May 13, 2020

Topic: COVID-19/ Information regarding the off-label use of SuperNO$_2$VA^{TM} Nasal PAP Device and System for respiratory insufficiency and failure outside of anesthesia care.

Dear Customer,

The COVID-19 pandemic has placed a great demand on the need for positive pressure devices such as non-invasive ventilators and high-flow nasal cannulas for the care of patients who are refractory to supplemental oxygen devices (e.g., nasal cannula and non-rebreathers) and in respiratory insufficiency or failure. Health care professionals have asked about alternative devices that deliver positive pressure and only require attachment to wall oxygen or oxygen tanks to address non-invasive ventilators and high-flow nasal cannulas shortages. In response, we want to convey information in this letter about such off-label use of the SuperNO$_2$VA^{TM} Nasal PAP Device and System.

IMPORTANT: This document contains off-label information.

- Use of the SuperNO$_2$VA**^{TM}** Nasal PAP Device and System outside of anesthesia care and for more than 24 hours is off-label.
- Information in this document is provided **only** with regard to the COVID-19 pandemic, and not for routine care for patients outside of the anesthesia care setting and for periods longer than 24 hours.
- Use of the SuperNO$_2$VA**^{TM}** Nasal PAP Device and System as a safe and effective replacement for respiratory insufficiency or failure outside of anesthesia care has **not** been approved or cleared by any medical device regulatory authority.
- Of note, on March 20, 2020, the FDA published guidance on its Enforcement Policy for Ventilators and Accessories and Other Respiratory Devices During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency in which the agency states:

  "Wherever possible, health care facilities should use cleared conventional/standard full-featured ventilators when necessary to support patients with respiratory failure. However, **for the duration of the public health emergency, to help foster the wider availability of devices for patients in need of ventilatory support, FDA does not intend to object to modifications to the FDA-cleared indications, claims, or functionality of these devices**, without prior submission of a premarket notification where the modification will not create an undue risk in light of the public health emergency. Examples of circumstances where FDA currently believes a modification would not create such undue risk include:

  1) The use of powered emergency ventilators and anesthesia gas machines for patients needing mechanical ventilation;"[1]
- For countries other than the United States, please consult with the relevant regulatory authority regarding exemptions or relaxations for off-label anesthesia devices and supplies use during the COVID-19 pandemic.
- Use of the SuperNO$_2$VA**^{TM}** Nasal PAP Device and System as substitutes for non-invasive ventilators and high-flow nasal cannulas has **not** been verified or validated.
- Off-label use of the SuperNO$_2$VA**^{TM}** Nasal PAP Device and System are the **sole** responsibilities of the device owner and is undertaken with the understanding that the owner assumes all liability for this use.

In sending you this letter, Vyaire is not seeking to promote, endorse or advise the use of the SuperNO$_2$VA^{TM} nasal PAP device and system as a non-invasive ventilators and high-flow nasal cannulas for patients failing supplemental oxygen therapy and in respiratory insufficiency or failure. However, we recognize the unusual and acute circumstances created by the COVID-19 pandemic and the needs of health care professionals to

consider modifications to standard clinical practices in an effort to address the needs of patients in respiratory insufficiency or failure.

IMPORTANT: The information presented here is based on the current understanding of the potential risks and device functionality of the SuperNO$_2$VA^{TM} Nasal PAP Device and System referred to below. This information is **not** comprehensive for all uses. As care for patients diagnosed with COVID-19 evolves, Vyaire will update information on our web site, so please bookmark it for easy access: **US: https://www.vyaire.com/Covid-19; International: https://intl.vyaire.com/Covid-19.**

FDA. Enforcement Policy for Ventilators and Accessories and Other Respiratory Devices During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency Guidance for Industry and Food and Drug Administration Staff. March 2020. Accessed at https://www.fda.gov/media/136318/download.

The SuperNO$_2$VA^{TM} Nasal PAP Device and System
The SuperNO$_2$VA^{TM} Nasal PAP Device and System significantly differ from non-invasive ventilators and high-flow nasal cannulas, even though the device and system can be used to provide oxygenation and positive pressure to patients. We want you to understand these differences to minimize risks to your patients.

The SuperNO$_2$VA^{TM} Nasal PAP Device and System, non-invasive ventilators and high-flow nasal cannulas all are designed to connect to an oxygen supply source and use gas flow and/or resistance to generate positive pressure to support patients in respiratory insufficiency or failure.

