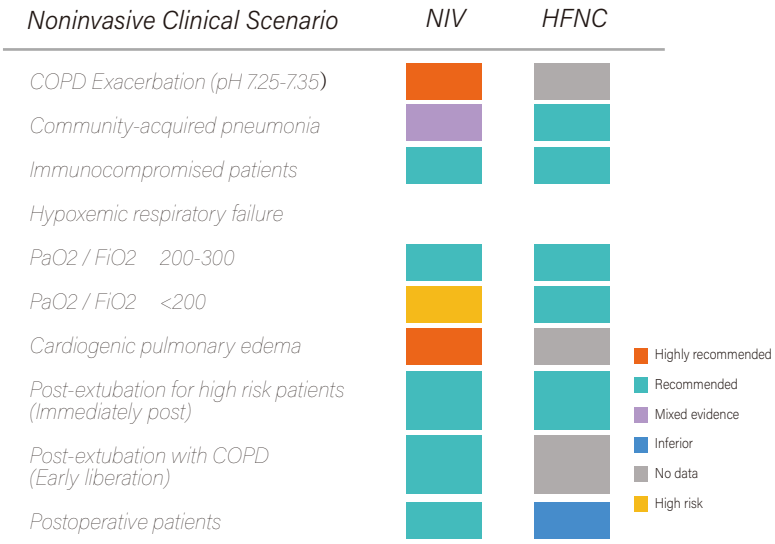
Dear,
Medical Specialists, Respiratory Therapists and Health Administrators.

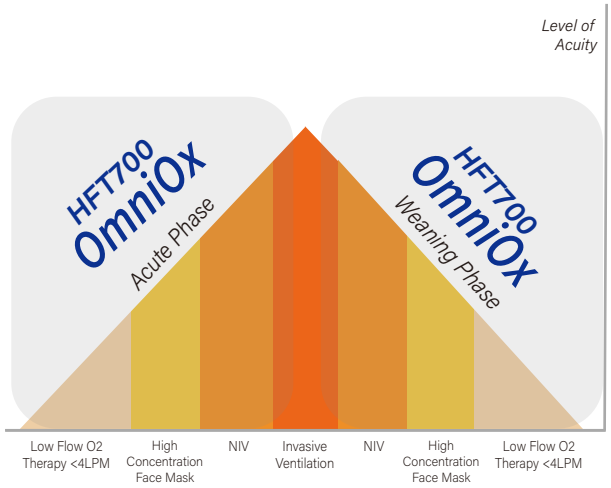
High Flow Therapy and NIVs would be defined adjunctive ventilatory support that has been used successfully in various respiratory failures before the pandemic. Given the lack of mechanical ventilators, it must be especially useful. As you see below, OmniOx (HFT500) allows a large number of patients to ventilate and avoid the intubation, and is classified as a Non-Life Support Ventilator in spontaneously breathing patients. What is sought through this type of ventilator is to minimize a number of intubations in patients with SARS-CoV-2, thereby decongesting Intensive Care Units (ICUs).

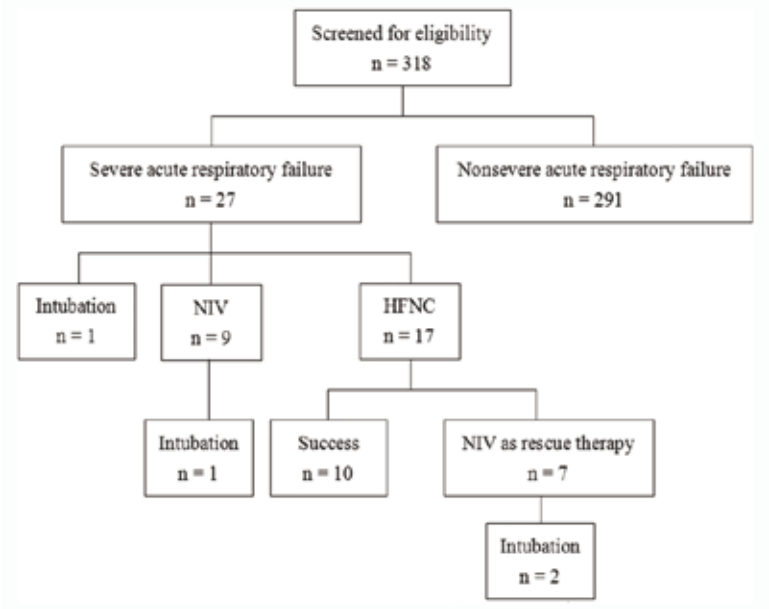
The following table and picture show the versatility of this type of ventilator in different clinical scenarios

