Pressure Ulcer Prevention

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Unit Y University of Michigan Health System (UMHS) is a nationally recognized unit that has received the Beacon Award for Excellence in Critical Care in 2010 and 2011. Being that this is a nationally recognized intensive care unit, it is important to uphold that standard of excellence by continually researching and implementing the newest evidence-based clinical practice guidelines and findings to ensure the best patient outcomes. The Clinical Nurse Specialist, S.D., has recently headed an initiative to decrease the incidence of pressure ulcers on patients in the UM Health System. Between September 2012 and August 2013, it was found there were 183 pressure ulcers acquired on the unit, some device-related, and others' etiologies unknown. Being that this is a population of patients who are frequently in one position for hours in surgery and are sent to the Y with support from many medical devices that can cause pressure ulcers, it is important to investigate the current clinical practice guidelines (CPG) for recommendations in the prevention of pressure ulcers. The purpose of this paper is to provide a general overview of an international CPG, critique the guideline using the AGREE model, compare the CPG with the current UMHS guideline, and make recommendations for the Y in prevention of pressure ulcers.

It is known that pressure ulcers affect 2.5 million patients per year, and that pressure ulcers cost the United States between $9.1 and $11.6 billion dollars per year. Berlowitz et al. (2011) found that 60,000 patients die each year as a direct result of pressure ulcers. Many insurance companies, including Medicare no longer cover preventable conditions, such as pressure ulcers, making it important to reduce the incidence of pressure ulcers in the Y. Other factors such as patient mortality rates and patient comfort are important reasons for needing to reduce pressure ulcer incidence.

In response to the large prevalence and cost in the management of pressure ulcers, as well as the pain and mortality associated with them, the European Pressure Ulcer Advisory Panel

(EPUAP) and American National Pressure Ulcer Advisory Panel (NPUAP) collaborated for 4 years in an effort to perform an extensive literature review and develop a CPG on the prevention and treatment of pressure ulcers. The CPG developed looks at seven topic areas: etiology, risk assessment, nutrition, positioning, support surfaces, and special populations (i.e., operating rooms). The etiology section covers mechanical load, magnitude, and time; tissue reactions at different types of mechanical loading; mechanisms that lead to tissue damage; and factors that influence susceptibility. This section serves as the introduction to the prevention guideline. The risk assessment section discusses how to assess a patient for risks, document these risks, and develop a prevention plan for those patients at risk of developing pressure ulcers. An important part of the risk assessment section is skin assessment of the patient and proper documentation of the skin assessment. The nutrition section recommends actions such as assessing nutritional status of each patient, using the correct nutritional screening tools, and providing nutritional support to each patient at risk of developing pressure ulcers (European Pressure Ulcer Advisory Panel [EPUAP] and National Pressure Ulcer Advisory Panel [NPUAP], 2009).

The positioning recommendations in this CPG discuss pressure areas, repositioning frequency, repositioning techniques, how to properly reposition the seated individual, and the importance of repositioning documentation. Support surfaces covers how to choose the proper support surface, examine the effect of the support surface for each individual, the proper mattresses to use while laying and sitting, and if the use of other support surfaces such as donut-type devices are effective or not. The last section of the CPG makes recommendations for special populations (i.e., patients in the operating rooms), how to risk-assess, and positioning the patient before, during, and after surgical procedures (EPUAP & NPUAP, 2009). This section is especially applicable and important for the Y population. In summary, this guideline discusses

the importance of proper assessment, prevention plans, repositioning, and support surfaces, and how when used in combination, the incidence of pressure ulcers in the tertiary care setting can be reduced.

Before it is implemented in a clinical setting, the CPG should be evaluated using a valid and reliable instrument. The Appraisal of Guidelines for Research & Evaluation, or AGREE model (AGREE II, 2009) will be used to assess the quality and scientific rigor of this CPG. Beginning with a clearly defined statement of purpose, the CPG intends to provide "healthcare professionals" with an evidenced-based CPG to prevent the development of pressure ulcers in all "vulnerable individuals of any age" (NPUAP & EPUAP, 2009). While failing to explicitly mention any specific goals or outcomes, the benefits of the CPG may be implied through the statement of significance. As previously stated, the CPG was a collaborative effort between the NPUAP and the EPUAP. The development team consisted of wound healing specialists and certified wound care nurses, with consults in plastic surgery and infectious disease. While the NPUAP and EPUAP encouraged all of its members to participate in the review and comment of the CPG, any individual or organization interested in pressure ulcers could become stakeholders. 906 individuals and 126 different organizations contributed to the development of the CPG, spanning from 63 countries on 6 continents (NPUAP & EPUAP, 2009). Additionally, the CPG included feedback from pressure ulcer survivors to provide a consumer perspective. No financial contributions influenced the development process, as disclaimed within the technical report.

