

POLICY: 554.10
TITLE: Acute Pulmonary Edema

EFFECTIVE: 07/01/2024
REVIEW: 07/2027
SUPERCEDES: 554.10 Congestive Heart Failure

APPROVAL SIGNATURES ON FILE IN EMS OFFICE

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ACUTE PULMONARY EDEMA

I. AUTHORITY

Health and Safety Code, Division 2.5, California Code of Regulations, Title 22, Division 9

II. PURPOSE

To serve as a patient treatment standard for EMRs, EMTs, and Paramedics within their scope of practice.

III. PROTOCOL

History may include: elderly patient, heart problems (hypertension, congestive heart failure), dyspnea worse when lying down (orthopnea), symptoms of acute MI, takes "water pills," sudden weight gain, cough with pink frothy sputum.

Medications may include: digoxin, lanoxin, digitoxin, chlorothiazide, furosemide, hydrochlorothiazide, bumetanide.

Physical findings may include: rales, distended neck veins, pedal or presacral edema.

**Provider Key: F = First Responder/EMR
P = Paramedic**

**E = EMT O = EMT Local Optional SOP
D = Base Hospital Physician Order Required**

| | F | E | O | P | D |
|---|---|---|---|---|---|
| ASSESSMENT | X | X | X | X | |
| PULSE OXIMETRY: apply and monitor. | | X | X | X | |
| CAPNOGRAPHY: apply and monitor. | | | | X | |
| OXYGEN: if pulse oximetry < 94% or signs of respiratory distress or hypoperfusion. | X | X | X | X | |
| ECG MONITOR: lead placement may be delegated. Treat as indicated. | | | | X | |
| POSITION: sitting (as tolerated). | | | | | |
| VASCULAR ACCESS: IV/IO, rate as indicated. | | | | X | |

| | F | E | O | P | D |
|--|---|---|---|---|---|
| *NITROGLYCERIN: <ul style="list-style-type: none"> 0.4 mg sublingual, (1 tablet/spray) for systolic BP 100-120 mmHg. 0.8 mg sublingual, (2 tablets/sprays) for systolic BP 120-200 mmHg. 1.2 mg sublingual, (3 tablets/sprays) for systolic BP > 200 mmHg. <p>May repeat every 3-5 minutes, maximum of 9 tablets/sprays. Hold when respiratory distress is alleviated, severe headache develops, or systolic BP drops below 100mmHg.</p> <p style="text-align: center;">AND</p> <p>*NITROGLYCERIN PASTE 1" (If systolic BP < 100 mmHg, NTG should be withheld or discontinued by wiping off with a clean towel).</p> | | | | X | |
| BASE CONTACT: for additional NTG orders. | | | | | X |
| CPAP or POSITIVE PRESSURE VENTILATION: as indicated. | | X | | X | |
| MORPHINE: 2 – 5 mg increments IV/IO. May repeat as needed not to exceed 20 mg per 30 minutes. Hold for systolic BP < 90. | | | | X | |
| PUSH DOSE EPINEPHRINE: for hypotension – titrate to SBP ≥ 90 <ul style="list-style-type: none"> Mix 1 mL of Epi 1:10,000 (0.1 mg/mL) with 9 mL of NS = concentration of 1:100,000 (0.01 mg/mL) Label syringe “epinephrine 10 mcg/mL” 0.5 – 1 mL (5-10 mcg) IVP every 1-5 minutes <p>If SBP does not stabilize ≥ 90 after two doses, consider epinephrine drip. Refer to 554.88 RX GUIDELINES.</p> | | | | X | |

***Nitroglycerin shall not be given to pts who have taken PDE-5 inhibitors (sildenafil, Cialis, Viagra or similar) within the last 48 hours; instead, start with Morphine**