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## Appendix A: NarxCare

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1 Document Overview

The PMP AWARxE Requestor User Support Manual provides step-by-step instructions for healthcare professionals and other users requesting data from the Virginia Prescription Drug Monitoring Program (PDMP) database. It includes such topics as:

- Registering for an account
- Creating patient requests
- Viewing request status
- Viewing patient reports
- Appointing a delegate to request and receive information on behalf of a prescriber or dispenser
- Managing your account

1.1 What is a Requestor?

A requestor is a PMP AWARxE account type held those who use PMP AWARxE to review patients’ prescription history. A requestor’s primary task within the application is to determine if a patient should be given or dispensed a prescription based on their prescription history. Requestors are the strongest line of defense to prevent prescription drug abuse. Physicians and pharmacists are the most common type of requestor; however, there are a number of roles that can be classified as a requestor. A complete list of available roles that fall into the requestor category is provided below:

**Healthcare Professionals**

- Dentist
- Medical Intern
- Medical Resident
- Nurse Practitioner/Clinical Nurse Specialist
- Optometrist
- Pharmacist
- Pharmacist’s Delegate – Licensed
- Pharmacist’s Delegate – Unlicensed
- Physician (MD, DO)
- Physician Assistant
- Podiatrist (DPM)
- Prescriber Delegate – Licensed
- Prescriber Delegate – Unlicensed

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2 Registration

This chapter provides an overview of the PMP AWARxE registration process as well as detailed instructions for registering for an account and registering for a delegate account.

2.1 Registration Overview

PMP AWARxE requires that every individual register as a separate user, using their email address as their username within the system. A user can register as a delegate, a role that is designed to allow the user to generate reports on the behalf of another, current user; for example, a nurse at a small doctor’s office could be assigned to act as a delegate to the physician to create Narx Reports for the patients whom the physician would be seeing that day. All queries run by the delegate are attributed to the prescriber for whom they run the report.

Please note that if you had an account with the previous system, you may already have an account in PMP AWARxE. Please attempt to access your account by following the Reset Password instructions located in this guide before attempting to create a new account. Please utilize the email address associated with your previous account.

The registration process is comprised of three pages: Create an Account, Select Your User Role, and Demographics. All three pages must be completed before your registration is successfully submitted for processing.

Some requestor roles may also require you to upload of a copy of a current government-issued photo ID, such as a driver’s license or a passport, or notarized validation documents. If required, you must submit this documentation before your account can be approved. Digital copies of these documents can be submitted through PMP AWARxE after you have completed the registration pages.

2.2 Registering for an Account

To request a new account in PMP AWARxE:

1. Navigate to https://virginia.pmpaware.net/login. The Log In page is displayed.
2. Click **Create an Account**.
   The Register for an Account page is displayed.

   ![Register for an Account](image)

   **Note:** A tutorial describing the complete registration process is available by clicking the Registration Process Tutorial link located in the top right corner of the page.

3. Enter your current, valid email address in the **Email** field. The email address you provide will be your username for logging in to the system.

4. Enter a password in the **Password** field, using the password requirements provided below, then re-enter it in the **Password Confirmation** field.

   **Passwords must contain:**
   - At least eight (8) characters
   - One (1) uppercase letter
   - One (1) lowercase letter
   - One (1) special character such as !, @, #, $, etc.

   **Note that a checkmark appears next to each requirement as it is met.**
5. Click **Save and Continue**.

The Select Your User Roles page is displayed.

6. To select your user role:
   a. Click the plus sign (+) next to the user role category that best fits your profession (Healthcare Professional, Agency Administration, etc.).

   The category expands to display the available user roles.

   b. Click to select the checkbox next to your user role.

   **Note:** If you do not see an applicable role for your profession, the State Administrator has not configured a role of that type and potentially may not allow users in that profession access to PMP AWARxE. Please contact your State Administrator for more information.

7. Click **Save and Continue**.

The Demographics page is displayed as shown on the following page.
8. Complete the required fields.

**Notes:**
- The information you are required to enter on this page may vary by state. Required fields for your state are marked with a red asterisk (*)
- Please enter all active DEA numbers, if applicable.

9. Click **Submit Your Registration**.

**Note:** If you are a delegate, there is an additional step in the registration process. Please refer to the **Registering as a Delegate** section for more information.
Once you have submitted your registration, you will be notified of your account status (Access Granted, Incomplete, Pending Approval) and prompted to verify your email address.

a. **Access Granted:** Certain user roles will be immediately granted access to the application provided their personal DEA numbers and Professional License Numbers as entered are valid and found within the registry. If you are approved, you will be presented with the End User License Agreement that you must review and accept. After accepting, you will be routed to your dashboard and can begin using the application.

   **Note:** If you are a delegate, you must be approved by any supervisors you have selected before can perform a Patient Request.

b. **Incomplete:** If you are required to upload validation documents to complete your registration, your registration status will be “incomplete,” and the Validation Documents page is displayed. Please refer to the Validation Documents section of this document for more information.

c. **Pending Approval:** If your account requires no further action but could not be verified by the process above, or if your user role is not one that is immediately approved, your account will be pended for review and approval by your State Administrator.

### 2.2.1 Email Verification

1. Once you have submitted your registration, PMP AWARxE sends an email to the supplied email address for verification of an active email address.

2. When you receive the email, it will contain a link to verify your email address. Click the verify your email link.

**Notes:**

- *The link contained within the email is only valid for 20 minutes. In the event that time has expired, clicking the link will result in a new email verification notification being sent to you. Click the link in the new email to verify your email address.*

- *If you are not able to receive HTML-formatted emails or emails with hyperlinks, please contact the help desk using the contact information located in the Technical Assistance section of this document.*

Once you click the link, you are directed to PMP AWARxE and a message is displayed indicating that your email address has been validated.

### 2.2.2 Validation Documents

If you are registering for a user role for which the State Administrator requires further validation, you will receive an email with instructions from the State Administrator and the necessary forms. Once you receive the email containing the validation documents, complete the required form(s) in accordance with the instructions in the email. You may submit your form(s) electronically, as described below, or you can mail them to the state office. Please refer to Administrative Assistance for the mailing address.
To submit your form(s) electronically:

1. Log in to PMP AWARxE using the email address and password you created during the registration process.

   The Welcome page is displayed. If your registration is not complete (i.e., you have not submitted your validation documents, the page contains a file upload section.

2. Click Add File, then select the required form(s).

   Once you have submitted your form(s), you will receive an email notifying you that your account has been updated. No further action is required at this time.

2.2.3 Account Approval

   Once the State Administrator has determined that all you have met all account requirements, your account can be approved. Once your account has been approved, you will receive an email stating that your account has been approved and is now active. Upon receipt of the approval email, you can log in to PMP AWARxE using the email address and password supplied during the account creation process.

   *Note: If you no longer have the password, you can reset it by navigating to [https://virginia.pmpaware.net](https://virginia.pmpaware.net) and clicking Reset Password, or by navigating to [https://virginia.pmpaware.net/identity/forgot_password](https://virginia.pmpaware.net/identity/forgot_password).*

2.3 Registering for a Delegate Account

   Registering as a delegate is virtually identical to registering as any of the other healthcare professional roles. To register as a delegate:

   1. Select one of the delegate roles (e.g., **Prescriber Delegate – Unlicensed** or **Pharmacist Delegate – Unlicensed**) on the Select Your User Role page.
2. Enter any required information on the Demographics page, noting that you must enter your supervisor’s email address in the I am a delegate for the following people... field. You may enter multiple supervisors by clicking Add.

![Delegate](image)

**Notes:**

- The supervisor must already have a registered account with the Virginia PDMP.
- Ensure that you enter the supervisor’s email address correctly and that it is a valid email address.
- You will not be able to perform Patient Requests on behalf of a supervisor until that supervisor has approved you as a delegate.
3 Basic System Functions

This chapter describes how to log in to PMP AWARxE, the Requestor Dashboard that is displayed upon logging in, and how to log out.

3.1 Log In to PMP AWARxE

1. Navigate to https://virginia.pmpaware.net.

   The Log In page is displayed.

   ![Log In page]

2. Enter the email address you provided when you registered in the Email field.

3. Enter your password in the Password field.

   **Note:** If you have forgotten your password, click Reset Password. You will be prompted to enter the email address registered to your account. Once you have entered a valid, registered email address, you will receive an email with a link to reset your password.

4. Click Log In.

   The My Dashboard page is displayed. Please refer to the My Dashboard section for a complete description of the dashboard.
3.2 My Dashboard

Upon logging in to PMP AWARxE with an approved account, the requestor dashboard (My Dashboard) is displayed. This dashboard provides a quick summary of pertinent items within PMP AWARxE, including State Administrator announcements, your recent patient searches, patient alerts, and, if applicable, your delegate’s or supervisor’s status. My Dashboard can be accessed at any time by clicking Menu > Dashboard (located under Home).

![My Dashboard Image]

3.2.1 Patient Alerts

This section displays the most recent patient alerts.

*Note: This section is user role dependent, meaning that certain roles will be unable to view this section.*

- New alerts (i.e., those that have not been viewed) are displayed in bold with the word “NEW” next to them.
- You can download the letter associated with the alert by clicking Download PDF.
- You can view the Patient Request associated with a patient by clicking the patient’s name.
• You can click **Patient Alerts**, located at the top of the section, to access a full listing of patient alerts. You can also access patient alerts at any time by clicking **Menu > Patient Alerts** (located under **Rx Search**).

