

<b>Basic Elements</b>							
<b>Patient ID</b>	<b>Race</b>	<b>Ethnicity</b>	<b>Gender</b>	<b>Payer</b>	<b>Preferred Language</b>	<b>Age upon admission (YEARS) [e.g. for 12.5 year old, years = 12]</b>	<b>Age upon admission (MONTHS) [ e.g. for 12.5 year old, months = 6]</b>
1	White	Non-Hispanic	Female	Medicaid	English	12	3
2	Black	Non-hispanic	Male	Medicaid	English	5	0
3	White	Hispanic	Male	Private	Spanish	8	12
4	Asian Pacific Island	Non-Hispanic	Male	Private	Chinese	10	0
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

**Initial Risk Assessment for Immobility-related Pressure Ulcer within 24 hours of PICU Admission**

<b>Denominator</b>				<b>Numerator</b>	
PICU Admission Date (mm/dd/yyyy)	PICU Admission Time (hh:mm, military)	PICU Discharge or Transfer Date (mm/dd/yyyy)	PICU Discharge or Transfer Time (hh:mm, military)	Evidence of standardized pressure ulcer risk assessment tool (Yes -1/No -2)	Date of standardized pressure ulcer risk assessment tool was administered (mm/dd/yyyy)
12/12/2011	13:01	12/14/2011	12:30	1	12/14/2011
3/3/2012	0:15	3/7/2012	8:10	1	3/3/2012
1/17/2012	23:59	1/18/2012	22:10	2	-
5/6/2012	10:45	5/6/2012	23:30	2	-

Time of standardized  
pressure ulcer risk  
assessment tool was  
administered (hh:mm,  
military)

0:50

12:55

-

-

<b>eMeasure Title</b>	<b>Initial Risk Assessment for Immobility-related Pressure Ulcer within 24 hours of PICU Admission</b>		
<b>eMeasure Identifier (Measure Authoring Tool)</b>	383	<b>eMeasure Version number</b>	0.0.006
<b>NQF Number</b>	None	<b>GUID</b>	553d31b1-02d5-4578-b8e1-3e546188a66f
<b>Measurement Period</b>	January 1, 20XX through December 31, 20XX to be reported monthly or quarterly		
<b>Measure Steward</b>			
<b>Measure Developer</b>			
<b>Endorsed By</b>	None		
<b>Description</b>	The measure will be a chart review measure or an eMeasuree performed to determine the proportion of patients for whom an initial risk assessment for development of an immobility-related pressure ulcer is performed. The immobility-related pressure ulcer assessment is to be performed within the first 24 hours of admission to the pediatric intensive care unit (PICU) with the use of a standardized pressure ulcer risk assessment tool designated as appropriate by the institution. The results of the assessment must be documented in the patient's chart upon completion.		
<b>Copyright</b>	TDB		
<b>Disclaimer</b>	These performance Measures are not clinical guidelines and do not establish a standard of medical care, and have not been tested for all potential applications.  THE MEASURES AND SPECIFICATIONS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND.		
<b>Measure Scoring</b>	Proportion		
<b>Measure Type</b>	Process		
<b>Stratification</b>	None		
<b>Risk Adjustment</b>	None		
<b>Rate Aggregation</b>	None		
<b>Rationale</b>	<p>Relationship to desired outcome:</p> <p>The desired outcome is reduced incidence of stage II, III, stage IV, and Unstageable immobility-related pressure ulcers and deep tissue injury in critically ill and injured children. Early assessment of risk has been shown to be important in prevention of immobility-related pressure ulcer development (Brandeis et al, 2001; Butler 2006; Quigley and Curley, 1996; Sims and McDonald, 2003). The Braden Q is the only validated immobility-related pressure ulcer risk assessment tool available for use with critically ill children (Curley et al, 2003).</p> <p>Opportunity for Improvement:</p> <ul style="list-style-type: none"> <li>* Identification of patients at risk is a key step in preventing development of pressure ulcers in critically ill and injured children</li> <li>* Targeted implementation of prevention strategies requires identification of children at risk in order to prevent the development of pressure ulcers in critically ill and injured children</li> </ul> <p>IOM Domains of Health Care Quality Addressed:</p> <ul style="list-style-type: none"> <li>* Safe</li> <li>* Effective</li> <li>* Patient-centered</li> <li>* Timely</li> <li>* Equitable</li> </ul> <p>Harmonization with Existing Measures:</p> <p>This measure strives to harmonize to the extent possible with all other existing pediatric measures such that the process of care expected of healthcare providers does not contradict what may be expected of them across the full spectrum of patient care in a Pediatric Intensive Care Unit (PICU).</p>		
<b>Clinical Recommendation Statement</b>	<p>The following clinical recommendation statements are quoted verbatim from the referenced clinical guidelines and represent the evidence base for the measure:</p> <p>Baharestani, M.M. &amp; Ratliff, C.R. (2007). Pressure ulcers in neonates and children: An NPUAP white paper. <i>Advances in Skin &amp; Wound Care</i>, 20(4), 208-220. On admission, all neonates and children should have a documented comprehensive examination, including a skin assessment and a risk assessment for pressure ulcers.</p> <p>Boynton, P. R., &amp; Paustian, C. (1996). Wound assessment and decision making options. <i>Critical Care Nursing Clinics of North America</i>, 8(2), 125-139. The increasing presence of multiple, chronic disease states among critically ill patients compounds care of their acute</p>		

