TeleRehab™ 2004

Users Manual

CARDIOPULMONARY MONITORING SYSTEM

TELEREHAB 2004

Users Manual

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PREFACE

Design

The ScottCare TeleRehab™ 2004 Cardiopulmonary Monitoring System is designed to allow monitoring and recording of electrocardiograph (ECG) rhythm strips and related information for patients undergoing an exercise therapy program. Patients are monitored via the use of medical telemetry exercise monitoring (TEM) equipment. This feature allows patients to comply with exercise prescriptions while exercising at a medical/rehabilitation facility near their home, or by returning to the primary medical facility to participate in an in-house cardiopulmonary rehabilitation program. The TeleRehab 2004 Cardiopulmonary Monitoring System includes a Program Management module that provides the means to print reports of exercise sessions, cumulative patient progress, and compliance.

Intended Use

The ScottCare TeleRehab 2004 Cardiopulmonary Monitoring System is intended for use as a group rhythm strip-monitoring device for remote and/or in hospital cardiac rehabilitation patients. The system is comprised of the computerized central unit located at the monitoring site, and the RF or Transtelephonic transmitting equipment being used by the patient.

The RF transmitting equipment is intended for use by a cardiac rehabilitation patient enrolled in a group rhythm strip-monitoring program. These transmitters are only to be used under the instruction and supervision of qualified personnel. **Federal law restricts this device to sale by or on the order of a physician.** (Qualified personnel are defined as hospital or clinical personnel who have received training in the proper application and use of this equipment).

Diagnostic Use Warning

ScottCare Patient Equipment is designed to amplify and process rhythm strips. The shape of transmitted ECG waveforms may be affected by body movement causing intermittent electrode contact or by other factors external to the Transmitter module. ACCORDINGLY, SCOTTCARE MAKES NO CLAIMS OR WARRANTIES, EXPRESS OR IMPLIED (INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE), AS TO THE QUALITY OF THE ECG SIGNAL RECEIVED, OR AS TO ITS EFFECTIVENESS AS A DIAGNOSTIC TOOL.

System Limitations:

The ScottCare TeleRehab Advantage monitoring system is capable of multi tasking, however, as with all computer systems, there are limitations. Changes to the TeleRehab Advantage configuration files should not be accomplished if any component of the system is in use, whether a monitoring terminal or a work station being utilized for use of the program management applications.

The ScottCare TeleRehab Advantage monitoring system is designed to extensively utilize the multi tasking capabilities of the Windows XP Professional operating system. As a result, it is possible that events may occur that cause what appear to be software anomalies that, in reality, are a result of the interaction between the Advantage system software and the operating system. Although **rare**, these idiosyncrasies can be a source of frustration for the equipment operator.

Examples include:

- When using the mouse and/or touchscreen to provide manipulation of the Advantage system, it is possible to provide commands via clicking of the mouse or touching of the touch screen monitor, faster than the system can respond. In a small number of cases, the operating system will overload with a backup of input commands producing undesirable results. Although the software has been 'hardened' to ignore commands when too many commands are backed up, system crashes are still a possibility.

  To avoid these undesirable results, one should be patient when manipulating the Advantage system, and not provide a new command until the last command has been satisfied.

- It is possible for the interaction between the Advantage software and the operating system to cause the random discontinuation of the recording of one or more sessions when monitoring several patients at once. The Advantage system continuously checks the recording function to verify that the recording of each session is taking place. When a discontinuation occurs, the system will provide notification as follows:

  If you wish to continue monitoring without recording, left click on the 'Cancel' button.

If left clicking on the 'Retry' button only results in this window being displayed again, call ScottCare customer service (800-243-9412) for assistance.

Disclaimer of Liabilities

The ScottCare Corporation, its parent, affiliates, agents, officers and employees, shall not be liable for special, incidental, or consequential loss or damages of any kind resulting from or caused by any defect, failure or malfunctioning of the equipment described herein, whether a claim for such loss or damages is based upon warranty, contract or otherwise. The ECG/Receiver system, manufactured by The ScottCare Corporation, is designed to amplify and transmit Rhythm Strips and THE SCOTTCARE CORPORATION MAKES NO CLAIMS OR WARRANTIES, EXPRESS OR IMPLIED (INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) AS TO ITS EFFECTIVENESS AS A DIAGNOSTIC, LIFE SAVING OR LIFE SUPPORT TOOL.

FCC Part 15 Information

The Telemetry Transmitter provided complies with the limits for a biomedical telemetry device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

Operation of the Telemetry equipment is subject to the following two conditions:

1. The Telemetry Transmitter may not cause harmful interference.

2. The Telemetry Transmitter must accept any interference received, including interference that may cause undesired operation.

Any changes or modification not expressly approved by ScottCare could void the user's authority to operate the telemetry equipment.

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Important Safety Information

Read all of these instructions before operating the equipment, and save these instructions for later reference. There are many instructions that relate to your safety.

WARNING: Use of Computer for Other Software

The Computer(s) used with the Tele-Rehab 2004 Cardiopulmonary Monitoring System have excess capacity that might be used to run other software applications. It should be noted that the installation and use of software or hardware other than that installed by

ScottCare might compromise system performance or cause system failure. ScottCare recommends against using any workstation as a common computer, and is not responsible for any problems or system failure caused by use of other software not expressly approved in writing by ScottCare for use on its systems.

WARNING.PACEMAKER PATIENTS.

Rate meters may continue to count the pacemaker rate during occurrences of cardiac arrest or some arrhythmias. Do not rely entirely upon rate meter alarms. Keep pacemaker patients under close surveillance. See this manual for disclosure of the pacemaker pulse rejection capability of this instrument.

TELEREHAB 2004 MONITORING SYSTEM

Overview

The ScottCare TeleRehab Monitoring System Software is a comprehensive software package for use on the TeleRehab 2004 computer based cardiopulmonary monitoring system designed to provide monitoring capability specifically for patients involved in an exercise schedule prescribed as a part of a cardiac or pulmonary rehabilitation program. Monitoring takes place while the patient exercises locally within an exercise facility via the use of telemetry.

QRS Detection

The TeleRehab 2004 Monitoring System software detects QRS complexes in accordance with the AAMI standard for Cardiac Monitors, Heart Rate Meters and Alarms (EC-13).

Heart Rate

The TeleRehab™ 2004 Monitoring System software detects the patient heart rate by counting the QRS complexes detected and displaying a running average of the last four (4) intervals. Sampling occurs constantly and the display is adjusted with each interval. If the patient's heart rate exceeds a prescribed high limit value or drops below a prescribed low limit value, the QRS complex and rate indication will turn RED and an alarm will sound to alert the system operator that the rate limit has been violated.

Arrhythmia Detection

Rate related arrhythmias generally create a change in the R-to-R interval that is detectable by the system. As the Tele-Rehab 2004 Monitoring System software monitors the interval between QRS complexes, a change in R-to-R interval of greater than 25% will cause the displayed QRS complex to turn blue and an alarm to sound to alert the system operator that an event has occurred that might require attention. Rates displayed while the heart rate indicator is blue will not be accurate heart rates.

Artifact

In order for the heart rate detection system and arrhythmia detection systems to perform at optimum efficiency, artifact must be minimized. Detected intervals that make no sense to the system will cause the display grid and rate indication to turn orange. Rates displayed while the display is orange will not be accurate. Some forms of artifact are of a type that will be detected by the system as potential arrhythmia in which case the QRS complex will turn blue and a soft alarm will sound giving a false indication of arrhythmia. Rates displayed while the QRS complex is blue will not be accurate.

Control of Artifact

It is essential that artifact be minimized to keep from interfering with the monitoring of the exercising patient. Some types of artifact can cause the system to react as though it were seeing ectopy, and other types cause the system to identify as erroneous, data generated when artifact is detected. In general, artifact can be controlled. There is always the patient who generates artifact no matter what you do; however, those are normally few and far between.

Several parameters can be involved in the production of artifact. Following are some causes and cures:

Preparation of the Patient - The greatest cause of artifact is inadequate contact between the patient and the electrodes. This condition is evident when artifact disappears when the transmitter is attached to a patient simulator where optimum contact is assured. Some causes of inadequate contact include the use of outdated pre-gelled electrodes where the conducting medium is dried out, or inadequate preparation of the area where the electrode is to be placed.

Alcohol is a commonly used means of patient prep. Although alcohol kills bacteria and cleans the area, alcohol tends to dry out the skin thereby increasing the skins electrical resistance. Roughing the area by rubbing with a gauze pad or terry cloth towel often helps to reduce skin resistance when alcohol is to be used as the prep medium.

The best prep is usually done for stress test patients and is normally extensive in that the skin is severely stressed before application of electrodes.

ScottCare recommends that a commercially available prep medium such as "Omniprep™" or "Nuprep™" be used with the cardiopulmonary rehab patient. When adequately prepped, artifact is rarely a problem.

Electrode Position - Often electrodes are placed on the patient's chest area over the pectoral muscle and/or over the soft area under the rib cage. Artifact is then created when the patient exercises due to the contraction of the pectoral muscle.

ScottCare recommends that electrodes be placed above the pectoral muscle just under the clavicle for the right arm and left arm leads, and on the lower rib area for the Left Leg and/or Right Leg lead. This placement will not normally have a significant effect the QRS complex but will eliminate motion artifact caused by muscle movement.

Cable Position - Patient Cables are frequently run from the patient transmitter, under the shirt, to the electrode site. When the lead wires are against the skin, it is possible for artifact to be introduced due to the rubbing of the wire against the skin during exercise.

ScottCare recommends that wires be run in such a manner as to minimize contact between the skin and the patient lead wire.

Transmitter/Cable Motion – Transmitters are provided with belt clips and can be worn on the belt line, placed in a pocket, placed in a pouch, or worn wherever comfortable and well supported. Transmitters that are not well supported can move about freely which can create motion artifact.

ScottCare recommends that transmitters be attached to the belt line off the hip to the rear in order to minimize jostling by the leg during exercise. If a pouch is used, it should be secured to the patient in a location least susceptible to jarring during exercise such as the center of the upper chest area.

Out of Range or Low Battery – Depending upon the specific type of transmitter in use, transmitter range is approximately 100 feet depending upon the environment and what material is between the transmitter and receiver. If the patient is "out of range" or if the battery voltage drops below an acceptable level, the QRS signal will be diminished and may be over written by artifact. Normal battery life is approximately 70 hours. When artifact appears as though the transmitter is not connected, try changing the battery and patient lead in that order. If artifact persists, call ScottCare for assistance. Refer to the section in the service manual regarding the specific transmitter in use for more information.

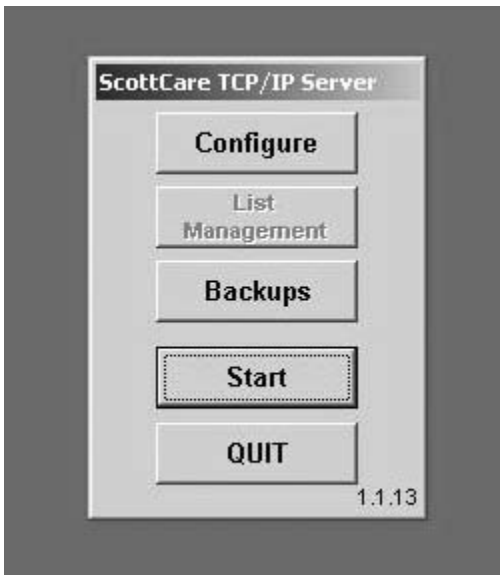
TELEREHAB 2004 MONITORING SYSTEM SET-UP

The Server Application

The Server application manages network communication, allows management of name lists, provides the back up utility, and contains some of the system configuration utilities.

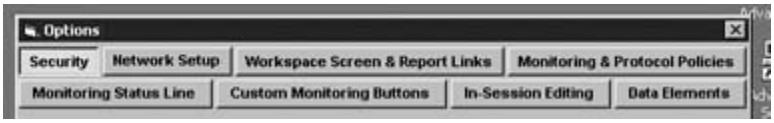
If the TeleRehab 2004 Monitoring System is to run on a customer network, the Server Application will be installed on a designated server computer.

If the TeleRehab 2004 Monitoring System is to function as a closed network, the Server application will be installed on the computer designated as the primary workstation/server.



Configuring the Server

Left click on '*Configure*' to enter the Options Screens. The tab section across the top of the screen will allow access to the various configuration options.



- **Security**

***Establishing a Password**:* The security option provides the ability to use a password to grant access to the other Server configuration options. To use the Server password feature, left click on the 'Use Password' block inserting a check mark. Enter the password to be used in the 'Enter Password' block, and press the <Enter> key. Left click the 'Apply' button to register the password within the system.

The next time the Options Screens area is displayed, it will be necessary to enter the password to access any of the server configuration options.

Changing the password: To change the password, enter the existing password, and left click on the 'Use Password' block to remove the check mark. Left click on the 'Apply' button. Next, left click again on the 'Use Password' block inserting a check mark. Enter the new password to be used in the 'Enter Password' block, and press the <Enter> key. Left click the 'Apply' button to register the new password within the system.

The next time the Options Screens area is displayed, it will be necessary to enter the new password to access any of the server configuration options.

When finished with the password option, left click on 'OK' to leave the security configuration screen and start the server application.

You can leave the security configuration screen at any time by clicking on the 'Cancel' bar.

You can activate the security configuration screen at any time by clicking on the 'Server' bar at the bottom of the screen, and then click on 'Configure'.

- **Network Setup**

The upper portion of this screen is the ***program identification*** area. The ***Program Identification*** area allows user identification that will appear on the various screens and reports:

Left click in the block following 'Facility Name', and type in the name of the user facility. (e.g. Modern General Hospital).

Left click in the block following 'Program Name', and type in the name of the program. (e.g. 'Cardiopulmonary Rehabilitation' or 'Healthy Hearts').

The lower portion of this screen is the ***configuration*** area. The first line is entitled **'File Path'** and asks for the location of the patient database. During factory setup of the ScottCare 2004 System software, a default directory entitled TB is installed. If the standard ScottCare database is to be used, the block under the **'File Path'** should indicate the path to the TB directory. E.g. C:\TB, or F:\TB.

The **System ID Code** identifies the system on which patient files are created, and defaults to SS.

The line entitled **'Server IP address:'** displays the IP address of the computer on which the server application is located.

The line entitled **'Software Version:'** displays the current software version and date of release.

The check box labeled **'Show IP Status'** is used to determine whether or not the status of the server will be displayed on the computer screen (in the background) while the computer is in use. This feature is factory set and should not be changed without direction from ScottCare.

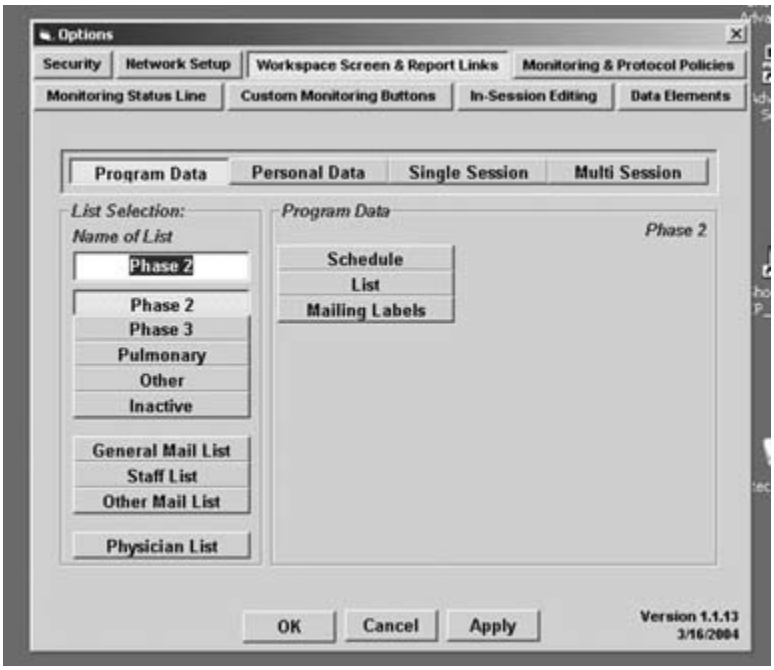
Once the appropriate data has been entered, click on 'Apply'. Click on 'OK' to leave the configuration screen.

You can leave the configuration screen at any time by clicking on the 'Cancel' bar.

You can activate the configuration screen at any time by clicking on the 'Server' bar at the bottom of the screen, and then click on 'Configure'.

- **Workspace Screen and Report Links**

The **Workspace Screen and Report Links** tab provides access to the utility that allows the user to define the labels to be used in identification of the various lists and report links for each data handling area within the system. It also provides the means to identify what screen or report will be printed or displayed when that specific area is selected for use.



The Workspace screen & report links utility screen displays blocks with labels for the four data handling areas provided by the system:

Program Data – This area provides functions that are related to the overall program as opposed to an individual. Schedules and lists are available in this area as well as compliance reports.

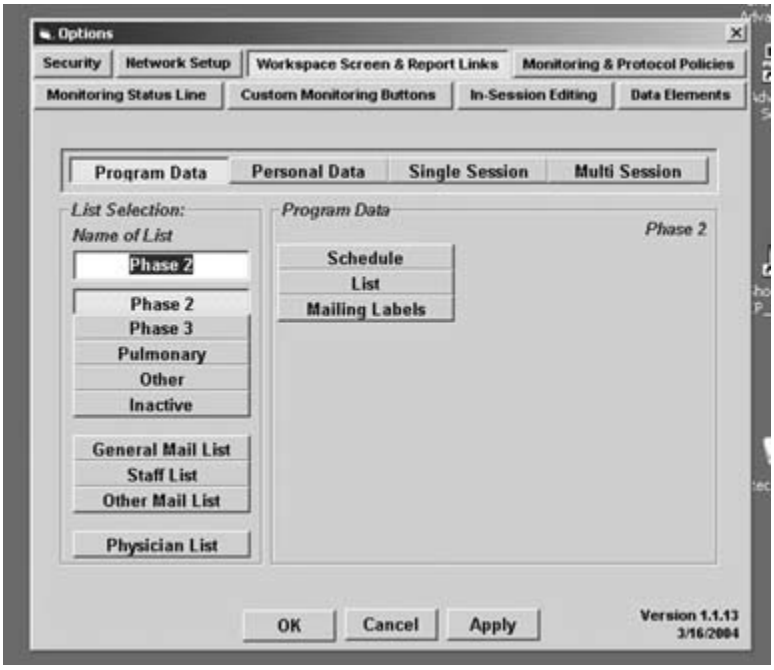
Personal Data – This area provides the means of entering and editing personal information on patients and/or other personnel when it is desired to maintain personal data within the system. Entering new patient data, changing status, and the ability to print a data sheet containing personal data is also provided by this area.

Single Session – This area contains information relating to the daily report function including unmonitored reports and full disclosures of recorded sessions.

Multi Session – This area allows the collation of data to prepare reports involving data collected in more than one daily session report.

Links are established for each of the four major areas based on the type of data to be entered and reports to be generated.

Program Data Links



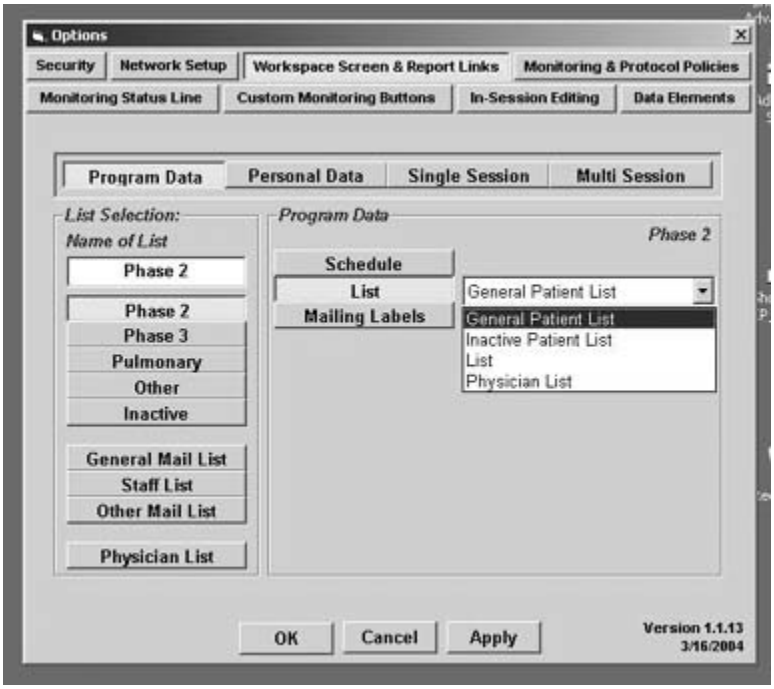
The **List Selection** area provides names for each of the lists maintained by the system. Names can be changed to accommodate your program needs. To change a list name, left click on the name that you wish to change.

The current name will appear in the white block at the top of the list and will be highlighted in black.

Type the name desired to identify the selected list and press the <Enter> key. The new name will appear in the selected block.

The **Program Data** area identifies the activities available for the selected list. Left clicking on one of the program data buttons will cause a third block to appear with a drop down window. The list provided on the drop down window is a list of forms available for selection. (See the section on **Utilities and Design** for more information on report forms).

The report form selected for each area will be the default form. When the system is asked to print a schedule, a list, or mailing labels for a group of patients, the form used will be determined by the settings in this utility.



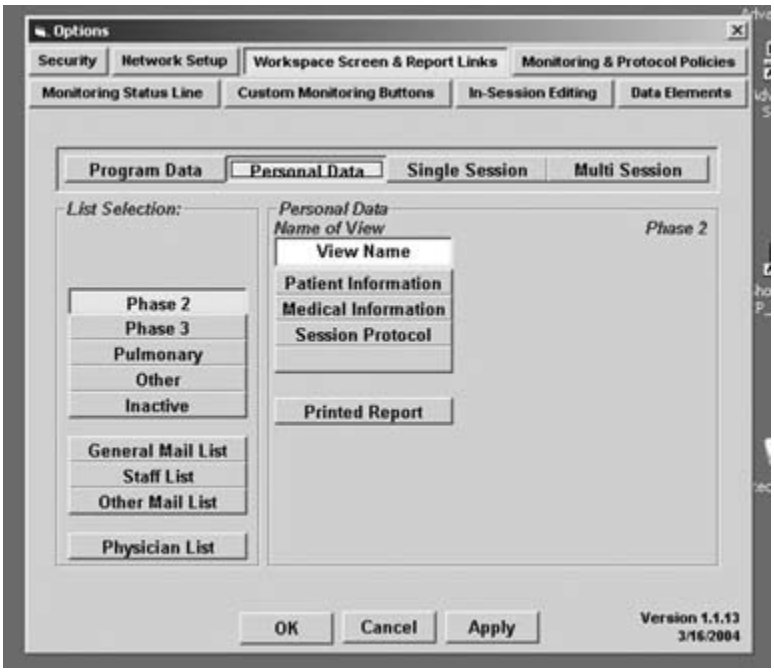
Personal Data Links

The **List Selection** area provides buttons for each of the lists maintained by the system.

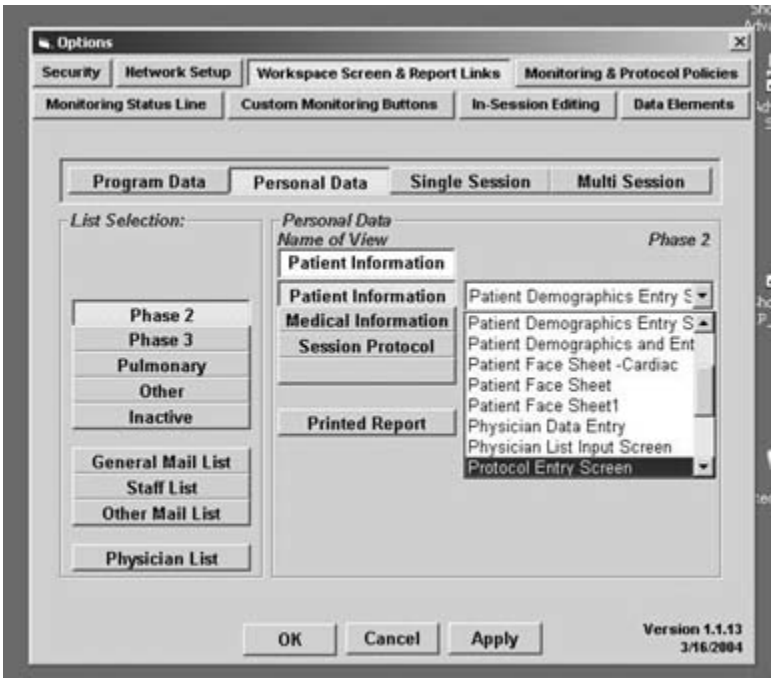
The **Personal Data** area provides names for the various screen views available for input of personal data. Names can be changed to accommodate your program needs. To change a view name, left click on the name that you wish to change.

The current name will appear in the white block at the top of the list and will be highlighted in black. This feature functions the same as *list selection* in program data links.

Type the name desired to identify the selected list and press the <Enter> key. The new name will appear in the selected block.



Left clicking on one of the four personal data buttons will cause a third block to appear with a drop down window. The list provided on the drop down window is a list of forms available for selection (See the section on **Utilities and Design** for more information on report forms).



The report form selected for each area will be the default form. When entering data into the system, the screens viewed for data entry will be determined by the form selected in this utility.

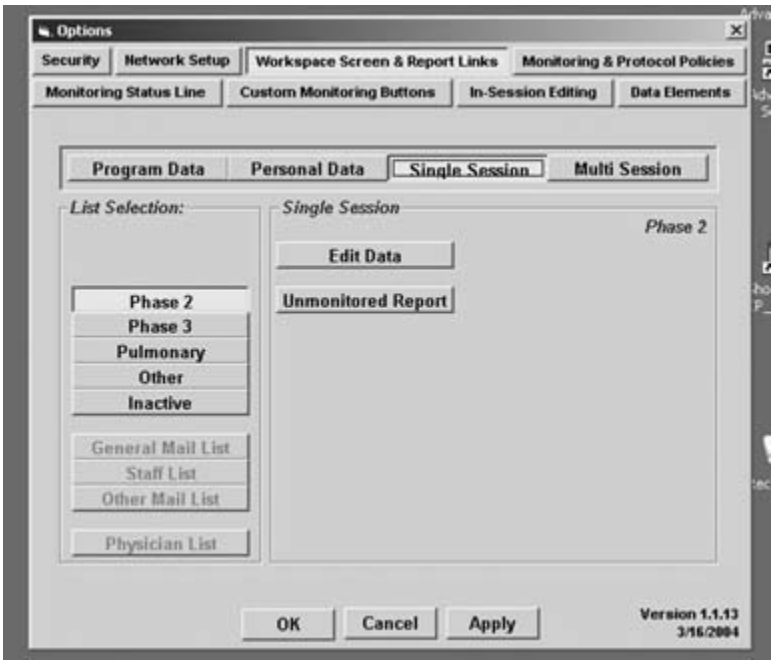
Left clicking on the button labeled 'Printed Report' will also cause a third block to appear with a drop down window. The list provided on the drop down window is a list of forms available for selection (See the section on **Utilities and Design** for more information on report forms).

The report form selected for this area will determine the report form to be utilized as the 'Patient Face Sheet' or 'Patient Information Report'. When asking the system to print patient data, the report form printed will be determined by the form selected in this utility.

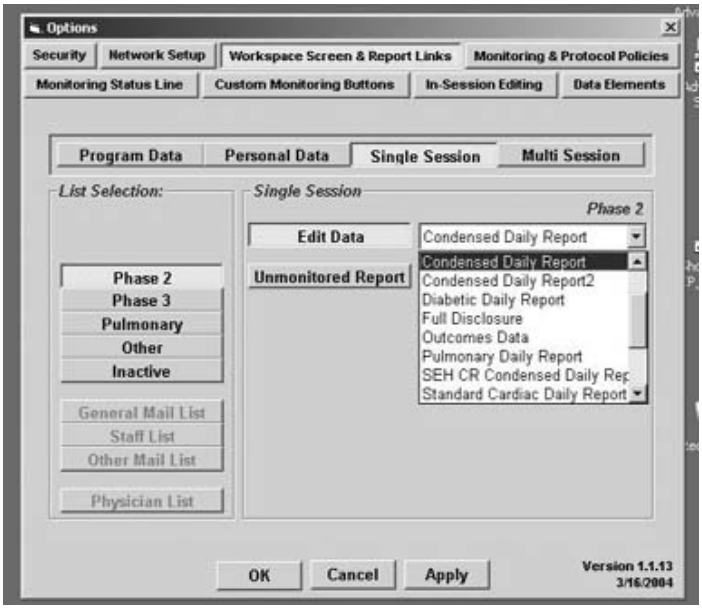
Single Session Links

The **List Selection** area provides buttons for each of the lists maintained by the system. Only those that are applicable to single session reporting are available for selection.

The **Single Session** area provides a button for editing report data and a second button to identify the form to be used when preparing an unmonitored report.



Left clicking on the 'Edit Data' button will provide a drop down window with a list of single session report forms available for use. The report form selected for this area will be assigned to all new patients in the selected list and will appear the first time a session is edited for that patient.

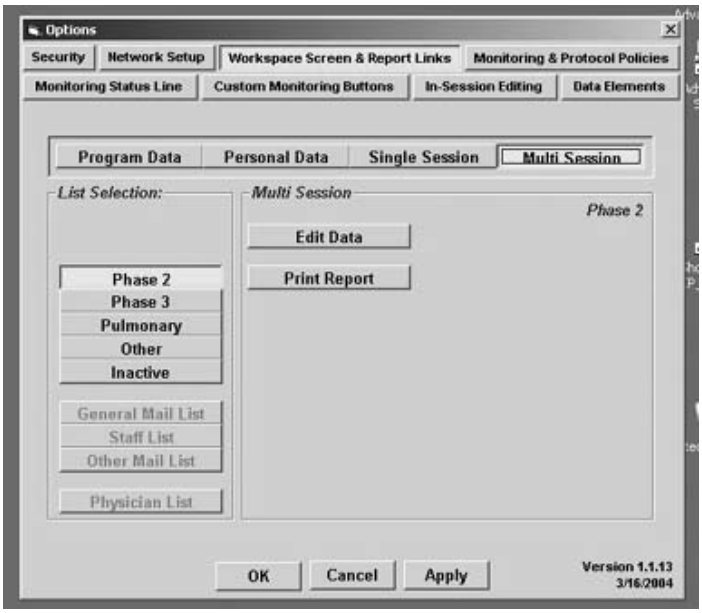


Left clicking on the 'Unmonitored Report' button will also provide a drop down window with a list of single session report forms available for use. The report form selected will be identified as the form to use each time the system is asked to provide an unmonitored report on any patient in the selected list.

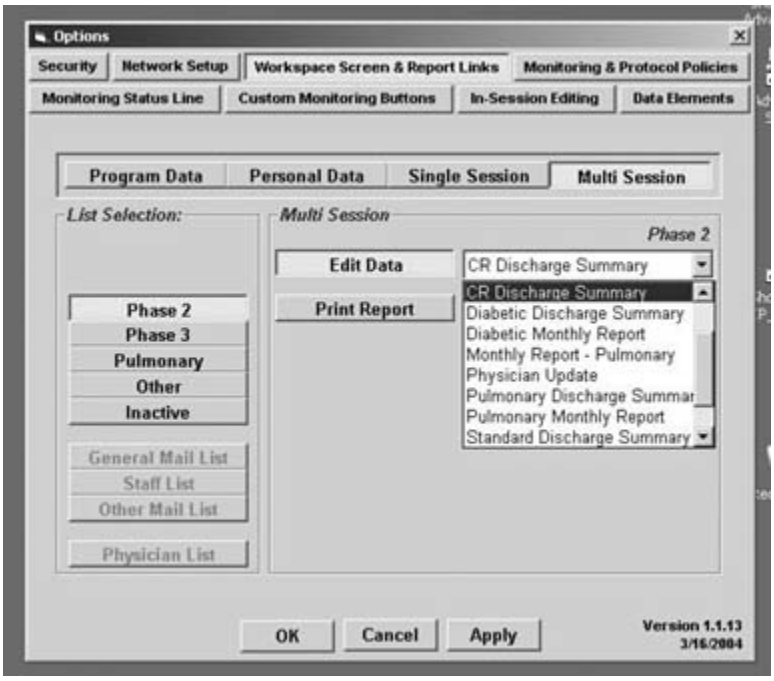
Multi Session Links

The **List Selection** area provides buttons for each of the lists maintained by the system. Only those that are applicable to multi session reporting are available for selection.

The **Multi Session** area provides a button for editing report data and a second button to identify the default form to be used when preparing a multi session report.



Left clicking on the 'Edit Data' button will provide a drop down window with a list of multi session report forms available for use. The report form selected for this area will be assigned to all new patients in the selected list and will appear the first time a session is edited for that patient.



Left clicking on the 'Print Report' button will also provide a drop down window with a list of multi session report forms available for use. The report form selected will be the default form to be printed each time the system is asked to provide a multi session report on any patient in the selected list.

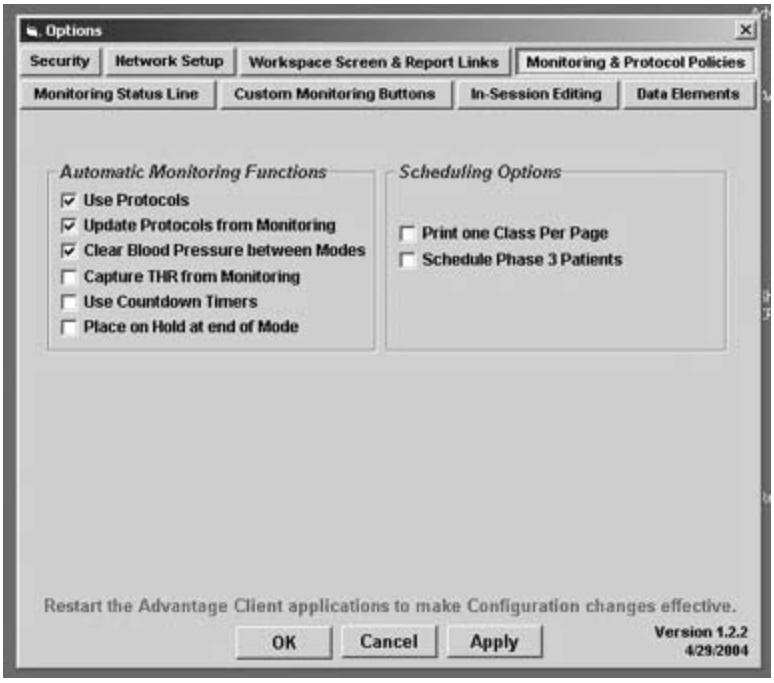
Once the appropriate data has been entered, click on 'Apply'. Click on 'OK' to leave the configuration screen.