### 3.2.2 Recent Requests

This section displays your most recent patient searches, including those performed by one of your delegates.

- You can view the Narx Report by clicking the patient’s name.
- You can view a list of all past requests by clicking **View Requests History**. You can also access your request history at any time by clicking **Menu > Requests History** (located under **Rx Search**).

*Note: The report that is displayed when you click the patient’s name is a historical report, meaning that it contains the data that was viewed when the report was initially run. For instructions on performing new patient Rx history searches, please refer to the **Creating a Patient Request** section.*

### 3.2.3 Delegates/Supervisors

This section displays your delegates or supervisors, depending on your user role.

- If you are a supervisor, you can quickly change a delegate’s status from the dashboard by clicking the delegate’s name. Once you click the delegate’s name, the Delegate Management page is displayed, and you can approve, reject, or remove a delegate from your profile.
- You can click **Delegates**, located at the top of the section, to access the Delegate Management page. The Delegate Management page can also be accessed at any time by clicking **Menu > Delegate Management** (located under **My Profile**). For additional information regarding delegate management, please refer to the **Delegate Management** section.

### 3.2.4 Announcements and Quick Links

This section displays announcements from your State Administrator as well as links to webpages outside of AWARxE that may be of use to you.

- The quick view only displays the first few lines of text; however, you can click **PMP Announcements**, located at the top of the section, to display the full announcement text. You can access the Announcements page at any time by clicking **Menu > Announcements** (located under **Home**).
- The announcements displayed in this section are configured by your State Administrator. Announcements can be configured as role-specific, meaning that a user whose role is “physician” may have an announcement, whereas a user whose role is “delegate” may not.
- Quick links are also configured by your State Administrator. Any links configured will be visible toward the bottom right of the dashboard in the **Quick Links** section.
3.3 Log Out of PMP AWARxE

To log out of the system, click the arrow next to your username (located in the top right corner of the page), and then click **Log Out**.
4  RxSearch

The RxSearch section of the PMP AWARxE menu contains the query functions available to you. These functions may include:

- Creating a patient request
- Viewing a patient request
- Performing a bulk patient search
- Viewing historical requests
- Viewing a report of prescriptions attributed to you
- Viewing patient alerts

Note: You may not have access to all of the reports listed above. The functions available under RxSearch may vary depending on your user role and the settings enabled by your State Administrator. If you do not have access to a report and you think you should, please contact your State Administrator.

4.1 Creating a Patient Request

The Patient Request allows you to create a report that displays the prescription drug activity for a specific patient for the specified timeline.

1. Log in to PMP AWARxE.
2. Click Menu > Patient Request.

The Patient Request page is displayed.
Note: A tutorial describing the complete patient request creation process is available by clicking the Patient Rx Request Tutorial link located in the top right corner of the page.

3. Enter the required information, noting that required fields are marked with a red asterisk (*). At a minimum, you must complete the following fields:

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Info</td>
<td></td>
</tr>
<tr>
<td>First Name</td>
<td>Enter the patient’s complete first and last name; Or Click the Partial Spelling checkbox to search by a partial first and/or last name. This option can be helpful when searching hyphenated names or names that are often abbreviated, such as “Will” vs. “William.” Note: The Partial Spelling function requires at least three letters. If the patient’s name contains only one or two letters, please do not attempt a partial search.</td>
</tr>
<tr>
<td>Last Name</td>
<td></td>
</tr>
<tr>
<td>Date of Birth</td>
<td>Use the MM/DD/YYYY format, or select a date from the calendar that is displayed when you click in this field.</td>
</tr>
<tr>
<td>Prescription Fill Dates</td>
<td>Use the MM/DD/YYYY format, or select a date from the calendar that is displayed when you click in these fields.</td>
</tr>
<tr>
<td>From</td>
<td></td>
</tr>
<tr>
<td>To</td>
<td></td>
</tr>
</tbody>
</table>

Note: If you are a delegate, you must select a supervisor from the Supervisor field, located above the Patient Info section of the page.

If no supervisors are available, please contact your supervisor(s) to approve your account or add the supervisor under My Profile. Current supervisors and their statuses are displayed on your dashboard. Refer to the Delegates/Supervisors section of My Dashboard or the My Profile section for further instructions.
4. If you require information from other states, click the checkbox next to the desired state(s) in the PMP InterConnect Search section of the page.

<table>
<thead>
<tr>
<th>PMP Interconnect Search (Optional)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To search in other states as well as your home state for patient information, select the states you wish to include in your search.</td>
</tr>
<tr>
<td>Select All</td>
</tr>
<tr>
<td>Alabama</td>
</tr>
<tr>
<td>California</td>
</tr>
<tr>
<td>Delaware</td>
</tr>
<tr>
<td>Hawaii</td>
</tr>
<tr>
<td>Kansas</td>
</tr>
<tr>
<td>Maine</td>
</tr>
<tr>
<td>Nebraska</td>
</tr>
<tr>
<td>North Carolina</td>
</tr>
</tbody>
</table>

Notes:
- Partial search is not available when searching other states. If you have selected partial search, the PMP InterConnect Search section will be removed from the bottom of the page.
- If a state is not included on the list, data sharing with that state is not currently in place, or your user role does not allow for data sharing.

5. Once you have entered all the required search criteria, click Search.
   a. If your search results return a single patient, the Narx Report is displayed. Refer to the Viewing a Narx Report section for more details regarding the report.
Note: If you need a PDF or CSV version of the report, you can click Download PDF or Download CSV, located in the top right corner of the report.

b. If the search could not determine a single patient match, a message is displayed indicating that multiple patients were found.
   • If you searched for an exact patient name and multiple patients were found, refer to the Multiple Patients Identified section.
   • If you searched for a partial patient name and multiple patients were found, refer to the Partial Search Results section.

c. If your search does not return any results, a message is displayed indicating that either no patient matching your search criteria could be identified or the patient was identified but no prescriptions were found. Refer to the No Results Found section for more information.

4.1.1 Multiple Patients Identified

1. If you searched for an exact patient name and multiple patients were found, a message is displayed indicating that multiple patients matching your search criteria have been identified.

2. From this window, you can:
   a. Click Refine Search Criteria to return to the Patient Request page, refine your search criteria, and re-run the report;
      Or
   b. Select one or more of the patient groups displayed, and then click Run Report.
The Narx Report for the patient group(s) you selected is displayed.

4.1.2 Partial Search Results

1. If you searched for a partial patient name and multiple patients were found, a message is displayed indicating that multiple patients match your search criteria.

2. From this window, you can:
   a. Click Refine Search to return to the Patient Request page, refine your search criteria, and re-run the report;
   Or
   b. Select one or more of the patients displayed, and then click Run Report. The Narx Report for the patient(s) you selected is displayed as shown on the following page.
4.1.3 No Results Found

1. If your search criteria could not be matched to any patient records, a message is displayed indicating that no matching patient could be identified.

![Error: No matching patient identified]

Or

2. If your search criteria matches a patient record but the patient has no prescriptions within the specified timeframe, a message is displayed indicating that the patient was found but no prescriptions were found.

![Message: Patients found but no prescriptions found.]

We were able to find this patient. However, there are no prescription records within the prescription fill dates provided. Please try a longer date range.

3. Click **Change Date Range** to return to the Patient Request page, enter a different date range, and re-run the report.

**Notes:**

- **Be sure to verify that all information entered on the request was entered correctly** (e.g., verify that the first and last names were entered in the correct fields, verify the patient’s birthdate, etc.).
- **If Partial Search was not originally selected, you can click the Partial Search checkbox to expand your search results.**
- **You can enter additional demographic information, such as a ZIP code, to perform a fuzzy search.**
4.2 Viewing a Narx Report

Once your search results are returned, the Narx Report is automatically displayed. For complete information on the Narx Reports, and for more information on the NarxCare system, please refer to Appendix A: NarxCare.

You may also access your previously requested Narx Reports at any time by clicking Menu > Requests History. Refer to the Requests History section for more information.

4.3 Requests History

1. To view a previously created Narx Report, click Menu > Requests History.
   The Requests History page is displayed.

   ![Requests History page]

   **Notes:**
   - You can only view reports you or your delegate(s) have created.
   - Reports are available in your Reports History for 30 days. After 30 days, they are automatically removed from your history.

2. From this page, you can:

   a. Click Advanced Options to filter the list of requests.

   ![Advanced Options]

   b. Click Download PDF or Download CSV to export your search history, if this functionality has been configured by your State Administrator.

   c. Click a patient name to view the details of that request in a detail card at the bottom of the page.
• Click **View** to display the results of the previously submitted request. Refer to [Viewing a Narx Report](#) for details regarding Narx Reports.

  **Note:** The results of previous requests are not updated with new information. The results displayed are the results at the time the original search was performed.

• Click **Refresh** to generate a new Narx Report for the selected patient. The Patient Request page will be displayed with the patient’s information automatically populated. Refer to [Creating a Patient Request](#) for complete instructions on generating new requests.

