

The Future is Now: Creating a Caring Culture Through Evidence Based Interventions to Reduce Harm



Kathleen M. Vollman MSN, RN, CCNS, FCCM, FAAN
Clinical Nurse Specialist/Educator/Consultant
ADVANCING NURSING
kvollman@comcast.net
Northville, Michigan

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Objectives

- Create the link of patient advocacy to the basic nursing care in creating a caring practice
- Outline evidence based nursing strategies to reduce hospital acquired pneumonia
- Outline evidence-based strategies for preventing heel injury and moisture associated skin damage

Disclosures for Kathleen Vollman

- Consultant-Michigan Hospital Association Keystone Center
- Subject matter expert HEN 2.0/Centers for Medicare and Medicaid
- Consultant/Faculty for CUSP for MVP—AHRQ funded national study
- Consultant and speaker bureau for Sage Products LLC
- Consultant and speaker bureau for Hill-Rom Inc
- Consultant and speaker bureau for Eloquest Healthcare



Notes on Hospitals: 1859

“It may seem a strange principle to enunciate as the very first requirement in a Hospital that it should do the sick no harm.”

Florence Nightingale

Advocacy = Safety

Polling Question

- As an ICU nurse, which of the following patient outcomes can I impact through my nursing care? (Choose all that apply)
 - a. Hospital acquired pneumonia
 - b. Catheter associated infections
 - c. Abscess development
 - d. Pressure ulcer prevention
 - e. Cardiac arrhythmias

**PROTECT THE
PATIENT FROM
BAD THINGS
HAPPENING ON
YOUR WATCH**



**Implement
Interventional Patient Hygiene**

Interventional Patient Hygiene

Hand Hygiene

Hygiene...the science and practice of the establishment and maintenance of health

- Interventional Patient Hygiene....nursing action plan directly focused on fortifying the patients host defense through proactive use of evidence based hygiene care strategies

Catheter Care

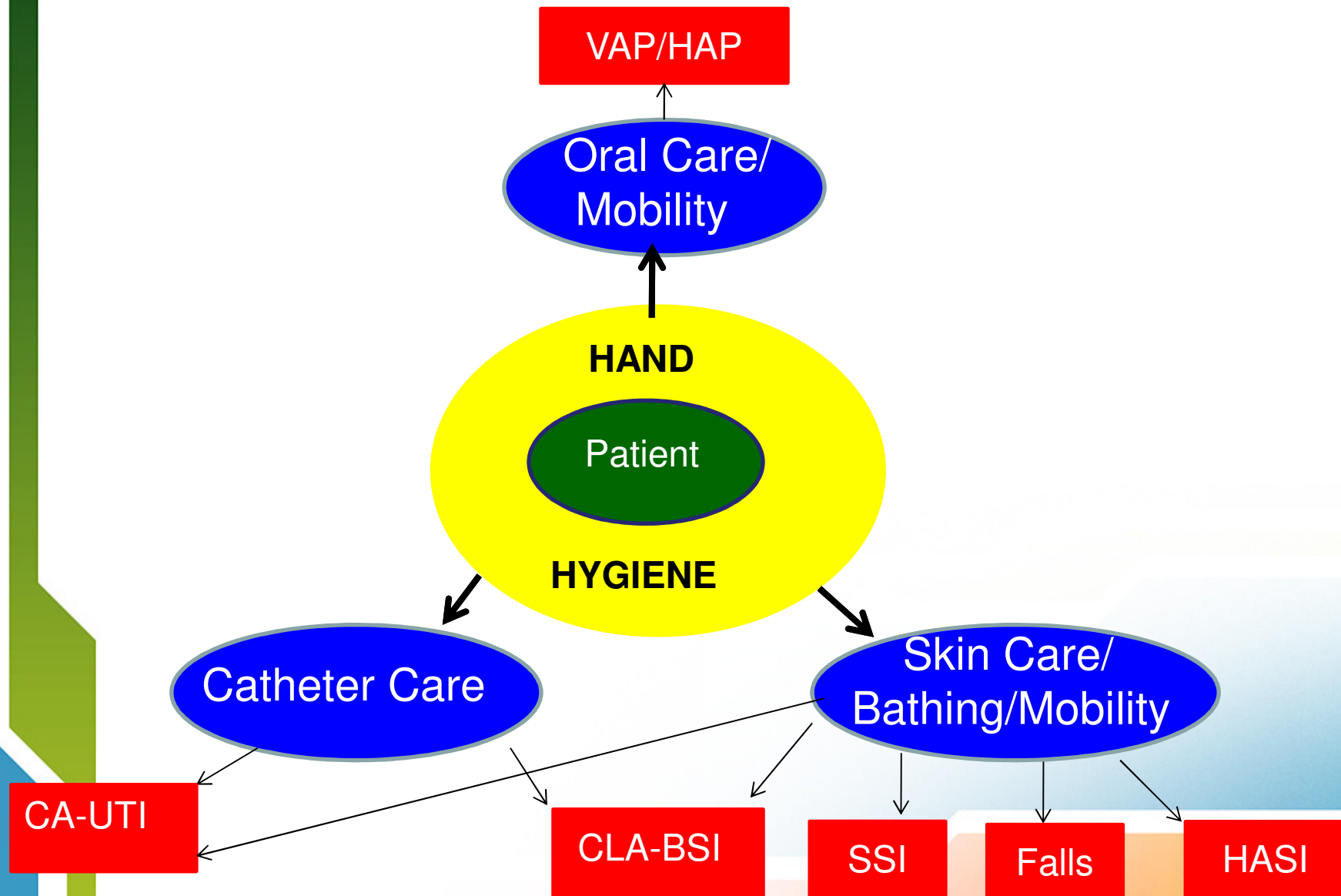
Bathing & Assessment

Pressure Ulcer Prevention

Incontinence Associated Dermatitis Prevention Program

Comprehensive Oral Care Plan

INTERVENTIONAL PATIENT HYGIENE(IPH)



Achieving the Use of the Evidence



Vollman KM.
Intensive Crit Care
Nurs, 2013;22(4):
152-154

Polling Question

- In my role as a patient advocate, I believe that I have the necessary tools to prevent harm caused by pressure and moisture?
 - a. Strongly agree
 - b. Agree
 - c. Disagree
 - d. Strongly disagree

Building Resiliency Into Interventions

Forcing Functions and Constraints

Automation and Computerization

Standardization and Protocols

Checklist and Independent Check Systems

Rules and Policies

Education and Information

Vague Warning – “Be More Careful!”

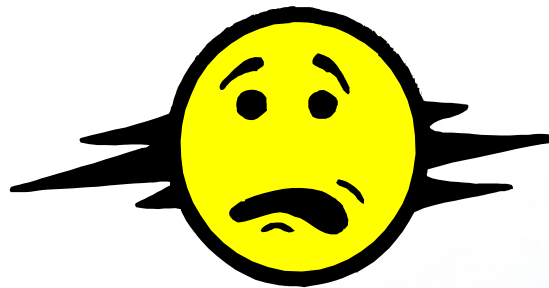
Strongest

STRENGTH OF INTERVENTION

Weakest

Missed Nursing Care

- “Any aspect of required patient care that is omitted (either in part or whole) or significantly delayed.”
- A predictor of patient outcomes
- Measures the process of nursing care



