



*****EMERGENCY PROTOCOL AND INFORMATION*****

HIGH FLOW NASAL CANNULA (HFNC) FOR BRONCHIOLITIS AND OTHER RESPIRATORY ILLNESSES:

Bronchiolitis is a very common condition in young children, most common in children under the age of 2. Many viruses cause bronchiolitis with a common virus being RSV. Symptoms can include fever, nasal congestion, cough, and wheezing. Many cases are very mild and require symptomatic treatment at home (antipyretics and nasal suctioning). Severe cases can lead to the need for respiratory support including HFNC, non-invasive positive pressure ventilation, or even intubation.

Children with increased work of breathing should first be treated with suctioning. Albuterol is often not indicated, but may be helpful in children with previous history of reactive airway disease or chronic lung disease, family history of asthma, or in the older age range 1-2 years of age.

Children with tracheal retractions, intercostal retractions, belly breathing, or other signs of respiratory distress not improved with suctioning may be placed on HFNC in the hospital. HFNC therapy can help maintain functional residual capacity with positive airway pressure, facilitate breathing by overcoming nasopharyngeal resistance due to edema and secretions, and wash out physiologic dead space.

HFNC is not just a traditional nasal cannula with the flow turned up. It requires special equipment and consists of a flow rate and a percentage of oxygen. Often pediatric patients start at 1.5 L/kg. The information below outlines equipment that may be used in the case of a facility transfer, along with guidance for the calculations and amounts of oxygen supply needed.

To help facilitate transfer of these patients within the system, a protocol has been developed. Patients should be placed in the ambulance with the assistance of transferring hospital staff to ensure the equipment is functioning appropriately.

*****PAGE 2: EQUIPMENT AND EDUCATIONAL LINK**

*****PAGE 3: OXYGEN DURATION GUIDANCE**

*****PAGES 4-7: HDCH SUCTIONING POLICY AND TECHNIQUES - EMS providers will continue to use normal procedures and equipment available for suctioning. Providers can utilize suction supplies from facilities if advised during patient hand off from facility staff.**

*****PAGES 8/9: EMERGENCY PROTOCOL**

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EQUIPMENT USED DURING TRANSPORT

Liter Flow	Device	Humidification Source	Heated
0-6 lpm	High-flow cannula with Green Tubing 	Small Bubbler	No
7-15 lpm	Intermediate high-flow nasal cannula with green tubing 	Intermediate Bubbler	No
16+ lpm	Airvo 	Airvo Chamber	Yes

Ensure that equipment has proper fit in the ambulance and is functional prior to transport.

Please follow the QR code here for educational videos for the Airvo II. Link to education is also included in the attached protocol :



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Please use the graphic and formula below to calculate oxygen duration. Ensure you have enough Oxygen to reach your destination.

DURATION CALCULATION:

Oxygen Tank Duration

Duration = Conversion Factor * $\frac{\text{Remaining Tank Pressure (psi)}}{\text{Continuous Flow Rate (L/min)}}$

D Tank = 0.16	E Tank = 0.28
G Tank = 2.41	M Tank = 1.56
H/K Tank = 3.14	




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1,080 x 675

EXAMPLE: "M" TANK

$$286 \text{ (in minutes)} = 1.56 * \frac{1100 \text{ (psi remaining)}}{6 \text{ (L/min)}}$$

= 4.77 hrs

Size	Uses Time (in hours)				
	1 liter/min	2 liters/min	3 liters/min	4 liters/min	5 liters/min
D	5.33	2.667	1.77	1.33	1.066
E	9.33	4.66	3.11	2.33	1.866
M	52	26	17.33	13	10.4
G	80.33	40.166	26.77	20.08	16.06
H and K	104.66	52.33	34.88	26.16	20.93