

O2 INHALE LIMITER

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ABSTRACT

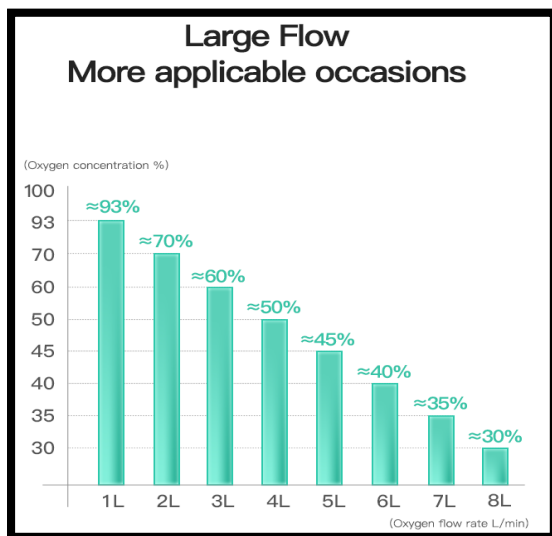


Figure 1

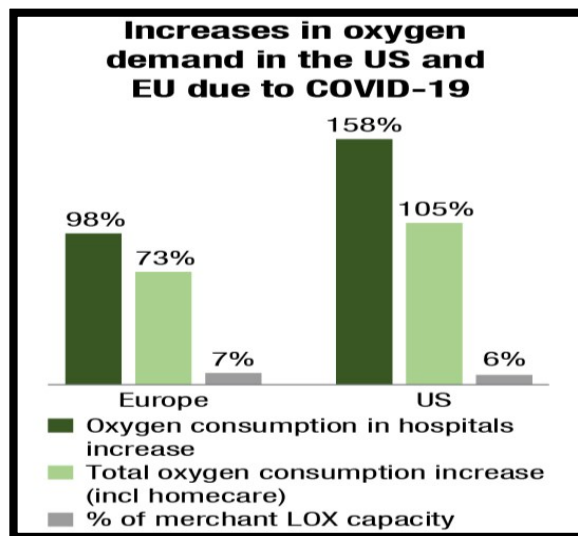


Figure 2

Oxygen is an elixir in all its aspects. Demand for oxygen over the people in the critical consequences enlarges the conservation of oxygen. This pandemic outbreak is drastic, making the oxygen deliver lower to humans causing certain dysfunctions. Figure 1 depicts how the oxygen flow rate depends on oxygen concentration and vice versa. Figure 2 depicts the increase in oxygen demand in developed countries such as the US and Europe due to COVID 19 outbreak. Our project chiefly focuses on the conservation of oxygen when not required for the patients or people, in such case of while exhaling and needed only during inhaling. Interfacing Arduino UNO with LabVIEW software, the project gets executed apparently. 5V Solenoid valve, Pressure Sensor, 5V Relay, Dot Board, Nasal Cannula, Pin Connectors are the primary components involved in the project. The working of the project model encompasses when the patient or person in need of oxygen inhales, the pressure sensor senses the patient's activity. During inhalation, the relay and the solenoid valve get open, allowing oxygen to flow through the cannula tube to the patient from the oxygen concentrator. Meantime, when the patient exhales, the relay and the solenoid valve get closed and limit the flow of oxygen. The indication of on and off of solenoid valve can be visualized in means of LED setup in Relay and LabVIEW simulation. This project simulation of software integrating with hardware setup furnishes compatible, spontaneous real-time action and sustains the oxygen deliverance by bestowing the oxygen to succeeding patients.

Keywords: Oxygen Conservation, Nasal cannula, LabVIEW, Oxygen Concentrator.