

A blurred photograph of a hospital hallway with medical staff in blue scrubs. The image is overlaid with a blue tint. The text is white and positioned on the left side of the image.

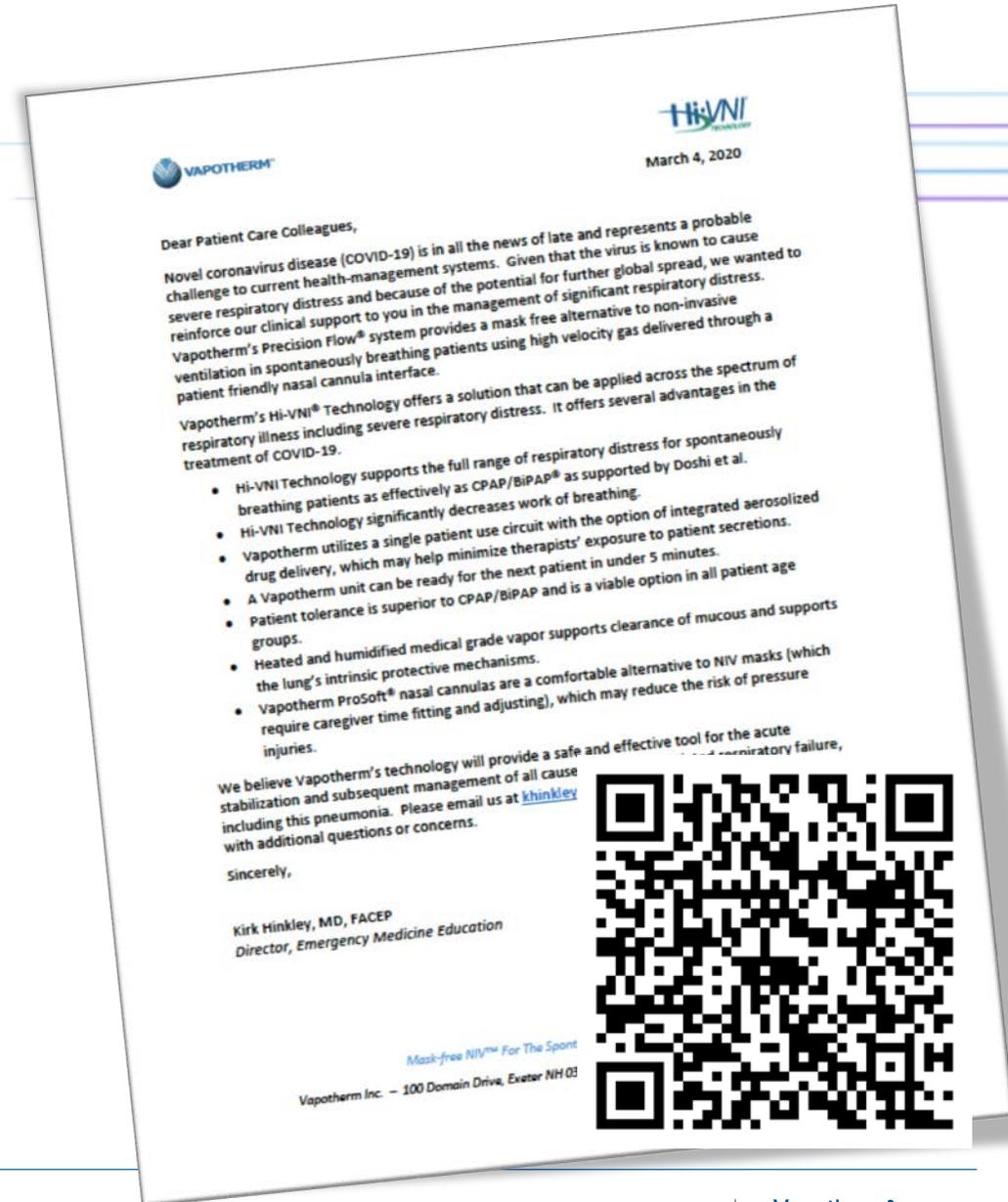
High Velocity COVID-19 Preparedness

UPDATE: 10 March 2020



COVID-19 and Vapotherm Therapy

- Hi-VNI Technology supports the full range of respiratory distress for spontaneously breathing patients as effectively as CPAP/BiPAP as supported by Doshi, et al.
- Hi-VNI Technology significantly decreases work of breathing.
- Vapotherm utilizes a single patient use circuit with the option of integrated aerosolized drug delivery, which may help minimize therapists' exposure to patient secretions.
- A Vapotherm unit can be ready for the next patient in under 5 minutes.
- Patient tolerance is superior to CPAP/BiPAP and is a viable option in all patient age groups.
- Heated and humidified medical grade vapor supports clearance of mucous and supports the lung's intrinsic protective mechanisms.
- Vapotherm ProSoft nasal cannulas are a comfortable alternative to NIV masks (which require caregiver time fitting and adjusting), which may reduce the risk of pressure injuries.)



