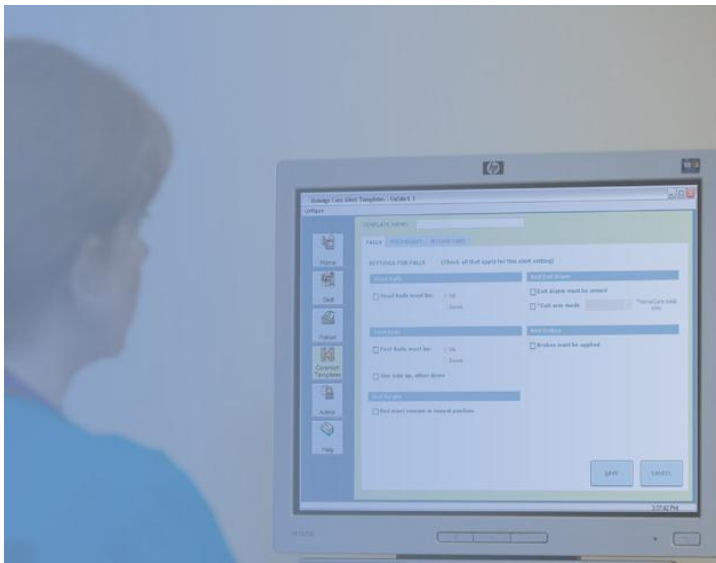


Using People, Process and Technology to Enhance Outcomes for Patients and Their Caregivers



