important purpose of providing a focused population to study. A “high-risk” patient was defined as any patient on a ventilator.

The audit tool was designed using Vergesolutions™ software to unite the documentation of the Braden Q scale and the documentation of the extra measures that can be taken on unit to further skin injury prevention. The tool begins with the nurse completing a Braden Q scale for his or her patient as a means of generating a risk score for each ventilated patient. The Braden Q scale can effectively predict the level of risk a patient has for skin injury, which would then help prompt the nurse to take extra measures for skin injury prevention depending on the patient’s score. These extra measures included:

- use of sage barrier cloths
- use of diaper rash prevention creams as suggested by the electronic chart’s diaper rash prevention algorithm
- a q2 turning schedule (repositioning the patient every two hours)
- rotation of the O2 saturation probe once a shift
- relocation of EKG patches once a shift
- use of heel protectors or a method to elevate heels off of the bed

Additionally, specialty surface intervention compliance was specifically analyzed for the ventilated patients who received a Braden Q score of 18 or less which qualified them as at the highest-risk for developing pressure ulcers. These interventions included:

- use of Z flo
- use of special mattress

The audit tool was sent out to each nurse on the unit at the beginning of a Tuesday evening shift. Each nurse was able to access the audit through his or her hospital email but only had to fill out the audit if his or her patient was on a ventilator. After completing a Braden Q scale provided within the tool, nurses were given three answer options within the audit tool when asked about the use of the extra measures mentioned above:

- Yes
- No
- Non-Applicable

These answer options were also accompanied by a text box that afforded the nurse the opportunity to write a reason for his or her answer if that answer appeared non-compliant with the suggested intervention.

At the end of the shift, data was stored within a portion of the Vergesolutions™ site which allowed the export of the completed audit tool information as an Excel document for further analysis.

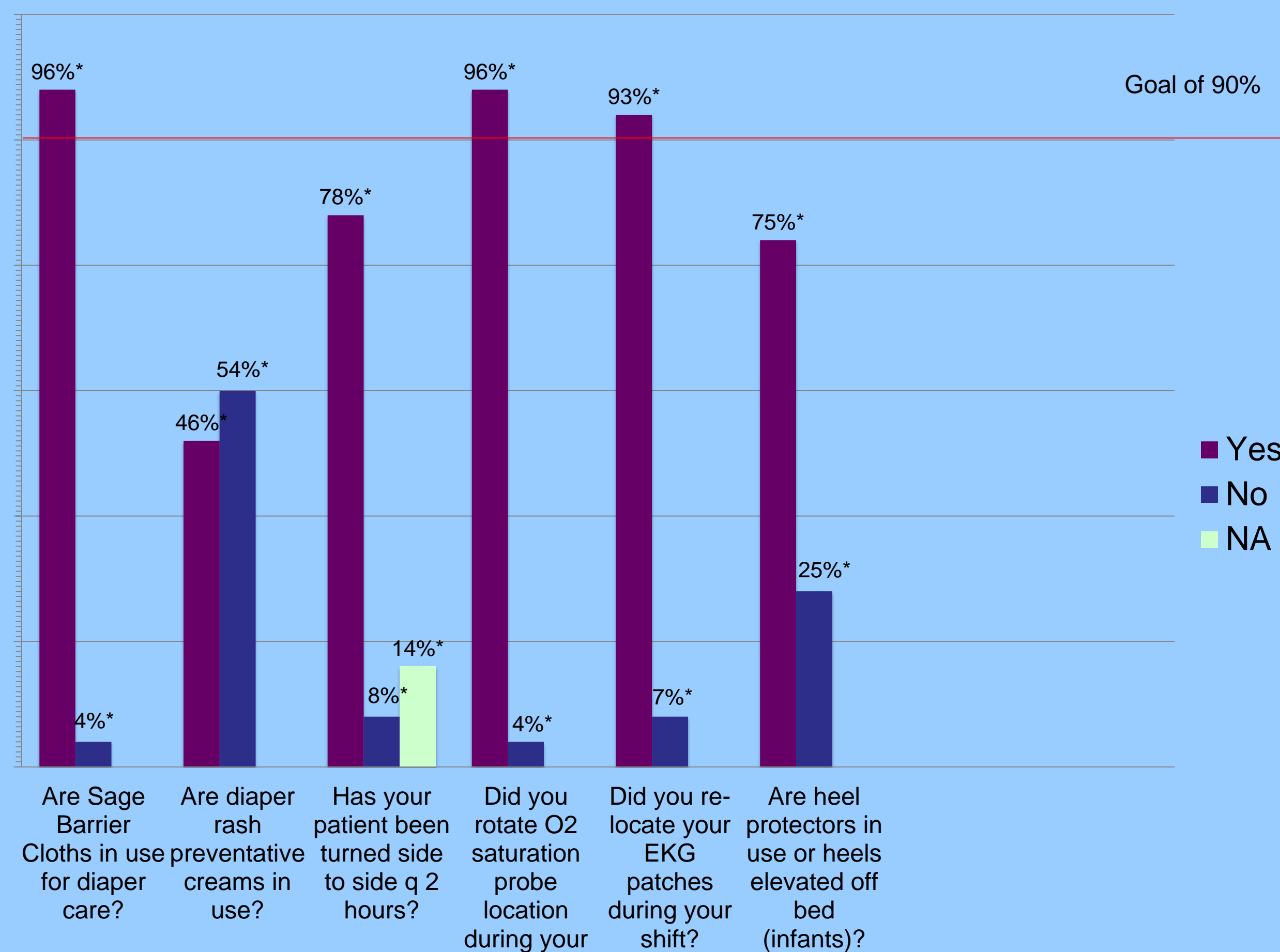
The audit tool was sent out each Tuesday for a three-month period, alternating morning and evening shifts each week.