You can leave the configuration screen at any time by clicking on the 'Cancel' bar.

You can activate the configuration screen at any time by clicking on the 'Server' bar at the bottom of the screen, and then click on 'Configure'.

- **Monitoring and Protocol Policies**

The **Monitoring and Protocol Policies** tab provides entry into the utility that establishes a set of *rules* regarding use or non-use of many of the features of the system.



The Monitoring and Protocol Policies screen contains a number of check blocks and features that allow the selection of various options available in the system.

Automatic Monitoring Functions

Use Protocols – If selected, this option will allow the system to interrogate a patient protocol for workload values for each modality. The value indicated in the patient protocol will be used as the default when a patient is indicated to be initiating exercise on an exercise device listed in the protocol.

Update Protocols from monitoring – If selected, this option allows the system to update workloads indicated in the patient protocol during the monitoring process. It should be noted that the system must be recording a session, and the protocol must be being followed for this function to work properly.

Clear Blood Pressure Between Modes – If selected, the system insures that no blood pressure values are displayed as values taken during exercise on a specific modality unless entered while the patient is indicated to be exercising on that specific modality.

Capture THR from Monitoring – If selected, The target heart rate values indicated in the patient protocol when the patient starts a recorded session will be replaced by the target heart rate calculated by the system for the current session. NOTE: Target heart rates such as R+30 or a target heart range will not be allowed.

Use Countdown Timers – If selected, the system will interrogate the patient session protocol for the exercise time prescribed for an exercise device and when that device is selected as the device currently to be used by the patient, Start the timing indicator at that number and count down to 0.

Place on Hold at End of Mode – If selected, the system will automatically cause the system to stop timing as active exercise time and indicate that such timing has halted. Indication is accomplished by displaying that the timer is in 'HOLD', when the exercise time indicated in the patient protocol for a device terminates.

Scheduling Options

Print One Class Per Page – If selected, the system will group patients together by scheduled starting times and print them together as a separate report. E.g. All 8AM patients will be printed out separately from any of the 9AM patients.

Schedule Phase 3 Patients – If selected, the system will provide scheduling for phase 3 patients.

- **Monitoring Status Line**

The **Monitoring Status Line** tab provides entry into the utility that allows identification of the resources to appear in the monitoring status line on the monitoring screen.

This utility allows the user to identify the data elements that are to be displayed on the monitoring screen relating to a patient who is being monitored. The layout of the utility includes:

Monitoring Status Line – a representation of what will appear on the monitoring screen during monitoring.

Items Available for Status Line – a block containing a list of data items eligible for inclusion in the Monitoring Status Line.

# of Characters in Data – allows the reservation of space for the information that is to be displayed.

Label – Allows the name of the displayed data to be abbreviated or otherwise changed.

The system is provided with a monitoring status line preset at the factory.

To **delete** an item from the Monitoring Status Line, left click in the Monitoring Status Line on the data element you wish to delete and then lift click on the Delete button. The data item will be removed from the Monitoring Status Line.

To **add** an item to the Monitoring Status Line, left click in the 'Items Available for Status Line' on the data element that you wish to add. The current item name will appear in the block after 'Label'. Edit the name of the item if desired to define the label to be used for this data element in the Monitoring Status Line.

Enter the number of characters to be reserved for data in the block after '# of Characters in 'Data' block.

Left click on the Add block, and the new data element label will be placed in the Monitoring Status Line.

Left click and hold the new data element label and move it to the desired location.

To **change** an item in the Monitoring Status Line, left click in the Monitoring Status Line on the data element you wish to change and then lift click on the Change button.

Left click in the 'Items Available for Status Line' on the data element that you wish to change to. The new data element will replace the selected data element in the Monitoring Status Line.

Changes to the new data element label and # of characters in Data blocks can still take place as described above.

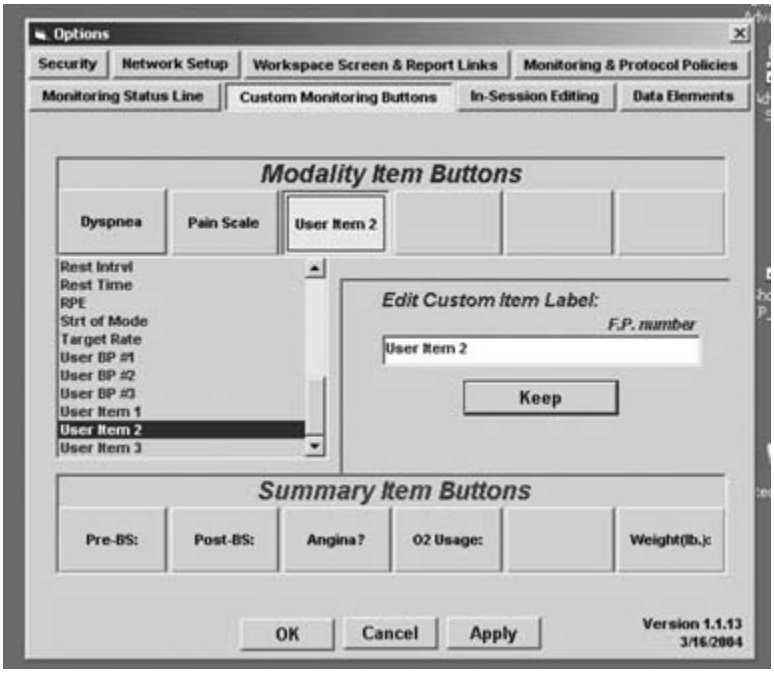
When you are satisfied with the contents of the Monitoring Status Line, left click on the 'Apply' button at the bottom of the screen.

Left click on the 'OK' button to leave the Monitoring Status Line Utility.

Left click on the 'Cancel' button to leave the Monitoring Status Line Utility at any time.

- **Custom Monitoring Buttons**

The **Custom Monitoring Buttons** tab provides entry into the utility that allows the user to define both Summary and Modality data elements that can be entered during a monitoring session through the use of touch buttons.



Modality Item Buttons – There are six modality buttons available for customization.

To **Add** a label to a modality button, left click on the blank button to be modified and the list of modality data items available for use appears.

Left click on the modality data element to be used in the modality button and the name of the data item will appear on the button.

To **Delete** a label from a custom modality button, left click on the item to be deleted and press the 'Del' key. The label will be removed from the button.

To **Change** a label on a custom modality button, left click on the button to be changed and then left click on the desired data element label in the list of data items available. The new data label will appear in the custom modality button.

Note that the list of modality data items available for use includes several labels indicating 'User Defined'. There are three categories of user-defined items:

User BP items – to be utilized for blood pressure style data entry.

User Integer – to be utilized for numeric style data entry.

User Item – to be utilized for alphanumeric style data entry.

To rename a User label, left click on the label to be renamed and then left click on the 'Edit Custom Item Label' block that appears.

Type in the name to be used and left click on the 'Keep' button. The new label will appear in place of the 'User' label. The newly named data element can be added, changed, or deleted as described above.

Summary Item Buttons

There are six summary buttons available for customization.

To **Add** a label to a summary button, left click on the blank button to be modified and the list of summary data items available for use appears.

Left click on the summary data element to be used in the summary button and the name of the data item will appear on the button.

To **Delete** a label from a custom summary button, left click on the item to be deleted and press the 'Del' key. The label will be removed from the button.

To **Change** a label on a custom summary button, left click on the button to be changed and then left click on the desired data element label in the list of data items available. The new data label will appear in the custom summary button.

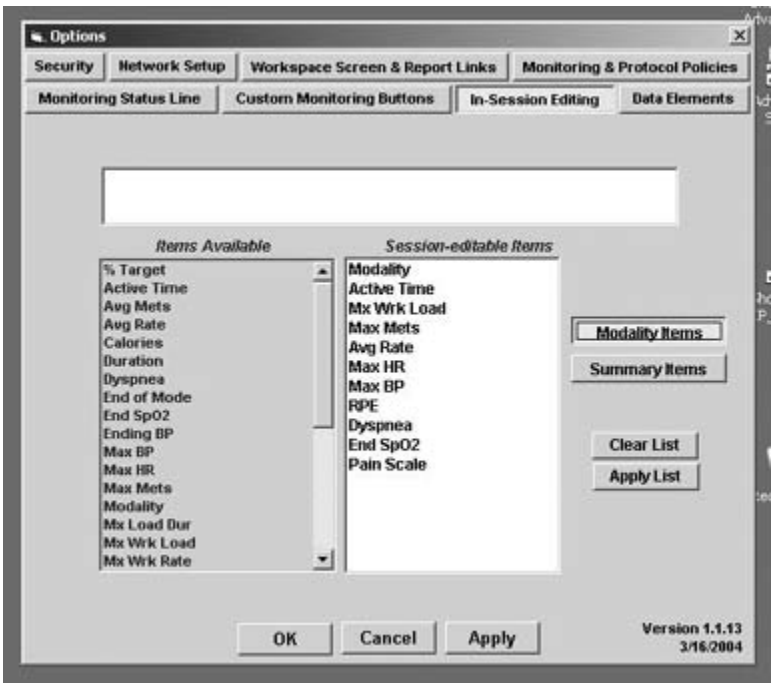
When you are satisfied with the contents of the Custom Monitoring Buttons, left click on the 'Apply' button at the bottom of the screen.

Left click on the 'OK' button to leave the Custom Monitoring Buttons Utility.

Left click on the 'Cancel' button to leave the Custom Monitoring Buttons Utility at any time.

- **In-Session Editing**

The **In-Session Editing** tab provides access to the utility that allows the user to define both Summary and Modality data elements that can be edited from the monitoring screen while monitoring a session.



*To identify the **modality** items to be available for editing while monitoring:*

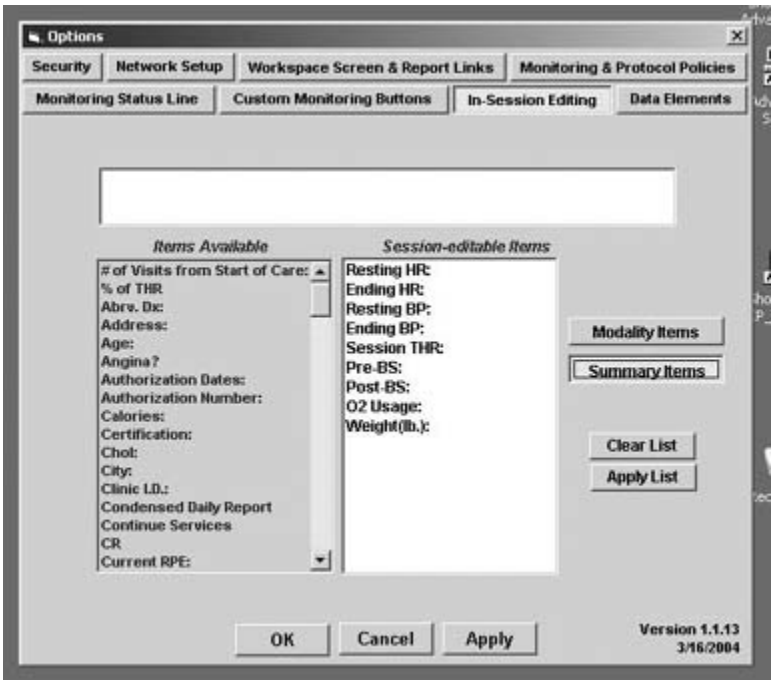
Left click on the Modality Items button.

Select items to be made available for editing from the list of items available by double left clicking on the name of the data item. The item will be transferred to the Session-Editable Items window.

To remove an item from the Session-editable Items window, left click on the item to be deleted and press the 'Del' key. The item will be deleted from the list.

To completely clear the list and start over, left click on the 'Clear List' Button.

When you are satisfied with the list of Session-Editable items, left click on 'Apply List'.



To identify the summary items to be available for editing while monitoring:

Left click on the Summary Items button.

Select items to be made available for editing from the list of items available by double left clicking on the name of the data item. The item will be transferred to the Session-Editable Items window.

To remove an item from the Session-editable Items window, left click on the item to be deleted and press the 'Del' key. The item will be deleted from the list.

To completely clear the list and start over, left click on the 'Clear List' Button.

When you are satisfied with the list of Session-Editable items, left click on 'Apply List'.

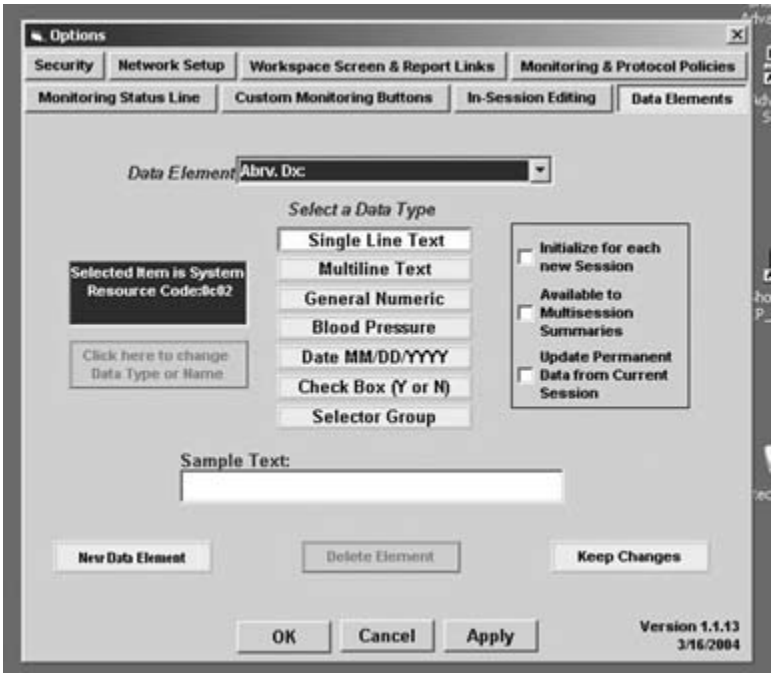
When you are satisfied with the contents of the In-Session Editing Utility, left click on the 'Apply' button at the bottom of the screen.

Left click on the 'OK' button to leave the In-Session Editing Utility.

Left click on the 'Cancel' button to leave the In-Session Editing Utility at any time.

- **Data Elements**

The utility that maintains a list of the data elements that can be used in the various reports and screens is called the Data Element Editor.



At the top is the 'Data Element' window. The drop down feature will list all of the accessible resources in the system of the selected type. The item appearing in the window is the current active data element.

Down the middle is a list of buttons indicating the various data types that can be created and used by the system.

To the left in the darker box is information regarding the selected resource item.

Below the information box is a button allowing you to change data type or data element name.

To the right are check boxes allowing specific use for each data item.

Caution: Once resource elements are created, moving them between resource types may cause data elements that no longer make sense. ScottCare recommends that resource elements that require change of resource type be done under the guidance of ScottCare technical support.

Single Line Text Items

Single Line Text data items offer the greatest utility due to their ability to deal with diverse data. Data to be entered can be alpha or numeric and should be short text items that utilize a single line of space.

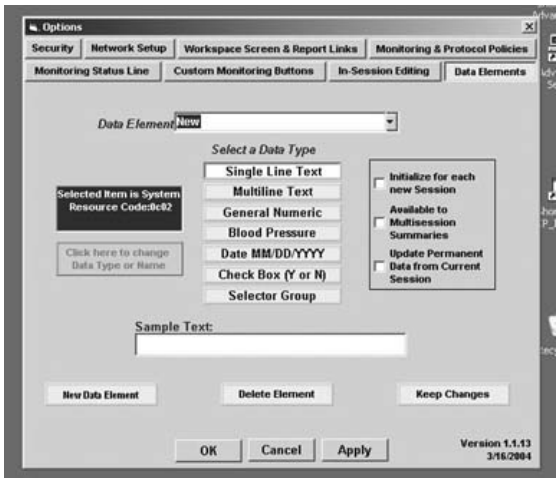
Single Line Text Resources can be identified to reset to a blank space at the start of each session. To do so, be sure that the 'Single Line Text' button is selected and click on the drop down window to display the list of single line text resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Initialize for each new Session' so that a check mark appears in the box. **Note: If a resource is identified to reset to a blank space at the start of each session, it cannot be identified for use to update a patient data file as described below.**

Single Line Text Resources are not allowed for use in Multisession Summaries and will not be available whether the block labeled 'Available to Multisession Summaries' is checked or not.

Single Line Text Resources used in the patient's data file can be updated from a current session. To allow the exchange of data, be sure that the 'Single Line Text' button is selected and click on the drop down window to display the list of single line text resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Update Permanent Data from Current Session' so that a check mark appears in the box. **Note: If a resource is identified to update a patient data file, it cannot be identified to start each session blank as described above.**

Adding Single Line Text Resources

Be sure that the 'Single Line Text' button is selected and left click on the 'New Data Element' button to get the screen below.



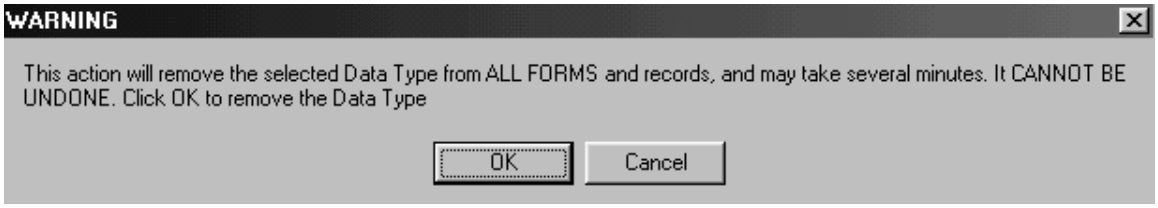
Type in the name of the new resource element and left click on 'Keep Changes'.

The new element will be added to the list of single line text data elements.

Deleting Single Line Text Resources

Be sure that the 'Single Line Text' button is selected and click on the drop down window to display the list of single line text resources available. Left click on the resource that you desire to delete so it is displayed in the *Data Element* window.

Click on 'Delete Element' and the system will present the following warning:



Click on OK to complete the removal of the selected resource.

Cancel will abort the removal process and return to the previous screen.

Changing the Name of a Single Line Text Resource

Be sure that the 'Single Line Text' button is selected and click on the drop down window to display the list of single line text resources available. Left click on the resource whose name you desire to change so it is displayed in the *Data Element* window.

Left click on the button labeled 'Click here to change Data Type or Name'.

Type the new name for the resource and click on 'Keep Changes'.

The resource will now appear on the list as the new item.

Multiline Text Items

Multiline text data items allow entry of multiple lines of data, either alpha or numeric. These data items are most often used for comment types of data.

Multiline Text Resources can be identified to reset to a blank space at the start of each session. To do so, be sure that the 'Multiline Text' button is selected and click on the drop down window to display the list of multiline text resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Initialize for each new Session' so that a check mark appears in the box. **Note: If a resource is identified to reset to a blank space at the**

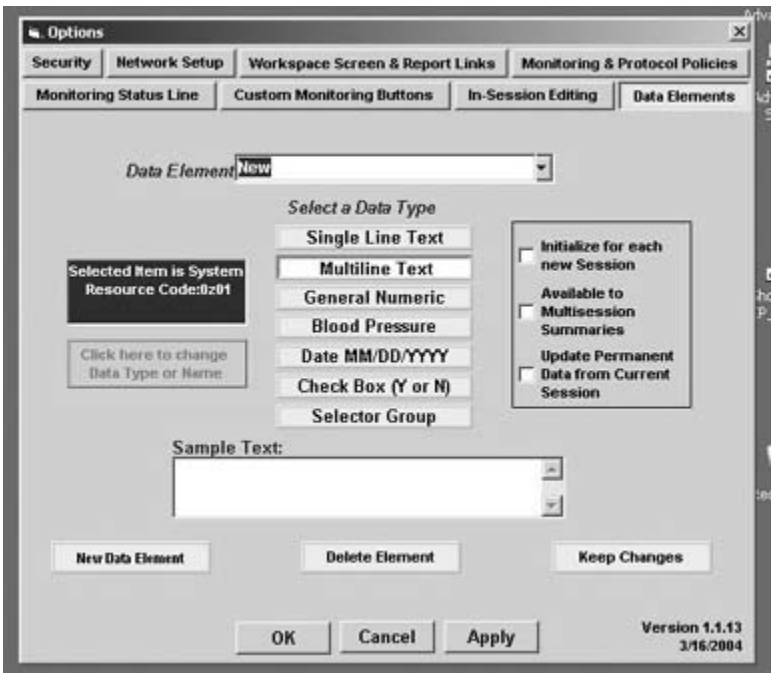
start of each session, it cannot be identified for use to update a patient data file as described below.

Multiline Text Resources are not allowed for use in Multisession Summaries and will not be available whether the block labeled 'Available to Multisession Summaries' is checked or not.

Multiline Text Resources used in the patient's data file can be updated from a current session. To allow the exchange of data, be sure that the 'Single Line Text' button is selected and click on the drop down window to display the list of single line text resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Update Permanent Data from Current Session' so that a check mark appears in the box. **Note: If a resource is identified to update a patient data file, it cannot be identified to start each session blank as described above.**

Adding Multiline Text Resources

Be sure that the 'Multiline Line Text' button is selected and left click on the 'New Data Element' button to get the screen below.



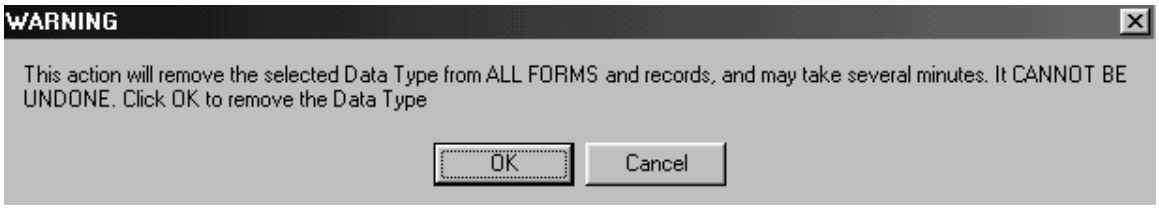
Type in the name of the new resource element and left click on 'Keep Changes'

The new element will be added to the list of multiline text data elements.

Deleting Multiline Text Resources

Be sure that the 'Multiline Text' button is selected and click on the drop down window to display the list of multiline text resources available. Left click on the resource that you desire to delete so it is displayed in the *Data Element* window.

Click on 'Delete Element' and the system will present the following warning:



Click on OK to complete the removal of the selected resource.

Cancel will abort the removal process and return to the previous screen.

Changing The Name of a Multiline Text Resource

Be sure that the 'Multiline Text' button is selected and click on the drop down window to display the list of multiline text resources available. Left click on the resource whose name you desire to change so it is displayed in the *Data Element* window.

Left click on the button labeled 'Click here to change Data Type or Name'.

Type the new name for the resource and click on 'Keep Changes'.

The resource will now appear on the list as the new item.

General Numeric Items

General Numeric data items offer a means of entering numeric information only. The advantage of this type of data element is that numeric data can be used in calculations, manipulated and graphed. Data to be entered must be numeric and will have short entry fields.

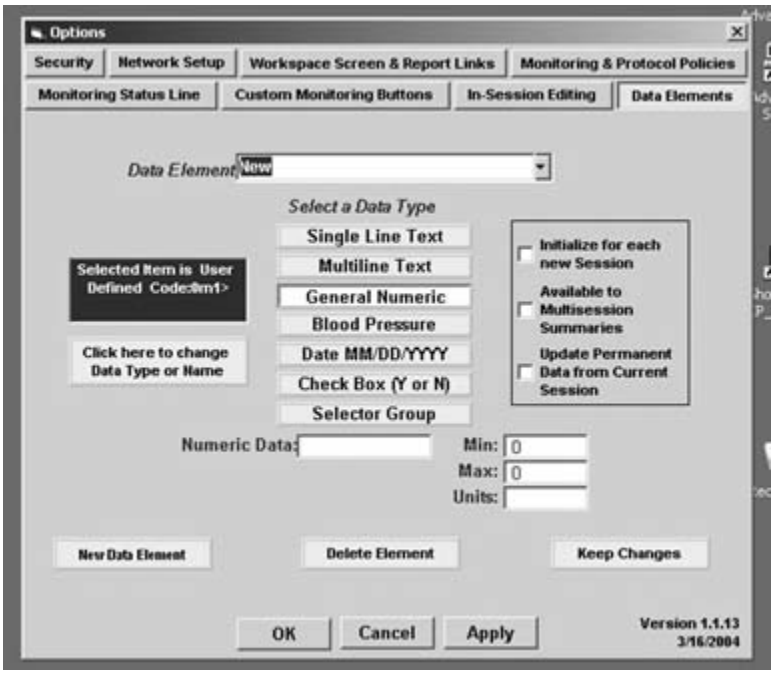
General Numeric Resources can be identified to reset to a blank space at the start of each session. To do so, be sure that the 'General Numeric' button is selected and click on the drop down window to display the list of general numeric resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Initialize for each new Session' so that a check mark appears in the box. **Note: If a resource is identified to reset to a blank space at the start of each session, it cannot be identified for use to update a patient data file as described below.**

General Numeric Resources can be identified for use in Multisession Summaries. If not identified at this level, these resource items will not be listed for use in the development of multisession reports. To identify a General Numeric item for use in Multisession Summaries, be sure that the 'General Numeric' button is selected and click on the drop down window to display the list of general numeric resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Available to Multisession Summaries' so that a check mark appears in the box.

General Numeric Resources used in the patient's data file can be updated from a current session. To allow the exchange of data, be sure that the 'General Numeric' button is selected and click on the drop down window to display the list of general numeric resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Update Permanent Data from Current Session' so that a check mark appears in the box. **Note: If a resource is identified to update a patient data file, it cannot be identified to start each session blank as described above.**

Adding General Numeric Resources

Be sure that the 'General Numeric' button is selected and left click on the 'New Data Element' button to get the screen below.



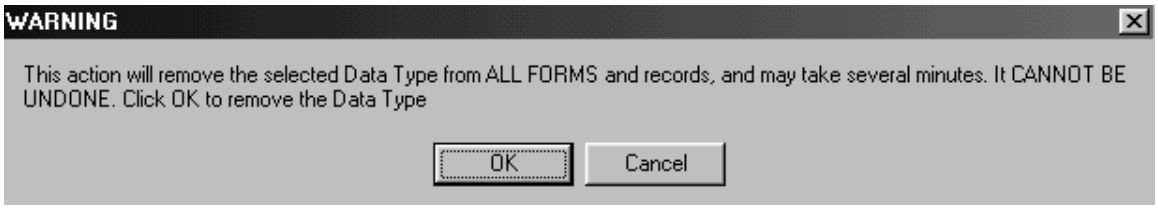
Type in the name of the new resource element and left click on 'Keep Changes'.

The new element will be added to the list of general numeric data elements.

Deleting General Numeric Resources

Be sure that the 'General Numeric' button is selected and click on the drop down window to display the list of general numeric resources available. Left click on the resource that you desire to delete so it is displayed in the *Data Element* window.

Click on 'Delete Element' and the system will present the following warning:



Click on OK to complete the removal of the selected resource.

Cancel will abort the removal process and return to the previous screen.

Changing the Name of a General Numeric Text Resource

Be sure that the 'General Numeric' button is selected and click on the drop down window to display the list of general numeric resources available. Left click on the resource whose name you desire to change so it is displayed in the *Data Element* window.

Left click on the button labeled 'Click here to change Data Type or Name'.

Type the new name for the resource and click on 'Keep Changes'.

The resource will now appear on the list as the new item.

Blood Pressure Items

Blood Pressure data items offer a means of entering numeric information in a blood pressure format (###/###). The 2004 of this type of data element is that data entered in the blood pressure format can be graphed differently. Data to be entered must be numeric and in the format of a number / a number.

Blood Pressure Resources can be identified to reset to a blank space at the start of each session. To do so, be sure that the 'Blood Pressure' button is selected and click on the

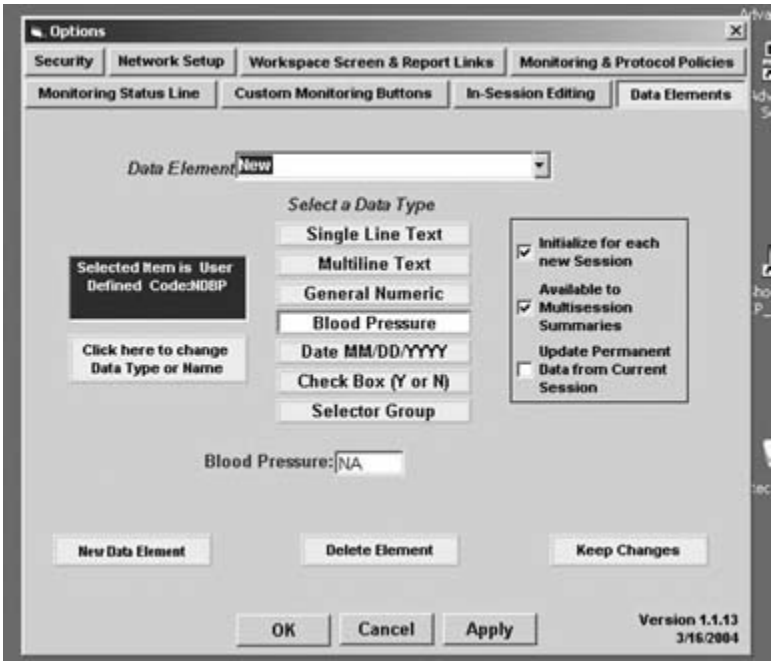
drop down window to display the list of blood pressure resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Initialize for each new Session' so that a check mark appears in the box. **Note: If a resource is identified to reset to a blank space at the start of each session, it cannot be identified for use to update a patient data file as described below.**

Blood Pressure Resources can be identified for use in Multisession Summaries. If not identified at this level, these resource items will not be listed for use in the development of multisession reports. To identify a Blood Pressure item for use in Multisession Summaries, be sure that the 'Blood Pressure' button is selected and click on the drop down window to display the list of blood pressure resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Available to Multisession Summaries' so that a check mark appears in the box.

Blood Pressure Resources used in the patient's data file can be updated from a current session. To allow the exchange of data, be sure that the 'Blood Pressure' button is selected and click on the drop down window to display the list of blood pressure resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Update Permanent Data from Current Session' so that a check mark appears in the box. **Note: If a resource is identified to update a patient data file, it cannot be identified to start each session blank as described above.**

Adding Blood Pressure Resources

Be sure that the 'Blood Pressure' button is selected and left click on the 'New Data Element' button to get the screen below.



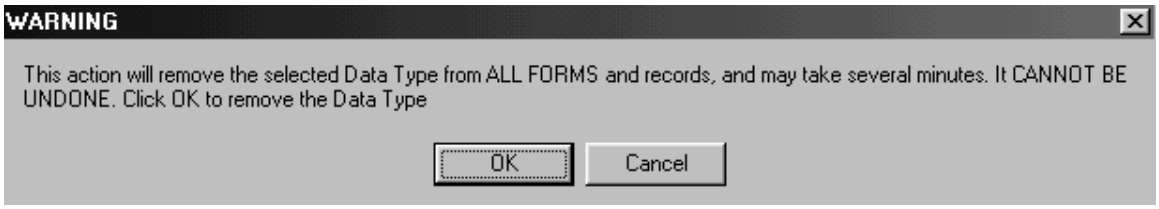
Type in the name of the new resource element and left click on 'Keep Changes'

The new element will be added to the list of blood pressure data elements.

Deleting Blood Pressure Resources

Be sure that the 'Blood Pressure' button is selected and click on the drop down window to display the list of blood pressure resources available. Left click on the resource that you desire to delete so it is displayed in the *Data Element* window.

Click on 'Delete Element' and the system will present the following warning:



Click on OK to complete the removal of the selected resource.

Cancel will abort the removal process and return to the previous screen.

Changing the Name of a Blood Pressure Resource

Be sure that the 'Blood Pressure' button is selected and click on the drop down window to display the list of blood pressure resources available. Left click on the resource whose name you desire to change so it is displayed in the *Data Element* window.

Left click on the button labeled 'Click here to change Data Type or Name'.

Type the new name for the resource and click on 'Keep Changes'.

The resource will now appear on the list as the new item.

Date (MM/DD/YYYY) Items

Date type data items offer a means of entering dates in a form recognized by most forms of database. Although rarely used, this type of data element responds well to export such as used in the ScottCare Outcomes program.

