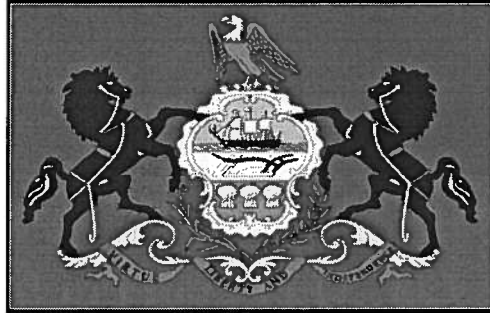


# The State of the Commonwealth



Thomas E. Serena MD FACS



# "I am a Wound Care Specialist"



## **Agenda**

- **Making the diagnosis: Pressure ulcer**
  - **Pressure Ulcers in Pennsylvania**
    - **Overview of Prevention**
      - **Early Intervention**



## **Acute vs. Chronic Wounds**

***"Acute wounds are those without an underlying healing defect and that usually occur secondarily to surgery or trauma in a healthy individual, healing quickly and completely."***



## Chronic Wounds

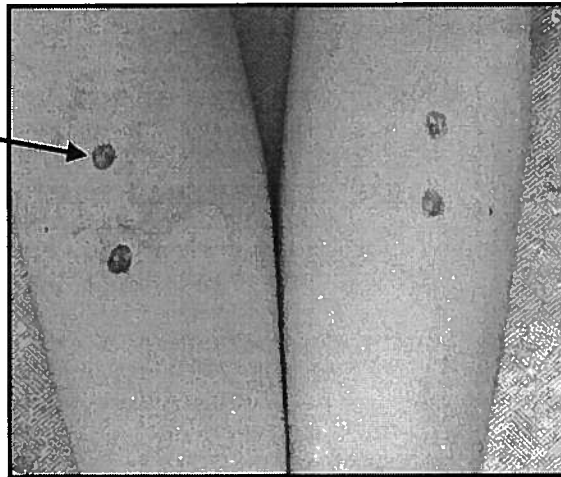
- **A chronic wound can be defined as a wound in which the normal process of healing has been disrupted at one or more points in the phases of hemostasis, inflammation, proliferation, and remodeling. Chronic wounds have several distinctive features and in contrast to acute wounds, they fail to heal in a timely and orderly manner.**

Wounds 15(7):213-229, 2003.



