

INSPIRED TECHNOLOGIES, INC.

VIAspire SD Card Data Utility User's Manual

VIAspire SD Card Software Utility

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VIAspire SD Card Software Utility User's Guide

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System Requirements:

- IBM Compatible PC, Pentium processor or higher
- 128 MB of Ram
- Microsoft Windows 2000, XP, or Vista
- 10MB of available hard disc space
- SVGA (800 x 600) 16-bit color monitor
- SD Card reader

Functional overview: The software is intended to:

Input data files generated by VIAspire SmartDose O2 dosing units and present data in graphical format.

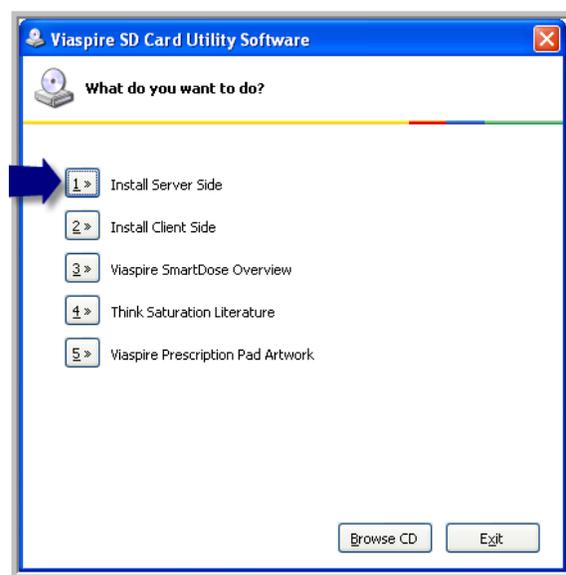
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Installing the VIAspire SD Data Utility

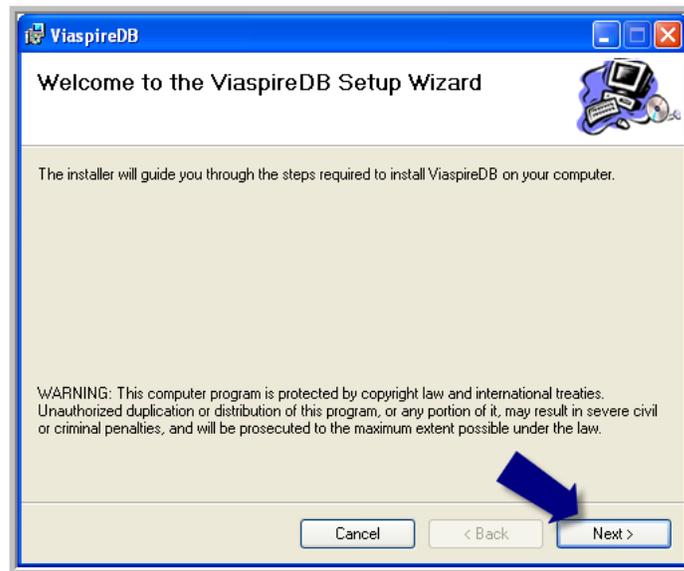
The VIAspire SD Card Data Utility is a client-server solution, but can also be installed on a single computer.

When the CD Rom is inserted, you will see a menu as shown below. Install the server side first by clicking on the first button.

