

Understanding the Seriousness and Complexity of Pressure Ulcers Relating to Continuum of Care

**By
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Understanding the seriousness and complexity of pressure ulcers relating to continuum of care requires addressing government regulations, legal responsibility, appropriate medical practice guidelines and financial responsibility. To accomplish this goal, pressure ulcer management must be done not only from admission through discharge, but continued to the next level of care by all medical facilities and homecare agencies.

The governmental regulations are well-defined in the Social Security Act of 1965 through the Medicare Modernization Act of 2003. The conditions of participation mandate that hospitals, long-term care facilities and homecare agencies all must comply with the Social Security Act regulations. These governmental regulations mandate a seamless continuum of care for the patient who is deemed to be at risk or who has an existing pressure ulcer. Federal and state agencies have been charged with oversight responsibilities. Other organizations such as JCAHO have deemed status and thus act as an agent for Medicare and other governmental organizations. Two recent activities relating to pressure ulcers being recognized as a quality of care indicator are the MEDICARE PATIENT MONITORING SYSTEM and the recognition by the consumers that an occurrence of a pressure ulcer may represent poor medical care. Articles in the main stream press underscore this consumer awareness and concern.

The details in federal statutes and regulations have set an easily identifiable industry standard for the care of pressure ulcers. This standard, and survey results applying it, have made negligence cases involving pressure ulcers easier to prove. Therefore, it is not surprising that facilities cited with violations involving pressure ulcers have lost significant cases.¹ Pressure ulcers remain an area in medicine where worst practices are more common than best practices.² With that said, it is paramount that facilities and their staff, both clinical professionals and non-clinical administrators, understand their fiduciary responsibility to the patient.

To follow the appropriate standard of care, the caregiver must recognize the problem, understand the problem and then address the problem. For years in the medical industry, many individuals within a medical setting, along with nurses, have recognized the problems of pressure ulcers and have addressed the problems, but do not understand

¹ Bennett RG, O'Sullivan J, DeVito EM, Remsburg R
The increasing medical malpractice risk related to pressure ulcers in the United States.
American Geriatrics Society. 2000; 48: 73-81

² Ferrell BA, Josephson K, Norvid P, Alcorn H.
Pressure ulcers among patients admitted to home care.
American Geriatrics Society. 2000; 1046

the pathophysiology of a pressure ulcer. In addition to the pathophysiology, individuals lack the understanding of the basic science of products being utilized for pressure ulcer prevention and treatment. This lack of proven problem solving technique has lead to little, if any, decrease in pressure ulcer development. Furthermore, there has been a higher than necessary expenditure on support surfaces not scientifically proven to improve clinical outcomes over less expensive alternatives.

With stress growing for quicker hospital discharges and increasing patient acuity, pressure ulcer assessment and management are important areas for education and quality improvements in homecare. It is estimated that 30% of all admissions to homecare are at serious risk of new pressure ulcers. Patients at risk of developing pressure ulcers and those who had existing pressure ulcers were found to be under treated.³ The problem of pressure ulcers among older adults receiving home healthcare rivals the problem of pressure ulcers among other adults in hospitals and long-term care facilities.⁴

Once the awareness of the problem has been noted, then an understanding of the problem must be addressed. A pressure ulcer is a mechanical stress (pressure, shear, friction) that causes ischemic necrosis of at risk soft tissue. Candidates are predominately of nutritionally and mobility impaired individuals which have been placed on a support surfaces. Little is known about predicting pressure ulcer development in home healthcare patients. The few studies conducted in this setting found that urine or fecal incontinence, altered levels of activity and mobility, recent discharge from a institutional setting or more functional impairments were associated with presents of a pressure ulcer.⁵ The above statements underscore the need to better understand the pathophysiology for pressure ulcer formation.

In understanding the relationship between soft-tissue injury and support surfaces, we must accept that the human body is 3-dimentional and when a support surface delivers a gradient pressure and/or shear mechanical stresses, the soft tissue will then become distorted. This distortion causes a change in the velocity and flow pattern of the circulation, causing endothelial cell damage. This damage can result in ischemia and possibly infarction of the soft tissue at risk that is trapped between the bony prominence of the skeletal press and the extrinsic support surface. When this ischemic event is combined with reperfusion injury and lack of reactive hyperthermia reserve in an at-risk patient one now better understands the concept of deep tissue injury and/or necrosis. Most importantly, they need to an understanding that there is a time delay up to 3-7 days for pressure ulcers to be clinically recognized from time of the causive event. This

³ Ferrell BA, Josephson K, Norvid P, Alcorn H.
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⁴ Bergquist S,
Pressure ulcer prediction in older adults receiving home health care: Implications for use with the OASIS.
Advances in Skin and Wound Care. 2002; 139

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understanding enables the clinicians to better recognize and document medical conditions that can and cannot be modified allowing one to be able to determine avoidable versus non-avoidable pressure ulcers. This has tremendous clinical outcome, regulatory, legal and public relations ramifications.