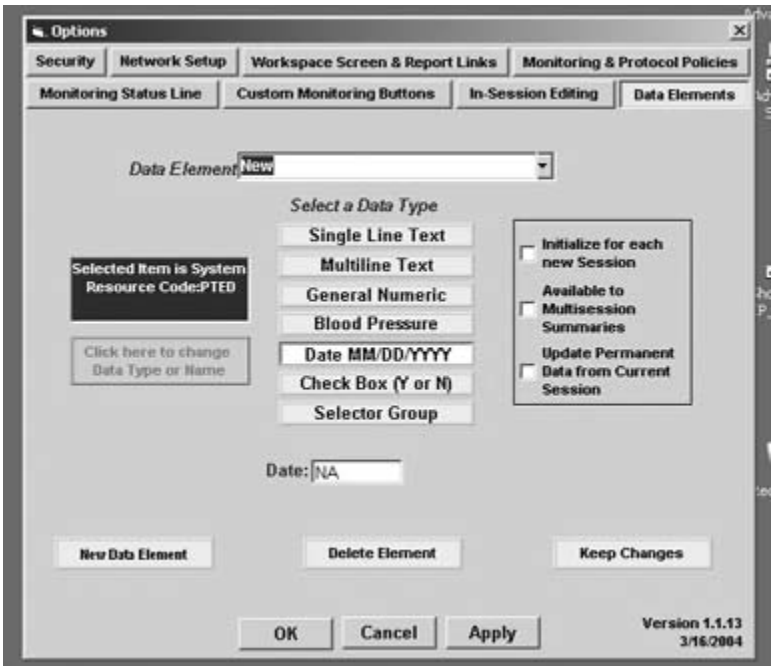
Date type resources can be identified to reset to a blank space at the start of each session. To do so, be sure that the 'Date (MM/DD/YYYY)' button is selected and click on the drop down window to display the list of date type resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Initialize for each new Session' so that a check mark appears in the box. **Note: If a resource is identified to reset to a blank space at the start of each session, it cannot be identified for use to update a patient data file as described below.**

Date type resources can be identified for use in Multisession Summaries. If not identified at this level, these resource items will not be listed for use in the development of multisession reports. To identify a Date item for use in Multisession Summaries, be sure that the 'Date (MM/DD/YYYY)' button is selected and click on the drop down window to display the list of date type resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Available to Multisession Summaries' so that a check mark appears in the box.

Date type resources used in the patient's data file can be updated from a current session. To allow the exchange of data, be sure that the 'Date (MM/DD/YYYY)' button is selected and click on the drop down window to display the list of date type resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Update Permanent Data from Current Session' so that a check mark appears in the box. **Note: If a resource is identified to update a patient data file, it cannot be identified to start each session blank as described above.**

Adding Date Type Resources

Be sure that the 'Date (MM/DD/YYYY)' button is selected and left click on the 'New Data Element' button to get the screen below.



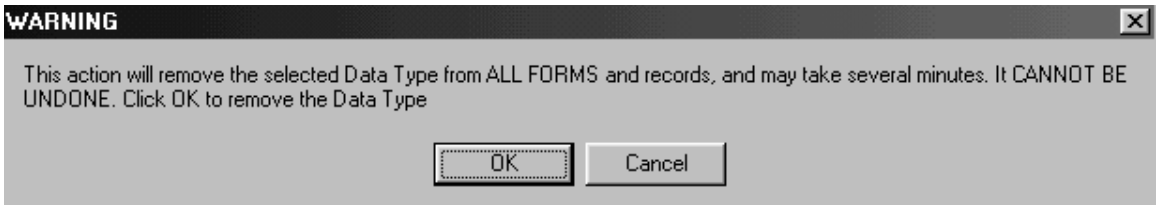
Type in the name of the new resource element and left click on 'Keep Changes'.

The new element will be added to the list of date type data elements.

Deleting Date Type Resources

Be sure that the 'Date (MM/DD/YYYY)' button is selected and click on the drop down window to display the list of date type resources available. Left click on the resource that you desire to delete so it is displayed in the *Data Element* window.

Click on 'Delete Element' and the system will present the following warning:



Click on OK to complete the removal of the selected resource.

Cancel will abort the removal process and return to the previous screen.

Changing the Name of a Date Type Resource

Be sure that the 'Date (MM/DD/YYYY)' button is selected and click on the drop down window to display the list of date type resources available. Left click on the resource whose name you desire to change so it is displayed in the *Data Element* window.

Left click on the button labeled 'Click here to change Data Type or Name'.

Type the new name for the resource and click on 'Keep Changes'.

The resource will now appear on the list as the new item.

Check Box (Y OR N) Items

Check Box data items allow easy entry of yes or no data through the use of a simple check box.

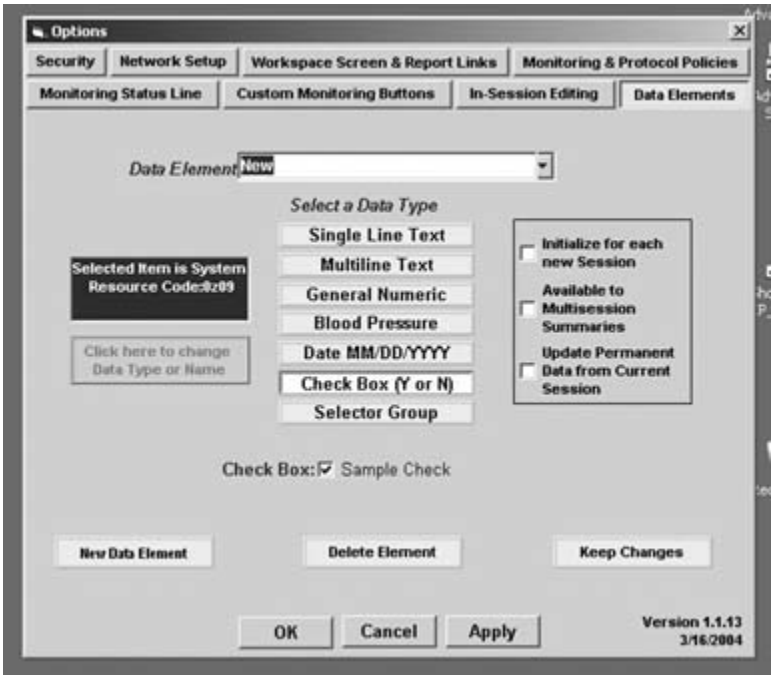
Check Box Resources can be identified to reset to a blank block at the start of each session. To do so, be sure that the 'Check Box (Y or N)' button is selected and click on the drop down window to display the list of check box type resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Initialize for each new Session' so that a check mark appears in the box. **Note: If a resource is identified to reset to a blank space at the start of each session, it can not be identified for use to update a patient data file as described below.**

Check Box type resources are not allowed for use in Multisession Summaries and will not be available whether the block labeled 'Available to Multisession Summaries' is checked or not.

Check Box type resources used in the patient's data file can be updated from a current session. To allow the exchange of data, be sure that the 'Check Box (Y or N)' button is selected and click on the drop down window to display the list of check box type resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Update Permanent Data from Current Session' so that a check mark appears in the box. **Note: If a resource is identified to update a patient data file, it cannot be identified to start each session blank as described above.**

Adding Check Box Type Resources

Be sure that the 'Check Box (Y or N)' button is selected and left click on the 'New Data Element' button to get the screen below.



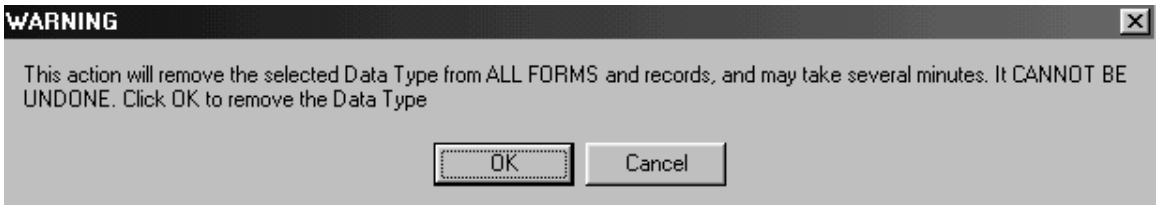
Type in the name of the new resource element and left click on 'Keep Changes'

The new element will be added to the list of check box type data elements.

Deleting Check Box Type Resources

Be sure that the 'Check Box (Y or N)' button is selected and click on the drop down window to display the list of check box type resources available. Left click on the resource that you desire to delete so it is displayed in the *Data Element* window.

Click on 'Delete Element' and the system will present the following warning:



Click on OK to complete the removal of the selected resource.

Cancel will abort the removal process and return to the previous screen.

Changing the Name of a Check Box Type Resource

Be sure that the 'Check Box (Y or N)' button is selected and click on the drop down window to display the list of check box type resources available. Left click on the resource whose name you desire to change so it is displayed in the *Data Element* window.

Left click on the button labeled 'Click here to change Data Type or Name'.

Type the new name for the resource and click on 'Keep Changes'.

The resource will now appear on the list as the new item.

Selector Group Type Items

Selector Groups can be used when selection from a pre defined group of items is desired. This resource allows display of the entire selector group or of only the item selected depending on location of use and desired format.

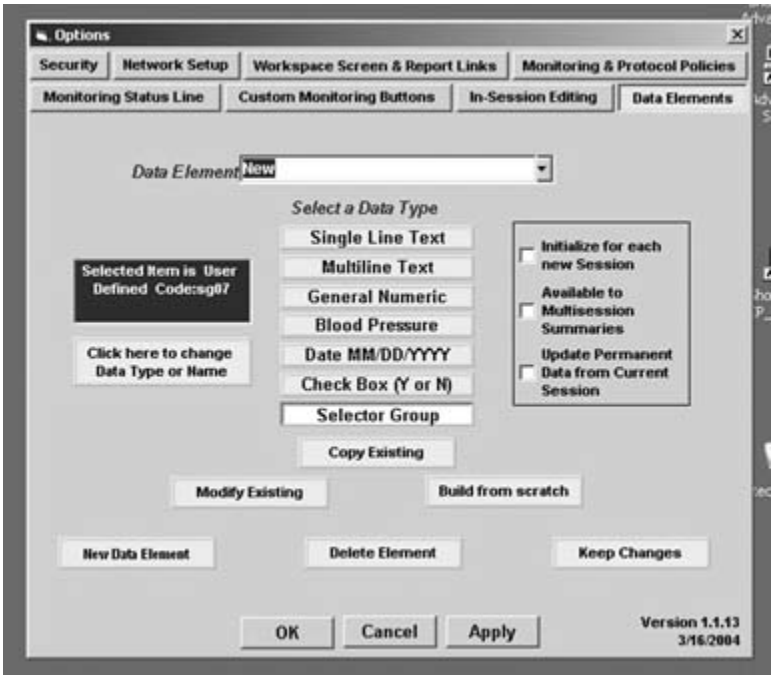
Selector Groups can be identified to reset to a 'none selected' state or to a default state at the start of each session. To do so, be sure that the 'Selector Group' button is selected and click on the drop down window to display the list of selector group type resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Initialize for each new Session' so that a check mark appears in the box. **Note: If a resource is identified to reset to a blank space at the start of each session, it cannot be identified for use to update a patient data file as described below.**

Selector Group type resources are not allowed for use in Multisession Summaries and will not be available whether the block labeled 'Available to Multisession Summaries' is checked or not.

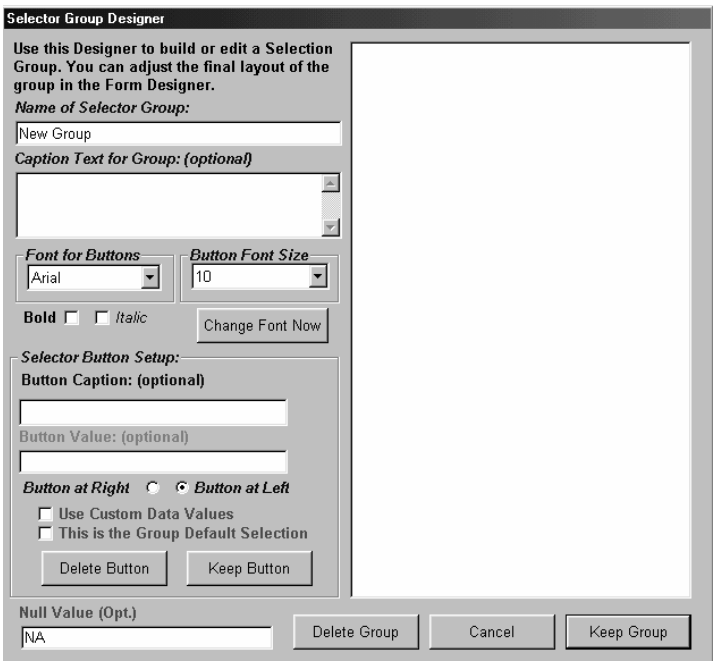
Selector Groups used in the patient's data file can be updated from a current session. To allow the exchange of data, be sure that the 'Selector Group' button is selected and click on the drop down window to display the list of check box type resources available. Left click on the resource whose name you desire to work with so it is displayed in the *Data Element* window. Click on the box labeled 'Update Permanent Data from Current Session' so that a check mark appears in the box. **Note: If a resource is identified to update a patient data file, it cannot be identified to start each session blank as described above.**

Adding Selector Group Type Resources

Be sure that the 'Selector Group' button is selected to get to the screen below.



Left Click on the 'Build from scratch' button to bring up the Selector Group Designer screen shown below:



Click on the block labeled 'New Group' and type in the name to be assigned to the selector group. In this example, we will use the name "ICE CREAM".

If you want a name to appear as a label for the selector group when used, click on the 'Caption Text for Group' block and type in the name that you want to appear.

In this case, we will want "Ice Cream" to appear as the selector group caption.

To change the font used on the various selector buttons, click the drop down window under 'Font for Buttons' and select the desired font. Likewise, to change the size of the font selected, click the drop down window under 'Button Font Size' and select the desired size.

If desired, select either or both Bold and/or Italic by clicking on the appropriate box to change the look of the buttons.

When making changes after buttons have been defined, click on the 'Change Font Now' button to incorporate the changes and see the results.

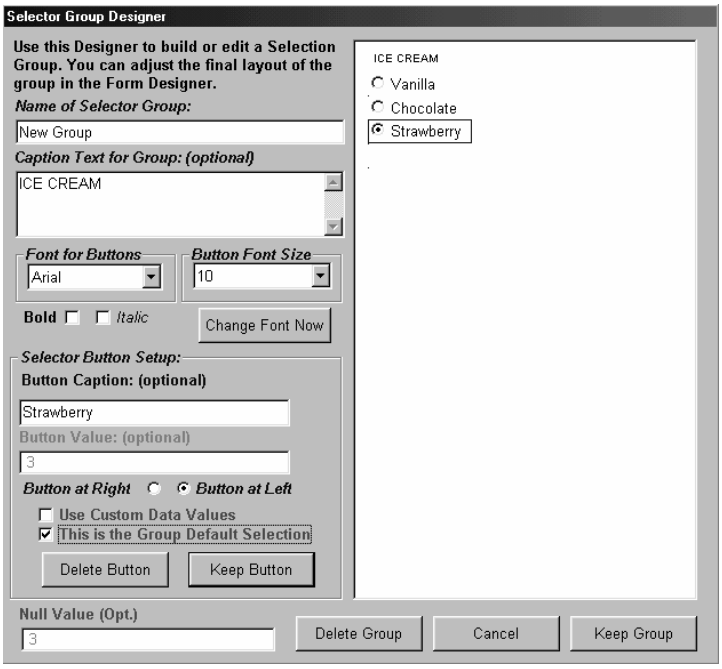
Type the caption to appear as the selector button in the box labeled 'Button Caption'. Enter a button value if desired. The button value can be any type of value including numeric, and describes the information that is saved as the resource content if this button is selected.

The 'Use Custom Data Values' block must be selected to use values other than default, and the 'This is the Group Default Selection' button identifies the default button for the group.

Once all button data has been identified, click on the 'Keep Button' block to make it a part of the selector group, or click on 'Delete Button' to remove it from the selector group.

The 'Null Value' area is used to define the resource content of the selector group when no button is selected and none have been defined as the default.

Following is the example of the ICE CREAM selector group:



Click on the 'Keep Group' button to make this selector group a part of the resource list.

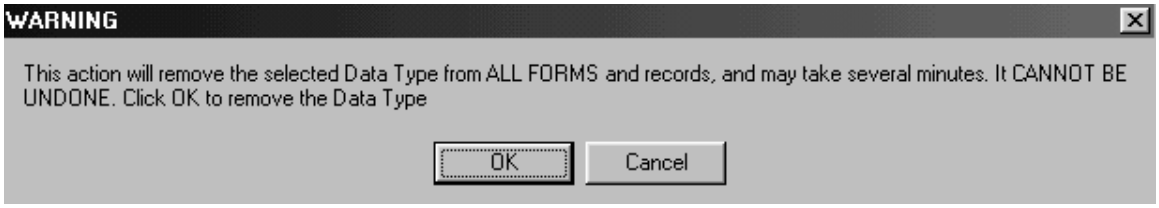
Click 'Cancel' to abort the selector group design.

Click 'Delete Group' to remove a group from the defined resource.

Deleting Selector Group Type Resources

Be sure that the 'Selector Group' button is selected and click on the drop down window to display the list of Selector Group type resources available. Left click on the resource that you desire to delete so it is displayed in the *Data Element* window.

Click on 'Delete Element' and the system will present the following warning:



Click on OK to complete the removal of the selected resource.

Cancel will abort the removal process and return to the previous screen.

Changing the Name of a Selector Group Type Resource

Be sure that the 'Selector Group' button is selected and click on the drop down window to display the list of selector group type resources available. Left click on the resource whose name you desire to change so it is displayed in the *Data Element* window.

Left click on the button labeled 'Click here to change Data Type or Name'.

Type the new name for the resource and click on 'Keep Changes'.

The resource will now appear on the list as the new item.

Changing the Content of a Selector Group

Click on the 'Selector Group' button and then click on the drop down window to display the list of selector group type resources available. Left click on the resource whose content you desire to change so it is displayed in the *Data Element* window.

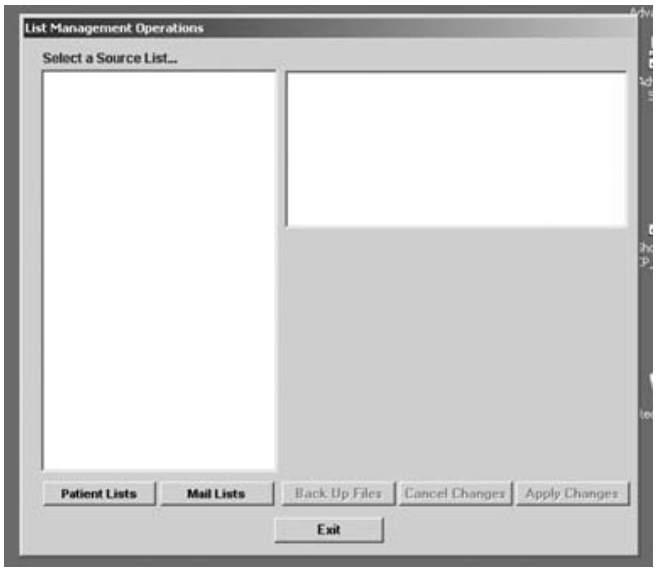
Left click on the button labeled 'Modify Existing', and the existing selector group designer window will appear. Make your changes in accordance with the instructions above under 'Adding a Selector Group Type Resource'.

Use the 'Copy Existing' button to simplify creation of a new resource by simply changing the content of a selector group that already exits.

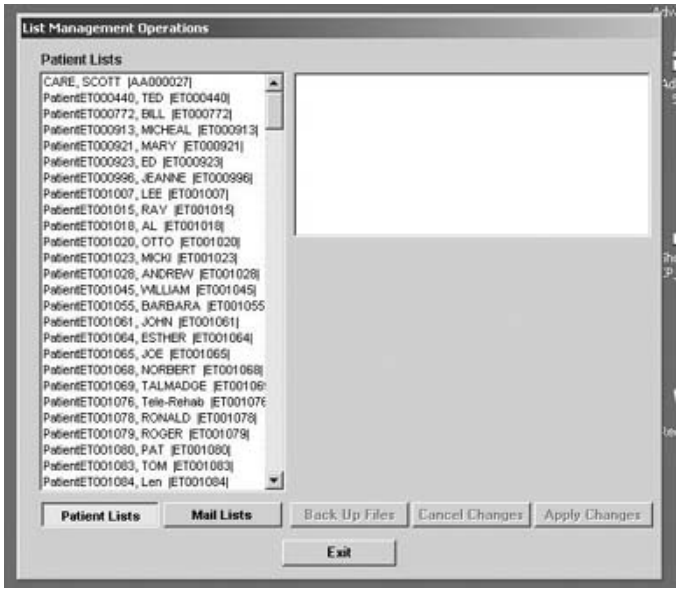
List Management

The list management utility provides the means of removing patients from the system database. It also facilitates moving patients from lists of participating patients to mailing lists, and moving names from mailing lists to participating patient lists.

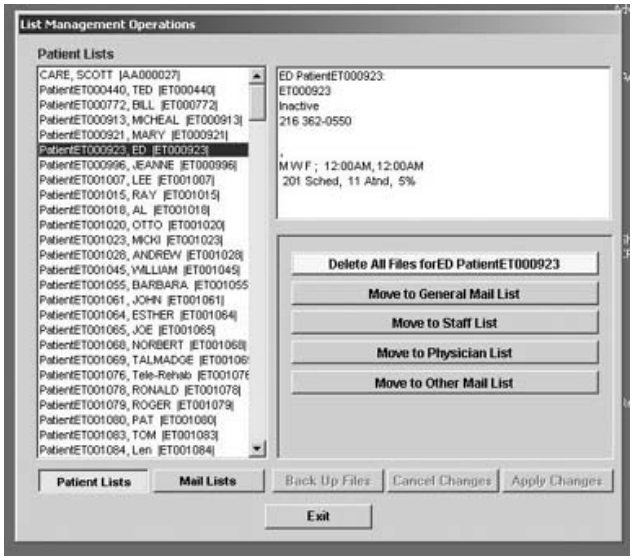
To access the utility, left click on the ***'List Management'*** button to get to the following 'List Management Operations' utility:



Left click on the list that you want to deal with (Patient Lists or Mail Lists), and a list of all names included on the associated lists will appear in alphabetical order.



Select the name of the person to be addressed by left clicking on their name. Basic information regarding the selected name will appear in the box on the right and available options will be provided for selection.



Selecting an action from the buttons on the left will cause the system to provide a warning about potential data loss, and make the remaining three buttons available for use.

To back up data before making the change, left click on the ‘Back Up Files’ button.

To cancel this action, left click on the ‘Cancel Changes’ button.

To complete the proposed transaction, left click on the ‘Apply Changes’ button.

Backing up the Database

The "Back up" process is an extremely important function designed to prevent the loss of information should something occur to the system that causes data to be destroyed or lost. The system provides a utility to allow the user to define the back up methodology and to identify the specific data to be backed up or restored from the back up medium.

ScottCare recommends backing your system up at least once each week, preferably every day.

To access the Backup Utility, click on the ***'Backups'*** button to get to the following 'Backup and Restore Files' utility:

Backup is designed to take place so that data is saved on a zip disk to expedite the process, however the utility allows the user to define where backup files are to be saved if so desired.

Unique back up requirements can be identified with the utility and then saved as a 'Backup Style'. Clicking on the drop down window under 'Backup Style' will provide a list of saved styles.

Clicking the drop down window under 'Backup Drive' will allow selection of the drive where the backup is to be saved. ScottCare recommends the use of the zip drive.

The area under 'Groups to Include' allows identification of which patient or other group is to be included in the backup process and whether all files need to be backed up or only changed files. The backup process is not a "snap shot" of the condition of the files at the time of backup, rather it is a cataloging type of backup. Once something is backed up, it is not erased, only changed. This process insures that data is available for restoration as far back as the first time the system was used.

The 'Included Names' area lists all the names of patients currently in the system. Individual names can be selected by clicking on the 'Clear All Checkboxes' bar and then checking the names of patients whose data is to be included in the backup.

At installation, a complete backup is accomplished to get the process started. ScottCare recommends that backups beyond that point include changes only in patient files, and other lists only if there have been changes. The system control files should be backed up each time a backup is done.

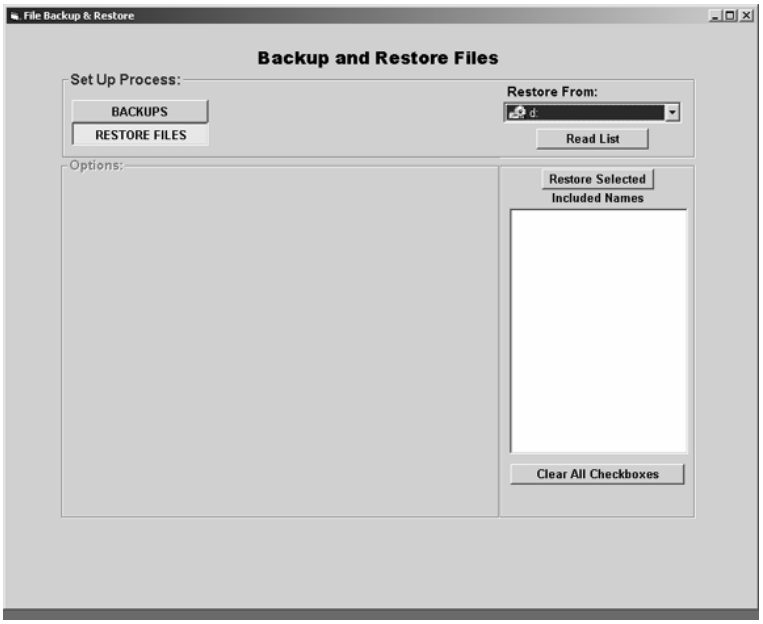
Clicking on the 'Do Backup' bar will cause the system to perform the backup process based on the selected settings to the selected drive.

Exit this screen by clicking on the x in the upper right corner.

Restoring From Backup

To restore information from a backup disk, access the 'Backup and Restore Files' utility as described above.

Click on the 'RESTORE FILES' button to access the following screen:



Click on the drop down window under 'Restore From' and select the drive containing the medium with the backed up information to be restored and click on the 'Read List' button.

Once the data on the drive has been read, the following screen will appear:

The area under 'Options' provides a means of detailing the selections of data to be restored from the backup disk. Click on those that apply.

To identify a specific patient, click on the 'Clear All Checkboxes' bar and then click on the checkbox for the patient(s) whose data you want to restore.

Once all selections have been made, click on the 'Restore Selected' bar to complete the restoration process.

Exit this screen by clicking on the "X" in the upper right corner.

Deactivating the Server

To deactivate the server software at any time, click on the 'Server' bar at the bottom of the screen and click on the 'Quit' bar in the resulting Server Window. NOTE: In systems provided by ScottCare, the Server software is set up to automatically start at boot up. If stopped for any reason, you must restart it by double clicking on the desktop icon for the Server. If the Server software is already running, it will not start a second time.

The 2004 Client Application:

The TeleRehab™ 2004 Cardiopulmonary Monitoring System setup is accomplished through the **Options** screens. To access the Options screens, you must be displaying the TeleRehab 2004 Launcher Screen as follows:

Left click on 'Utility' in the upper left corner and select Options. The Options screen will appear as follows:

- **Security**

Setting/Changing a Password

The Password feature sets the system to require the use of a password to allow entry into the Patient Data Management Database.

To activate the "Password" option, left click on the box labeled 'use password' to place a check mark in the box.

Left click on the block following 'Enter Password', and type in the desired password. Be sure to press the <Enter> key to complete the password entry. NOTE: the 'Enter Password' block will not be accessible unless the 'use password' box has been checked.

To change a password, access the site information screen as described above. Note that the Use Password block is not accessible.

Left click on the block following 'Enter Password', and type in the current password. Be sure to press the <Enter> key to complete the password entry. The 'Use Password' block will now be accessible.

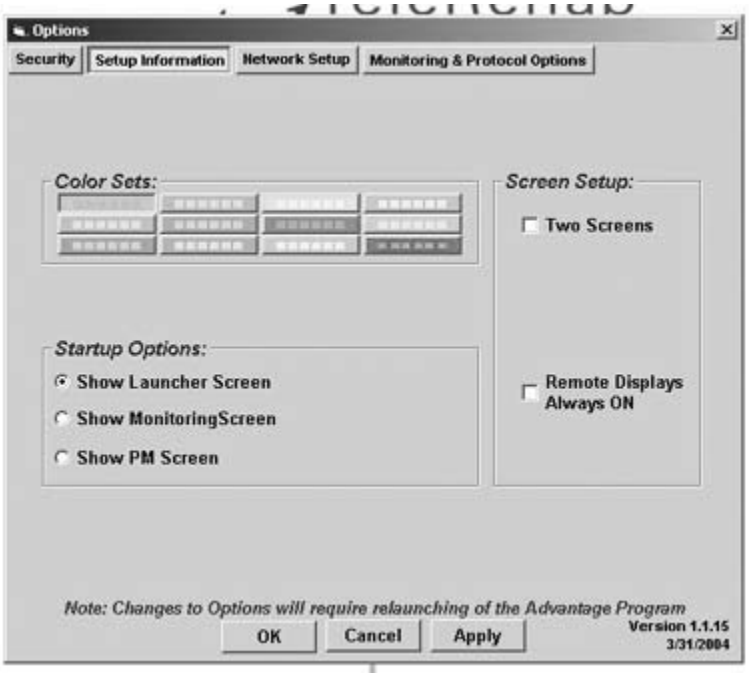
Left click on the 'Use Password' block to remove the check mark.

To activate a new password, left click on the box labeled 'Use Password' to place a check mark in the box.

Left click on the block following 'Enter Password', and type in the desired password. Be sure to press the <Enter> key to complete the password entry. NOTE: the 'Enter Password' block will not be accessible unless the 'use password' box has been checked.

- **Setup Information**

The **Setup Information** tab provides access to the utility utilized to identify the screen colors to be utilized as well as screen configuration settings.

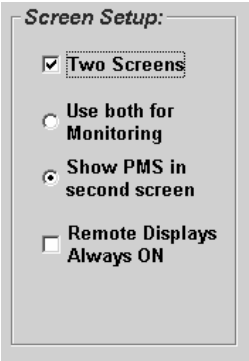


Setting Screen Colors

The ***Color Sets*** area allows selection of the color set to be used with the monitoring terminal. The color set is selected by clicking on the desired color set bar. This is the only place where the color set can be changed.

Setting the Number of Screens Utilized

The ***Screen Setup*** area provides a means of utilizing either one or two screens for display during monitoring. The ***Two Screens*** box, if checked, will cause the system to split the monitoring channels selected between 2 screens tied to the same computer. A selector box will appear allowing selection of either using both screens for monitoring, or display the Program Management System on the second screen. Otherwise, all channels will be displayed on the single display.



Activation of Remote Monitors

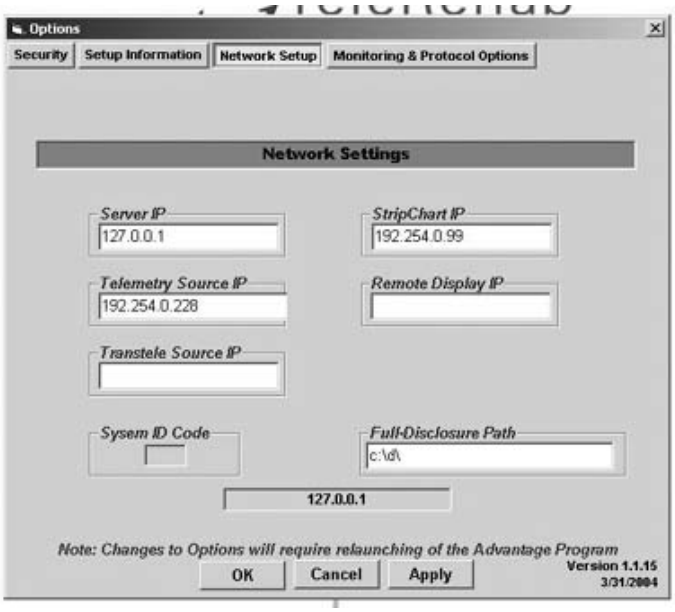
The ***Remotes Displays Always On*** box, if checked, causes all displays to be displayed on both the monitoring screen and the remote screen. Otherwise, only displays identified by the equipment operator will show up on the remote monitor.

Start-up Options

The ***Start-up Options*** area allows determination of what screen will be displayed when the system is started. The Launcher Screen allows selection of Monitoring, Program Management, or Outcomes. Selection of 'Show Monitoring Screen' will cause the system to start at the monitoring screen, and selection of 'Show PMS Screen' will cause the system to start at the Program Management Screen.

- **Network Setup**

The **Network Setup** tab provides access to the utility utilized to identify the source and/or destination of data via their specific network (TCP/IP) address.



The IP addresses will initially be set at the factory as follows:

The ***Server IP*** will be the TCP/IP address of the computer where the server software is running (must be the same location as the TB directory containing patient files).

The ***Telemetry Source IP*** will be the address of the telemetry receiver module.

The ***Strip Chart IP*** will be the address of the strip chart recorder.

The ***Remote Display IP*** will be the address of the Remote Display.

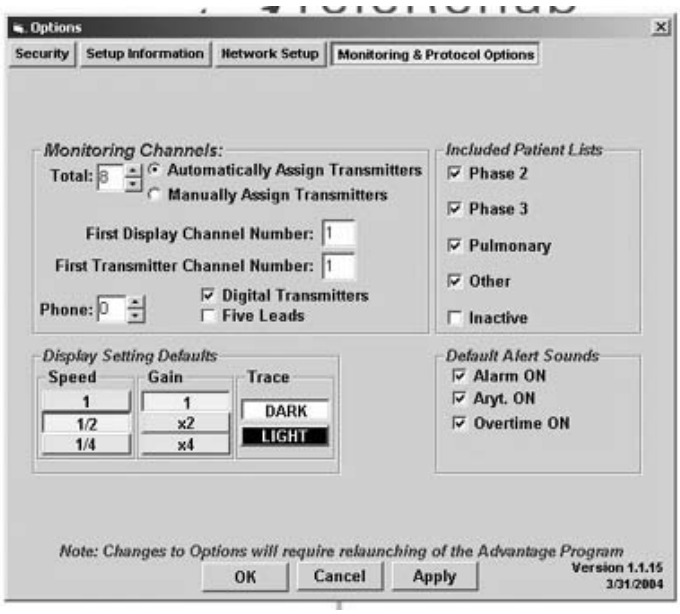
It should be noted that no IP address will be entered for items not being utilized by the system.