**SORRY WE
MISSED YOU!**

Hospital Variation in Missed Nursing Care

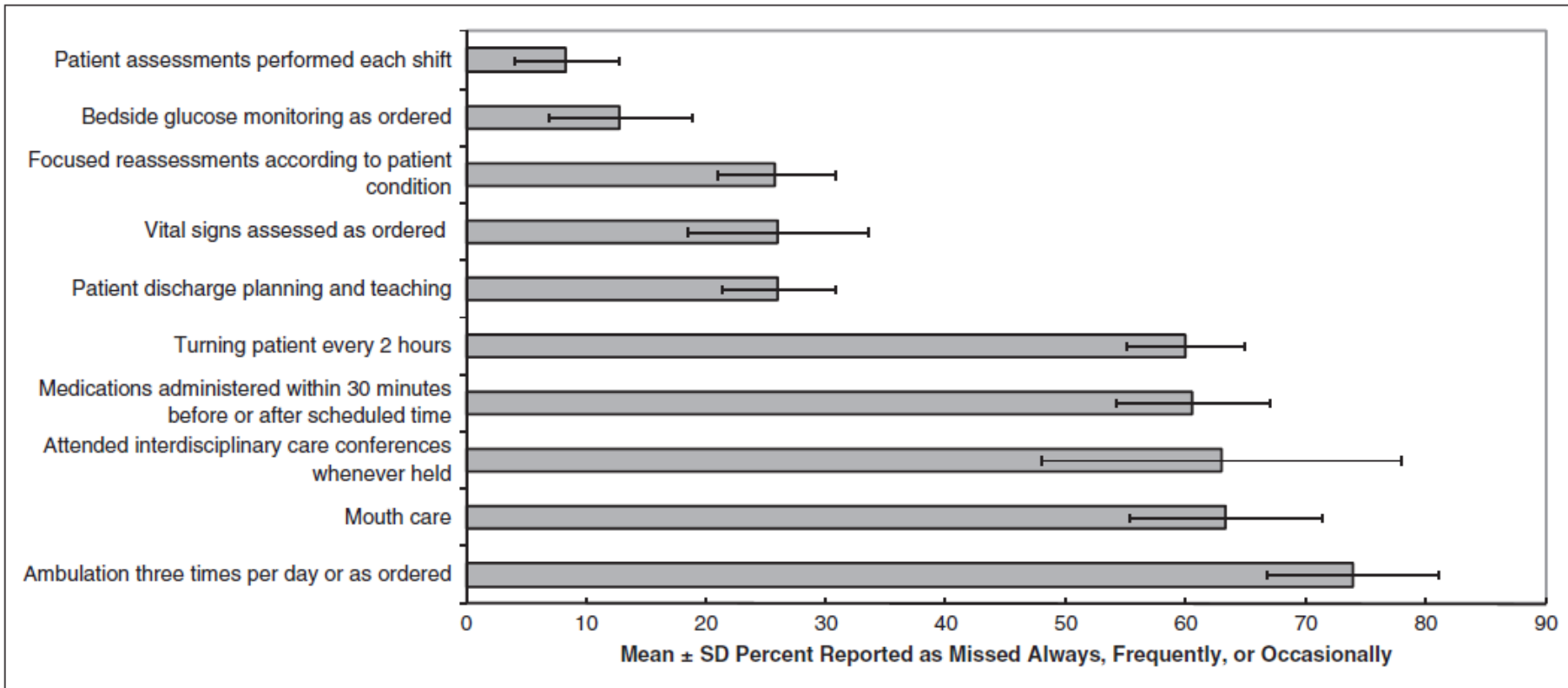


Figure 2. Elements of care most and least frequently missed. The solid bars represent the means across all 10 hospitals, and the range lines indicate the standard deviations.

Patient Perceptions of Missed Nursing Care

Table 2. Elements of Nursing Care by Ability of Patient to Report and Extent Missed*

	Fully Reportable	Partially Reportable	Not Reportable
			<ul style="list-style-type: none"> • Patient assessment • Surveillance • IV site care
Frequently Missed	<ul style="list-style-type: none"> • Mouth care • Listening • Being kept informed 	<ul style="list-style-type: none"> • Ambulation • Discharge planning • Patient education 	
Sometimes Missed	<ul style="list-style-type: none"> • Response to call lights • Response to alarms • Meal assistance • Pain medication and follow-up 	<ul style="list-style-type: none"> • Medication administration • Repositioning 	
Rarely Missed	<ul style="list-style-type: none"> • Bathing 	<ul style="list-style-type: none"> • Vital signs • Hand washing 	

* IV, Intravenous.

The background features a series of horizontal, overlapping bands in various colors: blue, brown, green, yellow, red, and dark red. These bands are decorated with white, stepped lines that create a sense of depth and movement. Small, colorful rectangular accents are placed at the ends of some of these lines. The overall design is modern and professional.

Preventing NV-HAP Through Evidence Based Fundamental Nursing Care Strategies

Build the Will: NV-HAP?

- HAP 1st most common HAI in U.S.
 - Increased morbidity → 50% are not discharged back home
 - Increased mortality → 18%-29%
 - Extended LOS → 4-9 days
 - Increased Cost → \$28K to \$109K
 - 2x likely for readmission <30 day
- Understudied, under-addressed
- Focus has been on the other HAP → VAP
- Surveillance not required....yet

Kollef, M.H. et.al. (2005). *Chest*. 128, 3854-3862.

ATS, (2005). *AmJ Respir Crit Care Med*. 171, 388-416.

Lynch (2001) *Chest*. 119, 373S-384S.

Pennsylvania Dept. of Public Health (2010).

Compelling Incidence Data

Study	Incidence	Mortality	+LOS	Cost
J. Davis (2012) Pennsylvania	5,600 /3 yrs	18.9%	Not queried	\$28,000
HCUP National database (P)	2/100 pts	14.5%	4 days	\$36,400
CDC (2014)	13% of all HAIs	19%-50%	4-9 days	\$40,000
Micek, et al Barnes Jewish Single Center	Mean occurrence day 4	15.5% (8.4x > odds of death)	10 days	-

Slide courtesy of Barb Quinn

Davis, Pt Safety Authority 2012 9(3).

Giuliano, K. et al. (2016) APIC Podium 2016

Magill, S.S. et al. (2014) NEJM. 370(13), p 1198-1208

Micek S, et al. <http://dx.doi.org/10.1016/j.chest.2016.04.009>

NV-HAP SMCS Research Findings: 2010

24,482 patients and 94,247 patient days

Incidence:

- 115 adults
- 62% non-ICU
- 50% surgical
- Average age 66
- Common comorbidities:
 - ❖ CAD, COPD, DM, GERD
- Common Risk Factors:
 - ❖ Dependent for ADLs (80%)
 - ❖ CNS depressant meds (79%)

Cost:

- \$4.6 million
- 23 deaths
- Mean Extended LOS 9 days
- 1035 extra days



Impact of NV-HAP in the ICU

HAPPI-2 Preliminary Data

- 23 hospitals in U.S.; 2014 data; 1306 total cases
 - 28% occurred in ICU
 - 26% occurred on Med/Surg units and were transferred to ICU
 - 54% of all NV-HAP cases spend some time in the ICU
 - 33% transferred to ICU died
 - 42% transferred to ICU survived but were discharged to a higher level of care; 25% home

Impact of NV-HAP on one year mortality:

- Any length of time spent in an ICU increases mortality of elderly patients who survive to discharge

ICU-Acquired pneumonia: VAP vs. NV-HAP

- **Methods:**

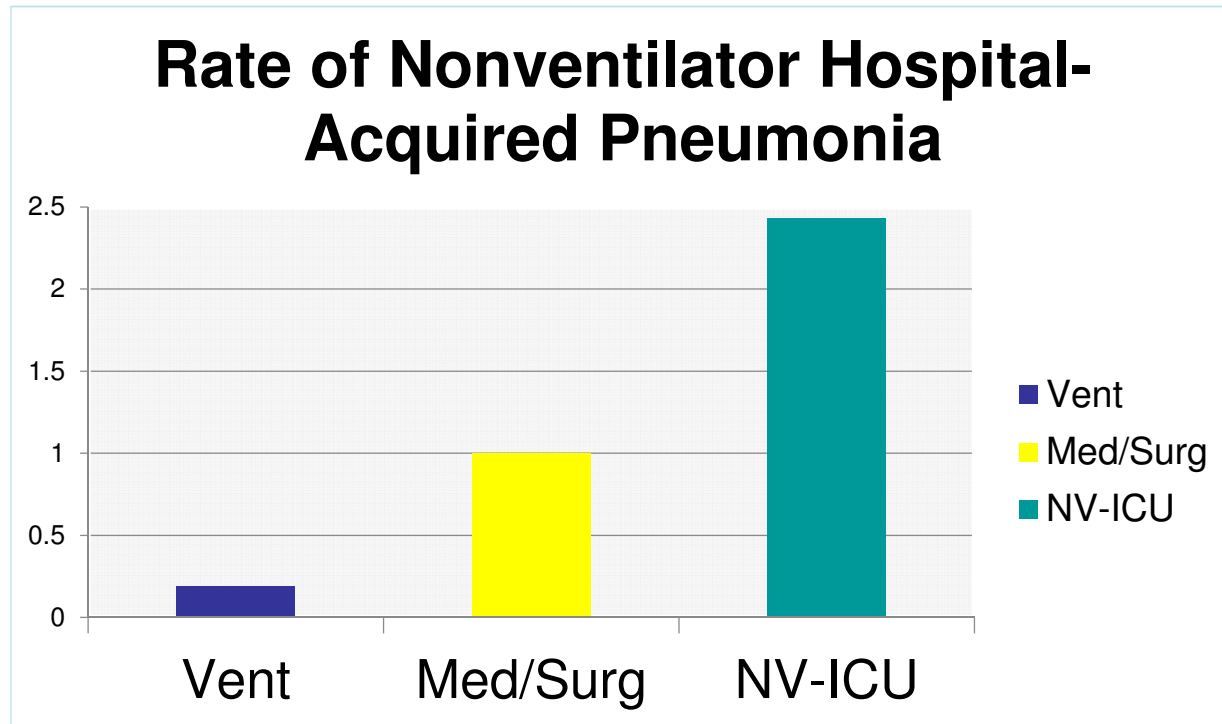
- Prospective study of 135 consecutive episodes over 3 years of adults with ICU-acquired pneumonia
- Compared clinical and microbiological characteristics of VAP and NV-HAP