Executive Summary of the current landscape



Respiratory Therapy





According to the Annals of Intensive Care of March 30, 2020, where 318 patients infected by COVID-19 develop with symptoms of SARS-CoV-2. They were treated by High Flow Nasal Cannulas and others therapies. There were initially 27 severe ARF of 318 patients. Among them, firstly 9 were assigned to NIV, 7 to High Flow Nasal Cannulas (HFNC) and 1 to mechanical ventilator. Of these 17 patients who took HFNC, in 2nd stage, 10 were successful and 7 changed to NIV. In 1st stage, 26 patients were tried to with HFNC and NIV. Consequently, of initial 27 severe ARF patients, only 4 were intubated and controlled on Life Support Ventilators

The experience of high-flow nasal cannula in hospitalized patients with 2019 novel coronavirus-infected pneumonia in two hospitals of Chongqing, China

The OmniOx (HFT700) device incorporates an oxygen blender and peripheral oxygen saturation value, which give us practical therapy strategy in possible method. Within same therapy platform, it not only allows the use of HFNC, but also switches over to the rescue NIV, which is due to exceptional advantage of an oxygen blender.

It helps clinicians control FiO2 up to 100%, if required. In such way, NIV rescue therapy could become more effective than isolated therapy approach.It is important to inform that either HFNC or NIV is useful in patients with SARS-CoV-2.Due to aerosol from nasal cannula; the only concern is how to protect the clinical staffs comprehensively in the area, where patients were quarantined to treat COVID-19. In all cases to be treated, all possible methods should be taken.

Likewise, in the table below, which is presented in the Spanish Consensus of Intensive Care Units, it clearly indicates that procedures performed within the ICU with mechanical ventilators using circuits closed in the atmosphere also invokes a high risk of COVID-19 contagion.

Low risk of virus transmission procedures	High risk of viral transmission procedures
· Guedel(oropharygeal) tube placement · Placement of oxygen therapy facial mask with expiratory filter · Chest compression · Defibrillation, cardioversion, transcutaneous pacemaker placement · Venous or arterial line insertion · Administration of drugs or intravenous fluids	· Aerosol therapy, nebulization · High flow nasal cannula · Manual ventilation with mask · Non-invasive ventilation · Orotracheal intubation · Surgical tracheostomy> percutaneous · Aspiration of secretions · Cardiopulmonary resuscitation

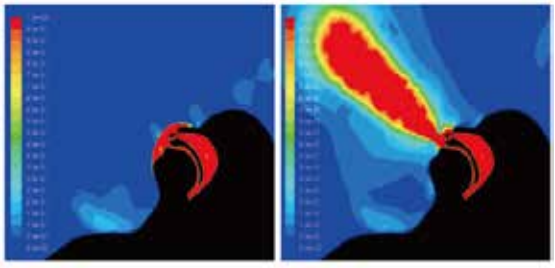


Figure 7. HVNI with Mask – velocity

Figure 8. HVNI without Mask - velocity

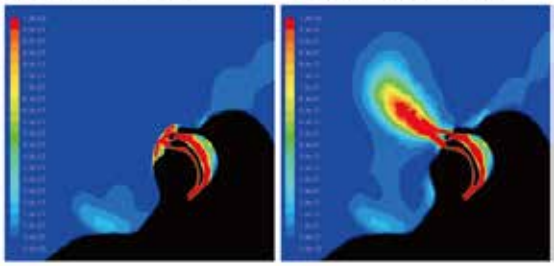


Figure 9. Low Flow Nasal Cannula with Mask – vel

Figure 10. Low Flow Nasal Cannula w/o Mask - vel

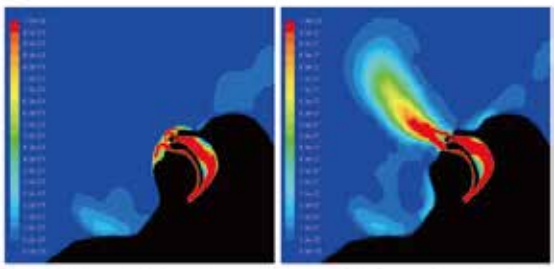


Figure 11. No Therapy with Mask - vel

Figure 12. No Therapy without Mask - vel

In HFNC,

the aerosol particle the patient exhales into the air is basically less than NIV application. But in any cases, with simple measure such as surgical mask, that contagious risk of virus would be significantly minimized, as shown in the images of a work carried out.