The System ID Code is pre-defined based on the server application set up. The ***Full-Disclosure Path*** establishes where the full disclosures will be recorded during monitoring. (The example above shows a folder called "d" on the c: drive). The full disclosure will be copied to the patient sub-directory in TB at the end of the session, and it will **NOT** be erased from the location where it was originally written until the patient is recorded again. The Local Full-Disclosure Path will initially be set at the factory.

The block near the bottom of the screen displays the IP address of the computer in use.

- **Monitoring & Protocol Options**

The **Monitoring and Protocol Options** tab provides entry into the utility that establishes a set of *rules* regarding use or non-use of many of the features of the system.



The ***Monitoring Channels*** section provides a means of setting the number of channels to be displayed on the monitoring screen. The number can range from 1 to 16.

The ***Automatically Assign Transmitters*** box, if checked, causes the system to sequentially number the individual channels on the screen starting with the channel number indicated in the **'First Display Channel Number:'** box.

The ***Manually Assign Transmitters*** box, if checked, causes the system to set all channel numbers to 0, and channel numbers are assigned based on the transmitter being used by a patient as their names are put on the monitoring screen.

The **'First Channel Transmitter Number:'** box is used to identify the number of the first transmitter that will be used with this terminal as defined by the telemetry interface unit. E.g. if this is the second display of a 12 channel system using a single IP address for the telemetry interface, the first channel transmitter number would be 6 (provided there were 6 channels per display). If the telemetry interface only dealt with the second 6 channels, the first channel transmitter number would be 1.

The ***Digital Transmitters*** block indicates whether digital or analog transmitters are being utilized with this system.

The ***Five Leads*** block will only be available if the Digital Transmitters block is selected, and indicates whether the digital transmitters being utilized are configured as 3 wire or 5 wire transmitters. Currently only 3 lead transmitters are employed.

The ***Display Setting Defaults*** area determines the speed of the trace and the gain. Defaults will be set at the factory of a speed equivalent to 25mm/sec and a gain of 1mv. Options for speed are ½ - equivalent to 25 mm/sec, 1 – equivalent to 50 mm/sec, and ¼ - equivalent to 12.5 mm/sec. Options for Gain are x1 – 1mv, x2 = 2mv, and x4 = 4mv. Wave forms cannot be made smaller than 1mv. Only defaults are set here. These features can also be changed from the monitoring screen.

The ***Trace*** area allows selection of whether the display is black trace on a white background or white trace on a black background. Again, only the default is set in this area. This display feature can be controlled from the monitoring screen.

The ***Included Patient Lists*** area allows the customer to identify which patients are to be displayed on the monitoring screen for selection for monitoring. This feature can be set up at the time of installation and can easily be changed by the user.

The ***Default Alert Sounds*** area provides a means to have Rate Alarm, Arrhythmia Rate Alarm, and Overtime audible alarms either on or off. This area sets the default only, both rate alarm and arrhythmia alarm sounds can be controlled from the monitoring screen.

Exercise Protocols

Exercise protocols are intended as prescriptions, or 'guides' for patient exercise activity during a session. The exercise prescription portion of the protocol can be printed on the patient schedule, and normally includes a sequence of exercise events with anticipated workloads.

The use of exercise protocols is not a mandatory function of the ScottCare 2004 Monitoring System. Exercise information can be entered manually for each patient as the session progresses, however the system has the ability to allow the equipment operator to cycle through a predefined patient exercise protocol for a session if desired.

To use this option, a specific exercise agenda must be indicated for the patient including specific exercise media, load settings, and times. As the patient moves from one mode to the next, the equipment operator simply touches 'NEXT' on their monitoring terminal screen to indicate that the patient has begun the next phase of their exercise regimen. The system will move the patient to the next exercise medium, calculate and display METS, and start timing automatically. This automatic cycle can be interrupted with a manual entry at any time if the assigned protocol is changed during the session.

The 2004 Program Management System allows you to develop generic protocols, or ***Protocol Templates***, that are stored in the system for use when patients are first entering the program. Several Protocol Templates can be developed to accommodate patients of various abilities. Detailed instructions for developing generic protocols can be found under **Generating Protocol Templates** below.

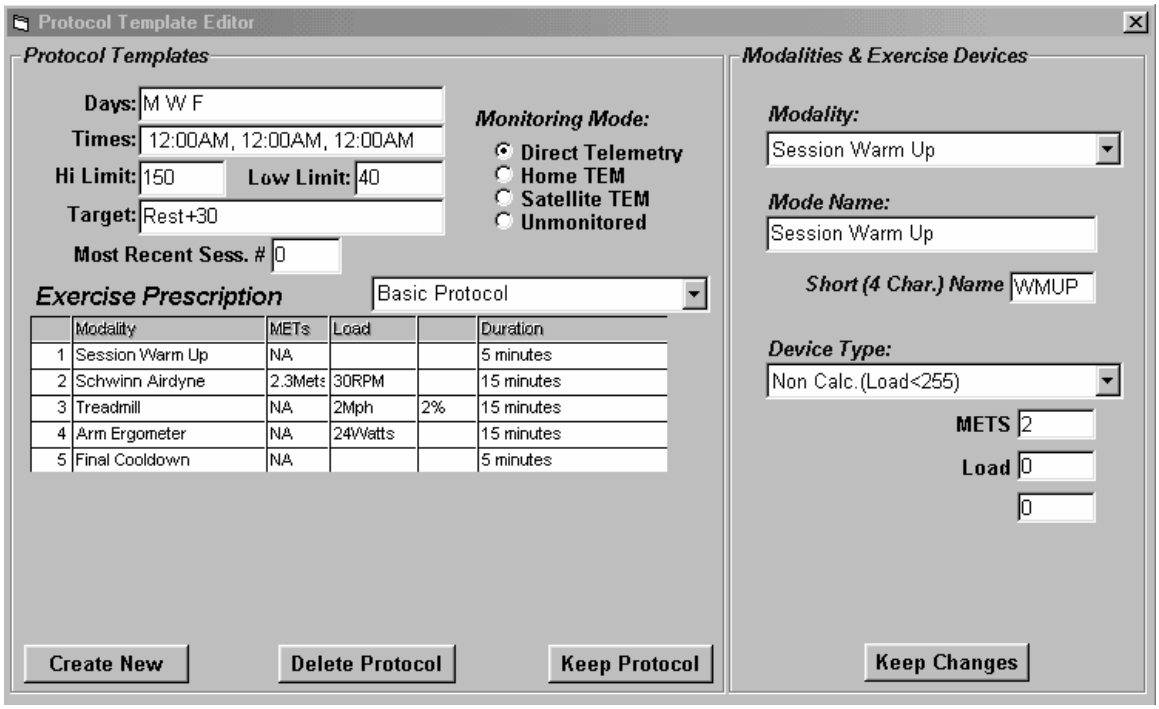
A default protocol is automatically assigned to a new patient if no protocol template is selected. This basic protocol can be altered to develop a unique session protocol for each patient. Once developed, the system will treat this unique session protocol in the same way as a protocol template in allowing the equipment operator to cycle through the exercise agenda during the patient exercise session. Detailed instructions for developing patient protocols can be found under **Session Protocols** below.

Defining Modalities and Exercise Devices

A key element in the development of an exercise protocol is the exercise device being utilized along with an appropriate workload. Several different devices, along with the ability to calculate MET levels for those devices, have been pre-installed in the 2004 Program Management System. Additional devices can be added to the list to customize the system to an individual program.

The utility that maintains both the list of exercise devices available for use within the session protocols as well as the list of predefined exercise protocols is called the Protocol Template Editor. This Protocol resource utility is accessible through the TeleRehab 2004 Launcher Screen as follows:

Left click on 'Utility' in the upper left corner and select Edit Protocols. The Protocol Template Editor will appear as follows:



The Protocol Template Editor screen is divided into two parts. The right side of the screen provides access to modalities and exercise devices while protocol templates are managed on the left.

The Modalities & Exercise Devices section is arranged as follows:

The 'Modality' block provides a drop down window listing all of the current exercise devices available on the system.

The 'Mode Name' block provides a means of changing the name of an exercise device.

The 'Short (4 Char.) Name' block provides a means of identifying the name of the exercise device to be used in multi-session reports.

The 'Device Type' block provides a drop down window listing the various methods of displaying workloads and providing METS calculations, if available.

The 'METS' and 'Load' blocks provide a means of setting default values if you choose not to include workloads when utilizing the selected device type in a protocol.

Click on the drop down window in the Modality box to see a list of current exercise modalities. Select a device and note that the information in the 'Device Type:' window will change to display the device type identified for the device selected.

To Add A Device to your program:

At the end of the list of modalities are several items identified as UNUSED MODE. Click on the first UNUSED MODE on the list.

Click on the 'Mode Name' block, and using the keyboard, type in the name of the new exercise mode. Press the <Enter> key.

Click on the 'Short (4 Char.) Name' block, and using the Keyboard, type in the four character code to be printed on multiple session reports to identify the new exercise mode. Press the <Enter> key.

Click on the drop down window in the Device Type block. Select the type of device or method of displaying workload that applies to the new mode. (Note that the Device Type determines what formula will be used by the system to calculate METS during the exercise session.)

Click the 'METS' block to enter a default value to be used if no workload or MET value is otherwise entered when this exercise modality is used.

Click the 'Load' block to enter a default load value to be used if no workload or MET value is otherwise entered when this exercise modality is used. Note that there are two

blocks identified as 'Load'. The second block is used when a workload is indicated by more than one item. E.g. Treadmill uses *Speed* and *Slope*, or a Stepper might use *Rate* and *Height*.

Click the 'Keep Changes' block to complete the process and save the changes.

NOTE: The list defined by this utility is used on the monitoring terminal to allow selection of devices while a patient is being monitored. The list displayed on the monitoring terminal will display items on the list down to (but not including) the *FIRST UNUSED MODE* and not beyond. If you modify the list to have an UNUSED MODE in the middle of your list, the resulting list will not display all available exercise devices for selection on your monitoring terminal.

NOTE: The list defined by this utility is used by every session report to identify the exercise devices utilized by a patient during the exercise session. Changing the order in which exercise devices appear on this list will potentially change some or all session reports for some or all-patient sessions completed before the change in the list is implemented.

Changing Any Parameter of a Mode

Click on the drop down window in the 'Modality' block and select the modality to be changed.

If the mode name is to be changed, click on the 'Mode Name:' block and use the keyboard to type in the new mode name. Press the <Enter> key.

If the short name is to be changed, click on the 'Short (4 Char.) Name' block and use the Keyboard to type in the new four character code to be printed on multiple session reports to identify the exercise mode. Press the <Enter> key.

If the device type is to be changed, click on the drop down window in the 'Device Type' block Select the type of device or method of displaying workload that applies to the mode. (Note that the Device Type determines what formula will be used by the system to calculate METS during the exercise session).

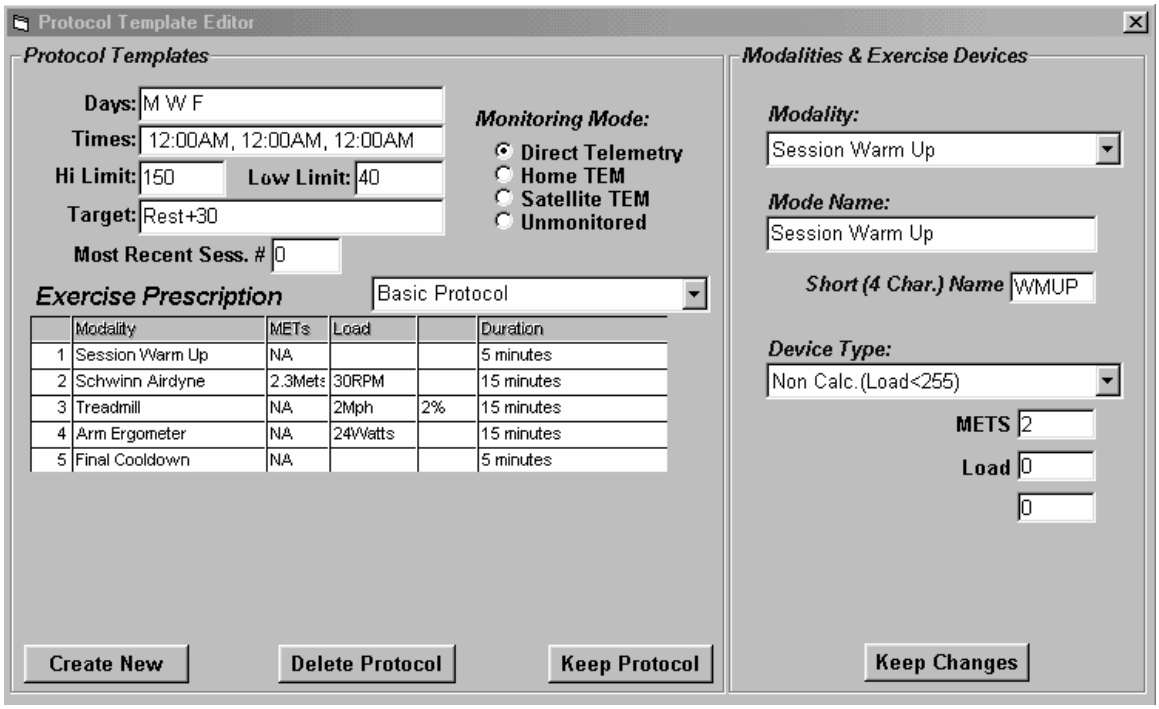
To change default settings, click on the default value block that is to be changed and enter the correct information.

WARNING: The accuracy of the entries in this utility will impact directly on data you will be able to save during a monitoring session. If, for example, you have selected TREADMILL to have a TYPE of NONCALC, you will not have the option of entering slope and speed to have the system calculate METS for you.

Generating Protocol Templates

Protocol Templates are protocols that are developed and stored in the program management system for use when adding a new patient to the system. The system is shipped with 2 or more predefined protocol templates that can be modified for use with your program.

To access the Protocol Template Editor, left click on 'Utility' at the top of the screen and then left click on 'Edit Protocols'.



The Protocol Template Editor screen is divided into two parts. The right side of the screen provides access to modalities and exercise devices while protocol templates are managed on the left.

The Protocol Templates section is arranged as follows:

The upper section contains data concerning the patient's schedule.

Also indicated are the high and low rate alarm limits.

The patient's target heart rate is shown along with the monitoring mode and most recent session number.

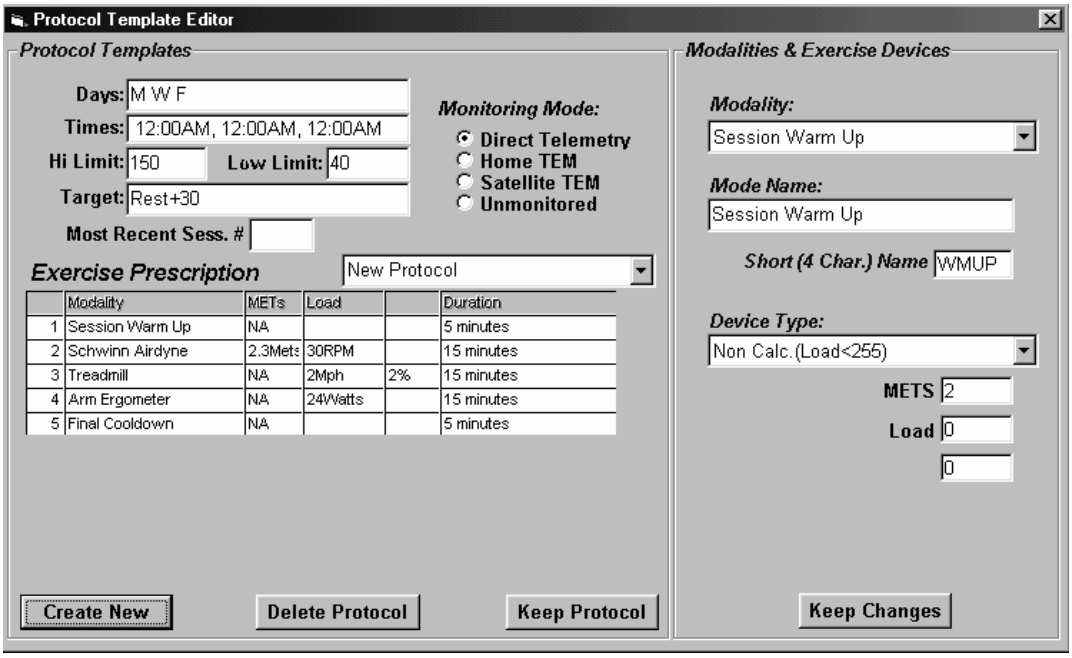
The above items are generally unique to individual patients and will be changed once the protocol template is assigned to the patient.

Finally, the exercise prescription displaying the patient's exercise sequence, workload, and duration will appear.

Adding Protocol Templates

Click on the block labeled 'Create New' near the bottom of the Protocol Template Editor utility.

The system will use the currently displayed Protocol Template as a pattern and copy it with the name 'New Protocol'.



A new template now exists, however it must be edited to contain the desired information.

Editing Protocol Templates

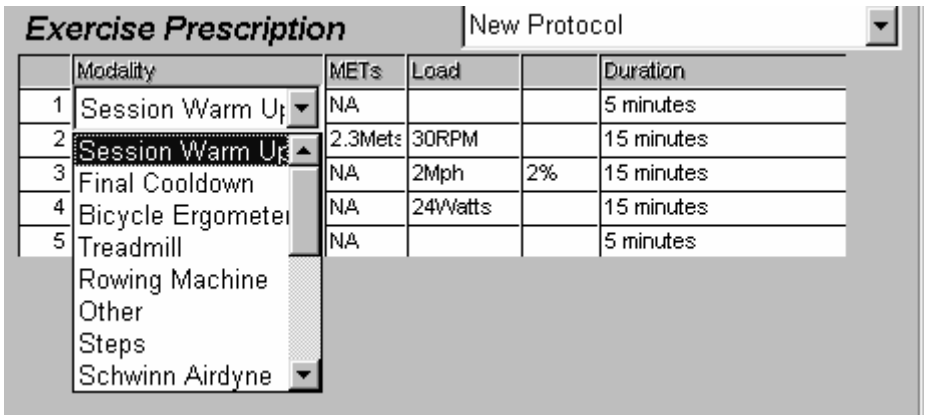
The first step in editing protocol templates is to select the template to be edited. In this case, we will edit the newly added template currently called 'New Protocol'. To view a list of current existing protocol templates, click on the drop down window in the protocol name block.

To change the name of the Protocol Template, click on the block containing the name to be changed, and type in the desired name.

All of the session information, including session time, days, target heart rate, and high and low rate limits can be left unchanged since these data will be entered for each individual patient once the protocol is identified for use. Until then, the system will use default information.

To edit a line of the Exercise Prescription, simply click on the item to edited.

Clicking on a modality will cause a drop down window to appear. Click on the drop down window and select the modality desired from the resulting list.



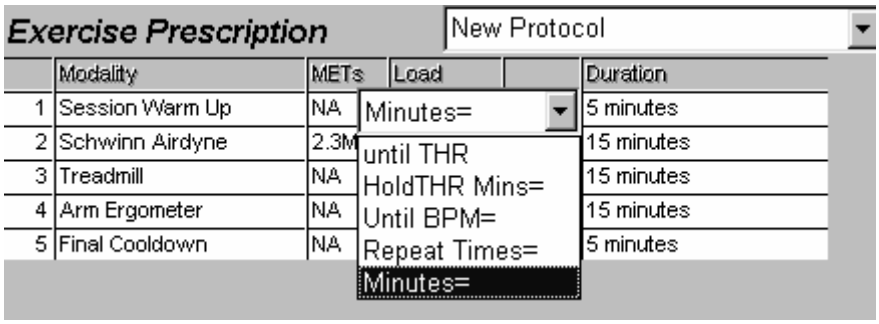
Clicking on the 'METS' block will allow you to enter a MET value. This should only be done if the system is not expected to calculate the MET value based on the workload and you know the MET value that should appear.

Clicking on the 'Load' block will allow entry of the prescribed load based on the Device Type and what settings have been selected for that device. For example, the Air dyne can require either RPM or Load based on which Device Type has been selected.

The second block after load with a blank heading is for the second part of a load when required. For example, Treadmill required both speed and slope. Speed appears in the first block and Slope in the second.

When the Load is entered, the system will calculate and display the MET value in the METs block based on the Device Type identified for the device selected. Changing the MET value will cause a corresponding change in the load to satisfy the formula being used.

Clicking on a Duration block will cause a drop down window to appear. Click on the drop down window and select the Duration identifier.



Click on the Duration block again to enter the appropriate duration.

To add a line item to the exercise prescription, hold down the <Shift> key and left click on the number of the line where the new line is to appear. The existing line will be duplicated.

Edit the new line of the session protocol in accordance with editing instructions above.

Example:

To enter a line indicating that we want to have the patient work on the treadmill at a speed of 2.8 mph slope 5% for 20 minutes.

Hold down the <Shift> key and left click on the block where the new item is to be added.

Click on the newly created Modality block, click on the drop down window, and select Treadmill from the list.

Enter a **2.8** in the first Load block.

Enter a **5** in the second load block.

Note that the METs have been calculated and are displayed in the METs block.

Click on the Duration block and verify that 'Time:' is highlighted in the drop down window box. If not, click on the drop down window and select 'Time:'

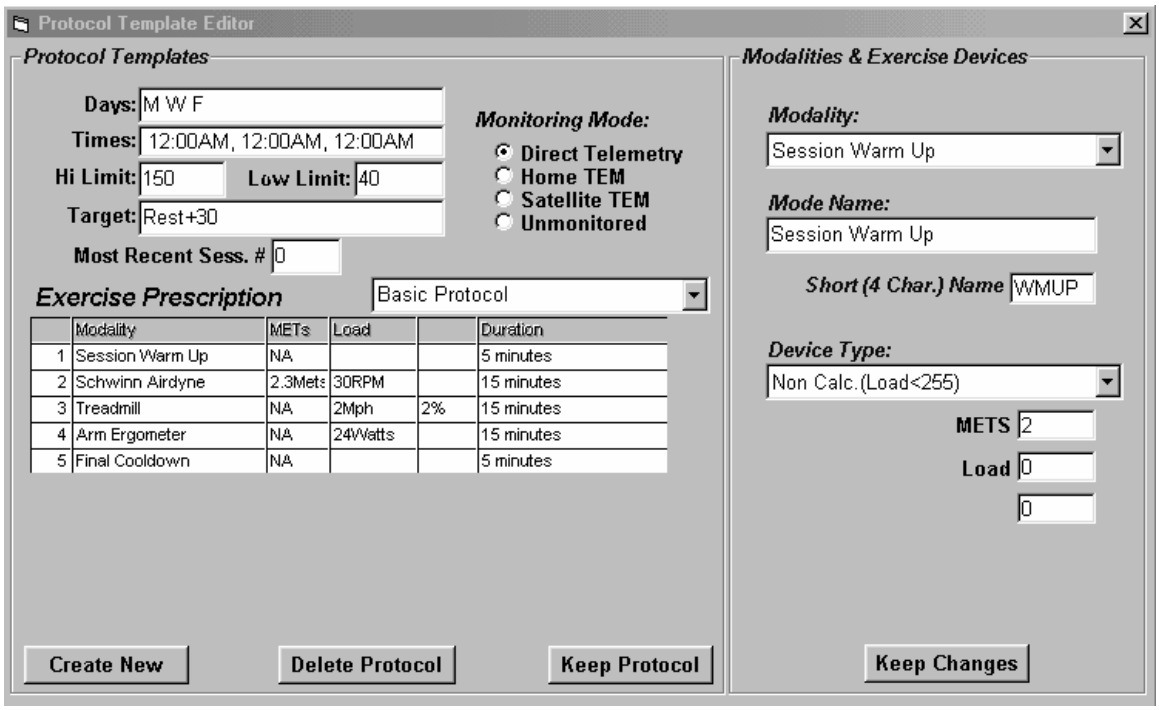
Enter **20** into the Duration block.

To remove a line item from the exercise prescription, hold down the <Ctrl> key and left click on the number of the line to be removed.

Once you are satisfied that each column indicates the desired entry, click on the block labeled 'Keep Protocol' and the new protocol will be added to the list.

Deleting Protocol Templates

First, access the Protocol Template Editor by left clicking on 'Utility' at the top of the screen and then left clicking on 'Edit Protocols'.



Click on the drop down window in the protocol name block and select the protocol name to be deleted.

Click on the 'Delete Protocol' block and the selected protocol will be removed from the list of Protocol Templates.

To exit from the Protocol Template Editor Utility, click on the "X" at the upper right corner of the Protocol Template Editor screen.

Session protocols are protocols that are developed and stored in the program management system as protocols unique to a given patient. Session protocols are defined in the Protocol Input Screen assigned to a patient when he/she is added to the system. Initially, the system will assign the default protocol defined in protocol templates to any new patient when added to the system. The default protocol is then modified to become the unique protocol for the patient being added.

See the section on the **Session Protocol Input Screen** for further information on the development and use of Session Protocols.

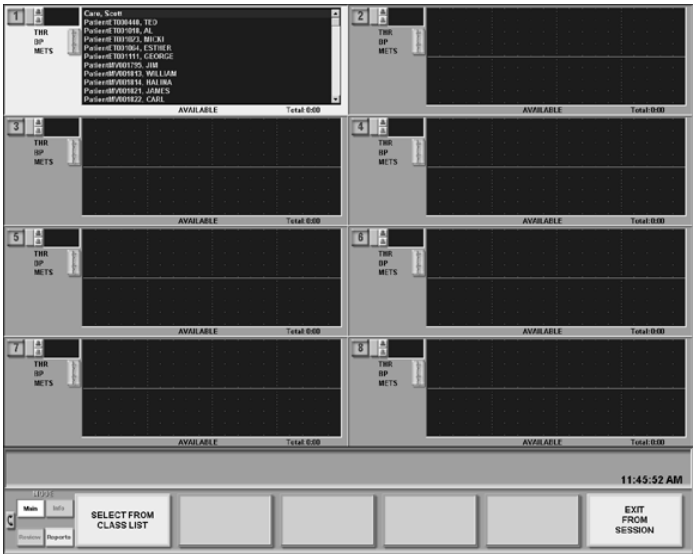
PATIENT MONITORING

The TeleRehab™ 2004 Monitoring area is accessed from the Launcher Screen.

Left click on the Monitoring Bar. The monitoring screen will appear as follows

The Monitoring Screen

When the monitoring section is started, the Monitoring Screen will appear as below:



The monitoring control center is across the bottom of the screen:

The 4 modes available include:

- Main – displayed above in startup mode. Allows you to enter a group of patients by selecting from class list schedule. Left click on the SELECT FROM CLASS LIST button to get a list of days and class times for the week.

  The EXIT FROM SESSION block will close the Monitoring Screen.

- Info – With no patients on the screen, button not available.

- Review – With no patients on the screen, button not available.

- Reports – Allows access to the reports section as described later in this manual.

In the initial screen, the individual monitoring blocks are blank with the exception of the first channel that has the list of patients identified as available for monitoring.

To move the list of names to a different available channel, left click (or touch) anywhere on the desired available channel.

The number to the left is the channel number indicator. Channel numbers may or may not be pre assigned based on the option selected during system setup. To the right of the channel number indicator is a blank block indicating that at least one transtelephonics channel is activated in Setup. If no transtelephonics channels are activated, the block will not be there.

To the Right of the channel number indicator are the bell shaped alarm indicators, red for rate and blue for arrhythmia rate.

The box to the right of the alarm indicators is where the heart rate will be displayed.

Below the Heart Rate box is displayed the THR (Target Heart Rate), BP (Current Blood Pressure Reading), and METS (most recent value). In the start up screen the values for these items are blank, but the display is activated when a patient is selected (See below).

To the right of the data area is a strip indicator activated only when a patient is entered on the screen for monitoring, and the display has been started.

Below the monitoring window, the word AVAILABLE appears to indicate that the channel is not in use. This area will display the modality in use along with a timer indicating how long the modality has been in use once a session is started.

To the far right of the modality indication area is a timer. This timer will start when the session recording starts and will stop when recording stops to indicate the total recorded session time.

The list of names of all patients available for monitoring based on the settings in the Setup area will appear in the monitoring area window. A scroll bar appears to the right of the window when the list of names exceeds the viewing space available in the window. The vertical size of the window will change based on how many channels are being displayed on the screen. (Number of channels is selected in the Setup screen).

Entering a Patient Name into the Monitoring Screen

Patient names can be entered into monitoring channels in three different ways.

Move the list of names to the desired channel and double left click on the desired patient name.

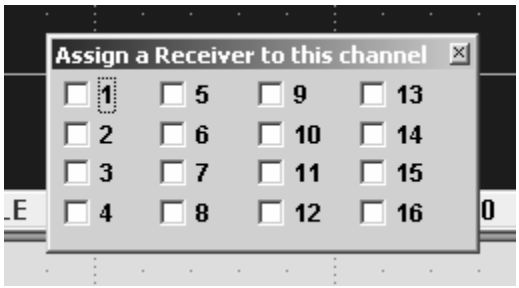
Touch the list of names to highlight a name and press the <Enter> key.

Click on the 'SELECT FROM CLASS LIST' button to get a drop down window with the schedule for the week.

Select the class day and time and the names of patients scheduled for monitoring as a member of that class will be sequentially entered in up to the maximum number of empty channels.

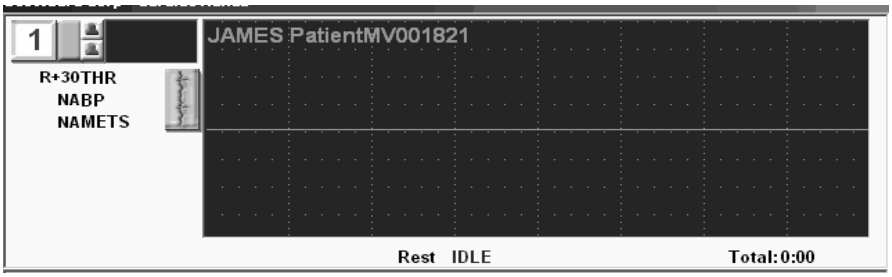
Once a name (or names) is/are loaded into monitoring channels, if channel numbers are not pre defined, channel numbers will need to be assigned before the ECG trace is started.

To assign a channel number to a channel, right click on the channel number block to view the following selector screen:



Left click on the box next to the channel you wish to assign to the selected area based on the transmitter number being used by the patient. (Note: this feature is most useful when coupled with the load class list feature).

Once patients are loaded and channel numbers assigned if needed, additional information will appear in each channel where a patient name has been loaded, and additional options are made available in the monitoring control center.



Once a name is displayed and before the ECG trace is started, the following information is available in the individual monitoring screen:

- THR (Target Heart Rate). This value will be whatever is in the patient file protocol section, and can be changed by right clicking on the value. A window will appear allowing entry of a new THR.

- BP (Current Blood Pressure Reading). This value will read NA until a blood pressure is entered for the patient.

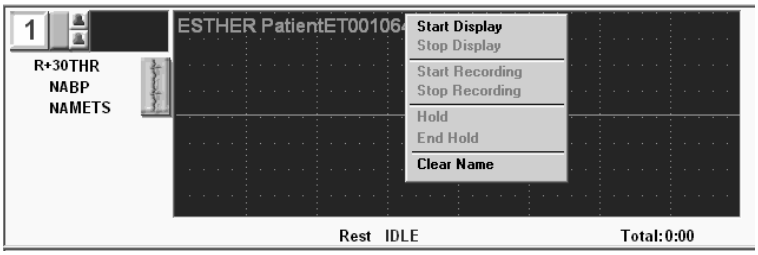
- METS (Most recent value). This value will read NA until a METS value is either entered or calculated by the system.

- Below the monitoring window, the word IDLE appears with the first modality indicated in the patient protocol just to the left. (The example is REST). This indicates that the session has not yet begun. This area will display the modality in use along with a timer indicating how long the modality has been in use once a session is started.

Starting the Displays

Displays can be started in three different ways.

1. Select the channel whose display is to be started and left click (or touch) the 'Start Display' button at the bottom of the screen. This will start the display for the selected channel.
2. Right clicking on the word IDLE brings up the individual display menu below:



Left click on the Start Display line to start the display for this channel.

3. Right click on one of the buttons across the bottom of the screen, and a menu will be displayed as below:

Left click on the Start All Displays line to start the displays for all channels not previously started.

Monitoring Patients

Once the patient name(s) have been added to the monitoring area, and the display(s) have been started, the monitoring center options will change as shown below.

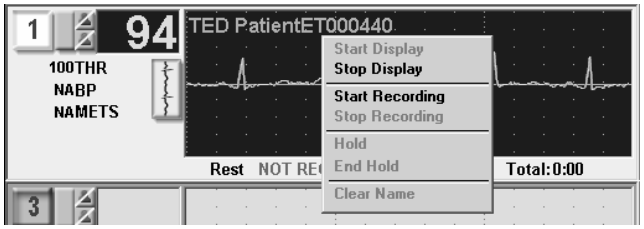
Once the patient name is entered, the features of the system in terms of collecting information for report preparation are functional, however not all data is saved to appear in a report.

Rhythm data is not being saved at this point, and reports produced will be without strips and without graphic representation of the session.

In order to produce acceptable monitored reports, the session must be recorded.

You can start the recording process in three different ways.

1. Select the channel whose display is to be started and left click (or touch) the START RECORDING (PATIENT NAME) Button at the bottom of the screen. This will start the recording process for the selected channel.
2. Right clicking on the words NOT RECORDING brings up the individual display menu below:



   Left click on the Start Recording line to start the recording process for this channel.

3. Right click on one of the buttons across the bottom of the screen, and a menu will be displayed as below:

Left click on the Start Recording All line to start the recording process for all channels not previously started.

Once the recording process is implemented, the monitoring center options will change as shown below, and channel numbers being recorded will turn green.

Alarm Indication

The system is equipped with 3 different audible and visual alarms:

- The Rate Alarm – When the patient's heart rate falls outside the established range, the trace will turn ***red***, and an audible alarm will sound. The default rate range is established during setup and can be changed during monitoring. See **Alarm Settings** for more information.

