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1. Preface

1.1. Application Overview
The AACVPR Outpatient Pulmonary Rehabilitation Registry is a Web-based application which collects data on outcomes of pulmonary rehabilitation to help prove performance measures and to allow facilities to pull reports and compare their outcomes to others across the nation.

1.2. Intended Audience
This document is intended for individuals who have knowledge of pulmonary rehabilitation processes and information. The document’s intent is to help a general user understand the features and information that the registry application will provide.

1.3. Supported Browsers
The AACVPR Pulmonary Rehab Registry application supports a wide variety of Web browsers. This includes Internet Explorer, Mozilla Firefox, Apple Safari, Chrome, and most other Web browsers on computers running UNIX, Apple Macintosh, or Windows. A list of support versions are indicated below.

- Chrome 3.0.195.27 and later versions
- Internet Explorer 7 and later versions
- Safari 3.2 and later versions
- Firefox 3.0.1 and later versions

1.4. Support and Contact

- For registry inquiries and support, please contact registry@aacvpr.org
- For general inquiries regarding AACVPR, please contact aacvpr@aacvpr.org
2. Getting Started

2.1. Launching
The AACVPR Pulmonary Rehab Registry application is a fully online application so you may gain access simply by clicking on or entering the following website URL into one of the supported browsers. (Refer to section 1.3 above.)

The AACVPR registry application is a secured website, thus is not open to the public domain. An account must be provided to you by AACVPR or by your local registry administrator. (Refer to section 1.4 to become a member of the AACVPR Pulmonary Rehab Registry.)

Click on or enter the following URL into your web browser:

https://registry.pulmonary.aacvpr.org/

To gain access to the application, simply type your username and password into the provided fields then click on the “Log In” button.
2.2. Password Recovery
If you have a registry account and you are unable to log in due to a password failure, the registry application contains a password recovery feature located on the main login page.

Click on the “Forgot Password” link located on the main login page. Enter the username that you used in the “My Profile” section of the system.

The registry application will automatically send an email with a new password to the registered email account.

If the issue remains, please contact your local registry administrator or the AACVPR support team. (Refer to section 1.4.)

2.3. Setting Up Your Profile
Once you have been provided with access to the registry application it is highly recommended that you verify and/or complete your profile so that features such as “Password Recovery” will be available.
To update your profile, move your cursor over the “My Profile” option located on the main menu. A drop-down menu of options will appear.

Click on the “Profile Management” item.

Please refer to Section 2.4, Interacting with the Software, for more information.
A small window will appear with your basic user information.

Add to or update the form as necessary to provide your most accurate information.

Please note that a number of fields are required. For example the “E-mail” field is required as it is the primary mechanism used in the above mentioned “Password Recovery” feature.

When you have completed updating your profile, click the “Save” button.

To change your password click on the “Change Password” item also located under the “My Profile” menu.

As with the “Profile Management” a small window will appear. Key in your old password in addition to your desired new password and validation into the appropriate fields.

Click on the “Change Password” button. A confirmation message will appear indicating that your password has been successfully changed.

Please refer to Section 2.4, Interacting with the Software, for more information.
2.4. Interacting with the Software

General interaction with the software is done through the primary menu system located at the top of the page. In many places the menu has sub-items which can be revealed by mousing over the visible menu item. To select an item simply click on the desired feature.

The menu system may change based on your identified role or if you are in pages specific to a patient. The fundamental “Home” feature is always present and allows you to return to the page you were initially presented with upon login.
In many areas of the application, the user is provided with a pop-up window to facilitate data entry.

While this pop-up is present, all features that are currently available in the background will be disabled until the pop-up is closed.

Buttons located at the bottom of the pop-up indicate completion or cancellation of the information on the form; when these buttons are clicked, the form will perform the selected action then close.
Within a specific patient’s file the primary menu changes to allow the user access to the clinical areas housed within the registry.

In addition, a secondary navigation process is available to the user. The application provides a “Save and Next” option which will save the current information on the current page then automatically shift the user to the next page in the sequence.

This wizard-like implementation provides a consistent method for the user to access the patient’s information while reducing the number of selections a user has to perform.