or traumatic conditions. These patients may be admitted with existing wounds and they may develop impaired skin integrity due to a variety of factors related to their illness and treatment. Thorough skin assessment is essential for early identification of risk.

Brandeis GH, Berlowita DR, Katz P. Are pressure ulcers preventable? A survey of experts. *Advances in Skin and Wound Care*. 2001;14(5):244-248.

Preventing pressure ulcers boils down to two major steps: first, identifying patients at risk; and second, reliably implementing prevention strategies for all patients who are identified as being at risk.

Butler, C. T. (2006). Pediatric skin care: Guidelines for assessment, prevention, and treatment. *Pediatric Nursing*, 32(5), 443-50, 452-4.

Accurate assessment, documentation, prevention, and treatment are all key factors to effective pressure ulcer prevention.

Curley, M. A. Q., Quigley, S. M., & Lin, M. (2003). Pressure ulcers in pediatric intensive care: Incidence and associated factors. *Pediatric Critical Care Medicine*, 4(3), 284-290.

Describes the different types of injuries that critically ill children, including infants, experience from the use of equipment including oxygen pulse oximeter probes, nasal continuous positive airway pressure (CPAP) devices, endotracheal tubes, tracheostomy tubes, and urinary catheters—and the location of the skin breakdown. The occipital area is noted as being the most prevalent area for skin breakdown in children. This article supports using the Braden Q as a risk assessment tool in pediatric patients. It validates the tool itself and stresses the importance of risk assessment.

Curley, M. A. Q., Razmus, I. S., Roberts, K. E., & Wypij, D. (2003). Predicting pressure ulcer risk in pediatric patients. *Nursing Research*, 52(1), 22-31.

Critically ill children were found to develop pressure ulcers within the first day of admission. This article supports using the Braden Q as a risk assessment tool in pediatric patients. It validates the tool itself and stresses the importance of risk assessment.

Gray M. Which Pressure Ulcer Risk Scales Are Valid and Reliable in a Pediatric Population? *Journal of Wound Ostomy and Continence Nursing*. 2004; 31: 157-160.

Increased risk factors for developing pressure ulcers in infants and children include the following: significant prematurity; critical illness, neurologic impairments (including myelomeningocele and spinal cord injury), nutritional deficits, poor tissue perfusion or oxygenation, and exposure to prolonged pressure from hospital apparatus or tubes. This article emphasizes the importance of assessment of risk. The Neonatal/Infant Braden Q Risk Assessment Scale has also been identified and is currently being studied for validity and reliability.

McCord, S., McElvain, V., Sachdeva, R., Schwartz, P., & Jefferson, L. S. (2004). Risk factors associated with pressure ulcers in the pediatric intensive care unit. *Journal of WOCN*, 31(4), 179-183.

