

# **Management of the Burn Patient**

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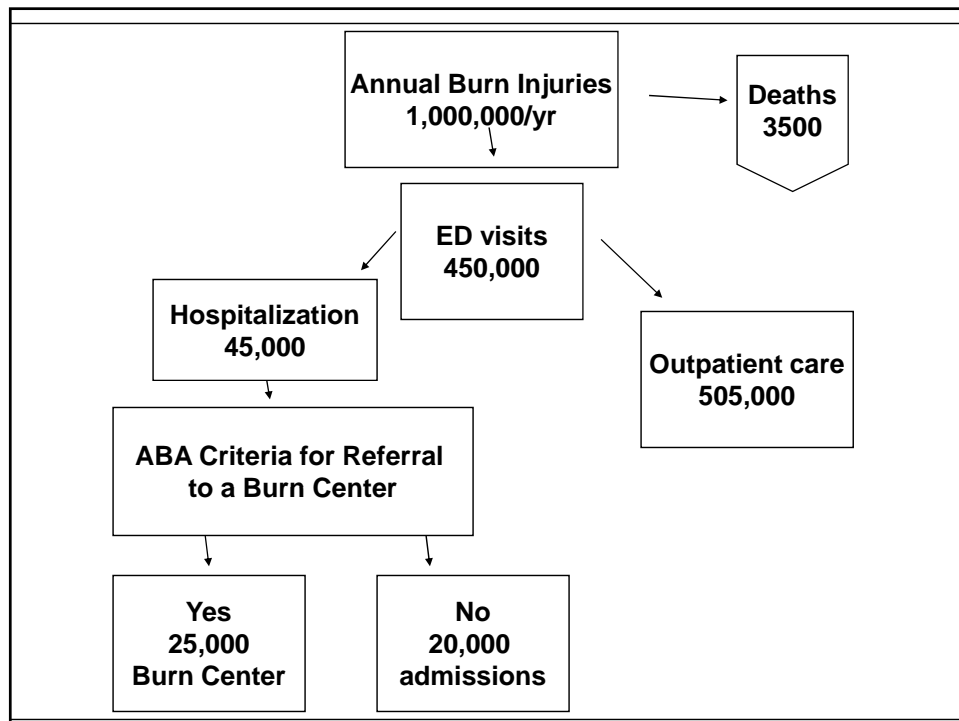
## **Learning Objectives**

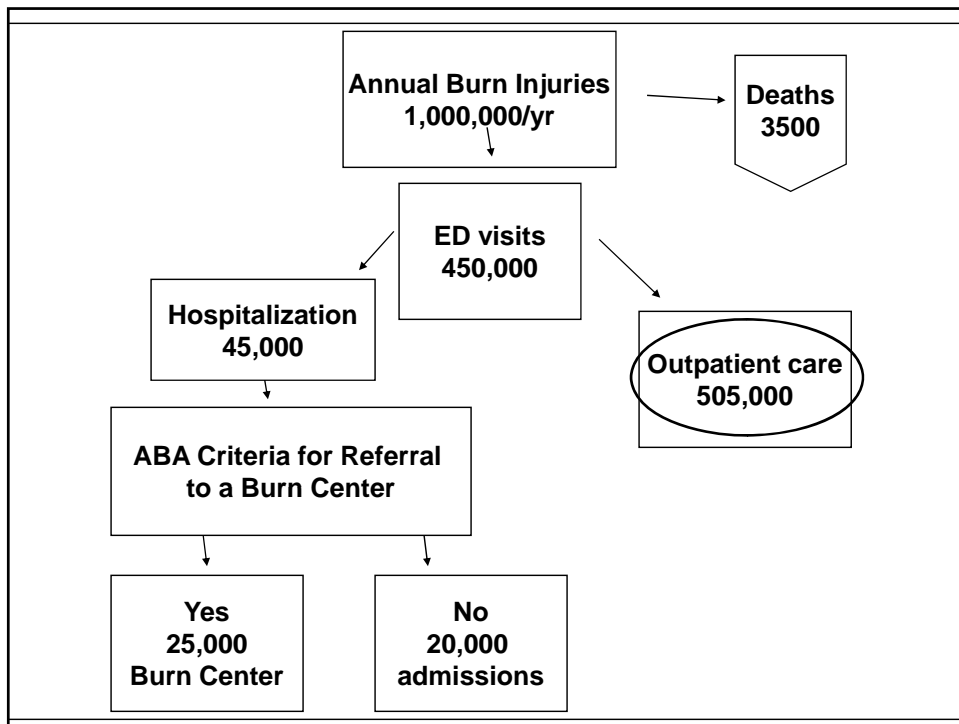
- **Describe ambulatory management of burn patients**
- **Use the “rule of nines” to estimate total body surface area of the burn**
- **Describe partial and full thickness burn wounds**
- **List ABA criteria for patient transfer to a specialty burn center**
- **Discuss the management of SJS/TEM**