### 4.4 Bulk Patient Search

The Bulk Patient Search functionality is similar to the Patient Request functionality; however, it allows you to enter multiple patients at once rather than one at a time. You can enter patient names manually or via CSV file upload.

To perform a Bulk Patient Search:

1. Click **Menu > Bulk Patient Search.**
   
   The Bulk Patient Search page is displayed.

   a. If you wish to enter patients manually, continue to step 2;
   
   Or

   b. If you wish to enter patients via CSV file upload, continue to step 6.

2. Ensure that **Manual Entry** is selected in the **How do you want to enter patients?** field at the top of the page.
3. Complete the following required fields:
   - **First Name** – enter the patient’s complete first name
   - **Last Name** – enter the patient’s complete last name
   - **DOB** – enter the patient’s date of birth using the MM/DD/YYYY format, or select a date from the calendar that is displayed when you click in this field

   **Note:** You may also enter the patient’s ZIP code; however, it is not recommended.

4. Once you have entered the patient’s information, click **Add** to add an additional patient.

5. Repeat steps 2-3 until all patients have been entered.

   **Note:** Once you have finished entering patients, continue to step 14.

6. Click the **File Upload** radio button in the **How do you want to enter patients?** field at the top of the page.

   The File Upload search is displayed.

7. Click **View Sample File** to download the sample CSV file.
8. Open the sample CSV file and complete the required fields.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>first_name</td>
<td>last_name</td>
<td>birthdate mm/dd/yyyy</td>
<td>postal_code</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
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</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- The patient’s complete first name, last name, and date of birth (using the MM/DD/YYYY format) are required.
- You may enter the patient’s ZIP code; however, it is not recommended.

9. Once you have entered all patient information, save the file to your computer.

**Note:** When naming your file, do not include spaces.

10. Click Choose File, then select the file you created in step 9.

11. Click Validate Format to download a validation report and ensure all records were entered correctly.

12. Once you open the validation report, any errors in your data will be listed in the Errors column. Please correct the errors and resubmit the corrected file. Note that if the Errors column is blank, the data is acceptable.

**Examples:**
- File with errors:
13. Repeat steps 10-12 until all errors have been corrected. Once all errors have been corrected and your file is validated, or if your file has no errors, continue to step 14.

14. Enter a name for your search session in the Group Name field.

   **Note:** Providing a group name will help you more easily distinguish between searches in the Bulk Patient History tab.

15. Enter the timeframe for which you wish to search in the From and To fields using the MM/DD/YYYY format.

16. If you wish to include other states in your search, click the checkbox next to the desired state(s) in the PMP Interconnect Search section of the page.

17. Click Search.

   A message is displayed indicating that your search is being processed.

4.4.1 Viewing Bulk Patient Search Results

1. To obtain the results of a Bulk Patient Search, or to view previous searches, click the Bulk Search History tab (Menu > Bulk Patient Search > Bulk Patient History).

The Bulk Search History page is displayed.
Notes:

- **The Number of Patients** column provides the total number of patients included in your search.
- **The Processing** column provides the total number of searches remaining to be processed. If the number is “0,” your search is complete.
- **The Incomplete** column provides the number of patient records that could not be found.
- **The Ready** column provides the number of patient search results available.

2. Click the **Bulk Search Name** to view the results of that search.

![Bulk Search Name](image)

3. Click a patient name to display that patient’s search details.

The search details are displayed below the table.

![Patient Details](image)

4. From this page, you can:

   - Click **View** to display the Narx Report.

     **Note:** For more information on viewing report results, please refer to Viewing a Narx Report.

   - Click **Refresh** if you are reviewing a previous report and wish to run a current report.

     **Note:** If the Bulk Search History page indicates that all patient records are ready (screenshot a), but you click the search results and a patient’s status is displayed as “incomplete” (screenshot b), it is likely that the search returned multiple results for that patient.
To resolve this and view the report:

1. Click the patient’s name.
   The patient search details are displayed.

2. Click Try Again.
   The Patient Request page is displayed.

3. Refer to Multiple Patients Identified to run the report.

4.4.2 Incomplete Bulk Patient Search Results

The Status column for an individual patient may indicate Incomplete for two reasons: No Matching Patient Identified or Multiple Patient. Upon clicking the patient’s name, the reason is listed in the Reason field of the search details.

1. No Matching Patient Identified. The system was not able to locate a patient matching your search criteria. Click Try Again to open the Patient Request page where you can perform a partial search or modify your search criteria.

2. Multiple Patient. The system identified multiple patients matching your search criteria. Click Try Again to open the Patient Request page, then click Search at the bottom of the page. The Multiple Patients Found window will
display prompting you to select the patients for whom you wish to run a report. The Multiple Patients Found window is shown on the following page.

Select the correct patient(s), and then click Run Report to view the Narx Report. For more information on viewing report results, please refer to Viewing a Narx Report.

4.4.3 No Prescriptions Found in Bulk Patient Search

If the Status column indicates No RXs Found for a patient, the patient exists in the database, but no prescriptions were reported for the patient in your report timeframe. Upon clicking the patient’s name, No Prescriptions Found in Date Range will be indicated in the Reason field.

You may click View if you need to export the blank report, or you may click Refresh to display the Patient Request page where you can change the date range and run a new report.
4.5 My Rx

If you have a DEA number associated with your AWARxE account, My Rx allows you to run a report that displays the filled prescriptions for which you were listed as the prescriber.

*Note: This functionality is only available if you have a DEA number associated with your user profile.*

To run the My Rx report:

1. Click **Menu > My Rx**.
   
The My Rx search page is displayed.

2. Enter the date range for your search in the **From** and **To** fields using the **MM/DD/YYYY** format.

3. Click the checkbox next to the DEA number(s) for which you wish to run a report.

4. If you wish to search for a specific drug, enter the generic drug name in the **Drug Name** field.

5. Click **Search**.
Your report results are displayed. If configured by your PMP Administrator, you may click Download PDF or Download CSV to export your report results.

4.6 Patient Alerts

This function displays your available patient alerts.

*Note: This section is user role dependent, meaning that certain roles will be unable to view this section.*

To access these alerts, click Menu > Patient Alerts.

The Patient Alerts page is displayed.

- New alerts (i.e., those that have not been viewed) are displayed in bold with the word “NEW” next to them.
- You can download the letter associated with the alert by clicking Download PDF.
• You can view the Patient Request associated with a patient by clicking the patient’s name.
5 Rx Management

The Rx Management page, located under Menu > Data, allows you to manage prescriptions within PMP AWARxE. If you are a dispenser, you can correct dispensation errors, modify inaccuracies on existing prescriptions (e.g., incorrect prescriber information), add new prescriptions, and review prescription history for the pharmacy.

Notes:

• Depending on the settings enabled by your State Administrator for the portal in general and for specific roles types, different options may be available. The screenshots and descriptions in the following sections are all inclusive. If an option is not available, then it has not been enabled by your State Administrator.

• In order to utilize this functionality, you must have an Employer Identifier on your account and agree that you are responsible for correcting/maintaining prescription information of the employer Identifier for submission to PMP AWARxE. This must be done during registration. If you have already registered and do not have any Pharmacy Identifiers available for selection, please contact your State Administrator to have the necessary Identifiers added and to agree to the terms of use.

5.1 Error Correction

The Error Correction page displays a list of erroneous records submitted by you or by your employer, if applicable. To access the Error Correction page, click Data > Rx Management > Error Correction.

![Error Correction page screenshot]

From this page, you can search for specific records and/or correct the errors.

Note: Error correction within AWARxE is only available for prescriptions submitted via SFTP, file upload, or real-time submission to PMP Clearinghouse. Any prescriptions
submitted via Universal Claim Form cannot be submitted to PMP AWARxE with a validation error, as the error must be corrected prior to submission.

5.1.1 Search for a Record

1. From the Error Correction tab, click Advanced Options.

2. Enter your search criteria in the appropriate field(s). You may search by any or all of the following:
   - Pharmacy Identifier
   - RX Number
   - Fill Start Date
   - Fill End Date

3. Click Search.

A list of records matching your search criteria is displayed.
5.1.2 Correct an Error

1. From the Error Correction page, click the link in the **Rx Number** column for the record you wish to correct.

   The record is displayed. **Note that the number of errors in the record is displayed at the top of the page.**

   - **Patient**
     - First Name*: Billie
     - Middle Name: Brody
     - Last Name*: Decker
     - DOB*: 01/22/1986
     - Gender*: Unknown
     - Address*: 62332 ORIN CORNERS
     - City*: ANGEVILLE
     - State*: Pennsylvania
     - Zip Code*: 57067-2002

   - **Drug**
     - NDC Number: 003300570702
     - Compound: 10000.0
     - Quantity Units: Milliliters

2. Scroll through the record to locate the error(s). Fields containing errors are red, and the specific error message is displayed below the field.

3. Correct the error(s), and then click **Submit**.
   - a. If all errors have been resolved, the record is submitted.
   - Or
   - b. If there are still errors on the page, the number of errors is displayed at the top of the page. Repeat steps 2-3 until all errors have been corrected.
5.2 Rx Maintenance

Rx Maintenance allows you to search for a specific prescription record and correct or void that record. To access the Rx Maintenance page, click Data > Rx Management > Rx Maintenance.