- **Results** for VAP & NV-HAP were not statistically different:

- Pathogens
- Comorbid conditions,
- Severity parameters,
- Mortality, and
- Hospital length of stay

- Among NV-HAP patients, 79 (52%) needed subsequent intubation

Where is the Highest Risk for NV-HAP?



NV-HAP per 1000 patient days

Pathogenesis → Prevention

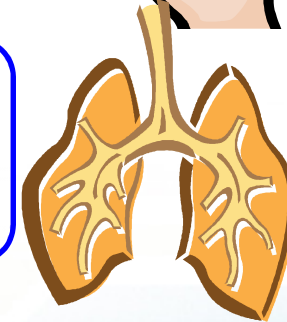
Germs in Mouth

- Dental plaque provides microhabitat
- Bacteria replicate 5X/24 hrs



Aspirated into Lungs

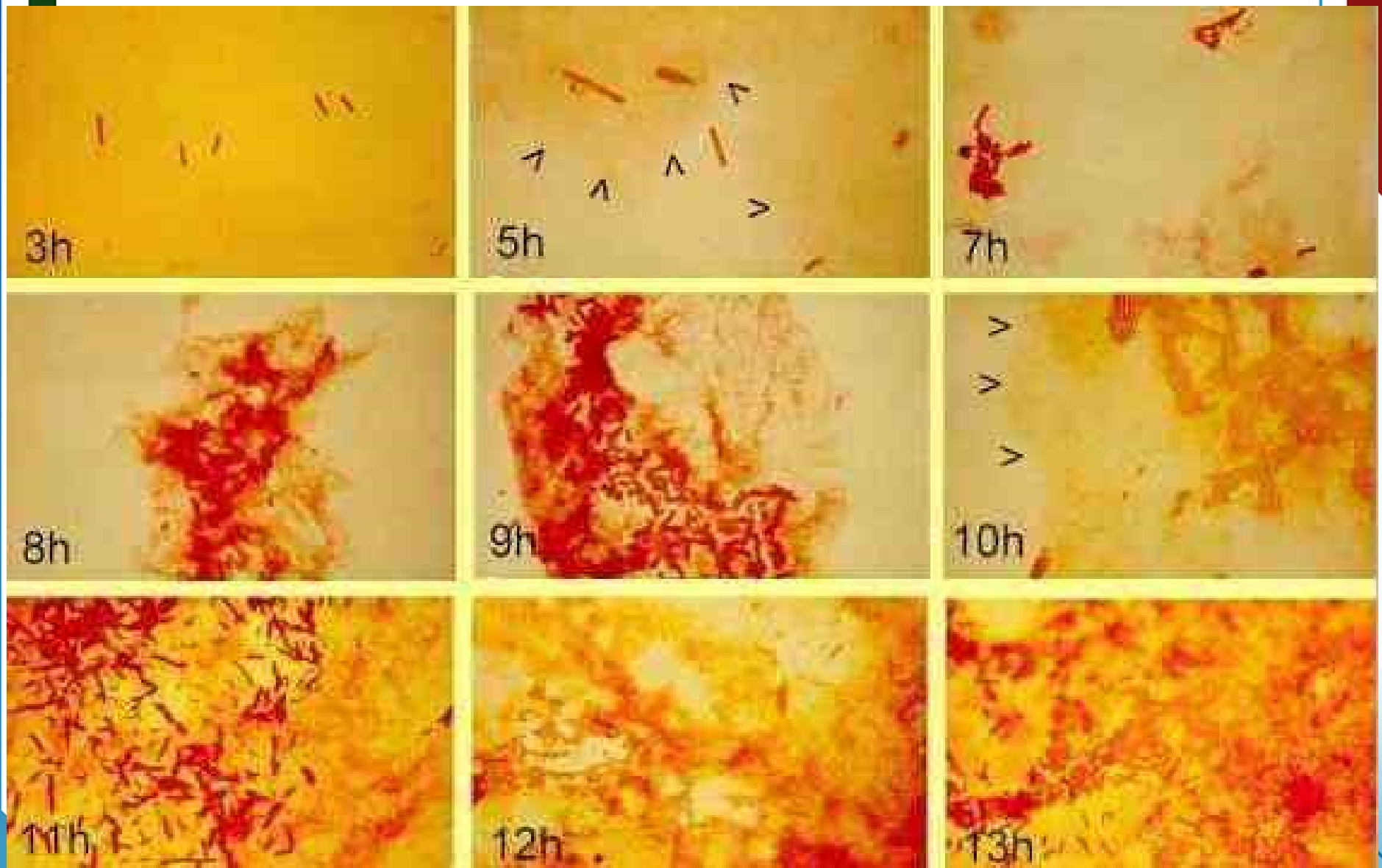
- Most common route
- 50% of healthy adults micro-aspirate in sleep



Weak Defenses

- Poor cough
- Immunosuppressed
- Multiple co-morbidities





<http://helios.bto.ed.ac.uk/bto/microbes/biofilm.htm>

Loesche, W. 2012

Pathogenesis → Prevention

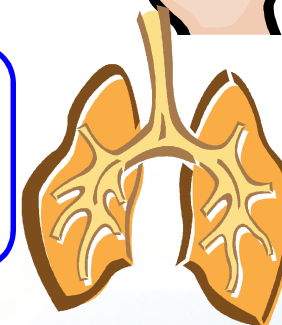
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Aspirated into Lungs

- Most common route
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Weak Defenses

- Poor cough
- Immunosuppressed
- Multiple co-morbidities





Oral Cavity & VAP

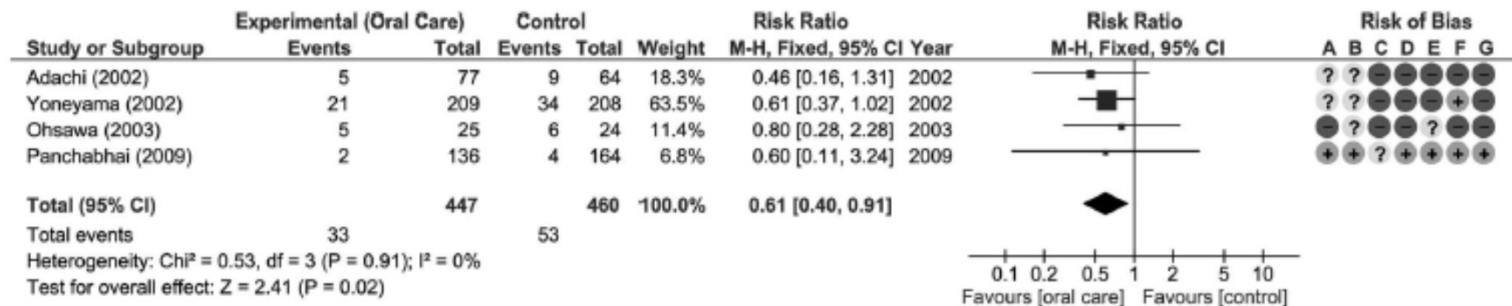


- 89 critically ill patients
 - Examined microbial colonization of the oropharynx through out ICU stay
 - Used pulse field gel electrophoresis to compare chromosomal DNA
 - Results:
 - Diagnosed 31 VAPs
 - 28 of 31 VAP's the causative organism was identical via DNA analysis
- 49 elderly nursing home residents admitted to the hospital
 - Examined baseline dental plaque scores & microorganism within dental plaque
 - Used pulse field gel electrophoresis to compare chromosomal DNA
 - Results
 - 14/49 adults developed pneumonia
 - 10 of 14 pneumonias, the causative organism was identical via DNA analysis

Garrouste-Orgeas et. al. Am J Respir Crit Care Med. 1997;156:1647-1655

El-Solh AA. Chest. 2004;126:1575-1582

Impact of Oral Care on HAP



Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of participants and personnel (performance bias)
- (D) Blinding of outcome assessment (detection bias)
- (E) Incomplete outcome data (attrition bias)
- (F) Selective reporting (reporting bias)
- (G) Other bias

FIGURE 2. Effects of oral care on preventing non-ventilator-associated pneumonia (non-VAP).