# American Burn Association Transfer Criteria

- Burn > 10% TBSA
- Burns > 5% full thickness
- Burns complicated by inhalation injury,
- significant associated injury or co-morbidity
- Burns of hands, face, feet, perineum, major joints
- Electrical/chemical injuries

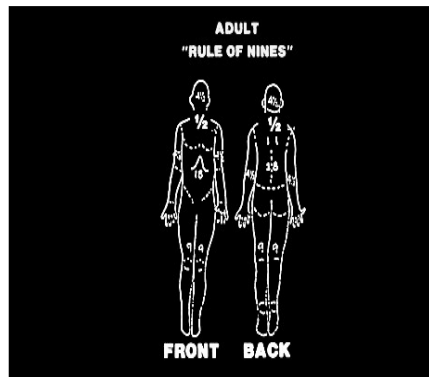
ABA Advance Burn Life Support (ABLS) course





## Severity

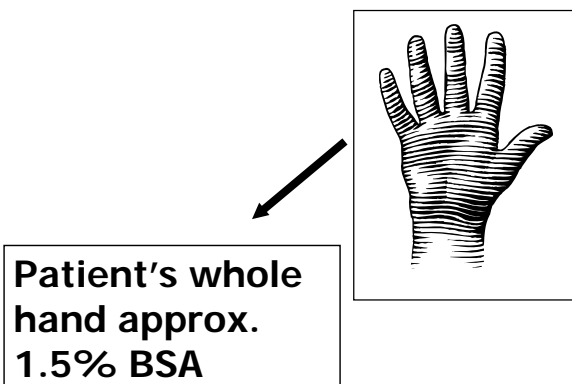
# Total Body Surface Area Rule of Nines



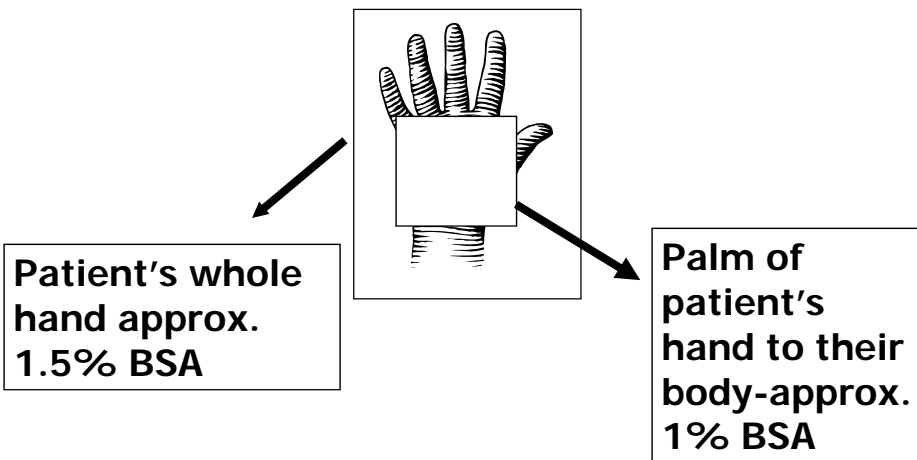
# Severity Total Body Surface Area



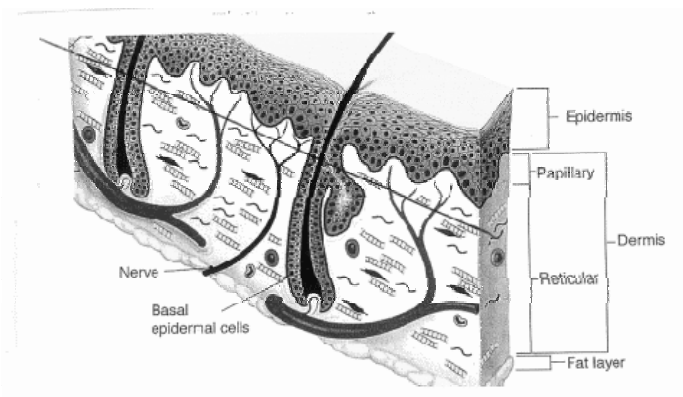
# Severity Total Body Surface Area



## Severity Total Body Surface Area



## Severity-Depth



Demling et al, Burnsurgery.org

