

## 6


## Storing and Reviewing Patient Data

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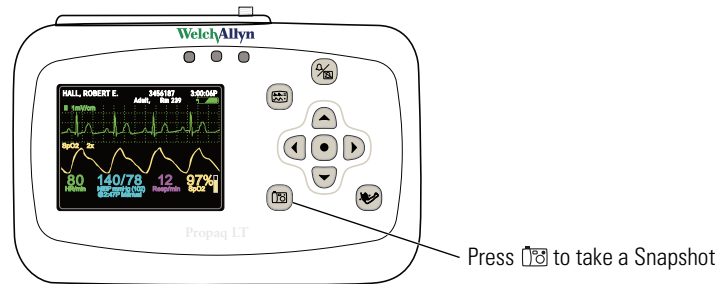
### Overview


The monitor stores up to 24 hours (at one-minute intervals) of trends information for the patient being monitored. When data storage is at capacity, the data from each new reading replaces the data from the oldest.

**Table 10. Store and Review Patient Data**

	All Monitors	Wireless Monitor
<b>Type of Data</b>	TRENDS <ul style="list-style-type: none"> <li>• Tabular or graphical.</li> <li>• Include maximum of 24 hours of trend data taken at:               <ul style="list-style-type: none"> <li>1-minute intervals</li> <li>NIBP and SpO<sub>2</sub> Spot Checks</li> <li>Snapshots</li> </ul> </li> </ul> SNAPSHOTS <ul style="list-style-type: none"> <li>• 21 seconds of numeric and waveform data: 14 seconds before and 7 seconds after the snapshot request.</li> <li>• Press  to take snapshots. (Maximum: 5 snapshots per minute.)</li> <li>• Maximum of 20 snapshots stored. At capacity, each new snapshot overwrites the oldest.</li> </ul>	Up to 96 hours (depends on Acuity system) of full disclosure data includes: <ul style="list-style-type: none"> <li>• numerics and waveforms</li> <li>• status</li> </ul>
<b>Where Stored</b>	Monitor	Acuity via wireless communication
<b>Where Reviewed</b>	Monitor Printer (with AutoPrint)	Acuity

## Capturing a Data Snapshot



Press  to capture a 21-second period of numeric and waveform patient data. The monitor captures the 14 seconds preceding and the 7 seconds following the button press.

The monitor can store 20 snapshots. After 20 snapshots have been taken, each new snapshot replaces the oldest snapshot in memory.





## Reviewing Data at the Monitor

Snapshots and trend data can be reviewed at the monitor.

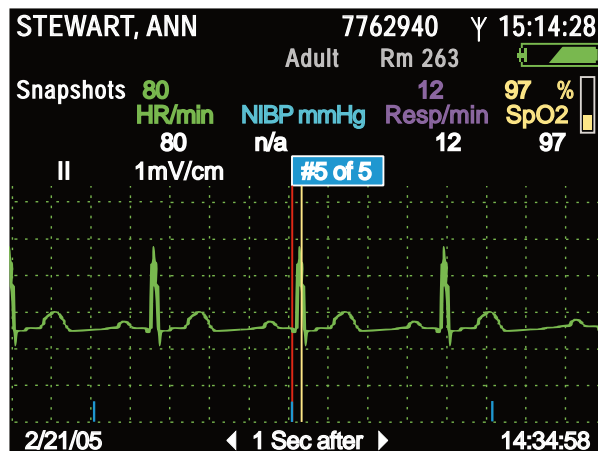
### Reviewing Snapshots

#### To Review Snapshots

From any main display screen (such as Large Numerics, Dual Waveform...):

1. Highlight , **HR/PR**, **SpO<sub>2</sub>**, **NIBP**, **Resp**, or .
2. Press .
3. Highlight **Snapshots** and press . The Snapshots display appears ([Figure 90](#)).

