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Document Area Respiratory  
Therapy  
Document Types Job Aid

## Job Aid: High Flow Nasal Cannula (HFNC), 12041

### OVERVIEW:

The purpose of this job aid is to provide safe and effective use with the Fisher Paykel High Flow Nasal Cannula (HFNC) unit on acute care, ICU's, and the ED. Some indications for HFNC support can include but are not limited to; patients with apnea that need higher than normal nasal cannula flows for respiratory stimulation, patients transitioning from CPAP, needing more support than low flow nasal cannula O<sub>2</sub>, and patients with tachypnea and requiring improved CO<sub>2</sub> clearance.

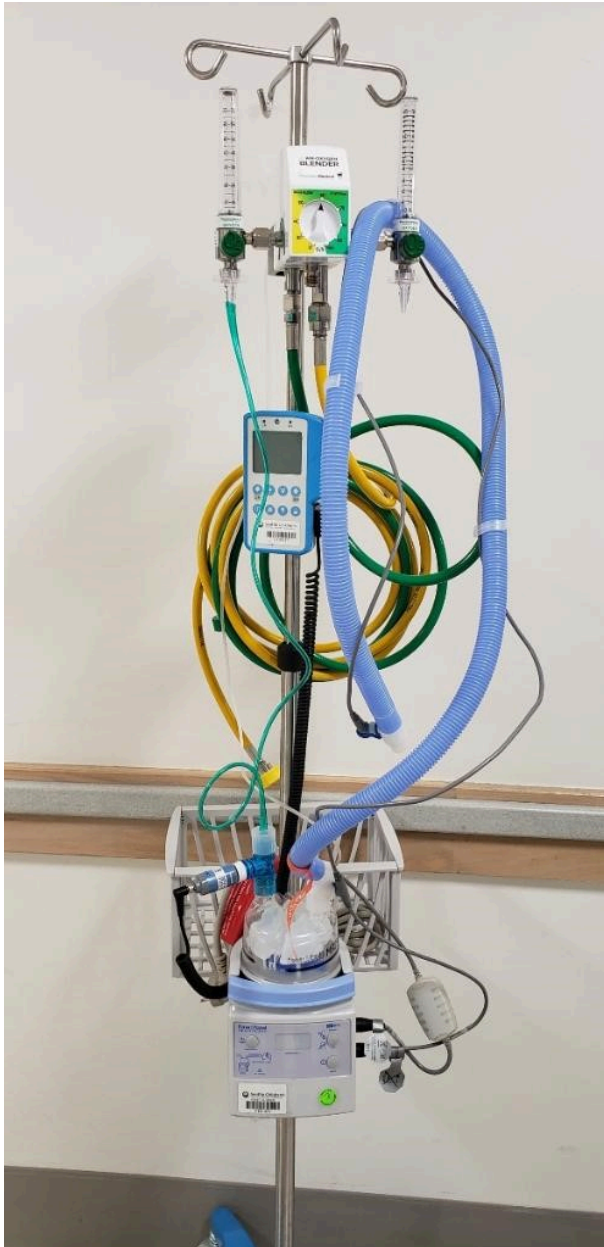
### MATERIAL:

- Humidifier circuit – two circuits available
  - **Infant** Respiratory Care System RT330 for flows **≤ 25L/min** – only compatible with pediatric prongs Optiflow Junior
  - **Adult** Breathing Circuit Inspiratory System RT202 for flows **≥ 25L/min** – only compatible with Optiflow Jr XXL (Grey) and adult prongs
- MR850 Humidifier
- Oxygen Blender with Flow meters attached – 15L, 30L or 70L
- Green O<sub>2</sub> tubing cut to connect flow meter to circuit
- Sterile Inhalation Water bag
- Appropriate sized cannula \*\*
  - **Cannula should be 50-60% the internal diameter of the patient nares for effective CO<sub>2</sub> clearance**

# PROCEDURE:

## Set-Up











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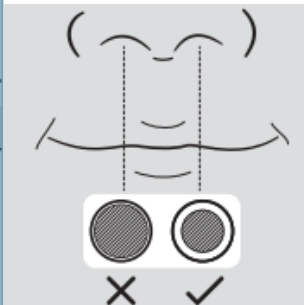
- A. Fit the chamber by sliding humidification chamber onto the humidifier base. Remove blue caps.
  1. Once HFNC initiated to patient, label/date chamber with sharpie on provided green change date sticker.
- B. Hang the water bag from the pole and unwind the water feed set and spike water bag.
- C. Connect the circuit
  1. Connect the white air entrainer to the humidification chamber
  2. place O2 analyzer
  3. Connect green Oxygen tubing between top of white air entrainer and flow meter (15L, 30L or 70L)
  4. Connect the elbow of the blue optiflow circuit to the humidification chamber
  5. Connect correct size nasal cannula to patient end of optiflow circuit
- D. Connect the temperature probe

1. Connect the blue temperature probe plug into the blue socket on the side of the humidifier
  2. Insert the two-pronged temperature probe plug into the socket on the elbow of Optiflow circuit
  3. Insert the other end of the blue probe into the port at the patient end of the Optiflow circuit
- E. Connect air and oxygen hoses from blender to wall outlets
1. Air and Oxygen tanks can be used in the event of transport.
- F. Humidifier
1. Turn humidifier on by pressing button on lower right hand side of humidifier
  2. Ensure ETT/Invasive mode (37 deg) selected and highlighted by green light
- G. Set blender and gas flow meter
1. Set blender to desired FiO2
  2. Set desired flow on flow meter – (consider maximum flow limitations of nasal cannula depending on size and appropriate flow meter)
  3. Humidifier and gas should be turned on and allowed to warm up before being attached to the child