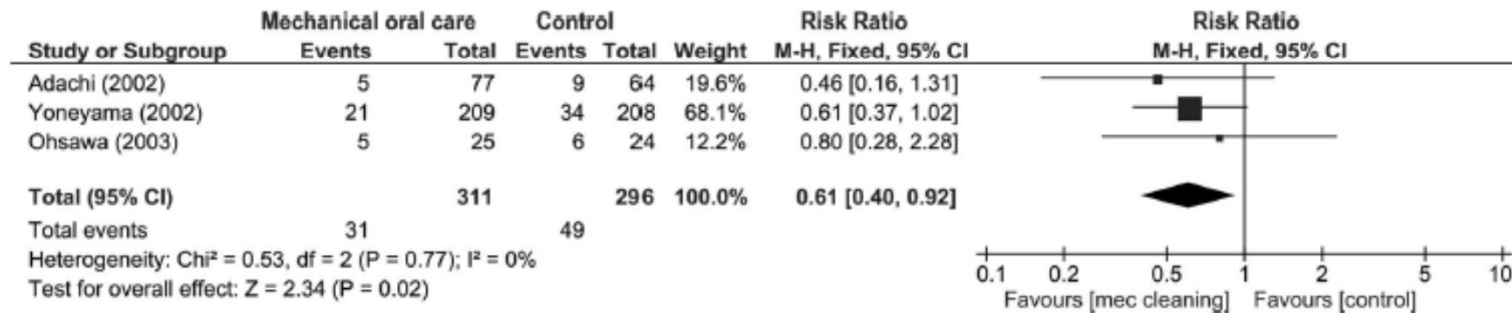


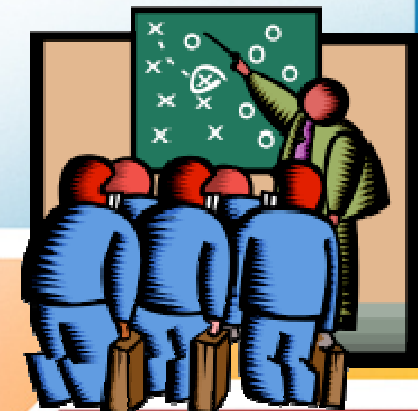
FIGURE 3. The effect of mechanical oral care on non-ventilator-associated pneumonia (non-VAP).

SMCS HAP Prevention Plan

Phase 1: Oral Care

- Formation of new quality team: Hospital-Acquired Pneumonia Prevention Initiative (HAPPI)
- New oral care **protocol** to include non-ventilated patients
- New oral care **products and equipment** for all patients
- Staff **education** and in-services on products
- Ongoing **monitoring and measurement**
 - Monthly audits

Quinn B, et al. J of Nursing Scholarship, 2014, 46(1):11-19



Protocol – Plain & Simple

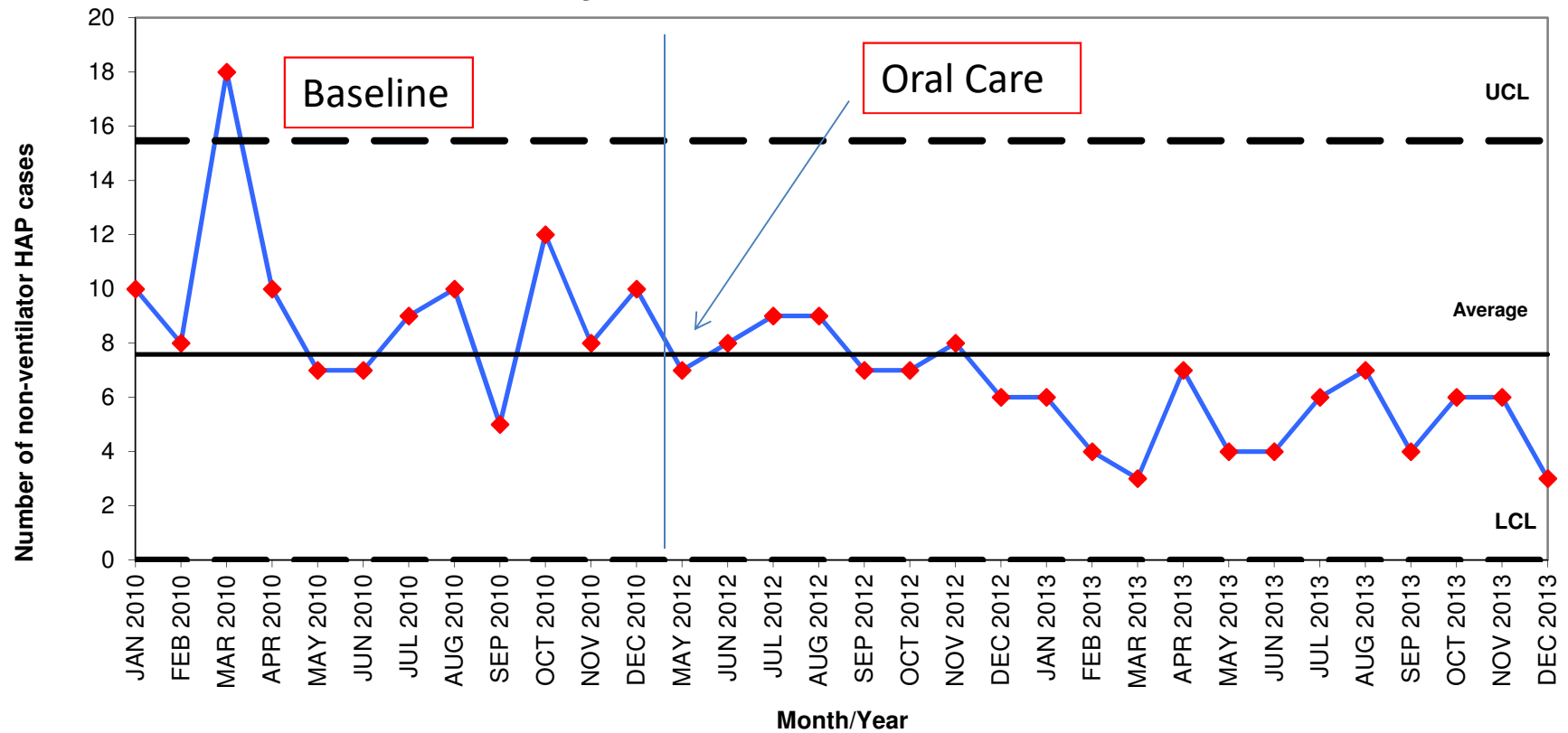


Patient Type	Tools	Procedure	Frequency
Self Care / Assist	Brush, paste, rinse, moisturizer	Provide tools Brush 1-2 minutes Rinse	4 X / day
Dependent / Aspiration Risk	Suction toothbrush kit (4)	Package instructions	4 X / day
Dependent / Vent	ICU Suction toothbrush kit (6)	Package instructions	6 X / day
Dentures	Tools + Cleanser Adhesive	Remove dentures & soak Brush gums, mouth Rinse	4X / day

