

# Pressure Ulcer Prevention

National Decubitus Foundation

[www.decubitus.org](http://www.decubitus.org)

[info@decubitus.org](mailto:info@decubitus.org)

# Zero Pressure Ulcers

“Zero pressure ulcers: That's the goal of every nurse, therapist, physician, and other health care professional who works with patients. It's a difficult goal to attain, but one the United Health Services Hospitals has just reached for the first time ever”

# National Decubitus Foundation

- Founded 1996
- 501(c)(3) Public Charity
- Goal is Education
- Patient-Advocate Organization
- Dedicated to Pressure Ulcer Eradication in Hospitals

# Funding

- Christopher and Dana Reeve Foundation
- 2008 Grant:
- Study published July 2008 *Advances in Skin and Wound Care*
- Distributed to 2000 acute care hospitals
- Distributed to all state regulatory agencies
- 2010 Grant:
- What support surfaces qualify?

# Abstract

- Identify hospitals with low nosocomial pressure ulcer incidence
- How did they accomplish this result?
- What do they have in common?
- How can all hospitals do the same?
- NDF Prevention Protocol
- What support surfaces qualify?

# Objective

- Prevent hospital-caused pressure ulcers
- Discover how a few hospitals are doing it
- Demonstrate how they can afford to do it
- Provide guidelines for surface selection

# Pressure Ulcer Incidence

• Santa Clara	• 3.6	0.0
• Stanford	• 20	7
• Allegheny	• 8	6
• Straub	• 31.4	4.7
• Scott & White	• 18	9
• Trinity	• 14	9
• Robert Packer	• 5.5	3.1
• Augusta	• 16.5	3.5

# Meta Analysis

	Control	PrU	Treated	PrU	Odds
Santa Clara	334	12	291	0	.044
Stanford	311	62	262	18	.252
Allegheny	331	25	315	19	.753
Straub	34	12	127	6	.091
Scott & White	158	28	157	14	.455
Trinity	330	46	330	30	.617
Robert Packer	108	15	128	7	.359
Augusta	404	67	404	14	.419



# Pressure Ulcers Preventable

“It mattered not whether the patient was a young paraplegic or elderly and demented; whether the patient was well nourished or found on the concrete in an alcoholic stupor; the result of my probing into the wound etiology always came to the same conclusion: **The pressure ulcer was preventable**” -  
John L. Baeke, M.D.

# The NDF Prevention Protocol

- Risk assessment by Braden Scale upon admission
- Immediate use of pressure redistribution or pressure relief surface for all at risk
- Regular turning as prescribed by bed manufacturer

# Provide Surface at Admission

Realization that most, if not all, pressure wounds have their origin in deep tissue explains why the practice followed by most hospitals of providing a specialty support surface only after the appearance of Stage I or II indicators has so often met with failure.

# How Soon Does PU Develop?

“PU's in subdermal tissues under bony prominences very likely occur approximately between **the first hour** and 4 to 6 hours after sustained loading.”

-Amit Gefin, PhD

# Discuss Risk with Families

- Many emails: “They kept it a secret”
- Help with shifting position
- Alert nurses to incontinence problems
- Help to avoid shear when sitting up
- Help with nutrition
- Alert handlers to cause no stress

# New Jersey Law April 23, 2009

“No later than three years after the effective date of this act, a nursing home shall replace all mattresses used by its nursing home residents with pressure redistribution mattresses that are designed to address, at a minimum, Stage 1 pressure ulcers.”

# California Responds

If New Jersey can require all nursing homes to provide pressure redistribution beds, why not California?

“...DHCS does not have the authority to require that hospitals adopt these specific procedures” - California Department of Health Care Services

# New York Responds

“We have an adverse event reporting system known as the New York Patient Occurrence Reporting and Tracking System (NYPORTS). Currently Stage 3 and Stage 4 Decubitus are not a reportable code in NYPORTS.” - State of New York Department of Health



# Reduce the Pressure

“Remember, there is a reason these wounds are called Pressure Ulcers and not Mystery Ulcers. That is because we know exactly what causes them...PRESSURE. It matters not how many predisposing risk factors an individual might have. Provide an environment of no pressure. And there will never be a pressure sore.”

