Developed in collaboration with the Wound Care Champions, Wound Care Specialists, Enterostomal Nurses, and South West Regional Wound Care Program (SWRWCP) members from Long Term Care Homes, Hospitals, and South West Community Care Access Centre contracted Community Nursing Agencies in the South West Local Health Integration Network.

Title

Procedure: Predicting Pressure Sore Risk in Adults and Children

Background

- Pressure sore risk screening tools differentiate between who is at risk of developing a pressure sore and who is not, to allow for appropriate, cost-effective, preventative resource utilization/allocation
- The use of a pressure sore risk assessment tool allows health care providers to target interventions to a person's individual risk factors
- The "Braden Scale for Predicting Pressure Sore Risk" (Braden Scale), developed in 1987, is made up of six sub-scales: sensory perception, moisture, activity, mobility, nutrition, and friction and shear[1,2]
- The Braden Scale has been tested in acute and long-term care settings and demonstrates high inter-rater reliability with registered nurses, and the tool has established validity, sensitivity, and specificity (predictive validity)[2,3]
- The "Braden Q Scale for Predicting Pediatric Pressure Injury Risk" (Braden Q Scale) is a valid and reliable pressure sore risk assessment tool for those aged 3 weeks to 8 years, adapted from the Braden Scale[4]. This tool includes the six original sub-scales of the Braden Scale, but adds a seventh – tissue perfusion/oxygenation
- The "InterRAI Pressure Injury Risk Scale" (PURS) is a Minimum Data Set (MDS)-informed tool that provides an estimate of graded risk for developing a pressure sore. The tool facilitates communication within the health care team and improves continuity of care for residents. The tools calculates risk based on: bed mobility, ability to walk in room, bowel continence, weight change, history of resolved pressure injuries, pain symptoms, and shortness of breath
- The total Braden Scale scores have been stratified into levels of risk, which are based on the predictive value of a positive test. Although not validated, the Braden Q Risk Scores and PURS scores have been stratified into like risk categories by SWRWCP program members for the purpose of implementing appropriate interventions, i.e.:

Risk Category	Braden Risk Score	Braden Q Risk Score	PURS Score
At Risk	15-18	22-25	1-2
Moderate Risk	13-14	17-21	3
High Risk	10-12	<16	4-5
Very High Risk	9 or below		6-8

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Indications	This procedure is intended to be used by front line registered health care providers, to assist with their assessment and management of individuals admitted with/presenting with a pressure sore or at risk for the development of a pressure sore.
Procedure	**NOTE: The use of the Braden Scale, the Braden Q Scale, or PURS Score is but one part of the holistic assessment of an individual admitted with/presenting with a pressure sore or at risk for a pressure sore.** **Assessment** 1. Determine if the Braden Score or Braden Q Score needs to be completed. NOTE: The initial Braden Scale or Braden Q Scale should be completed: a. Within two hours of admission to:

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        i. The Intensive Care Unit (ICU), Critical Care Unit (CCU), or Pediatric Intensive Care Unit (PICU)
        ii. Acute care, sub-acute care, or a rehabilitation unit
        iii. Acute psychiatry or geriatric psychiatry unit
        iv. Acute pediatric unit
    b. Within 24 hours of admission to long term care
    c. At the initial home visit in the community
    d. Pre-operatively (the day of surgery)
2. Thoroughly review the person's available medical records for documentation that reflects the person's current:
    a. Ability to respond to pressure/pain
    b. Degree to which their skin is exposed to moisture
    c. Level of/amount of daily physical activity
    d. Ability to change and control body position
    e. Food intake pattern
    f. Ability to reposition without experiencing friction/shear injury

Planning

1. Expected outcomes:
    a. Information from the person's medical chart, the person and/or their substitute decision maker (SDM)/power of attorney for personal care (POA C), and your assessment will allow for the proper completion of the Braden Scale or Braden Q Scale (whichever is appropriate)
    b. The information gleaned from the completion of the Braden Scale or Braden Q scale, in addition to your holistic person/wound assessment, will allow for the identification of extrinsic, intrinsic, and iatrogenic factors affecting the person's ability to heal (if they have a pressure sore and healing is the goal), or factors increasing their risk for pressure sore development
    c. Registered nursing staff, in collaboration with other involved health care disciplines and the person with the pressure sore or their SDM/POA C (if applicable), will be able to use the assessment information to initiate/modify and implement an interdisciplinary plan of care which contains clear directions to staff and others who are providing the person with direct care
2. Explain the procedure and purpose behind the pressure sore risk assessment to the person and/or their SDM/POA C and obtain verbal or implied consent to proceed with the assessment