5.2.1 Correcting Prescriptions

To search for and correct a prescription record:

1. Complete the fields on the Rx Search page. Note that the Pharmacy Identifiers and Prescription Fill Dates fields are required.
2. Click Search.

Your search results are displayed.
3. Click the link in the **Rx Number** column for the record you wish to view and/or correct.

The Dispensation Correction Form page is displayed.

4. Make the necessary corrections, then click **Submit**.

If all fields pass validation, a message is displayed indicating that the record was successfully submitted.

*Note: If any fields do not pass validation, an error message is displayed indicating that errors exist. Click **OK** on the error message, then scroll through the form to locate the errors. Fields containing errors are red, and the specific error message is displayed below the field.*

5.2.2 Voiding Prescriptions

If you need to void a prescription:

1. Perform steps 1-3 in the **Correcting Prescriptions** section to locate the prescription.

2. Scroll down to the bottom of the Dispensation Correction page and click **Void**.
The Void Dispensation window is displayed asking you to confirm that you wish to void the record.

3. Select the reason you wish to void the record from the **Please enter a void reason** drop-down, then click **Void**.

**Note:** Voiding a record is a permanent change. In the event a record is voided that should not have been, you will need to resubmit the record.

### 5.3 New Rx

You can manually enter your prescription information into the Virginia PDMP database using the Manual Submission Form within the PMP AWARxE web portal. This form allows you to enter patient, prescriber, dispenser, and prescription information.

Please refer to the *Data Submission Guide for Dispensers* for the complete list of reporting requirements.

**Note:** This form cannot be saved and must be completed near the time of creation to avoid loss of information.

To access the New Rx page, click **Data > Rx Management > New Rx.**
To enter a new dispensation:

1. Complete the required fields.

   **Notes:**
   - A red asterisk (*) indicates a required field.
   - **If you are entering a compound,** click the **Compound** checkbox in the Drug Information section of the page, complete the required fields for the first drug ingredient, then click **Add New** to add additional drug ingredients.

2. Once you have completed all required fields, click **Submit**.

   If all fields pass validation, a message is displayed indicating that the record was successfully submitted.

   **Note:** If any fields do not pass validation, the number of errors is displayed at the top of the page. Scroll through the form to locate the errors. Fields containing errors are red, and the specific error message is displayed below the field.

   Once all errors have been corrected, click **Submit**.

### 5.4 PharmacyRx

If you have a DEA number associated with your AWARxE account, PharmacyRx allows you to run a report that displays all dispensations associated with that DEA number. To access the PharmacyRx page, click **Data > Rx Management > PharmacyRx**.

To perform a PharmacyRx search:

1. Click the radio button next to the DEA number for which you wish to generate the report.

2. Select the date range for the report in the From and To fields, using the **MM/DD/YYYY** format, or select a date from the calendar that is displayed when you click in these fields.
3. **Click Search.**

Your report results are displayed. If configured by your PMP Administrator, you may click **Download PDF** or **Download CSV** to export your report results.

![PharmacyRx Report Example]

- Report Prepared: 06/18/2018
- Date Range: 01/01/2017 – 06/18/2018

<table>
<thead>
<tr>
<th>Fill Date</th>
<th>Rx #</th>
<th>Name</th>
<th>Year of Birth</th>
<th>Drug Name</th>
<th>Qty</th>
<th>Supply</th>
<th>Refill Number</th>
<th>Prescriber Name</th>
<th>Paym Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/12/2018</td>
<td>102847</td>
<td>TESTPATIENT, EDI</td>
<td>1990</td>
<td>HYDROCODONE-ACETAMINOPHEN 10-325</td>
<td>30.0</td>
<td>10</td>
<td>0</td>
<td>Paul, Doctor</td>
<td>insurance</td>
</tr>
<tr>
<td>10/12/2018</td>
<td>102846</td>
<td>TESTPATIENT, ALICE</td>
<td>1980</td>
<td>HYDROCODONE-ACETAMINOPHEN 10-325</td>
<td>30.0</td>
<td>10</td>
<td>0</td>
<td>Paul, Doctor</td>
<td>insurance</td>
</tr>
<tr>
<td>04/25/2018</td>
<td>41152100</td>
<td>TESTPATIENT, EDI</td>
<td>1990</td>
<td>ACETAMINOPHEN/COD 3 TABLET</td>
<td>3.0</td>
<td>3</td>
<td>0</td>
<td>Walgreen Co. Co.</td>
<td>paid</td>
</tr>
<tr>
<td>04/25/2018</td>
<td>41152650</td>
<td>TESTPATIENT, ALICE</td>
<td>1990</td>
<td>ACETAMINOPHEN/COD 3 TABLET</td>
<td>3.0</td>
<td>3</td>
<td>0</td>
<td>Paul, Doctor</td>
<td>paid</td>
</tr>
<tr>
<td>04/21/2018</td>
<td>1028478</td>
<td>TESTPATIENT, EDI</td>
<td>1990</td>
<td>HYDROCODONE-ACETAMINOPHEN 10-325</td>
<td>20.0</td>
<td>10</td>
<td>0</td>
<td>Paul, Doctor</td>
<td>insurance</td>
</tr>
</tbody>
</table>
6 User Profile

The User Profile section of the PMP AWARxE menu allows you to manage your AWARxE user profile, including:

- Viewing and updating your profile information
- Set your default PMP InterConnect states
- Managing your delegate account(s)
- Updating or resetting your password

6.1 My Profile

My Profile allows you to view your account demographics, including user role, license numbers, etc. as well as update your email address, healthcare specialty, time zone, and supervisor(s) (if you are a delegate).

Note: If you need to update your personal or employer information (including DEA/NPI/NCPDP numbers), please contact your State Administrator.

To update your account:

1. Click Menu > My Profile.

   The My Profile page is displayed.
2. Update your information as necessary. The following notes may be helpful in updating your information:

- **Healthcare Specialty**: You can add or update your healthcare specialty in the Specialty section of the page. Search for your specialty by typing a few characters into the Healthcare Specialty field, or click Browse All to view all available specialties and select yours from the list. If you have multiple specialties, you can designate your primary specialty by clicking the star icon to the left of the specialty. To remove a specialty, click the “x” button to the right of the specialty.

![Specialty](image)

- **Updating Time Zone**: To update your time zone, select the correct time zone from the Time Zone drop-down.

- **Adding Supervisors**: If you are a delegate, you may add supervisors to or remove supervisors from your account in the Supervisors section of the page. To add a supervisor, enter the supervisor’s email address, and then click Add. To remove a supervisor, click the “x” button next to the supervisor.

![Supervisors](image)

- **Email Address**: To update the email address associated with your account, enter the new email address in the New Email Address field, then re-enter it in the Re-enter Email Address field. Once your changes have been saved, you will receive an email asking you to verify the new email address. Please ensure that you click the link in the verification email to verify your new email address. **Note that the verification link is only valid for 20 minutes. If you click the verification link after it has expired, you will be sent a new link.**

3. Once you have made all necessary changes, click Save Changes.
6.2 Setting Default PMP InterConnect States

PMP AWARxE is configured to integrate with PMP InterConnect to expand your search capabilities when researching a patient’s prescription history. This feature allows you to configure states to be selected by default when performing a Patient Request. To set your default PMP InterConnect states:

1. Click **Menu > Default PMPi States**.
   The Default InterConnect PMPs page is displayed.

   ![Default InterConnect PMPs]

2. Click the checkbox next to the state(s) you would like to be selected by default when performing a Patient Request.

3. Click **Update Defaults**.
   Your selections are saved and will be selected by default when you create a Patient Request.

   **Note:** You can de-select default states as necessary—selecting default states does not require you to search for those states every time.

6.2.1 Using PMP InterConnect with a Patient Rx Search

1. When creating a new Patient Request, the list of available PMP InterConnect states is provided at the bottom of the page.

   ![PMP InterConnect Search]

   **Note:** Available states are dependent upon your state’s configurations and your user role.

2. Click to select the state(s) from which you wish to obtain results. You may also click **Select All** to select all available states.
3. Once you click Search, PMP AWARxE submits the request to the selected states’ PMP InterConnect systems. Results from those states are then blended into the final Narx Report.

**Notes:**
- The report does not separate prescription information on a state-by-state basis. It incorporates all information from all sources into a single report.
- Only an exact name match will return results from interstate searches. There will not be a multiple patient pick list displayed for patients who do not have an exact name match.

6.3 Delegate Management

If you are a supervisor, the Delegate Management function allows you to approve or reject new delegates, or remove existing delegates from your account.

6.3.1 Approving and Rejecting Delegates

If a user registers as a delegate and selects you as their supervisor, you will receive email notification that a delegate account is pending your approval.

**Note:** If the request is not acted upon, the system will send follow-up emails advising you that action is still required.

Once you have received the email notification:
1. Log in to PMP AWARxE.
2. Click **Menu > Delegate Management**.
   
   The Delegate Management page is displayed.

