THE EFFECT OF IMPLEMENTATION OF THE AGENCY FOR HEALTH CARE POLICY AND RESEARCH (AHCPR) PREVENTION OF PRESSURE ULCER GUIDELINES ON NURSES' KNOWLEDGE, INCIDENCE AND COST OF PRESSURE ULCER DEVELOPMENT IN A TERTIARY CARE SETTING

Brenda Ryan, R.N., M.S.N., C.E.T.N

INTRODUCTION

Pressure ulcers are serious wounds that cause pain, suffering, disability and sometimes death. The National Pressure Ulcer Advisory Panel (NPUAP) estimated in 1989 that over one million people suffer from pressure ulcers each year. Frequently reported estimates are that 3% to 11% of hospitalized patients develop pressure ulcers (Allman, 1986; Langemo et al, 1990: NPUAP, 1989). Furthermore, pressure ulcers are costly; the U.S. health care system spends $1.3 billion annually to treat pressure ulcers (NPUAP, 1989).

In 1989, Congress created The Agency for Health Care Policy and Research (AHCPR) in order that guidelines for care on specific health care conditions be developed. The overall purpose of this guideline is to promote consistent practice.

Recognizing the important role of nurses in prevention and care of patients with pressure ulcers, the present study supported by the guidelines, the literature and partnering of enterostomal therapy nursing and clinical nursing research, proposed that use of a combined approach of education and system changes on the unit would result in decreased incidence of pressure ulcers, increased nurses' knowledge, and cost reduction for pressure ulcer care. The objectives of the study were to 1) increase research based skin care, 2) decrease the incidence of pressure ulcers in adults, and 3) decrease costs associated with pressure ulcer development.

METHODS

Design

A pre-test, post-test design was used. The independent variables or interventions were the educational program and system additions. The outcomes or dependent variables measured were nurses' knowledge and patient pressure ulcer development (numbers and associated cost).

Sample and Human Subjects

There were two sets of subjects: nurses and patients. All nurses on the targeted patient care units, cardiovascular and orthopedic, were asked to complete a test of their knowledge about skin care guideline content.

OUTCOME MEASURES

Provider (nurses' knowledge): A Skin Care Survey comprised of 24 multiple choice questions was developed from the Guideline content by a task force and items were written to support four areas: Definitions, Risk Assessment Tools and Risk Factors, Skin Care and Early Treatment and Mechanical Loading and Support Surfaces (AHCPR Panel, 1992).

Patient (pressure ulcer incidence): Incidence refers to the number or percentage of persons at risk who have newly developed pressure ulcers (NPUAP, 1989). For this study, incidence is defined as pressure ulcer development during hospitalization.

System (cost of pressure ulcer care): Cost per pressure ulcer ranges from $2,000 to $30,000 (NPUAP, 1989). A cost per pressure ulcer will be associated with each ulcer prevented.

PROCEDURE

An incidence/prevalence survey was conducted by enterostomal therapy (E.T.) nurses on cardiovascular and orthopedic units before and after the intervention. Each patient on the units was assessed for incidence of pressure ulcer, staging of pressure ulcer severity for each incidence, a Braden Risk Assessment Scale score (risk for pressure ulcer) and social demographic data; these same data (post test) were collected two months later on all consenting patients present on the same units.

A pretest of knowledge about pressure ulcers was administered to nurses on the specific units. This test was distributed again to the same nurses after the educational program and opportunity for use of system changes over a two month time period.

Implementation strategies included education and system approaches. After pre-tests of incidence/prevalence and nurses' knowledge were completed, an educational program was offered to all bedside caregivers on the specified units. A video and copies of the AHCPR Prevention of Pressure Ulcer Guidelines were made available to each nurse. Newsletters describing rationale for the study, how and when to use the Braden Scale, availability of resources on the unit and coaching on development of a skin integrity plan of care were circulated to staff nurses during the implementation period. Each staff nurse received opportunity to perform a Braden Scale assessment with a mentor present.

Several system additions were implemented. An intervention protocol was instituted including the use of a **therapeutic pressure relieving overlay (ROHO DRY FLOATATION MATTRESS)** if the patient was at high risk. The Braden Scale and appropriate interventions for patients at risk, were placed on a large laminated card on each patient's chart.

RESULTS

As a result of the combined approach of education and system changes, including use of the **ROHO DRY FLOATATION Mattress System**, pressure ulcer incidence decreased by 40% and projected cost savings was approximately $700,000.

1995

This study has been reprinted with the permission of Brenda Ryan, R.N., M.S.N., C.E.T.N., formerly the Director of Abbott Northwestern Hospital E.T. Nursing Education Program. She is currently an Assistant Professor of Nursing at the College of St. Catherine, Minneapolis, MN.

If you have additional questions about ROHO or CROWN products, please feel free to contact Customer Service at 800-851-3449.

Study Hypotheses

- An educational program about pressure ulcer risk, prevention and treatment given to bedside care givers will result in increased **knowledge**
- An educational program and system additions will decrease the **incidence** of pressure ulcers on specified units
- An educational program and systems changes will decrease the incidence of pressure ulcers and thereby **cost** on specified units

Implementation Strategies/ Independent Variables

Education

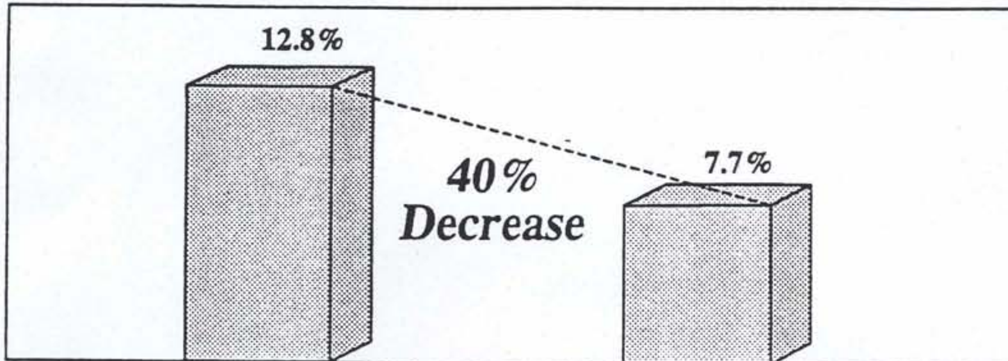
- Video
- Guideline reading
- Newsletters
- Detailing with each staff nurse on use of Braden Scale and construction of a Skin Plan of Care

System Additions

- Process owner on each unit
- Braden Scale and appropriate interventions on each patient's chart
- Braden Scale score stamp on each assessment form
- "16" button

Pressure Ulcer Incidence

	Incidence Over Seven Units
Pre-Guideline Implementation	**20 (ulcers)/156 (patients) or 12.8%**
Post-Guideline Implementation	**12 (ulcers)/154 (patients) or 7.7%**
Overall	**40% decrease**



Projected Savings Over Time on All Patient Care Units

Saved $3,428* per unit
x 12 months
$41,136 per unit per year

Potential savings of **$41,136** per unit annually.

Abbott Northwestern, with 17 units hospital-wide, could potentially save **$699,312** with implementation of the specific system changes, including the ROHO DRY FLOATATION Mattress.

*Savings based on strategies found in Table 2.

Potential Additional Savings

At $6,000 per ulcer*, an additional **$48,000** could be saved due to the prevention of nosocomial acquired pressure ulcers.

*$6,000 estimate based on the average cost of eight ulcers over two months in seven hospital units (NPUAP, 1989).