

A-PB5
PREHOSPITAL
MECHANICAL VENT.

Use of 'CPR Mode' by AEMTs and
Paramedics requires service-level training
& credentialing by the Medical Director.



Note: **Critical Care Paramedics** and Paramedics who have completed a **Ventilator Transport Certification Course** (and any applicable updates) may initiate and titrate mechanical ventilator settings based on the full capabilities of the specific device and the patient's clinical needs.

Indications

- **Adults with Cardiac Arrest** and an advanced airway in place (BIAD or ET Tube)
- Following Prehospital Endotracheal Intubation

Contraindications

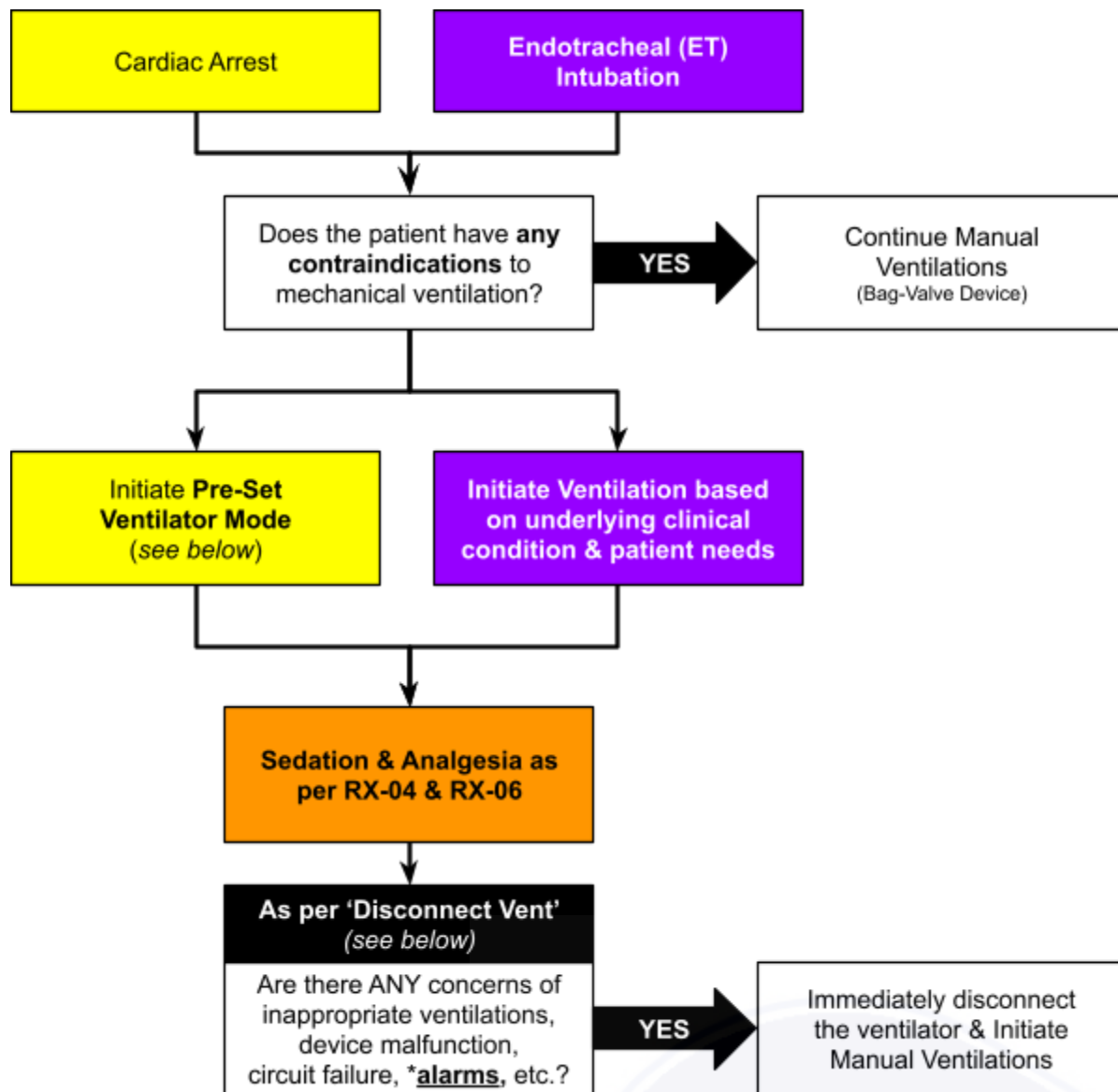
Absolute

- Lack of agency/device-specific training
- Lack of credentialing by the EMS Medical Director
- Pediatric patients

Relative

- Suspected significant chest trauma (pneumothorax)
- Hemodynamic instability (significant hypotension, cardiac dysrhythmias, etc.)