Melissa A. Fitzpatrick, RN, MSN, FAAN
VP & Chief Clinical Officer, Hill-Rom

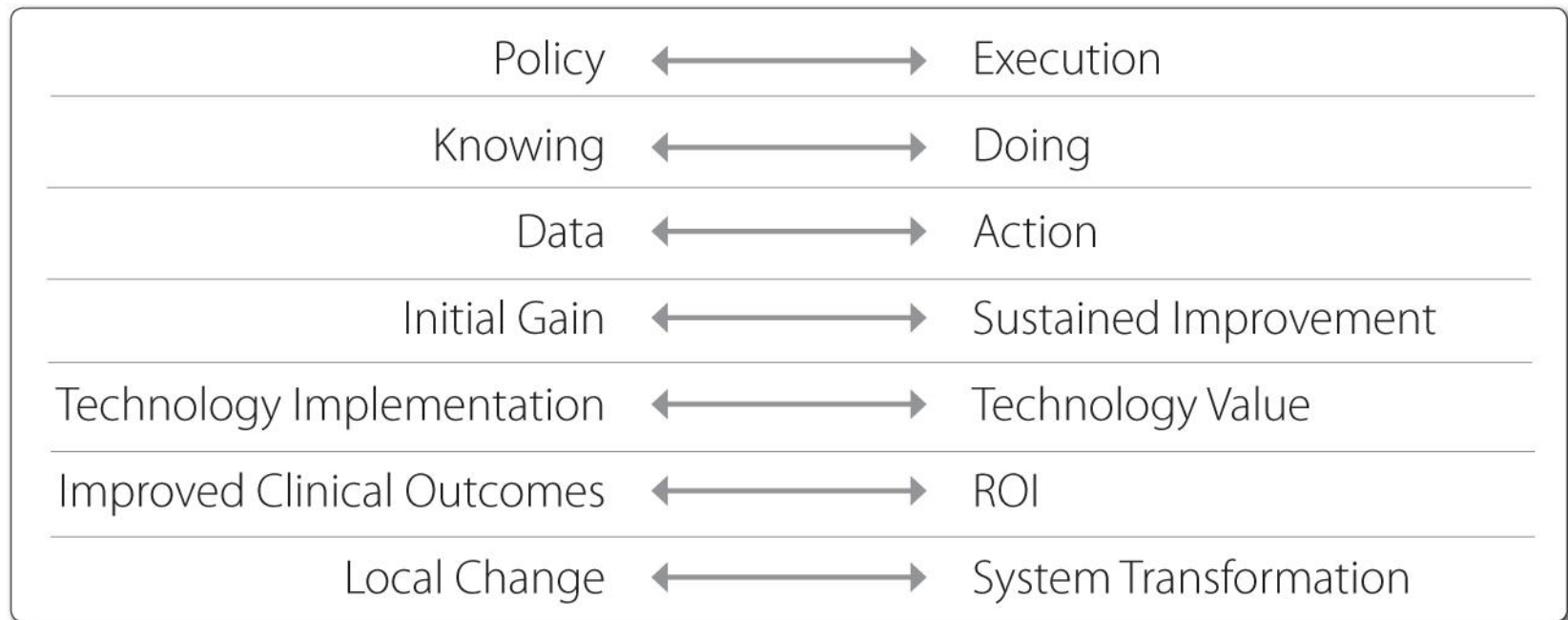
Trends Driving Our Industry



We need to enable

- More effective care
- Safer care
- More satisfied patients, families and caregivers

The discrepancy between the **current state** and the **desired outcome** of efficiency and safety initiatives is often due to existing **gaps**: **Action is required to close those gaps.**



Understand Your Needs - Experience Your World - Accelerate Positive Change
Sustain Improvement - Fuel Continuous Improvement and Spread

WASHINGTON, Aug. 18, 2007 In a significant policy change, Bush administration officials say that Medicare will no longer pay the extra costs of treating preventable errors, injuries and infections that occur in hospitals, a move they say could save lives and millions of dollars.

- ***The New York Times*: “Medicare Says it Won’t Cover Hospital Errors”, 8/19/07 (front page)**
Retrieved from web site:
- http://www.nytimes.com/2007/08/19/washington/19hospital.html?_r=1&adxnnl=1&oref=slogin&adxnnlx=1187969852-kf4xVF6uC3VYX0DPof3LvA

- **Among the conditions that are affected:**
- Pressure ulcers
- Injuries caused by falls
- Infections resulting from the prolonged use of catheters in blood vessels or the bladder
- Foreign objects retained after surgery
- Blood incompatibility
- Surgical site infection after CABG

- ***The New York Times*: “Medicare Says it Won’t Cover Hospital Errors”, 8/19/07 (front page) Retrieved from web site:**
http://www.nytimes.com/2007/08/19/washington/19hospital.html?_r=1&adxnnl=1&oref=slogin&adxnnlx=1187969852-kf4xVF6uC3VYX0DPof3LvA

People + Process + Technology = Enhanced Outcomes



Deep insight into patient safety with actionable reporting and analysis



Expert Account, Clinical and Technical Teams

Prevalence Assessment (Data Collection / Analysis)

Education

Safe Skin Assessment Tools

Protocol Development

In depth Program Analysis, Development, Execution and Monitoring

Excellence in Pressure Redistribution

Excellence in Microclimate Management

Excellence in Shear & Friction Reduction

Excellence in Testing

Global Research & Development Team

Imagine a World with No Falls

The data are staggering.....

- Each year, over **1 million patients fall** in US acute care facilities – avg. fall rate of 3.73 / 1000 patient days
- Moderate to severe falls in hospitals cost an estimated **\$6 billion annually** and over **\$1 million per hospital**
- Medicare patients who fall represent approximately **\$2.5 billion annually** in reimbursement

Partnering for Safe Skin



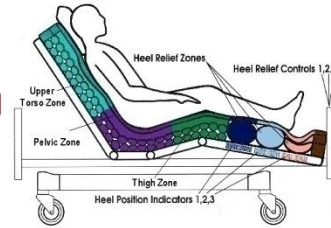
Wound ○

Guidelines for Staging
The following criteria can be used to quickly identify pressure ulcer stages as identified in the AHCPR Clinical Practice Guidelines (1994).

| Stage I | Stage II | Stage III | Stage IV |
|--|---|---|--|
| | | | |
| <small>An observable, persistent alteration in the skin color that is not blanchable. The color is usually red, but may be purple or brown in the darker-skinned patient. The ulcer is usually a well-demarcated area of discoloration that is not deeper than the surrounding skin.</small> | <small>Partial thickness loss of dermis. The ulcer is shallow and presents as a crater, a shallow crater, or shallow ulcer.</small> | <small>Full thickness loss of dermis extending into subcutaneous tissue. The ulcer is deep enough to expose fat, muscle, tendon, or bone.</small> | <small>Full thickness loss of tissue with exposed bone, tendon, muscle, or cartilage. The ulcer is deep enough to expose muscle, bone, or other structures. The ulcer is usually a well-demarcated area of discoloration that is not deeper than the surrounding skin.</small> |

When eschar is present, a pressure ulcer cannot be accurately staged until the eschar is removed.