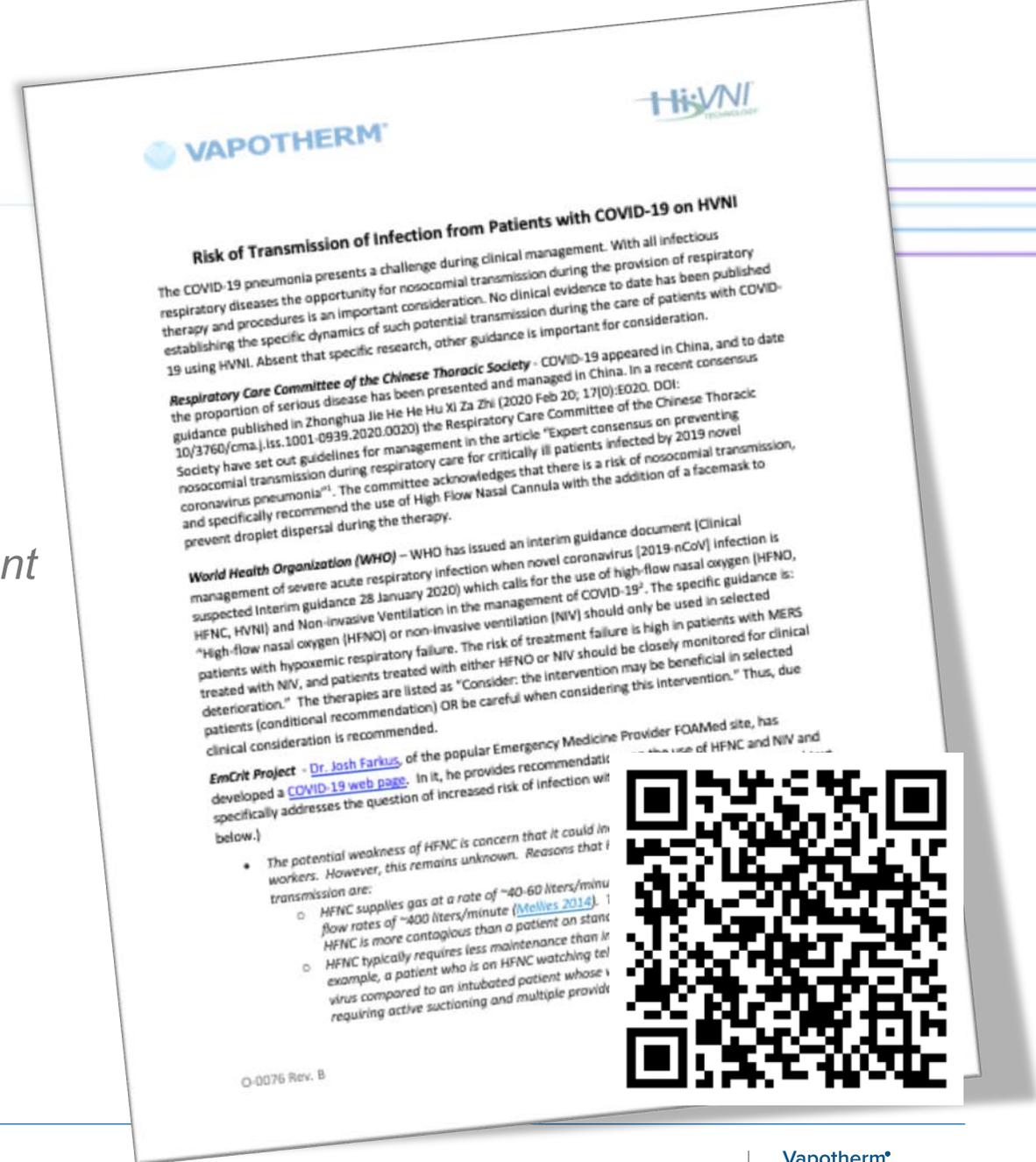
COVID-19 Transmission Risk

“No clinical evidence to date has been published establishing the specific dynamics of such potential transmission during the care of patients with COVID-19 using HVNI.”

Absent that specific research, other guidance is important for consideration.”