The “Save and Next” feature is simply an additional navigational tool; the user still has the ability to navigate through the patient’s file by using the “Save” button in combination with the primary navigation menu.
The registry offers a convenient method to log out, which is located on all pages of the system. It is recommended that when users have finished with the application, they use the “Sign Out” feature.

Add Primary Respiratory Diagnoses

<table>
<thead>
<tr>
<th>Event Date</th>
<th>Primary</th>
<th>Edit</th>
<th>Remove</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan-01-2009</td>
<td>✔️</td>
<td><img src="edit.png" alt="Edit" /></td>
<td><img src="remove.png" alt="Remove" /></td>
</tr>
</tbody>
</table>

...
3. Patient Features

The basic features regarding a patient such as Add, Find, Edit, and Delete are all accessible from the “Patient List” component of the system. To navigate to the patient list simply use the main navigation menu to select “Patient List.”

3.1. Adding Patients

To add a new patient to the system, click on the “Add Patient” button located on the patient list page.
The user will be presented with the “Patient Add” screen.

The application requires a user to enter a unique “Medical Record ID” in addition to selecting the associated “Pulmonary Rehab Program.”

Users are only permitted to add patients to programs that they, the users, are associated with, so in most cases the “Pulmonary Rehab Program” will be preselected.

The “Medical Record ID” may be any alpha-numeric combination less than 255 characters. It is important that this identifier be unique to a specific individual and relevant to the program so that others may locate this patient at a later time.

All other data fields on the form are optional; however, it is highly recommended that the patient’s “Date of Birth” and “Sex” are entered. These values are used in many calculations which will not be available if these data points are left incomplete.

**Note:**
The application will provide a warning if a user tries to add a patient who is already in the system and who is currently in a pulmonary rehab program cycle.

Patients are permitted to flow through a pulmonary rehab process cycle more than once as long as the dates of the process cycles do not intersect.
3.2. Finding a Patient
Locating an existing patient within the system is a quick and easy process. The application provides two methods to find a patient recorded in the system.

**Method 1 – Find a Patient**

This feature allows a user to search their catalogue of patients by Last Name or by specific Medical Record ID.

The user may enter the information into the provided textboxes within the “Find a Patient” feature and click the “Search” button.

The patient list will automatically refresh to display all matches to the user’s query.

To clear the search criteria, the user simply clicks on the “Clear” button also located within the “Find a Patient” section.

**Note:**
Any previously set filter options will be reset. A filter may not be applied to search criteria.
Method 2 – Apply a Filter

This feature allows a user to filter the list of patients to locate a specific patient and/or subset of patients.

The user may apply the following filters to get a subset of the data:

- Pulmonary Program (if permissions allow)
- Program Status (Complete, incomplete, etc.)
- Patient enrollment date range

In addition, the patient list column headers allow the user to reorder the data according to the selected column. A single click will reorder the information in ascending order; a second click will reorder the information in descending order.
3.3. Deleting a Patient

The registry’s purpose is to gather data over time with respect to a wide variety of patients. The removal of a patient is not recommended for everyday usage or to minimise a PR Program’s list of active patients. It is recommended that the “Remove Patient” feature be used only when duplicate data is identified or when invalid information is inadvertently added to the system.

To remove a patient from the system use one of the “Locate Patient” features indicated in the above section 3.2.

Once a patient is located and is appearing in the patient list, the user simply need click on the “Remove” icon located in the far right column of the grid.

Warnings will appear requiring the user to confirm the removal of a patient. This will help prevent accidental or inadvertent removal of patients.

At any time the user may click on the “Cancel” button to stop the remove patient process.

Note:
If the patient list does not contain a “Remove” column then your account does not have appropriate permissions to remove patients from the system.

Please contact your local registry administrator to have your account privileges increased or to request that the administrator remove the patient for you.
4. Pulmonary Rehabilitation Information and Features

The following features are with respect to a specific patient’s Pulmonary Rehabilitation Program record. These features are only available when a specific patient has been selected or added from the patient list section. (Refer to section 3 above regarding adding or locating a patient.)

The term **record** refers to the set of clinical information the registry captures for a specific patient during a specific cycle through a Pulmonary Rehabilitation Program.

4.1. Patient Summary

The “Patient Summary” page is the initial page a user is shown once a patient has been selected from the patient list.

