

Complications of using Invasive Ventilators for Covid-19 Patients and Remedy. Invasive Ventilators: Helping or Harming COVID-19 Patients ? Invasive Ventilator Complications: Lung Damage & Infections ?

*By using Invasive Ventilators more sparingly on Covid-19 patients, Medical Professionals **could reduce more than 50% death rate** for those put on the machines, according to an analysis published by the American Journal of Tropical Medicine and Hygiene. (April 21, 2020).*

Invasive Ventilators can cause long term Permanent Cognitive, Physical & Respiratory effect due to sedation followed by intubation.

Many who go on an Invasive Ventilator die and those who survive likely will face ongoing breathing problems caused by either the machine or the damage done by the Virus.

The Covid-19 patients looked a lot more like they had **Altitude Sickness** than **Pneumonia**. That means, they need mostly breath support devices not Invasive Ventilators.

There is a growing recognition that some Covid-19 Patients, even those with severe disease as shown by the extent of Lung Infection, can be safely treated with simple nose prongs or face masks that deliver oxygen. The latter include **CPAP** (Continuous Positive Airway Pressure) masks used for sleep apnea, or **BiPAP** (bi-phasic positive airway pressure) masks used for congestive heart failure and other serious conditions. **But here the patients will expel large quantities of virus** into the air and endanger the health care workers. That means devices push aerosolized virus particles into the air, where anyone entering the Patient's room can inhale them.

These regular Devices do not have provisions of Alarms based on Patient's breathing conditions etc., and also do not have protection from Patient & Machine spreading the Virus. Also most of these systems do not have in-built battery backup.

The Remedy is SwasthVayu – Non Invasive Ventilator from ACL

The SwasthVayu–Non Invasive Ventilator (Know-how from CSIR-NAL) has the following unique features which make it ideal for its use with Covid-19 Positive tested Patients. *The pressurized controlled Air from System's Blower Motor goes through (at Interstage) HME (Heat Moisture Exchanger) & BV (Bacterial Viral) Filter; this air passes through a specially designed tubular Manifold & supplies Air to the patient Air way through **Non-Vented-MASK**.*

Thus, the contamination at the surroundings of the patient is blocked in the Air being supplied to the Patient.

Advantage & Uniqueness: *Here the Patient does not inhale any Virus prevalent in the surroundings. Even if Patient is not really infected with Covid-19 virus (only suspected), the chances of the Patient inhaling from next beds or surroundings are very less.*

Also the HME (Heat Moisture Exchanger) & BV (Bacterial Viral) Filter at the TEE Manifold protects Virus entry/spread into the environment during the exhale time.

Otherwise, Patients would have expelled large quantities of Virus into the air/environment and endanger health care workers. *That means the device is blocking the aerosolized virus particles being spread into the air/environment, where anyone entering the Patient's room (including health care workers) could have inhaled them.*

Thus, the **Safety of Health Care Workers** is taken care while dealing with the COVID-19 positive tested patients.

Hence, the Pressurized Air (also with Oxygen, if supplied through the Oxygen Port) is supplied to Patient without Contamination and the Virus Exhaled by Patient is blocked to enter the outside environment – These features help to alleviate the fear of the virus spread and it can be safely used for Covid-19 patients.

Advantage & Uniqueness: *Endanger of health care workers is avoided & Health care Workers can safely attend the Patient without any fear of Virus attack.*

*The SwasthVayu – Non Invasive Ventilator from ACL– Apollo Computing Laboratories (P) Ltd., has provisions of **Warning Alarm Buzzer** to provide audio alarm to the medical attendants under various conditions of the Patient, which are derived under self-adapted novel algorithm for Patient breath cycle detection. ACL's SwasthVayu also provides in-built battery backup for over 2 Hours with Li-ion batteries.*

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