- John L. Baeke, MD

# The Present Situation

- Pressure ulcers declared a “never event”
- Medicare denies funding when hospital-caused
- Not yet clear if making any difference
- Some hopeful developments

# IHI Mentor Hospital Registry

- Pressure ulcer prevention
- [www.ihl.org/IHI/Programs/Campaign](http://www.ihl.org/IHI/Programs/Campaign)
- Twelve mentors
- Hospitals that have reduced PU incidence
- Nearly all invested in new support surfaces

# If They Can Do It.....?

• Binghamton General		0.0
• Lodi Memorial	9.5	0.0
• R W Johnson	5.9	0.0
• Yuma Regional	13	2.4
• Baystate	20	0.0
• Claxton-Hepburn	27	3.0
• Morristown Mem'l	11	2.5
• Onslow Mem'l	20	0.0

# Measuring Interface Pressure

- Pressure Mats
- Capacitance Sensors
- Resolution
- Values Depend on Many Factors
- Definition not clear for pressure relief types

# Support Surfaces and IP

Surface	Sacrum	Trochanter
Pressure Redistributing	15 – 20.3	23 – 38.4
Pressure Relieving	deflate 1 inflate 42	1 65 (mm Hg)
Standard Hospital	33	49

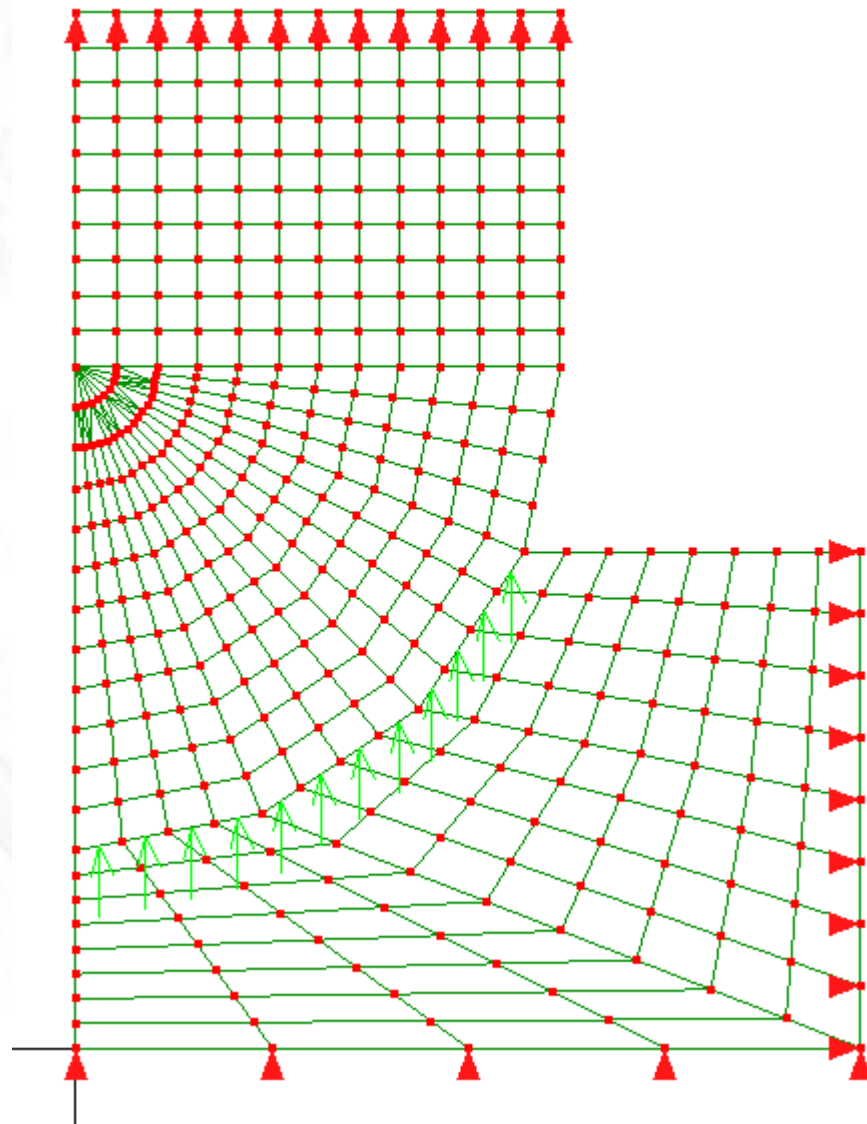
# Pressure-Relieving Mattresses

“I have used “zero-pressure” mattresses on well over two hundred patients, including my quadriplegic father. By physician order, I would even instruct the nursing staff NOT to turn my patients....During the 14 years I have used the Pegasus mattress, none of my patients has developed any pressure ulcers. None!” - John L. Baeke, M.D.