Implementation

1. Provide for privacy and ensure the person is in a comfortable position to facilitate the assessment of their skin
2. Wash your hands and attend to the person with your assessment

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	supplies 3. Ensure the person's SDM/POA C is present or available if the person does not have a reliable memory or is unable to accurately answer any questions derived from the contents of the Braden Scale or Braden Q Scale 4. Ensure adequate lighting 5. If the person is in a bed, raise the bed (if you are so able) to an appropriate ergonomic working height to allow you to conduct the skin assessment while preventing self-injury 6. If you have the potential to come into contact with bodily fluids during your assessment, apply clean disposable gloves 7. Following the order of the Braden Scale or Braden Q Scale, ask the person and/or their SDM/POA C questions, observe, and physically assess to elicit/determine responses to the various Braden Scale or Braden Q Scale sub-scales: a. Sensory Perception: i. Is the person able to respond to your verbal commands? If so, can they clearly communicate when they are having discomfort and needing to be repositioned? ii. What is the person's level of consciousness? Do they respond to any stimuli? iii. Do they have sensory impairment, i.e. paralysis, neuropathy and if so, how much/what parts of their body surface does this impairment effect b. Moisture: i. Are the person's skin and linens usually dry, or do they require linen changes more than once per day? If so, how often? ii. Does the person have issues with perspiration, urine or fecal incontinence, highly draining wounds, drooling of saliva or hyperemesis that result in their skin being frequently or constantly moist? c. Activity: i. Does the person walk at least once every two hours when they are awake? If not, how often are they walking? ii. Does the person spend most/all of their days in bed or sitting in a chair? iii. Can the person physically walk/weight bear? What is the extent of assistance required to transfer/mobilize them? d. Mobility: i. Can the person regularly reposition themselves without assistance, or are they dependent on others for this? If so, to what extent are they dependent? ii. Observe the tolerance of the person for position

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changes

iii. Observe the person for preferred positions when in their bed/chair

e. Nutrition:
   i. Does the person usually eat a least 75% of their meal? If not, how much are they eating per meal on average?
   ii. Does the person take any nutritional supplements?
   iii. Is the person on a tube feeding or TPN?
   iv. How many servings of protein is the person taking in per day?
   v. Is the person drinking adequate fluids?
f. Friction/Shear:
   i. Is the person able to move about their bed/chair without causing friction/shearing injury, without assistance? If not, how much assistance to they require? If you are unsure, ask them to demonstrate
   ii. Are they able to maintain a good position in their chair/bed, or do they slide down?
   iii. Does the person have spasticity, contractures or agitation which results in friction injury?
g. Tissue Perfusion (the Braden Q Scale only):
   i. Is the child's Sp02 greater than 95%?
   ii. Do they have adequate capillary refill (i.e. less than two seconds)?
   iii. What is the child's hemoglobin count, i.e. for newborns is it 165-195 g/L and for children is it 112-165 g/L?
   iv. Is the child's serum pH normal, i.e. 7.35-7.45?
   v. Is the child hypotensive, i.e. is their mean arterial pressure <50mmHg or <40mmHg if they are a newborn?
   vi. Can the child physically tolerate position changes?

