A SYSTEMATIC APPROACH TO PRESSURE ULCER PREVENTION IMPROVES PATIENT CARE, REDUCES COSTS

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CHESAPEAKE REGIONAL MEDICAL CENTER

Hospital:
Chesapeake Regional Medical Center

Location:
Chesapeake, VA

Size:
311-bed inpatient facility

Challenge:
Develop a systematic program to reduce prevalence level of hospital-acquired pressure ulcers

Results:
Conducted 90-day program trial in ICU2. Reduced ICU2's pressure ulcer incidence from 57.1 percent to 0 percent. Overall, the facility's pressure ulcer incidence went from 16.2% in July 2008 to 2.5% in May 2009. Estimated cost savings for the hospital were $1,079,500 in nursing time, pharmaceuticals and supplies.

Our Hospital:
Chesapeake Regional Medical Center, Chesapeake, VA, was founded in 1976 with the goal of providing the highest quality health care available to meet the needs of southeastern Virginia and northeastern North Carolina. The hospital established several affiliates over the years, and in 1998 they all combined under the same name, Chesapeake Regional Medical Center. The Medical Center includes:

- A 310-bed inpatient facility
- A 24-hour emergency room
- Rehabilitation services
- Two intensive care units – one is neurological, one is medical
- Sleep Center
- Lifestyle Center
- Obstetrics
- Center for Wound Care and Hyperbaric Medicine

The hospital is a local, independent, community-focused organization offering area residents what they want: high-quality health care delivered by people who openly display their concern and compassion.

Our Challenge
When I joined the hospital in April 2008 as the facility's Wound Care Coordinator, I learned we had an increasing level of hospital-acquired pressure ulcers. Pressure ulcers (sometimes referred to as "bed sores") affect millions of people each year.

A pressure ulcer is an injury to the skin that is caused by pressure. Sitting or lying in one position without moving puts pressure on the skin and slows down blood flow. When blood flow slows down, skin and tissue can die and result in a pressure ulcer. When pressure ulcers occur, they often can be painful, debilitating and potentially cause serious health issues. They also can add to a patient's length of stay in the hospital.

The cost savings from preventing pressure ulcers and eliminating additional treatment is very significant for both the hospital and our patients. According to the Centers for Medicare & Medicaid Services (CMS), the average cost per patient per hospital stay for a pressure ulcer as a secondary diagnosis is $43,180, including nursing time, medication and supplies. *(See figure 2 on back page.)*

In the spring of 2008, our hospital's ICU2 unit had a pressure ulcer incidence level of 57.1 percent (incidence is the rate of new pressure ulcers in a given time period) with 25 hospital-acquired pressure ulcers. This number was significantly higher than the national benchmark of 3.3 percent. This was the result of inconsistent skin assessments as well as documentation, and a general lack of focus about the value of preventative skincare. Our program had focused on treating pressure ulcers after they had already developed rather than preventing them.

The staff had products available, but education was limited regarding efficient use of these products. Ointments and cleansers were used, but provided no protective barrier to prevent pressure ulcer formation. The skincare procedure also did not include moisturizers, a key step to an effective skincare program. We also had very few pressure-relieving devices such as heel supports and cushions to help minimize pressure to vulnerable body parts. Use of reusable incontinence pads amplified the problem by keeping moisture close to the patients' skin for extended periods of time.

Although the high prevalence of pressure ulcers in our facility was cause for great concern, the issue took on more immediacy with the impending reimbursement changes. Beginning in October 2008, the Centers for Medicare & Medicaid Services (CMS) no longer reimbursed healthcare facilities at the higher payment rate for the costs associated with hospital-acquired pressure ulcers. With an at-risk population (elderly patients who are thin and have diabetes or vascular disease) of over 50 percent, our staff and senior administration realized the immediate need to reevaluate the current pressure ulcer program and create a new, prevention-oriented system.

Beginning in May 2008, an interdisciplinary wound team and a wound care advisory panel was developed to create new protocols and procedures aimed at reducing pressure ulcer prevalence. The team consisted of physicians, nurses, dieticians and a physical therapist. The panel's first initiative was to create an innovative program called the "Wound Warriors." The Wound Warriors were the wound care team's first line of defense on each unit. These individuals are nurses selected based on their interest in wound care. They receive additional education about the proper assessment and documentation involved in the prevention of pressure ulcers. Each team member dedicates two shifts per month to review audits and ensure that the correct procedures are being followed. They are also involved in wound rounds with the interdisciplinary wound team.