- The Arrhythmia Alarm – When an arrhythmia rate, or any other anomaly occurs that causes a significant change in R-to-R interval, the trace will turn ***blue***, and an audible alarm will sound. See **Alarm Settings** for more information.

- The Overtime Alarm – When the time of exercise defined in a patient's protocol (duration) is exceeded, an audible alarm will sound while the device time indicator flashes.

Keeping Track of Time

To the right of the modality indication in the monitoring area is a timer. When a session begins, this timer will keep track of the time spent on the indicated modality. The timer can be either a *standard timer* (shown) or a *countdown* timer depending on the selection made during setup. The timer will reset each time the modality is changed.

NOTE: Protocols should be entered and used if countdown timers are to be used.

In the lower right corner is a second timer. This timer will start when recording starts, and will stop when recording stops to indicate the total recorded session time.

The Hold Feature

The timer on a modality may also be placed in a 'Hold' mode if desired to avoid counting idle time as exercise time. To place the timer on 'Hold', right click on the time indicator to see the selector window shown below.

Left click on the Hold bar to place the timer on hold.

The timer will restart and keep track of the time that the system was in the 'Hold' mode.

The system can be configured to automatically go into Hold mode at the end of a prescribed time if that selection is made during setup. See the section on system setup for further information.

To take the system out of 'Hold' mode, right click on 'Hold' to bring up the selector window.

Click on "End Hold" to resume timing exercise on a given modality.

Changing modalities will also cause the system to reset the timer and resume normal timing of exercise.

Adjusting the Display Settings

The system provides a means to adjust display speed, display size, and whether the display is a black trace on a white background or a white trace on a black background while monitoring. These features are defined in the setup section where the default settings are selected.

Right clicking on the monitoring window will bring up a channel control menu as follows: (Note: This feature is active as long as a patient name is on the screen, including while a trace is being displayed and recorded).

Defaults will be set at the factory of a speed equivalent to 25mm/sec and a gain of 1mv. Options for speed are ½ - equivalent to 25 mm/sec, 1 – equivalent to 50 mm/sec, and ¼ - equivalent to 12.5 mm/sec. Options for Gain are x1 – 1mv, x2 = 2mv, and x4 = 4mv. The waveforms cannot be made smaller than 1mv.

The *Trace* area allows selection of whether the display is black trace on a white background or white trace on a black background.

Current settings are indicated by a check mark to the left of the setting. To change any setting, click on the *desired* setting and the change will take effect automatically.

Alarm Settings

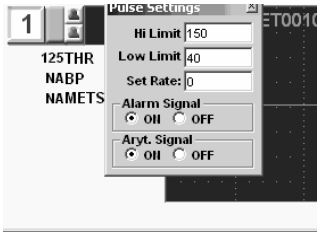
To the Right of the channel indicator are the alarm indicators, red for rate and blue for arrhythmia rate.

Left clicking on one of the indicators will deactivate the alarm for the channel. A slash will appear across the symbol to indicate deactivation. Left clicking the symbol again will reactivate the alarm.

Right clicking on the alarm indicator will deactivate the alarm for all channels. Right clicking a second time will reactivate the alarms for all channels.

The box to the right of the alarm indicators is where the heart rate is being displayed.

Right clicking on this box will provide the following option screen:



Hi and Low Limit boxes indicate the cut off values to activate the rate alarm (RED).

The Set Rate option allows manual entry of a heart rate that will be displayed and used in reports in lieu of rates determined by the computer.

The rate alarm and/or arrhythmia alarm can be activated or deactivated here as well.

Displayed Information

A great deal of information is displayed and saved during the monitoring session. Some of this information is displayed on the screen during the session while other information is saved for use in various reports. Information is displayed both in the monitoring area and in the monitoring status line.

The Monitoring Display Area

Once the trace is started and recording is under way, the monitoring display area will appear as follows:

The channel number will be Green to indicate that the channel is being recorded.

- Current Heart Rate. This value is displayed in large numbers between the alarm indicators and the patient's name. The heart rate displayed is an 8 beat running average, and the number is updated approximately every 4 seconds.

- THR (Target Heart Rate). This value will initially be whatever is in the patient file protocol section. The THR for ***this session*** is determined by the format used to define the patient's THR. If a whole number is assigned, that number will be identified as the session THR. If a range is assigned, the entire range is identified as the session THR, and if rest + a number is assigned, the session THR will be calculated using the heart rate appearing on the first saved strip. (The system assumes that the first strip saved is the resting strip).

- BP (Current Blood Pressure Reading). This value will read NA until a blood pressure is entered for the patient. The most recently entered BP will be displayed in this area.

- METS (Most recent value). This value will read NA until a METS value is either entered or calculated by the system. The value displayed will be related to the exercise device being used. The system will automatically calculate and display the MET value based on the workload settings for the device being used provided the formula necessary for the calculation is resident in the system. Manually entered MET values will be accepted and displayed for those devices where no formula is present or where the formula is not identified for use.

- Below the monitoring window, the word IDLE appears with the first modality indicated in the patient protocol just to the left. (The example is REST). This indicates that the session has not yet begun. This area will display the modality in use along with a timer indicating how long the modality has been in use once a session is started.

The Monitoring Status Line

The area below the monitoring area (Monitoring Status Line) will display data on the patient whose channel is selected as defined by the setup of the monitoring status line in the System Setup Section.

- The RBP (Resting Blood Pressure) is assumed by the system to be the first blood pressure value entered on a given patient. That value will be displayed unless changed by the user. (See entering Information While Monitoring below for further information).

- RHR (Resting Heart Rate) is assumed by the system to be the heart rate indicated by the first strip saved on a given patient. That value will be displayed unless changed by the user. (See entering Information While Monitoring below for further information).

- SpO2 (Blood Oxygen Level) the most recently entered value is displayed.

- RPE (Rate of Perceived Exertion) the most recently entered value is displayed.

- Cal (Calories) the accumulated number of calories expended based on the work done for each completed exercise device is displayed.

- Dx (Abbreviated Diagnosis) the abbreviated diagnosis entered into the patient record is displayed.

- The long line down the center of the status bar displays the current exercise device information including the device, workload, and time of activity assigned.

- The long line near the bottom of the status bar displays information regarding the next exercise device expected to be utilized by the patient. If the patient's exercise protocol has been interrupted, or no exercise device is assigned following the current device, NA will be displayed in this area.

- # (Session number) The current session number is displayed.

- The time of day is displayed in the lower right corner of the status bar.

Saving Strips

Rhythm strips can be saved in several different ways.

- A left click on the icon next to the monitoring area will cause the strip chart recorder to begin printing the displayed rhythm strip. The strip chart recorder will continue to run until stopped by left clicking a second time on the same icon. The first 6 seconds of the rhythm strip so saved will be marked for inclusion in the daily session report.

- Double left clicking on the icon next to the monitoring area will cause the strip chart recorder to print a six second strip. The printed rhythm strip is also identified for inclusion in the daily session report.

- Touching a strip (if a touchscreen is in use) will cause the system to identify or 'mark' the touched strip for inclusion in the daily session report without physically printing a rhythm strip to the strip chart recorder.

- Left clicking a strip will cause the system to identify or 'mark' the identified strip for inclusion in the daily session report without physically printing a rhythm strip to the strip chart recorder.

- Right clicking on the icon next to the monitoring area will cause the system to identify or 'mark' the current rhythm strip for inclusion in the daily session report ***for all patients currently being monitored.***

NOTE: Once a strip is saved while the patient is on a specific device, the strip icon will be green indicating that a strip has been saved for the device currently in use. When the device is changed, the icon will turn cream white again to indicate that no strip has yet been saved for the now current device.

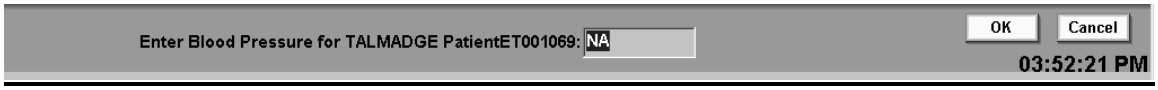
Entering/Editing Information While Monitoring

Various means of entering information are provided based on data type and how it is used. User defined information is included, and specific areas have been incorporated to allow input and/or editing of user defined information.

Entering/Editing Current Blood Pressure Readings

There are two ways to enter current blood pressure values:

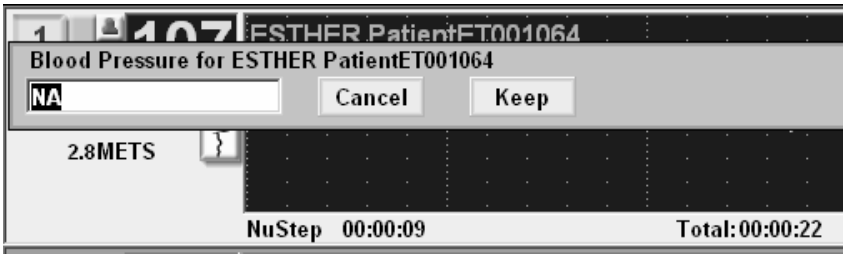
Left clicking on (or touching) ENTER BLOOD PRESSURE button near the bottom of the screen brings up a box allowing you to enter the current blood pressure for the patient whose monitoring area is selected.



Enter the blood pressure in the block and press the <Enter> key or click OK to save the information and exit this utility input screen. The newly entered value will be displayed in the monitoring area.

The cancel button is self-explanatory.

Right clicking on the blood pressure value being displayed in the monitoring area of the patient whose current blood pressure is to be entered will cause the blood pressure entry box to appear in the monitoring area selected.

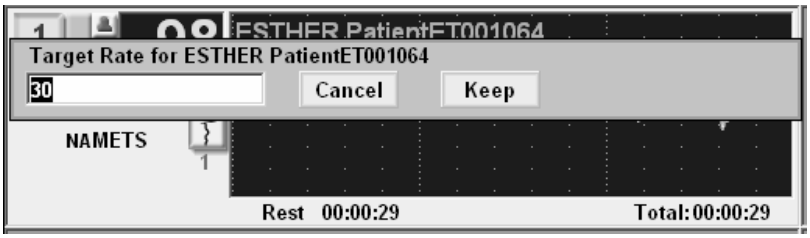


Enter the current blood pressure in the block and press the <Enter> key or click Keep to save the information and exit this utility input screen. The newly entered value will be displayed in the monitoring area.

The cancel button is self-explanatory.

Editing the Session Target Heart Rate

Right clicking on the THR value being displayed in the monitoring area of the patient whose session target heart rate is to be changed will cause the Target Rate entry box to appear in the monitoring area selected.



Enter the correct session target heart rate in the block and press the <Enter> key or click Keep to save the information and exit this utility input screen. The newly entered value will be displayed in the monitoring area.

The cancel button is self-explanatory.

Entering Timed Comments

Timed comments are comments that can be entered during the monitoring process that will be displayed in a report based on the time that they were entered. They may also be used to augment session comments.

Click on (or touch) the ENTER COMMENT FOR (PATIENT NAME) button near the bottom of the screen to enter a timed comment for that patient. The patient name that

appears on the labels is determined by the name on the channel currently selected. The following screen will be made available:

The Phrase Library is made available on the left.

To move a comment from the phrase library to the comment area, double click on the phrase to be moved, OR - Type in the comment desired to appear in the report.

Click the **OK** button to save the comment.

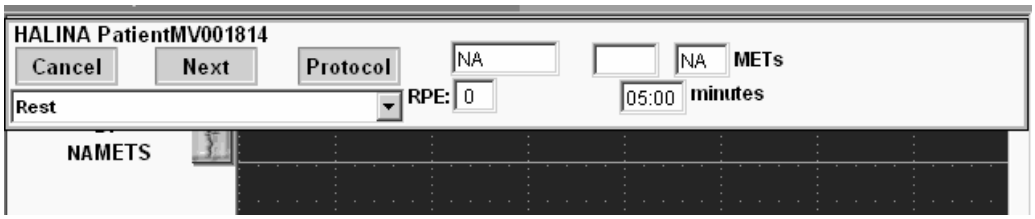
Click the **Cancel** button to leave this screen without entering a comment.

Entering/Editing Exercise Functions

Exercise functions involve several different parameters including Exercise ***Modality, Workload, METs, RPE***, and ***Time*** that the patient is to participate in a given modality.

Left clicking on (or touching) EXERCISE FUNCTIONS button near the bottom of the screen brings up a protocol entry utility allowing changing of modality, workload information, RPE, and/or time for the selected patient.

A right click on either the METs value or on the Current Modality item in the monitoring area of the patient whose exercise functions you wish to address will produce the following screen:



Changing Exercise Modalities

The **Next** button will change the modality to the next item in the patient protocol. If no additional modalities are listed in the patient protocol, the **Next** label will change to **Keep**, and it can no longer be used to change the modality.

If the patient is not following their protocol, and the **Next** button is not being used, there are two ways to select modalities.

First, there is a drop down window that lists all modalities available as defined by the Protocols Utility in the Program Management files. An exercise modality can be selected

from that list by clicking the drop down window, and highlighting the desired device to be used as the exercise modality. When a modality is selected, the **Next** label will change to **Keep**. If the modality selected is also a part of the patient's protocol with assigned workloads and time, that information will appear in the Load, METs, and time blocks. If the modality selected is NOT a part of the patient's protocol, no information will appear in the Load, METs, or time block and appropriate data will have to be entered. Click on the Keep label and the selected exercise modality will appear as the current exercise modality.

It should be noted that once the protocol sequence is broken, the **Next** button would no longer be available for use for the balance of the session.

Second, clicking on the Protocol label will bring up a window containing the patient's protocol. A checkbox appears to the left of each modality, and a check mark will appear in the box if the modality has been used. Clicking on any of the modalities listed will cause that modality to appear in the drop down window and the assigned workloads and time will appear in the appropriate blocks. The **Next** label will change to **Keep**, and left clicking on **Keep** will cause the selected exercise modality to appear as the current exercise modality.

Changing Work Load

To change the workload for the modality currently in use, enter the new workload in the boxes provided between the Protocol button and the METs block. In those instances where there are two components to the workload, the first block is used for the primary component and the second block contains the secondary component. For example, Treadmill Speed would appear in the first block while slope would appear in the second.

When the workload block is activated, the ***Next*** button will change to ***Keep***, and left clicking on ***Keep*** will cause the newly entered workload to be saved and used in the METs calculation.

Changing MET's

To change the MET's value for the modality currently in use, enter the new MET's value in the box provided.

When the MET's block is activated, the ***Next*** button will change to ***Keep***, and left clicking on ***Keep*** will cause the newly entered METs to be saved. The workload value will be adjusted based on the new METs value.

Entering/Changing Time

To enter or change the Time for an exercise modality currently in use, enter the new time in the box provided.

Due to the way time is utilized and displayed by the system, Time must be entered using a colon to distinguish between seconds and minutes. An entry without a colon identifies the time as seconds while a colon after the number entered identifies the time as minutes.

Entering/Changing RPE

To enter or change the RPE value for the exercise modality currently in use, enter the new RPE value in the box provided.

When the RPE box is activated, the ***Next*** button will change to ***Keep***, and left clicking on the ***Keep*** button will cause the newly entered RPE value to be saved as a part of the session data file.

The RPE can also be entered or changed by editing the RPE value displayed in the Monitoring Status Line.
Right click on the RPE value displayed and the following screen will be made available:

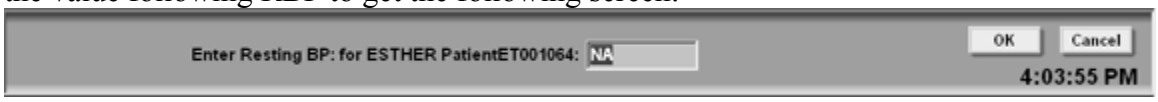
Enter the correct RPE value and left click on the OK button to save the new number.

Editing Items in the Monitoring Status Line

Some items displayed in the monitoring status line are eligible for editing.

Editing the Resting Blood Pressure Value

The RBP (Resting Blood Pressure) is assumed by the system to be the first blood pressure value entered on a given patient. If the existing value is incorrect, right click on the value following RBP to get the following screen:



Enter the correct RBP value and left click on the OK button to save the new information.

Entering the Resting Heart Rate Value

The RHR (Resting Heart Rate) is assumed by the system to be the heart rate indicated by the first strip saved on a given patient. If the value displayed is incorrect, right click on the existing value to get the following screen:

Enter the correct RHR value and left click on the OK button to save the new information

Editing the Current SpO2 Value

The SpO2 (Blood Oxygen Level) displayed is the most recently entered value. If the displayed value is incorrect, right click on the existing value to get the following screen:

Enter the correct SpO2 value and left click on the OK button to save the new information.

Editing the Current Session Number

The # (Session number) displayed is the current session number. If the displayed number is incorrect, right click on the existing number to get the following screen:

Enter the correct session number and left click on the OK button to save the new information.

NOTE: There may be other user-defined resources displayed in this area that are also eligible for editing. In all cases, a right click on the value to be edited allows access to the Editing utility.

Entering/Editing User Defined Modality Data

The system provides an area designed to allow entry of user defined modality data. The items included are defined during system setup (See **Setting up the Custom Monitoring Buttons** in the Setup Section).

To access the Modality buttons, left click on (or touch) the Info button to the left of the Monitoring Control Center to access the Info buttons.

Left click on (or touch) the button labeled MODALITY BUTTONS to access the user defined modality input screen below:

Left click on (or touch) the desired modality button to access the input screen:

Enter the correct data and left click on the OK button to save the new information.

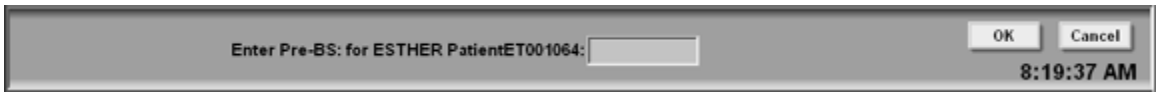
Entering/Editing User Defined Summary Data

The system provides an area designed to allow entry of user defined summary data. The items included are defined during system setup. (See **Setting up the Custom Monitoring Buttons** in the Setup Section).

To access the Summary buttons, left click on (or touch) the Info button to the left of the Monitoring Control Center to access the Info buttons.

Left click on (or touch) the button labeled SUMMARY BUTTONS to access the user defined summary input screen below:

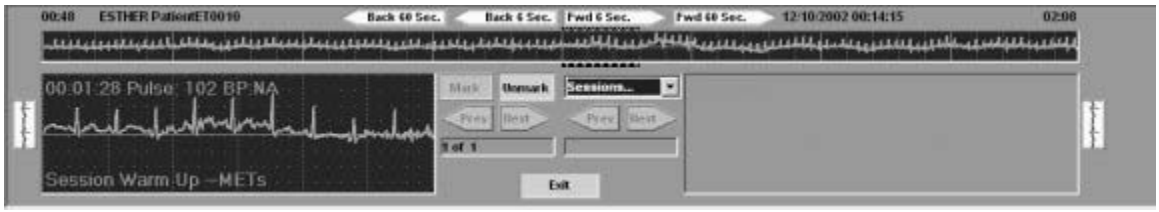
Left click on (or touch) the desired summary button to access the input screen:



Enter the correct data and left click on the OK button to save the new information.

Editing Saved Rhythm Strips

Left clicking (or touching) the SHOW SELECTED STRIPS button allows review of the full disclosure to the point in time when this utility is activated. It also provides access to strips saved during this session as well as any strip that has been saved in previous sessions.

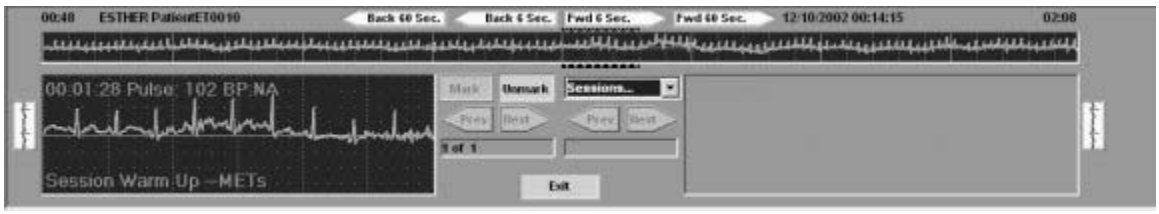


The time indicators at the top left and right corners indicate the time span being displayed by the full disclosure strip.

The patient name appears in the upper left area of the box, with the date and time of session appearing to the right of the box.

Left clicking on the arrow tabs at the top of the box will move the full disclosure strip as indicated by the box (e.g. Back 60 sec. Or Fwd 6 sec.)

When first activated, the first strip saved will appear in the larger box at the lower left of the screen. The small flat box inside near the center will indicate which strip you are viewing (e.g. 2 of 4). View each of the strips saved by left clicking on either **Prev** for previous strips or **Next** for the next strip saved.



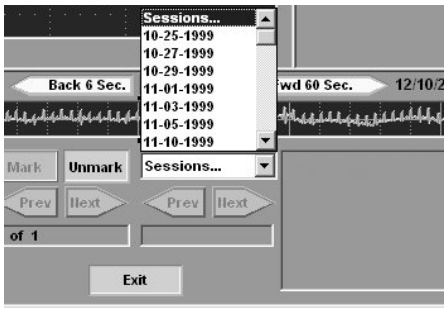
Left clicking anywhere on the full disclosure will cause that 6-second strip to appear in the large box at the lower left of the screen in place of a saved strip. To save an unsaved strip, left click on the **Mark** block. To unsave a strip, left click on the **Unmark** block.

Printing Saved Rhythm Strips to the Strip Chart Recorder

To print a strip on the strip chart recorder, left click on the strip icon to the left of the strip box. The strip shown in the box will print to the strip chart recorder.

Reviewing Rhythm Strips from Previous Sessions

To view strips saved in previous sessions, left click on the drop down window box labeled **Sessions**, and a list of session dates will appear.



Double click on the date of the session whose strips you wish to view, and the first of the saved strips in that session will appear in the strip box to the right of the screen.

The small flat box inside near the center right will indicate which strip you are viewing (e.g. 2 of 4). View each of the strips saved by left clicking on either **Prev** for previous strips or **Next** for the next strip saved.

Printing Rhythm Strips from Previous Sessions to the Strip Chart Recorder

To print a strip on the strip chart recorder, left click on the strip icon to the right of the strip box. The strip shown in the box will print to the strip chart recorder.

Left click on the **Exit** box to leave this screen.

Review/Edit Session Summary Data

Left clicking (or touching) the EDIT SESSION SUMMARY DATA button at the ***review*** menu allows review of the summary information identified to appear in the daily session report.

The items appearing in this screen are defined in the program management application. To change an item, click on the appropriate box and enter the desired information.

When done, left click on the box to the right that identifies the action you wish to take:

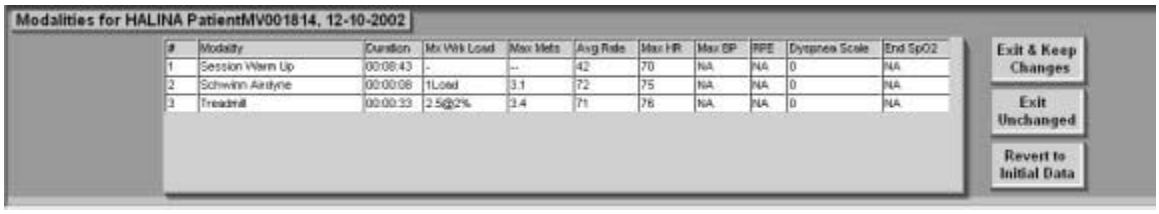
Exit and Keep Changes will keep your changes for the daily session report.

Exit Unchanged will ignore your changes and keep the initial information.

Revert to Initial Data will return all values to their original number.

Review/Edit Session Modality Data

Left clicking (or touching) the EDIT SESSION MODALITY DATA button at the ***review*** menu allows review of the modality information to appear in the daily session report.



The items appearing in this screen are defined in the program management application. To change an item, left click on the appropriate box and enter the desired information. The modality items will provide a drop down window for selection. Duration must be entered as a time including the colons. Workloads may require entry of two items (e.g. speed and slope). All other blocks will accept numeric information.

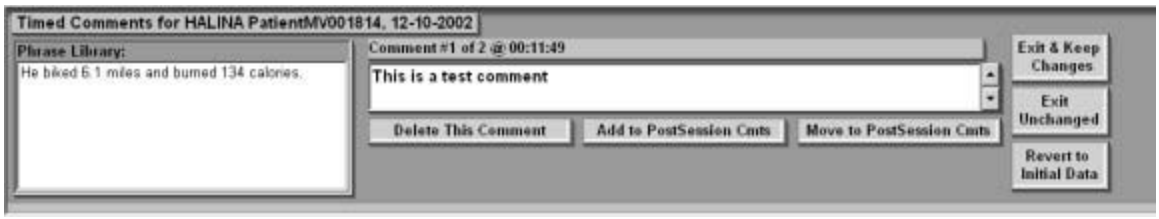
Exit and Keep Changes will keep your changes for the daily session report.

Exit Unchanged will ignore your changes and keep the initial information.

Revert to Initial Data will return all values to their original number.

Review/Edit Session Timed Comments

Left clicking (or touching) the EDIT TIMED COMMENTS button at the ***review*** menu allows review of comments that were entered during a session.



Modify a timed comment by double clicking on a phrase from the phrase library, or by clicking into the comment itself and making desired changes.

View other timed comments by clicking the up or down arrow to the right of the comment block.

To delete a timed comment, click on the **Delete This Comment** block.

Clicking on the **Add to PostSession Cmts** block will add the comment to the post session comments area and maintain the comment as a timed comment as well.

Clicking on the **Move to PostSession Cmts** block will add the comment to the post session comments area and remove the comment from the timed comments area.

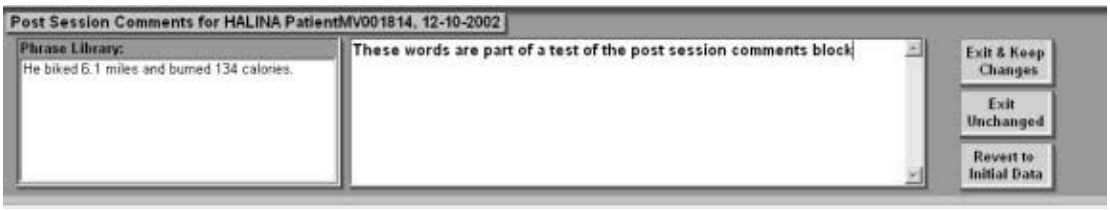
Exit and Keep Changes will keep your changes for the daily session report.

Exit Unchanged will ignore your changes and keep the initial information.

Revert to Initial Data will return all values to their original number.

Review/Edit Post Session Comments

Left clicking (or touching) the POST SESSION COMMENTS button at the ***review*** menu allows entry as well as review of post session comments that are entered during a session.



Modify the post session comments by double clicking on a phrase from the phrase library, or by clicking into the comment itself and making desired changes.

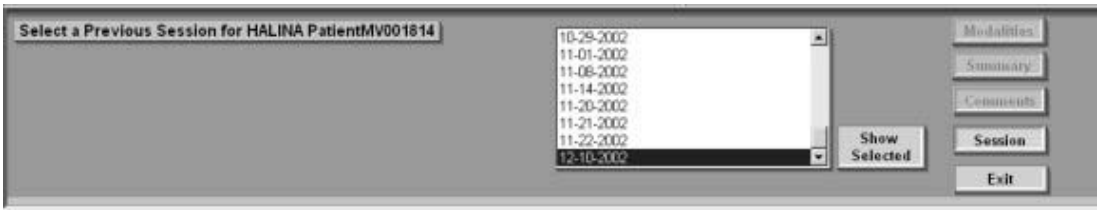
Exit and Keep Changes will keep your changes for the daily session report.

Exit Unchanged will ignore your changes and keep the initial information.

Revert to Initial Data will return all values to their original number.

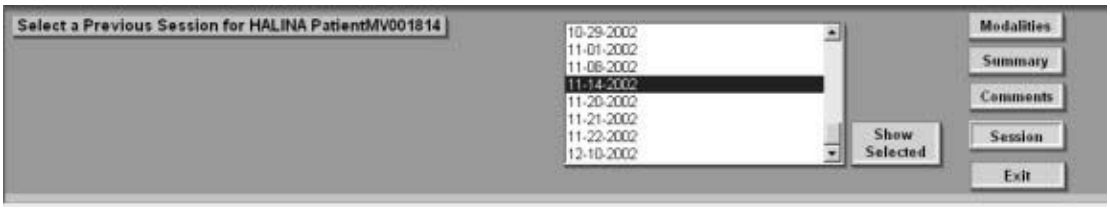
Reviewing a Previously Recorded Session While Monitoring

Left clicking (or touching) the REVIEW PREVIOUS SESSION button at the ***review*** menu allows review of data entered in any previous session for the selected patient. (Note: Strips can be reviewed by using the **SHOW SELECTED STRIPS** Option).

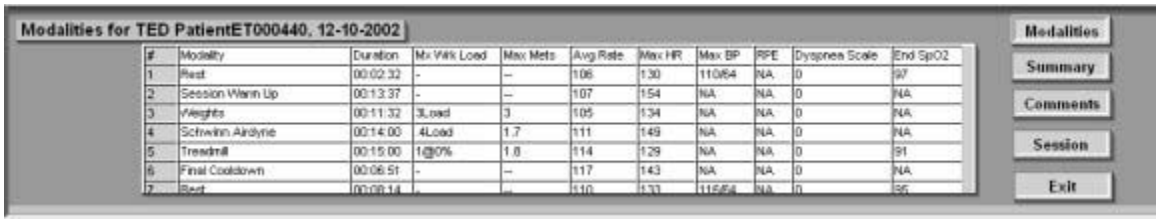


A list of session dates is made available for selection. To select a date, click on the date and then click on the **Show Selected** box.

The section boxes will become available to bring up the various sections of the reports.

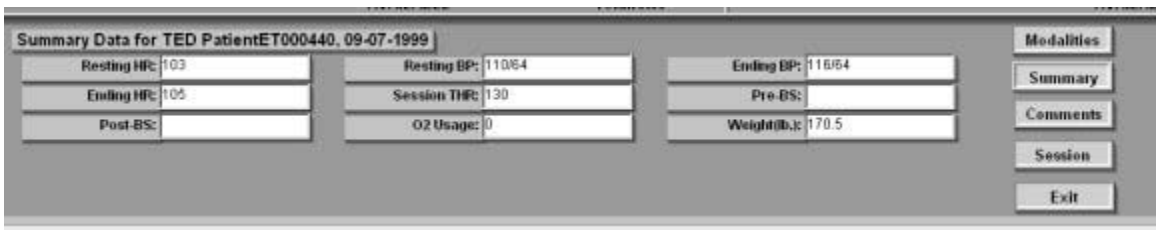


Left click the **Modalities** block to view the modalities section of the selected report.



#	Modality	Duration	Mx Wlk Load	Max Mets	Avg Rate	Max HR	Max BP	RPE	Dyspnea Scale	End SpO2
1	Rest	00:02:32	-	--	106	130	110/64	NA	0	97
2	Session Warm Up	00:13:37	-	--	107	154	NA	NA	0	NA
3	Weights	00:11:32	3Load	3	105	134	NA	NA	0	NA
4	Schwinn Airdyne	00:14:00	4Load	1.7	111	149	NA	NA	0	NA
5	Treadmill	00:15:00	1@0%	1.8	114	129	NA	NA	0	91
6	Final Cooldown	00:06:51	-	--	117	143	NA	NA	0	NA
7	Rest	00:08:14	-	--	110	133	116/64	NA	0	95

Left click the **Summary** block to view the Summary section of the selected report.



Left click the **Comments** block to view the comments (both timed and post session) sections of the selected report.

Note that comments can be copied to the current session by high lighting the comments desired to copy and clicking on the block labeled **Copy to Current Session**.

Clicking on the **Session** button will return to the screen showing the list of sessions available.

Click on the **Exit** button to leave this utility.

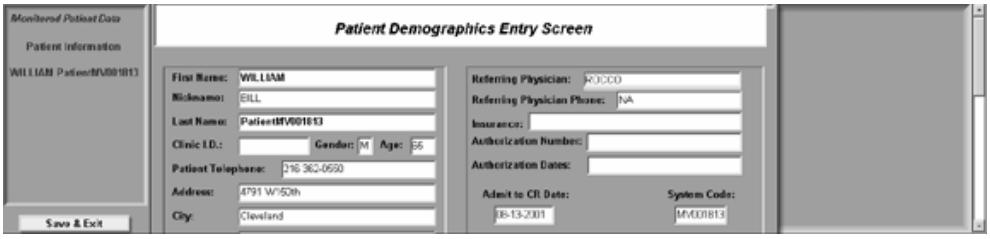
Editing Patient Information While Monitoring

Left clicking on the Info button during a session will bring up the following selections at the monitoring control center:

Keep in mind that the various functions will apply to the patient whose name is on the highlighted channel on the monitoring screen.

Editing Demographic Information While Monitoring

Left clicking (or touching) the **Patient Information** Button will cause the system to display the patient information input screen as defined in the program management section.

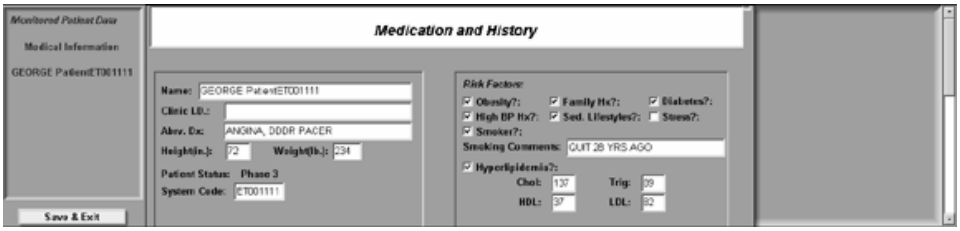


Through the use of this screen, data can be entered/edited directly into the patient file. Use the scroll bar on the right hand side to scroll through the entire screen.