**Figure 90. Snapshots Display**

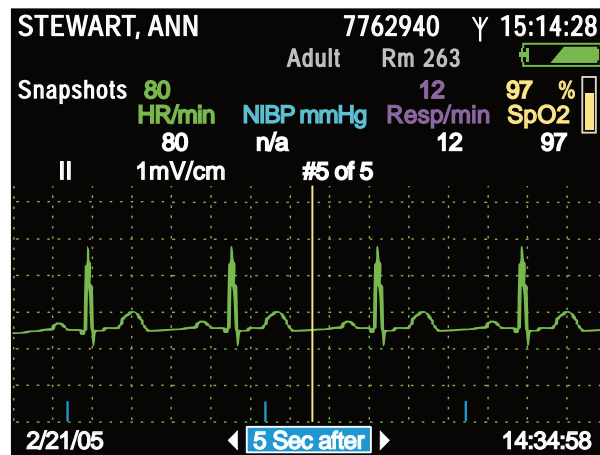


- The monitor first displays **Select**. With **Select** highlighted, press  $\odot$  to view the list of up to 20 snapshots. To view another snapshot, highlight the snapshot menu (**#5 of 5** in the example above), press  $\odot$ , and highlight any of the available snapshots.

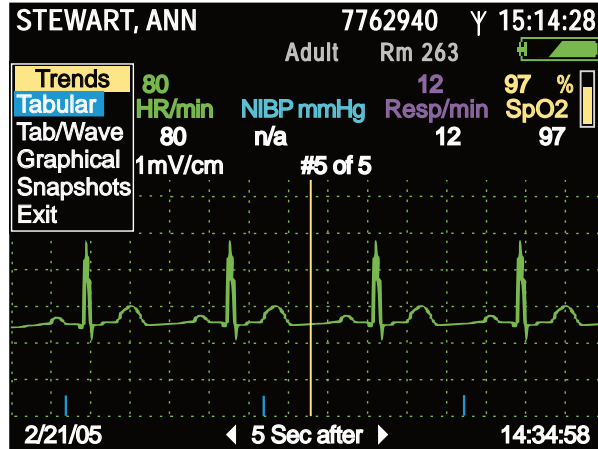
The blue markers at the bottom of the waveform display represent one-second intervals. The numeric data above the waveform represents the patient's vital signs measured at a specific time relative to that indicated in the lower right corner. For example: In [Figure 90](#), the data was measured at "1 Sec after" 14:34:58.

- To view the waveform and the numeric data for a specific time within the 21 seconds of data, highlight **1 Sec after** and then use  $\blacktriangleright$  or  $\blacktriangleleft$  scroll the display to the desired time. For example, to see the vital signs taken five seconds after the trigger point of the snapshot, highlight **1 Sec after** and press and hold  $\blacktriangleright$  as needed to increment the display ([Figure 91](#)) to **5 Sec after**.

**Figure 91. Snapshots Display: 5 Seconds After the Button Press**







- To change the source of the displayed waveform, see ["To Change the Waveform Selection"](#) on page 59.
- To change the size of the waveform, see ["To Change the Waveform Size"](#) on page 60.
- From this display, you can switch to another type of display or you can exit and return to the primary display. To do this, highlight **Snapshots** and press  $\odot$ . The Trends menu appears ([Figure 92](#)), from which you can exit or switch to another display—Tabular, Tabular and Waveform, or Graphical. To switch to the split display, for example, highlight **Tab/Wave** and press  $\odot$ .



**Figure 92. Snapshots Display: Switching to Another Display**





## Reviewing Trends

### To Review Trends

From any main display screen (such as Large Numerics, Dual Waveform...):

1. Highlight , **HR/PR**, **SpO<sub>2</sub>**, **NIBP**, **Resp**, or .
2. Press .
3. Highlight **Trends** and press . The Trends display appears.

Use  and  to scroll through the list of trends.

- Red indicates an alarm.
-  indicates that a snapshot exists for this trend. Highlight  and press  to view the snapshot.
-  indicates that the snapshot for this trend was overwritten with a more recent snapshot and is not available for viewing.
- --- indicates a value below the monitor's measurement range.
- +++ indicates a value above the monitor's measurement range.
- ??? indicates an undetermined value.