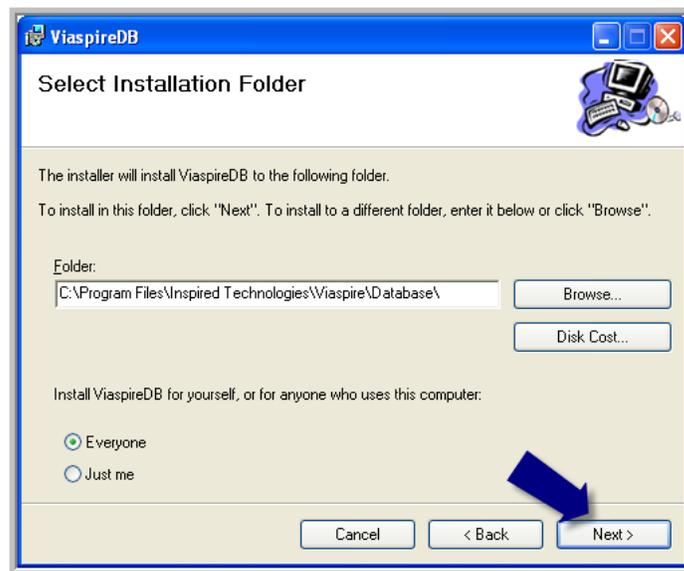


You will then see the following windows:

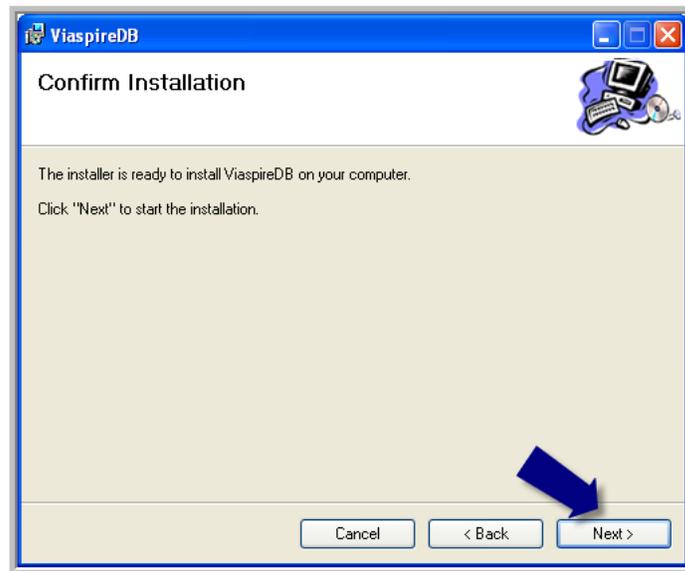
Click **Next** -



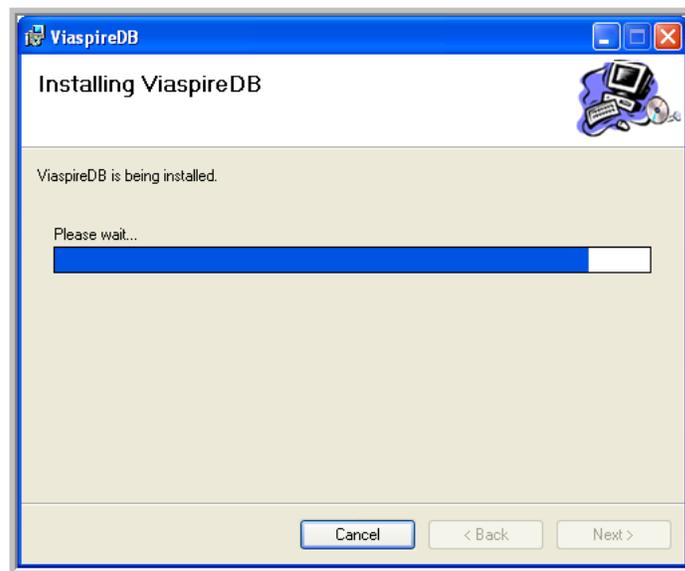
At the window below, you can choose a new location for the database by clicking on the “Browse” button, or accept the default location. Click **Next**.