The Braden Q Scale				
Mobility				
1. Completely immobile. Does not change or cannot change in body or extremities without assistance.	2. Very limited. Can only move head or extremities; passive bed only or completely passive bed with or without assistance.	3. Limited. Can move head or extremities; limited weight shifting or only a few changes in body position.	4. Slightly Limited. Can move head or extremities; can change in body or extremities; passive independently.	5. No Limitations. Can move head or extremities; can change in body or extremities; can change in body or extremities; can change in body or extremities.
Activity				
1. Bedfast. Confined to bed.	2. Chair fast. Able to sit up, move, transfer or reposition. Cannot bear own weight and must be moved in bed or wheelchair.	3. Walks with assistance. Requires only minimal assistance. Can move independently in wheelchair.	4. Walks Occasionally. Requires only minimal assistance. Can move independently in wheelchair.	5. Walks Independently. Requires no assistance. Can move independently in wheelchair.
Sensory/Perception				
1. Completely limited. Unresponsive to pain, heat, cold, pressure, or any other physical stimulus. Not oriented to person, place, or time.	2. Very limited. Responds only to painful stimuli. Cannot respond to other physical stimuli.	3. Limited. Responds to most physical stimuli. Responds to most physical stimuli.	4. Slightly limited. Responds to most physical stimuli. Responds to most physical stimuli.	5. No limitation. Responds to most physical stimuli. Responds to most physical stimuli.
Moisture				
1. Completely incontinent. Incontinent of urine, stool, or both.	2. Very limited. Incontinent of urine, stool, or both. Requires assistance to change.	3. Limited. Incontinent of urine, stool, or both. Requires assistance to change.	4. Slightly limited. Incontinent of urine, stool, or both. Requires assistance to change.	5. No incontinence. Incontinent of urine, stool, or both. Requires assistance to change.
Friction/Shear				
1. Severe. Requires assistance to move. Friction and shear are severe. Friction and shear are severe.	2. Moderate. Requires assistance to move. Friction and shear are moderate. Friction and shear are moderate.	3. Mild. Requires assistance to move. Friction and shear are mild. Friction and shear are mild.	4. Slightly limited. Requires assistance to move. Friction and shear are slightly limited. Friction and shear are slightly limited.	5. No limitation. Requires assistance to move. Friction and shear are no limitation. Friction and shear are no limitation.
Nutrition				
1. Very Poor. Very poor nutrition. Very poor nutrition.	2. Poor. Poor nutrition. Poor nutrition.	3. Moderate. Moderate nutrition. Moderate nutrition.	4. Slightly limited. Slightly limited nutrition. Slightly limited nutrition.	5. Good. Good nutrition. Good nutrition.
Flow/Perfusion/Oxygenation				
1. Extremely. Extremely poor flow/perfusion/oxygenation. Extremely poor flow/perfusion/oxygenation.	2. Compromised. Compromised flow/perfusion/oxygenation. Compromised flow/perfusion/oxygenation.	3. Limited. Limited flow/perfusion/oxygenation. Limited flow/perfusion/oxygenation.	4. Slightly limited. Slightly limited flow/perfusion/oxygenation. Slightly limited flow/perfusion/oxygenation.	5. Good. Good flow/perfusion/oxygenation. Good flow/perfusion/oxygenation.