Hill-Rom
A Division of Hillier Companies, Inc.



People

- 300 dedicated clinicians on staff
- Wound specialists on staff
- Access to industry wound experts

Processes

- Wound Education
- Wound Protocols
- Protocol Analysis
- Compliance tracking
- IPUP

Technology

- Beds, stretchers, and surfaces facilitate the prevention and treatment of wounds
- Furniture facilitates mobility and encourage family advocacy
- Full range of capital and rental offerings to match financial goals

Safe Skin

Skin Breakdown – Impact

There are a significant number each year:

- An estimated **2.5 million** pressure ulcers are treated¹
- Over **900,000** patients develop a pressure ulcer each year¹
- Pressure ulcer prevalence in acute care has remained high at **13.4%**²

With serious outcomes for patients:

- Over **60,000** patients die from complications due to facility-acquired pressure ulcers each year¹
- In 2000 and 2001, pressure ulcers were cited as **1 of the top 3** in-hospital errors that lead to patient • deaths³

And high costs for the hospital:

- The average cost per hospitalization for patients who develop Stage III & IV pressure ulcers has been reported to be **\$43,180**⁴
- Annual direct cost of treating facility-acquired pressure ulcers ranges from **\$400,000** to **\$700,000** per year for hospitals⁵



1. Courtney, B., Ruppman, J., Cooper, H., (2006). *Save our skin: Initiative cuts pressure ulcer incidence in half*. Nursing Management, April, pg 36-45.
2. Hill-Rom, Inc., 2007 International Pressure Ulcer Prevalence Survey. Data on file.
3. Levinson D. Hospital patient safety incidents account for \$6 billion in extra costs annually. Rep Med Guide Outcomes Res 2004; 15:1-2, 6-7.
4. Center for Medicare & Medicaid Services Office of Public Affairs, April 14, 2008, Fact Sheet for: CMS PROPOSES ADDITIONS TO LIST OF HOSPITAL-ACQUIRED CONDITIONS FOR FISCAL YEAR 2009. Assessed on April 29, 2008 from: <http://www.cms.hhs.gov/apps/media/press/factsheet.asp?Counter=3042&intNumPerPage=10&checkDate=&checkKey=&srchType=1&numDays=3500&srchOpt=0&srchData=&srchOpt=0&srchData=&keywordType=All&chkNewsType=6&intPage=&showAll=&pYear=&year=&desc=&cboOrder=date>
5. Diamond D, McGlinchey PR. Effective strategies to reduce pressure ulcer rates. Washington, DC: The Advisory Board Company; May 5, 2004.

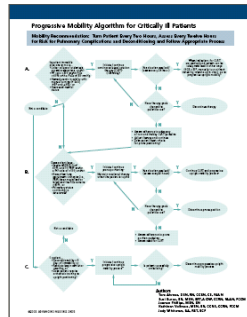
Direct Cost Averages per public data

| Event | Effect on incremental cost of care per case ² | Effect on incremental length of stay |
|---------------------------------------|--|--------------------------------------|
| Retained surgical object | +\$13,312 (166%) | +8.0 days (121%) |
| Select infections due to medical care | +\$34,982 (450%) | +22.7 days (315%) |
| UTI after major surgery | +\$12,287 (112%) | +8.4 days (165%) |
| Decubitus ulcer | +\$16,359 (113%) | +15.7 days (117%) |
| DVT/PE after major surgery | +\$16,262 (159%) | +10.6 days (226%) |
| C.Diff infection | +\$24,260 (278%) | +22.2 days (322%) |
| Surgical wound infection | +\$32,848 (440%) | +18.3 days (290%) |
| Pneumonia after major surgery | +\$26,101 (277%) | +12.8 days (305%) |

² Without consideration of malpractice, reimbursement denial or reputation impact

Source: WebMD Select Quality Care – Professional 2008 (Manhattan Hospitals)

Partnering for Clear Lungs



People

- 300 dedicated clinicians on staff
- Pulmonary specialists on staff
- Access to industry pulmonary experts