The Braden Q was used to evaluate at risk patients in the PICU. The presence of edema, increasing length of stay, patients on increasing positive-end expiratory pressure, not turning the patient, use of a specialty bed in the turning mode, and weight loss are associated with the increased risk of development of pressure ulcers in patients in the PICU.

Quigley, S. M., & Curley, M. A. Q. (1996). Skin integrity in the pediatric population: Preventing and managing pressure ulcers. *JSPN*, 1(1), 7-18.

Cites a 3-pronged approach for pressure ulcer prevention and management, which decreases unnecessary variation in practice surrounding the prevention and care of pressure ulcers in acutely ill children. One of the key recommendations was the use of the Braden Q for pediatric risk assessment.

Schindler, C.A., Mikhailov, T.A, Kuhn, E.M., Christopher, J., Conway, P., Ridling, D., & Simpson, V.S. (2011). Protecting fragile skin: Nursing interventions to decrease development of pressure ulcers in pediatric intensive care. *American Journal of Critical Care*, 20(1), 26-34.

The article evaluates the key risk factors in children who develop pressure ulcers in the pediatric intensive care unit. The researchers use the Braden Q risk assessment. Use of reliable risk assessment tool associated with better outcomes.

Schindler, C.A., Mikhailov, T.A., Cashin, S., Malin, S., Christensen, M., & Winters, J.M. (2013). Under pressure: Preventing pressure ulcers in critically ill infants. *JSPN*. doi: 10.1111/jspn.12043

Team used Braden Q risk assessment tool that was part of comprehensive pressure ulcer care bundle. The implementation of the care bundle was associated with a significant drop in pressure ulcer incidence from 18.8% to 6.8%. Key component of the bundle was admission risk assessment followed by daily risk assessment.

Sims A, McDonald R. (2003). An overview of paediatric pressure care. *Journal of Tissue Viability* 2003;13:144-8. Although there is no agreement on which risk factors contribute to pressure ulcer development in neonates and children, there is agreement that prevention lies in early risk identification.

Visscher, M., King, A., Nie, A.M., Schaffer, P., Taylor, T., Pruitt, D., Giaccone, M.J., Ashby, M., Keswani, S. (2013). A quality-improvement collaborative project to reduce pressure ulcers in PICUs. *Pediatrics* (131)6, e1950-1960. The collaborative QI model was effective at reducing PUs in the PICU. Pediatric patients, particularly neonates, are at risk for device-related ulcers. Heightened awareness, early detection, and identification of strategies to mitigate device-related injury are necessary to further reduce PU rates.

Wound Ostomy and Continence Nurses Society. WOCN Clinical Practice Guideline Series: Guideline for Prevention and Management of Pressure Ulcers. Glenview, IL. 2003.

The admission assessment should include both a risk assessment (to evaluate risk of developing a pressure ulcer) and a skin assessment (to detect existing pressure ulcers). These two assessments should be thought of as a single process step: a pressure ulcer admission assessment. The prompt identification of at-risk patients using a validated risk assessment tool is essential for accurate, prompt identification of at-risk patients and timely implementation of

prevention strategies. The risk assessment must include an assessment of several components: mobility incontinence, sensory deficiency, and nutritional assessment.

<b>Improvement Notation</b>	
<b>Reference</b>	
<b>Definition</b>	Standardized pressure ulcer assessment tool:  Assessment tool should be applied in a standardized basis to each patient admitted to the PICU and should be based on an immobility-related pressure ulcer risk assessment tool which has been validated for the majority of the institutions' PICU patients.  Currently, the Braden Q is the only validated immobility-related pressure ulcer risk assessment tool available for critically ill and injured children. Other validated risk assessment tools are acceptable, if available.
<b>Guidance</b>	None
<b>Transmission Format</b>	TDB
<b>Initial Population</b>	All patients admitted to the PICU with an admission ending during the reporting period.
<b>Denominator</b>	All patients admitted to the PICU for at least 24 hours during a monthly or quarterly reporting period.
<b>Denominator Exclusions</b>	None
<b>Numerator</b>	Number of PICU patients for whom an assessment of immobility-related pressure ulcer risk using a standardized pressure ulcer risk assessment tool was documented within 24 hours of admission.
<b>Numerator Exclusions</b>	None
<b>Denominator Exceptions</b>	None
<b>Measure Population</b>	Not applicable
<b>Measure Population Exclusions</b>	Not applicable
<b>Measure Observations</b>	Not applicable
<b>Supplemental Data Elements</b>	For every patient evaluated by this measure also identify payer, race, ethnicity and gender.

