

INSPIRED TECHNOLOGIES, INC.

United Hospital Center Pulmonary Rehab

SmartDose patient testing



Recently, SmartDose was used on patients at the *United Hospital Center Pulmonary Rehab, Clarksburg, WV*. Six patients were tested on their current oxygen equipment and then on the SmartDose system. Three were monitored with the CODR, and three were monitored with standard S_pO_2 readings at approximately 1 min intervals. While 6 patients were tested, only 4 are reported on due to difficulty in data acquisition on one patient, and inability to saturate on any conservator on another patient.

Note that each patient was tested with their own equipment first, then allowed to rest, and tested with SmartDose second to ensure that fatigue was not a factor in any favorable outcomes with SmartDose.

Several patients were monitored with pulse oximetry only, while others were monitored with the Inspired Technologies, Inc. CODR product.

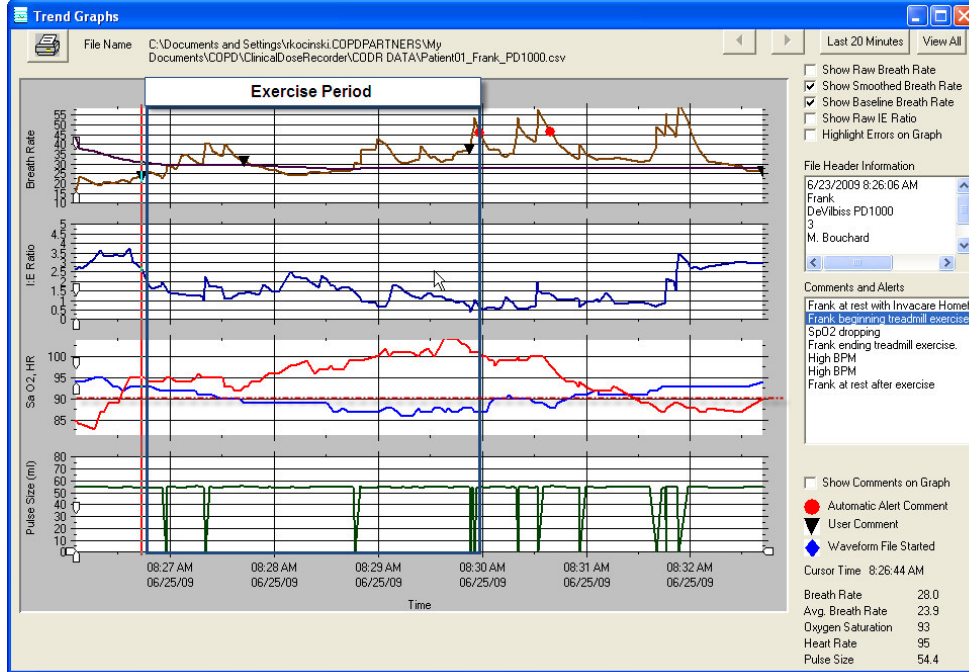
Summary

In the patients tested, SmartDose maintained patient saturation better than standard oxygen conservators and gives patients the ability to ambulate longer with less breathlessness. SmartDose senses changes in breathing during activity and adjusts to the patient's needs for more oxygen, leading to improved saturations.

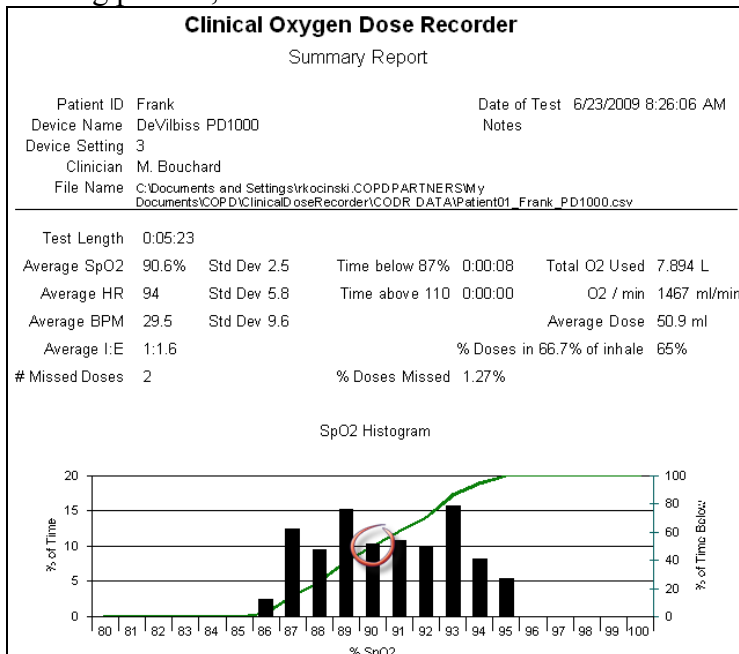
Patients reported improved results in their ability to continue for longer periods of exercise and lower levels of breathlessness.