Procedure (PREHOSPITAL INITIATION OF MECHANICAL VENTILATION):



*In cardiac arrest, high-pressure alarms are expected due to chest compressions. Otherwise (in patients not receiving chest compressions), any high-pressure alarm should prompt the provider to immediately disconnect the patient from the mechanical ventilator and initiate manual ventilations.

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Indications to DISCONNECT VENT (post-RSI or post-ROSC)

Immediately disconnect the patient from the ventilator, begin manual ventilations and reassess primary and secondary surveys IF:

- **Persistent Hypoxemia** (<90%) despite 100% FiO2 (with good waveform)
- **End-Tidal CO2 that is consistently increasing**, indicating potential hypoventilation.
- **End-Tidal CO2 that is consistently decreasing**, indicating a state of hypoperfusion and/or acidosis
- **End Tidal CO2 that suddenly decreases**, as this may represent 1) a circuit failure or 2) a state of pulselessness/cardiac arrest.
- Any signs of **possible Pneumothorax**, including tracheal deviation, worsening hypoxemia, subcutaneous air, etc.
- Any **High-Pressure Alarm**
- Any other concerns over displacement of the advanced airway or malfunction of the ventilatory device.

Additional Requirements

- Mandatory use of Advanced Monitoring on all intubated patients:
 - ECG Monitoring (continuous)
 - Pulse Oximetry (continuous)
 - End-Tidal CO2 (ETCO2; continuous)
- Vital signs will be documented every five (5) minutes (as per 1-02).

Note: **Advanced EMTs are not expected to interpret ECG or ETCO2 waveforms**, BUT they are expected to utilize the continuous monitoring to assess the patient's heart rate and end-tidal CO2 value. This is also required for Quality Assessment reviews that will be conducted on all prehospital cases of ventilator and/or advanced airway use.

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PRESET (i.e. "CPR") MODE - DEVICE SETTINGS:

Ventilator Setting	Recommended Starting Range for Critical Care & Vent-Medics	Fixed-Mode Settings AEMT/Paramedic	
Device		Hamilton-T1	Zoll Z Vent
Selection Name		"CPR" Mode	"Adult Default"
Mode Type	Varies	APVcmv	SIMV(V)
Tidal Volume (Vt)	6-8 ml/kg IBW **lower for certain pathologies	6 mL/kg	6 mg/kg
Respiratory Rate	12-20 bpm	12 bpm	12 bpm
PEEP/CPAP	5+ cmH2O	5 cmH2O	5 cm/H2O
FiO2	40%+	100%	100%
I:E Ratio	1:4	1:4	1:4
Limits & Alarms	Per agency policy	Per agency policy	Per agency policy

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Tidal Volume (mL) for IBW

					Tidal Volume			
Height	Inches	cm	IBW (kg)		4 mL/kg	6 mL/kg	8 mL/kg	10 mL/kg
5' 0"	60	152	50		200	300	400	500
1"	61	155	52		208	312	416	520
2"	62	157	55		220	330	440	550
3"	63	160	57		228	342	456	570
4"	64	163	59		236	354	472	590
5"	65	165	62		248	372	496	620
5' 6"	66	168	64		256	384	512	640
7"	67	170	66		264	396	528	660
8"	68	173	68		272	408	544	680
9"	69	175	71		284	426	568	710
10"	70	178	73		292	438	584	730
11"	71	180	75		300	450	600	750
6' 0"	72	183	78		312	468	624	780
1"	73	185	80		320	480	640	800
2"	74	188	82		328	492	656	820
3"	75	191	85		340	510	680	850
4"	76	193	87		348	522	696	870
5"	77	196	89		356	534	712	890
6' 6"	78	198	91		364	546	728	910
7"	79	201	94		376	564	752	940
8"	80	203	96		384	576	768	960
9"	81	206	98		392	588	784	980
10"	82	208	101		404	606	808	1010
11"	83	211	103		412	618	824	1030
7' 0"	84	213	105		420	630	840	1050

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First Responder
EMT
AEMT
Paramedic

QI Review Parameters:

1. {PENDING}