The SuperNO$_2$VA^{TM} Nasal PAP Device and System: Combines a no-leak nasal mask with an anesthesia/hyperinflation bag with an adjustable pressure-limiting (APL) valve and is connection-ready for wall oxygen or an oxygen tank source. This simple set up allows the device and system to be used in any environment that has an oxygen supply.

- To increase pressure within the device or system, close the valve and/or increase the flow of oxygen.
- To decrease pressure within the device or system, open and/or decrease the flow of oxygen.
- Note: The SuperNO$_2$VA^{TM} Nasal PAP Device and System **does not** connect to alarms and therefore, will not alert the clinician if pressure is too high or too low.
- Keeping the oxygen flow between 8 to 15 liters per minute (LPM) will reduce the risk of over-pressurization.
- To reduce the risk of drying out nasal mucosa, limit oxygen flow less than 15 LPM as the SuperNO$_2$VA^{TM} Nasal PAP Device and System uses non-humidified oxygen.
- The device and system **do not** require a humidifier.
- To reduce the risk of re-breathing CO_2, ensure the oxygen flows are greater than 8 LPM.
- Because the nasal mask is completely sealed and applies pressure to the skin, there is a risk of a pressure ulcer. During use, a trained provider should occasionally loosen the nasal mask to permit blood circulation within skin capillaries to reduce the risk of a pressure ulcer. Please routinely inspect skin and reposition frequently to reduce the risk of skin ulcer.
- The clinician should occasionally monitor the patient's oxygen saturation to ensure therapy is effective.
- Any trained provider can apply the device.

Non-Invasive Ventilator: The following set up is required to provide non-invasive ventilation: a vented or non-vented mask connected to a breathing circuit, a heater and humidifier, and a non-invasive ventilator that is connected to compressed gas.

- Its use within the hospital and sub-acute environments is limited and must connect to compressed gas.
- To adjust pressure within the system, use the adjustable valves. The exhalation valve reduces the risk of re-breathing.
- The use of humidification reduces the risk of nasal mucosa drying.
- The alarms alert the clinician when pressure has decreased (i.e., a leak) or increased (i.e., an obstruction).
- The risk of pressure ulcer due to mask tightness is reduced as the mask does not need to be as tight.
- The complexity of the non-invasive ventilators requires either a respiratory therapist or physician to apply it to a patient.

High-Flow Nasal Cannula: The following set up is required to provide high-flow nasal cannulas: a high-flow nasal cannulas, a heater and humidifier, and a regulator that allows for 60 LPM of oxygen.

- Use within the hospital and sub-acute environments is limited because the system requires 60 LPM of oxygen.
- The high-flow nasal cannula is an open to air system (i.e., does not create a seal) and therefore increases or decreases in pressure completely depend on increasing or decreasing oxygen flow, respectfully.
- The open system allows CO_2 to be removed by exhaling into air.
- The use of humidification reduces the risk of nasal mucosa drying. The risks of over-pressurization are reduced by the system being open to air and not able to generate moderate or high pressures.
- The complexity of the high-flow nasal cannula requires either a respiratory therapist or physician to apply it to a patient.

IMPORTANT SAFETY INFORMATION
WARNING: The SuperNO$_2$VA™ Nasal PAP Device and System are equipment that support and sustain life. If this equipment is not used properly in accordance with instructions and occasionally monitored by trained health care professionals, a risk of serious injury or death can occur.