## **Partial thickness: First Degree**

**Epidermis only**

**Pink or red**

**Painful**

**Heals in few days, injured epithelial cells peel**

## **Severity Depth - 2nd Degree Burn**



- **appearance**
  - **reddened**
  - **blisters**
  - **open tissue**
- **sensation**
  - **painful**
  - **diminished discrimination between sharp & dull stimulus**

## **Think child Abuse**



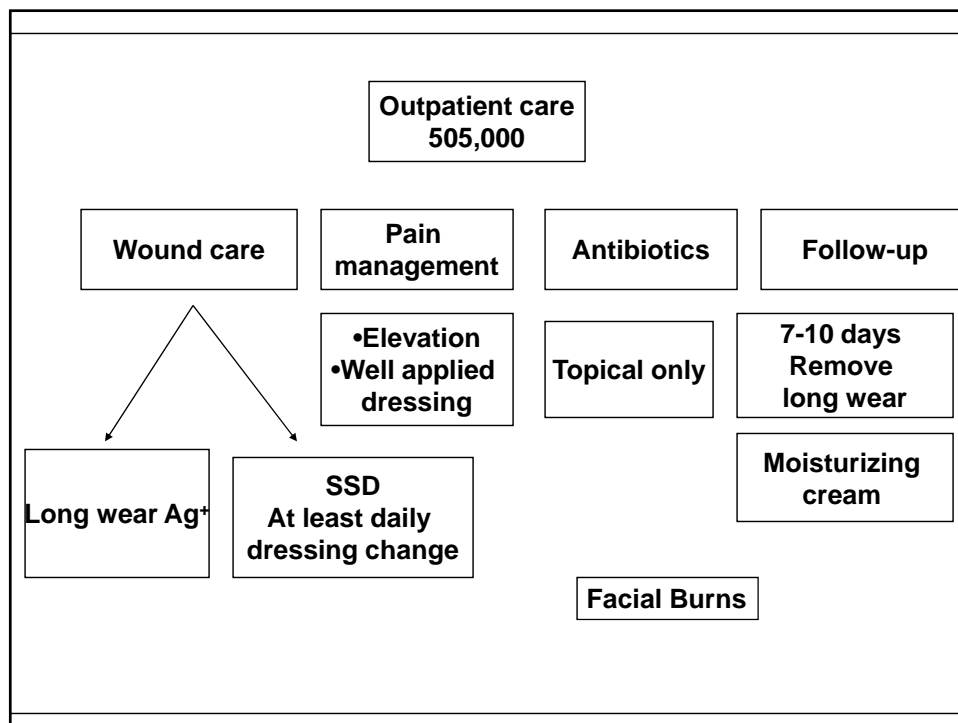
### **Severity Depth - 3rd Degree Burn**

- Entire epidermis and dermis
- White, gray
- Dry, leathery
- No hair
- Absent capillary refill
- Less pain
- Small area heals by epithelial ingrowth
- Large areas require surgical skin grafts

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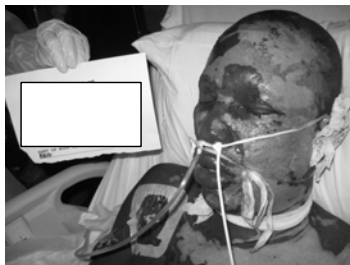