Patient 1 currently uses a DeVilbiss iFill system with a PD-1000 OCD at a setting of 3. The S_pO_2 during activity is shown on the third chart down (blue line). During the test period, his S_pO_2 drops, spending more than half of his exercise time with an S_pO_2 of less than 90%.

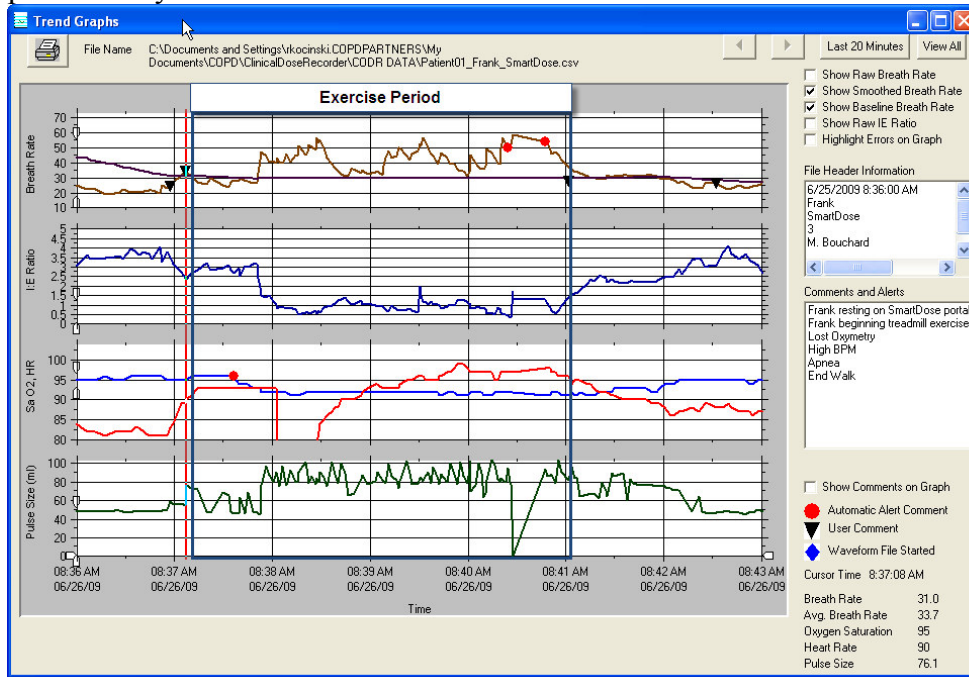


On the CODR summary report, we can see the patient spent 50% of the total test time, including the resting periods, below 90%.

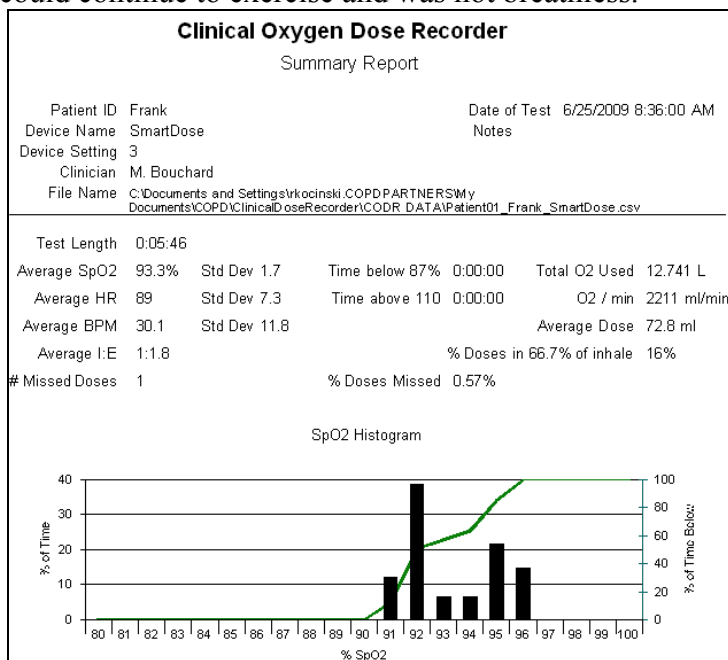




Testing was repeated on Patient 1 using the SmartDose portable while completing the same level of treadmill activity. If you look at the bottom graph, you can see how SmartDose is giving increased dosing in response to changes in breathing during exercise— **automatically**, which prevents any desaturation below 90%.