<table>
<thead>
<tr>
<th>First</th>
<th>Last</th>
<th>Role</th>
<th>Delegate Status</th>
<th>Date Requested</th>
<th>Date Verified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan</td>
<td>Delegate</td>
<td>Prescriber Delegate - Unlicensed</td>
<td>Pending</td>
<td>04/06/2018</td>
<td></td>
</tr>
<tr>
<td>Adam</td>
<td>Delegate</td>
<td>Prescriber Delegate - Unlicensed</td>
<td>Approved</td>
<td>04/06/2018</td>
<td>04/11/2018</td>
</tr>
</tbody>
</table>

**Note:** New delegates are identified with a status of “Pending.”

3. Click the delegate’s name to display their information in the detail card at the bottom of the page.

<table>
<thead>
<tr>
<th>Jordan Delegate</th>
<th>Approve</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role: Prescriber Delegate - Unlicensed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone: 6020156054</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email: <a href="mailto:jccrawford23@yahoo.com">jccrawford23@yahoo.com</a> (unverified)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address: 10421 Linnet Station Rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louisburg, NC 28093</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of Birth: 01/01/1981</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delegate (pending):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Supervisors:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal DEA:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:jccrawford@appriss.com">jccrawford@appriss.com</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td>National Provider (invalid):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jordan Admin (rejected):</td>
<td></td>
<td></td>
</tr>
<tr>
<td><a href="mailto:jccrawford-admin@appriss.com">jccrawford-admin@appriss.com</a></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Click **Approve** to approve the delegate;

Or
5. Click **Reject** to reject the delegate. If rejected, the delegate will be removed.

### 6.3.2 Removing Delegates

If you need to remove a delegate from your account:

1. Click **Menu > Delegate Management**.

   The Delegate Management page is displayed.

   ![Delegate Management Table]

     | First   | Last   | Role                  | Delegate Status | Date Requested | Date Verified |
     |---------|--------|-----------------------|-----------------|----------------|---------------|
     | Jordan  | Delegate | Prescriber Delegate - Unlicensed | Pending       | 04/06/2018    |               |
     | Adam    | Delegate | Prescriber Delegate - Unlicensed | Approved      | 04/06/2018    | 04/11/2018    |

2. Click the delegate’s name to display their information in the detail card at the bottom of the page.

3. Click **Remove**.

   Upon removal, the delegate’s status will be returned to “Pending.” The delegate is not removed from your delegate list.

**Notes:**

- **If you need to add the user again at a later date, select the former delegate, then click **Approve** to add them to your account.**
- **If you need to completely dissociate a delegate from your account, select the former delegate, then click **Reject**. Rejecting a delegate will remove them from your account.**
- **It is your responsibility to regularly maintain your delegate list and remove access if it is no longer necessary.**

### 6.4 Password Management

Your AWARxE password expires every 90 days. There are two ways you can manage your password:

1. You can proactively change your password within the application before it expires by [updating your current password](#).

2. If your password has already expired, or if you have forgotten your password, you can [reset your password](#).

### 6.4.1 Updating a Current Password

If your password has not expired, but you would like to proactively reset it, you can do so within the AWARxE application.

**Note:** This functionality requires that you know your current password and are logged into PMP AWARxE.

To update your password:

1. Click **Menu > Password Reset**.
The Change Password page is displayed.

2. Enter your current password in the Current Password field.
3. Enter a new password in the New Password field, then re-enter it in the New Password Confirmation field. The password guidelines are provided below.

**Passwords must contain:**
- At least eight (8) characters
- One (1) uppercase letter
- One (1) lowercase letter
- One (1) number
- One (1) special character such as !, @, #, $, etc.

4. Click Change.

Your password is updated, and you will use the new password the next time you log in to the system.

6.4.2 Resetting a Forgotten Password

1. If you have forgotten your password or your password has expired, navigate to [https://virginia.pmpaware.net](https://virginia.pmpaware.net).
The Log In page is displayed.

2. Click Reset Password.

The Reset Password page is displayed.

3. Enter the email address associated with your account, then click Continue.

   If the email address you provided is valid and registered, you will receive an email containing a link to reset your password. Once you have received the email, click the link.

   The Change Password page is displayed.

4. Enter a new password in the New Password field, then re-enter it in the New Password Confirmation field. The password guidelines are provided below.

   Passwords must contain:
   - At least eight (8) characters
   - One (1) uppercase letter
   - One (1) lowercase letter
• One (1) special character such as !, @, #, $, etc.

You cannot re-use any of your last 12 passwords.

5. Click Change.

Your password is updated, and you will use the new password the next time you log in to the system.

Notes:

• The password reset link is only active for 20 minutes. After the time has expired, you will need to repeat steps 1-3 to generate a new password reset email.

• Per our security protocol, PMP AWARxE will not confirm the existence of an account. If you do not receive an email at the email address provided, follow the steps below:
  1. Ensure you entered a valid email address.
  2. Check your Junk, Spam, or other filtered folders for the email.
  3. If the email address is correct but you have not received the email, contact your PMP Administrator to request a new password or determine what email address is associated with your account.
  4. Add the following email addresses and domains to your contacts list, or contact your organization’s IT support to have them added as safe senders:
     (a) no-reply-pmpaware@globalnotifications.com
     (b) globalnotifications.com
     (c) amazonses.com
7 Assistance and Support

7.1 Technical Assistance

If you need additional help with any of the procedures outlined in this guide, you can:

- Contact Appriss Health at 1-855-SVA-4PMP (1-855-482-4767);
  OR
- Create a support request at the following URL:

Technical assistance is available 24 hours per day, 7 days per week, 365 days per year.

7.2 Administrative Assistance

If you have non-technical questions about the Virginia PDMP, please call:

804-367-4514
OR
804-367-4409
8 Document Information

8.1 Disclaimer

Appriss has made every effort to ensure the accuracy of the information in this document at the time of printing; however, information is subject to change.

8.2 Change Log

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Chapter/Section</th>
<th>Change Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A; initial publication</td>
</tr>
<tr>
<td>2.0</td>
<td>06/17/2019</td>
<td>Global</td>
<td>Updated to current document template</td>
</tr>
</tbody>
</table>
Appendix A: NarxCare

Introduction to NarxCare

NarxCare is a robust analytics tool and care management platform that helps prescribers and dispensers analyze real-time controlled substance data from prescription drug monitoring programs (PDMPs), which are the system’s primary data source.

NarxCare automatically accesses the PDMP data, analyzes it, scores it, and generates an interactive, patient-centered report with visual enhancements that enable providers to quickly comprehend the patient’s controlled substance use history.

The NarxCare platform is designed to accommodate additional, non-PDMP data sources such as claims data, registry data, continuity of care documentation, etc. As these data become available, they will be visually incorporated as additional risk indicators and eventually be included in existing and new algorithms.

Every NarxCare report includes type-specific use scores for narcotics, sedatives, and stimulants. These scores are based on a complex algorithm with up to 20 time-weighted measurement points. The scores range from 000 to 999, with higher scores equating to higher numbers of prescribers, MME, pharmacies, and overlapping prescriptions.

An Overdose Risk Score, developed using advanced data science, is also included. This risk score ranges from 000–999 with higher scores equating to increased risk of unintentional overdose. Currently based on PDMP data, the score will become more holistic in nature as additional data sources are added to the algorithm.

Data visualization is enhanced with an interactive, color-coded graphical display of prescription data that allows for increased detail when desired.

A Resources section provides tools that enable providers to link patients with treatment and easily obtain information documents that may be helpful as reference material or patient handouts.
Application Interface Overview

The NarxCare report interface is a modular design with several collapsible segments.
Narx Report Details

Report Header

The Narx Report page heading contains several report- and account-level controls:

- **Drop-down menu bar:** Clicking **Menu** allows you to navigate to all functional areas of AWARxE. For NarxCare users, the menu contains additional training links as well as a link to the NarxCare user guide. You can click your username for quick access to account management options such as **My Profile**, **Delegate Management**, and **Password Reset**.

- **Patient identifying information:** The patient’s name, age in years, and gender are displayed above the navigation tabs. Additional patient information, such as date of birth and address, can be found in the first segment of the Narx Report.

- **Navigation tabs:** There are two tabs beneath the patient’s name labeled **Narx Report** and **Resources**. The **Narx Report** tab is displayed by default. You can click on the **Resources** tab to display several treatment locators and document resources that may be useful in managing patient referrals or reviewing CDC guidelines.
- **Report download links**: If you need to download a PDF or CSV version of the report, click the Download PDF or Download CSV links located on the right side of the page below the state logo.

![Report download links screenshot]

**Report Body**

The body of the Narx Report contains several functional areas aimed at rapidly raising awareness of risk and prescription use patterns, and when required, individual prescription detail.

- **Scores and additional risk indicators**: The Narx Report includes a series of type-specific use scores, Narx Scores, Overdose Risk Score, and Additional Risk Indicators, which are located in the Risk Indicators section of the report. These scores and other elements are often automatically returned to the requesting system as discrete data. Requesting systems receiving such data can choose to display the scores within the native electronic health record or pharmacy management system, and many systems choose to display these data in the patient header, face sheet, or alongside patient vital signs.

  **Note**: Please refer to the Narx Scores, Overdose Risk Score, and Additional Risk Indicators sections of this document for more information on those scores and indicators.

