



ReviewGx

User Manual

ReviewGx is medication review and deprescribing software that complements TreatGx, which together comprise GenXys' Clinical Decision Support System. ReviewGx and TreatGx integrate pharmacogenetic data with a patient's health data to dynamically identify personalized and evidence-based treatment options.

ReviewGx is focused on identifying potential issues with the safety and efficacy of current medication therapy using a multi-factorial approach. It is powered by evidence-based algorithms, created by a team of clinicians using the latest PGx implementation guidelines and medication safety information from monographs and guidelines.

This tool is effective with or without PGx results and can highlight when PGx data would be beneficial for medication decisions. Providing comprehensive patient details, such as a complete list of medications and lab results, enhances the accuracy of the review.

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Accessing TreatGx

1. Go to the sign in page: [USA Log In](#) or [Canada Log In](#)

2. Select the Sign In button

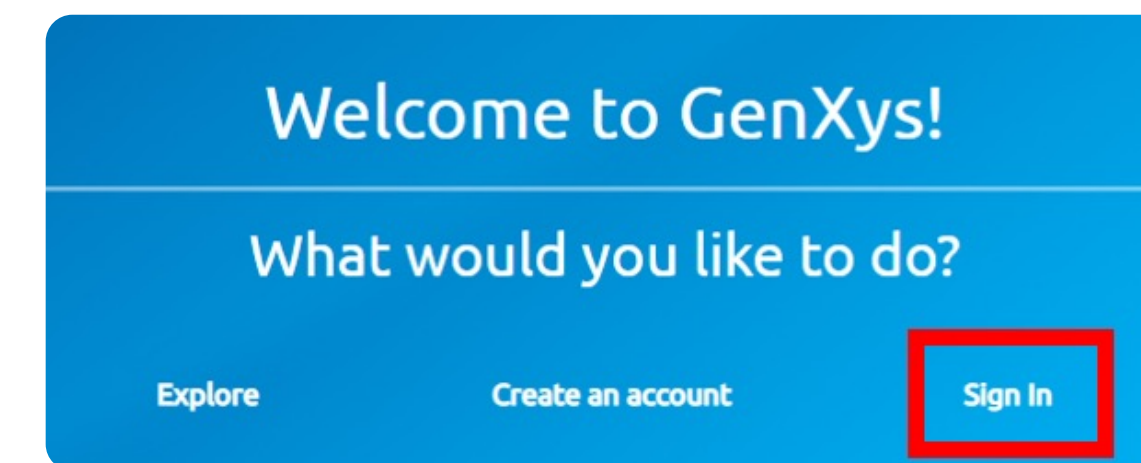
3. Enter the username and password chosen when the GenXys account was created into the pop-up box

a. If an account has not been made, click on Create an account and follow the prompts to register for a new GenXys account

4. Select Login to access your GenXys account

5. A new page will display with all available GenXys software products.

Products that you have purchased and are available for use will have a Launch button. Select Launch under the ReviewGx display to begin using ReviewGx



Email

The Email field is required.

Password

The Password field is required.

☐ Remember me?

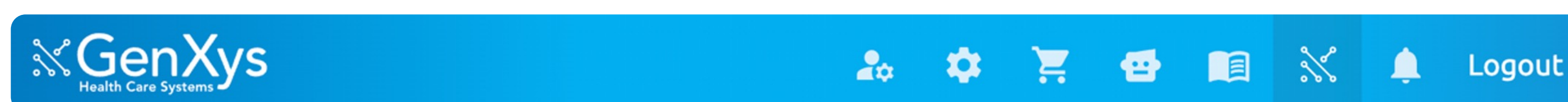
Cancel **Login**

[Forgot your password?](#) [Create an account](#)

[Resend email confirmation](#)



Navigating the GenXys Portal



1. The top bar displays several icons on the right-hand side.



Account: Access your user profile, address, email, and password and make any changes you would like



Manage: View patient case invitations and licenses you own



Cart: View products currently in your cart



Support Agent: Use to ask questions about APIs, lab orders, documentation



Support Documents: Visit the Help Center and view manuals



Explore: View your current products



Notifications: View your notifications



Logout: Logout of your account

Navigating ReviewGx



The top bar displays several icons



TreatGx Link: Access TreatGx clinical decision support software



Report History: Access all your patient’s previously archived reports



Support Agent: Use to ask questions about APIs, lab orders, documentation



Support Documents: Visit the Help Center and view manuals



Explore: View your current products



Notifications: View your notifications

Accepting Patients

If you have ordered a pharmacogenetic test for a patient, when the results are ready you will receive an email saying that your patient’s results are ready. You can import this patient case into the GenXys Patient Portal to use in TreatGx and ReviewGx. In addition, when logged into the GenXys portal a number will appear beside the Notification (bell) icon indicating a PGx Result is complete.