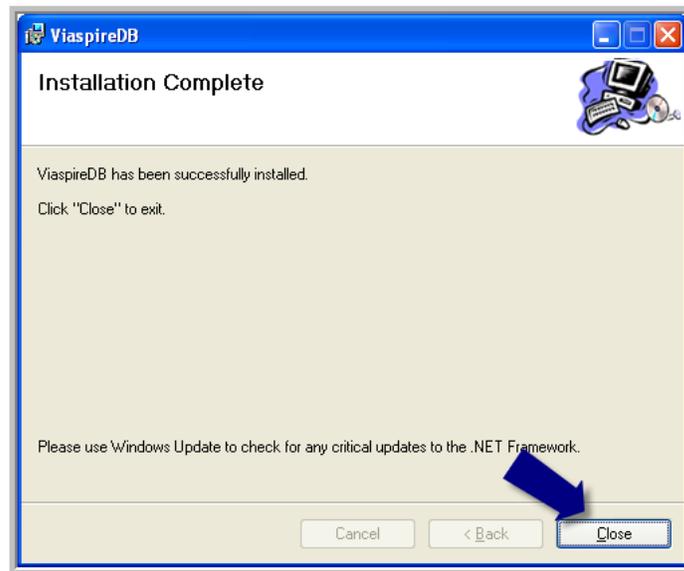
Click on **Next** again to load the server applications.



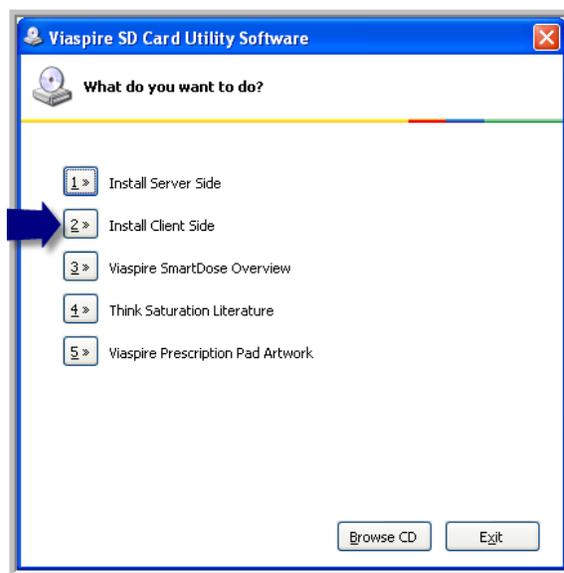
A progress window with status bar will appear.



When finished with the install, click on **Close**.



Now install the Client Side by clicking on the 2nd button as shown below:



Repeat the process used for installing the server to install the client software.

When you have completely installed the server and the client, you will have an icon on your desktop labeled – “RUN VIASPIRE” as shown here. **Congratulations** – you have successfully installed the software!!



Pointing to the DataBase

If you have installed on a single system— Ignore this section

If you have installed the database on a server, linking the client application to the database is required.

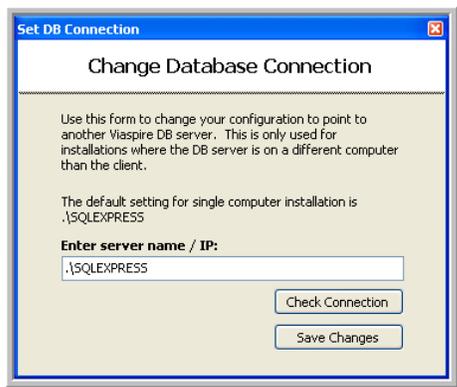
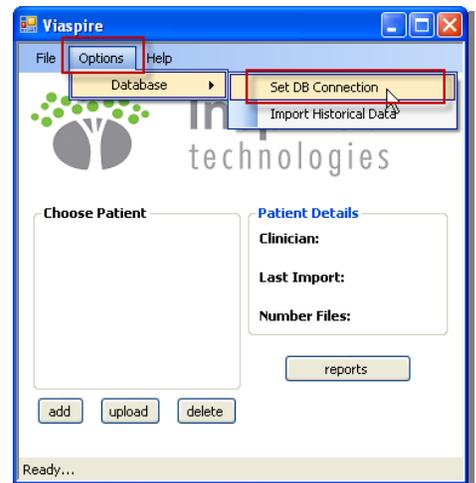
TO POINT TO THE DATABASE ON SERVER APPLICATIONS ONLY:

Open the program by double clicking on the RUN VIASPIRE icon on your desktop.