**Figure 93. Trends Display, 1-Minute Interval**

STEWART, ANN		7762940		Y 04:45:10P	
Adult		Rm 263			
<b>Tabular</b>	59	120/72(88)	14	98	%
Time	HR/min	NIBP mmHg	Resp/min	SpO2	
4:42P	60	121/73(89)	14	99	
4:41P	58	119/72(88)	13	98	
4:40P	59	120/72(88)	14	98	
4:40P	59	120/72(88)	14	99	
4:39P	60	118/71(87)	13	98	
4:39P	60	118/71(87)	14	98	
4:38P	59	120/71(88)	14	98	
4:37P	60	119/71(87)	14	99	
4:36P	60	117/70(86)	13	98	
4:35P	60	120/72(88)	14	98	
4:35P	60	120/72(88)	13	99	
4:34P	59	119/72(88)	13	98	

4. Highlight and view any available reading in tabular or graphical format.

### Changing the Trends Display Interval

#### To Change the Trend Display Interval

1. Highlight **Time** and press .

**Figure 94. View Interval Menu, 1-Minute Interval Selected**

STEWART, ANN		7762940		Y 04:45:12P	
Adult		Rm 263			
<b>Tabular</b>	59	120/72(88)	14	98	%
View Interval	HR/min	NIBP mmHg	Resp/min	SpO2	
1 min		121/73(89)	14	99	
5 min		119/72(88)	13	98	
10 min		120/72(88)	14	98	
15 min		120/72(88)	14	99	
30 min		118/71(87)	13	98	
60 min		118/71(87)	14	98	
4:38P	59	120/71(88)	14	98	
4:37P	60	119/71(87)	14	99	
4:36P	60	117/70(86)	13	98	
4:35P	60	120/72(88)	14	98	
4:35P	60	120/72(88)	13	99	
4:34P	59	119/72(88)	13	98	

- Highlight the interval you want (Figure 95)...

**Figure 95. View Interval Menu, 10-Minute Interval Highlighted**

STEWART, ANN		7762940	Y	04:45:15P
Adult		Rm 263		
Tabular	59	120/72(88)	14	98 %
<b>View Interval</b>	min	NIBP mmHg	Resp/min	SpO2
1 min		121/73(89)	14	99
5 min		119/72(88)	13	98
<b>10 min</b>		120/72(88)	14	98
15 min		120/72(88)	14	99
30 min		118/71(87)	13	98
60 min		118/71(87)	14	98
4:38P	59	120/71(88)	14	98
4:37P	60	119/71(87)	14	99
4:36P	60	117/70(86)	13	98
4:35P	60	120/72(88)	14	98
4:35P	60	120/72(88)	13	99
4:34P	59	119/72(88)	13	98

- ...and press .

**Figure 96. Trends Display, 10-Minute Interval**

STEWART, ANN		7762940	Y	04:45:17P
Adult		Rm 263		
Tabular	60	119/72(88)	14	98 %
Time	HR/min	NIBP mmHg	Resp/min	SpO2
4:40P	59	120/72(88)	13	98
4:40P	59	120/72(88)	14	98
4:39P	60	118/71(87)	13	98
4:35P	59	120/72(88)	14	98
4:30P	58	119/71(87)	14	99
4:20P	60	120/72(88)	14	98
4:10P	59	120/71(88)	14	98
4:00P	60	121/73(89)	13	98
3:59P	59	119/71(87)	14	98
3:50P	59	119/72(88)	14	98
3:40P	60	118/71(87)	13	99
3:30P	60	120/71(88)	14	99

## Measurement Anomalies in the Trends Display

**Figure 97. Trends Display with Measurement Anomalies**

STEWART, ANN		7762940 Y 04:45:10P	
	Adult	Rm 263	
Tabular	59	120/72(88)	14 98 %
Time	HR/min	NIBP mmHg	Resp/min SpO2
4:42P	60	121/73(89)	14 99
4:41P	58	119/72(88)	13 98
4:40P	59	120/72(88)	14 98
4:40P	59	192/110(130)	14 98
4:39P	60	118/71(87)	13 98
4:39P	+++	✘118/71(87)	14 98
4:39P	60	??/?/?(??)	14 98
4:37P	60	119/71(87)	14 99
4:36P	---	117/70(86)	13 98
4:35P	60	120/72(88)	14 98
4:35P	60	120/72(88)	13 99
4:34P	59	119/72(88)	13 98

- 
- +++ Measurement above monitor limits for the parameter.
  - Measurement below monitor limits for the parameter.
  - ?? Measurement undetermined.
  - red text** Patient alarm condition.
- 

## Reviewing Data at a PC

See ["Printing Patient Data"](#) on page 103.