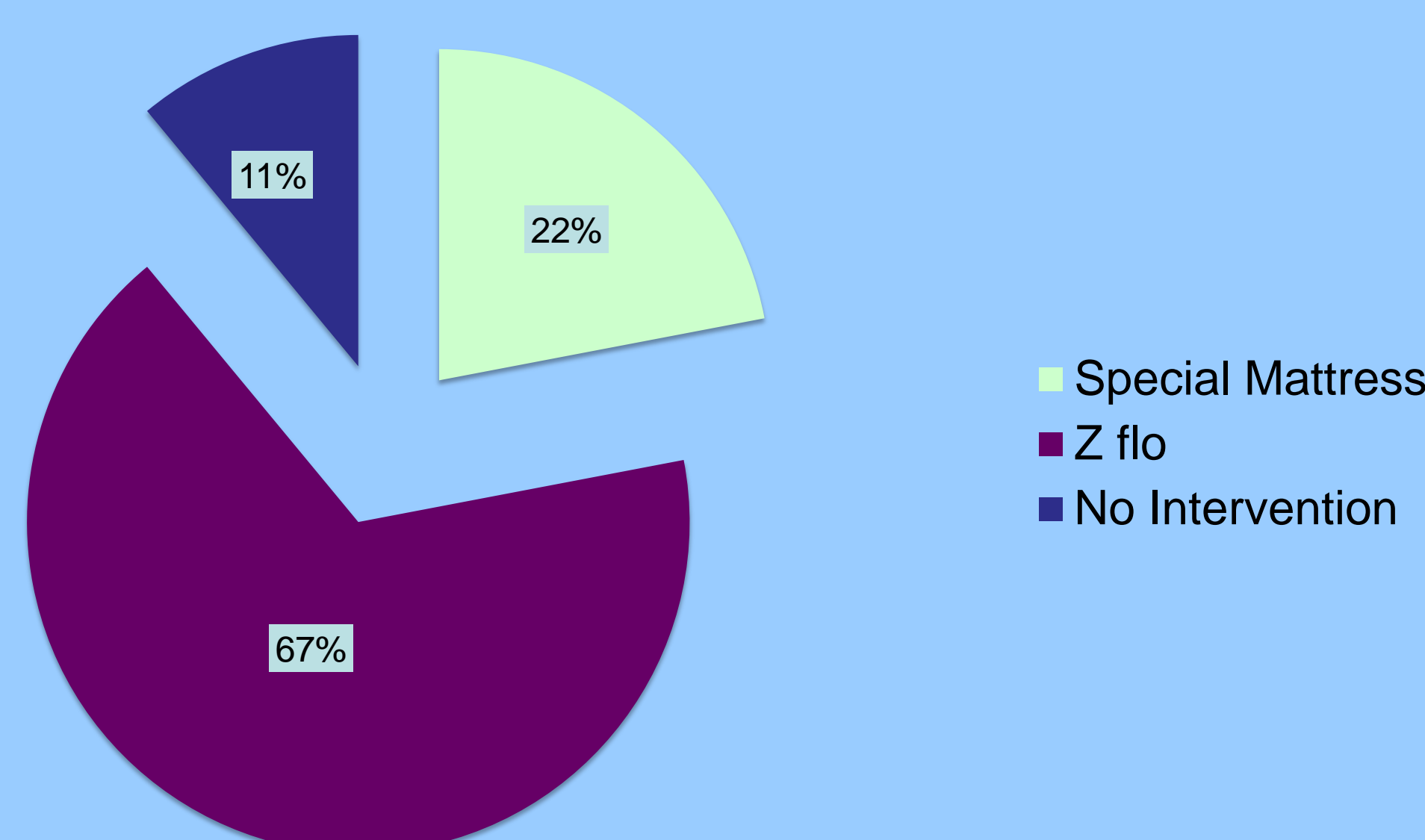
Example of the Braden Q Scale used by Johns Hopkins Hospital PICU nurses.

3 Results

PICU Nurse Compliance Data for Ventilated Patients: April – May 2014



Specific Surface Interventions for Highest-Risk PICU Patients April – May 2014



4 Conclusions

Analysis of the audit tool data from the months of April and May revealed nurses were above the 90% goal for compliance in the following interventions:

- use of sage barrier cloths
- rotation of O2 saturation probes
- EKG patch rotation.

Even though the data showed only 78% of nurses were compliant with the strict turning schedule, 14% of nurses reported this was not an appropriate intervention due to specific patient conditions, thus, this intervention was also viewed as successfully meeting the compliance goal.

Only 75% of high-risk patients received the heel protection intervention and only 46% of patients were receiving diaper rash prevention creams in their daily care. The prevention cream statistic suggests the need for further multidisciplinary education regarding the practice of writing unnecessary orders.

The 90% compliance goal was just missed for the highest-risk patients receiving surface interventions. 67% of highest-risk patients received Z flo as an intervention while 22% were provided special mattresses, leaving 11% of highest-risk patients without any surface intervention.

All of the results suggest the need for directed education strategies in five specific areas:

- the use of heel protectors
- the use and availability of Z flo (for example, Z flo can be used as an effective heel protector)
- the use of a special mattress if Z flo does not provide enough pressure relief
- a q2 turning schedule – when it is and when it is not an appropriate intervention
- the use of diaper rash prevention creams when an appropriate order is written

5 Future Directions

The goal of the compliance bundle data will continue to be one of improving the use of interventions in the care of critical pediatric ICU patients as a means of preventing unnecessary skin breakdown in the vulnerable pediatric patient.

The project will aim to post monthly compliance reports related to the interventions discussed within the audit tool as a means of encouraging nurses to use the interventions available to them.

Ideally, the project would move from collecting monthly prevalence data to collecting weekly incidence data headed up by a special PICU skin care team. However, the movement towards this type of incidence study and data collection along with the creation of a special skin care team becomes an issue of staffing and funding. Until these issues are overcome, the study will continue with the quarterly point prevalence model.

6 References

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