8. Assess the condition of the person's skin over regions of pressure. Body weight against bony prominences places underlying skin at risk for breakdown. Look for areas of:
   a. Skin discoloration and temperature changes
   b. Blanching
   c. Induration
   d. Pallor and mottling
   e. Absence of superficial skin layers
9. Assess the person for additional areas of potential pressure:
   a. Nares: nasogastric tube, oxygen cannula
   b. Tongue and tips in the presence of an endotracheal tube
   c. Ears: oxygen cannula, pillows
   d. Intravenous sites
   e. Drainage tubes

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	f. Indwelling urethral catheter g. Orthopedic devices 10. Assist the person to a comfortable position, if needed 11. Lower the person's bed to an appropriate height (if applicable), and ensure the person's safety, i.e. apply side rails, personal alarms, restraints, etc. as per the person's care plan/medical orders 12. Clean reusable equipment/surfaces touched during the procedure with warm soapy water or antimicrobial wipes and dry thoroughly to prevent cross contamination 13. Remove your disposable gloves and discard them in the appropriate receptacle 14. Wash your hands 15. Score each sub-scale item based on their descriptors. Place the sub-scale scores in the score column on the far right of the table 16. Total the sub-scales and place the total score in the designated area at the bottom of the table. **NOTE: People with additional risk factors, i.e. an existing pressure sore, hemodynamic instability, low diastolic pressure, advanced age and/or fever may be at greater risk than that indicated by the total Braden Score or Braden Q Score, and as such, their score should be advanced to the next risk category** 17. Discuss your findings and the implications of those findings with the person and/or their SDM/POA C 18. Share the results of your assessment with the interdisciplinary members of the person's wound care team 19. Complete documentation as required, i.e.: a. Document initial and on-going Braden Scale and Braden Q Scale scores on the designated form according to your organization's policy, and store that document in the assigned location b. Implement interventions to reduce/minimize risk and to address factors affecting pressure sore healability, based on the total Braden Scale or Braden Q Scale, and based on individual sub-scale scores. See "Pressure Injury Risk Reduction Interventions", found on the SWRWCP website c. Complete/update interdisciplinary person-centered care plans as per your organizations policy, based on the person's score and your holistic assessment **Evaluation** 1. Unexpected outcomes: a. The information from the person's medical records, the person and/or their SDM/POA C, and your assessment do not allow for the thorough completion of the Braden Scale or Braden Q Scale b. The information obtained does not allow for the identification of extrinsic, intrinsic, and iatrogenic factors delaying pressure sore healing or putting the person at increased risk for

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	pressure sore development c. Registered nursing staff, in collaboration with other involved health care disciplines and the person with the pressure sore or their SDM/POA C, are unable to use the assessment information to initiate/modify and implement an appropriate person-centered, interdisciplinary plan of care d. The Braden Scale or Braden Q Scale is not completed according to this procedure and/or appropriate interventions are not put into place 2. Reassess those who score "At Risk" or higher: a. Every 12 hours in the PICU and on pediatric acute care units b. Daily in the ICU, CCU c. Every 48 hours in acute care, sub-acute care, acute psychiatry, geriatric psychiatry, on rehabilitation units, and post-operatively d. Weekly for four weeks in community care and long-term care, and then quarterly, within 24 hours of any return from hospital admission, and within 24 hours of any return from an absence of greater than 24 hours 3. Reassess all people, irrespective of previous risk scores or the care setting, whenever there is a significant change in their condition/health status 4. **NOTE: For those using the RAI-MDS system, you will be completing a RAI-MDS assessment within 14 days of admission, quarterly thereafter, and with any significant change in health, which will generate a PURS score. This PURS score can be used to direct preventative/treatment measures related to pressure sore risk**
References	1. Braden BJ and Bergstrom N. A conceptual schema for the study of etiology of pressure sores. Rehabil Nurs. 1987;12(1):8-12. 2. Bergstrom N, Demuth PJ, Braden BJ. A clinical trial of the Braden Scale for predicting pressure sore risk. Nurs Clin North Am. 1987;22:417-428. 3. Bergstrom N, Braden B. A prospective study of pressure sore risk among institutionalized elderly. J Am Geriatr Soc. 1992;40:747-758. 4. Quigley S, Curley M. Skin integrity in the pediatric population: Preventing and managing pressure ulcers. J Soc Pediatr Nurs. 1996;1:17-18.
Related Tools (NOTE: these tools and their instructions can be found on the SWRWCP's website: swrwoundcareprogram.ca)	• Braden Scale for Predicting Pressure Sore Risk • Braden Q Scale • Pressure Injury Risk Reduction Interventions

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