## Reviewing Data at Acuity

See the *Acuity Directions For Use*.





# 7

## Printing Patient Data

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### Overview

The AutoPrint utility uploads from the monitor to the PC, either manually or automatically, trend data and snapshots stored by the monitor for the current or most recent patient. The PC then prints the data on the configured laser printer.

**Note** Use only a laser printer. The monitor can store a large amount of data. If you use any other type of printer, it can take a long time to print all of the data.

**Note** If you attempt to print patient data during the first minute of monitoring, before the monitor has recorded a snapshot or generated a trend, the monitor might display the message, "File transfer failure". If this occurs, cancel the AutoPrint operation and continue monitoring.

**Note** The following message might appear when AutoPrint starts:  
"To help protect your computer, Windows Firewall has blocked some features of this program. Do you want to keep blocking this program?"  
To prevent this message from appearing again, select **Unblock**.

**Note** AutoPrint works only when the monitor is powered on. This feature helps you be certain that only the data for the current patient is being printed or, if no patient is being monitored, that only the data for the last patient monitored is being printed.

**Note** If the monitor is off when it is placed in the cradle, AutoPrint is disabled. To enable AutoPrint, turn the monitor on and select **Continue Patient**.

**Note** If you turn the monitor on and select **Start New Patient**, all stored patient data is deleted from the monitor and cannot be printed.

The printed data includes the following:

Trends print-out:

- Up to 24 hours of HR/PR, RR/BR, and SpO<sub>2</sub> trends (one set of measurements per row, with a 15-minute interval between rows).
- SpO<sub>2</sub> spot checks and NIBP measurements, interspersed among the rows of trends data.

In the Snapshots print-out:

- Up to twenty snapshots (21-second intervals of full-disclosure patient data, including waveforms and numerics).
- The utility extracts the available ECG Leads from the patient data and prints a page of strips for each snapshot. Depending on the number of ECG Leads available, the strips may contain 21 seconds of data for one or three Leads of ECG data.

The utility supports US Letter and European A4 page sizes.

## Printing

### **To print the patient data stored in a monitor:**

1. Install the AutoPrint Utility on a PC.
  - a. Insert the Propaq LT Monitor PC Utility Program in the CD-ROM drive of the PC.
  - b. Follow the on-screen instructions to install the AutoPrint Utility.
2. Connect the PC to a cradle (Propaq LT Monitor Charging/Communications Cradle), using the supplied USB cable.

Each time a monitor is inserted into this cradle while the cradle is connected via USB cable to the PC, the patient data stored in the monitor is printed on the default printer.

Patients monitored continuously for 24 hours typically generate enough data for a 2- or 3-page trends table of two panels per page. For example, a 24-hour report with the following data (192 rows) would cover three pages:

- 96 rows of vital-signs data (4 intervals/hr = 4 rows per hour) for 24 hours
- 48 NIBP readings (2/hr)
- 48 SpO<sub>2</sub> spot-check readings (2/hr)

Figure 98 shows a typical printout.

- Text in italic font indicates one of the trends measurements taken at 15-minute intervals.
  - Text in bold font indicates an NIBP measurement or an SpO<sub>2</sub> spot check.
  - White text in a black box indicates an alarm condition—a measurement that is outside of alarm limits.
- indicates a measurement value below the monitor’s measurement range.  
 +++ indicates a measurement value above the monitor’s measurement range.  
 ??? indicates an undetermined measurement value.

