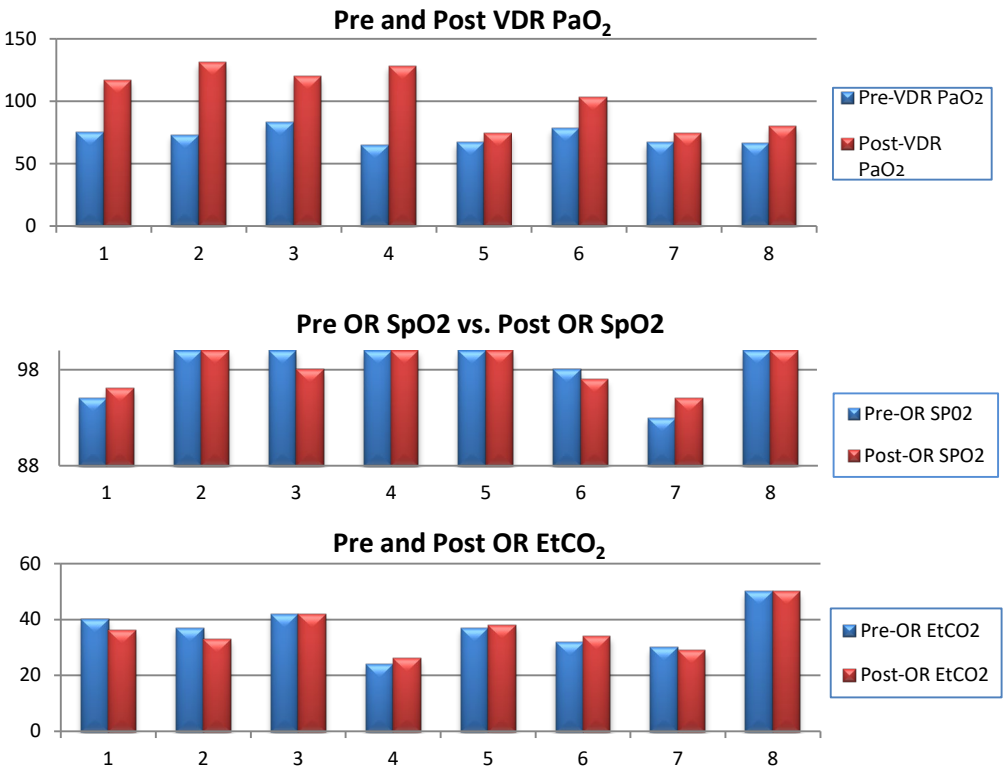
The Burn Center at Saint Barnabas Medical Center | RWJBarnabas HEALTH

PROVIDING SAFE INTERNAL TRANSPORT OF THE SEVERELY PULMONARY COMPROMISED BURN ICU PATIENT

Patients requiring VDR support may be safely transported on the VDR from one area of the hospital to another. Instituting this practice allows patients to receive lifesaving procedures in a more timely manner, thus reducing the need to delay surgery.



At this facility, use of the Volumetric Diffusive Respirator (VDR) has successfully stabilized the respiratory status of compromised patients by improving oxygenation and ventilation for hospital transport.

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This technology has allowed for safe transport of patients to the operating room sooner, potentially avoiding negative patient outcomes including but not limited to longer hospital stays, sepsis and death. Patients are provided the extra support needed to tolerate both transports or any surgical procedures.

A retrospective review was conducted of all VDR transports for surgery from January 2017 to May 2019. A total of eight patients were transported on the VDR to and from the OR on twenty-eight occasions. Patients presented with 19% to 73% TBSA burns with or without smoke inhalation. The population consisted of four males and four females, ranging in age from 21 – 61 years. Patients with severe burns and hypoxemia that failed conventional mechanical ventilation were placed on VDR. The VDR was initiated a minimum of 24 hours prior to surgery. Settings were optimized to achieve a PaO_2 of 60 mmHg or greater and a pH within 7.35 – 7.45 range. Continuous noninvasive monitoring of SpO_2 and End Tidal CO_2 were used to monitor and adjust ventilator settings as necessary to optimize ventilation and oxygenation. Patients were transported to the operating room while on VDR with a BICU Nurse, VDR technology trained Respiratory Therapist, and a Burn Surgeon.

The respiratory therapist, along with the anesthesiologist, remains with the patient throughout any surgical procedures to ensure that ventilation and oxygenation is supported. Additional studies are warranted to quantify any effects related to sepsis, death or length of stay or outcomes.