At the window shown on the right, select **Options > Database > Set DB Connection**

You will then see the window below. Simply enter the location of the installed database (on another computer, LAN Drive, or server location).



Adding / Removing Information

To begin assembling the database, enter patient information first.

NOTE: This software is to be used in compliance with all federal, state and local laws, including Health Insurance Portability and Accountability Act (HIPAA) requirements. Only trained and authorized users are to use software.

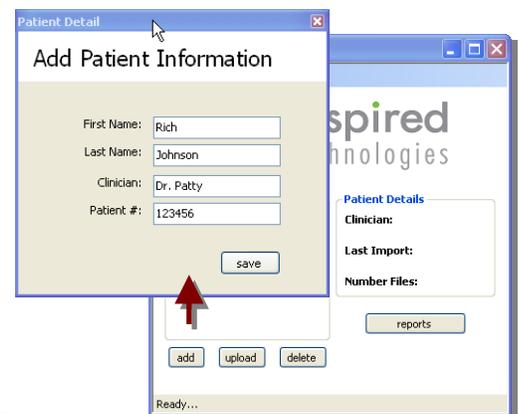
Security requirements for Patient information are assumed by the user of this software.

Add a Patient -

To enter a patient to the database, simply click on the **add** button.

Fill in the form

And click on the **save** button



The patient will now show up on the Patient List

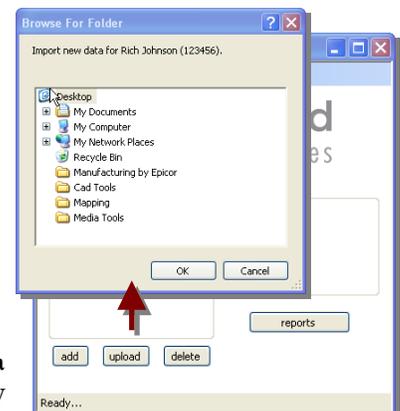
Add Patient Data -

Select a patient who's information you wish to upload.

Click on the upload button.

Point to the folder where the data resides.

NOTE: The upload will bring in all data in the folder that is from the Viaspire Portable (csv format). Keep patient data separated from other patients. On subsequent uploads, only new data will be brought in and previously uploaded data will be ignored.



Delete a Patient –

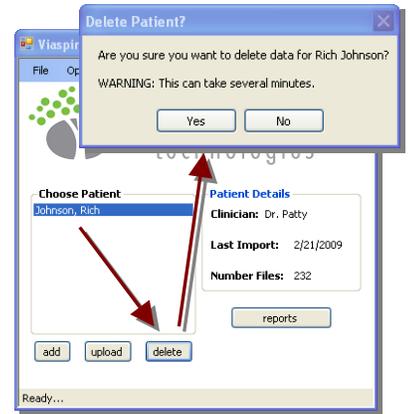
Highlight the patient to be deleted on the list

A “Delete Patient?” window will appear.

Pay special attention to ensure that the patient listed is the patient that you would like deleted from the database.

Select **Yes** button to delete this patient from the database.

NOTE: Deleting a patient from the database will remove them from the patient list as well as removing all data that had been uploaded for this patient. **This is a permanent deletion.**