Figure 98. Printout (Trends Page)

Monday, June 20, 2005 09:23:28				<b>WelchAllyn</b> <sup>®</sup>	
<b>HALL, ROBERT E.</b>		<b>3456187</b>	<b>239</b>	<b>1 of 1</b>	
Name		Patient ID #	Location	Page	
<b>09:23</b>		<b>Tabular Trend Adult</b>		<b>11:51</b>	
Time	HR/PR	RR/BR	SpO <sub>2</sub>	NIBP	
HH:MM	BPM	Br/M	%	mmHg	
09:30	65	14	OFF	OFF	
09:45	72	15	OFF	OFF	
10:00	67	15	OFF	OFF	
10:15	72	16	OFF	OFF	
10:30	71	15	OFF	OFF	
10:45	79	16	OFF	OFF	
11:00	73	16	OFF	OFF	
11:15	66	14	OFF	OFF	
11:30	67	15	OFF	OFF	
11:31	79	OFF	OFF	131 / 88 ( 99 )	
11:32	71	OFF	OFF	117 / 80 ( 91 )	
11:32	71	OFF	OFF	124 / 86 ( 97 )	
11:33	67	OFF	OFF	126 / 82 ( 95 )	
11:34	71	OFF	OFF	125 / 84 ( 95 )	
11:34	75	OFF	OFF	117 / 80 ( 90 )	
11:35	66	OFF	OFF	118 / 82 ( 93 )	
11:36	67	OFF	OFF	119 / 82 ( 92 )	
11:37	63	OFF	OFF	125 / 83 ( 94 )	
11:41	67	OFF	<b>86</b>	OFF	
11:43	69	OFF	96	OFF	
11:44	72	OFF	98	132 / 88 ( 101 )	
11:45	69	OFF	OFF	OFF	

Trend rows at 15-minute intervals

NIBP measurements without SpO<sub>2</sub>

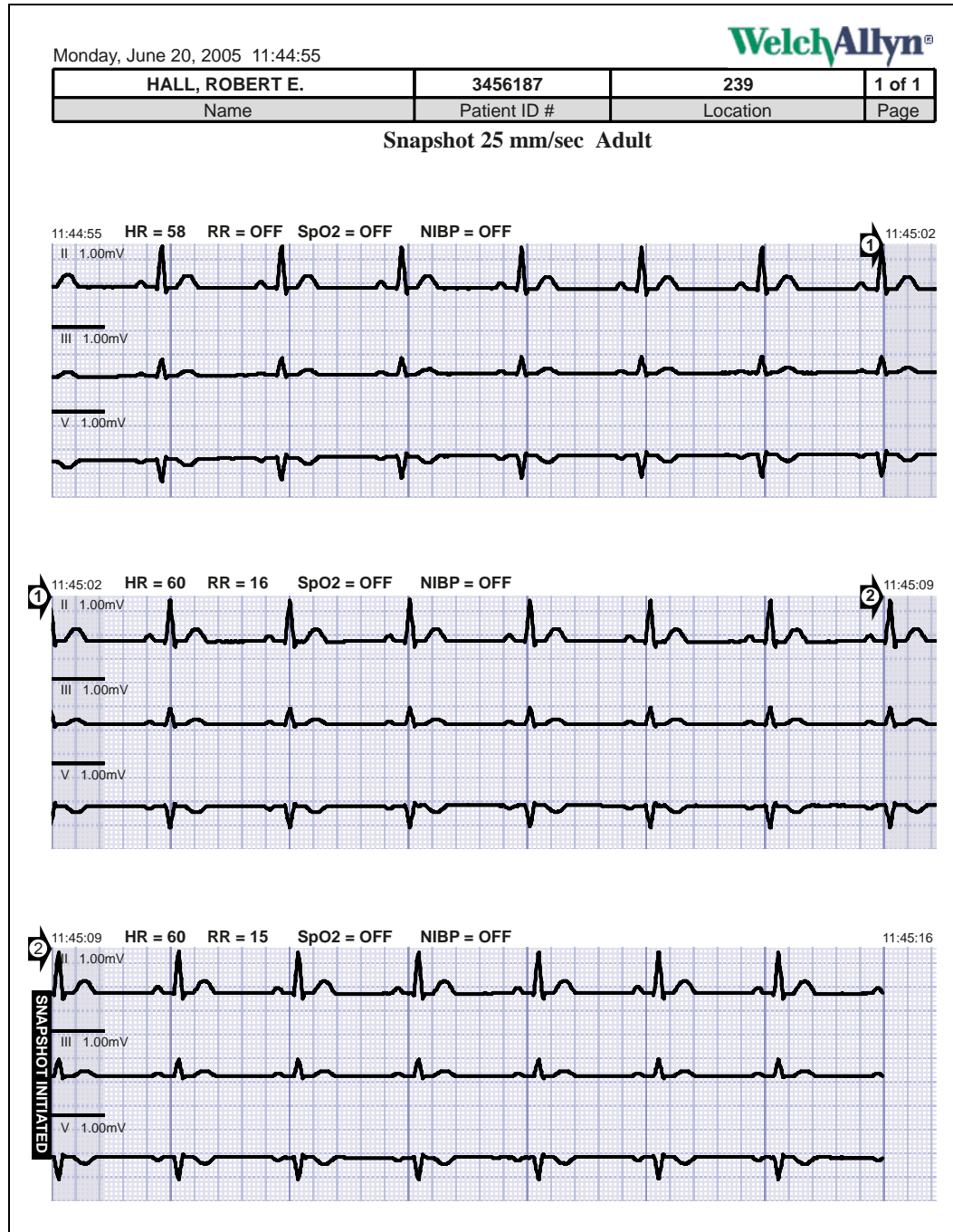
SpO<sub>2</sub> spot check- alarm condition