- **Clinical Letter from Vapotherm Includes Research From:**

- *Respiratory Care Committee of the Chinese Thoracic Society*
- *World Health Organization (WHO)*
- *Annals of the American Thoracic Society*
- *The Lancet Respiratory Medicine*
- *EmCrit Project*



COVID-19

Transmission Risk

- **Chinese Journal of Tuberculosis and Respiratory Diseases**
 - Recommends the use of a surgical facemask placed over High Flow Nasal Cannula to reduce droplet dispersal during therapy.
- **World Health Organization**
 - "High-flow nasal oxygen (HFNO) or non-invasive ventilation (NIV) should only be used in selected patients with hypoxemic respiratory failure.
 - "Patients treated with either HFNO or NIV should be closely monitored for clinical deterioration"
- **Tran et. al.**
 - "The intubation procedure places healthcare workers at enormous risk of acquiring the virus, so intubation with a goal of reducing transmission is probably counterproductive."

Table 2. Risk of SARS Transmission to HCWs Exposed and Not Exposed to Aerosol-Generating Procedures, and Aerosol Generating Procedures as Risk Factors for SARS Transmission

Aerosol Generating Procedures	Odds ratio (95% CI)	
	Point estimate	Pooled estimate; I ²
Tracheal intubation (4 cohort studies)	3.0 (1.4, 6.7) [25]	6.6 (2.3, 18.9); 39.6%
	22.8 (3.9, 131.1) [26]	
	13.8 (1.2, 161.7) [27]	
	5.5 (0.6, 49.5) [29]	
Tracheal intubation (4 case-control studies)	0.7 (0.1, 3.9) [23]	6.6 (4.1, 10.6); 61.4%
	9.2 (4.2, 20.2) [21]	
	8.0 (3.9, 16.6) [20]	
	9.3 (2.9, 30.2) [24]	
Suction before intubation (2 cohort studies)	13.8 (1.2, 161.7) [27]	3.5 (0.5, 24.6); 59.2%
	1.7 (0.7, 4.2) [25]	
Suction after intubation (2 cohort studies)	0.6 (0.1, 3.0) [27]	1.3 (0.5, 3.4); 28.8%
Chest physiotherapy (2 cohort studies)	1.3 (0.2, 8.3) [27]	0.8 (0.2, 3.2); 0%
	0.5 (0.1, 3.5) [25]	
High-frequency oscillatory ventilation (1 cohort study)	0.7 (0.1, 5.5) [26]	
High flow oxygen (1 cohort study)	0.4 (0.1, 1.7) [25]	
Tracheotomy (1 case-control study)	4.2 (1.5, 11.5) [20]	
Intubation, tracheotomy, airway care, and cardiac resuscitation (1 case-control study)	6.2 (2.2, 18.1) [22]	
Manipulation of BiPAP mask (1 cohort study)	6.2 (2.2, 18.1) [27]	
Endotracheal aspiration (1 cohort study)	1.0 (0.2, 5.2) [27]	
Suction of body fluid (1 case-control study)	1.0 (0.4, 2.8) [23]	
Administration of oxygen (1 case-control study)	1.0 (0.3, 2.8) [23]	
Mechanical ventilation (1 cohort study)	0.9 (0.4, 2.0) [25]	
Manual ventilation before intubation (1 cohort study)	2.8 (1.3, 6.4) [25]	
Manual ventilation after intubation (1 cohort study)	1.3 (0.5, 3.2) [25]	
Manual ventilation (1 cohort study)	1.3 (0.2, 8.3) [27]	
Collection of sputum sample (1 cohort study)	2.7 (0.9, 8.2) [25]	

COVID-19 Transmission Risk

- Disposable Patient Circuits are Single-Patient Use
- Refer to Instructions for Use for Cleaning and Disinfection
 - Fast Cleaning Protocol
 - Use Super-Sani Cloth[®]
 - Clean **Whole Unit**, Including DPC Docking Station

COVID-19 Readiness Checklist

For Your Hospital

High Velocity Readiness

- Device Education with RT, ED, and ICU – *Including* Physicians and Nurses
- What is Your HVNI & NiPPV Strategy?
- Availability of Precision Flow Units
- Disinfection Checklist
- Supply of HVNI Cannulas for Longer-Term Patient Care
- Supply of DPCs (Standard *and* Aerosol)

COVID-19 Readiness Checklist For You and Your Family

ACEP Personal Checklist for Healthcare Providers Includes:

- PPE Procedures and Access
- Hand Sanitizer in Car and at Entryways
- Easy-to-Prepare Meal Plan
- 2-Weeks Grocery Stocks
- Designated 'Sick' Room at Home

Download

https://www.acep.org/globalassets/sites/acep/media/by-medical-focus/covid-19-personal-checklist_0320.pdf

