INSPIRED TECHNOLOGIES, INC.
SmartDose Case Study – 10/27/09

Clinical Case Study

Overview:
Single subject completed a pulmonary stress test under physician's orders and desaturated during exercise. Physician ordered 4 LPM of continuous flow oxygen, however, patient expressed concerns about losing her active lifestyle. Physician tested patient on a pneumatic conserver and found that she could not trigger the device and as expected, desaturated during exercise. Physician requested that patient be tested on SmartDose to determine if the patient could trigger consistently.

Testing:
The patient was monitored using the Inspired Technologies, Inc. CODR device to show comparative data of heart rate and oximetry. The patient was tested with continuous flow oxygen and then was switched over to SmartDose. The CODR device can sense when there is a breath and takes a recording on each breath. One of the parameters recorded is the dose volume (bottom graph). A missed dose while on SmartDose, or any other conserver, is shown by a zero reading. The results were saved in one continuous file and are shown in Figure 1.

Results
The patient baseline is shown in the first half of the data while on 4 LPM continuous flow oxygen. The patient was then switched to SmartDose on a setting of 2. Due to using single lumen cannula for both tests, we only see HR and S_pO_2 during the continuous flow testing. While on SmartDose, we can see that a bolus of oxygen was delivered consistently, with one missed pulse late in the testing.

Conclusion:
SmartDose reliably triggered for this patient who could not trigger less sensitive pneumatic conservers.

Figure 1: Charts from top to bottom – Breath rate, I:E ratio, HR / S_pO_2, dose volume