![Risk Indicators table]

This NarxCare report is based on search criteria supplied and the data entered by the dispensing pharmacy. For more information about any prescription, please contact the dispensing pharmacy or the prescriber. NarxCare scores and reports are intended to aid, not replace, medical decision making. None of the information presented should be used as sole justification for providing or refusing to provide medications. The information on this report is not warranted as accurate or complete.
- **Rx Graph**: The Rx Graph, located in the Graphs section of the report, allows you to rapidly see important patterns and levels of use.

  - Prescriptions are color coded and can be selected or deselected at the top of the graph.
  3. Narcotics (opioids) = red
  4. Buprenorphines = purple
  5. Sedatives (benzodiazepines, sleep aids, etc.) = blue
  6. Stimulants = green
  7. Other = grey

  - The Rx Graph is reverse time ordered, meaning that the most recent prescriptions are displayed on the left side of the graph and the oldest are displayed on the right.
– Each pixel in the graph represents one day; therefore, a 30-day prescription is represented by a rectangle about 1 cm wide and a 1–3-day prescription appears as a narrow vertical bar.

![Graph example](image)

– The Rx Graph is interactive. You can click on a prescription to view information for that prescription, or you can click and drag over multiple prescriptions to view information for the selected prescriptions.

![RX Graph example](image)

– Daily morphine milligram equivalency (MME), buprenorphine milligrams, and lorazepam milligram equivalency (LME) graphs are also provided for a quick longitudinal view of daily MME, buprenorphine, and LME. Abrupt changes in these factors are often due to overlapping prescriptions.

![Graph example](image)
Prescription Detail

Each prescription dispensed to the patient is presented in the Prescriptions table, which is located in the Rx Data section of the report. If desired, you can use the arrows next to each column header (↑) to sort the table by that column. You can also hover your cursor over a prescriber or pharmacy to view additional information such as prescriber or pharmacy full name, address, and DEA number.

Provider and Pharmacy Detail

Provider and pharmacy information, including full name, address, and DEA number, is presented in the Providers and Pharmacies tables, located in the Rx Data section of the report.
Resources Tab

The **Resources** tab provides easy access to treatment locators and CDC documents.

- **MAT locator**: The MAT locator, located in the Access to Treatment section of the **Resources** tab, quickly creates a list of the 30 closest providers who are listed in the Substance Abuse and Mental Health Administration (SAMHSA) buprenorphine treatment locator database.

  ![Access to Treatment](image)

  The patient’s zip code is pre-populated but can be edited. Click **Submit** to generate a PDF that can be viewed and printed.

- **CDC documents**: The Information Documents section of the **Resources** tab provides a series of CDC documents pertaining to both providers and patients that can be referenced quickly and printed, if desired.

  ![Educational Resources](image)
Narx Scores

The NarxCare application delivers several elements of discrete data and a visually enhanced, interactive PDMP report. Contained on the report, and delivered as discrete data, are three type-specific use scores called Narx Scores. These Narx Scores numerically represent the PDMP data for a patient.

Narx Scores are calculated for narcotics (opioids), sedatives, and stimulants and have the following characteristics:

1. Each score consists of three digits ranging from 000–999.
2. The last digit of each score represents the number of active prescriptions of that type. For example, a Narx Score of 504 indicates the patient should have four active narcotic prescriptions according to dispensation information in the PDMP.
3. The scores correspond to the number of literature-based risk factors that exist within the PDMP data. These risk factors include:
   a. The number of prescribers
   b. The number of pharmacies
   c. The amount of medication dispensed (often measured in milligram equivalencies)
   d. The number of times prescriptions of a similar type overlap from different prescribers
4. The time elapsed for any risk factor serves to decrease its contribution to the score. For example, 1000 MME dispensed within the last month will elevate the score more than 1000 MME dispensed one year ago.
5. The distribution of Narx Scores for patients found in a PDMP is approximated as follows:
   a. 75% score less than 200
   b. 5% score more than 500
   c. 1% score more than 650

The Narx Scores were designed such that:

1. Patients who use small amounts of medication with limited provider and pharmacy usage will have low scores.
2. Patients who use large amounts of medications in accordance with recommended guidelines (single provider, single pharmacy, etc.) will have mid-range scores.
3. Patients who use large amounts of medications while using many providers and pharmacies, and with frequently overlapping prescriptions, will have high scores.

Narx Score Algorithm

Relative Scoring

Narx Scores represent a relative scoring system wherein the risk factors representing use within a PDMP report are counted and then converted to a reference value that ranges from 0–99. These reference values correlate with a percentile measurement of that use within the PDMP population.
A single point measurement of total MME in the last 60 days can be used to illustrate this concept further using the following three patients:

- Patient A: 160 MME
- Patient B: 4800 MME
- Patient C: 1050 MME

If we were to place these three patients on a line of relative risk, we could intuit a linear relationship based on MME, which could be depicted as follows:

![Risk Diagram]

This depiction has no boundaries to the left or right so these patients could just as easily be drawn as follows:

![Risk Diagram]

The NarxCare algorithm uses a unique strategy to establish boundaries of use by converting all measured variables, such as 60-day MME, to a scaled value between 0 and 99. This was done by evaluating a large PDMP population and measuring the 60-day MME value for every patient. This set of data was then used to create a reference table roughly equating to a percentile in the population. If we add the scaled value to each example patient’s 60-day MME we get:

- Patient A: 160 MME | 20
- Patient B: 4800 MME | 90
- Patient C: 1050 MME | 65

If we apply these new scaled values to our risk diagram and create a left and right boundary of 0 and 99, we get:

![Risk Diagram]
Interestingly, the population-based scaled values indicate that Patient B and C are closer to each other than might otherwise be suspected. In this case, we can also say that Patient B has used more MME in the last 60 days than 90% of the rest of the PDMP population.

**Time Periods**

The NarxCare algorithm evaluates a PDMP record using four different, overlapping time periods. In each time period, the risk factor being evaluated is tabulated and then converted to a scaled value. An example provider reference table is provided below.

<table>
<thead>
<tr>
<th>Prescribers</th>
<th>2mo Scaled</th>
<th>6mo Scaled</th>
<th>1yr Scaled</th>
<th>2yr Scaled</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>19</td>
<td>12</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>36</td>
<td>22</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>51</td>
<td>32</td>
<td>23</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>64</td>
<td>41</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td>5</td>
<td>75</td>
<td>49</td>
<td>37</td>
<td>26</td>
</tr>
<tr>
<td>6</td>
<td>85</td>
<td>57</td>
<td>43</td>
<td>30</td>
</tr>
</tbody>
</table>

And so on …

These reference tables exist for all the risk factors being evaluated and cover all four time periods. In general, as the raw value count (i.e., number of prescribers) increases, so does the reference value (up to 99 maximum). As the time period increases, the scaled value decreases. Some examples are provided below.

<table>
<thead>
<tr>
<th>Prescriber Count</th>
<th>2mo Scaled</th>
<th>6mo Scaled</th>
<th>1 yr Scaled</th>
<th>2yr Scaled</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>19</td>
<td>12</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>36</td>
<td>22</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>3</td>
<td>51</td>
<td>32</td>
<td>23</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>64</td>
<td>41</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td>5</td>
<td>75</td>
<td>49</td>
<td>37</td>
<td>26</td>
</tr>
<tr>
<td>6</td>
<td>85</td>
<td>57</td>
<td>43</td>
<td>30</td>
</tr>
</tbody>
</table>

And so on …
## Pharmacy Count Scaled

<table>
<thead>
<tr>
<th>Pharmacy Count</th>
<th>2mo Scaled</th>
<th>6mo Scaled</th>
<th>1 yr Scaled</th>
<th>2yr Scaled</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>16</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>45</td>
<td>31</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>63</td>
<td>44</td>
<td>35</td>
<td>27</td>
</tr>
<tr>
<td>4</td>
<td>78</td>
<td>56</td>
<td>45</td>
<td>35</td>
</tr>
<tr>
<td>5</td>
<td>90</td>
<td>67</td>
<td>54</td>
<td>42</td>
</tr>
<tr>
<td>6</td>
<td>99</td>
<td>76</td>
<td>62</td>
<td>49</td>
</tr>
</tbody>
</table>

And so on ...

## Pharmacy Count Scaled

<table>
<thead>
<tr>
<th>Pharmacy Count</th>
<th>2mo Scaled</th>
<th>6mo Scaled</th>
<th>1 yr Scaled</th>
<th>2yr Scaled</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>25</td>
<td>16</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>2</td>
<td>45</td>
<td>31</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>63</td>
<td>44</td>
<td>35</td>
<td>27</td>
</tr>
<tr>
<td>4</td>
<td>78</td>
<td>56</td>
<td>45</td>
<td>35</td>
</tr>
<tr>
<td>5</td>
<td>90</td>
<td>67</td>
<td>54</td>
<td>42</td>
</tr>
<tr>
<td>6</td>
<td>99</td>
<td>76</td>
<td>62</td>
<td>49</td>
</tr>
</tbody>
</table>

And so on ...

