

### Brief Resolved Unexplained Event (BRUE)

<b>Management and Treatment</b>	<ul style="list-style-type: none"> <li>Determine if patient meets low risk criteria: <ul style="list-style-type: none"> <li>Age &gt;60 days</li> <li>Born &gt;or= 32 weeks GA and corrected GA &gt;or= 45 weeks</li> <li>No CPR by trained provider</li> <li>Event &lt;1 min</li> <li>First event</li> <li>No concerning H&amp;P as above</li> </ul> </li> <li>Low risk → ED observation on continuous CV monitor and pulse ox for at least 1 hour including 2 observed feedings by RN or MD</li> <li>High risk → Admit to inpatient, continuous CV monitor and pulse ox for at least 6 hours (no more than 24 hours) including 2 observed feedings by RN or MD and 2 sleep/awake cycles</li> <li>Provide CPR training kit to parents/guardians on discharge</li> </ul>
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### Burns

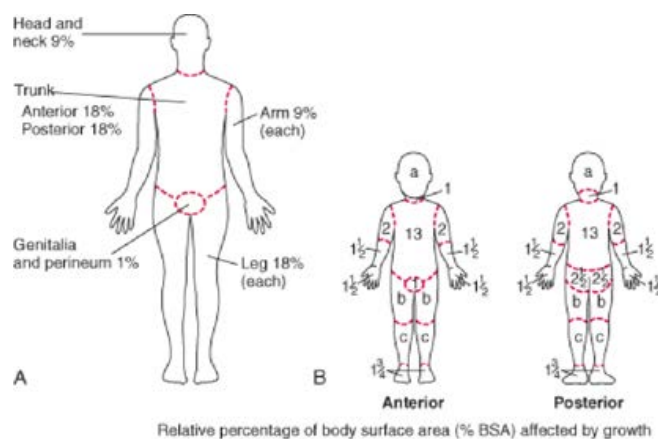
Sources	CHOP clinical pathway		
Classification	Definition	Symptoms	Description/Treatment
<b>1<sup>st</sup> degree</b>	Superficial (epidermis)	Erythema, pain	Includes sunburn, minor scalds Does not require fluid replacement; not included in estimate of surface area burned Usually heals without scarring in 3-5 days
<b>2<sup>nd</sup> degree</b>	Superficial partial thickness	Intense pain Blisters, pink to cherry-red skin, moist, weepy	Nails, hair, sebaceous glands, nerves intact Can progress to deep partial- or full- thickness burns Spontaneous re-epithelialization in 2-3 weeks
	Deep partial thickness	Intense pain Dry and white in color	Disruption of nails, hair, sebaceous glands, nerves Skin grafting may be required based on size
<b>3<sup>rd</sup> degree</b>	Full thickness	Charred black color ± areas dry or white Pain intense or absent, depending on nerve involvement	Skin grafting required
<b>Pathogenesis</b>	Burn injury → increased capillary permeability → third spacing, edema, fluid loss.		
<b>Estimating Burn Size</b>	<ul style="list-style-type: none"> <li>Estimate proportion of total body surface area involved</li> <li>Rule of 9's for adults and older adolescents: <ul style="list-style-type: none"> <li>9% for each arm</li> <li>18% for each leg</li> <li>9% for head</li> <li>18% for front torso</li> <li>18% for back torso</li> </ul> </li> <li>Rule of 9's does not apply to children due to differing body proportions, see modification for children on next page</li> <li>Palm of child's hand = 0.5% of total body surface area, can use to estimate burn size:</li> </ul>		

Burns continued on next page →

## Burns

### Estimating Burn Size

#### Modified Lund and Browder chart



### Workup

- Mechanism of burns (flame, chemical, electrical)
- Closed vs. open space exposure
- Condition of other victims, such as death at the scene
- Duration of exposure
- Associated trauma, such as falls
- Tetanus immunization status
- Always consider non-accidental trauma (See Suspected Child Abuse)

### Treatment

- Treatment is based on the depth of burn, proportion of TBSA involved, and if there is airway involvement or other injuries:
  - Airway:**
    - Assess for signs of inhalation injury or respiratory distress, snoot in nares, carbonaceous sputum, stridor
    - Consider intubation for >30%TBSA burned
  - Breathing:**
    - Assume carbon monoxide poisoning with severe/closed space burns
    - Assess stability of the airway
    - If airway injury, early intubation (use smaller cuffed ETT than necessary for age given continued swelling that will occur)
  - Circulation:**
    - For burns >15%BSA or any evidence of inhalation → Parkland formula
    - Initial bolus of 20 cc/kg NS
    - Parkland fluid resuscitation formula: good estimate for losses, but underestimates needs of young children. Provides fluid requirements to be added in addition to normal maintenance fluid requirements
    - $[TBSA \text{ burned } (\%) \times [wt \text{ (kg)}] \times [4mL] = \text{total mL resuscitation required over first 24 hrs} \rightarrow \text{Give } 1/2 \text{ in 1st 8 hours, remainder in next 16 hrs}$
- Assess urine output:
  - Urine output <1mL/kg/hr → 20 mL/kg bolus of crystalloid
  - Urine output = 1-3 mL/kg/hr → continue parkland formula
  - Urine output >3 mL/kg/hr → decrease rate to 2/3 Parkland formula
- Pain control: IV narcotic therapy often necessary (can give IM morphine or IN fentanyl prior to placing IV)
- Wound care:
  - Cleanse affected area with lukewarm sterile water.
  - Wipe away loose tissue with sterile gauze
  - Leave unruptured bullae intact (do not rupture)
- Admit if: partial thickness burns of >10% TBSA or > 2% full-thickness burns, hands, joints
- Refer to Shriners for further care: <http://www.shrinershq.org/Hospitals/Boston>