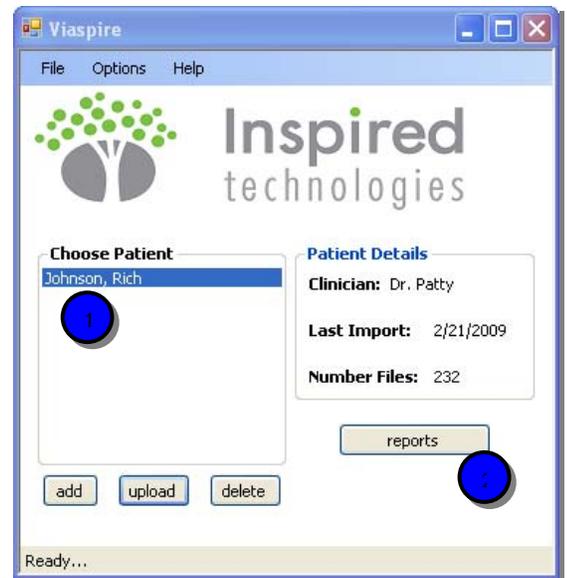


Reports

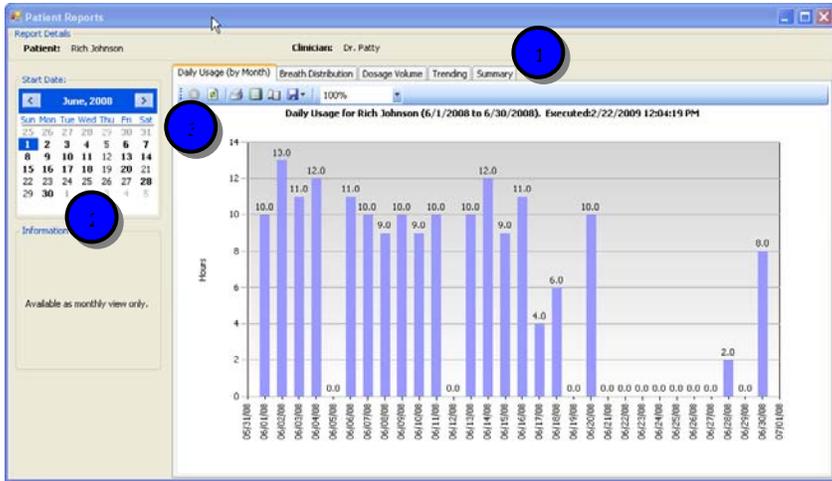
Generating reports for patients is easy and quick. When you select / highlight a patient on the list, statistics will populate on the right.

To open the report viewer, simply select a patient from the list and then click on the **reports** button.

This will open the Patient Reports window and allow you to select from various reports, select the timeframe for reports, and allow printing and exporting of data in easy to read, graphical form.



The Patient Reports Window:



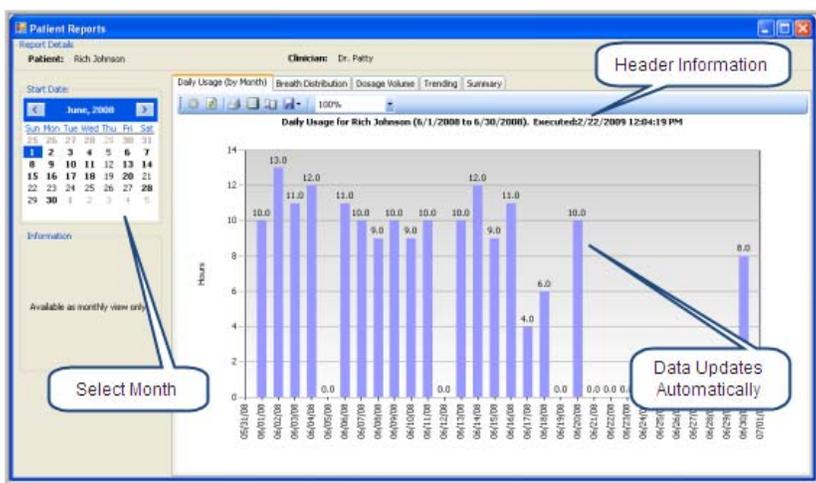
1. The Patient Reports window has 5 standard reports accessed by the tabs at the top of the graphs.
2. The area on the left gives users the ability to select the time frame for the charts and graphs.
3. The tool buttons allow you to print, format pages and export data to Excel or PDF formats.

Note that the patient information is always shown along with the creation date for the report.

Daily Usage by Month Report

The first chart shown in the Patient Reports window is the Daily Usage (by Month) report. This simply shows the number of hours that the unit has been used each day of the month.