## Sedative LME Scaled

<table>
<thead>
<tr>
<th>Sedative LME</th>
<th>2mo Scaled</th>
<th>6mo Scaled</th>
<th>1 yr Scaled</th>
<th>2yr Scaled</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1-4</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>5 - 9</td>
<td>8</td>
<td>10</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>10 - 14</td>
<td>10</td>
<td>12</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>15 - 19</td>
<td>20</td>
<td>20</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>20 - 24</td>
<td>23</td>
<td>23</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>25 - 29</td>
<td>24</td>
<td>23</td>
<td>26</td>
<td>30</td>
</tr>
</tbody>
</table>

And so on ...
Weighting

A Narx Score is calculated as a weighted average of the scaled values. A 50% weighting is applied to the milligram equivalencies with the remaining risk factors making up the other 50%.

This type of weighting results in several reliable relationships. If we think of milligram equivalency as consumption and the combination of providers, pharmacies, and overlaps collectively as behaviors, we can intuit the following score categories.

<table>
<thead>
<tr>
<th>Overlap Days</th>
<th>2mo Scaled</th>
<th>6mo Scaled</th>
<th>1 yr Scaled</th>
<th>2yr Scaled</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>11</td>
<td>7</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>14</td>
<td>9</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>16</td>
<td>10</td>
<td>8</td>
<td>6</td>
</tr>
</tbody>
</table>

And so on...

<table>
<thead>
<tr>
<th>Patient</th>
<th>Consumption</th>
<th>Behaviors</th>
<th>Narx Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient A</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Patient B</td>
<td>Low</td>
<td>High</td>
<td>Mid</td>
</tr>
<tr>
<td>Patient C</td>
<td>High</td>
<td>Low</td>
<td>Mid</td>
</tr>
<tr>
<td>Patient D</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

It is important to understand that there are several different patterns of use that can result in the same score. It is always necessary to look at the actual PDMP data to determine what use patterns exist that have resulted in the Narx Score presented.
Algorithm and Score Computation

The following steps are involved with calculating a Narx Score:

1. Determine the raw values for all time periods for all variables.
2. Convert all raw values to scaled values.
3. Average the scaled values for each risk factor for all time periods.
4. Determine the weighted average.
5. Add (concatenate) the number of active prescriptions.

Using a sample patient as an example to illustrate the calculation of a Narcotic Score:

1. Determine the raw values for all time periods for all variables.

<table>
<thead>
<tr>
<th></th>
<th>60 days</th>
<th>6 mos</th>
<th>1 year</th>
<th>2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribers</td>
<td>6</td>
<td>9</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Pharmacies</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>MME</td>
<td>1640</td>
<td>5408</td>
<td>7358</td>
<td>7364</td>
</tr>
<tr>
<td>LME</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Overlaps</td>
<td>17</td>
<td>55</td>
<td>65</td>
<td>65</td>
</tr>
</tbody>
</table>

2. Convert all raw values to scaled values.

<table>
<thead>
<tr>
<th></th>
<th>60 days</th>
<th>6 mos</th>
<th>1 year</th>
<th>2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribers</td>
<td>85</td>
<td>76</td>
<td>84</td>
<td>64</td>
</tr>
<tr>
<td>Pharmacies</td>
<td>78</td>
<td>56</td>
<td>62</td>
<td>49</td>
</tr>
<tr>
<td>Morphine milligram eq</td>
<td>74</td>
<td>87</td>
<td>88</td>
<td>87</td>
</tr>
<tr>
<td>Lorazepam milligram eq</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Overlaps</td>
<td>41</td>
<td>70</td>
<td>64</td>
<td>52</td>
</tr>
</tbody>
</table>

3. Average the scaled value for each risk factor for all time periods.

<table>
<thead>
<tr>
<th></th>
<th>60 days</th>
<th>6 mos</th>
<th>1 year</th>
<th>2 years</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribers</td>
<td>85</td>
<td>76</td>
<td>84</td>
<td>64</td>
<td>77</td>
</tr>
<tr>
<td>Pharmacies</td>
<td>78</td>
<td>56</td>
<td>62</td>
<td>49</td>
<td>61</td>
</tr>
<tr>
<td>MME</td>
<td>74</td>
<td>87</td>
<td>88</td>
<td>87</td>
<td>84</td>
</tr>
<tr>
<td>LME</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Overlaps</td>
<td>41</td>
<td>70</td>
<td>64</td>
<td>52</td>
<td>57</td>
</tr>
</tbody>
</table>

4. Calculate the weighted average.

<table>
<thead>
<tr>
<th></th>
<th>60 days</th>
<th>6 mos</th>
<th>1 year</th>
<th>2 years</th>
<th>Avg</th>
<th>Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribers</td>
<td>85</td>
<td>76</td>
<td>84</td>
<td>64</td>
<td>77</td>
<td>1</td>
</tr>
<tr>
<td>Pharmacies</td>
<td>78</td>
<td>56</td>
<td>62</td>
<td>49</td>
<td>61</td>
<td>1</td>
</tr>
<tr>
<td>MME</td>
<td>74</td>
<td>87</td>
<td>88</td>
<td>87</td>
<td>84</td>
<td>3</td>
</tr>
<tr>
<td>LME</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Overlaps</td>
<td>41</td>
<td>70</td>
<td>64</td>
<td>52</td>
<td>56</td>
<td>2</td>
</tr>
<tr>
<td><strong>Weighted Average (sum/8)</strong></td>
<td><strong>63</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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5. Add (concatenate) the number of active prescriptions

<table>
<thead>
<tr>
<th></th>
<th>60 days</th>
<th>6 mos</th>
<th>1 year</th>
<th>2 years</th>
<th>Avg</th>
<th>Wt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribers</td>
<td>85</td>
<td>76</td>
<td>84</td>
<td>64</td>
<td>77</td>
<td>1</td>
</tr>
<tr>
<td>Pharmacies</td>
<td>78</td>
<td>56</td>
<td>62</td>
<td>49</td>
<td>61</td>
<td>1</td>
</tr>
<tr>
<td>MME</td>
<td>74</td>
<td>87</td>
<td>88</td>
<td>87</td>
<td>84</td>
<td>3</td>
</tr>
<tr>
<td>LME</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Overlaps</td>
<td>41</td>
<td>70</td>
<td>64</td>
<td>52</td>
<td>56</td>
<td>2</td>
</tr>
<tr>
<td>Weighted Average (sum/8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>63</td>
</tr>
<tr>
<td>Number of Active Narcotic Prescriptions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Narcotic Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>632</td>
</tr>
</tbody>
</table>

Clinical Application

In-Workflow Use

Narx Scores are intended to be automatically delivered into the clinical workflow as discrete data and be easily viewable within a patient’s record. Many systems choose to place the scores in the patient header or alongside the patient’s vital signs.

Narx Scores are best viewed at the beginning of a patient encounter, and as such, they should be obtained at or near the time a patient is registered.

General Considerations

- The primary purpose of providing Narx Scores is to raise provider awareness of the associated PDMP data available for review.
- Concerning Narx Scores are intended to trigger a discussion, not a decision. If a Narx Score raises concern, the recommended course of action is to evaluate the PDMP data, review any additional pertinent data, and discuss any concerns with the patient.
- Just as there is no single blood pressure that can be considered normal for all people, there is no Narx Score that is normal. A Narx Score must be applied to the clinical scenario before evaluating appropriateness. For example, a blood pressure of 120/80 can simultaneously be:
  - Inappropriate for a 2-month-old infant
  - Appropriate for a 20-year-old woman
  - Inappropriate for an elderly patient with an average daily blood pressure of 200/100
- Narx Scores are distributed within the PDMP population as follows:
  - 75% of patients score below 200
  - 5% of patients score above 500
  - 1% of patients score above 650
Example Use Cases

Narx Scores can be used to great effect in certain clinical scenarios. Again, the recommended course of action is to seek additional information and discuss concerns with the patient.

- **Case A** – A 17-year-old male basketball player with other significant history presents with a severe ankle sprain. His Narx Scores are:
  
<table>
<thead>
<tr>
<th>Narcotic</th>
<th>Sedative</th>
<th>Stimulant</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>000</td>
<td>000</td>
</tr>
</tbody>
</table>

  **Important consideration:** If considered for an opioid due to the severity of injury, this may be the patient’s first exposure to the effects of an opioid. Recommend thorough review of the risks and benefits with the patient and consideration of an informed consent process.

- **Case B** – An 81-year-old female presents with decreased level of consciousness following a fall where she suffered a closed head injury. Her Narx Scores are:
  
<table>
<thead>
<tr>
<th>Narcotic</th>
<th>Sedative</th>
<th>Stimulant</th>
</tr>
</thead>
<tbody>
<tr>
<td>341</td>
<td>501</td>
<td>000</td>
</tr>
</tbody>
</table>

  **Important Consideration:** Many elderly patients are on chronic opioids and benzodiazepines. The use of opioids and benzodiazepines for this patient may have contributed to her fall. The patient may be taking enough medication to develop anxiety seizures due to benzodiazepine withdrawal, complicating the medical picture.

- **Case C** – A 36-year-old male patient with mild chronic back pain frequently treated with opioids presents for a medication refill. On review of the PDMP record, the patient has been to 17 different prescribers in the last year. His Narx Scores are:
  
<table>
<thead>
<tr>
<th>Narcotic</th>
<th>Sedative</th>
<th>Stimulant</th>
</tr>
</thead>
<tbody>
<tr>
<td>671</td>
<td>240</td>
<td>000</td>
</tr>
</tbody>
</table>

  **Important Consideration:** Many patients obtain medications through multiple different providers. This can be due to the patient being seen in a clinic that is staffed by different providers, or it can be due to access to care issues requiring visits to urgent care centers or emergency departments.