Processes

- Immobility Education
- Pulmonary Protocols
- Protocol Analysis
- Compliance Tracking

Technology

- Beds for progressive mobility with capital and rental/lease options
- Central monitoring and wireless real-time alerts
- Furniture and lifts to facilitate mobility and safe patient handling
- Architectural products for reliable delivery of gas and electric service
- Rental medical equipment manages peak needs

Clear Lungs

Imagine a World with Clear Lungs

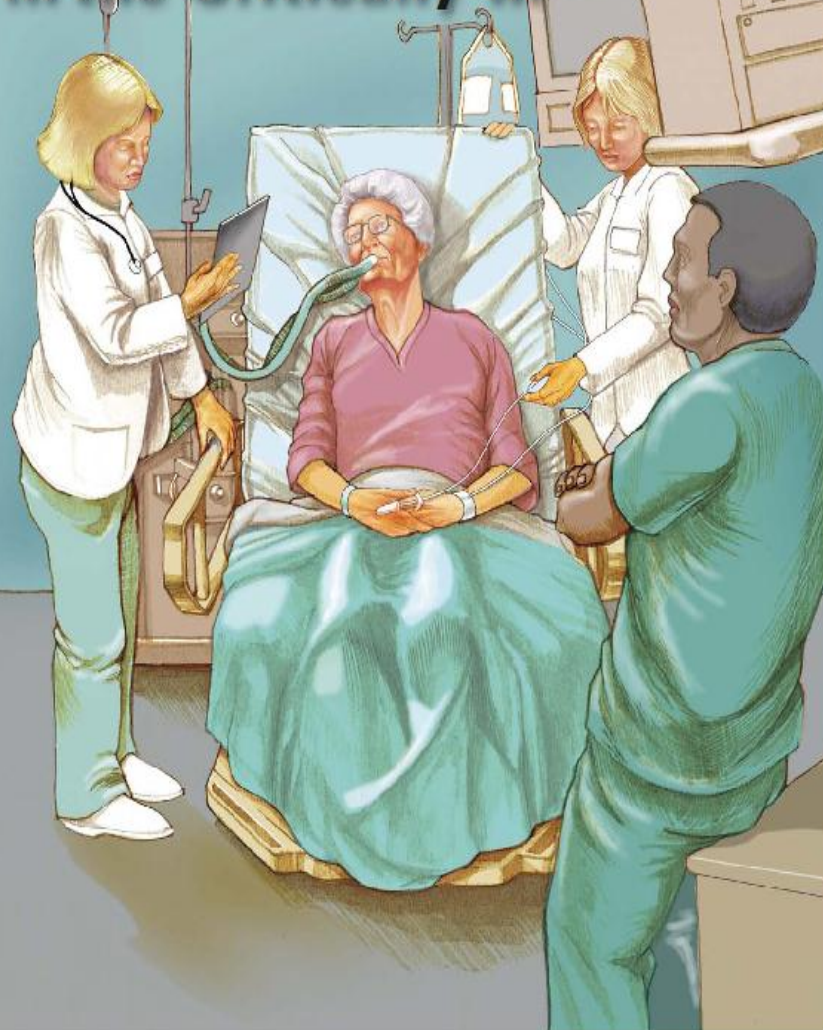
Ventilator associated pneumonia (VAP) is the most common hospital-acquired infection among patients requiring mechanical ventilation.¹

- Ventilator-associated pneumonia (VAP) is a common concern in critical care departments, where its incidence can run as high as 65%.¹
- VAP is the **leading cause of death** among hospital acquired infections – **46% mortality rate**.²
- VAP can increase a patient's length of stay by 4.3 days; mortality rates range from 20% to 70%, with the total cost of care varying from \$5,800 to more than \$20,000 per incidence.³
- VAP costs an estimated **\$7 Billion annually** in US Acute Care Hospitals.⁴