Left click on the ***Save and Exit*** button when editing is complete.

Editing Medical Information While Monitoring

Left clicking (or touching) the **Medical Information** Button will cause the system to display the medical information input screen as defined in the program management section.

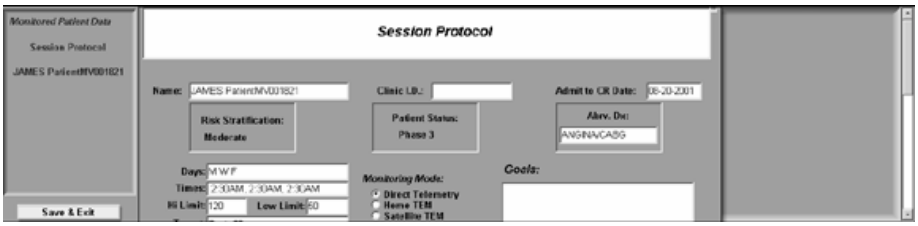


Through the use of this screen, data can be entered/edited directly into the patient file. Use the scroll bar on the right hand side to scroll through the entire screen.

Left click on the ***Save and Exit*** button when editing is complete.

Editing the Protocol Screen While Monitoring

Left clicking (or touching) the **Session Protocol** Button will cause the system to display the session protocol input screen as defined in the program management section.

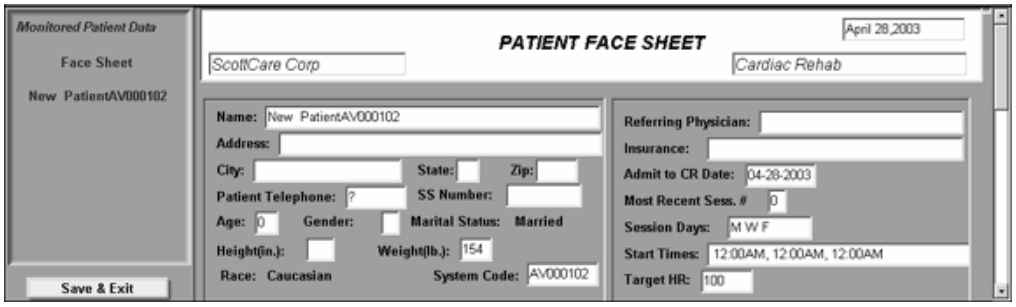


Through the use of this screen, data can be entered/edited directly into the patient file. Use the scroll bar on the right hand side to scroll through the entire screen.

Left click on the ***Save and Exit*** button when editing is complete.

Editing the Face Sheet While Monitoring

Left clicking (or touching) the **Face Sheet** Button will cause the system to display the patient face sheet input screen as defined in the program management section.



Through the use of this screen, data can be entered/edited directly into the patient file. Use the scroll bar on the right hand side to scroll through the entire screen.

Left click on the ***Save and Exit*** button when editing is complete.

Editing Patient Information on Patients Not Currently Being Monitored

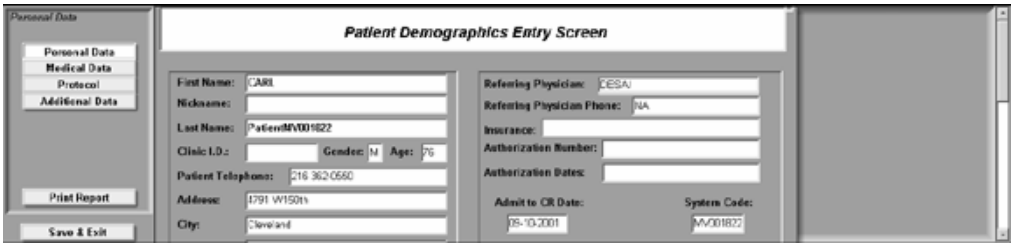
Left clicking on the Reports button while monitoring will provide access to the utilities that provide a means of entering/editing patient information on *patients that are not currently being monitored.*

From this control center, you can view/edit patient data on any patient in the system by left clicking on the Edit Patient Data button.

Highlight the name of the patient whose data you want to review/edit and press the <enter> key.

Editing Patient Information

Left click on the **Patient Information** bar to view the patient information input screen.



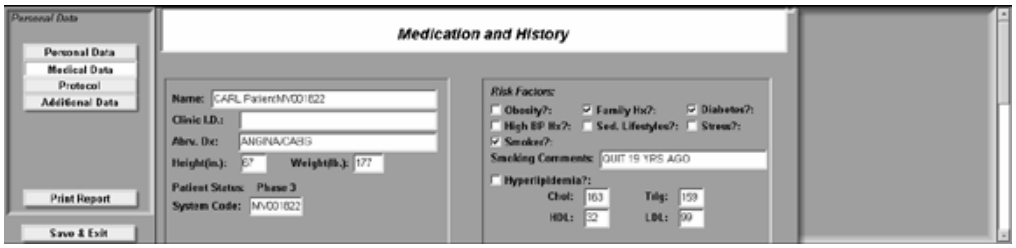
Through the use of this screen, data can be entered/edited directly into the patient file. Use the scroll bar on the right hand side to scroll through the entire screen.

To print the contents of this screen, left click on the ***Print Report*** bar.

Left click on the ***Save and Exit*** button when editing is complete.

Editing Medical Information

Left click on the **Medical Information** bar to view the medical information input screen.



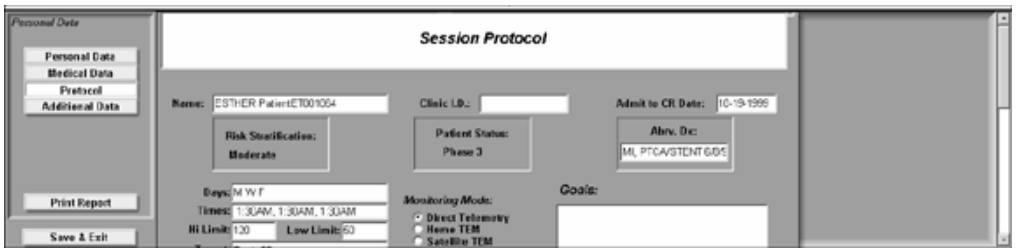
Through the use of this screen, data can be entered/edited directly into the patient file. Use the scroll bar on the right hand side to scroll through the entire screen.

To print the contents of this screen, left click on the ***Print Report*** bar.

Left click on the ***Save and Exit*** button when editing is complete.

Editing Protocol Information

Left click on the **Session Protocol** bar to view the session protocol input screen.



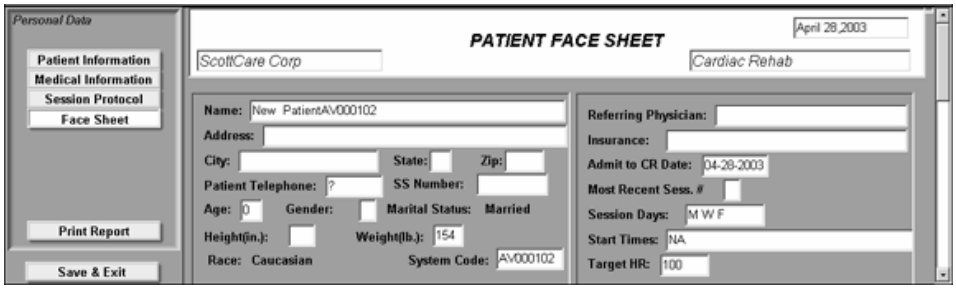
Through the use of this screen, data can be entered/edited directly into the patient file. Use the scroll bar on the right hand side to scroll through the entire screen.

To print the contents of this screen, left click on the ***Print Report*** bar.

Left click on the ***Save and Exit*** button when editing is complete.

Editing Face Sheet Information

Left click on the **Face Sheet** bar to view the patient face sheet screen.



Through the use of this screen, data can be entered/edited directly into the patient face sheet. Use the scroll bar on the right hand side to scroll through the entire screen.

To print the contents of this screen, left click on the ***Print Report*** bar.

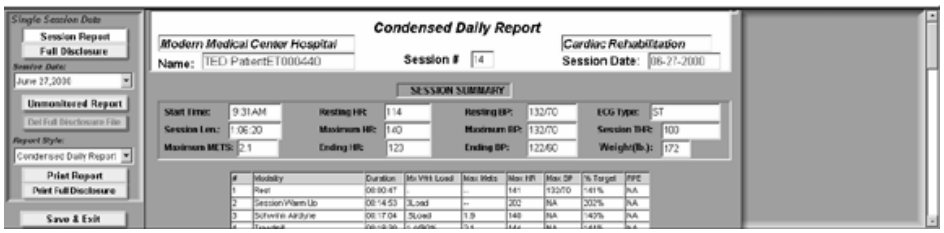
Left click on the ***Save and Exit*** button when editing is complete.

Viewing/Editing Report Data On Previously Monitored Patients

Left clicking on the Reports button while monitoring will provide access to the utilities that provide a means of viewing/editing reports on patients not currently being monitored.

From this control center, you can view/edit report data on any patient in the system by left clicking on the SELECT PRE MONITORED PATIENT button.

Highlight the name of the patient whose report data you want to review/edit and press the <enter> key.



Refer to the section on single session reports for complete instruction on reviewing and editing single session reports.

PROGRAM MANAGEMENT

The TeleRehab™ 2004 Monitoring area is accessed from the Launcher Screen.

Left click on the Program Management Bar. The program management screen will appear as follows:

The Patient Data area allows access to the following four major areas:

1. Program Data
2. Personal Data
3. Single Session Data
4. Multi Session Data

Program Data

The Program Data area provides the ability to print schedules, lists, mailing labels, and program compliance reports. This area also provides a "Scheduler" that can be used as a master schedule for all patients.

Daily Schedules

The system monitors each patient file and identifies those patients scheduled each day when the system is turned on. *Phase 2, Pulmonary,* and *Other* patients are automatically scheduled based on the data entered in their protocol. Phase 3 patients will be scheduled based on the data entered in their protocol only if they have been identified for scheduling. See the section on ***2004 System Setup, Monitoring and Protocol Options.***

Printing Options for Daily Schedule

To print a daily schedule from the ***Patient Data*** screen:

First select the group of patients that you want to print today's schedule for by left clicking on the appropriate bar under Group Selection.

Once the group has been selected, click on 'Print Daily Schedule', and the system will print the schedule.

Classes will be printed either chronologically by time scheduled, or by class times on separate pages depending on the option selected during setup. See the section on ***2004 System Setup, Monitoring and Protocol Options.***

The format utilized for the Schedule being printed is defined in the ***Workspace Screen & Report Links*** area during system setup, and it is possible to have a different schedule format for each patient group.

Patient Lists

The system has the ability to print a list of patients for each category within the Group Selection area. Lists available include not only patient categories, but list can be printed for the General Mail List, Staff List, Other Mail List, and the Physician List as well.

Printing Options for Lists

To print a patient list from the ***Patient Data*** screen:

First select the group of patients that you want to print a list for by left clicking on the appropriate bar under Group Selection.

Once the group has been selected, click on 'Print Patient List', and the system will print the list.

Names will be printed alphabetically in the format defined in the ***Workspace Screen & Report Links*** area during system setup, and it is possible to have a different list format for each patient group.

Mailing Labels

The system has the ability to print mailing labels for patients for each category within the Group Selection area. Mailing labels can be printed not only for patient categories, but list can be printed for the General Mail List, Staff List, Other Mail List, and the Physician List as well.

Printing Options for Mailing Labels

To print mailing labels from the ***Patient Data*** screen:

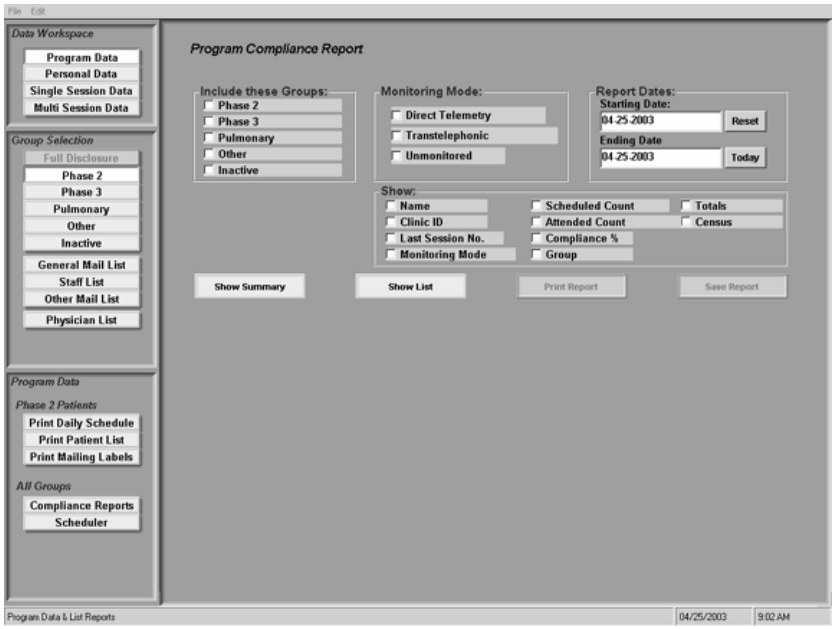
First select the group of patients that you want to print mailing labels for by left clicking on the appropriate bar under Group Selection.

Once the group has been selected, click on 'Print Mailing Labels', and the system will print the mailing labels.

Names will be printed alphabetically in the format defined in the ***Workspace Screen & Report Links*** area during system setup, and it is possible to have a different mailing label format for each patient group.

Compliance Reports

Compliance Reports are reports that reflect the number of sessions attended versus the number scheduled. Reports can be produced reflecting compliance for scheduled patients over a selected time frame as well as an over all compliance for the cardiac rehab program. A utility is provided to define the data that is to appear in the report. To access the Compliance Report Utility, click on the 'Compliance Report' button to get the following 'Program Compliance Report' screen.



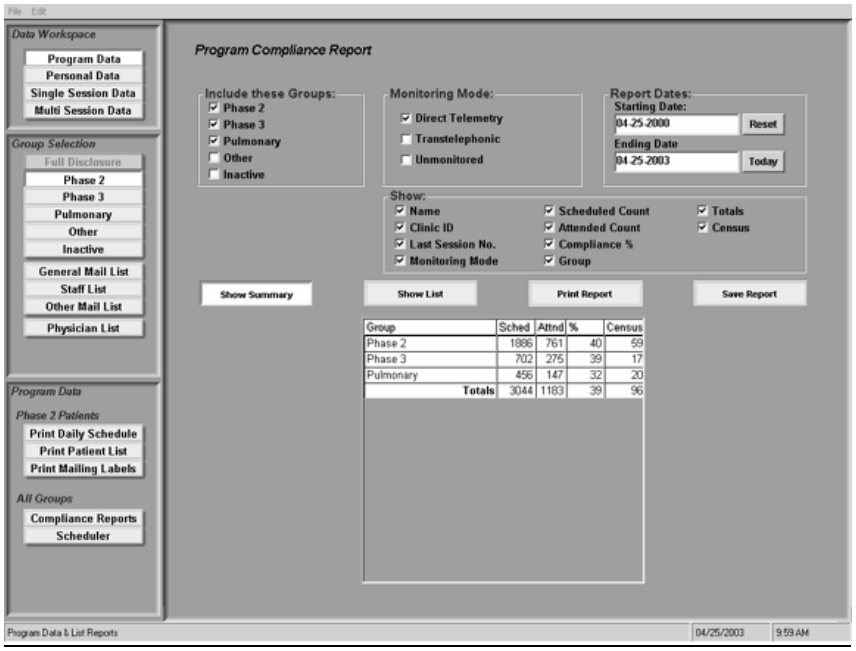
Identify the patient group(s) to be included in the report by checking the appropriate boxes available under 'Include These Groups'.

Select the type of monitoring to be considered by checking the appropriate boxes available under 'Monitoring Mode'.

Enter the starting and ending dates to be considered in the appropriate blocks under 'Report Dates'.

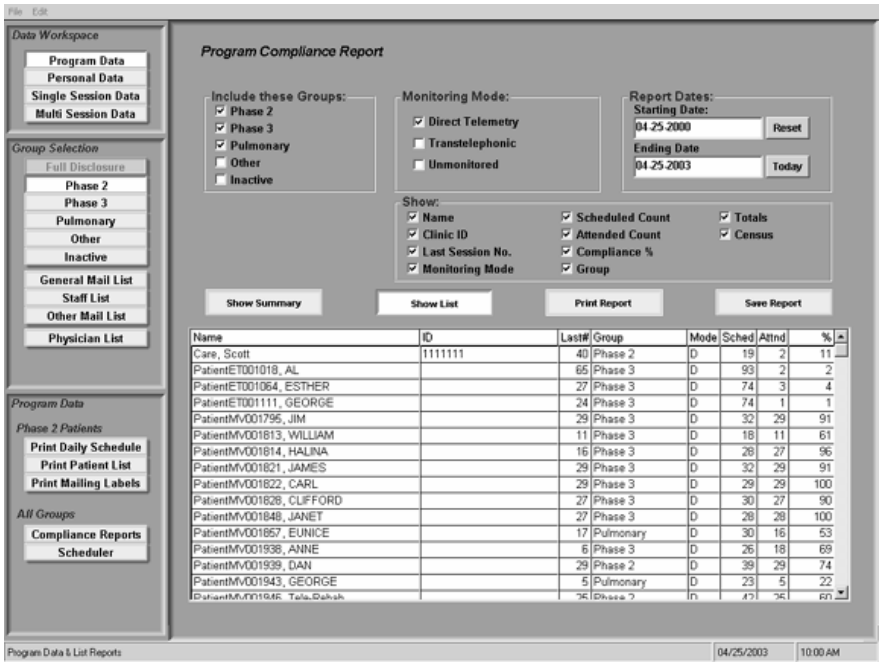
Finally, Check the blocks identifying items to be included in the report under the 'Show' area.

Once all desired blocks have been selected, click on 'Show Summary' to get a summarization of data displayed on the screen. Following is an example:



To print the summary report, click on the 'Print Report' Button.

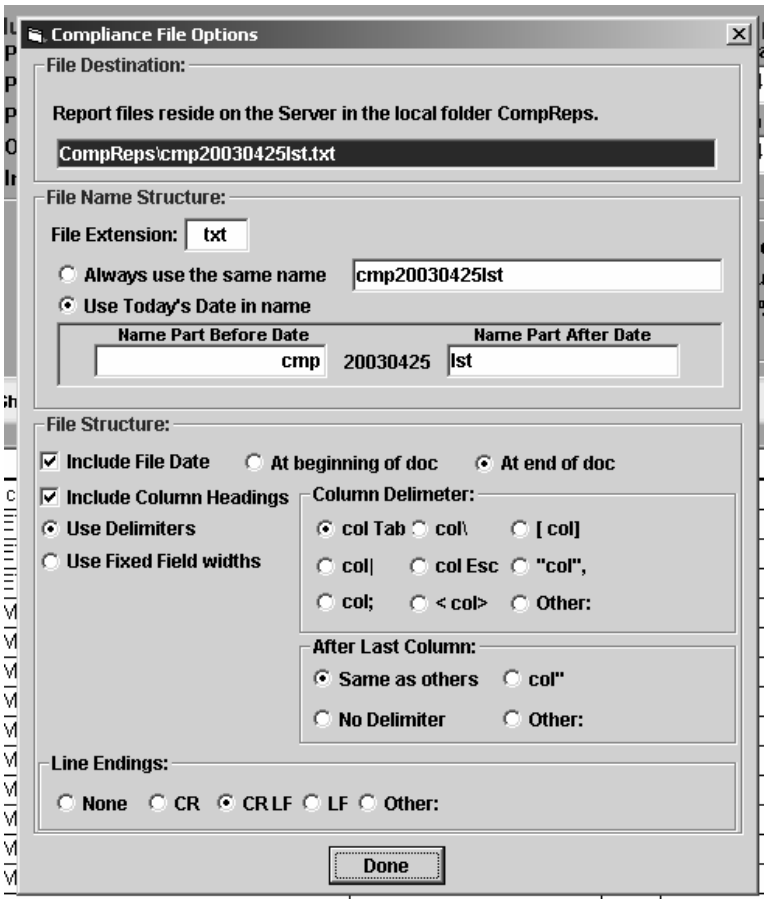
To view the more detailed list of data, click on the 'Show List' button to get the following screen.



To print the detailed report, click on the 'Print Report' Button.

Exporting Compliance Report Information

The system allows the export of compliance reports to a file that can be saved on a floppy disk for archive purposes or used to move compliance data from the 2004 Program Management System to another application. The export function is accomplished through the use of the Compliance File Options utility. To access the Compliance File Options utility, click the 'Save' button to get the following screen:



This utility allows the user to define the name and extension of the file to be created, and how the file is to be constructed. The idea is to create a file that can be imported into another application by designing the file to meet the specifications of the destination application.

The file will be saved in the location indicated in the File Destination window. In other words, all compliance report files will be stored on the C drive of the computer housing the Server application in a folder identified as 'CompReps'.

To set up the file name and file name structure, work in the 'File Name Structure' area. Enter the File Extension to be used in the 'File Extension' block.

If you want to always have the file export with the same name, click on 'Always use the same name'.

If you want a unique name for each file, click on 'Use Today's Date in name'. Enter what is to appear before the date in the block labeled 'Name Part Before Date', and enter what is to appear after the date in the block labeled 'Name Part After Date'. In this mode, the file name will change each day based on today's date.

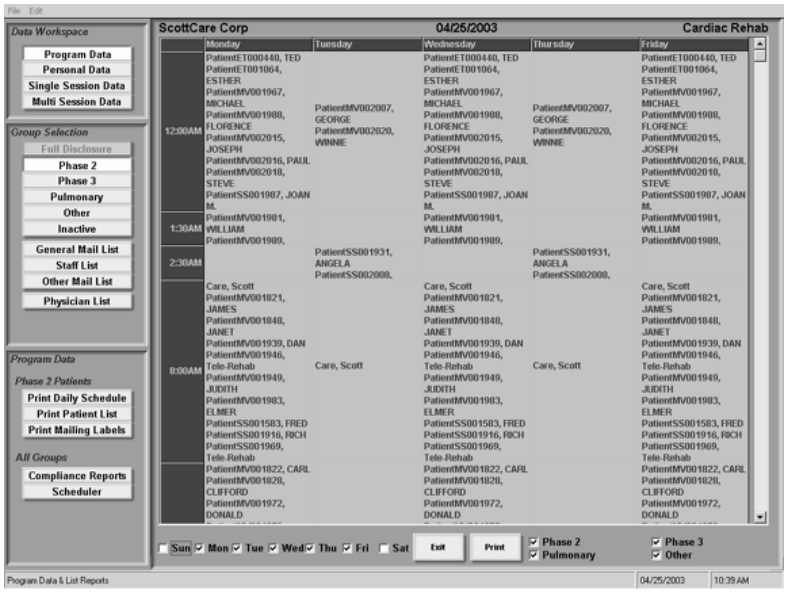
To define the structure of the file to be saved, select the appropriate items in the 'File Structure' area. If delimiters are to be used, define which ones are needed in the 'Column Delimiter' area. Also define what is to happen after the last column in the 'After Last Column' area, and what occurs at the end of a line in the 'Line Endings' area.

Once the file has been defined, export it by clicking on the 'Done' button at the bottom of the 'Compliance File Options' screen. The file will be created and saved to the place identified in the 'File Destination:' area.

Using the Scheduler

The system provides a master list of all patients in the system that are scheduled for an exercise session in the form of a ***Scheduler.*** The Scheduler can be used as a master utility to manipulate the schedule of individual patient or groups of patients as needed. Changes effected through the scheduler are passed on to a patient file to assure that current scheduling information is maintained.

To activate the 'Scheduler' utility, click on the 'Scheduler' button to activate the following screen:



The Scheduler can easily be formatted to display any or all of a weekly schedule by selecting the days of the week at the bottom left of the screen. Data will be displayed for each day checked. The groups of patients included are determined by selecting the desired patient groups at the lower left of the screen. Data will be included in the display for each group checked.

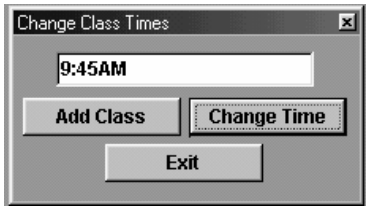
The information displayed includes the day of the week at the top of each column. The number of columns will correspond to the days of the week checked for display.

Time of day is indicated along the left with patient names grouped based on the time of day that they are scheduled.

Remember that changes made through the scheduler utility will be reflected in all patient files of those patients affected by the change. Following are the allowable changes that can be accomplished through the Scheduler utility:

Adding or Changing Class Times

To add a new class time, click on any of the time blocks and a small window will appear as follows:



To add a new class time, enter the time and click on the 'Add Class' button. The new time will be added to the list on the left hand side of the screen.

To change the time of an established class, click on the class time to be changed and access the above window. Change the time to the desired time and click on the 'Change Time' button. The time will be changed as displayed on the left side of the screen. (Remember that changing a class time will change the scheduled time of all patients included in that class).

Moving Patients To a Different Day of The Week

To move a patient to a different day of the week:

- left click on the block where the patient name currently resides
- left click on the patient name (highlights the name)
- left click on the block under the new day of the week where the name is to go

- The name will now be scheduled at the newly selected day and time

Note that if a patient is scheduled on several different days, only the one selected will be changed.

Moving Patients To a Different Time of Day

To move a patient to a different time of day:

- Left click on the block where the patient name currently resides
- Left click on the patient name (highlights the name)
- Left click on the block for the time of day where the name is to go
- The name will now be scheduled at the newly selected time

Note that if a patient is scheduled on several different days, they will be scheduled at the new time on all days that they are scheduled!

To Move a Patient to a Different Time of Day (FOR ONE DAY ONLY):

- Left click on the block where the patient name currently resides
- Left click on the patient name (highlights the name)
- Right click on the highlighted patient name
- Left click on the block for the time of day where the name is to go
- The name will now be scheduled at the newly selected time **FOR THAT DAY ONLY.**

Printing a Scheduler

The Scheduler can be printed by clicking on the 'Print' button in the lower right hand corner of the screen.

Leaving The Scheduler

Leave the Scheduler screen by clicking on the 'Exit' button in the lower center of the screen.

Personal Data

The personal data area provides the ability to enter and edit patient information, medical information, session protocol information, add new patients, change the category of a patient, delete a patient name from the system, and print patient reports. These personal data options are available for Phase 2, Phase 3, Pulmonary, Other, and Inactive patients.

The personal data options change when selecting General Mail List, Staff List, Other Mail List, and Physician List. When selecting General Mail List, the following options become available: patient information, add new name, change category, delete name and print report. When selecting Staff List, Other Mail List, and Physician List, the following options become available: general information, add new name, change category, delete name, and print report.

Options available for Phase 2, Phase 3, Pulmonary, Other, and Inactive Patients

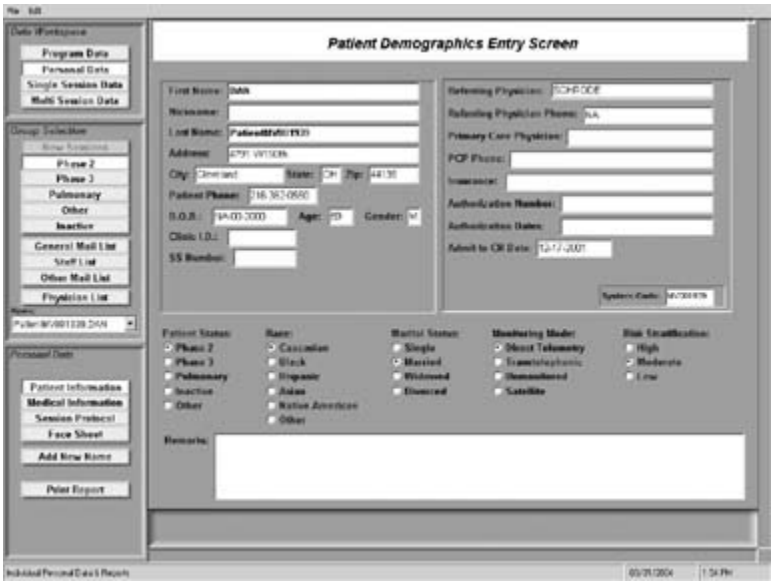
Patient Information

Patient information is to be selected when adding a new name to the system or for the purpose of editing information already entered into the system.

To enter a new patient into the system:

1. Under *Data Workspace*, confirm that Personal Data is selected.

2. Under the section labeled *Personal Data,* select **Add New Name.** The program will automatically default to the Patient Information screen defined by the user.
3. Enter patient information. Only the patient name is required to establish a record, however, all data entered can appear on various reports.



NOTE: Data is entered into blocks designed to accept either a small amount of information on a single line (single line text) or a large amount of information on several lines (mulit-line text). When entering data into single line blocks, simply enter the information and press the <Enter> key to move down a block, the <Tab> key to move one block to the right, or select the new block using your mouse. When entering data into multi-line text block, the <Enter> Key will move the arrow down a line within the block, and the <Tab> key will function as a normal Tab within the multi-line text block. When you are done entering data into multi-line text block, you must use the down arrow key to move to the next block.

To make changes to a patient already entered into the system:

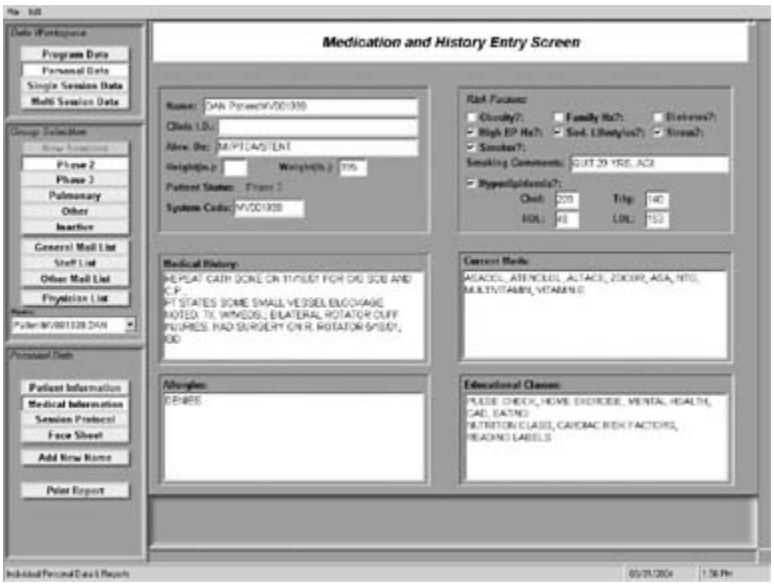
1. Under *Data Workspace*, confirm that Personal Data is selected.
2. Under the section labeled *Group Selection*, select Phase 2, Phase 3, Pulmonary, Other, or Inactive as dictated by the status of the patient you intend to edit.
3. Under the section labeled *Name*, use the drop down box to select the patient. Once the patient name has been selected, the screen will default to the Patient Information Screen defined by the user. The screen will be the same as the one shown above with patient information already entered.
4. Edit patient information.

Medical Information

Medical information can be selected once a patient name has been entered into the system or for the purpose of editing information already entered into the system.

Once a patient name has been entered into the system:

1. Under *Personal Data*, select Medical Information.
2. Enter the medical information. All data entered can appear on various reports.



To make changes to a patient already entered into the system:

1. Under *Data Workspace*, confirm that Personal Data is selected.

2. Under the section labeled *Group Selection*, select Phase 2, Phase 3, Pulmonary, Other, or Inactive as dictated by the status of the patient you intend to edit.
3. Under the section labeled *Name*, use the drop down box to select the patient. Once the patient name has been selected, the screen will default to the Patient Information Screen defined by the user.
4. Left click on the 'Medical Information' block to get the Medications and History Screen.
5. Edit Patient Medical Information.

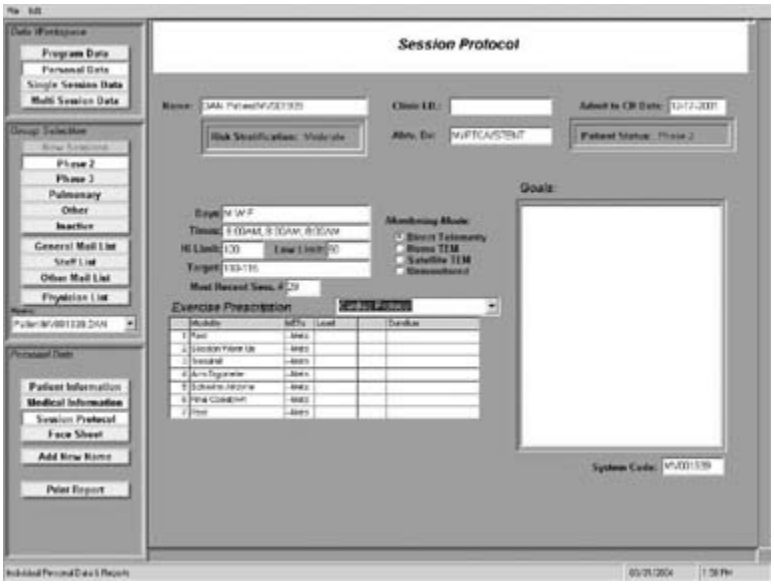
Session Protocol

Session protocol can be selected once a patient name has been entered into the system or for the purpose of editing information already entered into the system.

Once a patient name has been entered into the system:

Under *Personal Data*, select Session Protocol.

Enter the protocol information. All data entered can appear on various reports.



To make changes to a patient already entered into the system:

Under the section labeled *Data Workspace*, confirm that Personal Data is selected.

Under the section labeled *Group Selection*, select Phase 2, Phase 3, Pulmonary, Other, or Inactive as dictated by the status of the patient you intend to edit.

Under the section labeled *Name*, use the drop down box to select the patient. Once the patient name has been selected, the screen will default to the Patient Information Screen defined by the user.

Select Session Protocol and make the necessary edits.