Selecting the Notifications (bell) or Manage (gear) icon will take you to the notifications page:



Notifications*



Health Care Provider Invitation Awaiting: 1

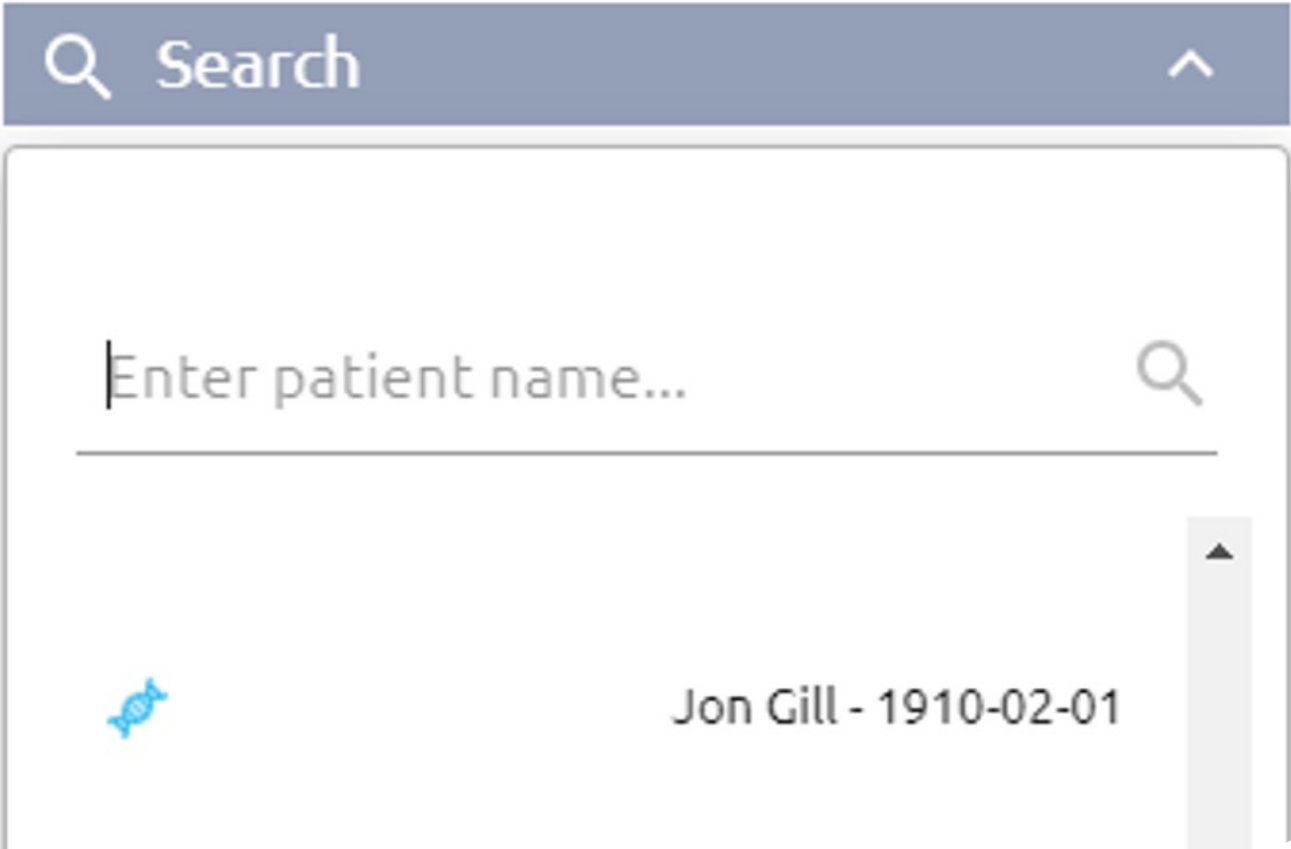
*All results filtered and displayed in UTC date and time unless specified.