1. Dodek, P., Keenan, S., Cook, D., Heyland, D., et al.: "Evidence-Based Clinical Practice Guidelines for the Prevention of Ventilator-Associated Pneumonia [clinical guidelines],"*Annals of Internal Medicine*. 141(4):305–313, 2004.
2. Richards MJ, Edwards JH, Culver DH, et al. Nosocomial infections in medical intensive care units in the United States: National Nosocomial Infections Surveillance System. *Crit Care Med* 1999;27:887-892
3. Koleff, M.: "Prevention of Hospital-Associated Pneumonia and Ventilator-Associated Pneumonia,"*Critical Care Medicine*. 32(6):1,396–1,405, 2004.
4. Chulay M. VAP prevention. The latest guidelines. *RN* 2005;68(3):52-57 Safdar N, Desfulian C, Collard Hr, Saint S. Clinical and economic consequences of ventilator associated pneumonia: a systematic review. *Critical Care Med*. 2005;33(10):2184-2193

A Supplement to *Critical Care*

PROGRESSIVE MOBILITY in the Critically Ill



Definition & Scope

Progression

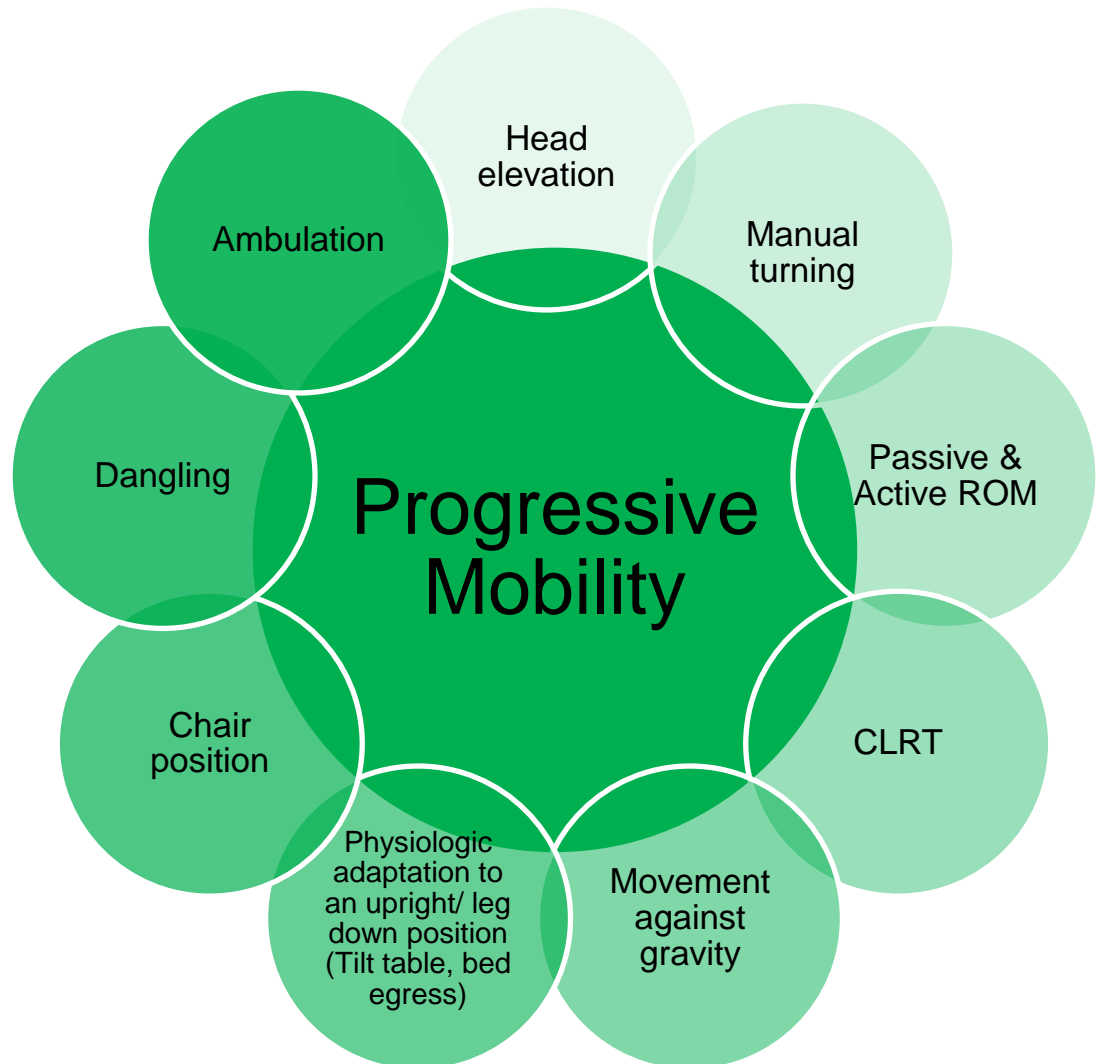
- Moving forward or onward
- A continuous & connected series