## Management Guidelines

- A. The temperature should be set to Invasive to prevent excessive "rainout" in tubing
- B. Ensure patient is not lying on the tubing and that flow path is maintained
- C. DO NOT place any adhesive tape over the cannula onto the face
- D. Secure NGT below nasal cannula, try not to tape over the cannula as this will hinder removal of the cannula in an emergency
- E. Pick appropriate sized Optiflow cannula based on patient weight and naris size
  1. Prongs must not create a seal in the nares
  2. Patient weight should only be used as a guide

		WEIGHT GUIDE (KG)													SPARES				
		500g	1	1.5	2	2.5	3	3.5	4										
F.	 OJR410 <b>XS</b>	Expected to fit patient								May fit patient						F&P Wigglepads™ 2 WJR110			
	 OJR412 <b>S</b>	Expected to fit patient										May fit patient							
		WEIGHT GUIDE (KG)													SPARES				
		1	2	3	4	5	6	7	8	9	10	15	20	25	30				
	 OJR414 <b>M</b>	Expected to fit patient										May fit patient							
	 OJR416 <b>L</b>	Expected to fit patient										May fit patient						F&P Wigglepads™ 2 WJR112	
	 OJR418 <b>XL</b>	Expected to fit patient										May fit patient							
																			



G.



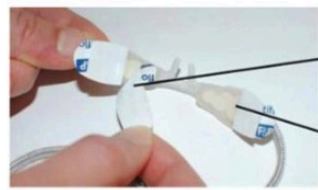
- H. Humidified nasal cannula circuits are heated wire circuits and will be changed every 30 days and prn just like ventilator or CPAP circuits
- I. Ongoing management for HFNC and weaning should be guided using the Table below
- J. This table is derived from the Bronchiolitis Pathway and HFNC [P&P: High Flow Nasal Cannula \(HFNC\), 10200](#)

Age Group	Definition of HFNC*		Acute Care Minimum HFNC Flow Rate (bronchiolitis pathway)		Acute Care Maximum HFNC Flow Rate		ICU Maximum HFNC Flow Rates	
	Flow Rate (L/min)	Estimated PEEP (cm H2O)	HFNC minimum (L/min)	Estimated PEEP (cm H2O)	HFNC maximum (L/min)	Estimated PEEP (cm H2O)	HFNC maximum (L/min)	Estimated PEEP (cm H2O)
0-90d	3	2	3	2	4	3	8	10
91d-6mo	4	<1	4	<1	6	2	10	6
>6mo-1yr	5	<1	5	<1	8	2	12-20	4-10
>1 yr-2yr	6	<2	5	<1	10	3	15-20	6-10
>2yr-8yr	6	<1	6	<1	12	2	15-20	4-6
>8yrs	8	<1	8	<1	15	2	15-30	4-12

PEEP values are estimated at each HFNC settings using a spontaneously breathing lung model and 3D anatomic airway with Vapotherm device.

\*HFNC definition based on estimated inspiratory flow for average weight in term infant through adolescent patients; patients who are not on the bronchiolitis pathway and are receiving flow below that defined as HFNC for age may be candidates for weaning / discontinuation and should be discussed with medical team; patients requiring oxygen after HFNC should be supported with a NC attached to an oxygen flow meter (without blender) before acute care transfer.

## Application of Optiflow Cannula



Remove first layer of backing paper from nasal prong wiggle pads

Wiggle Pads



Position nasal prongs into the nares, ensuring a gap of at least 2mm between the nasal septum and the prongs is present to avoid possible pressure necrosis.



When happy with placement, remove second layer of backing paper from wiggle pads, securing nasal prongs to patient face.

## Additional Information

- A. There should be no barrier placed as not to occlude nares and impede CO<sub>2</sub> clearance.
- B. Note flow limitations associated with cannula size.
- C. Humidified nasal cannula circuits are heated wire circuits and will be changed every 30 days and prn just like ventilator or CPAP circuits.
- D. The circuits used for this therapy are single patient use disposables and should be thrown away after each patient use.
- E. Please turn flow and humidifier off if your patient is getting breaks. Leaving the unit on while not on a patient will cause excessive rain out and water build up in circuit and can cause the unit to overheat.
- F. Document in Epic what size cannula pt is wearing. There is a color code on the cannula.

Oxygen Therapy/Pulse Ox	
Oxygen Therapy	
O2 Delivery Method	
HFNC Cannula Size	



Optiflow Sizing and Flow Rates		
Size	Color	Flow Rate(LPM)
XS	Blue	0.5-8
S	Red	0.5-9
M	Yellow	0.5-10
L	Purple	0.5-23
XL	Green	0.5-25
XXL	Grey	1.0-36

G. Document skin integrity/issues every 4 hrs.

## Outcome & Success

- A. RT should assess patient, do an equipment check, document parameters and assess skin every 4-6 hrs.
- B. Patients respiratory status and WOB should be improved.

## SEE ALSO:

- **P&P:** [High Flow Nasal Cannula \(HFNC\), 10200](#)
- For questions about this job aid, contact:
  - Clinical Supervisor Respiratory Care : Ext. 7-3306
  - Manager Clinical Research/ Quality Respiratory Care: Ext. 7-0364
  - Manager Education & Training Respiratory Care: Ext 7-3341
  - Director Respiratory Care: Ext. 7-1275

## Attachments

- [1.png](#)
- [2.png](#)
- [3.png](#)
- [4.png](#)
- [5.png](#)

## Approval Signatures

Step Description	Approver	Date
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Release for Publication	Erin White: Program Manager III - Document Management	11/28/2022
Document Quality Control	Tim Klein: Program Coordinator III [DL]	11/23/2022
Document Owner	Donna Dupras: Director, Respiratory Care	11/10/2022

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