The purpose of this page is to provide the user with a brief overview of the patient’s record, in addition to being a launching point for patient-specific reports.
4.2. Demographics

The “Demographics” page contains the same information as the “Add Patient” section.

This section allows users to update information that was unavailable at the time of addition to the registry.

To assist in the data entry process, the registry application provides feedback to the user at the top of the page if information entered is invalid or required. (Refer to the example image adjacent.)
Also located on the “Demographics” page is the “Insurers Utility.” This section allows a user to enter each of the patient’s associated insurers.

**Add Insurers**
To add new insurers simply click on the “Add Insurers” button from the demographics page.

The “Insurers Add Utility” will appear allowing the user to select each insurer in turn. Once an insurer is selected, the user may click on the “Save and Close” button to return to the “Demographics” page. The user may otherwise select the “Save” button, which will add the insurer then clear the form to allow the user to add additional insurers without the need to close the utility. If more than one insurer is listed, the option to mark a primary insurer is available. Once the “Insurer Add Utility” is closed, the “Demographics” screen will update accordingly.

**Edit Insurers**
To edit insurers simply click on the “Edit” button located to the right of the specific insurer listed. The “Insurers Edit Utility” will appear allowing the user to modify the insurer information. To save the revised information simply click on the “Update” button provided.

**Remove Insurers**
To remove insurers click on the “Remove” button located to the right of the specific insurer listed. A warning will appear requiring the user to confirm the removal of the insurer. Once confirmed the item will be removed from the list.
4.3. Medical History

The “Medical History” page contains information regarding the patient’s Admission/Event and general Comorbidities.

The admission event section is an important segment within the AACVPR Pulmonary Rehab Registry. This section allows users to define the primary event and date which triggered the referral to pulmonary rehabilitation.

The primary event date is a significant indicator in the patient’s overall timeline of care.
Add Admitting/Respiratory Diagnosis

To add a new Admission Event or Respiratory Diagnosis, simply click on the “Add Primary Respiratory Diagnoses” button from the “Patient Medical History” page.

The “Admitting/Respiratory Add Utility” will appear allowing the user to complete each event in turn. Once an Admitting/Respiratory entry is completed the user may click on the “Save and Close” button to return to the “Patient Medical History” page.

The user may otherwise select the “Save” button, which will add the Admitting/Respiratory then clear the form to allow the user to add subsequent Admitting/Respiratory entries without the need to close the utility.

Once the “Admitting/Respiratory Add Utility” is closed the “Patient Medical History” screen will update accordingly.

Edit Admitting/Respiratory Diagnosis

To edit admission events simply click on the “Edit” button located to the right of the specific Admission Event listed. The “Admitting/Respiratory Edit Utility” will appear allowing the user to modify the Admission Event information. To save the revised information simply click on the “Update” button.

Remove Admitting/Respiratory Diagnosis

To remove Admitting/Respiratory entries click on the “Remove” button located to the right of the specific Admitting/Respiratory entry listed. A warning will appear requiring the user to confirm the removal of the Admission Event. Once confirmed the item will be removed from the list.
Add / Update Comorbidities

To add and/or update a patient’s comorbidities simply check or uncheck the provided checkbox associated with the comorbidity item.

When finished use the “Save” or “Save and Next” buttons located at the top of the page to commit the modification.

Note:
As you check or uncheck a comorbidity item you will notice the standard Charlson Comorbidity Index will automatically recalculate based on your selections.
4.4. Program

The “Program” page contains information regarding the patient’s flow through the pulmonary rehabilitation process.

Each of the three fundamental stages is indicated on this page:
- Intake
- Discharge
- Follow-up

Note:
In many places throughout the registry the dates supplied on the Program form are used for validation of data in other areas.

For example: The system will prevent a referral date that is earlier than the primary admission event date.

When complete use the “Save” or “Save and Next” button located at the top of the page to complete the modification.
4.5. PFT / Spirometry & Clinical Tools

Overview
The “Clinical Tools” section refers to the medical-based set of information that is obtained throughout the patient’s pulmonary rehabilitation cycle. The information set is partitioned into eight distinct areas:

1. Pulmonary Function/ Spirometry
2. Smoking
3. Medications
4. Functional Capacity
5. Quality Of Life
6. Oxygen Usage
7. Anthropometric
8. Psychosocial

Each area provides a mechanism for users to enter information at each of the three primary stages of the pulmonary rehabilitation program: Intake, Discharge, and Follow-up. Percent change calculations will automatically occur based on the user’s entries.