## Human Forearm Biopsy Model for Acute Wound Healing

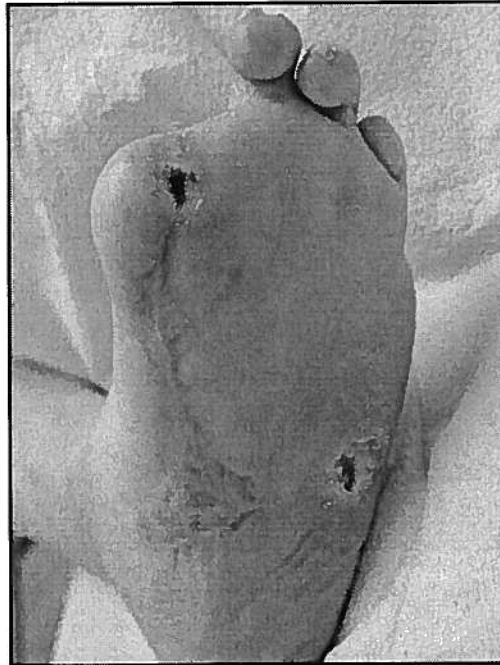
- **6mm Full Thickness Punch Biopsy**

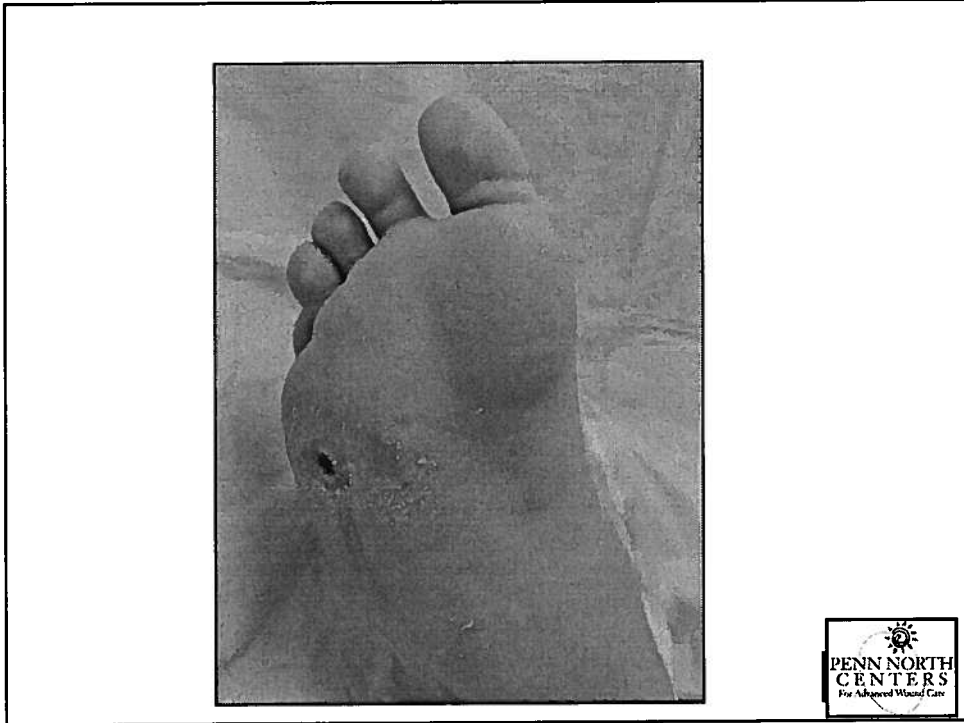


# Location, Location, Location...

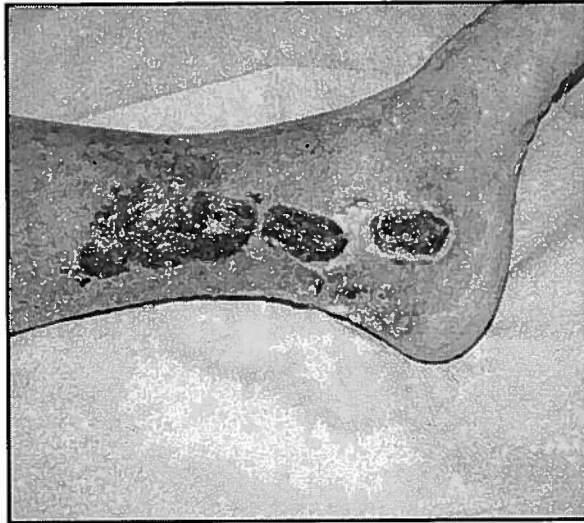


Diabetic  
Foot Ulcer





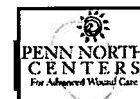
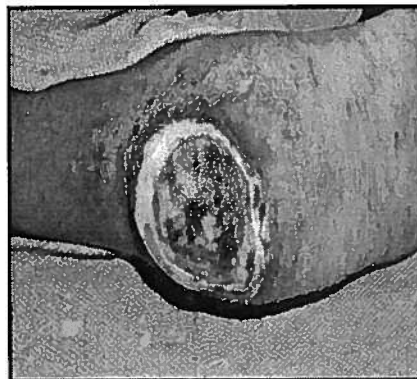
## Venous Leg Ulcers



## Ischemic Ulcers



## Pressure Ulcers



## **Pressure Ulcer: Definition**

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 and/or friction.



## **Pressure Ulcer Prevalence**

- 2.2 to 23.9 percent of persons in skilled care and nursing home facilities and 0.4 to 28 percent in acute care settings
- In high-risk patients, including elderly individuals with femoral fractures, the incidence and prevalence is over 60 percent
- 65 % of elderly patients hospitalized with hip fractures develop pressure ulcers.