Mobility

- Capable of moving or being moved

Progressive Mobility

- Planned movement in a sequential manner beginning at a patient's current mobility status



IHI Ventilator Bundle Elements

- Elevation of the head of the bed to between 30 and 45 degrees
- Daily awakening: “sedation interruption”
- Daily assessment of readiness for weaning
- DVT prophylaxis (unless contraindicated)
- PUP—Peptic ulcer prevention

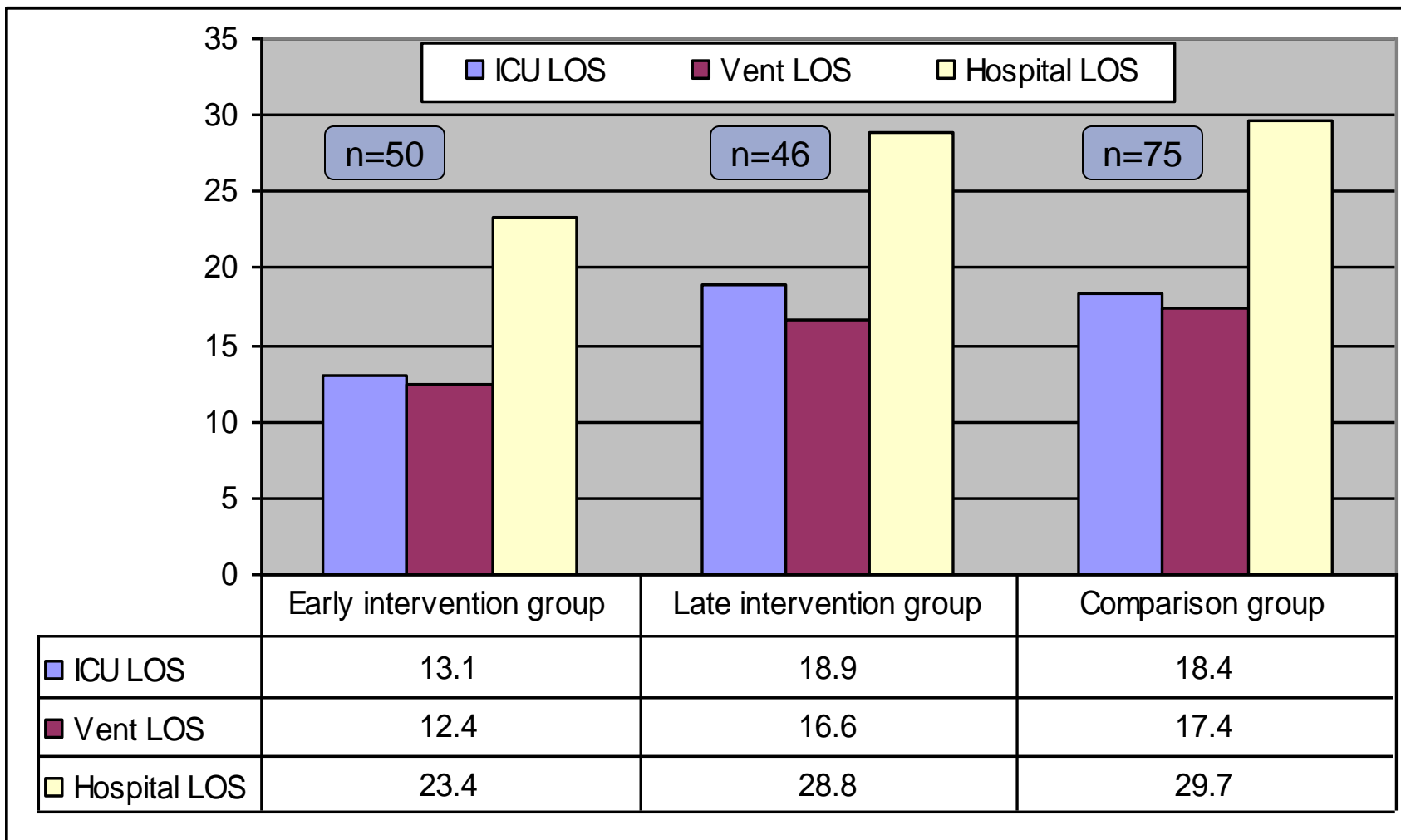


Professional opinion regarding turning

➤ electronic mail survey (72 respondents)