The application not only calculates the percent change but also provides visual feedback to the user regarding the patient’s progress in the specific data item. The application automatically determines if the given data indicates an improvement or a worsening through the use of visual indicators. A legend of the icons is provided on each page for the user’s reference, as well as below.

**Icon Legend**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://example.com/checkmark.png" alt="Green Checkmark" /></td>
<td>Value entered is within defined range.</td>
</tr>
<tr>
<td><img src="https://example.com/exclamation-mark.png" alt="Yellow Exclamation Mark" /></td>
<td>Value entered is outside of defined range, however is still accepted by the system.</td>
</tr>
<tr>
<td><img src="https://example.com/cross.png" alt="Red Cross" /></td>
<td>Value entered is outside of defined limits. The value must be corrected before the system will allow a save.</td>
</tr>
<tr>
<td><img src="https://example.com/arrow-up.png" alt="Green Arrow" /></td>
<td>The % change value indicates an improvement. (Note: Improvement is based on a change toward the norm rather than a physical increase/decrease in a value over time.)</td>
</tr>
<tr>
<td><img src="https://example.com/arrow-down.png" alt="Red Arrow" /></td>
<td>The % change value indicates a worsening or decline. (Note: Worsening/decline is based on a change away from the norm rather than a physical increase/decrease in a value over time.)</td>
</tr>
</tbody>
</table>
The AACVPR Pulmonary Rehab Registry application also provides a mechanism for the user to review the percent change value for either
  - Intake to Follow-up
  - Discharge to Follow-up

By default the Discharge to Follow-up is pre-selected. The user may modify the displayed percent change by clicking the down arrow from the column heading and selecting the desired range from the presented menu.
Pulmonary Function / Spirometry

The user is provided with a means to enter the patient-specific values into the appropriate data fields and timeframe.

The application will validate the legitimacy of the entered value and calculate the percent change value if applicable.

(Refer to the icon key in section 4.5 for a description of specific icons.)

Note:
Airway Obstruction/Restriction is not associated with Intake/Discharge/Follow-up as this data would be applicable throughout the duration of the Pulmonary Rehab Program.
Smoking and Medication

The user is provided with a means to enter in the patient-specific values into the appropriate data field and timeframe.

The application will validate the legitimacy of the entered value and calculate the percent change value if applicable.

(Refer to the icon key in section 4.5 for a description of specific icons.)
Functional Capacity

The user is provided with a means to enter in the patient-specific values into the appropriate data field and timeframe.

The application will validate the legitimacy of the entered value and calculate the percent change value if applicable.

(Refer to the icon key in section 4.5 for a description of specific icons.)
Quality of Life
The user is provided with a means to enter in the patient-specific values into the appropriate data field and timeframe.

The application will validate the legitimacy of the entered value and calculate the percent change value if applicable.

(Refer to the icon key in section 4.5 for a description of specific icons.)
Psychosocial

The user is provided with a means to enter in the patient-specific values into the appropriate data field and timeframe.

The application will validate the legitimacy of the entered value and calculate the percent change value if applicable.

(Refer to the icon key in section 4.5 for a description of specific icons.)
**Oxygen Usage**

The user is provided with a means to enter in the patient-specific values into the appropriate data field and timeframe.

The application will validate the legitimacy of the entered value and calculate the percent change value if applicable.

(Refer to the icon key in section 4.5 for a description of specific icons.)
Anthropometric

The user is provided with a means to enter in the patient-specific values into the appropriate data field and timeframe.

The application will validate the legitimacy of the entered value and calculate the percent change value if applicable.

(Refer to the icon key in section 4.5 for a description of specific icons.)
4.6. Hospitalizations/Exacerbations

The “Hospitalizations / Exacerbations” page contains supporting information regarding a patient’s events that may have occurred during the Pulmonary Rehabilitation Program.

The supporting information is categorised into three sections.

- Untoward Event(s) / mortality
- Exacerbation
- Hospitalization
Add Untoward Events
To add a new Untoward Event simply click on the “Add Untoward Event” button on the “Hospitalizations / Exacerbations” page.