## Facial Burns



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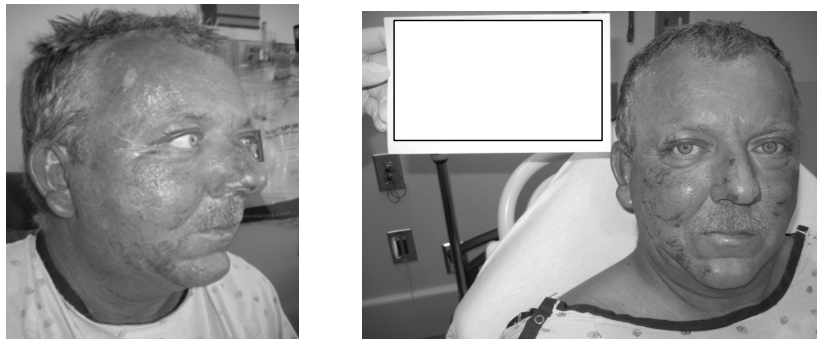
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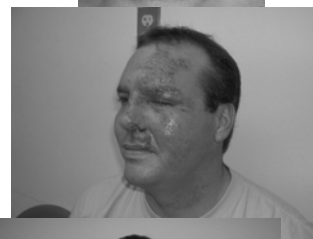
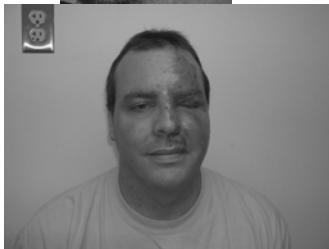
## Facial Burns



## Facial Burns



## Facial Burns



**Example  
Long wear Ag<sup>+</sup> Products**

**Most Commonly Used  
Acticoat  
AquacelAG  
MepilexAg**











# **Chemical Injury**

## **Treatment**

**Get chemical off of the tissue**

**if dry chemical brush off 1st**

**Flush with copious amounts of water 20-30 minutes**

**P.P.E.'s to ensure safety of healthcare provides**

## **Patient with Chemical Burn**



**Full thickness  
injury from  
chemicals in  
the home**

## **Hydrofluoric Acid**

**Tissue damage & great pain**

**Hydrofluoric Acid binds with Calcium**

**Treatment**

**Topical mixture of calcium gluconate & K-Y**

**Sub-dermal inject calcium gluconate (ER)**

**Intra-arterial infusion of calcium gluconate  
(Burn Center)**

# Wound Care

## FOR PATIENTS BEING TRANSFERRED:

- Cover the wound with dry clean sheets / towels / blankets - need not be sterile
- KEEP THE PATIENT WARM