Score-Based Guidance

<table>
<thead>
<tr>
<th>Score/Range</th>
<th>Notes</th>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>This may be the first prescription of this type for the patient.</td>
<td>Discuss risks/benefits of using a controlled substance. Consider informed consent.</td>
</tr>
<tr>
<td>010–200</td>
<td>Approximately 75% of scores fall in this range. Occasionally, patients in this score range have a remote history of high usage (&gt; 1 year ago).</td>
<td>Review use patterns for unsafe conditions. Discuss any concerns with patient. See guidance below. If previously high usage exists with recent abstinence, consider risk/benefits of new prescriptions.</td>
</tr>
</tbody>
</table>
### Overdose Risk Score

The NarxCare application delivers several elements of discrete data and a visually enhanced, interactive PDMP report. Contained on the report, and delivered as discrete data, is an Overdose Risk Score (ORS). This score numerically represents the risk of unintentional overdose death.

The ORS has the following characteristics:

1. The score is three digits and ranges from 000–999.
2. Risk approximately doubles for every 100-point increase in the score.
3. Using patients who score 0–199 as a reference group, the odds ratio associated with successive 100-point bins is as follows:

<table>
<thead>
<tr>
<th>ORS</th>
<th>Odds Ratio of Unintentional Overdose Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>000–199</td>
<td>1</td>
</tr>
<tr>
<td>200–299</td>
<td>10</td>
</tr>
</tbody>
</table>

Approximately 24% of scores fall in this range.

Review use patterns for unsafe conditions.

Discuss any concerns with patient. See guidance below.

Approximately 1% of scores fall in this range.

Some patient records may have a score in this range and still be within prescriber expectations.

Many patient records include some level of multiple provider episodes, overlapping prescriptions, or elevated milligram equivalency.

Review use patterns for unsafe conditions. If multiple providers involved in unsafe prescribing, discuss concern with patient and consider contacting other providers directly. If multiple pharmacies involved in unsafe prescribing, discuss concern with patient and consider pharmacy lock-in program. If overlapping medications of same or different type, discuss concern with patient and consider taper to lower dose and/or discontinuation of potentiating medications. If patient has evidence of a substance use disorder, consider inpatient admit or referral for outpatient evaluation and treatment.
## ORS Algorithm

The ORS algorithm was derived using machine learning and other predictive techniques applied to a large case series of over 5,000 unintentional overdose deaths. For the first version of the score, more than 70 PDMP variables were evaluated with 12 chosen for the final model. Subsequent revisions of the model have included evaluation of thousands of variables, and efforts to include non-PDMP data such as criminal justice information, claims data, overdose registry data, etc., are ongoing. A specific characterization of the current variables and coefficients is beyond the scope of this document. In general, the variables that have shown to be predictive of unintentional overdose death include:

- The number of pharmacies visited per unit time
- Maximum morphine milligram equivalency (MME) in the last year
- The number of prescribers in the last two years
- Various slopes of opioid and sedative use
- Various slopes of prescriber usage

This section will be updated when new types of variables are incorporated and/or new sets of data are included.

<table>
<thead>
<tr>
<th>ORS</th>
<th>Odds Ratio of Unintentional Overdose Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>300–399</td>
<td>12</td>
</tr>
<tr>
<td>400–499</td>
<td>25</td>
</tr>
<tr>
<td>500–599</td>
<td>44</td>
</tr>
<tr>
<td>600–699</td>
<td>85</td>
</tr>
<tr>
<td>700–799</td>
<td>141</td>
</tr>
<tr>
<td>800–899</td>
<td>194</td>
</tr>
<tr>
<td>900–999</td>
<td>329</td>
</tr>
</tbody>
</table>
Clinical Application

The ORS is intended to eventually provide a holistic estimate of overdose risk. At the current time, the risk assessment does not incorporate any data other than PDMP usage. This aligns the clinical application of the score with other sources of overdose risk assessment based on PDMP data such as number of pharmacies visited in the last 90 days or daily morphine equivalent dose (MED). The ORS performs much better than estimates using only one variable. For example, when comparing the utility of average MED in the last 60 days to the ORS, one can easily see that while MED does have a dose response curve, the ORS has markedly higher performance.

The absolute risk of death from unintentional overdose is very low in the population of patients found in a PDMP. Even though the annual unintentional overdose death rate is unacceptably high, measured in the thousands for many states, the number of people using controlled substances in those same states are in the multiple millions. Patients on elevated doses of medication are also prevalent and have a low overall incidence of unintentional overdose death. For example, in evaluating average daily MED over a period of 60 days in one state, the following death rates were found:

<table>
<thead>
<tr>
<th>60-day MED avg</th>
<th>Decedents</th>
<th>Living</th>
<th>Death Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 MED</td>
<td>1,008</td>
<td>162,231</td>
<td>0.6%</td>
</tr>
<tr>
<td>150 MED</td>
<td>722</td>
<td>94,681</td>
<td>0.8%</td>
</tr>
<tr>
<td>480 MED</td>
<td>144</td>
<td>13,693</td>
<td>1.0%</td>
</tr>
</tbody>
</table>

The results of this analysis equate the CDC-recommended maximum 90 MED for chronic opioid use to an expected death rate of just 0.6%. It isn’t until you get to an average MED of 480 that...
the death rate reaches 1%, and at that level, there are over 13,000 patients in the PDMP database.

One method of incorporating the ORS into clinical practice is to use a value of 650 as a threshold approximately equivalent to the CDC’s recommended maximum of 90 MED. Just as patients who are above 90 MED are often evaluated for dose reduction, patients above a score of 650 may similarly be considered for:

1. Substance Use Disorder evaluation and treatment (if appropriate)
2. Discontinuation of potentiating drugs (if present)
3. Dose reduction
4. Provider lock-in
5. Pharmacy lock-in
6. Consideration of non-opioid therapy

**Score-Based Guidance**

The ORS can be applied to clinical practice in a manner analogous to daily MED. The CDC opioid prescribing guidelines recommend naloxone be considered at 50 MED and that most patients should be treated at a dose of 90 MED or less. Using an equivalent population methodology, the following ORS ranges can be associated with CDC MED-based guidance.

<table>
<thead>
<tr>
<th>Score</th>
<th>Approximate CDC MED Equivalent</th>
<th>Guidance</th>
</tr>
</thead>
</table>
| < 010–440 | < 50 MED                      | Consider other sources of risk beyond PDMP data.  
                                            See below                                      |
| 450–650  | 50 MED (or more)              | Consider naloxone prescription.               
                                            See below.                                      |
### Additional Risk Indicators

The NarxCare application delivers several elements of discrete data and a visually enhanced, interactive PDMP report. Contained on the report, and delivered as discrete data, are a set of Additional Risk Indicators. These indicators may be determined by the state PDMP and are felt to have stand-alone value.

This section is intended to aggregate important information from multiple sources of data. These data sources may include PDMP data, claims data, overdose registry data, continuity of care documents, and criminal justice.

There are currently three PDMP based indicators:

- More than 5 providers in any 365-day period
- More than 4 pharmacies in any 90-day period
- More than 40 MED average and more than 100 MME total at any time in the previous 2 years

These indicators are based on the following literature:


### Clinical Application

PDMP-based indicators typically corroborate any concerns raised by the Narx Scores and ORS. When available, additional risk indicators sourced from non-PDMP data sources may represent other dimensions of risk such as past heroin use, substance use disorder, previous overdose, etc.

When non-PDMP indicators become routinely available, they will be modeled into the ORS, and it may then be the case that a patient may have low Narx Scores (due to low use of prescribed controlled substances) BUT have an elevated ORS (due to high risk associated with non-PDMP data).

In all cases, if a provider determines that inappropriate risk exists for a patient, they should seek additional information, discuss the risk concern with the patient, and choose appropriate medical care options that are in the best interest of the patient.

### Indicator-Based Guidance

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 5 providers in any year (365 days)</td>
<td>Review use patterns for unsafe conditions. If multiple providers involved in unsafe prescribing, discuss concern with patient and consider contacting other providers directly.</td>
</tr>
<tr>
<td>More than 4 pharmacies in any 90-day period</td>
<td>Review use patterns for unsafe conditions. If multiple pharmacies involved in unsafe prescribing, discuss concern with patient and consider pharmacy lock-in program.</td>
</tr>
<tr>
<td>More than 40 MED per day average and more than 100 MME total</td>
<td>Review use patterns for unsafe conditions. Consider taper to lower dose and/or discontinuation of potentiating medications.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Indicator</th>
<th>Guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>If all 3 indicators present</td>
<td>Review use patterns for unsafe conditions. If multiple providers involved in unsafe prescribing, discuss concern with patient and consider contacting other providers directly. If multiple pharmacies involved in unsafe prescribing, discuss concern with patient and consider pharmacy lock-in program. If overlapping medications of same or different type, discuss concern with patient and consider taper to lower dose and/or discontinuation of potentiating medications. If patient has evidence of a substance use disorder, consider inpatient admit or referral for outpatient evaluation and treatment.</td>
</tr>
</tbody>
</table>