San Mateo County Emergency Medical Services

Smoke Inhalation Injury

For patients with smoke inhalation

History
- Number and severity of other victims
- Industrial or residential fire
- Duration of inhalation
- Social history - smoking
- Past medical history
- Other trauma
- Odor

Signs and Symptoms
- Facial burns, pain, and/or swelling
- Cherry red skin
- Loss of consciousness
- Hypotension/shock
- Airway compromise/distress could be indicated by hoarseness/wheezeing
- Seizure/AMS after industrial or closed space fire consider cyanide poisoning

Differential
- Foreign Body Aspiration
- Asthma exacerbation
- COPD exacerbation
- Cyanide poisoning
- Carbon monoxide poisoning
- Thermal injury
- Heart failure
- Acute respiratory distress syndrome

For suspected closed space inhalation, choose Severe Airway Involvement path

No or Mild Airway Involvement
Airway patent, no signs of edema, no stridor or change in voice, no soot in the oropharynx or nasopharynx, nasal hairs intact, low likelihood of airway involvement

If oxygen saturation ≥ 92%
Routine Medical Care

Moderate Airway Involvement
Suspected inhalation injury with only one of the following: Wheezing, presence of soot/singed nasal hairs, change in voice, carbonaceous sputum, increased work of breathing/tachypnea.

E
Monitor and reassess
Apply Oxygen to maintain goal SpO2 ≥ 92%
Cardiac monitor
CO-oximetry (SpCO), if available
Consider, 12-Lead ECG
Consider, 2 IV/IO sites
Consider, Albuterol

Notify burn center.
Consider Base Hospital for medical direction

Severe Airway Involvement
Accessory muscle use or altered breath sounds and definitive airway felt necessary
OR
Any combination of the following: Airway edema, stridor, presence of soot/singed nasal hairs, change in voice, carbonaceous sputum, increased work of breathing/tachypnea.

P
Airway Field Procedure
if indicated

E
Monitor and reassess
High flow Oxygen
Regardless of SpO2
Cardiac monitor
Consider, 12-Lead ECG
Consider, 2 IV/IO sites
Albuterol
Epinephrine 1:1,000 nebulized for stridor
CPAP

Closest receiving facility for definitive airway.
Consider Base Hospital for medical direction
For patients with smoke inhalation

**Pearls**

- Ensure patient is properly decontaminated before placing in ambulance and transport to hospital.
- Contact Hazmat or Poison Control Center with questions about chemical or guidance on immediate treatment.
- If able, obtain the name of chemical(s) patient was exposed to pass information along to receiving hospital staff.
- If able, remove patient’s clothing before placing in ambulance and transport to hospital.