Even with the creation of the Wound Warriors and their focus on pressure ulcers, a systematic, staff-wide approach to pressure ulcer prevention, including standardization and quality products, was still lacking.

The Solution

In May 2008 we were introduced to Medline's Pressure Ulcer Prevention Program (PUP) through a webinar presented by the company. The program, we learned, includes intensive staff education, skincare products and hands-on implementation by Medline staff aimed at reducing pressure ulcer incidence levels in healthcare facilities. The program is based on sound wound care principles backed by excellent teaching materials. The one potential hurdle was that, on paper, the program would increase our supply budget with the introduction of some new, but necessary products.

To overcome this initial challenge, Medline guaranteed that at the end of the trial period, if our facility did not reduce our incidence of facility-acquired pressure ulcers, they would reimburse us the cost of the products we used during the trial period. Moreover, knowing the severity and immediacy of the pressure ulcer situation at Chesapeake, the vice president of nursing was fully behind the program to do whatever we could to lower our rates.

Implementation

We began the program in September 2008 with a 90-day trial in our ICU2 unit, whose total patient census is 14. As mentioned earlier, but worth repeating, the unit had a pressure ulcer incidence level of 57.1% percent with 25 hospital-acquired pressure ulcers – a disturbingly high level of pressure ulcers.

The trial was spearheaded by the unit manager and involved the Medline wound care specialists, the Wound Warrior and the charge nurse. In all, there were about 45 ICU2 staff members participating in the program – 37 licensed nurses and eight nursing assistants (CNAs).

The program started with an educational poster displayed in the staff lounge to bring awareness to the program. Prior to implementation, a pre-test was administered to our nurses and nursing

assistants to assess their baseline level of treating pressure ulcers. A post-test was then given about four to six weeks later to reassess the staff's knowledge. The goal of the program is to pass the test with a score of 90 percent or higher.

The Medline representatives implemented an incentive program with small awards to encourage staff members to review the materials and complete the tests within the specified time frame. This system worked well, and all nursing staff in ICU2 completed their tests on time.

The staff's initial test scores were actually pretty high – the average CNA score was 85 percent and the nurse's was 83 percent. *(See figure 1 on back page.)*

Medline also supplied and reviewed the education and training materials with our staff. The unit manager received a comprehensive training manual including a CMS presentation, workbooks, instructor's guide, forms and tools and pre- and post-tests.

The nursing assistant's workbook included basic information covering skin care, patient turning, incontinence care and nutrition. The nurse's workbooks covered CMS policy, risk factors, assessment, skin care, turning, incontinence care, nutrition and documentation.

As a further incentive, everyone who successfully completes the course and achieves at least an 80 percent on the post-test will be presented with a reward pin to display on their uniform and a certificate of completion.

The Medline representatives worked closely with our staff on the education aspect of the program by reviewing the format outlined in the workbooks. But the staff really took it upon themselves to learn the material through self-training.

Medline conducted intensive inservicing on the products with our staff – covering their benefits and how and when to use them. Product education was a crucial step in the success of the program. The main products utilized in the program are:

- **Remedy** advanced skin care system, Medline's exclusive line of skin care products. The comprehensive program includes cleanser foams, barrier ointments, and skin repair creams (moisturizers). The staff also likes the products' scent and feel, which further motivates them to use the products and follow the protocols.
- **Ultrasorbs Dry Pads,** a superabsorbent underpad that wicks moisture away from the skin for increased dignity and better skin care.

We also are using more pressure relief devices for highly vulnerable areas such as heels and elbows. These devices, when used properly in conjunction with the products cited above, help prevent pressure ulcers in high-risk patients.

The program also offers adult briefs and low air loss mattresses, but we have not employed those products as of yet.