NV-HAP Incidence

50 % Decrease from Baseline

Control chart for NV-HAP
January 2010 to December 2013

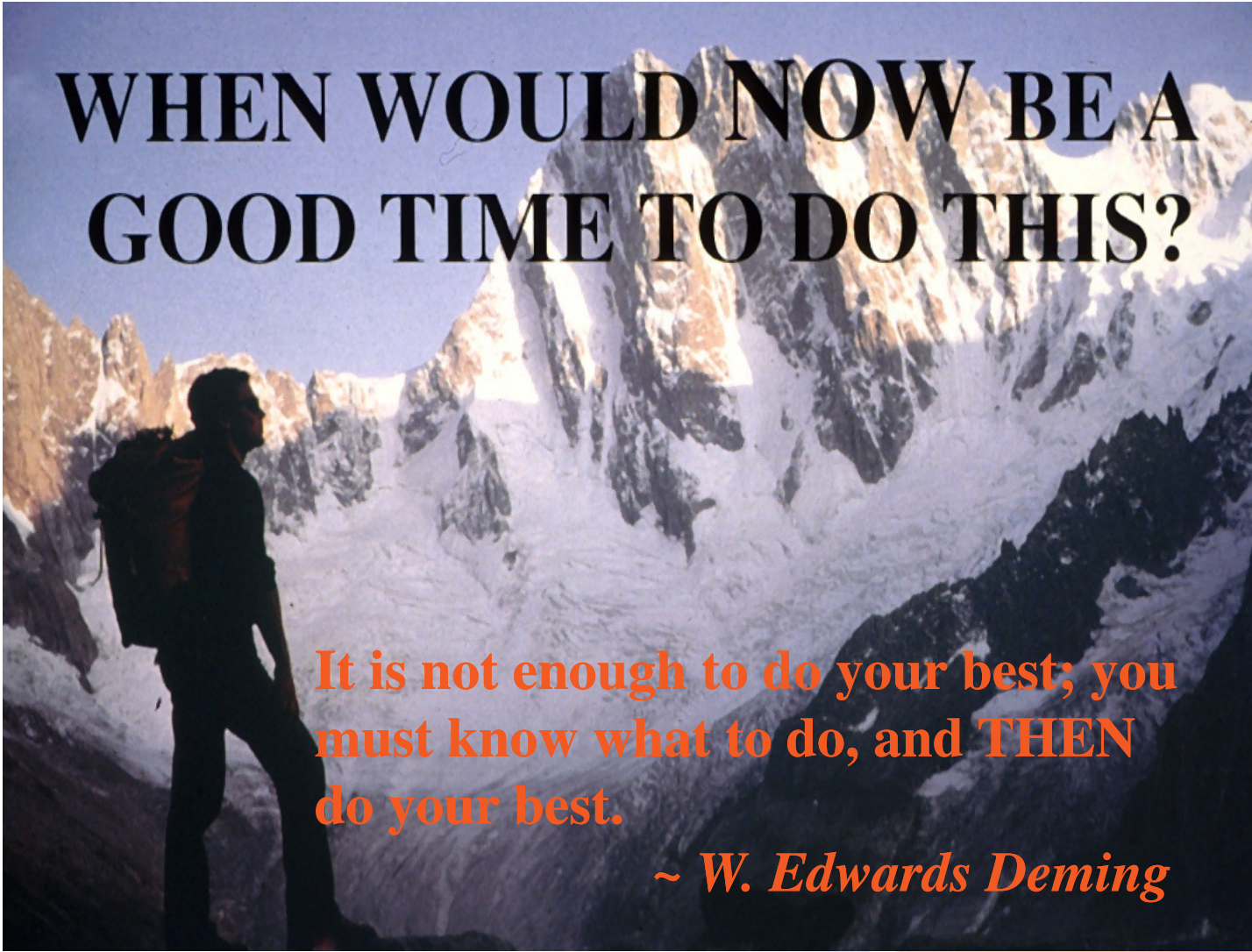


Return on Investment

- ▶ 60 NV-HAP avoided Jan 1 – Dec. 31 2013
- ▶ \$2,400,000 cost avoided
- ▶ - 117,600 cost increase for supplies
- ▶ \$2,282,400 return on investment

• 8 lives saved

PRICELESS

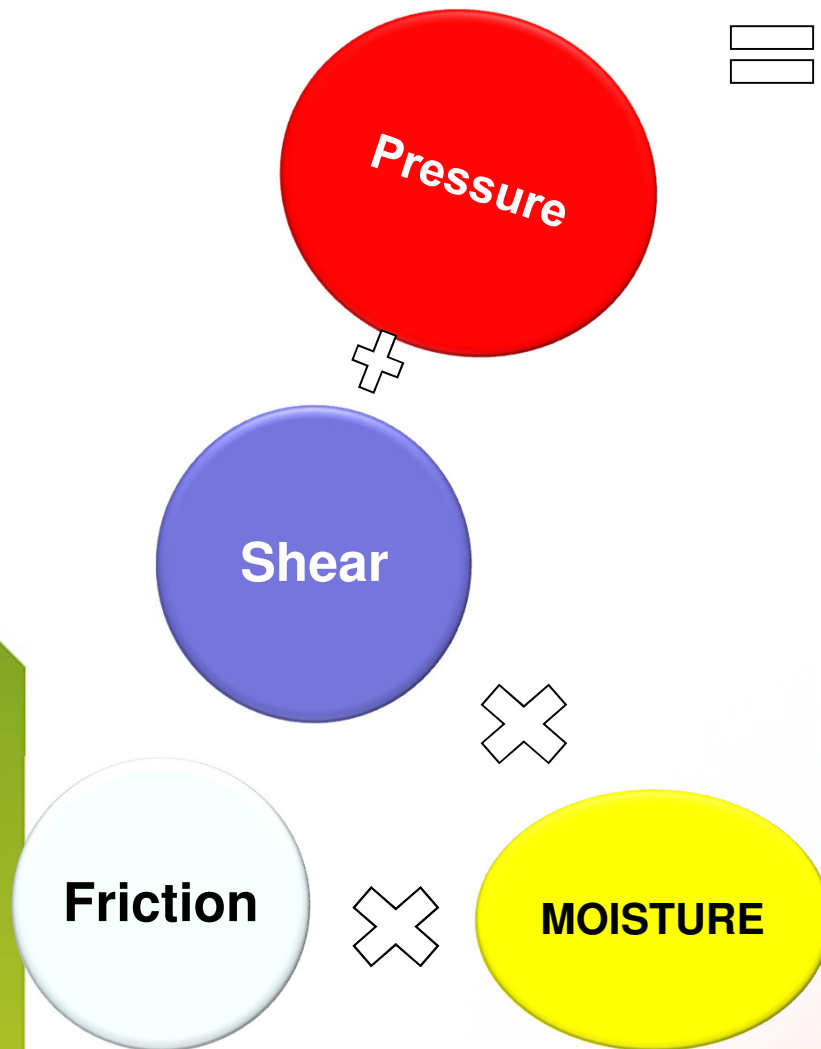


WHEN WOULD NOW BE A GOOD TIME TO DO THIS?

**It is not enough to do your best; you
must know what to do, and THEN
do your best.**

~ W. Edwards Deming

Pressure Ulcers



Pressure Ulcer

A pressure ulcer is localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear

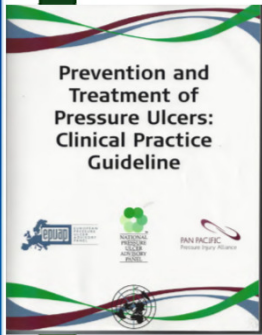
Moisture increases the impact of shear and friction coefficient

UK Pressure Injury Facts

- Pressure ulcers one of the 4 categories of the Harm Free Care Initiative
- Reporting required as part of national safety thermometer
- Sacrum most common-second heels at 27-30%
- Mean costs for treating pressure ulcers in the UK range from £1,214 for a category 1 pressure ulcer to £14,108 for a category 4 pressure ulcer¹