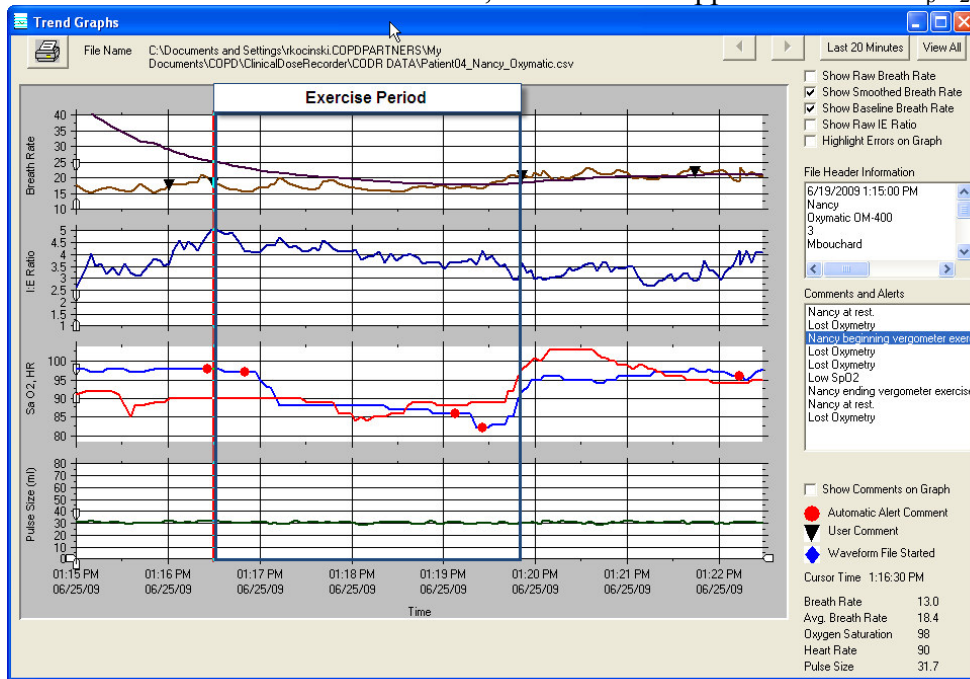


As we can see from the summary report below, Patient 1 spent no time below 90% SpO₂, and his average SpO₂ climbed from 90.6% to 93.3%. Additionally, the patient stated that he felt that he could continue to exercise and was not breathless.

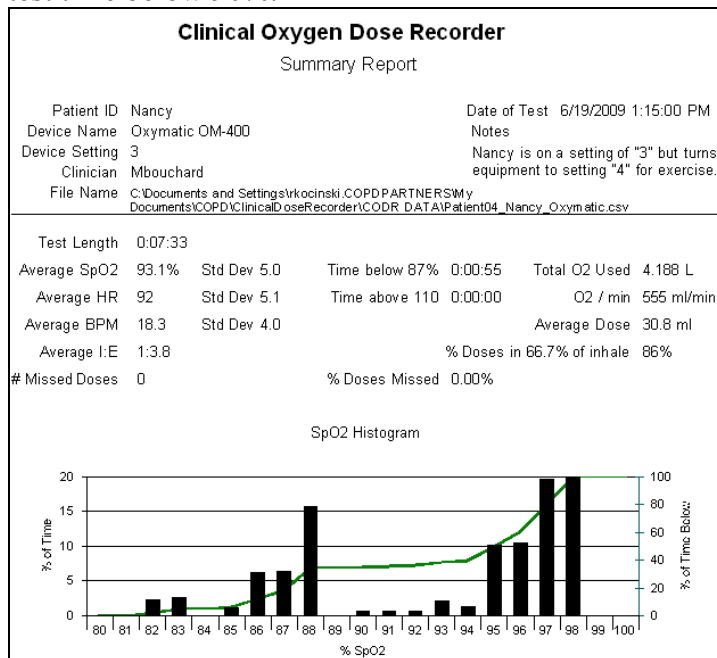




Patient 4 was tested using her current system, a Chad Oximatic conservor, on a setting of 3. Three minutes into the exercise, the test was stopped due to low SpO₂ Alert.