☒	Modified	Viewed	Type	Detail
☒	2023-11-14		Health Care Provider Invitation Awaiting	First Name: NoSABLabWillard Last Name: NoSABLabBennett Date of Birth: 1963-05-08 Sex at Birth: Female Invitation Date: 2023-11-14 Status: Awaiting Accept Invitation

In this example the lab has invited the Health Care Provider associated with the patient to view their results. You can Mark as Viewed, Accept Invitation, or Decline Invitation. To see the patient’s results, first check the box to the left of the patient’s name, then select “Accept Invitation”. The patient profile and their PGx results will now be available in TreatGx and ReviewGx. When searching for and selecting patients in TreatGx or ReviewGx, patients with lab or PGx results directly imported from a lab will have a DNA icon next to their name:

Patients

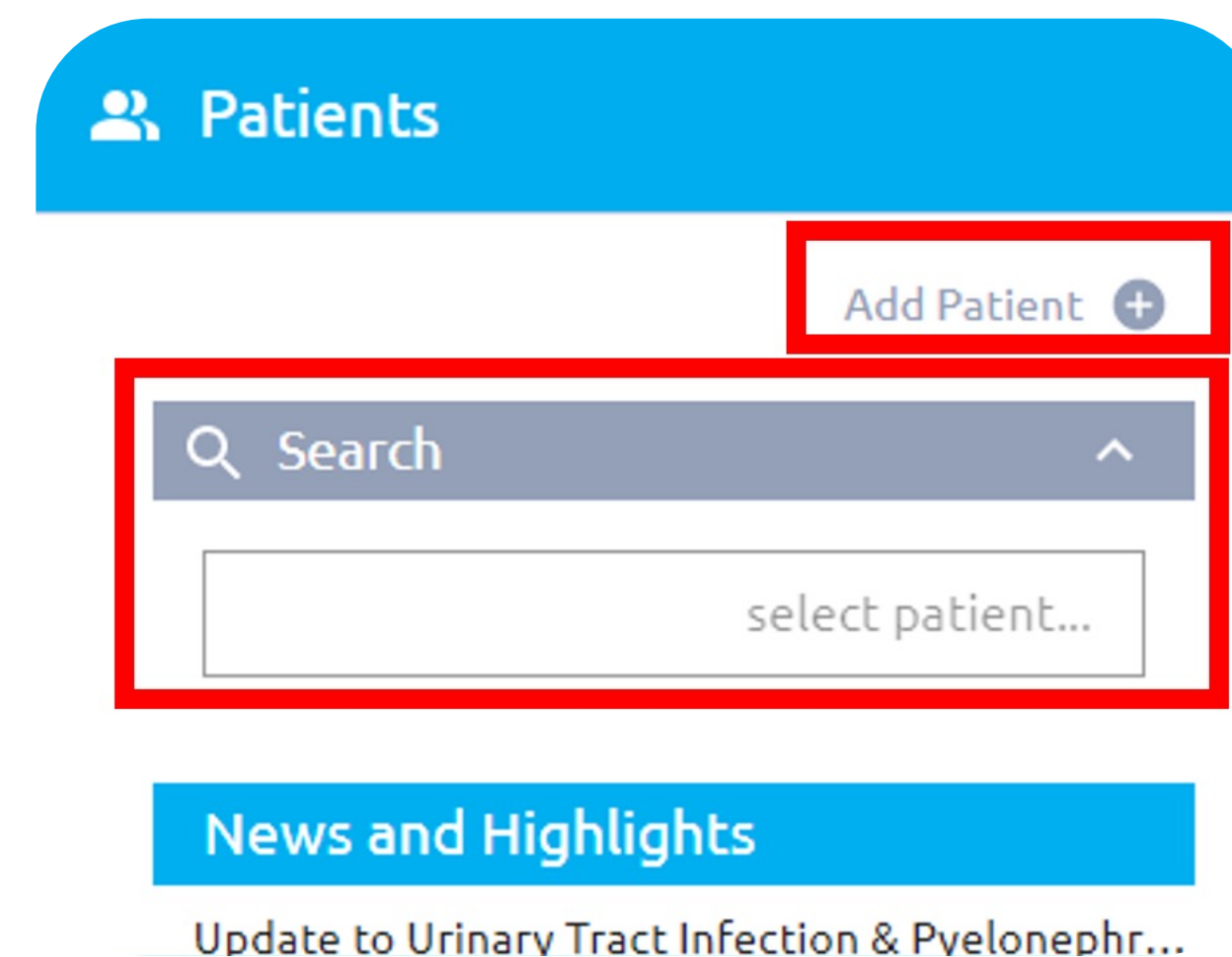
Add Patient



Adding and Selecting Patients

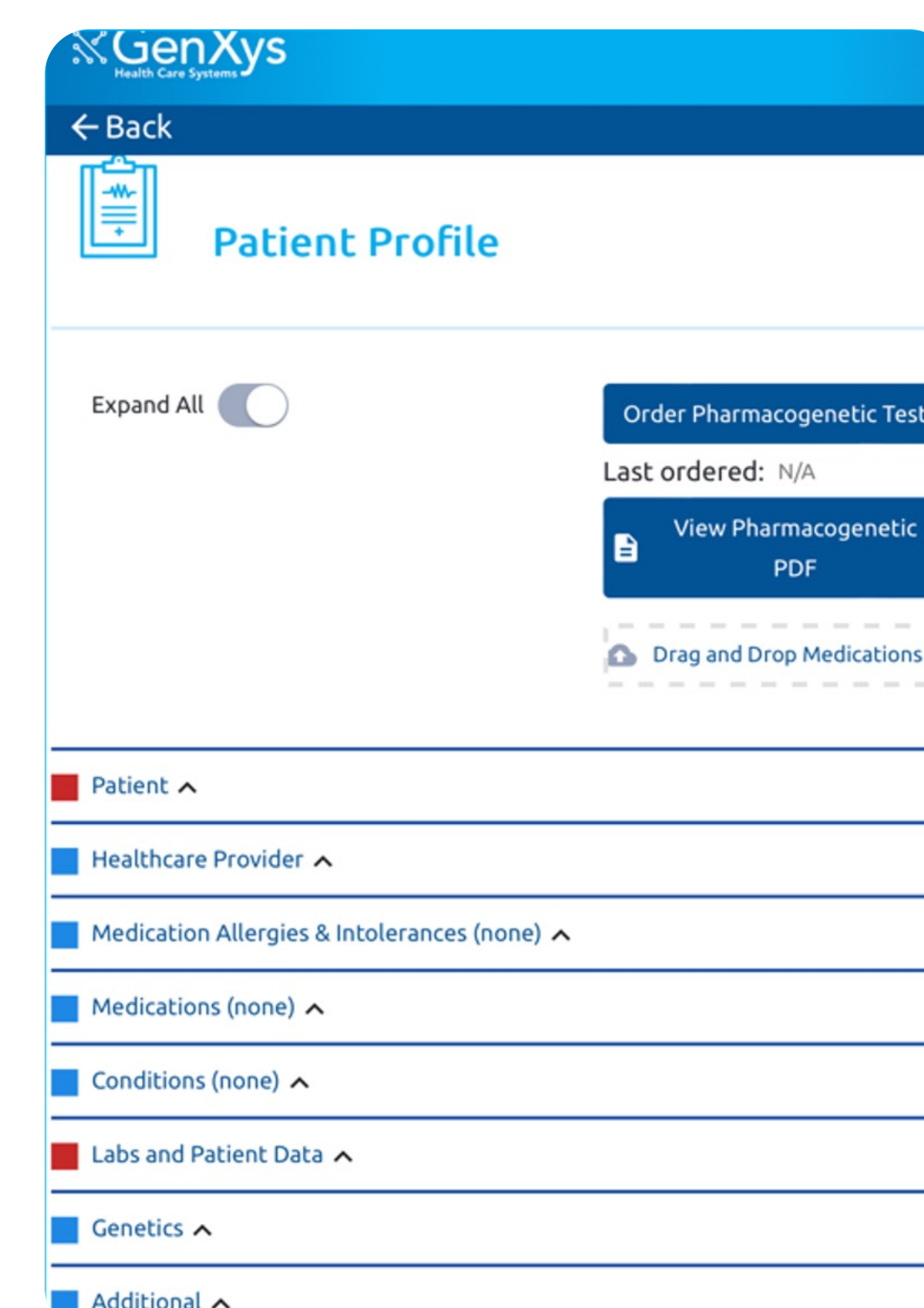
1. The Patients sidebar will appear on the left side of the screen when you open TreatGx and will allow you to:

- Add a new patient profile
- Search for an existing patient profile. Note: Patient profiles can only be selected from search after they have been added