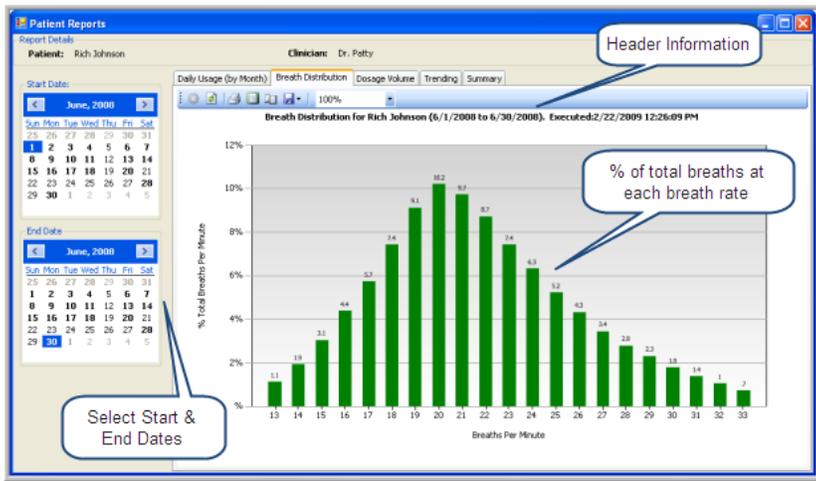
Note that the date selection area only allows monthly selections and can be advanced or decreased in one month increments by clicking on the arrows at the top of the monthly calendar.



Days that show data will be bolded on the calendar, while days without data (usage) are shown in non-bolded text.

Breath Distribution Report:

By clicking on the Breath Distribution tab, you will see a report showing the percentage of breaths taken at each breath rate during the time frame selected.



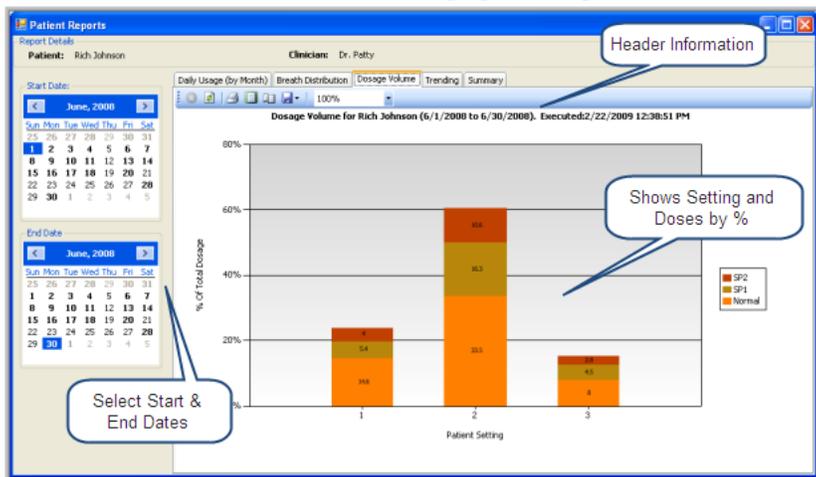
Because the SD Card in the VIAspire records a record at each and every breath, this can a compilation of a significant number of breaths. For example, if we were to look at a one month period where a patient used the unit for only 4 hours each day, and assuming an average breath rate of only 20 BPM, this would be:

$$20 \text{ BPM} * 60 \text{ min/hour} * 4 \text{ hours} * 30 \text{ days} = 144,000 \text{ breaths.}$$

Note: This chart rounds the breath rates into 0.5 BPM increments to give a general overview of the distribution of the patient's breath rate over time.

Dosage Volume Report

By clicking on the Dosage Volume tab a report showing both the patient setting and modes for the time period selected. Select the desired time period to view on the left and the graph will update to reflect data for that time period.