The “Untoward Events Add Utility” will appear allowing the user to complete each Untoward Event in turn. Once an Untoward Event is completed the user may click on the “Save and Close” button to return to the “Hospitalizations / Exacerbations” page. The user may otherwise select the “Save” button which will add the Untoward Event then clear the form to allow the user to add additional Untoward Events without the need to close the utility.

Once the “Untoward Events Add Utility” is closed the “Hospitalizations / Exacerbations” screen will update accordingly.

Edit Untoward Events
To edit Untoward Events simply click on the “Edit” button located to the right of the specific Untoward Event listed. The “Untoward Events Edit Utility” will appear allowing the user to modify the Untoward Event information. To save the revised information simply click on the “Update” button provided.

Remove Untoward Events
To remove Untoward Events click on the “Remove” button located to the right of the specific Untoward Event listed. A warning will appear requiring the user to confirm the removal of the Untoward Event. If confirmed the item will be removed from the list.
Add Exacerbation
To add a new Exacerbation Event simply click on the “Add Exacerbation Event” button on the “Hospitalizations / Exacerbations” page.

The “Exacerbations Events Add Utility” will appear allowing the user to complete each Exacerbation Event’s information in turn. Once an Exacerbation Event is completed the user may click on the “Save and Close” button to return to the “Hospitalizations / Exacerbations” page.
The user may otherwise select the “Save” button which will add the Exacerbations Event then clear the form to allow the user to add additional Exacerbation Events without the need to close the utility.
Once the “Exacerbation Event Add Utility” is closed the “Hospitalizations / Exacerbations” screen will update accordingly.

Edit Exacerbation Events
To edit Exacerbation Events simply click on the “Edit” button located to the right of the specific Exacerbation Event listed. The “Exacerbation Events Edit Utility” will appear allowing the user to modify the Exacerbation Event information. To save the revised information simply click on the “Update” button provided.

Remove Exacerbation Events
To remove Exacerbation Events click on the “Remove” button located to the right of the specific Exacerbation Event listed. A warning will appear requiring the user to confirm the removal of the Exacerbation Event. If confirmed the item will be removed from the list.
Add Hospitalization
To add a new Hospitalization Event simply click on the “Add Hospitalization Event” button on the “Hospitalizations / Exacerbations” page.

The “Hospitalization Add Utility” will appear allowing the user to complete each Hospitalization Event in turn. Once a Hospitalization Event is completed the user may click on the “Save and Close” button to return to the “Hospitalizations / Exacerbations” page. The user may otherwise select the “Save” button which will add the Hospitalization Event then clear the form to allow the user to add additional Hospitalization Events without the need to close the utility. Once the “Hospitalization Add Utility” has closed the “Hospitalizations / Exacerbations” screen will update accordingly.

Edit Hospitalization
To edit Hospitalization Events simply click on the “Edit” button located to the right of the specific Hospitalization Event listed. The “Hospitalization Edit Utility” will appear allowing the user to modify the Hospitalization Event information. To save the revised information simply click on the “Update” button provided.

Remove Hospitalization
To remove Hospitalizations click on the “Remove” button located to the right of the specific Hospitalization listed. A warning will appear requiring the user to confirm the removal of the Hospitalization Event. If confirmed the item will be removed from the list.
5. Reporting Features

5.1. Understanding Reports

The AACVPR Pulmonary Rehab Registry application offers predefined reports for general review and usage. An in-depth overview of each predefined report is outlined in the below sections. (Sections 5.2 and 5.3)

In general the reports are designed with a minimalistic presentation approach. The reports will only display data to the user where information actually exists in the system. For example, if the patient health survey SF-36 is not used in a particular PR Program then the reports will never display the SF-36 rows. This approach prevents the reports from displaying data which is irrelevant to the user and allows the user to focus on the more important information.

In addition, the reporting shows the percent change and associated improvement/decline icons from the clinical tools dataset. Refer to section 4.5 for an overview of the icon meanings. It is again important to note that the icons which describe the percent change are determined based on an improvement toward or away from the baseline. The physical number decreasing or increasing over time in partnership with the predefined AACVPR baseline target range is used to dynamically calculate an improvement /decline.
5.2. Individual Reports

The individual report is specific to a patient and pulmonary rehabilitation program cycle. This report indicates changes in a specific patient’s information during the course of the pulmonary rehabilitation program, in addition to providing a general outcomes overview of the patient performance.