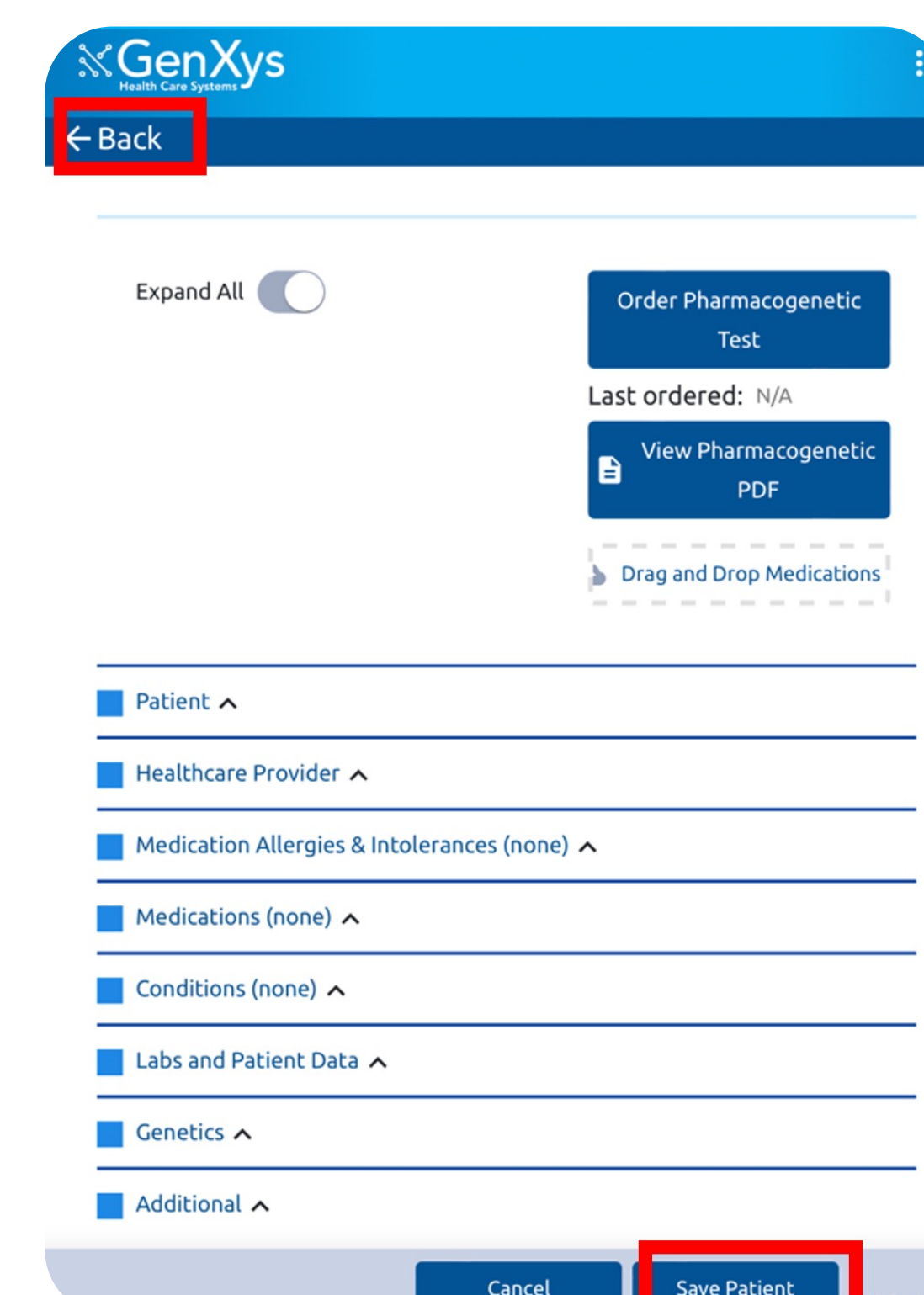


2. Selecting **Add Patient** will bring you to a new page with a blank patient profile with several categories to enter information. (Tip: Entering more information will return more personalized medication options for your patient.) Select one of the following categories to expand the entry field for specific information. Any fields that are tagged with a red box indicate that they require information to be entered for medication options to be generated. An entry box tagged with a blue box indicates one of three things i) it is optional information, ii) a required field has been filled and satisfied or iii) no further information is needed to generate a result.