## **Pennsylvania**

- **Advancing Excellence in Nursing Homes Campaign.**
  - **Pennsylvania 11.2% compared to national average of 12%.**
  - **Facilities that participated had a lower incidence of pressure ulcers during the course of the trial.**
- **CMS Reporting 2007**
  - **High Risk 13.7%**
  - **Low Risk 3.5%**



## **Pennsylvania Patient Safety Authority**

- **13,500 reports of pressure ulcer development.**
- **4300 hospital acquired.**
- **Estimated annual estimate is 28,000 cases per year statewide.**



## Cost

- **Patient cost: Stage IV pressure ulcers take up to two years to heal.**
- **Up to \$40,000/pressure ulcer in direct treatment costs.**
- **CMS with holding a higher DRG payment to inpatient prospective payment for Stage III and IV ulcers.**
- **Legal Issues.**
  - **87% settle in favor of plaintiffs.**

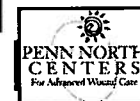
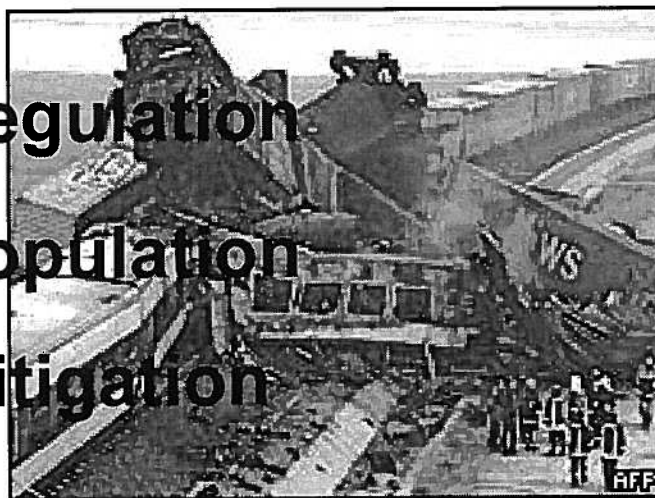