| Question | Yes, % (n) | No, % (n) | No Response, % (n) |
|---|---------------|--------------|-----------------------|
| Do you agree that the standard of care is to turn immobile patients approximately every 2 hrs? | 83 (60) | 17 (12) | 0 |
| Do you agree that turning immobile ICU patients every 2 hrs may reduce the risk for complications (DVT, pressure sores, atelectasis)? | 90 (65) | 8 (6) | 1 (1) |
| Do you believe that patients in your ICU are receiving this turning care >50% of the time? | 57 (41) | 42 (30) | 1 (1) |

Medical Center of Central Georgia



Swadener-Culpepper L, Skaggs RL, VanGilder CA. (2008). The Impact of Continuous Lateral Rotation Therapy in Overall Clinical and Financial Outcomes of Critically Ill Patients. Crit Care Nurse Q, 2008 Jul-Sep;31(3):270-9

Safe Progressive Mobility



Continuous Lateral Rotation Therapy
Decrease pulmonary complications and ICU LOS

Tilt Table
Patients to begin bearing weight on legs

FullChair® position
Enhance resp., pulm., oxygenation & gas exchange.

Patient Egress
Getting patients up to break the deconditioning cycle.



1

Limb Lifting
Foley Catheter Insertion
One Caregiver

Turning/Holding in Sidelying
Posterior Nurse Assessment

Safe weight bearing
Standing tolerance test

Patient Mobilization
Ambulation and ADLs testing



Dramatic Clinical Results

- 2004 - 2007 Ascension Health Results
- Pressure Ulcer Rates down 93% vs. Estimated National Rate¹
- Patient Falls Rates down 86% vs. Estimated National Rate¹
- Ascension Health quantified a statistically significant correlation between the implementation of new Hill-Rom technologies in conjunction with the Ascension Health program to reduce preventable injuries and the sustained reduction in pressure ulcers, patient falls with serious injury and ventilator-associated pneumonia.
- Hill-Rom clinical consultants supported consistent use of bed features in conjunction with Ascension Health's implementation of programs, bundles and toolkits across their system of Health Ministries aimed at eliminating pressure ulcers, falls, and ventilator-associated pneumonias.

Collaborative Partnership
People. Process. Technology.

¹ 2007 Ascension Health Annual Report

Return Caregivers to the Bedside

- Nurse Communication Systems
- Patient Flow Systems
- Asset Management Systems
- Eliminate Redundant Documentation

Redesign the Clinical Work System



Improved safety compliance
Automated protocol
Safety alerts/reminders

Increased asset utilization
Decreased searching
Improved infection control
Automated equipment locating

Enhanced patient-nurse connection
Improved response time

Patient surveillance and real time monitoring of medical devices, automatic association, and documentation of patient data



Improved patient flow
House-wide visibility
Enhanced care coordination

Direct person-to-person communication and alerts
Reduced searching
Increased communication efficiency

Complete Patient Story
Applied Critical Thinking

Using Technology to Save Caregiver Miles and Non-Caregiving Minutes Per Shift

- Returning the Caregiver to the Patient for more time to deliver direct care

| SOLUTION | RESULT | CAREGIVER TIME RETURNED PER SHIFT |
|------------------------------|---|---|
| Decentralized NurseCall | 2 Miles less per shift walking vs. national average of 3 | 20 minutes |
| Wireless Communication | Rapid communication between staff members & their patients | 30-50 minutes |
| Asset Management & Tracking | Eliminate Hunting & Gathering of Mobile Equipment & Supplies | 30-90 minutes |
| Enterprise Patient Flow | Seamless Coordination of Patient & Staff from Admission Through Discharge | 20-40 minutes |
| Total Value Delivered | Substantially improved Patient & Caregiver Satisfaction | 1.3 to 3.3 Hours Per 10 Hour Shift |



Enhanced Outcomes