- Patient (required)
- Healthcare Provider
- Medication Allergies & Intolerances
- Medications
- Conditions
- Labs and Patient Data (required)
- Kidney function defaults to an eGFR of 100 mL/min unless manually changed
- Liver function defaults to No Liver Disease unless manually changed
- Genetics i. All genetic results are defaulted to unknown unless manually changed or pharmacogenetic test results have been directly imported from a lab or other source



3. When all the required fields have been entered, select Save Patient on the bottom right-hand corner of the screen. A green banner will appear to indicate the patient profile has been successfully updated.



4. Select Back on the upper left-hand corner of the screen to return to ReviewGx and use the software to generate medication treatment options for the patient.

Patient Profile

There are many sections to fill out. Entering more information will return more personalized medication options for your patient.

Patient Information

Enter patient details

Patient Information form fields:

- First Name: John
- Last Name: Doe
- Email: [Empty]
- Phone Number: [Empty]
- Date of Birth (mm/dd/yyyy): 05/24/1990
- Patient Identifier: Identifier Type (e.g. PHN), Identifier Value (e.g. ABC-123), Health System (e.g. Epic)

Healthcare Provider Information

Enter the patient's healthcare provider information

Healthcare Provider Information form fields:

- First Name: [Empty]
- Last Name: [Empty]
- Phone Number: [Empty]
- Fax Number: [Empty]
- Email: [Empty]

Note: Name will appear on TreatGx and ReviewGx reports under the heading 'Generated by'

Medication Allergies & Intolerances

1. Click on the (+) symbol to bring up the ingredient search menu

2. Search for the agent the patient is allergic to by typing it into the search bar or scrolling through the list and clicking on it.

3. Select whether the agent is an intolerance or allergy.

a. If allergy is selected, more prompts will appear regarding the allergy severity, details of the reaction, confirmation of allergy testing, and if medications of the same class are tolerated.

b. To remove an allergy/intolerance from the patient profile, select the Remove button.

Medication Allergies & Intolerances (none) [Add]

Note: non-drug excipients and fillers (e.g. peanut, milk protein, dyes) are not checked by the allergy algorithm, as these ingredients may vary with brand and formulation

Healthcare Provider [Expand]

Medication Allergies & Intolerances [Add]

Note: non-drug excipients and fillers (e.g. peanut, milk protein, dyes) are not checked by the allergy algorithm, as these ingredients may vary with brand and formulation

Enter an allergy...

- Cephalosporin antibiotics
- Macrolide antibiotics
- NSAIDs (Non Steroidal Anti Inflammatories)
- Opioids
- Penicillin antibiotics

Macrolide antibiotics [Expand]

Reaction Type: ☐ Intolerance/Adverse Reaction ☒ Allergy

Allergy Severity: ☒ Life-threatening reaction ☐ Non-life threatening reaction ☐ Unknown reaction

Reaction Detail: [Text Area]

Confirmed with allergy testing: ☐

Allergy testing detail: [Text Area]

Remove [X]