SpO<sub>2</sub> spot check - normal

NIBP measurement with SpO<sub>2</sub>

Final trend row

Figure 99. Printout (Snapshots Page)



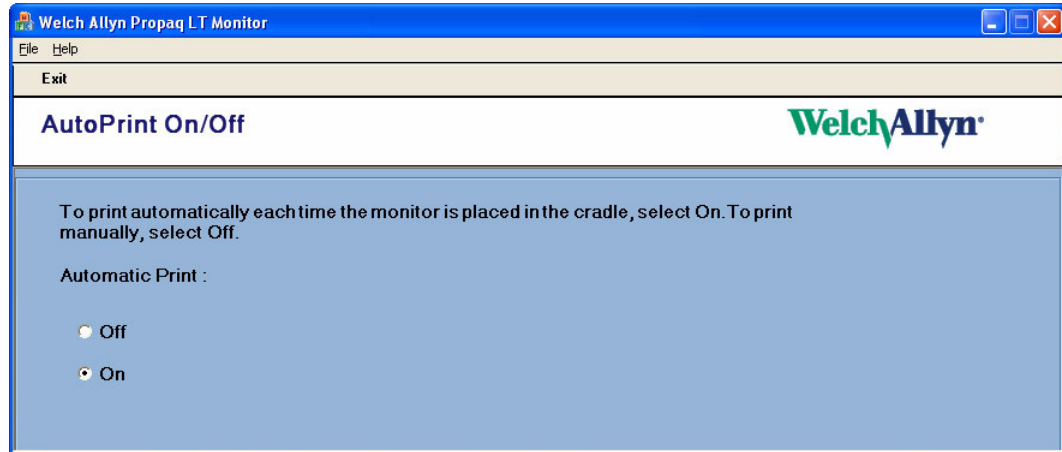
# AutoPrint Options

## Enable/Disable AutoPrint

To enable or disable the AutoPrint function:

1. **Start -> All Programs -> Welch Allyn -> Propaq LT Monitor -> AutoPrint On-Off**

Figure 100. AutoPrint On/Off



2. Click **On** or **Off**.

You can use the AutoPrint Utility to print automatically (the default function) or manually.

## Printing Manually

To print manually:

1. **Start -> All Programs -> Welch Allyn -> Propaq LT Monitor -> AutoPrint On-Off**
2. Click **Off**.
3. **Start -> All Programs -> Welch Allyn -> Propaq LT Monitor -> Print Snapshots and Trends**

## Canceling a Print Request

When the utility receives a print request, it immediately uploads patient data from the monitor to the PC and presents a print dialog. You have 10 seconds to cancel the print request (which automatically exits the AutoPrint Utility). If you do not cancel, the utility prints the patient data.

## When Uploading is Complete

When the data has been uploaded and sent to the printer, the utility presents the options to reprint the current data, print the data from another monitor, or exit the utility.

If you select to reprint, the data is printed again.

If you select to print data from another monitor, the utility prompts you to replace the monitor in the cradle with another monitor.