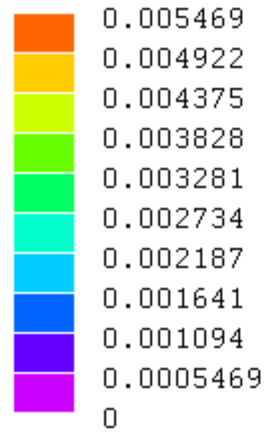
# Objectives of the FEA

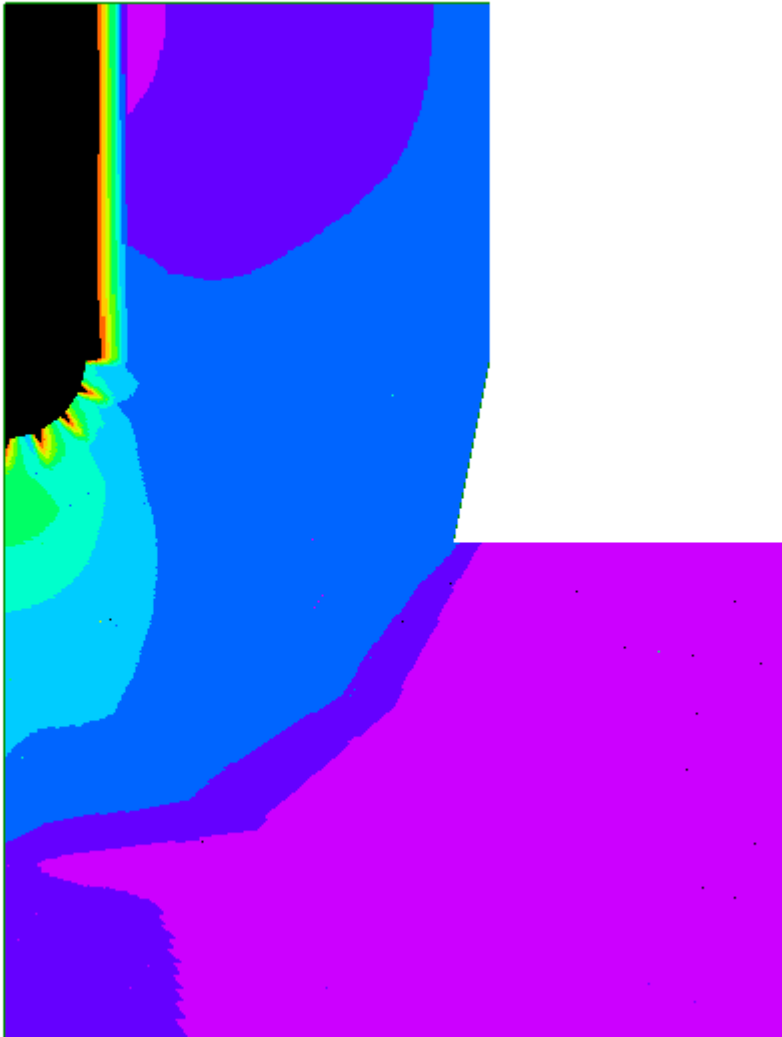
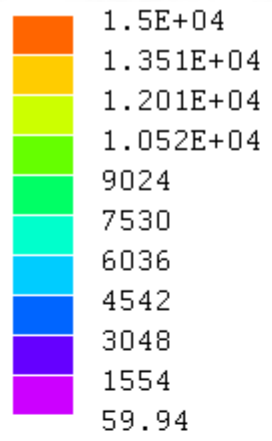
- Apply the measured interface pressure
- Find the stress at the bony prominence
- Explore the effect of varying geometry
- Find behavior vs time for pressure relief
- Explore effect of different cycle times
- Compare with healthy person on standard mattress





Displacement Magnitude





# How Many Surfaces Required?

“The reported Braden Scale scores within the sample (2120) ranged from 9 to 23. Approximately one third (35%) of the total sample had a Braden Scale score of 18 or less.”

Kelly, C. A New Look at the Braden Scale, 2010

# Cost Savings vs Rentals

“Placed 140 AtmosAir (KCI) mattresses on six units ...in March 2001 and in a five month period we saved \$100,000 in rental costs and reduced pressure ulcer incidence by more than two percent”

- OSF St Francis Medical Center
- Peoria, IL

# Recommendation

All hospitals should be required to implement the NDF Prevention Protocol by having on hand at least sufficient effective support surfaces to be provided to all at-risk patients at the time of admission.