Intended Use of The SuperNO$_2$VA™ Nasal Pap Device and System

- The SuperNO$_2$VA™ Nasal PAP Device and System are a mask that creates a seal when positioned over a patient's nose to direct anesthesia gas, air, and *I* or oxygen to the patient's upper airway during the continuum of anesthesia care.
- The SuperNO$_2$VA™ Nasal PAP Device and System is intended to be used under clinical supervision with adequate alarms and safety systems for monitoring and treatment of ventilatory failure
- The SuperNO$_2$VA™ Nasal PAP Device and System are intended for short-term (less than 24 hours) use on adult patients [greater than 30 kg (66.14 Lbs.)] during the continuum of anesthesia care.
- The SuperNO$_2$VA™ Nasal PAP Device and System is a single-patient-use disposable.
- If SuperNO$_2$VA™ Nasal PAP Device and System is used outside of anesthesia care and/or for more than 24 hours the following, should be considered:
    - Advise all health care professionals to receive the training on the device and system.
        - All healthcare professionals to review IFU 36-23405 (mask only) and/or 36-23406 (system) as well as be trained using the public training video: https://www.youtube.com/watch?v=iGCf3xLnhPk&feature=youtu.be
        - This device and system are indicated for operative care – should it be used externally from op care; it shall be used only under the supervision of a trained healthcare professional.
    - Connect a filter (e.g., B/V, HEPA) to the anesthesia port on the SuperNO$_2$VA™ nasal mask to reduce the risk of aerosolization.
    - Connect the hyperinflation bag's oxygen tubing to the oxygen flow meter.
    - Set the oxygen flow between 8 to 15 LPM
    - Connect the hyperinflation bag to the SuperNO$_2$VA™ nasal mask.
    - If the patient is wearing a surgical mask or N95 mask, slightly lower the mask off of the nose but ensure the mask is still covering the patient's mouth to reduce transmission.
    - Place the SuperNO$_2$VA™ nasal mask over the patient's nose and secure via the head strap.
    - The hyperinflation bag should fill and pressurize when the mask secured tightly and properly.
    - If the hyperinflation bag does not fill and pressurize, adjust and tighten head strap.
    - Occasionally have a trained clinician monitor patient's oxygen saturation to ensure effective therapy.

Attended Devices

- The SuperNO$_2$VA™ Nasal PAP Device and System is designed for use occur in fully monitored care areas and under qualified professional healthcare personnel.

Training/Knowledge of the System

- The safe use of the SuperNO$_2$VA™ Nasal PAP Device and System relies on user knowledge and training.
- Ensure all Healthcare Professionals are properly trained prior to using the SuperNO$_2$VA™ Nasal PAP Device and System.
- Unique characteristics differentiate the SuperNO$_2$VA™ Nasal PAP Device and System from a non-invasive ventilators and high-flow nasal cannula, such as the use of an anesthesia/hyperinflation bag with an APL valve to adjust pressure.
- It also does not require a regulator, alarms, or humidifier.
- Occasionally have a trained clinician monitor the hyperinflation bag to ensure pressure is being delivered and monitor the patient's oxygen saturation to ensure effective therapy.
- Do not allow the SuperNO$_2$VA™ Nasal PAP Device and System's seal to come into direct contact with the patient's eyes; such action could lead to an eye injury.

vyaire.com
26125 N. Riverwoods Blvd.
Mettawa, IL 60045

- Use of the SuperNO$_2$VA^{TM} nasal mask may result in drying of the eyes, eye pain, eye infections, or blurred vision.
- Patients at risk for aspiration may not be suitable for the SuperNO$_2$VA^{TM} Nasal PAP Device and System.
- In the event of a delayed allergic reaction, discontinue use of the SuperNO$_2$VA^{TM} Nasal PAP Device and System immediately.
- For training, please also consult the following public training video provided by Vyaire Medical: https://www.youtube.com/watch?v=iGCf3xLnhPk&feature=youtu.be

Length of Use:

- SuperNO$_2$VA^{TM} Nasal PAP Device and System is **not** recommended to be used for more than 24 hours or to be used outside of anesthesia care, as use would be considered off-label.
- Only if there are shortages of non-invasive ventilators and high-flow nasal cannulas, or if use of a non-invasive ventilators and high-flow nasal cannula is not feasible in a specific hospital setting, should the SuperNO$_2$VA^{TM} Nasal PAP Device and System be used.
- If the SuperNO$_2$VA^{TM} Nasal PAP Device and System is to be used for more than 24 hours, the risks of delayed allergic reaction, materials leaching and extracting from the device, and other complications have not been studied, verified, or validated.

If you have any additional questions, please reach out to your local Vyaire representative, or visit our web sites; US: https://www.vyaire.com/Covid-19; International: https://intl.vyaire.com/Covid-19

As a world leader in respiratory care, we take our critical role in the response to this global health crisis seriously. At Vyaire, our goal is to meet the demand as best we can and ensure our customers have the products they need. We are truly proud to partner with you on the frontlines of the COVID-19 global health crisis. The work you are doing is improving outcomes for patients around the world.

Sincerely,

Dr. Michael Pedro
VP and Medical Director

Enclosure:
Attachment A – Vyaire Catalogue Information