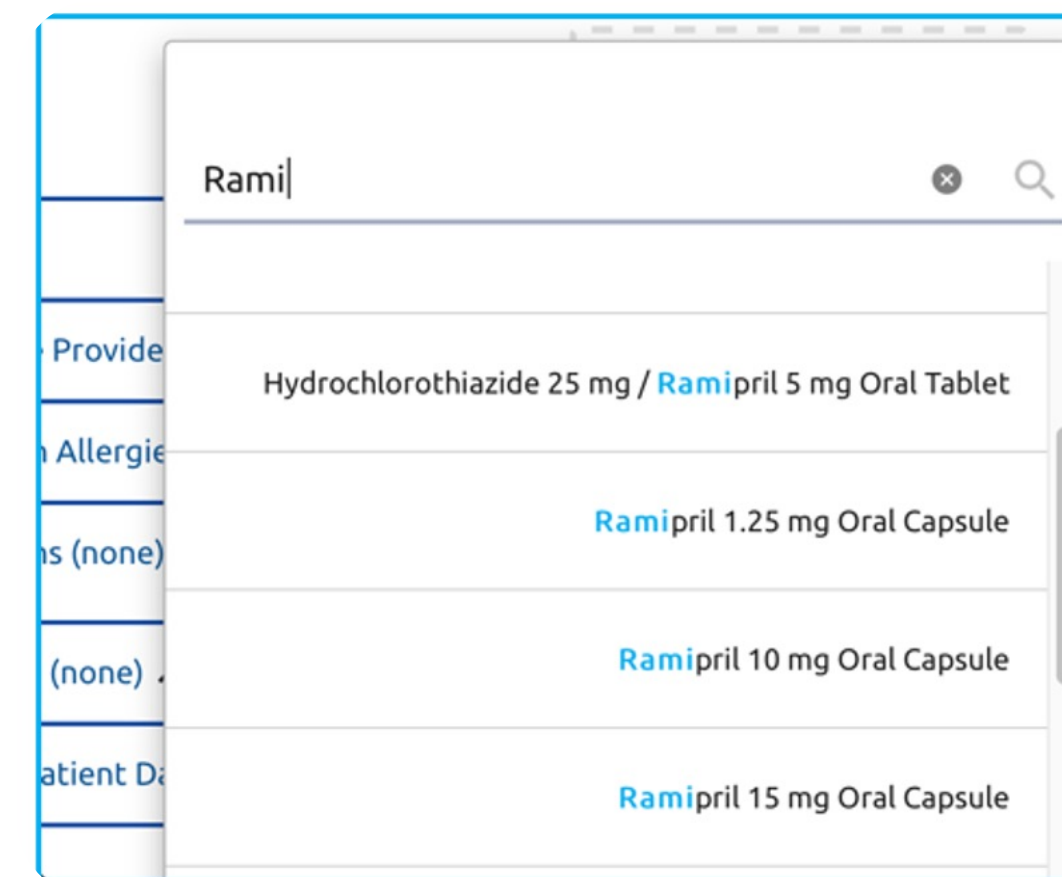
Add [+

Medications

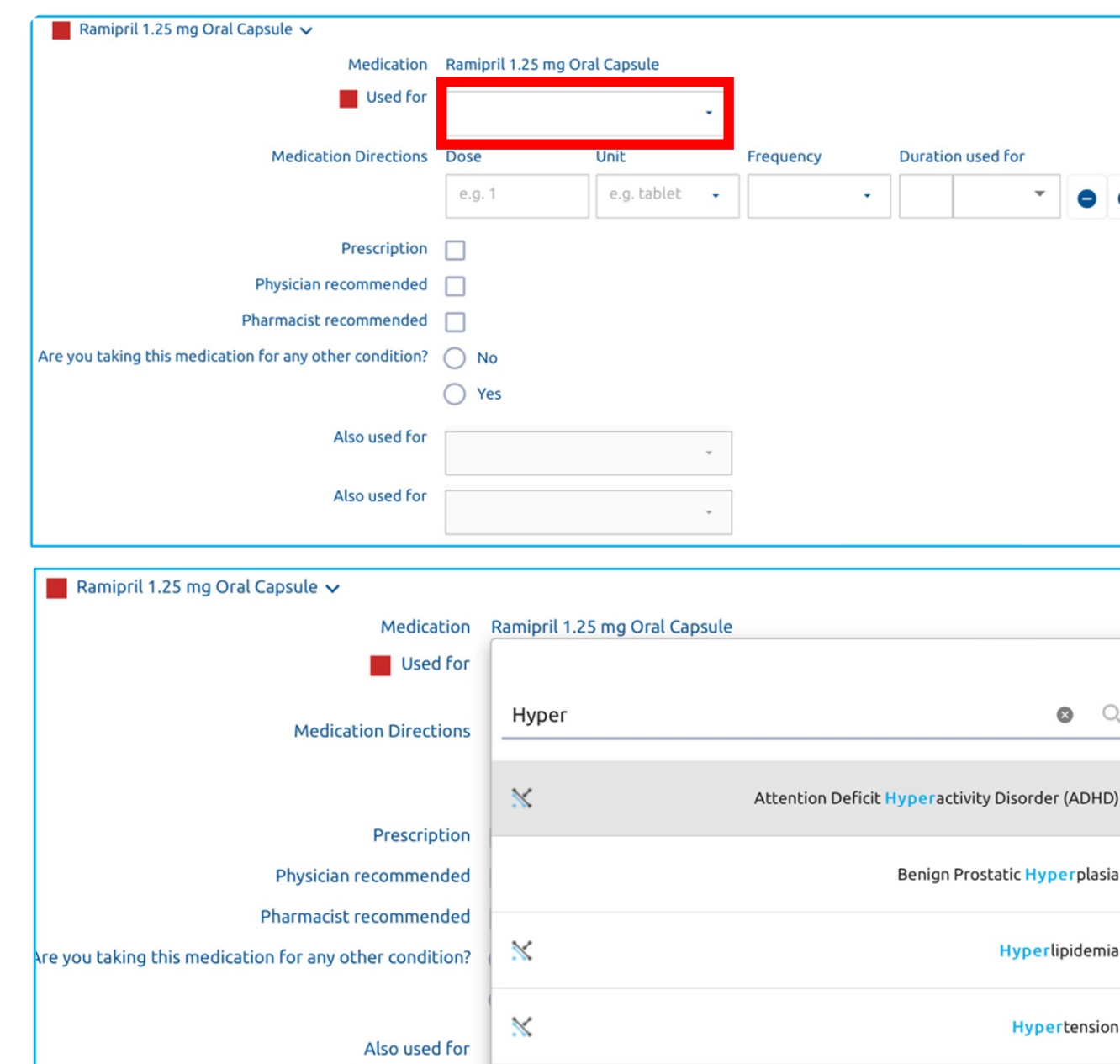
1. Click on the (+) symbol to bring up the ingredient search menu. To remove a medication select (-) symbol