Face Sheet

The patient Face Sheet can be selected once a patient name has been entered into the system or for the purpose of editing information already entered into the system.

Once a patient name has been entered into the system:

Under *Personal Data*, select Face Sheet.

Enter the face sheet information. All data entered can appear on various reports.

To make changes to a patient already entered into the system:

1. Under the section labeled *Data Workspace*, confirm that Personal Data is selected.
2. Under the section labeled *Group Selection*, select Phase 2, Phase 3, Pulmonary, Other, or Inactive as dictated by the status of the patient you intend to edit.
3. Under the section labeled *Name*, use the drop down box to select the patient. Once the patient name has been selected, the screen will default to the Patient Information Screen defined by the user.

4. Select Face Sheet and make the necessary edits.

Add New Name

This option is selected when entering a new patient into the system. See # 2 in the section labeled Patient Information above.

Print Report

This option allows you to print a hard copy of any of the screens displayed in the personal options area.

To print a screen:

1. Under *Data Workspace*, confirm that Personal Data is selected.
2. Under the section labeled *Group Selection*, select Phase 2, Phase 3, Pulmonary, Other, or Inactive as dictated by the status of the patient for which you intend to make printed reports.
3. Under the section labeled *Name* select the patient.
4. Select the screen displaying the report to be printed. (Patient Information, Medical Information, Session Protocol, or Face Sheet.)
5. Select Print Report.

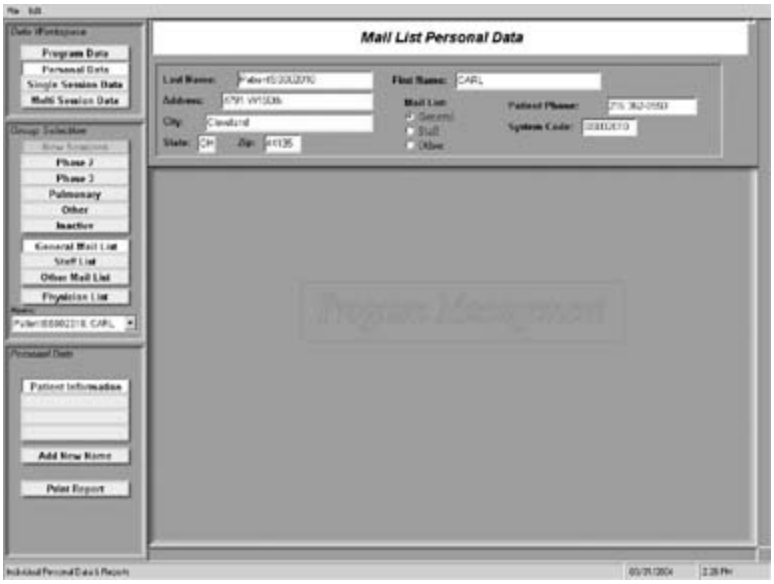
NOTE: The report that will be printed will be the report displayed on the screen.

Options Available for General Mailing List

The following are the only options available when General Mailing List is selected from *Group Selection*. All options contain the same functions as stated in the previous section titled "Options available for Phase 2, Phase 3, Pulmonary, Other, and Inactive Patients." Any additional information needed per option is stated below.

Patient Information

When a patient is selected from the General Mailing List, the default screen will display the Mail List Personal Data screen defined by the user.



Add New Name

When a new name is to be entered into the General Mailing List:

1. Under *Data Workspace*, confirm that Personal Data is selected.
2. Under *Group Selection*, select General Mailing List.
3. Under *Personal Data,* select Add New Name.

Print Reports

Refer to the previous section for description and functions.

Options Available for Staff List, Other Mail List, and Physician List

The following are the only options available when Staff List, Other Mail List, and Physician List are selected from *Group Selection*. All options contain the same functions as stated in the previous section titled "Options available for Phase 2, Phase 3, Pulmonary, Other, and Inactive Patients" and "Options available for General Mailing List."

NOTE: General Information replaces Patient Information.

Add New Name

Print Report

Single Session Reports

The single Session Data area provides the ability to Create, Review, Edit, and Print, daily session reports of either non-monitored sessions or sessions that have been monitored, and data saved during the monitoring process.

Click on the 'Single Session Data' bar to get to the following Patient Data screen.

From the above screen, you can view and edit today's session report, or any session report ever done on any patient in the system.

Viewing and Editing Daily Session Reports

The following descriptions and procedures for editing apply to all session reports saved on a patient. All recorded sessions will be available for review and editing on the system in the form of a full disclosure as well as a session report.

There are two ways to view the most recent recorded session on any patient residing in the active portion of the system (Phase 2, Phase 3, Pulmonary, Other, or Inactive).

1. Under *Group Selection*, click on the 'New Sessions' bar.
    a. Click on the drop down window under *Name*, and a list of names will appear of all patients with a sessions on file that have not been printed.
    b. Left click on the name of the patient whose report data you wish to review, and the report data will be displayed on the screen.

OR

2. Under Group Selection, click on the category of the patient whose data you want to review.
    a. Click on the drop down window under *Name*, and a list of names of all patients in the selected category will appear.
    b. Left click on the name of the patient whose data you want to review, and the most recent report data will be displayed on the screen.

The first time a report style is displayed, the format is determined by what is defined in the Workspace and Report Forms Links section in Setup. Once a report is saved on a patient, the report style being displayed at the time of saving is made a part of the session data file, and it will be used when the same report is displayed again.

The system provides several predefined report styles. Additional report styles can be created and made available through the use of the internal Utilities and Design Functions described elsewhere in this manual. To view the report in a different style, left click on the drop down window lower left of the screen labeled Report Style ***and a list of available report styles will appear. Left click on the desired style and the session data will be displayed in the selected report style.***

Any report done on a patient is available for review. To access a report other than the most recent report, under ***Group Selection***, click on the category of the patient whose data you want to review.

Click on the drop down window under *Name*, and a list of names of all patients in the selected category will appear.

Left click on the name of the patient whose data you want to review, and the most recent report data will be displayed on the screen.

Left click on the drop down window under *Session Date*, and a list of dates of sessions on file will be displayed.

Left click on the date of the session to be reviewed, and that session report will be displayed on the screen.

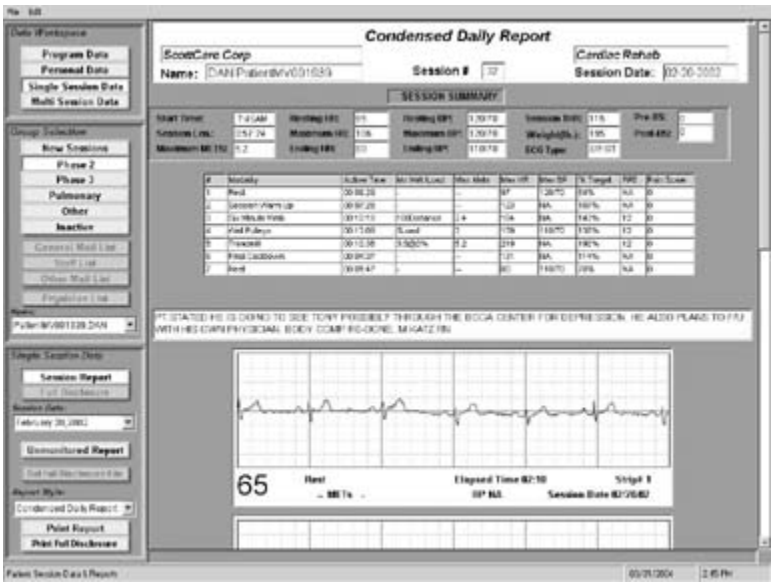
NOTE: The system displays data in some areas of the Session Summary area based on data in the Modality Section. For example, the Maximum Heart Rate for the session that is displayed in the Session Summary area comes from the Maximum HR column in the Modality Area. Changing data in the Modality Area will automatically cause it to change in the Session Summary Area. Further, when viewing the Full Disclosure, the system assumes that the viewing is being used to select additional strips for the report. Therefore, when leaving the Full Disclosure area, the system rebuilds the strips file to include any new strips to be included and will replace those displayed prior to entering the Full Disclosure area.

For these reasons, ScottCare recommends the following sequence be used in reviewing and editing of Session Reports.

1. **View the Full Disclosure and select any additional strips that you wish to include in the report.**
2. **Edit the Modality Section of the Session Report.**
3. **Edit the balance of the Session Report.**

The Condensed Daily Report

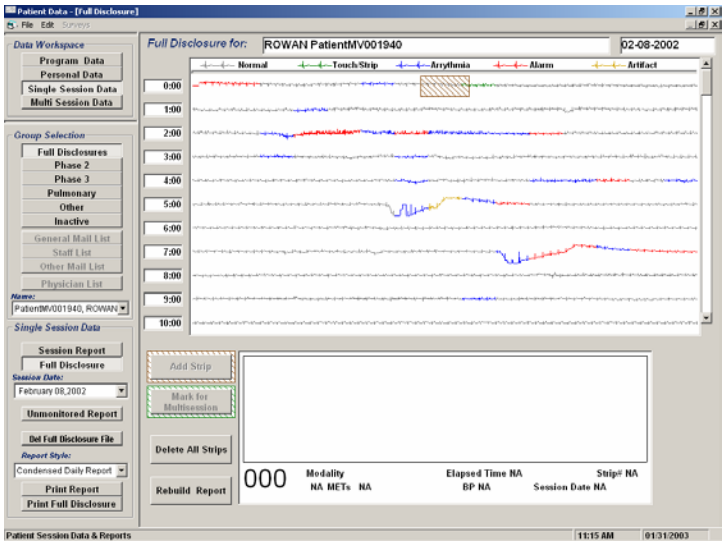
Following are screens depicting a ***Condensed Daily Report***. Samples of various session reports appear in at the end of this section.



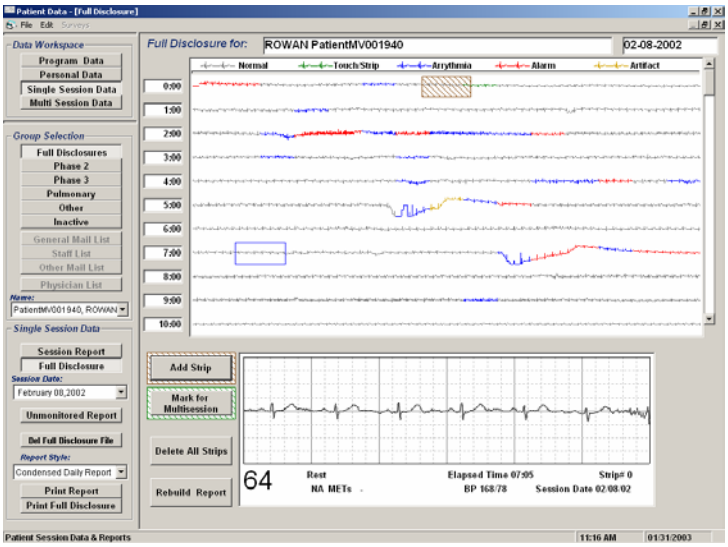
The Condensed Daily Report is designed to allow reporting of minimal information and up to three saved strips on a single page. It consists of a ***Report Header***, ***Session Summary Data area***, ***Modality Data area***, ***Post Session Comments and Timed Comments area***, and a series of saved ***Strips***.

The first step in the editing process should be to review the full disclosure and identify any strips desired to be a part of the report in addition to or in lieu of those already saved. **(Most recent session only).**

Left click on the Full Disclosure bar under Single Session Data on the left of the screen. The full disclosure will appear as below.



Left click in the display area, and the corresponding strip will appear in the strip block near the bottom of the page.



The blue box on the eighth line down is the selected area and the strip appearing in the area at the bottom of the page is the area inside the blue box.

Normal rhythms are displayed in black, while areas of the full disclosure in Red indicate a rate alarm, and Blue indicates either arrhythmia or artifact. If a strip was saved during the session by printing from the strip chart recorder, there will be a Green area at the point where the strip was saved. Yellow areas indicate areas where the system could not decipher any useful information.

The shaded block near the top of the page indicates a strip that is already included in the session report.

The time into the session is indicated in the blocks on the left side of the full disclosure allowing one minute of information per line.

Scroll through the full disclosure by using the arrows on the right hand side of the screen.

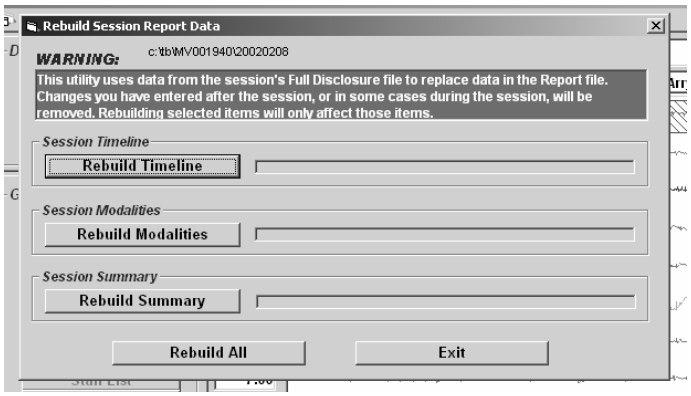
To ***Add*** a Strip to the report, left click on the Add Strip bar. The strip being displayed in the box at the bottom of the screen will be added to the report.

To ***Delete*** a Strip from the report, insure that the strip selected is one already included in the report. The bar currently labeled 'Add Strip' will change to 'Delete Strip'. Left click on the 'Delete Strip bar to remove the strip from the report.

Left clicking on the 'Mark for Multi Session' bar will identify the displayed strip for inclusion in Multi Session reports. See the section on Multi Session Reports for further information.

Left clicking on the 'Delete All Strips' bar will cause the system to remove all strips from the report.

Left clicking on the 'Rebuild Report' bar will cause the system to display a rebuild utility. This utility is designed to remove any editing that has been done and restore the report to its original condition based on the data entered and saved during the recording of the session.



Left click on the bar corresponding to the area of the report you wish to rebuild.

1. 'Rebuild Timeline' will rebuild the Session Graph.
2. 'Rebuild Modalities' will rebuild only the Modality Section.
3. 'Rebuild Summary' will rebuild only the Summary Section.
4. 'Rebuild All' will rebuild all of the above.

(Note: The Saved Strip File is rebuilt any time you leave the full disclosure screen).

To leave the utility, left click on the 'Exit' bar.

To Leave the Full Disclosure area, left click on the bar labeled 'Session Report' in the *Single Session Data* area on the left hand side of the screen.

If desired, the Full Disclosure can also be printed by left clicking on the 'Print Full Disclosure' button on the lower left hand side of the screen.

The ***Modality Area*** of the report allows some different editing applications during the editing process:

To add a line to the modality section, hold down the Shift Key and left click on the number of the line above where you want to add a line. The new line will appear duplicating the line above.

To remove a line from the modality section, hold down the Ctrl key and left click on the line that is to be deleted. The line will be removed from the modality section.

To change the name of the modality, left click on the modality to be changed and then left click on the drop down window to view a list of all modalities available in the system. Left click on the modality name desired.

The ***Duration*** block is a time block. Left click on the block to be changed and enter the time information. Be sure to include the colons for the times to appear properly.

The ***Max Mets*** and ***Mx Wrk Load*** blocks only require that you enter the correct data. Note that the Max Workload will be recalculated automatically if you change the Max Mets value, and the Max Mets value will be recalculated automatically if you change the Max Workload.

Max HR is changed by entering the correct number. Note that the % Target will automatically adjust if the Max HR is changed.

Max BP is changed by entering the correct numbers.

Although ***% Target*** can be changed if desired, the number will be correct based on the Max HR and the Session Target Heart Rate calculation.

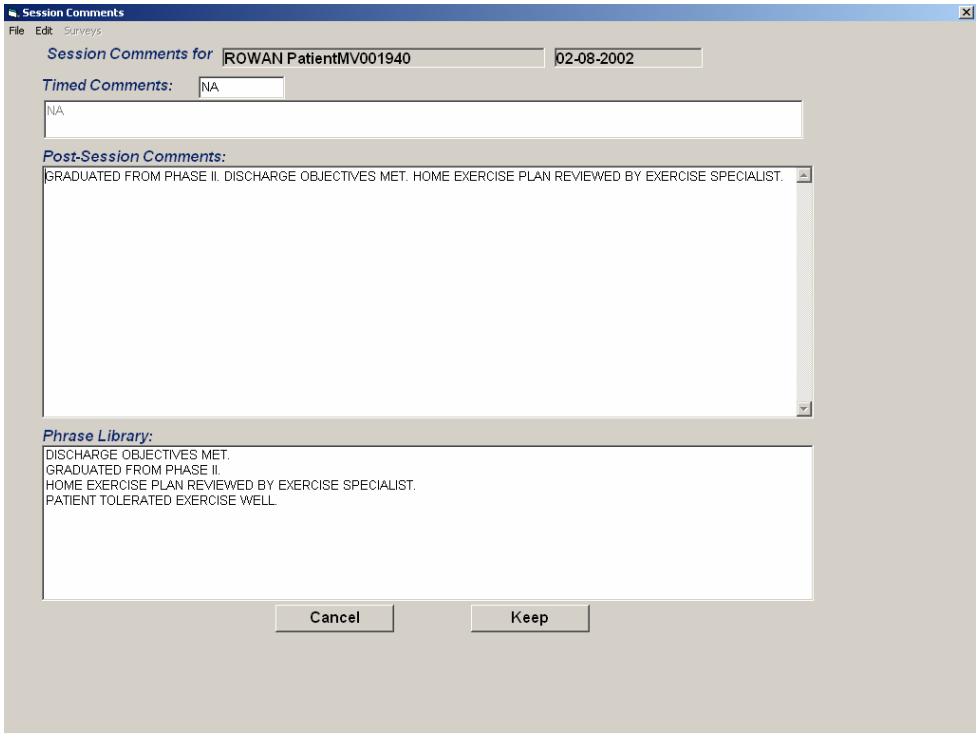
RPE is changed by entering the desired number.

Editing of other items that might appear in the Modality area of the report will follow the same logic as those shown above.

The only thing editable in the ***Report Header*** is the session number. The program information is taken from whatever is entered in the program information area during setup as described elsewhere in this manual. The Name block is not an editable field. You must change either the Last Name or the First Name in their respective fields in order to edit the patient name. The session date is the date that the session was done, and cannot be changed.

The ***Session Summary*** area contains data relating to the overall session. To edit data in the Session Summary area, left click on the block containing the information to be changed and enter the correct information. Some items appearing in the Session Summary area are controlled by the data in the Modality area. These items include, Maximum Heart Rate, Maximum Blood Pressure, and Maximum METs. Although those items can be edited and will keep any entered data, if the Modality area is reentered for any reason, data in those items will change to whatever is displayed in the Modality area.

The ***Post Session Comments*** and ***Timed Comments*** can be edited by left clicking on the Post Session Comments area. The Session Comments screen will appear as follows:



If Timed Comments were saved during the session, they will appear in the smaller block near the top of the page. Timed comments are comments that were entered during monitoring and appear in the report chronologically by time entered.

Timed comment content can be edited by left clicking in the Timed Comments block and making the desired changes to the comment appearing there.

Timed Comments cannot be added to a report.

To Delete a Timed Comment, Highlight the comment by left clicking and holding the button down while you move the cursor over the complete comment. Once the comment is highlighted, release the mouse button and press the <Delete> key. The comment will be removed from the session report.

To copy all or part of a Timed Comment into the Post Session Comments block, highlight what is to be copied as described above. Once the highlight function is complete, release the mouse button. Left click the highlighted area again holding the button down and ***drag*** the area into the Post Session Comments block. Release the mouse button, and the area moved will appear as part of the Post Session Comments.

Post Session Comments can be added by typing comments directly in to the Post Session Comments block, copying Timed Comments as described above, or by using the Phrase Library.

The Phrase Library is a collection of commonly used phrases that are used routinely as Post Session Comments. The Phrase Library is established as follows:

Highlight a comment or phrase in the Post Session Comments area by left clicking and holding the button down while you move the cursor over the complete comment or phrase. Once the comment or phrase is highlighted, release the mouse button. Left click the highlighted area again holding the mouse button down and ***drag*** the area into the Phrase Library area. Release the mouse button, and the comment or phrase moved will appear as part of the Phrase Library.

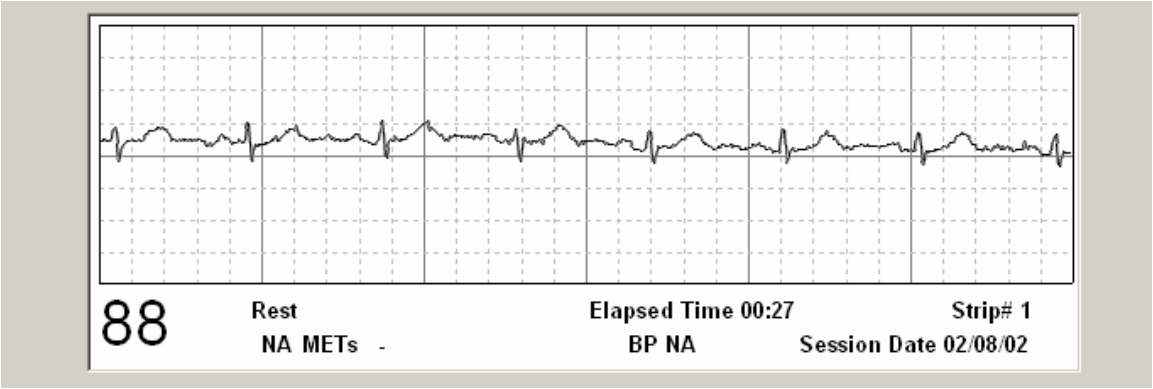
To use the Phrase Library, reverse the above procedure.

Once the Timed and Post Session Comments are entered and/or edited to the users satisfaction, left click on the ***Keep*** button to exit the screen and keep changes.

The ***Cancel*** button will exit the screen without keeping the changes.

Editing Strip Information

Strips saved during the recorded session appear at the bottom of the Daily Session Report.



Some information appearing on a saved strip can be changed including the heart rate, exercise modality being used when the strip was saved, METs at the time the strip was saved, and the blood pressure at the time the strip was saved.

To change the ***Heart Rate***, left click on the strip and two red lines will appear. Using the mouse cursor, place the cursor over the red line on the right. When you see the 'double arrow', left click, hold, drag and drop the red line to an R wave peak. Move the red line on the left in the same way to an R wave peak 2 intervals to the left of the first red line. The heart rate will change to the rate calculated for those two intervals. You can use any of the two interval areas on the strip, and the heart rate will be recalculated accordingly.

Note: A right click on the strip will result in two green lines with an indication of the distance between them. Using the technique described above, moving the green lines so that they line up on the P wave and corresponding R wave, the PR interval in milliseconds can be identified. This utility can be used to identify any interval on the strip.

To change the ***Exercise Device***, left click on the exercise device name and then on the drop down window. Select the desired device from the modality list that appears.

To edit the ***METs*** level, left click on the METs value displayed (e.g. in the above example, NA), and a block will be made available to enter the correct Mets value.

To edit the ***BP*** value, left click on the BP value displayed (e.g. in the above example, NA), and a block will be made available to enter the correct BP value.

To ***Delete a strip*** from the report, left click on the strip and press the <Delete> key. The strip will be removed from the report.

To ***Add a strip*** to the report, use the Full Disclosure as previously described.

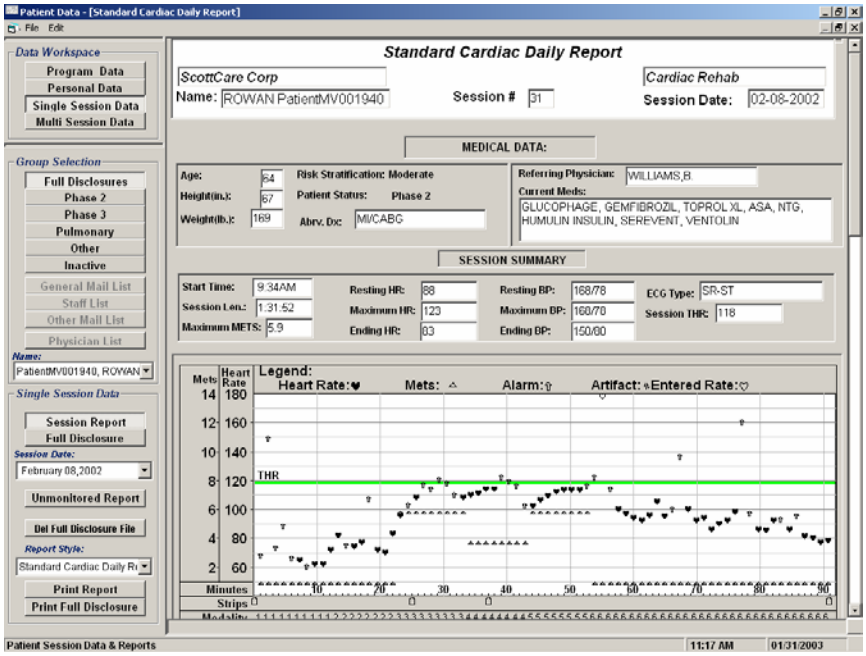
Printing The Report

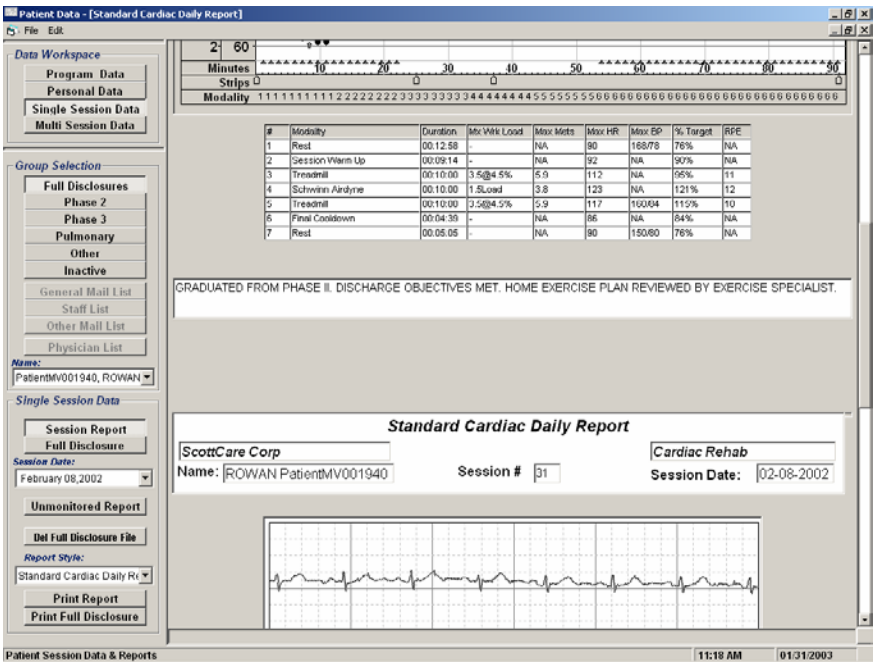
Once all editing has been accomplished, left click on the 'Print Report' button at the lower left of the screen and the report will print in the displayed format.

The Standard Daily Report

Following are screens depicting a ***Standard Daily Report.***

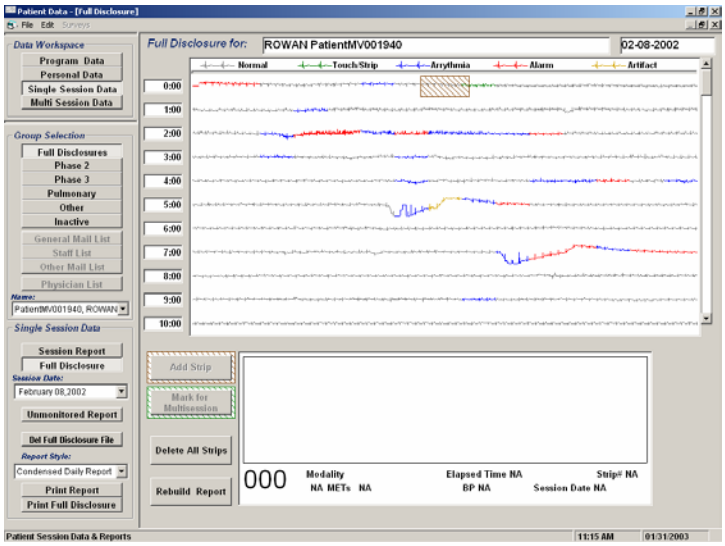
When the standard daily report is displayed, the first editing page appears as shown below. Use the scroll bar on the right to scroll through the report for further viewing.



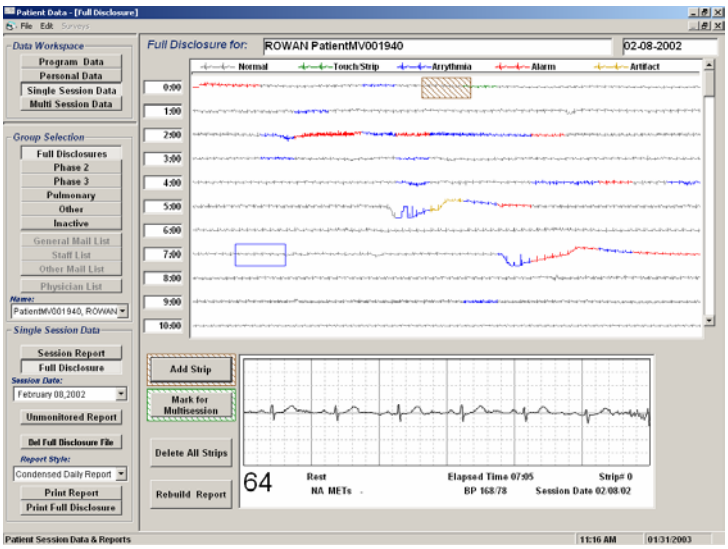


The first step in the editing process should be to review the full disclosure and identify any strips desired to be a part of the report in addition to or in lieu of those already saved (most recent session only).

Left click on the Full Disclosure bar under Single Session Data on the left of the screen. The full disclosure will appear as below.



Left click in the display area, and the corresponding strip will appear in the strip block near the bottom of the page.



The blue box on the eighth line down is the selected area and the strip appearing in the area at the bottom of the page is the area inside the blue box.

Normal rhythms are displayed in black, while areas of the full disclosure in Red indicate a rate alarm, and Blue indicates either arrhythmia rate or artifact. If a strip was saved during the session by printing from the strip chart recorder, there will be a Green area at the point where the strip was saved. Yellow areas indicate areas where the system could not decipher any useful information.

The shaded block near the top of the page indicates a strip that is already included in the session report.

The time into the session is indicated in the blocks on the left side of the full disclosure allowing one minute of information per line.

Scroll through the full disclosure by using the arrows on the right hand side of the screen.

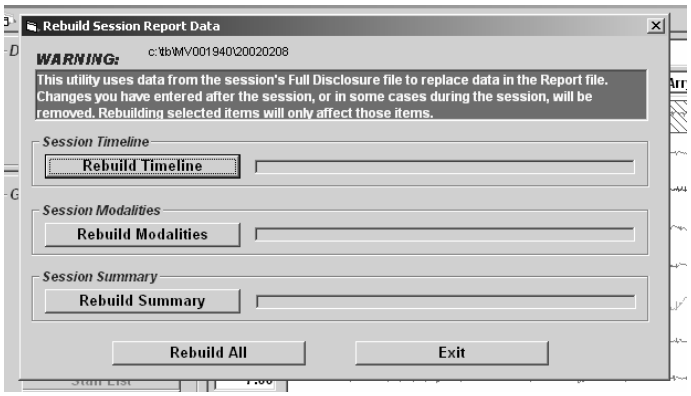
To ***Add*** a Strip to the report, left click on the Add Strip bar. The strip being displayed in the box at the bottom of the screen will be added to the report.

To ***Delete*** a Strip from the report, insure that the strip selected is one already included in the report. The bar currently labeled 'Add Strip' will change to 'Delete Strip'. Left click on the 'Delete Strip bar to remove the strip from the report.

Left clicking on the 'Mark for Multi Session' bar will identify the displayed strip for inclusion in Multi Session reports. See the section on Multi Session Reports for further information.

Left clicking on the 'Delete All Strips' bar will cause the system to remove all strips from the report.

Left clicking on the 'Rebuild Report' bar will cause the system to display a rebuild utility. This utility is designed to remove any editing that has been done and restore the report to its original condition based on the data entered and saved during the recording of the session.



Left click on the bar corresponding to the area of the report you wish to rebuild.

'Rebuild Timeline' will rebuild the Session Graph.

'Rebuild Modalities' will rebuild only the Modality Section.

'Rebuild Summary' will rebuild only the Summary Section.

'Rebuild All' will rebuild all of the above.

(Note: The Saved Strip File is rebuilt any time you leave the full disclosure screen).

To leave the utility, left click on the 'Exit' bar.

To Leave the Full Disclosure area, left click on the bar labeled 'Session Report' in the *Single Session Data* area on the left hand side of the screen.

If desired, the Full Disclosure can also be printed by left clicking on the 'Print Full Disclosure' button on the lower left hand side of the screen.

The ***Modality Area*** of the report allows some different editing applications during the editing process:

To add a line to the modality section, hold down the Shift Key and left click on the number of the line above where you want to add a line. The new line will appear duplicating the line above.

To remove a line from the modality section, hold down the Ctrl key and left click on the line that is to be deleted. The line will be removed from the modality section.

To change the name of the modality, left click on the modality to be changed and then left click on the drop down window to view a list of all modalities available in the system. Left click on the modality name desired.

The ***Duration*** block is a time block. Left click on the block to be changed and enter the time information. Be sure to include the colons for the times to appear properly.

The ***Max Mets*** and ***Mx Wrk Load*** blocks only require that you enter the correct data. Note that the Max Workload will be recalculated automatically if you change the Max Mets value, and the Max Mets value will be recalculated automatically if you change the Max Workload.

Max HR is changed by entering the correct number. Note that the % Target will automatically adjust if the Max HR is changed.

Max BP is changed by entering the correct numbers.