The Results

By the middle of October 2008 – about six weeks into the trial – ICU2's pressure ulcer incidence was reduced to 23.1 percent, a reduction of more than half from where we started. At the end of the trial, ICU2's incidence rate was down to 0 percent. This was in the beginning of January. A few weeks later, they were still at 0 percent with February's facility-wide prevalence study. The facility's incidence rate was 7.5 percent. As of May 13, 2009, the facility's rate was down to 2.5 percent, which is below the national benchmark of 3.3 percent. What this means in real numbers is that at the end of the trial we had virtually no facility-acquired pressure ulcers, compared to the 25 we had at the beginning of the trial. This trend has continued as we report incidence levels well below the national average.

The staff's post-test scores also reflect these outstanding results. Both the CNA and nurse's scores averaged 98 percent! Moreover, whatever little resistance we did have from our staff to this new system has completely disappeared and has been replaced by enthusiasm and a great amount of self-satisfaction for doing an excellent job. To have your staff believe in the benefits of the program and see their efforts result in improved patient care are essential to the long-term success of this or any patient care initiative.

Most importantly, senior administration and materials management have fully

bought into the program. By showing them how preventing pressure ulcers saved $1,079,500, they understood the full value of the program. *(See figure 3 below.)* This savings was determined by multiplying 25 – the number of pressure ulcers acquired in the ICU2 – by the average cost of a pressure ulcer – $43,180, as calculated by CMS.

The savings numbers combined with implications of the the new CMS inpatient prospective payment system (IPPS) that no longer reimburses facilities at the higher payment rate for hospital-acquired pressure ulcers, presented an overwhelming case to administration to implement the program permanently in the ICU2 and to roll it out facility-wide.

Future Initiatives

The success of the 90-day trial period has shown us that a systematic approach to pressure ulcer prevention can eliminate facility-acquired pressure ulcers. As a result of this success, we are now in the early stages of implementing the program facility-wide and hope to have it in all our nursing units by the end of June 2009. In order for complete house-wide prevention, we are anxiously awaiting the Medline emergency room pressure ulcer prevention program.

In addition, in the summer of 2009, we will be seriously assessing Medline's new pressure ulcer prevention module for the operating room. The operating room is a high-risk environment for pressure ulcers – according to AORN, the incidence of pressure ulcers occurring as a result of surgery may be as high as 66 percent. This perioperative module includes risk assessment and prevention methods to help prevent facility-acquired pressure ulcers in our surgical patient population.

Pressure Ulcer Prevention Education Data
Figure 1: Chesapeake Regional Medical Center

Category	Pre-Test Scores	Post-Test Scores	Improvement
CNA	85%	98%	13%
Nurse	83%	98%	15%
Advanced	N/A	99%	N/A

Pressure Ulcer Treatment Costs
Figure 2: Pressure Ulcer Costs

Category	% of total treatment cost	Cost per patient/case*
Nursing Time	50%	$21,590
Pharmaceuticals	39%	$16,840
Products	11%	$4,749
Total Costs	**100%**	**$43,180**

**Centers for Medicare & Medicaide Services. Medicare Program; Changes to the Hospital Inpatient Prospective Payment Systems and Fiscal Year 2008 Rates; Final Rule. Federal Register. 2007;72(162):47130-48175*

Pressure Ulcer Prevention Program Savings
Figure 3: Chesapeake Regional Medical Center Savings

Category	Pre-Program	Post-Program	Savings*
Nursing Time	$539,750	0	$539,750
Pharmaceuticals	$421,005	0	$421,005
Products	$118,745	0	$118,745
		Total Savings	**$1,079,500**

**Based on reducing the incidence of pressure ulcers from 25 prior to the implementation of the program to zero post-program.*

ABOUT THE AUTHOR Zemira M. Cerny, BS, RN, CWS is the Wound Care Coordinator at Chesapeake Regional Medical Center in Chesapeake, VA. Zemira has 10 years specializing in wound care and is a Certified Wound Specialist through the American Academy of Wound Management. Zemira's role is to oversee wound care in the outpatient and inpatient areas, whereby allowing for continuity of care across the health care settings. Currently, she is managing a staff of ten certified Hyperbaric and Wound Care Clinicians.

This paper was approved by the Wound Care Advisory Panel and Nurse Manager, the staff of ICU 2, Elaine Griffiths, VP of Nursing, Angela McPike, VP of Marketing, and Michelle Laisure, Corporate Compliance Officer.

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