## Table of Contents

- [Population criteria](#)
  - [Data Criteria \(QDM Variables\)](#)
  - [Data criteria \(QDM Data Elements\)](#)
  - [Supplemental Data Elements](#)
  - [Risk Adjustment Variables](#)
- 

## Population criteria

- **Initial Population =**
  - # All patients admitted to the PICU for at least 24 hours during a monthly or quarterly reporting period.
  - o AND: Intersection of:
    - "Occurrence A of Encounter, Performed: PICU Admission or Transfer" >= 24 hour(s) during "Measurement Period"
- **Denominator =**
  - o AND: Initial Population
    - # Same as initial population
  - o AND: Intersection of:
    - "Occurrence A of Encounter, Performed: PICU Admission or Transfer" >= 24 hour(s) during "Measurement Period"
- **Denominator Exclusions =**
  - o None
- **Numerator =**
  - # Number of PICU patients for whom an assessment of immobility-related pressure ulcer risk using a standardized pressure ulcer risk assessment tool was documented within 24 hours of admission.
  - o AND: Intersection of:
    - Union of:
      - Intersection of:
        - "Occurrence A of Risk Category Assessment: Standardized Pressure Ulcer Risk

Assessment Tool (Braden Q)" <= 24 hour(s) starts during "Measurement Period"

- "Occurrence A of Risk Category Assessment: Standardized Pressure Ulcer Risk Assessment Tool (Braden Q) (start datetime)"

▪ Intersection of:

- "Occurrence A of Risk Category Assessment: Standardized Pressure Ulcer Risk Assessment Tool (Other)" <= 24 hour(s) starts during "Measurement Period"
- "Occurrence A of Risk Category Assessment: Standardized Pressure Ulcer Risk Assessment Tool (Other) (start datetime)"

- **Numerator Exclusions =**

- None

- **Denominator Exceptions =**

- None

- **Stratification =**

- None

### Data Criteria (QDM Variables)

- None

### Data criteria (QDM Data Elements)

- "Encounter, Performed: Occurrence A of PICU Admission or Transfer" using "Occurrence A of PICU Admission or Transfer User Defined QDM Value Set (1.1.1.1)"
- "Risk Category Assessment: Occurrence A of Standardized Pressure Ulcer Risk Assessment Tool (Braden Q)" using "Occurrence A of Standardized Pressure Ulcer Risk Assessment Tool (Braden Q) User Defined QDM Value Set (1.1.1.1)"
- "Risk Category Assessment: Occurrence A of Standardized Pressure Ulcer Risk Assessment Tool (Other)" using "Occurrence A of Standardized Pressure Ulcer Risk Assessment Tool (Other) User Defined QDM Value Set (1.1.1.1)"

### Supplemental Data Elements

- "Patient Characteristic Ethnicity: Ethnicity" using "Ethnicity CDCREC Value Set (2.16.840.1.114222.4.11.837)"
- "Patient Characteristic Payer: Payer" using "Payer SOP Value Set (2.16.840.1.114222.4.11.3591)"
- "Patient Characteristic Race: Race" using "Race CDCREC Value Set (2.16.840.1.114222.4.11.836)"
- "Patient Characteristic Sex: ONC Administrative Sex" using "ONC Administrative Sex AdministrativeSex Value Set (2.16.840.1.113762.1.4.1)"

### Risk Adjustment Variables

- None

---

<b>Measure Set</b>	Not applicable
--------------------	----------------