## The Collision

**Regulation**

**Population**

**Litigation**



## Pennsylvania is a Grey State



## Etiology

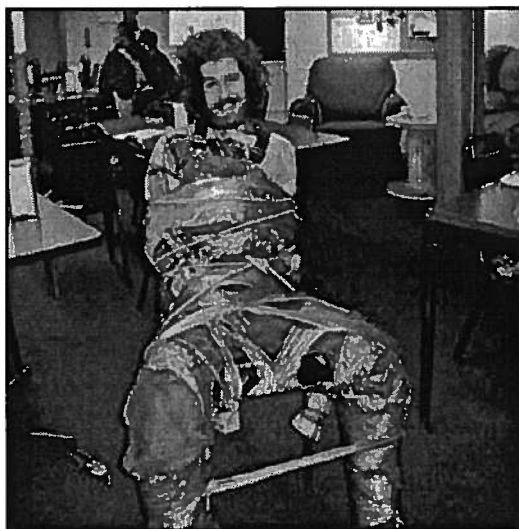


## Shear forces



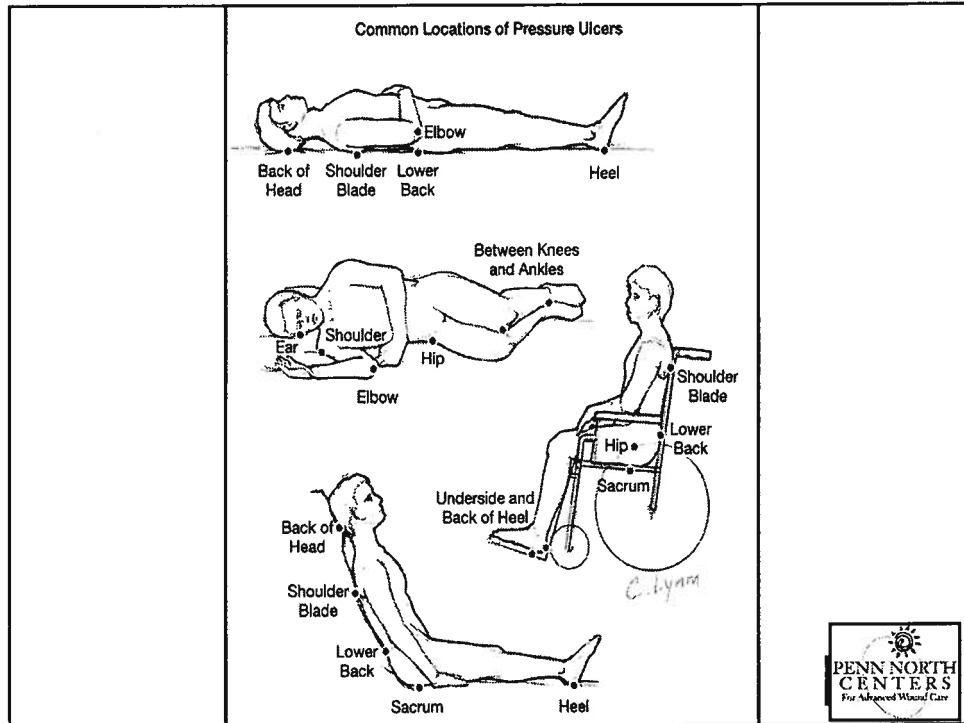
4 Hours

2 Hours



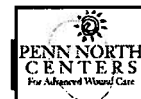
How long will it take this guy to develop a pressure ulcer.





## Stage I

Intact skin with non-blanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area.



## Stage II

Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister.



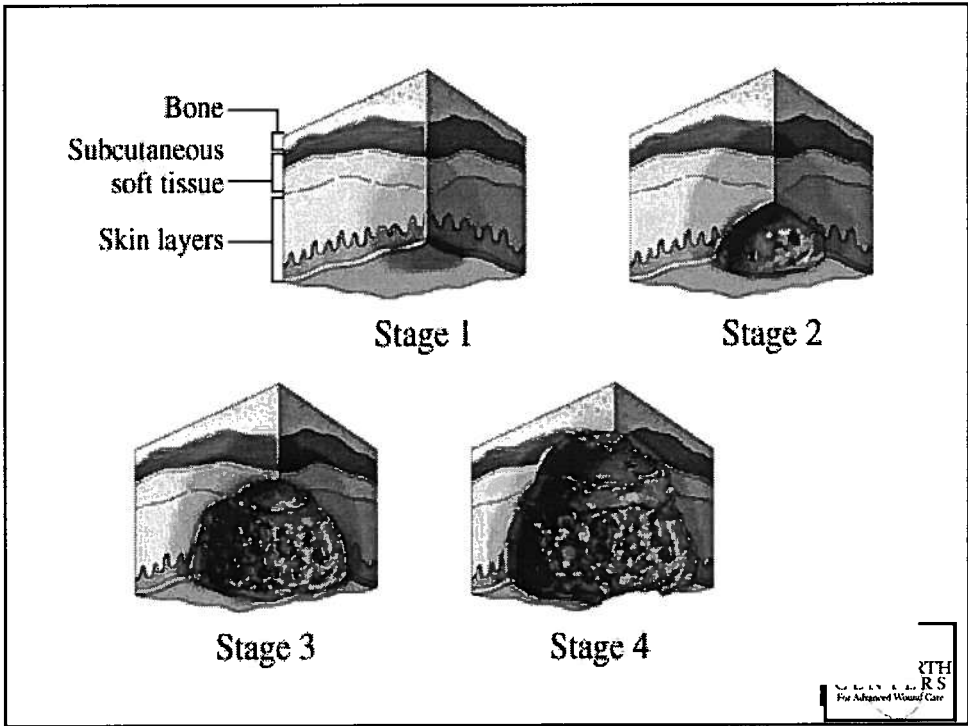
## Stage III

- Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are *not* exposed. Slough may be present but does not obscure the depth of tissue loss.



## Stage IV

Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present on some parts of the wound bed.