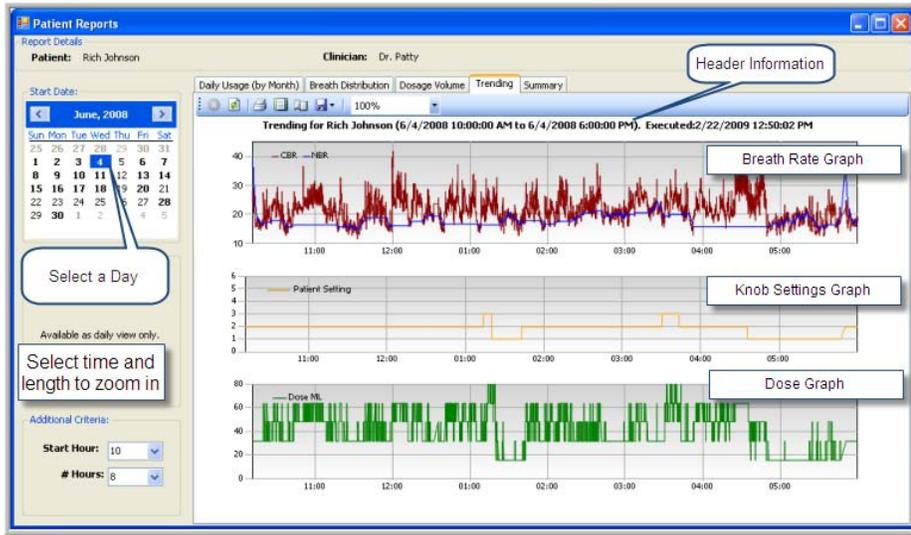
The x-axis of the graph is patient settings. On this chart, the patient had the settings knob on 2 most of the time, but also had used the 1 & 3 settings as well.

The stacking in each bar shows the doses at each mode of the VIAspire unit; normal mode, Sport 1 dose, and Sport 2 dose.

Normal mode provides 16 ml /setting of oxygen on each breath, so a patient on a 2 setting in normal mode will receive 32 ml of O₂ on each breath.

Sport 1 dose provides an additional 16 ml over the normal mode, and Sport 2 dose gives an extra 32 ml over normal mode. In this example, when the user had the settings knob on the 2 setting for just over 60% of the time. They were in setting 2 normal mode more than half of that time, but got sport doses 1 & 2 for periods as well.

The Trending Graph



The trending graph shows a significant amount of detail and as such, can only be viewed for a single day of data.

You can zoom in on any period of the day by selecting the starting hour and the length of data to show.

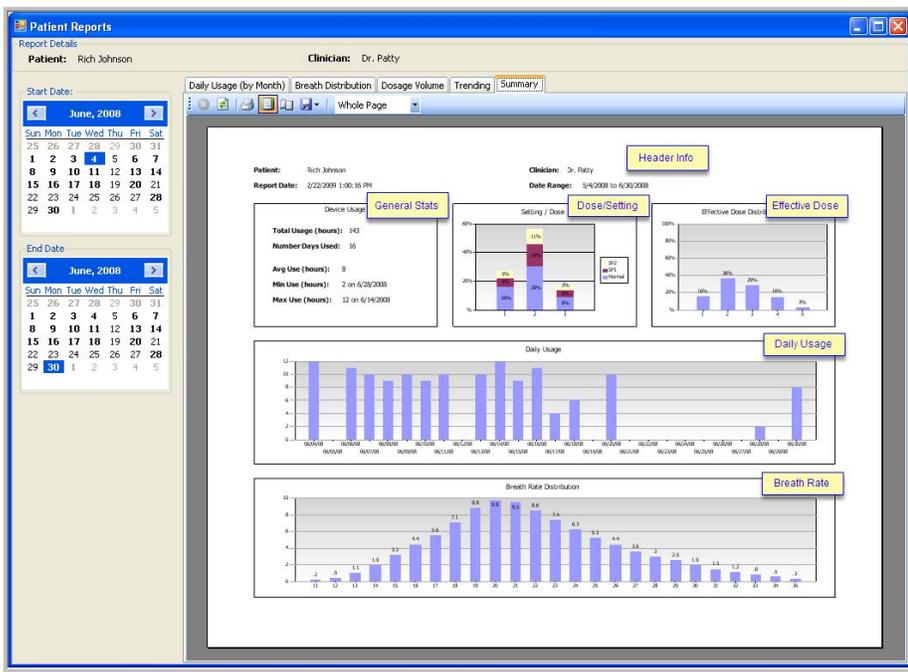
Three graphs are shown using the same time scale.