To access a specific patient’s individual report, open the desired patient’s record. (Refer to section 3.)

From the “Patient Summary” page click on the button “Individual Report.” A new window will appear with the patient’s individual report.
### Example: Individual report

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>Initial</th>
<th>DO</th>
<th>FU</th>
<th>DC-FU % Chg</th>
<th>Goal</th>
<th>Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Enrollment Date</strong></td>
<td>1/1/2012</td>
<td>6/3/2013</td>
<td>6/3/2013</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sessions</strong></td>
<td>20</td>
<td>20</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Medications</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-Acting Beta Agonist</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-Acting Beta Agonist</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-Acting Anticholinergics</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-Acting Anticholinergics</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intranasal Corticosteroids</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral Corticosteroids</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Smoking</strong></td>
<td>Former smoker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gout Year</strong></td>
<td>2005</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Packs (Year’s)</strong></td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FVC Actual</td>
<td>2.55</td>
<td>2.66</td>
<td></td>
<td>11.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Predicted FVC</td>
<td>60</td>
<td>55</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IC Actual (l/min)</td>
<td>3</td>
<td>9</td>
<td></td>
<td>200</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>% Predicted IC</td>
<td>25</td>
<td>24</td>
<td></td>
<td>4</td>
<td></td>
<td>29</td>
</tr>
<tr>
<td>Measured FVC pre- or post-</td>
<td>6.4</td>
<td>29</td>
<td></td>
<td>46</td>
<td></td>
<td>57</td>
</tr>
<tr>
<td>bronchodilator</td>
<td></td>
<td></td>
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<td>6M Walk Distance (m)</td>
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<td>494.2</td>
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<td>6</td>
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<td>Rest (min)</td>
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<td>2</td>
<td></td>
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<tr>
<td>ADL’s (min)</td>
<td>2</td>
<td>3</td>
<td></td>
<td>5</td>
<td></td>
<td>56</td>
</tr>
<tr>
<td>Exercise (min)</td>
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<td>3</td>
<td></td>
<td>5</td>
<td></td>
<td>56</td>
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<tr>
<td>Sleep (min)</td>
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<td>2</td>
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<td>ambulatory O2 system</td>
<td>pulse</td>
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<td>Type of O2 system patient uses</td>
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</tbody>
</table>

- Meets or exceeds goal
- Short of goal and moving in the wrong direction

Report Used For: Individual Patient Progress Report

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5.3. Program Reports
The AACVPR Pulmonary Rehab Registry application contains two separate program reports for review the “Program Outcomes Summary” and the “Program Comparison” report.

To access the program reports, use the primary navigation to select “Reports” from the “Reports and Data” menu.
Report 1 – Program Outcomes Summary

The Program Outcomes Summary report is a program-specific aggregate report of all patients in the program that have a defined discharge date within the user defined timeframe.

This report indicates general statistics and overall performance of patients within the specified timeframe.

To generate this report, select the desired program (if applicable) and date range. Click on the “Generate” button.

Note:
To select all data regardless of timeframe simply leave the date selections blank.
The Program Comparison report shows a comparison of the aggregate data for all patients in the specified program to the selected group of programs. The selected set of patients for both the program and the group of programs will have a defined discharge date within the user defined timeframe.

This report indicates general statistics and overall performance of patients within the specified timeframe for each of the two distinct sets of data.

The group of programs always includes the comparing program. Thus as a minimum the report will generate a comparison to itself.

To generate this report select the desired program (if applicable), comparing group and date range. Click on the “Generate” button.

**Note:**
To select all data regardless of timeframe simply leave the date selections blank.
6. Extracting Your Data

6.1. Data Manager

The AACVPR Pulmonary Rehab Registry application provides a unique and innovative means for users to extract information from the registry. The “Data Manager” section will allow users to make predefined requests to retrieve data or to create custom requests for their needs. Since many complex data routines are server-intensive, the download manager was created to help manage the requested data without negatively impacting the server and/or running application. As such, data requests are buffered until such time as the application determines it is safe to perform the extraction.