The two groups first used several electronic databases (PubMed, CINHAL, EMBASE, The Cochrane Database of Systemic Reviews, The Cochrane Central Register of Controlled Trials, Health Technology Assessment, and AMAD) to collect a wide range of evidence from January 1998 through January 2008; these articles were screened, evaluated, and divided

according to topic. Search terms can be found on www.pressureulcerguidelines.org. As part of the screening and evaluation process, two reviewers critiqued the quality of the studies. The approved articles were placed into an evidence table, with the level of evidence for each study identified. To reduce bias, the developers performed a quality check on a random 10% sample of the completed evidence tables. Based on the literature review findings, the two groups drafted their recommendations for the CPG [clinical practice guidelines] in summarizing the evidence found in each of the selected articles. However, as stated in the limitations and appropriate use section, these recommendations may not be appropriate in certain circumstances and users are encouraged to modify their care based on the complex needs of their patients (NPUAP & EPUAP, 2009).

The National Pressure Ulcer Advisory Panel guidelines for pressure ulcer prevention can be compared to the UMHS standard of care in many ways. Both include recommendations on risk assessment and skin assessment. However, the National Pressure Ulcer Advisory Panel also goes into depth about nutrition for pressure ulcer prevention, repositioning for prevention, and support services; things that the UMHS guideline only briefly discusses. Table 1 shows the similarities and differences between the two guidelines.

With the current clinical practice guidelines in mind, nurses must consider what this means for their individual practice while in the clinical setting. Care bundle approaches have continuously been studied and found to be of great success. This method includes all practices that if done in combination should lead to the best outcome. The three highlights of the ulcer prevention specific care bundle revolve around: Comprehensive skin assessment, a standardized pressure risk assessment, and finally implementations to address the areas of risk. The area that most nurses need to focus on is the implementation section. The NPUAP identifies three main

areas of implementation: repositioning, support surfaces, and nutrition. When considering repositioning, nurse should understand the importance of repositioning patients at least every two hours, relieving the pressure applied to certain areas of the body. This includes turning (on the patient's own or with the help of the nurse) or getting the patients out of bed. Key areas where position changes may not always be done are when patients are put into chairs. They still need to be turned, especially in these situations, as pressure ulcers develop quickly (often quicker than while in bed) when they are up to the chair.

The second area focuses on support surfaces. Surfaces should be breathable while supporting the patient, allowing for optimal comfort. Pillows should also be placed under the calves allowing for the heels to dangle, as these are major pressure areas. Finally, nutrition should be assessed early and often. The amount of nutrition a patient needs versus their energy expenditure is important in preventing as well as treating pressure ulcers. Talking to the health care team about getting patients their recommended nutrition, whether it is orally, through tube feeds, or some other means, is of the utmost importance (Berlowitz et al., 2011). These areas, bundled together, should improve and promote the prevention of ulcers, thus improving patient's outcomes.

Table 1.

	Comparison of NPUAP pressure ulcer prevention guidelines with UMHS standard of care	
	NPUAP	UMHS
Risk Assessment	Risk assessment should assess activity mobility, nutritional indicators, factors affecting perfusion and oxygenation, skin moisture, advanced age, friction/shear, sensory perception, general health status, and body temperature. Risk factors identified in assessment should lead to individualized plan of care and should be documented.	Standard of care uses Braden Scale to predict pressure ulcer risk in adult population (sensory perception, mobility, activity, moisture, nutritional status, and friction/shear). Hospitalized patients will be assessed for risk of pressure ulcer: at admission/transfer to unit, first day after every surgery, any time condition deteriorates, M-W-F is Braden score is ≤17 and every Monday if >17. Formulate Care plan based on risk factors identified in Braden Scale using The Risk for Impaired Sin Integrity Care plan, The Braden Skin Care Nursing Intervention Cue Sheet, or Impaired Tissue Integrity Care Plan. Document Braden scores, any interventions and outcomes on 24 hr flow sheet and progress notes.
Skin Assessment	Assessment should be ongoing and include localized heat, edema, induration, pain/discomfort, medical-device related and should be documented. Do not massage or rub ulceration, protect using moisture barriers, and use skin emollients to hydrate skin.	Conduct head to toe skin assessment using Braden Scale (sensory perception, mobility, activity, moisture, nutritional status, friction/shear): at admission/transfer to unit, everyday if Braden score is ≤17 and every Monday if Braden Score is >17. Evaluate pressure ulcers with each dressing change.
Nutrition	Should use a valid and practical tool for nutritional screening. Individuals at nutritional risk and pressure ulcer risk should have a nutritional assessment, estimation of nutritional requirements, comparison of nutrient intake with estimated requirements, appropriate nutrition intervention and route, and monitor/evaluate nutritional outcome.	Nutrition assessment is covered by one question in the Braden assessment (is nutrition adequate-3, probably not adequate-2, and not adequate-1). Nutrition specialist and dieticians consult is requested if nutrition is poor.

Repositioning	Repositioning must take into consideration the condition of the patient, support service used, patient tissue tolerance, and level of activity/mobility, medical condition, overall treatment objectives, and assessment of skin condition. Reposition seated individual to maintain full range of activities, minimizes pressure, and limit time individual spends seated in a chair without pressure relief. Document accordingly.	No specific guidelines noted regarding patient repositioning.
Support Surfaces	Selection of support surface should take level of mobility within bed, comfort, microclimate control, and care setting into consideration. Use pillows under calves to elevate heels from the mattress. Continue to turn and reposition patients on specialty mattresses and on chairs.	No specific guideline on support surfaces or mechanisms of use.

References

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