When one understands the pathophysiology of pressure ulcer formation the basic science relating to the support surface should be addressed. The various basic science disciplines of chemistry, physics, mechanics and others can help the clinicians understand the mechanical stresses that will be delivered to the patient at risk for pressure ulcer development. The media from which the support surface is made must be evaluated based upon scientific facts and studied by 3-dimensional, not 2-dimensional means. Pressure mapping relies on a 2-dimensional measurement. For a more accurate evaluation, 3-dimensional volumetric measuring techniques such as CT scanning or MRI scanning should be conducted on the soft tissue at risk.

Volumetric support can only be delivered by a static fluid (gas, liquid, sol) media within an appropriate container that is properly filled or inflated and is pliable yet durable. Mother Nature has chosen a static fluid environment for the development of the fetus and life in an atmosphere (gas) or water (liquid). A properly made and used static fluid product creates an equalized distribution of the body's weight. This allows the patient's physiologic system to auto regulate itself to the best obtainable level of health. Thus, if homeostasis is maintained, the patient has a better chance not to develop a pressure ulcer. Selection of a proper support surface is a modifiable factor when trying to prevent or treat a pressure ulcer. No one product type is appropriate for every patient's needs. This requires knowledge about how products work and how they affect the at-risk patient.

The lower extremity cannot be protected from pressure ulcer development nor relied on for treatment of an existing pressure ulcer with use of a support surface alone at all times. This is not to say that the support surface is bad, but the recumbent physiological changes resulting in hemodynamic variations, coupled with the anatomy of the ankle/heel/foot complex, creates a very difficult prevention/treatment scenario of pressure ulcers of the lower extremity. Additional devices may be required depending on various factors such as mobility and ambulation along with other general medical problems such as the cardiovascular health of the patient.

The usage of pressure reducing devices alone can cause an increase in the incidence of pressure ulcer development while protocols decrease the incidence by 50% or greater.^{6 7} Protocols are crucial in developing and implementing a seamless continuum of care. A standardized protocol should be able to be individualized so a care plan can be

⁶ Moody BL, Fanale JE, Thompson M, Vaillancourt D, Symonds G, Bonasoro C. Impact of staff education on pressure sore development in elderly hospital patients. *Archives of Internal Medicine*. 1988; 124: 2241-2243

⁷ Lyder CH, Preston J, Grady JN, Scinto J, Allman R, Bergstrom N, Rodeheaver G. Quality of care for hospital medicine patients at risk for pressure ulcers. *Archives of Internal Medicine*. 2001; 161: 1549-1554

developed and followed for each individual patient. Factors to be considered for developing a standardized protocol might include nutrition and hydration, mobilization and ambulation, support surface selection, lower extremity protection, incontinence care, wound care, care of other general medical conditions and continuum of care responsibilities. For the continuum of care to be properly implemented, the individualized care plan based on the standardized protocol must be understood and followed by all caregivers combined with a timely assessment and risk analysis upon admission. The care plan must continue after admission with scheduled assessments throughout the patients stay and discharge to the next level of care.

One must remember that health impaired individuals are susceptible to pressure ulcer development as long as the risk factor remains. Prevention and treatment strategies for pressure ulcers were found to be limited before admission to homecare. Since pressure ulcers can occur on any surface in a short period of time, support surface protection should occur immediately and be maintained throughout the continuum of care within a facility as well as inter-facility transfer.

The problem remains that only 54% of patients with pressure ulcers were placed on a pressure reducing device upon discharge and only 18% of those at risk for developing new pressure ulcers were receiving pressure reduction devices at time of discharge.⁸ A care plan should follow a patient to the next level of care. To accomplish this appropriately, adequate medical staffing levels with appropriate abilities must be combined with appropriate material resources. The need to inform, educate and help the patient or caregiver about the risk of pressure ulcer development or the requirements to heal an existing pressure ulcer is not only appropriate medical care, but is required by governmental regulations. This seamless continuum of care compares to a well-trained relay race team that practice and communicate with each other so as not to drop the baton.

Appropriate staffing levels and skills have been studied to determine the appropriate levels needed to decrease the risk of pressure ulcer development. The selection of appropriate products is difficult at times do to profit motivations by some facilities to use low price, ineffective products or expensive products that are reimbursed at higher levels with no proven improvement in care. Difficult requirements to obtain insurance reimbursements, even though there is a medical necessity for the use of specific products creates a disconnect in care if products can not be obtained at a reasonable cost. A new medical product delivery system utilizing patient direct sales will evolve as the medical industry goes from a reimbursement driven system to a consumer driven system for purchasing of products period.

In conclusion, the pressure ulcer problem must be addressed by an individualized care plan that considers multiple risk factors. This care plan must be the glue to a seamless continuum of care for that patient. Continuum of care must have appropriate

⁸ Ferrell BA, Josephson K, Norvid P, Alcorn H.
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staffing levels with adequate skill as well as having access to products and services that are cost effective, not the cheapest or the best profit generating. Until this seamless approach is accomplished, avoidable pressure ulcer development, patient morbidity and death, citations, civil penalties and litigation will continue.