The primary screen of the “Data Manager” module is merely a viewing portal to previously extracted information. In addition, a listing of currently pending data requests that the application is presently buffering is visible.

The extraction history panel provides users a quick reference to the date of the request, a description of the information contained, and who initially created the dataset.

To download a newly completed or previously processed dataset simply click on the icon next to the desired extraction.
6.2. New Data Extractions

To create a new data extraction for download, click on the “New Data Request” button from the “Data Manager” page.

A modal window will appear allowing the user to select from an existing dataset or to create a new dataset.

Predefined datasets are not specific to a timeframe or a specific organization. Essentially the predefined datasets are a template of information to be extracted. A user will be required to indicate the timeframe and the desired PR Program in order to request information from the application.

Through the use of the dataset templates a user may create distinct data extractions over time and/or for distinct PR Programs. This concept will provide a consistent and known structure for ease in analysis.

For example: A user may define a specific dataset template regarding “Untoward Event(s)”. They may then create data requests on a quarterly basis. The output will provide them with on-going analysis of “Untoward Event(s)” monitoring for the desired PR Program.

Note: Users only have access to extract data for PR Programs they currently have privileges to. Access to information regarding PR Programs outside of their defined privileges is strictly prohibited by the AACVPR Pulmonary Rehab Registry application.
To create a new dataset template simply click on the “New” button from the “Data Request Wizard’ page. (See above instructions.)

The Data Request Wizard will provide the user with a tree-like view of information that exists within the AACVPR Pulmonary Rehab Registry. The user may select the [+ ] icon located to the left of each category to view the subset of data variables within that category.

The user then selects the associated checkbox next to the desired data element they wish to include in their dataset template. In addition, the user may filter each selected data item by selecting or entering the desired filter criteria into the “Operand” and “Filtered Value’ columns.

**Example:** The image to the left indicates that a user wants to extract data regarding patients’ Functional Capacity. The user has revealed the subset of Functional Capacity information by selecting the [+ ] icon next to the Functional Capacity heading. The user has also selected the following variables to be included in the extraction:

- 6Min Walk Distance
- 6Min Walk Distance Units
- Assessment Type

In addition, the example indicates that the user has
requested a filter to be applied to the extraction where only values at *Assessment Type - Intake* are to be included.

The user may traverse the entire set of available information and create a fully customized extraction to meet their current needs.

Once the dataset template variables have been defined, the user may select “Next” in the wizard, at which point they will be required to provide a name for their newly created dataset template. Upon “Save” of the template, the user will be presented with the “Dataset Request Wizard,” where their newly created dataset template name will appear in the predefined dataset dropdown.

Refer to the above documentation on how to extract specific data from a dataset template.
7. Security

7.1. Application Security
The AACVPR Pulmonary Rehab Registry application is safeguarded by a number of security protocols. Primarily the application is secured under the standard 128 bit encryption Secure Socket Layer protocol (SSL). Thus all data transmitted to the registry will be in an encrypted state.

Additionally, the application is a closed access system, which requires a primary individual to register and administrate users to the system. The AACVPR Pulmonary Rehab Registry does not allow users to self-register, thus limiting access to known and controlled user sets.

The application requires registered users to sign in using a two factor authentication process. The authentication process will limit the user’s privileges based on the user’s defined role. Users are generally limited to accessing a single PR Program. The application strictly prohibits users from accessing information which is external to their defined PR Programs.

Lastly the application is fully HIPAA compliant providing administrative, physical, and technical safeguards to the system in addition to providing a complete audit trail of information modifications. For more information regarding the application security and safeguards please contact AACVPR. (Refer to section 1.4.)

7.2. Privacy

AACVPR values your privacy and the information you provide in the AACVPR Pulmonary Rehab Registry. All of your information will be treated with the utmost sensitivity and care. The AACVPR Pulmonary Rehab Registry application is intended for professionals involved in Cardiovascular and Pulmonary Rehabilitation and collects information that you, the user, provide through online forms/applications, such as de-identified clinical information, etc. The information you provide is kept confidential and is not available for public use. Some information may be used in an aggregate format; however, no direct one-to-one comparisons are available. Please refer to the AACVPR Outpatient Pulmonary Rehabilitation Registry Protocol and Participation Agreement for details regarding confidentiality, safeguards, and security.