## **Risk Factors**

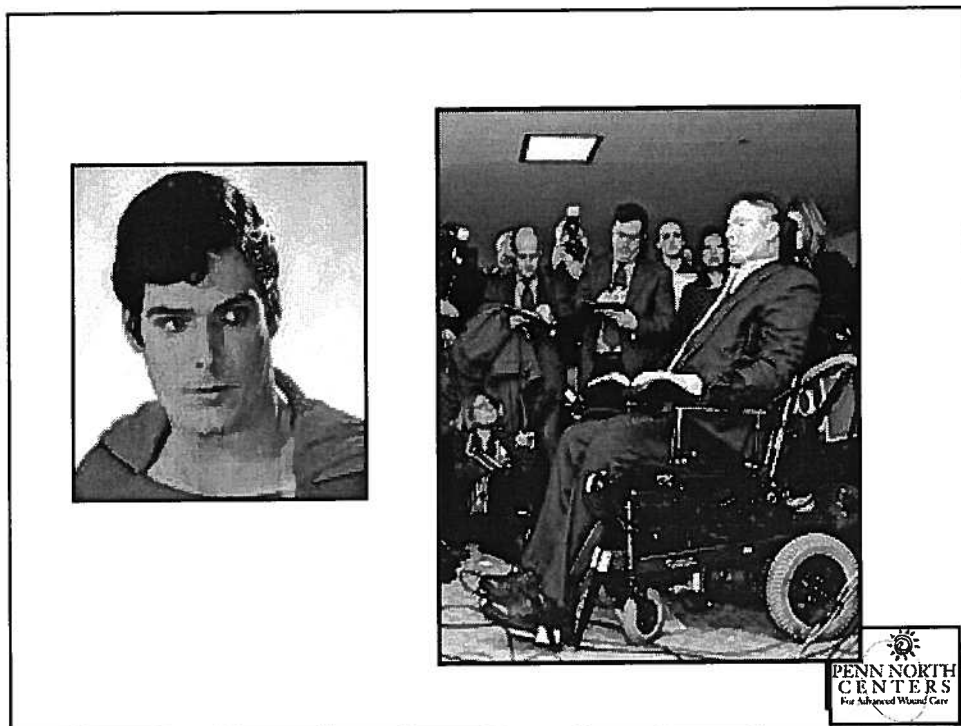
- **Immobility**
- **Fecal Incontinence**
- **Urinary Incontinence**
- **Sensory Defect**
- **Malnutrition (decreased body weight)**
- **Hypotension (diastolic)**
- **Dry Skin**
- **Obesity**
- **Lymphopenia**
- **Peripheral Arterial Disease**
- **Diabetes mellitus**
- **Age**



## **Prevention**

- **Asses Risk. Braden Scale or Norton Scale.**
- **Develop Policies and Procedures based on risk assessment.**
  - **Frequent repositioning.**
  - **Offloading regimen.**
  - **Maximizing nutritional status and hydration.**
  - **Maintain skin moisture.**
  - **Control incontinence.**
  - **Maximize medical conditions**