Breath rate shows the patient's breath rate through the day on the red line. The blue line shows the

Normal Breath Rate, or resting breath rate, as calculated by the algorithms in the VIAspire. Note that when the Current Breath Rate exceeds the Normal (resting) Breath Rate by more than 4 BPM, Sport 1 dosing is given. When the CBR exceeds the NBR by more than 8 BPM, Sport 2 dosing is given.

This chart is helpful in determining outlining a patient's oxygen use and activity throughout any day.

Summary Report



The Summary Report puts general data for the selected time frame onto a single page report, complete with header information.

This gives a means of printing one report for a patient for a selected time period for general review.

One chart is added, not seen in other report views. The effective dose chart shows the % of doses given at each level; 16, 32, 48, 64, etc.

A dose at a setting of 1 in Sport1 mode will be 32 ml, which is the same dose as a setting of 2 in normal mode. In this chart, these are both shown as an effective dose of "2".

Appendix A:

Raw data files from VIAspire unit.

The VIAspire unit writes data to an SD Card at each breath after the first minute of operation. It creates a new file each time the unit is turned on and off. The files are named to reflect their creation date and time. Files are in comma separated value format (csv) and can be opened in Excel to view raw data. The following outlines a sample file.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Doser Settings:																	
2	Software Version	0.99F																
3	Clock is now	6/7/2008	15:26:24															
4	Valve A Flow	4.0 LPM																
5	Valve B Flow	8.0 LPM																
6	Valve AB Flow	10.0 LPM																
7	Sport 1 Threshold	4 BPM																
8	Sport 2 Threshold	8 BPM																
9	E-I Trigger Level	20																
10	I-E Trigger Level	4																
11	Normal Dose	16																
12	Sport 1 Dose	16																
13	Sport 2 Dose	32																
14	Current Breath Rate Filter	0.8																
15	Normal Breath Rate Filter	0.95																
16	NBR Lock Delay	60 sec.																
17	NBR Start Value	40 BPM																
18	CBR Start Value	25 BPM																
19	Battery Low Threshold	4.8 V																
20	Battery Red Threshold	4.3 V																
21	Pct. Total Breath Available	22																
22																		
23																		
24																		
25																		
26	Date	Time	Breath Time	I:E Ratio	CBR	NBR	Patient Set	Dose (ml)	Valve Use	Valve On-Time(msec)								
28	6/7/2008	15:26:24	3.5	1.3	20.1	40	2	32	A	480								
29	6/7/2008	15:26:26	3.5	1.1	19.5	40	2	32	A	480								
30	6/7/2008	15:26:34	8	2.3	17	38.8	2	32	A	480								
31	6/7/2008	15:26:40	5.6	6	15.7	37.7	2	32	A	480								
32	6/7/2008	15:26:44	3.9	4.4	15.7	36.6	2	32	A	480								
33	6/7/2008	15:26:47	2.7	3.7	16.9	35.6	2	32	A	480								
34	6/7/2008	15:26:53	6.1	2.5	15.4	34.6	2	32	A	480								

Header shows firmware parameters loaded for this VIAspire portable at the time the data was created.

Data shows a record for each and every breath.

Date

Time

Breath Time (seconds)

I:E ratio - Shown as E when I=1. Example: value of 4.2 means I:E is 1:4.2

CBR – Current Breath Rate in breaths per minute (BPM)

NBR – Normal (resting) Breath Rate in BPM

Patient Setting – location of patient setting knob

Dose – Volume of oxygen given in ml

Valve used – A, B, or AB

Valve On-Time (msec)