**Note** When the utility uploads the patient data from the monitor to the PC for printing, the data is deleted from the monitor. If you insert another monitor and upload the data from it, the data from the previous upload is lost.

If you select to exit, the utility exits.

If you do nothing for one minute after the data is uploaded to the PC, the utility exits.

## Creating a PDF of Patient Data

This procedure requires a PC connected to a monitor and cradle via a USB cable. The Welch Allyn AutoPrint Utility must be installed on the PC, but not running. The cradle must include the USB data transfer option.

### To Create a PDF of Patient Data

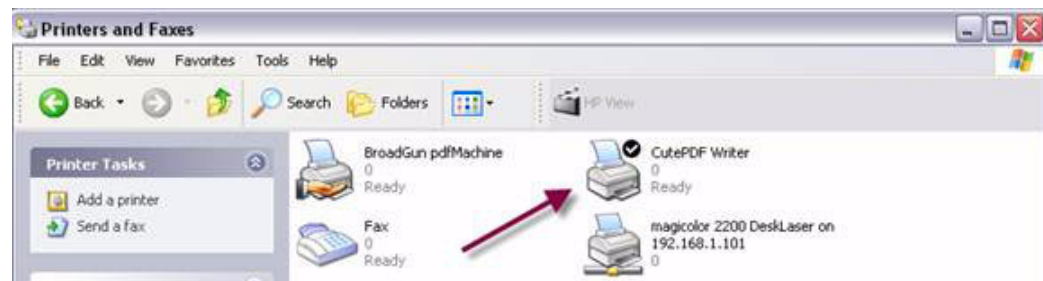
1. On the PC, install a PDF writer tool.

Many PDF writer tools are available. For example, you can find PDF writer tools at the following web locations:

- [www.pdf995.com](http://www.pdf995.com)
- [www.cutepdf.com](http://www.cutepdf.com)
- [www.adobe.com](http://www.adobe.com)

Welch Allyn does not recommend one PDF writer tool over another.

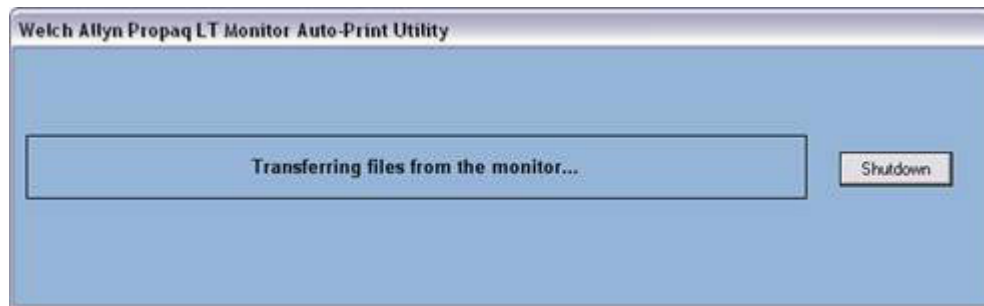
2. On the PC, change the default printer to the newly installed PDF writer, as follows:
  - a. Open the **Control Panel**.
  - b. Double-click **Printers and Faxes**.



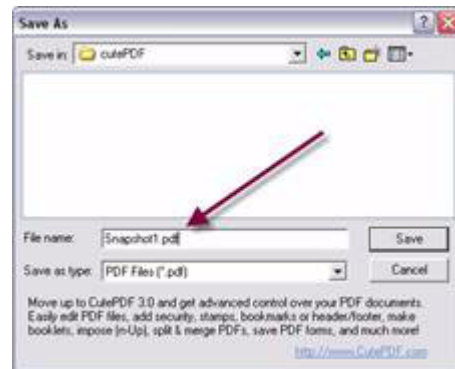
- c. In the **Printer and Faxes** dialog, right-click on the newly installed PDF writer and check **Set as Default**.
3. On the PC, start the AutoPrint Utility:

**Start > Programs > Welch Allyn > Propaq LT AutoPrint Utility**

The AutoPrint Utility immediately begins transferring data files from the monitor to the PC.



4. Individually save as a PDF file each snapshot file uploaded from the monitor.



These saved PDF files can now be printed, emailed, or viewed on-screen.