Although ***% Target*** can be changed if desired, the number will be correct based on the Max HR and the Session Target Heart Rate calculation.

RPE is changed by entering the desired number.

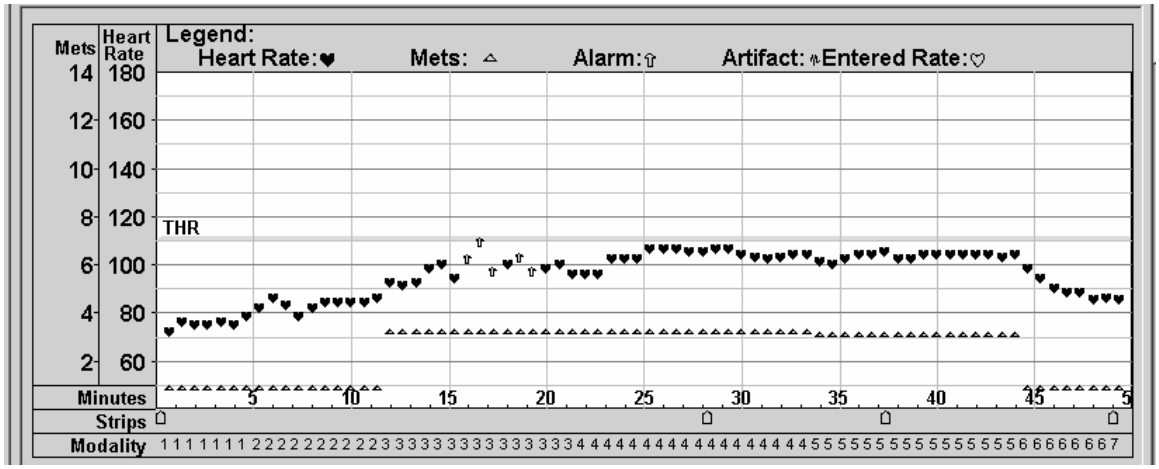
Editing of other items that might appear in the Modality area of the report will follow the same logic as those shown above.

The only thing editable in the ***Report Header*** is the session number. The program information is taken from whatever is entered in the program information area during setup as described elsewhere in this manual. The Name block is not an editable field. You must change either the Last Name or the First Name in their respective fields in order to edit the patient name. The session date is the date that the session was done, and cannot be changed.

The ***Medical Data*** area contains data relating to the overall condition of the patient. To edit data in the Medical Data area, left click on the block containing the information to be changed and enter the correct information.

The ***Session Summary*** area contains data relating to the overall session. To edit data in the Session Summary area, left click on the block containing the information to be changed and enter the correct information. Some items appearing in the Session Summary area are controlled by the data in the Modality area. These items include, Maximum Heart Rate, Maximum Blood Pressure, and Maximum METs. Although those items can be edited and will keep any entered data, if the Modality area is reentered for any reason, data in those items will change to whatever is displayed in the Modality area.

The ***Session Graph*** is generally not editable, although the small hearts can be moved if desired. The graph provides a graphic representation of the entire recorded session.



The scales for both Mets and Heart Rate appear on the left, while time appears along the bottom of the graph. Mets is indicated by a small triangle, and Heart rate is indicated by the small hearts.

The Target Heart Rate is indicated as a line (if the Target Heart Rate is a single number) or a shaded area (if the Target Heart Rate is a range) horizontally across the graph.

An alarm condition is indicated by a small arrow. The alarm condition can be either a rate alarm or an arrhythmia alarm.

When a strip is saved during the session, a wide arrow appears on the line under the graph labeled 'Strips'. The arrow will appear at the time the strip was taken.

The 'Modality' line indicates the exercise modality in use during the indicated time based on its position in the list of modalities utilized during the session. The number 1 would indicate the first thing in the list of modalities used, generally rest or session warm up. The number 2 would indicate the second thing on the list, and so on.

The ***Modality Area*** of the report allows some different editing applications during the editing process:

To add a line to the modality section, hold down the Shift Key and left click on the number of the line above where you want to add a line. The new line will appear duplicating the line above.

To remove a line from the modality section, hold down the Ctrl key and left click on the line that is to be deleted. The line will be removed from the modality section.

To change the name of the modality, left click on the modality to be changed and then left click on the drop down window to view a list of all modalities available in the system. Left click on the modality name desired.

The ***Duration*** block is a time block. Left click on the block to be changed and enter the time information. Be sure to include the colons for the times to appear properly.

The ***Max Mets*** and ***Mx Wrk Load*** blocks only require that you enter the correct data. Note that the Max Workload will be recalculated automatically if you change the Max Mets value, and the Max Mets value will be recalculated automatically if you change the Max Workload.

Max HR is changed by entering the correct number. Note that the % Target will automatically adjust if the Max HR is changed.

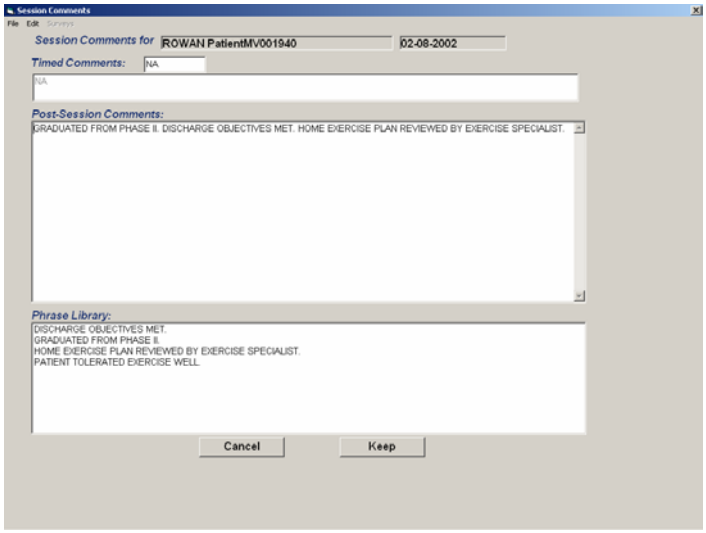
Max BP is changed by entering the correct numbers.

Although ***% Target*** can be changed if desired, the number will be correct based on the Max HR and the Session Target Heart Rate calculation.

RPE is changed by entering the desired number.

Editing of other items that might appear in the Modality area of the report will follow the same logic as those shown above.

The ***Post Session Comments*** and ***Timed Comments*** area can be edited by left clicking on the Post Session Comments area. The Session Comments screen will appear as follows:



If Timed Comments were saved during the session, they will appear in the smaller block near the top of the page. Timed comments are comments that were entered during monitoring and appear in the report chronologically by time entered.

Timed comment content can be edited by left clicking in the Timed Comments block and making the desired changes to the comment appearing there.

Timed Comments cannot be added to a report.

To Delete a Timed Comment, Highlight the comment by left clicking and holding the button down while you move the cursor over the complete comment. Once the comment is highlighted, release the mouse button and press the <Delete> key. The comment will be removed from the session report.

To copy all or part of a Timed Comment into the Post Session Comments block, highlight what is to be copied as described above. Once the highlight function is complete, release the mouse button. Left click the highlighted area again holding the button down and ***drag*** the area into the Post Session Comments block. Release the mouse button, and the area moved will appear as part of the Post Session Comments.

Post Session Comments can be added by typing comments directly in to the Post Session Comments block, copying Timed Comments as described above, or by using the Phrase Library.

The Phrase Library is a collection of commonly used phrases that are used routinely as Post Session Comments. The Phrase Library is established as follows:

Highlight a comment or phrase in the Post Session Comments area by left clicking and holding the button down while you move the cursor over the complete comment or phrase. Once the comment or phrase is highlighted, release the mouse button. Left click the highlighted area again holding the mouse button down and ***drag*** the area into the Phrase Library area. Release the mouse button, and the comment or phrase moved will appear as part of the Phrase Library.

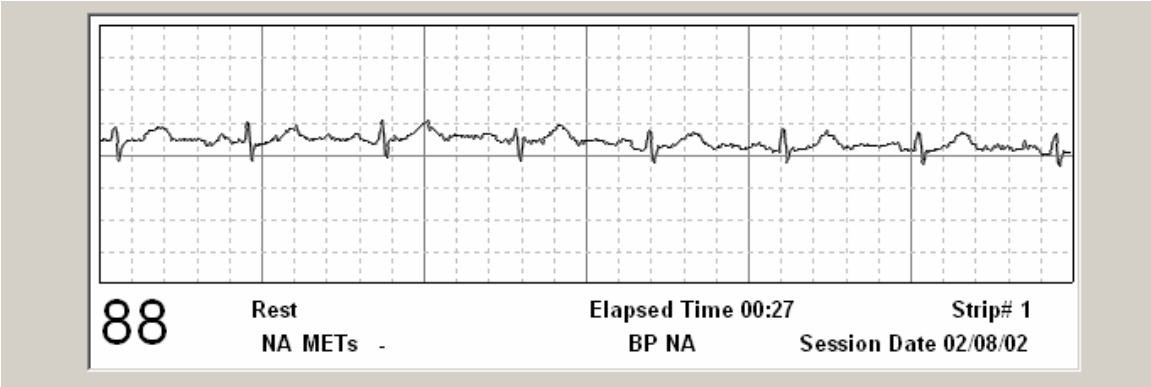
To use the Phrase Library, reverse the above procedure.

Once the Timed and Post Session Comments are entered and/or edited to the users satisfaction, left click on the ***Keep*** button to exit the screen and keep changes.

The ***Cancel*** button will exit the screen without keeping the changes.

Editing Strip Information

Strips saved during the recorded session appear at the bottom of the Daily Session Report.



Some information appearing on a saved strip can be changed including the heart rate, exercise modality being used when the strip was saved, Mets at the time the strip was saved, and the blood pressure at the time the strip was saved.

To change the ***Heart Rate***, left click on the strip and two red lines will appear. Using the mouse cursor, move the red line on the right to an R wave peak. Move the red line on the

left to an R wave peak 2 intervals to the left of the first red line. The heart rate will change to the rate calculated for those two intervals. You can use any of the two interval areas on the strip, and the heart rate will be recalculated accordingly.

Note: A right click on the strip will result in two green lines with an indication of the distance between them. By moving the green lines so that they line up on the P wave and corresponding R wave, the PR interval can be identified. This utility can be used to identify any interval on the strip.

To change the ***Exercise Device***, left click on the exercise device name and then on the drop down window. Select the desired device from the modality list that appears.

To edit the ***METs*** level, left click on the METs value displayed (e.g. in the above example, NA), and a block will be made available to enter the correct Mets value.

To edit the ***BP*** value, left click on the BP value displayed (e.g. in the above example, NA), and a block will be made available to enter the correct BP value.

To ***Delete a strip*** from the report, left click on the strip and press the <Delete> key. The strip will be removed from the report.

To ***Add a strip*** to the report, use the Full Disclosure as described earlier.

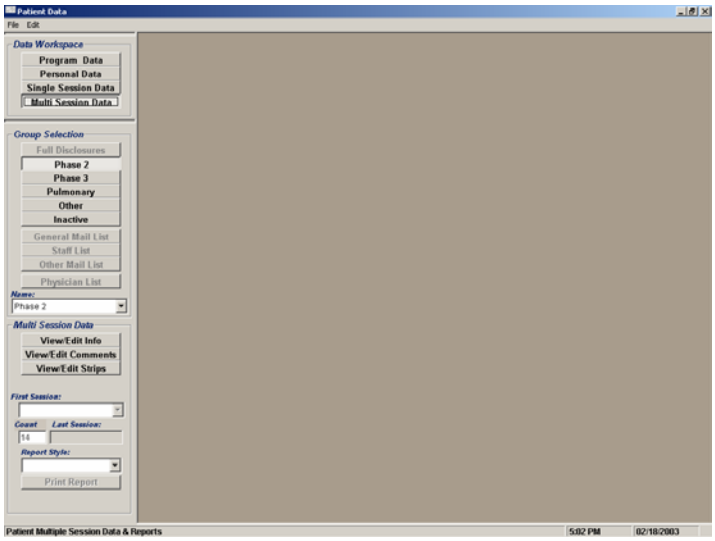
Printing The Standard Daily Report

Once all editing has been accomplished, left click on the 'Print Report' button at the lower left of the screen and the report will print in the displayed format.

Multi Session Reports

The Multi Session Data area provides the ability to Create, Review, Edit, and Print, reports containing data from either non-monitored sessions or sessions that have been monitored, and data saved during the monitoring process. The Multi Session report provides a summary of data collected over a number of sessions and includes graphic information as well as strips identified as significant during the monitoring process.

Click on the 'Multi Session Data' bar to get to the following Patient Data screen:



From the above screen, you can view and edit Multi Session reports. There are two different primary styles of Multi Session report, the ***14 session or monthly style***, and the

36-session or discharge summary style. Reports can be generated for any patient residing in the active portion of the system (Phase 2, Phase 3, Pulmonary, Other, or Inactive).

Viewing and Editing Multi Session Reports

The following descriptions and procedures for editing apply to all multi session reports created on a patient.

Under Group Selection, click on the category of the patient whose data you want to review.

Click on the drop down window under *Name*, and a list of names of all patients in the selected category will appear.

Left click on the name of the patient whose data you want to review. Next, left click on the Count block and enter the number of sessions to be included in the report. Finally, left click on the First Session block and a list of sessions will appear. Left click on the starting session number/date, and a report will be displayed covering the number of sessions selected starting with the session number/date selected.

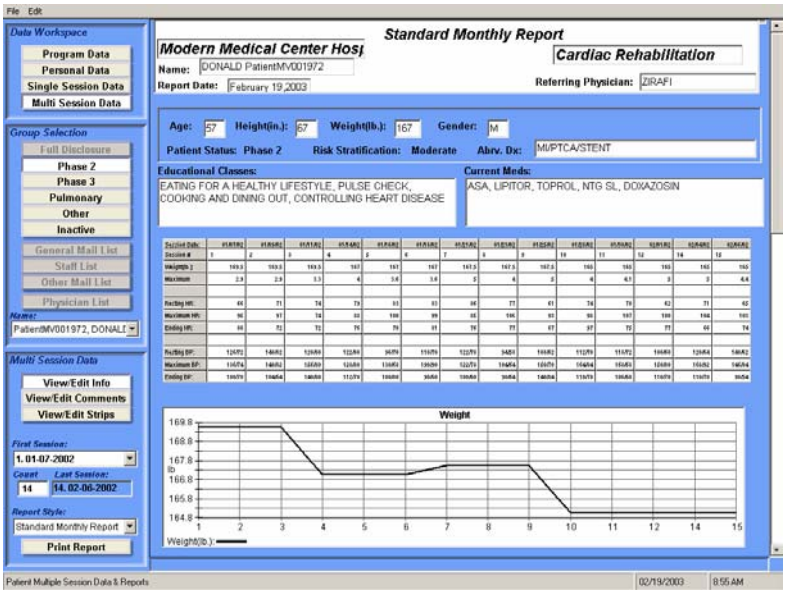
The format of the report is determined by what is defined in the Workspace and Report Forms Links section in Setup. To view the report in a different style, left click on the drop down window lower left of the screen labeled Report Style and a list of available report styles will appear. Left click on the desired style and the Multi Session data will be displayed in the selected report style.

The system provides several predefined report styles. Additional report styles can be created and made available through the use of the internal Utilities and Design Functions described elsewhere in this manual.

NOTE: Multi Session reports are designed to deal with up to 14 sessions, or up to 36 sessions. Generally, 14 session styles are used as monthly or periodic reports while 36 session styles are used as discharge summaries or final reports.

The Standard Monthly Report

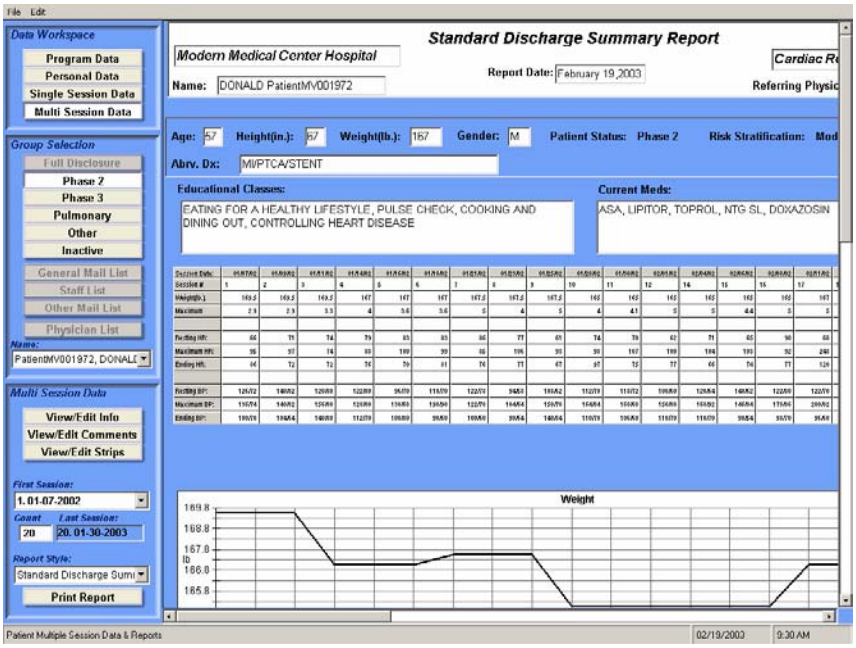
Following are screens depicting a ***Standard Monthly*** Multi Session Report. Samples of various Multi Session reports appear in at the end of this section.



The Standard Monthly Report is designed to display data for up to 14 sessions. It consists of a ***Report Header***, ***Patient Information area***, ***Session Summary Data area***, and a series of ***Graphs***, ***Comments,*** and a series of saved ***Strips***.

The Standard Discharge Summary Report

Following are screens depicting a ***Standard Discharge Summary Report.***



The Standard Discharge Summary Report is designed to display data for up to 36 sessions. It consists of a ***Report Header***, ***Patient Information area***, ***Session Summary Data area***, a series of ***Graphs***, ***Comments,*** and a series of saved ***Strips***.

The only difference in the standard 14 session reports and the 36 session reports is the screen layout and the way that the report is printed.

The 36 session report styles are laid out and printed in landscape mode and require the use of a horizontal slider bar to allow review and edit of the entire report.

The editing features are identical for the 14 and/or 36 session report style.

In the above examples, the only thing editable in the ***Report Header*** is the Referring Physician. The program information is taken from whatever is entered in the program information area during setup as described elsewhere in this manual. The Name block is not an editable field. You must change either the Last Name or the First Name in their respective fields in order to edit the patient name. The report date is the date that the report was created, and cannot be changed.

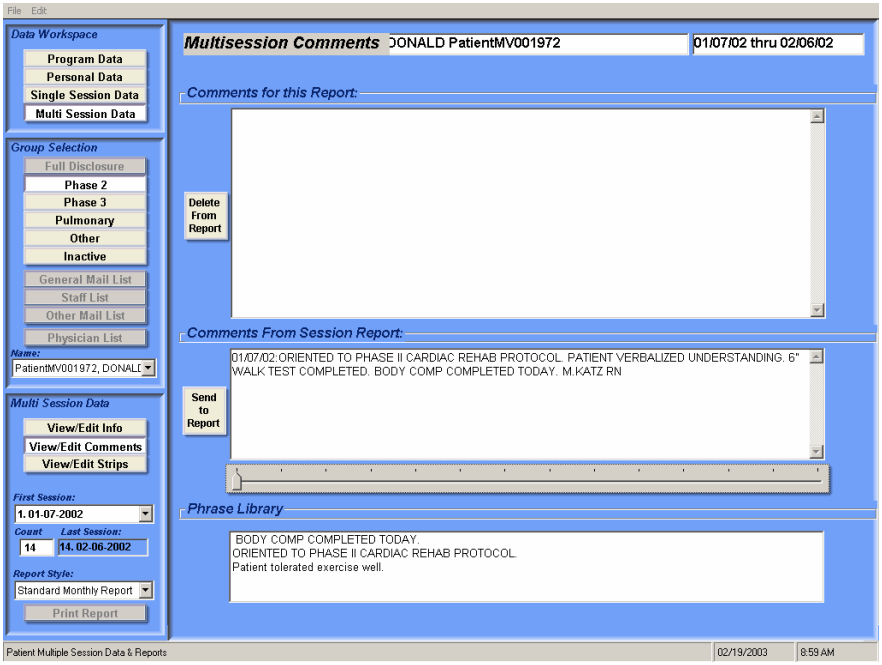
The ***Patient Information*** area normally contains demographic data relating to the patient taken from his/her patient data file. To edit data in the Patient Information Data area, left

click on the block containing the information to be changed and enter the correct information.

The ***Session Summary*** table contains data relating to each of the sessions included in the report. This area is NOT EDITABLE. Data displayed in this area is taken from the individual sessions that are included in this Multi Session report, and any changes must originate in the individual session report involved.

The ***Graphs*** included in the report are also not editable. The graphs are derived from numerical summary information. What graphic data is included in the report is defined at the time the report is designed. See the section on Utilities and Design for more information.

The Comments area is accessed by left clicking on the button labeled *View/Edit Comments*. The following screen will be displayed:



The ***Comments*** utility allows manual entry of comments directly into the *Comments for this Report* block, transfer of comments from individual sessions, or transfer of items from the phrase library.

Comments residing in the individual sessions included in this report can be reviewed for possible inclusion in whole or in part by moving the slider under the block labeled Comments From Session Reports to the right or left. Each comment will be preceded by the date of the session report where the comment is stored.

To use a complete session comment as a part of Comments for This Report, left click on the button labeled Send to Report. The comment displayed will copy to the Comments for This Report block.

To copy a portion of a session comment, highlight the portion of the comment to be copied by left clicking and holding the button down while you move the cursor over the comment area. Once the desired comment area is highlighted, release the mouse button. Left click the highlighted area again holding the button down, and ***drag*** the area into the Comments for This Report block. Release the mouse button, and the area moved will appear as part of the Comments for This Report. Control where the comment appears by the cursor position when the mouse button is released.

The Phrase Library is a collection of commonly used phrases that are used routinely as Comments. The Phrase Library is normally established through the session report comments utility, however phrases/comments used in Multi Session reports can be included as follows.

Highlight a comment or phrase in the Comments for This Report area by left clicking and holding the button down while you move the cursor over the complete comment or phrase. Once the comment or phrase is highlighted, release the mouse button. Left click the highlighted area again holding the mouse button down and ***drag*** the area into the Phrase Library area. Release the mouse button, and the comment or phrase moved will appear as part of the Phrase Library.

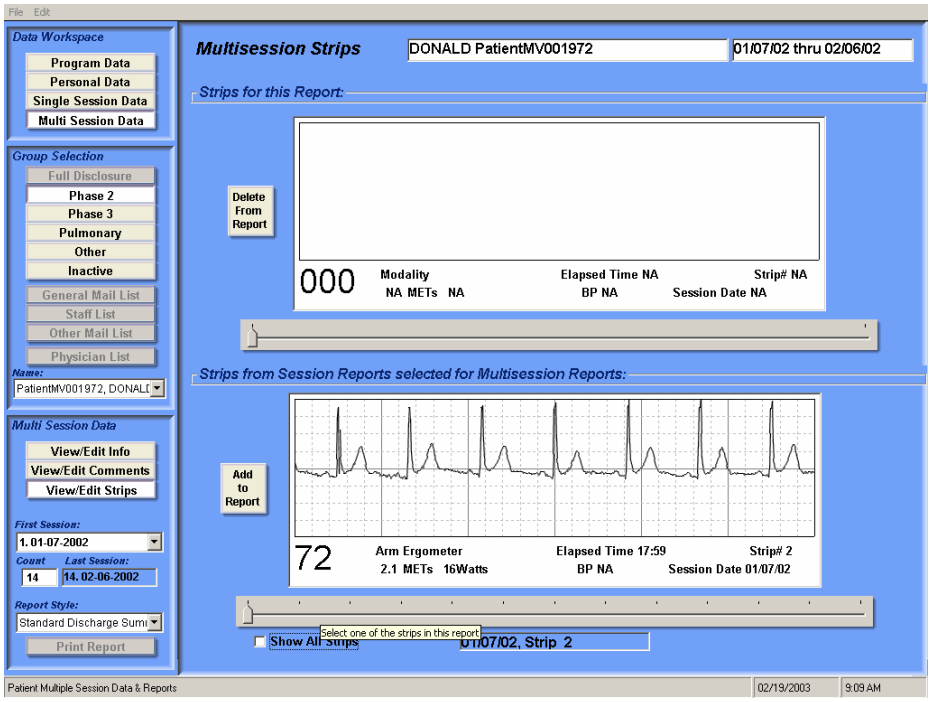
To use the Phrase Library, left click on the phrase/comment to be copied and it will be highlighted. Left click the highlighted area again holding the button down, and ***drag*** the area into the Comments for This Report block. Release the mouse button, and the area moved will appear as part of the Comments for This Report. Control where the comment appears by the cursor position when the mouse button is released.

To remove a phrase/comment from the Comments for This Report block, highlight a comment or phrase in the Comments for This Report area by left clicking and holding the button down while you move the cursor over the complete comment or phrase. Once the comment or phrase is highlighted, release the mouse button. Left click on the *Delete From Report* button, and the highlighted phrase/comment will be removed.

Leave the Comment utility by left clicking on either View/Edit Info to return to the report screen, or View/Edit Strips to move to the strip utility. The comments area will automatically be saved upon exit.

Editing Strip Information

Left click on the button labeled View/Edit Strips to enter the strip editing utility.



Initially, the ***Strips for this Report*** area will be blank as shown above. Strips ultimately identified to be a part of this report would appear in the upper box. Scroll through those identified by using the slider bar under the strip area.

The strips appearing in the lower box are those that were identified for inclusion in a multi session report during the editing process of the session report. Clicking on the small box labeled *Show all Strips* will cause all strips saved in each session report to be made available for review. Scroll through available strips by using the slider bar under the strip area.

To select a strip to appear in this report, left click on the box labeled *Add to Report*. The strip shown in the lower box will be copied to the upper box.

To remove a strip from those selected to appear in this report, left click on the box labeled Delete from Report. The strip will be deleted from the group saved for this report.

Strip data is not editable in Multi Session reports; it is merely a copy of what appears in the individual session report. If changes are indicated, edit the strip in the single session report area.

Printing The Standard Discharge Summary Report

Once all editing has been accomplished, left click on the 'Print Report' button at the lower left of the screen and the report will print in the displayed format.

HL7 Interface:

The HL7 Interface module allows the transfer of session information from the TeleRehab cardiopulmonary monitoring system to a repository where that information can be disseminated and utilized as desired by the hospital information system or other network entities. The information is converted from the proprietary means of storage within the TeleRehab monitoring system to a HL7 format when stored in the repository.

The session information transfer consists of 84 fixed data elements and a number of user defined data elements if desired. A list of included data elements appears as attachment 1. A session report saved as a .PDF file is also included if desired.

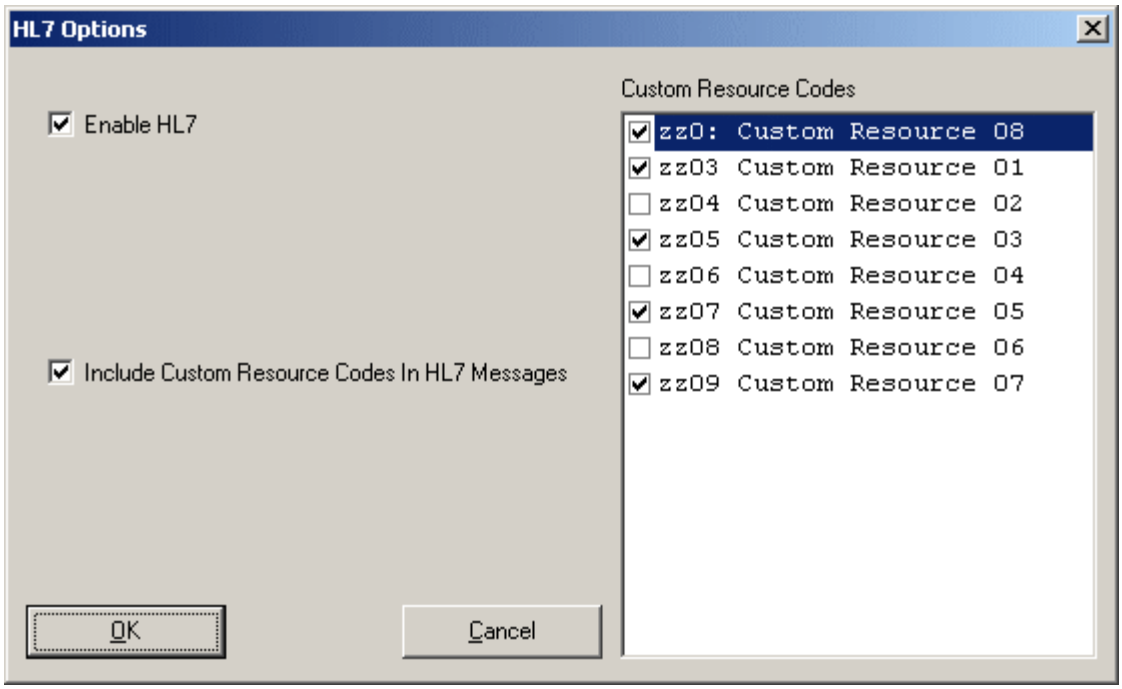
The HL7 Interface also allows the importation of patient demographic information from the hospital information system as a means of entering patient data into the TeleRehab cardiopulmonary monitoring system.

Activating the HL7 Interface:

The HL7 configuration screen allows the operator to enable the HL7 software and to identify user defined data that is to be a part of the exported HL7 information file. The configuration screen is accessed through the TeleRehab Advantage Server as follows:

Bring up the TeleRehab Advantage Server menu:

Hold down the Alt and Ctrl keys and right-click in the right or left margin. The following configuration screen will appear:



Place a check mark in a box or remove it by left clicking on the box.

"Enable HL7" will cause the export and import functionality to be activated.

"Include Custom Resource Codes in HL7 Messages" will make a list of user defined data elements available for selection to be a part of the exported data file.

The export function:

The process of transferring information is invisible to the equipment operator. When a patient name is removed from the monitoring screen, the session information saved by the system is exported to the repository. A full set of session information is exported, however, the information actually utilized by the hospital system is defined during installation and configuration of the application.

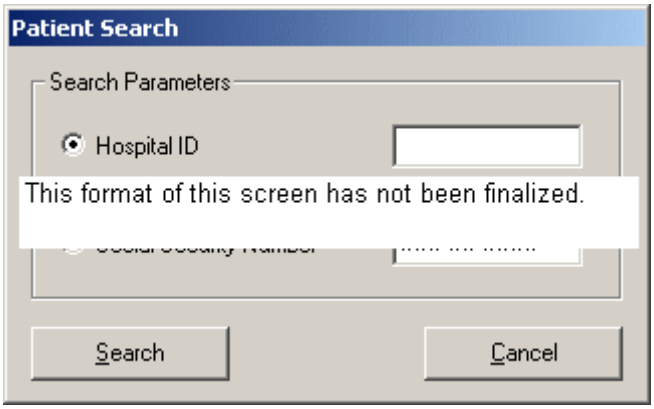
Information can also be manually exported once a report is defined and edited. A new button will appear in the single session data area called "Print Report to PDF".

Left click on the "Print Report to PDF" button to cause the system to create a .PDF file of the selected report, and export the session data file along with the .PDF file to the HL7 repository.

The Import Function:

Patient demographic information can be imported from the Hospital Information System for use in creating a patient file within the TeleRehab Advantage system. A new button will appear in the personal data area call "Patient Search".

Left click on the "Patient Search" button to bring up the HL7 search screen:



Enter the requested information and left click on the 'Search' button. The system will retrieve the patient demographic information from the hospital information system and create a patient data file.

ATTACHMENT 1

MPDV=Max. BP Mode
PTPI=Comments
MMDV=Mode
0c21=Risk Stratification
PTLN=Last Name
PTED=Admit to CR Date
PTSA=Address
PTPZ=Status
PTHT=Height(in.)
PTFN=First Name
MDTE=Report Date
0c06=Family Hx?
0c10=Smoker?
0c02=Abrv. Dx
0c03=Educational Classes
0c04=Insurance
0c17=Pre-BS
0c18=Post-BS
0c19=Marital Status
0c12=Smoking Comments
0c15=HDL
0z04=Referring Diagnosis and ICD 9
0z05=Authorization Number
0z06=Authorization Dates
SMED=Current Meds
0z01=Allergies
0z08=ECG Type
DCLN=MD Last Name
RSBP=Resting BP
0z10=Medication Taken?
PCMT=Post-Session Comments
0z12=O2 Usage
MXMT=Maximum METS
NTHR=Session THR
PTSS=SS Number
PTST=State
MXBP=Maximum BP
PTZP=Zip
SNDT=Session Date
DST6=Distance (feet)
PTWN=Name
SNNO=Session #
mNPE=RPE
PTPH=Patient Phone
PTMH=Medical History
PTNN=Nickname
PTCT=City
PTFC=System Code
PTRM=Remarks
PTHD=Clinic I.D.
MHDV=Max. HR Mode
PTFS=First Session
0c07=High BP Hx?
0c08=Sed. Lifestyles?
0c09=Stress?
0c01=Obesity?
0c05=Diabetes?
0c11=Hyperlipidemia?
0c16=LDL
0c20=Race
0c13=Chol
STHR=Target HR
0c14=Trig
0z02=Goals
0z07=Referring Physician Phone
DCPH=MD Phone
DCNM=Referring Physician
RHRT=Resting HR
0z14=SpO2 Low
0z15=SpO2 High
DCFN=MD First Name
0z09=Angina?
SDYS=Session Days
MXPE=Maximum P.E. Level used
NDBP=Ending BP
NDHR=Ending HR
PTSL=Session List
MXHR=Maximum HR
PTSX=Gender
SNLN=Session Len.
PTAG=Age
SNTM=Start Time
LSSN=Most Recent Sess. #
PTWT=Weight(lb.)