In the case of HFNC use with the covering nasal cannula through surgical mask (left side on figure) and cannula without mask (right side on figure), you will check this simplest change to make a big difference in clinical and health professional field.

It will minimize the airborne risk of virus from the confirmed or potential patient. For the facial mask or oro-nasal type, it has a connection port to supply continuous nebulization. Thus, it will avoid any disconnection. Also it minimizes the aerosol particle to the indoor environment.

Reported Cases and Deaths by Country, Territory, or Conveyance

Country, Other	Total Cases	New Cases	Total Deaths	New Deaths	Total Recovered	Active Cases	Serious, Critical	Tot Cases/ 1M pop	Deaths/ 1M pop	Total Tests	Tests/ 1M pop
World	3,007,194	+13,932	207,265	+350	883,306	1,916,623	57,613	386	26.6		
USA	987,322	+162	55,415	+2	118,781	813,126	15,143	2,983	167	5,470,555	16,527
Spain	226,629		23,190		117,727	85,712	7,764	4,847	496	1,199,548	25,656
Italy	197,675		26,644		64,928	106,103	2,009	3,269	441	1,757,659	29,071
France	162,100		22,856		44,903	94,341	4,682	2,483	350	463,662	7,103
Germany	157,770		5,976		114,500	37,294	2,570	1,883	71	2,072,669	24,738
UK	152,840		20,732		N/A	131,764	1,559	2,251	305	669,850	9,867
Turkey	110,130		2,805		29,140	78,185	1,776	1,306	33	898,742	10,656
Iran	90,481		5,710		69,657	15,114	3,079	1,077	68	421,313	5,016
Russia	87,147	+6,198	794	+47	7,346	79,007	2,300	597	5	3,019,434	20,690
China	82,830	+3	4,633	+1	77,474	723	52	58	3		

Healthcare professionals say; in Latin America we are just beginning to suffer the rigors of COVID- 19 and face this pandemic. This will result in a considerable increase in patients in the coming weeks and months. To perform a simple calculation of the potential number of patients, we will use the average number of patients per million inhabitants in the first 10 countries of this report measured by infection (Worldmeter COVID-19). To soften the average we will eliminate the ends (the three highest and the three lowest). Applying this method we will have an average of 3,509 potential patients for every million inhabitants. By applying this factor to the population of your country, you obtain the possible contagions. Of that amount, around 20% will require ventilatory support to treat those patients with SARS-CoV-2.

Our proposal is to present an alternative to health professionals of the use of HFNC + NIV as an effective treatment when treating patients infected with SARS-CoV-2 and with the additional benefit that minimizes the intubation of these patients, and associated complications. It is critically important that it reduces the flow of patients with Mechanical Ventilator requirements, which at this time are scarce or non-existent.As additional data; it has recently been shown that there is an increase in the mortality rate of patients with SARS-CoV-2 treated with mechanical ventilation

Once the global emergency was over, NIV equipment could be used in the home of those patients who survived from disease; but they were left with conditions associated with the COVID- 19. As for the mechanical ventilators, the question would be left such as 'what to do with all these mechanical ventilators requested at the beginning of the pandemic'. In the end, those huge devices may arrive to our Latin American's countries with a sinificant delay and in excess to our hospitals?Waiting for your comments, and/or for further details you can contact me at: **Sales@mek-ics.com**

References

1. *https://www.philips.com/c-dam/b2bhc/master/resource-catalog/landing/high-flow/HFT-therapy-clinical-summary.pdf*
2. *https://annalsofintensivecare.springeropen.com/articles/10.1186/s13613-020-00653-z*
3. *https://blog.opositatest.com/covid19-manejo-pacientes-iii-procedimientos-respiratorios/*
4. *https://rebelem.com/covid-19-hypoxemia-a-better-and-still-safe-way/*
5. *https://www.medscape.com/viewarticle/928605*