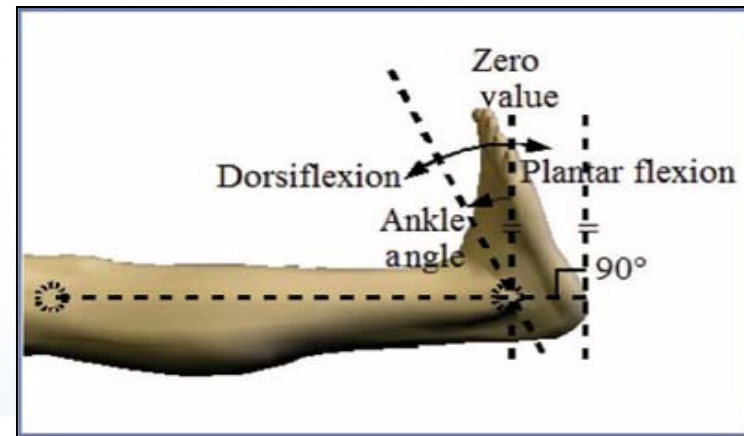
Setting	July 2012 to March 2015	Patients surveyed
Community (nationally)	5.6%	2,131,552
Community Hospital Ward	8%	304,833
Hospice	11.6%	13,843
Mental Health Community	0.7%	35,010
Mental Health Ward	1%	141,911
Nursing Home	4.1%	272,402
Other	2.1%	71,571
Own Home	5.5%	431,056
Residential Care Home	3.2%	50,498

Dealey C, Posnett J, Walker A (2012) The cost of pressure ulcers in the United Kingdom. *J Wound Care* **21**(6): 261-6). www.gov.uk/government/statistics/nhs-safety-thermometer-report-march-2014-to-march-2015



EBP Recommendations to Achieve Offloading & Reduce Pressure

- Ensure the heels are free of the bed surface
 - Inspect the skin of the heels regularly
 - Heal-protection devices should elevate the heel completely (off-load) in such a way as to distribute weight along the calf
 - The knee would be in slight flexion
 - Remove device periodically to assess the skin
 - Elevation of the heel on a pillow is usually inadequate.

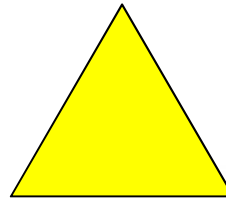


Reger SI et al, OWM, 2007;53(10):50-58, www.ihl.org

Heel Protectors



Heel Pads



Miller SK, et al WOCN, 2015;42(4):346-351

Successful Prevention of Heel Ulcers and Plantar Contracture in the High Risk Ventilated Patients

Study Inclusion Criteria

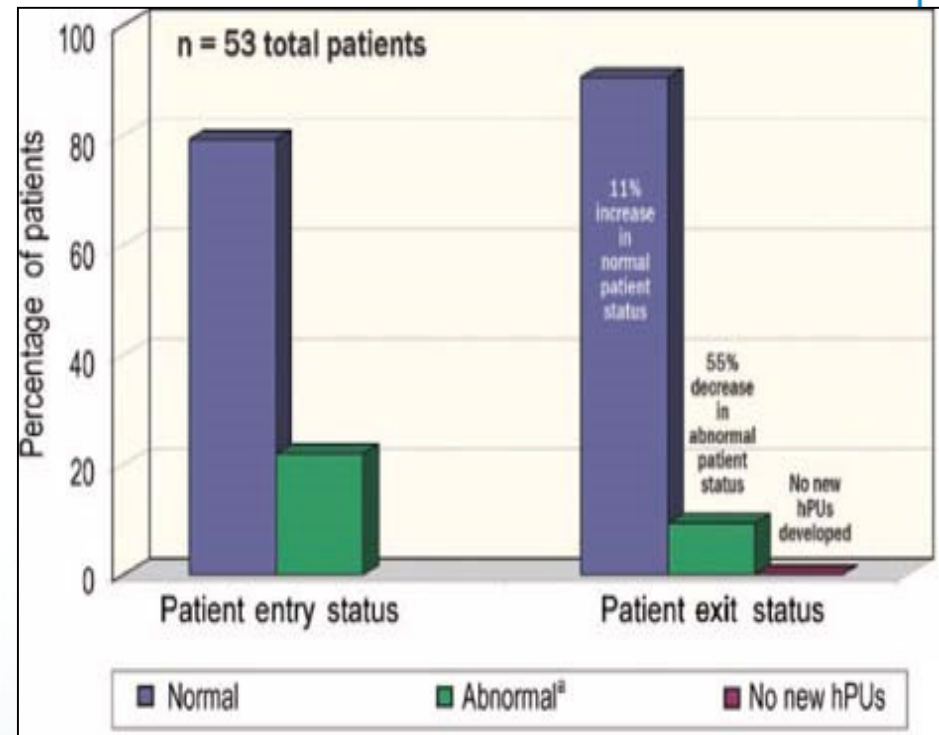
- Sedated patient > 5 days
- May or may not be intubated
- Braden equal to or less than 16

Procedure

- Skin assessment and Braden completed on admission
- All pts who met criteria were measured for ROM of the ankle with goniometer, then every other day until pt did not meet criteria
- Heel appearance, Braden and Ramsey scores were assessed every other day and documented
- Identified and trained ICU nurses completed the assessments

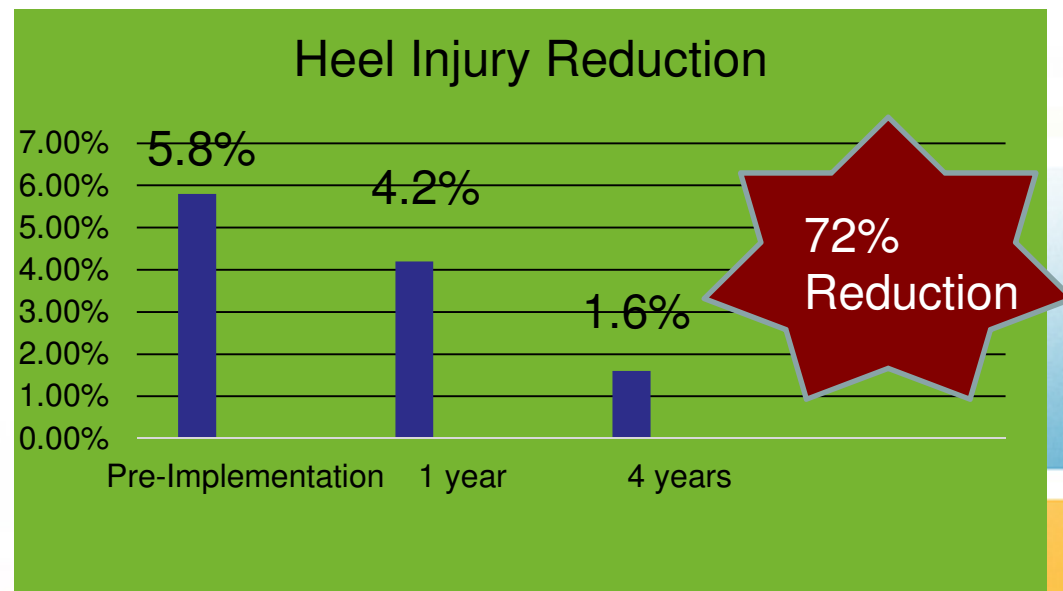
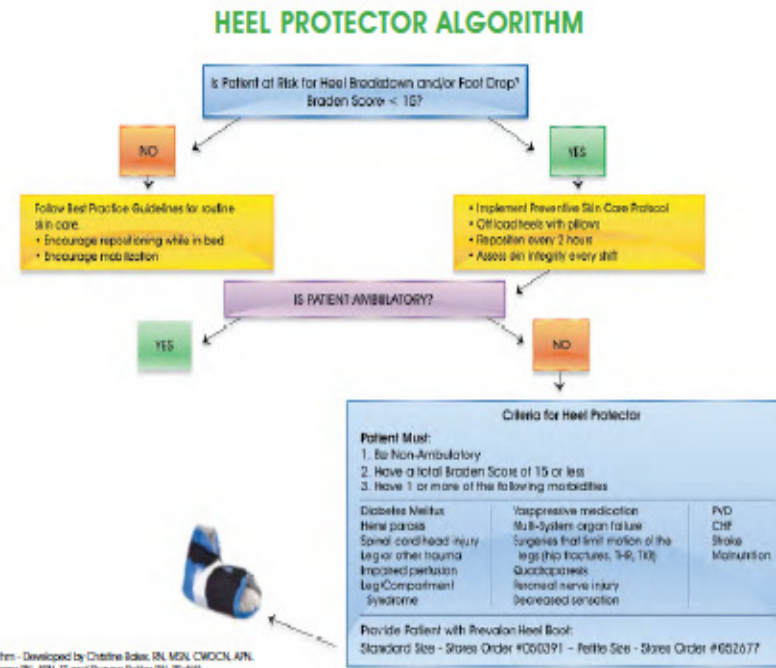
53 sedated patients over a 7 month period

