DELIVERY OF NITRIC OXIDE VIA VAPOTHERM. John Newhart RCP, UCSD Medical Center San Diego CA. **Background:** At UCSD Medical Center we have delivered inhaled nitric oxide (INO) to patients for pulmonary hypertension and or refractory hypoxemia using the Datex-Ohmeda INOvent. A situation arose where it would be desirable to deliver INO to patients who were on a heated and humidified Vapotherm (Vapotherm Inc. Annapolis MD) high flow nasal cannula system. We sought to find a safe and effective way of combining the two systems. **Methods:** We placed the injector module of the INOvent inline between the flowmeter and the inlet of the Vapotherm. We removed the nitric oxide injector line from the injector module, capped the port and connected the line to an adaptor between the coaxial portion of the circuit and the nasal cannula. Downstream of the injector line we added 6 inches of 22mm corrugated tubing to act as a mixing chamber for the NO and O2. The INOvent sample line was placed immediately downstream of the corrugated tubing. As oxygen flow through the system is increased, back-pressure applied to the vapor cartridge is increased. We therefore limited the flow of oxygen through the system to 30 lpm vs the factory recommended 40 lpm. This is to avoid over-pressuring the sample line causing malfunction of the device. The NO injector line was moved to the described location for the same reason. **Results:** The Vapotherm was set to 40 degrees C and allowed to stabilize. The INOvent was calibrated and passed a pre-use check. The systems were set-up as previously described and run at various oxygen flow rates and different NO doses. The following table contains the results.

	Vapotherm Oxygen Flowrate		
	10 LPM	20 LPM	30 LPM
NO set	NO/NO2	NO/NO2	NO/NO2
5ppm NO	4.6/0.1	4.4/0	5.5/0
20ppm NO	19/0.1	19/0.1	20/0
80ppm NO	76/0.7	81/0.6	84/0.7

Conclusion: The INOvent functioned according to factory specifications when used in conjunction with the Vapotherm at oxygen flowrates up to 30 lpm with an adult cannula. Using a smaller bore cannula or higher oxygen flowrates may cause overpressure of the INOvent monitoring system.

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