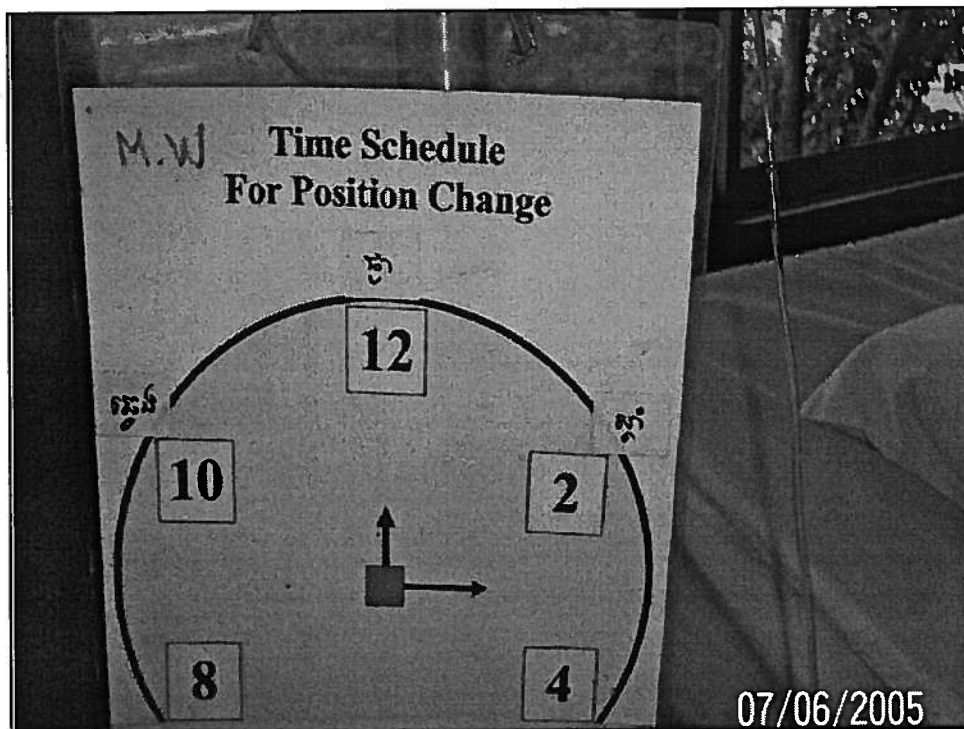
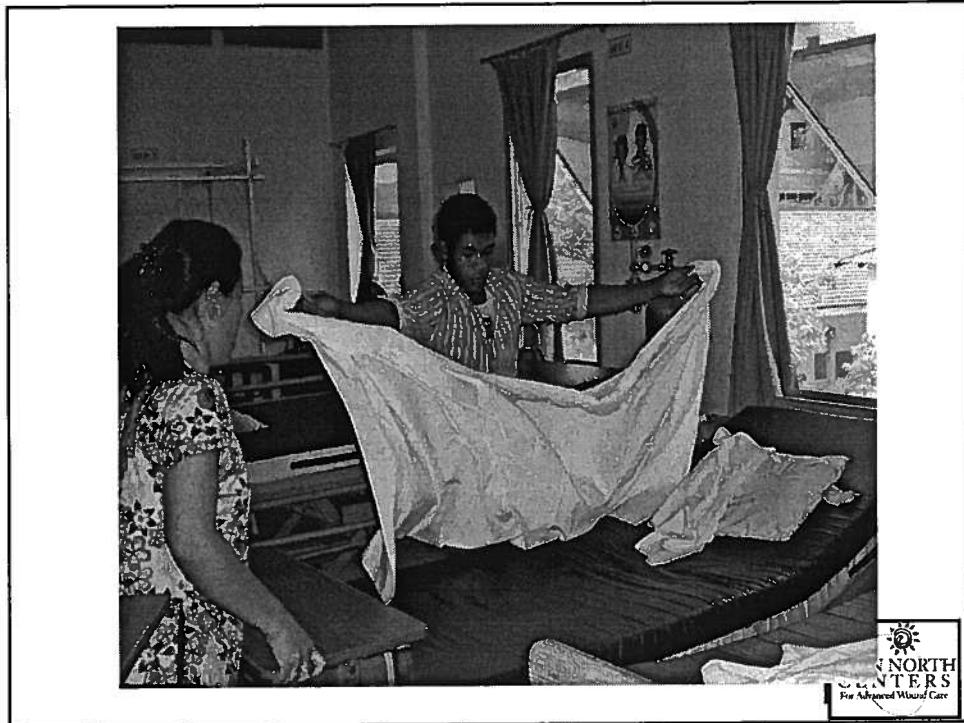




## **Efficacy of intervention**

- **The use of scales have not been shown to reduce pressure ulcers.**
- **Having a policies in place is not a guarantee that pressure ulcers will not develop.**
- **High staff and leadership turnover decreases efficacy of the treatment plan.**
- **Staging is frequently inaccurate.**
- **Documentation is inconsistent.**





# Treatment



## Nutritional Status

- **Protein assessment**
  - serum albumin
  - pre-albumin
  - serum transferrin
  - nitrogen balance
- **Arginaid/Juven**
  - 802-BID
- **Carbohydrates**
- **Fats**
- **Vitamins**
- **Minerals**
- **Water**



## Stage I and II

- **Offload**
  - Turn q 2hrs
  - Specialty mattress
  - Positioning
  - Limited linen under the patient
- **Control fecal and urinary incontinence**
- **Ensure adequate hydration**
- **Stabilize medical conditions**
- **Protective barrier and topical agent**
- **Wound Care Team involved**



## **Objective Measurements**

- **Skin moisture measurement.**
- **Subcutaneous edema and evidence of deep tissue injury determined by bedside ultrasonic evaluation.**
- **Skin temperature.**