Results



Sustainability of Heel Injury Reduction: QI Project

- 490 bed facility
- Evidence based quality Improvement initiative
- 4 tier Process
 - Partnership
 - Comprehensive product review
 - Education & engagement
 - Support structures & processes



Moisture Injury: Incontinence Associated Dermatitis

- Inflammatory response to the injury of the water-protein-lipid matrix of the skin
 - Caused from prolonged exposure to urinary and fecal incontinence
- Top-down injury
- Physical signs on the perineum & buttocks
 - Erythema, swelling, oozing, vesiculation, crusting and scaling
- Ease at which the skin breaks is 4x greater with excess moisture than dry skin



IAD Assessment Tool

Hospital Survey on Incontinence & Related Skin Injury

Unit / Work Area		
Instructions: This survey is limited to inpatient care areas and excludes the following: Labor & Delivery, Obstetrics, Nursery, Emergency Department & Operating Room. <i>Note: Complete ONLY ONE form for each unit.</i>		
Date of Survey: ____/____/____		Unit: _____
Please check the unit specialty that best describes the care provided.		
<input type="checkbox"/> Burn <input type="checkbox"/> Cardiac Surgery <input type="checkbox"/> CCU - General <input type="checkbox"/> CCU - Interventional <input type="checkbox"/> ICU - Cardiovascular <input type="checkbox"/> ICU - General <input type="checkbox"/> ICU - Medical <input type="checkbox"/> ICU - Neuro <input type="checkbox"/> ICU - Neonatal <input type="checkbox"/> ICU - Pediatric <input type="checkbox"/> ICU - Surgical	<input type="checkbox"/> LTAC <input type="checkbox"/> LTC <input type="checkbox"/> Medical <input type="checkbox"/> Med/Surg <input type="checkbox"/> Neurology <input type="checkbox"/> Oncology <input type="checkbox"/> Orthopedic <input type="checkbox"/> Other <input type="checkbox"/> PACU <input type="checkbox"/> Pediatrics <input type="checkbox"/> Psychiatric - General	<input type="checkbox"/> Psychiatric - Geriatric <input type="checkbox"/> Rehabilitation <input type="checkbox"/> Renal/Urology <input type="checkbox"/> Respiratory/Pulmonary <input type="checkbox"/> SNF/Transitional Care <input type="checkbox"/> Skilled Care (LTC) <input type="checkbox"/> Stepdown/Transition <input type="checkbox"/> Surgical <input type="checkbox"/> Telemetry - General <input type="checkbox"/> Telemetry - Medicine <input type="checkbox"/> Telemetry - Surgical <input type="checkbox"/> Wound Care
Patient Census of Unit at Time of Survey: _____		
Incontinence Collection Products: Check all that apply to a specific unit/work area.		
<input type="checkbox"/> Pad/Chux <input type="checkbox"/> Reusable cloth <input type="checkbox"/> Disposable plastic-backed <input type="checkbox"/> Disposable air flow-backed	<input type="checkbox"/> Diaper/Brief <input type="checkbox"/> Reusable cloth <input type="checkbox"/> Disposable plastic-backed <input type="checkbox"/> Disposable air flow-backed	<input type="checkbox"/> Collection Device
Incontinence Cleanup & Skin Protection: Check all product categories that are available in a specific unit/work area.		
Cleansing: <input type="checkbox"/> Soap/Water/Basin <input type="checkbox"/> Peri-Wash (spray) <input type="checkbox"/> Cleansing Foam <input type="checkbox"/> Washcloth (circle type) <input type="checkbox"/> reusable / disposable <input type="checkbox"/> Pre-moistened Wipe <i>(thin, not washcloth)</i>	Barrier Protection (Tubes, Bottles or Sprays): <i>Must contain one of the "Active Ingredients" listed below</i> <input type="checkbox"/> Petroleum <input type="checkbox"/> Zinc Oxide <input type="checkbox"/> Dimethicone <input type="checkbox"/> Liquid Film Barrier <input type="checkbox"/> Other _____	All-in-one products: <i>Must combine cleansing, moisturizing & barrier protection</i> <input type="checkbox"/> Barrier cloth with skin protectant
Moisturizers: <input type="checkbox"/> Lotion <input type="checkbox"/> Cream <input type="checkbox"/> Ointment		

sage10141C

Patient Information		
Patient Unit: _____ (from Unit/Work Area data collection form)		
Section 1 - Complete for all patients surveyed		
Demographic Information:		
Patient Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female	Patient Age Group: <input type="checkbox"/> 0 to 12 months <input type="checkbox"/> 1 to 3 yrs <input type="checkbox"/> 4 to 15 yrs <input type="checkbox"/> 20 to 29 yrs <input type="checkbox"/> 30 to 39 yrs	<input type="checkbox"/> 40 to 49 yrs <input type="checkbox"/> 50 to 59 yrs <input type="checkbox"/> 60 to 69 yrs <input type="checkbox"/> 70 to 79 yrs <input type="checkbox"/> 80 + yrs
Continence Status: Incontinence = inability to control the flow of urine and/or stool in the preceding 24 hours Check all that apply		
Urine: <input type="checkbox"/> Continent <i>Note: A patient with a Foley Catheter is deemed "continent."</i> <input type="checkbox"/> Patient has Foley <input type="checkbox"/> Incontinent	Stool: <input type="checkbox"/> Continent <i>Note: A patient with an external fecal collection device is deemed "continent."</i> <input type="checkbox"/> Incontinent <input type="checkbox"/> Liquid or semi-liquid stools <input type="checkbox"/> Frequency _____ <input type="checkbox"/> Patient has indwelling fecal collection device <input type="checkbox"/> Patient has external fecal collection device	
Section 2 - Complete only for incontinent patients		
Contributing Factors & Co-Morbidities		
Check all that apply: <input type="checkbox"/> Low albumin <input type="checkbox"/> Antibiotics <input type="checkbox"/> Clostridium difficile stool positive <input type="checkbox"/> Tube feeding	<input type="checkbox"/> Braden Score _____ <input type="checkbox"/> Mobility Score _____ <input type="checkbox"/> Friction & Shear Score _____ <input type="checkbox"/> Nutrition Score _____	<input type="checkbox"/> Diabetic with recent hyperglycemia <input type="checkbox"/> Obesity with deep groin/low abdomen skin folds <input type="checkbox"/> Immunocompromised <input type="checkbox"/> Other _____
Incontinence Cleanup & Skin Protection:		
Cleansing: <input type="checkbox"/> Soap/Water/Basin <input type="checkbox"/> Peri-Wash (spray) <input type="checkbox"/> Cleansing Foam <input type="checkbox"/> Washcloth (circle type) <input type="checkbox"/> reusable / disposable <input type="checkbox"/> Pre-moistened Wipe <i>(thin, not washcloth)</i>	Barrier Protection: (Tubes, Bottles or Sprays) <i>Must contain one of the "Active Ingredients" listed below</i> <input type="checkbox"/> Petroleum <input type="checkbox"/> Zinc Oxide <input type="checkbox"/> Dimethicone <input type="checkbox"/> Liquid Film Barrier <input type="checkbox"/> Other _____	
Moisturizers: <input type="checkbox"/> Lotion <input type="checkbox"/> Cream <input type="checkbox"/> Ointment	All-in-one products: <i>Must combine cleansing, moisturizing & barrier protection</i> <input type="checkbox"/> Barrier Cloth with skin protectant	
Section 3 Complete only for incontinent patients with redness of buttock or perineal skin		
Perineal Skin Injury		
Check all that apply Condition: <input type="checkbox"/> Incontinence Associated Dermatitis <input type="checkbox"/> Red and dry <input type="checkbox"/> Red and weepy <input type="checkbox"/> Present on Admission <input type="checkbox"/> Pressure Ulcer (anal, coccyx or ischio) <input type="checkbox"/> How many? _____ <input type="checkbox"/> Stage(s) _____ <input type="checkbox"/> Present on Admission <input type="checkbox"/> Fungal/yeast appearing rash <input type="checkbox"/> Other _____ <input type="checkbox"/> Specify _____	Area Affected: <input type="checkbox"/> Buttocks <input type="checkbox"/> Coccyx <input type="checkbox"/> Rectal Area <input type="checkbox"/> Scrotum/Labia <input type="checkbox"/> Lower Abdomen <input type="checkbox"/> Upper Thighs <input type="checkbox"/> Groinal cleft <input type="checkbox"/> Groins	Containment Products: <input type="checkbox"/> Fecal/Seal Fecal Collection Device <input type="checkbox"/> Zapp Fecal Collection Device <input type="checkbox"/> Nasal Trumpet <input type="checkbox"/> Other _____ Y N Is there leakage around device at the anus? Y N Was there an underpad present? <input type="checkbox"/> Reusable cloth <input type="checkbox"/> Disposable plastic-backed <input type="checkbox"/> Disposable air flow-backed Y N Were incontinence briefs worn by patient?