## Steven Johnson Syndrome (SJS) / Toxic Epidermal Necrolysis (TEN) Continuum

STANDARD OF CARE IS MANAGEMENT IN  
A BURN CENTER

McGee, 1998, Palmieri 2002,

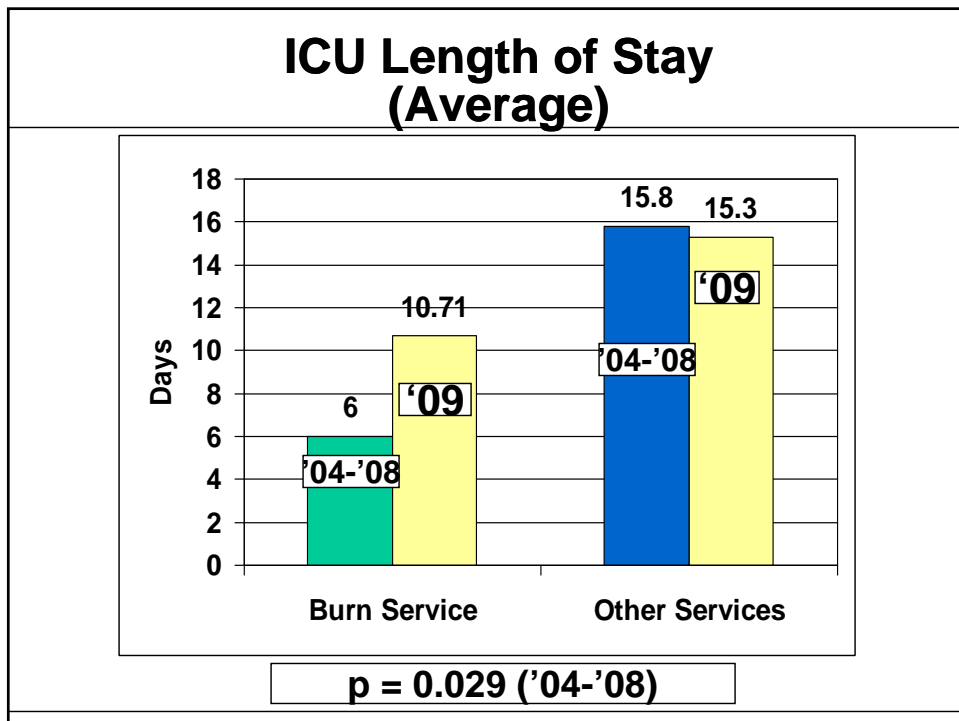
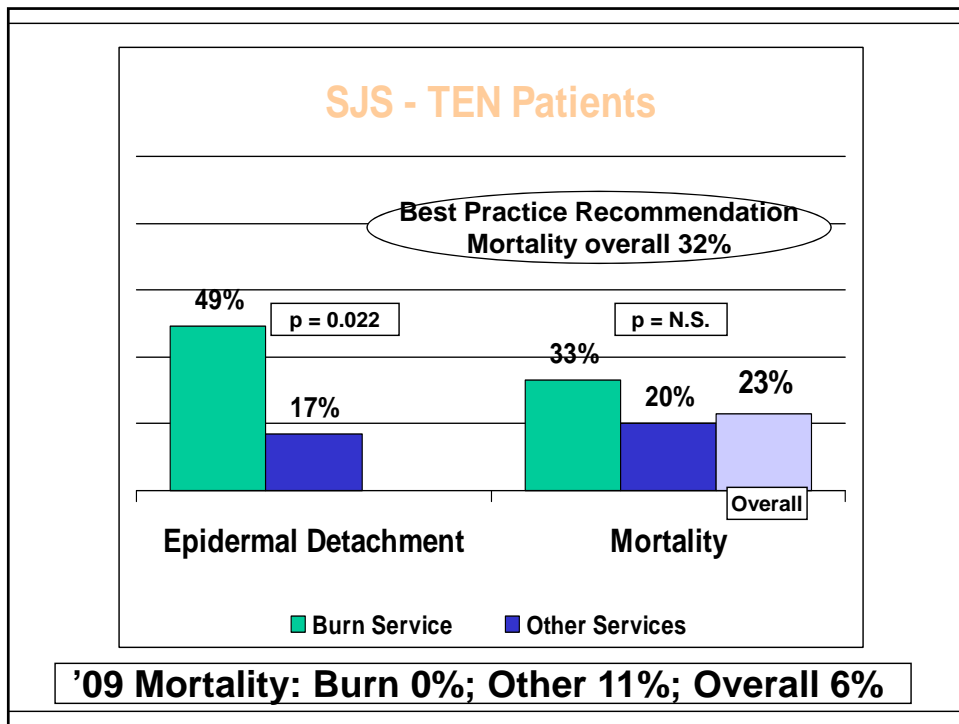
# Methods

- Retrospective chart review
  - SJS/TEN patients
- Two Timeframes
  - (2004-2008)
  - (2009)
- Burn Center established
  - February, 2006

# Results

- Causative agents:
  - Bactrim
  - Other antibiotics
  - Anticonvulsants
- Services:

|                  | <u>N=24 (04-08)</u> | <u>N=16</u> |
|------------------|---------------------|-------------|
| ( '09)           |                     |             |
| – Burn service   | 8                   | 7           |
| – Other services | 16                  | 9           |
- Age (average)
  - 53.1 years ('04-'08)
  - 47.3 years ('09)



## Quality Measures: SCORTEN Score

- Severity-of-illness score
- Predict mortality of TEN patient
- Obtain first 24 hours of admission
- 7 independent risk factors:
  1. Age > 40
  2. Malignancy
  3. Epidermal Separation > 10%
  4. Heart rate > 120 BPM
  5. BUN > 28 mg/dL
  6. Serum glucose > 252 mg/dL
  7. Serum bicarbonate < 20 mEq/L

| Number of Risk Factors | Mortality |
|------------------------|-----------|
| 0 - 1                  | 3.2%      |
| 2                      | 12.1%     |
| 3                      | 35.3%     |
| 4                      | 58.3%     |
| 5                      | 90.0%     |

## Conclusions

- **Early referral to Burn Center was re-confirmed**
  - Burn Center patients had greater epidermal detachment, but no difference in mortality, and shorter ICU stays
- **Education of other services about early referral to Burn Center**
  - Comprehensive supportive intensive care
  - Excellent wound care
  - Increased patient survival
    - Palmieri 2002, McGee, 1998

## **OSUMC Burn Resources**

**OSU Burn Center 614-293-2876 (BURN)**

**Burn Center administrative office**

**614-293-5710**

**Burn Unit 614-293-8744**

**Emergency Department**

**614-293-8333**

**Children's Hospital (under 16 years of age)**