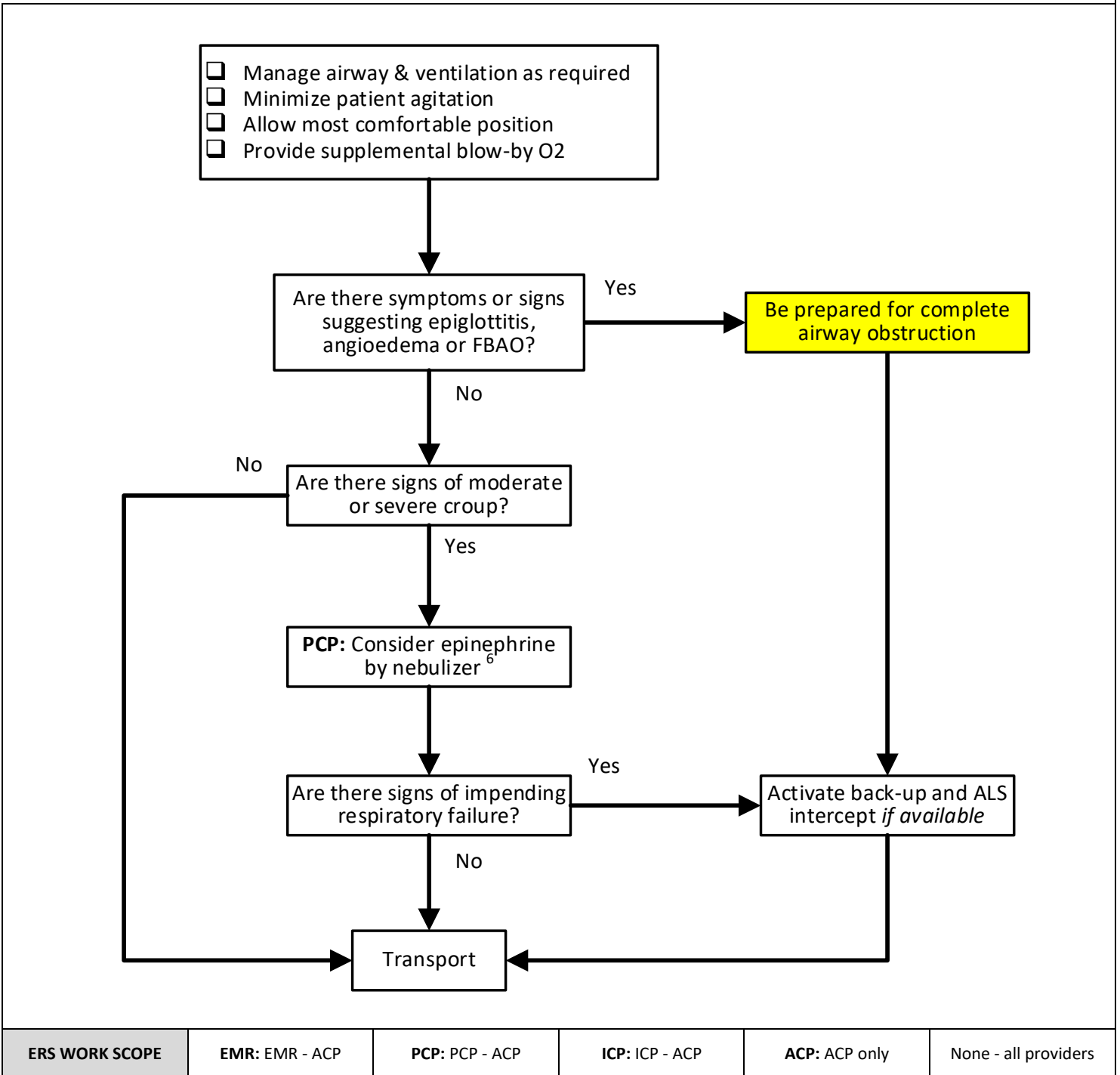
	<b>E01 - CROUP</b>	
	Infant & child	MEDICAL
Version date: 2024-05-07		Effective date: 2024-05-15 (0700)



### QRG: NEBULIZED EPINEPHRINE (1 mg/ml)

- Dose: 0.5 ml/kg (up to max 5 ml)
- Add sterile saline up to 5 ml
- Nebulize over 15 min
- Repeat once in 2 hours if necessary

This guide is for dosing only.  
Refer to the medication documents for additional information required for safe administration.

### INDICATIONS

- Any infant or child with known or suspected croup

### CONTRAINDICATIONS

- Stridor known or suspected to be due to epiglottitis, angioedema, or a foreign body airway obstruction (FBAO)

### NOTES

1. Croup is the clinical manifestation of viral laryngotracheobronchitis. It is uncommon over 6 years of age.
2. If there is any suspicion of epiglottitis (appendix A), angioedema, or foreign body airway obstruction (FBAO) minimize on-scene time and any unnecessary interventions, activate backup or ALS intercept if available, and transport emergently to the closest emergency department (ED).
3. In infants and small children, stridor and retractions may be minimal at rest but increased with exertion or agitation as increased airflow turbulence will worsen upper airway resistance.  
Agitation may be minimized by having parents or caregivers assist in administering supplemental oxygen or medication using the blow-by technique.
4. **Croup symptoms and signs may decrease as airway obstruction worsens and airflow decreases.** Stridor may become less audible and retractions may decrease due to weakening of respiratory effort (appendix B).  
Signs of *impending* respiratory failure include cyanosis or pallor and decreasing level of consciousness.
5. Mild croup responds well to the inhalation of cool or humidified air. If there are signs of moderate or severe croup, administer L-epinephrine.
6. Medication administration by nebulization is an aerosol generating medical procedure. Appropriate personnel protective equipment (PPE) is required (A09).

<b>LINKS</b>
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| <ul style="list-style-type: none"> <li>• A09 - AEROSOL GENERATING MEDICAL PROCEDURES</li> <li>• C11 - UPPER AIRWAY OBSTRUCTION</li> <li>• M05 - EPINEPHRINE</li> </ul> |
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<b>APPROVED BY</b>	
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EMS Medical Director	EMS Associate Medical Director

<b>VERSION CHANGES (refer to X05 for change tracking)</b>
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- |   |
|---|
| <ul style="list-style-type: none"> <li>• Identifier legend at bottom of flow chart replaces work scope statement in header</li> </ul> |
|---|

**APPENDIX A - CLINICAL DIFFERENTIATION OF CROUP FROM EPIGLOTTITIS**

	<b>EPIGLOTTITIS</b>	<b>CROUP</b>
Age	Two years & older	Up to three years
Onset	Usually sudden	Slower onset
General appearance	Toxic / unwell	Relatively well
Fever	High	Mild to moderate
Cough and coryza	Minimal or absent	Usually present
Stridor	Usually severe	Mild to moderate
Speech	Muffled	Hoarse
Secretions	Droling, unable to swallow	Able to swallow

**APPENDIX B - CROUP SEVERITY <sup>2, 3, 4</sup>**

	<b>LOC</b>	<b>COUGH</b>	<b>RESTING STRIDOR</b>	<b>AIR ENTRY</b>	<b>RETRACTIONS</b>	<b>CYANOSIS</b>
<b>MILD</b>	Normal	Occasional	None	Normal	None	None
<b>MODERATE</b>	Normal	Frequent	Mild	Normal	Mild	None
<b>SEVERE</b>	Agitated	Decreased	Severe	Decreased	Severe	None
<b>RESP FAILURE</b>	Decreased	Decreased	Decreased	Decreased	Decreased	Present