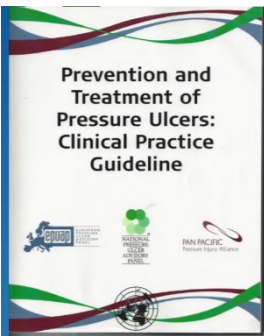
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IAD: Multisite Epidemiological Study

- 5342 patients in 424 facilities in Acute & Long Term Care in US
- Prevalence study
 - To measure the prevalence of IAD in the acute care setting,
 - To describe clinical characteristics of IAD, and
 - To analyze the relationship between IAD and prevalence of sacral/coccygeal pressure ulcers
- Results: 1716 patients incontinent (44%)
 - 57% both FI and UI, 27% FI, 15% UI
 - 24% IAD rate
 - 60% mild
 - 27% moderate
 - 5% severe
 - 73% was facility acquired
 - ICU a 36% rate
 - IAD 5x more likely to develop a HAPU

Evidence-based Components of an IAD Prevention Program

- Skin care products used for prevention or treatment of IAD should be selected based on consideration of individual ingredients in addition to consideration of broad product categories such as cleanser, moisturizer, or skin protectant. (Grade C)
 - A skin protectant or disposable cloth that combines a pH balance no rinse cleanser, emollient-based moisturizer, and skin protectant is recommended for prevention of IAD in persons with urinary or fecal incontinence and for treatment of IAD, especially when the skin is denuded. (Grade B)
 - Commercially available skin protectants vary in their ability to protect the skin from irritants, prevent maceration, and maintain skin health. More research is needed (Grade B)



EBP Recommendations to Reduce Injury From Incontinence & Other Forms of Moisture

- Clean the skin as soon as it becomes soiled.
- Use an incontinence pad and/or briefs that wick away
- Use a protective cream or ointment
 - Disposable barrier cloth recommend by IHI & IAD consensus group
- Ensure an appropriate microclimate & breathability
- < 4 layers of linen
- Barrier & wick away material under adipose and breast tissue
- Support or retraction of the adipose tissue (i.e. KanguruWeb)
- Pouching device or a bowel management system

National Pressure Ulcer Advisory Panel and European Pressure Ulcer Advisory Panel. Pressure ulcer prevention & treatment :clinical practice guideline.

Washington, DC: National Pressure Ulcer Advisory Panel; 2009.

Williamson, R, et al (2008) Linen Usage Impact on Pressure and Microclimate Management. Hill-Rom

www.ihi.org

Doughty D, et al. JWOCN. 2012;39(3):303-315

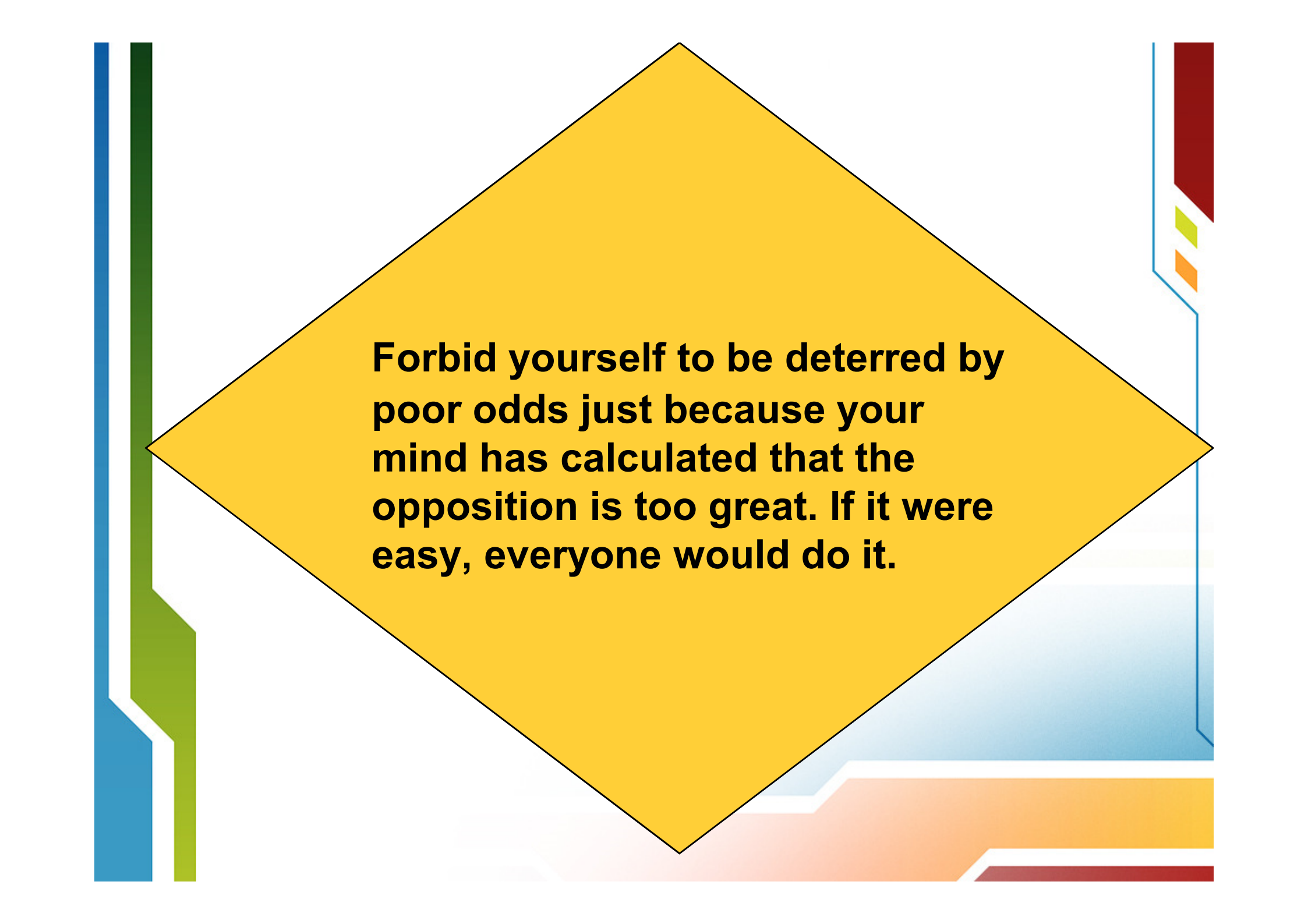
IAD/HAPU Reduction Study

- Prospective, descriptive study
- 2 Neuro units
- Phase 1: prevalence of incontinence & incidence of IAD & HAPU
- Phase 2: Intervention
 - Use of a 1 step cleanser/barrier product
 - Education on IAD/HAPU
- Results:
 - Phase 1: incontinent 42.5%, IAD 29.4%, HAPU 29.4%, LOS 7.3 (2-14 days), Braden 14.4
 - Phase 2: incontinent 54.3%, IAD & HAPU 0, LOS 7.4 (2-14), Braden 12.74



“Even if you are on the right track, you will get run over if you just sit there.”

Will Rogers



Forbid yourself to be deterred by poor odds just because your mind has calculated that the opposition is too great. If it were easy, everyone would do it.



Contact Kathleen Vollman at
kvollman@comcast.net
www.Vollman.com