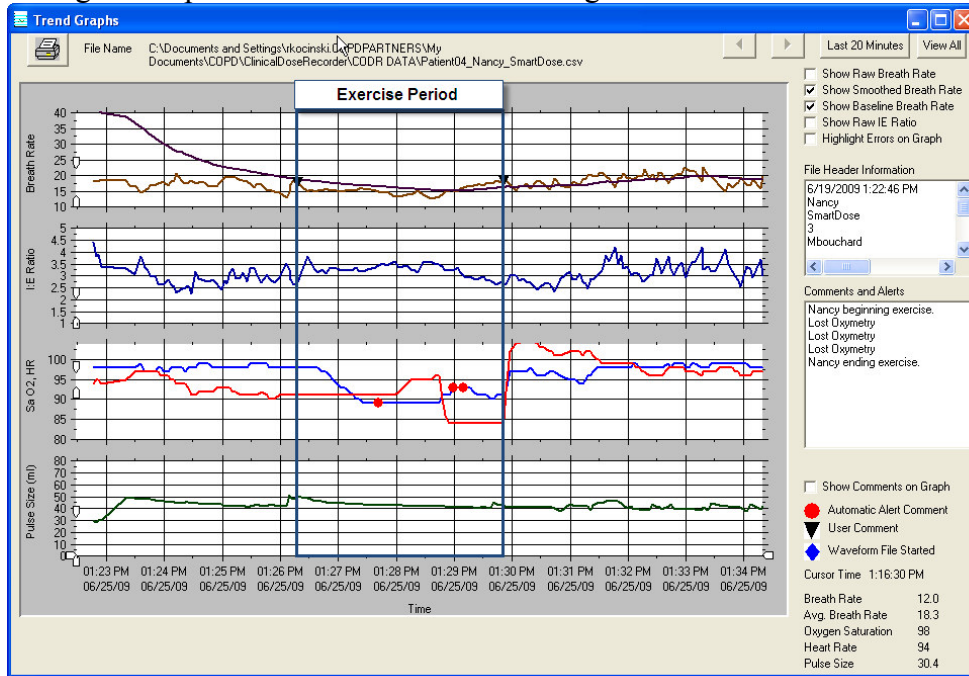


The summary report shows that Patient 4 dipped down to 82% on her SpO₂, and spent 40% of the test time below 90%.

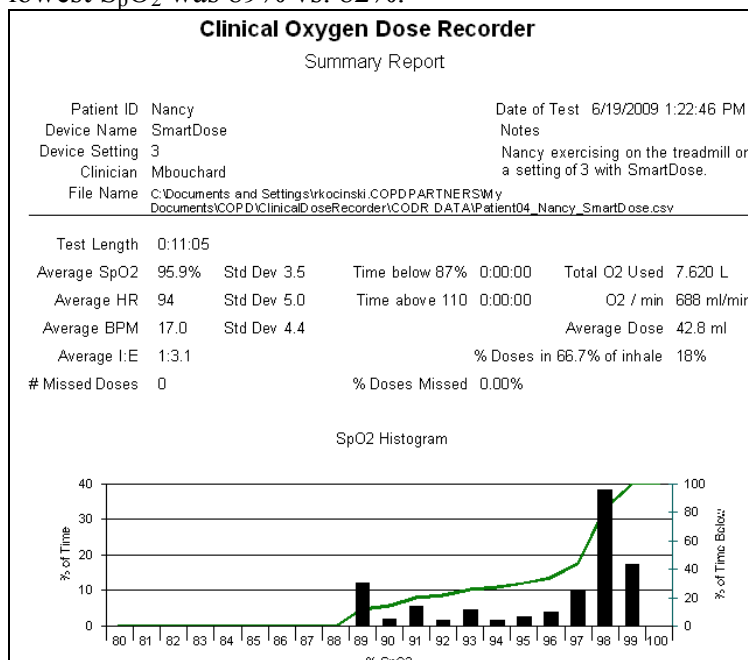




On SmartDose, Patient 4 does not have as much auto-adjusting, due to her constant breath rate, but is staying saturated, likely due to the higher standard dose and improved oxygen dose delivery during the 1st part of inhalation at the 3 setting with SmartDose.



Patient 4's summary report on SmartDose clearly shows improvement. Her avg S_pO₂ went from 93.1% to 95.9%. Here time below 90 was approximately 12% vs. 40% on the Chad system. Her lowest S_pO₂ was 89% vs. 82%.



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It should be noted that the 2 remaining patients, monitored with regular oximetry showed similar results including better average S_pO_2 , less time below 90%, and higher nadir S_pO_2 readings and a feeling that they could exercise longer.

We can see from these results that the SmartDose's unique auto adjusting feature responds to changes in patient's breathing patterns during activity to reduce or eliminate desaturations seen during exercise while using other conserving devices. Patients also commented that they had reduced breathlessness and felt they would be able to continue activity longer using the SmartDose. These benefits have the potential to:

- Improve the patients' ability to complete activities of daily living with less breathlessness
- Increase the patients' exercise level and training duration during pulmonary rehabilitation
- Improve quality of life

Additionally, the CODR allows clinicians to clearly monitor changes in the patient's oxygen needs during activity and choose the portable oxygen system which best maintains adequate oxygen saturation.

SmartDose is available in liquid oxygen or gas cylinder versions. More information is available at www.inspiredtechnologiesinc.com

ⁱ Thanks to Jo Harbert, RN; Cheryl Farley, RN; & Diana Anderson, RN for their help and willingness in conducting this testing.