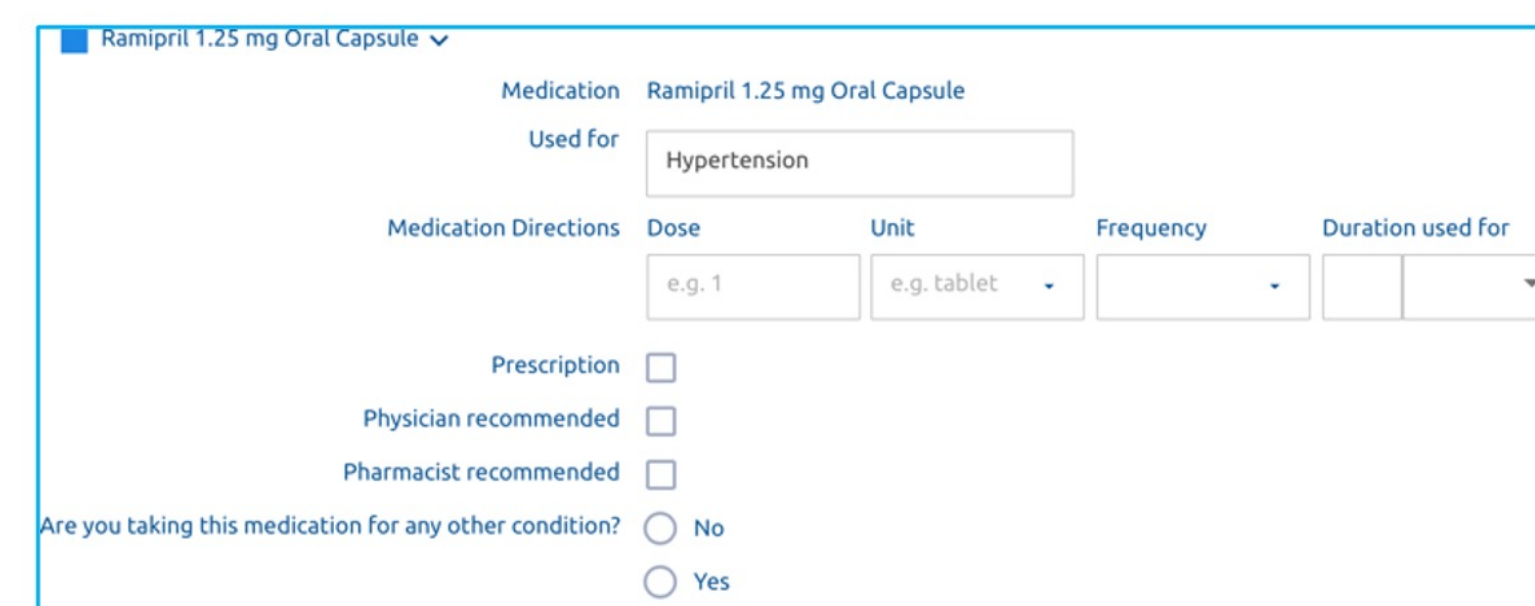
2. Search for the medication the patient is currently taking by typing it into the search bar or scrolling through the list and clicking on it.



3. Select the indication by typing it into the “Used for” field or scrolling through the list.
- If ‘Other’ is selected, you will be required to type in an indication. (Note: This is a required field and the medication will not be saved if an indication is not selected)



4. (Optional) Fill in the directions for use, and select if the drug is by prescription, if it was recommended by a physician or pharmacist, and if the drug is being used for any other condition



Conditions

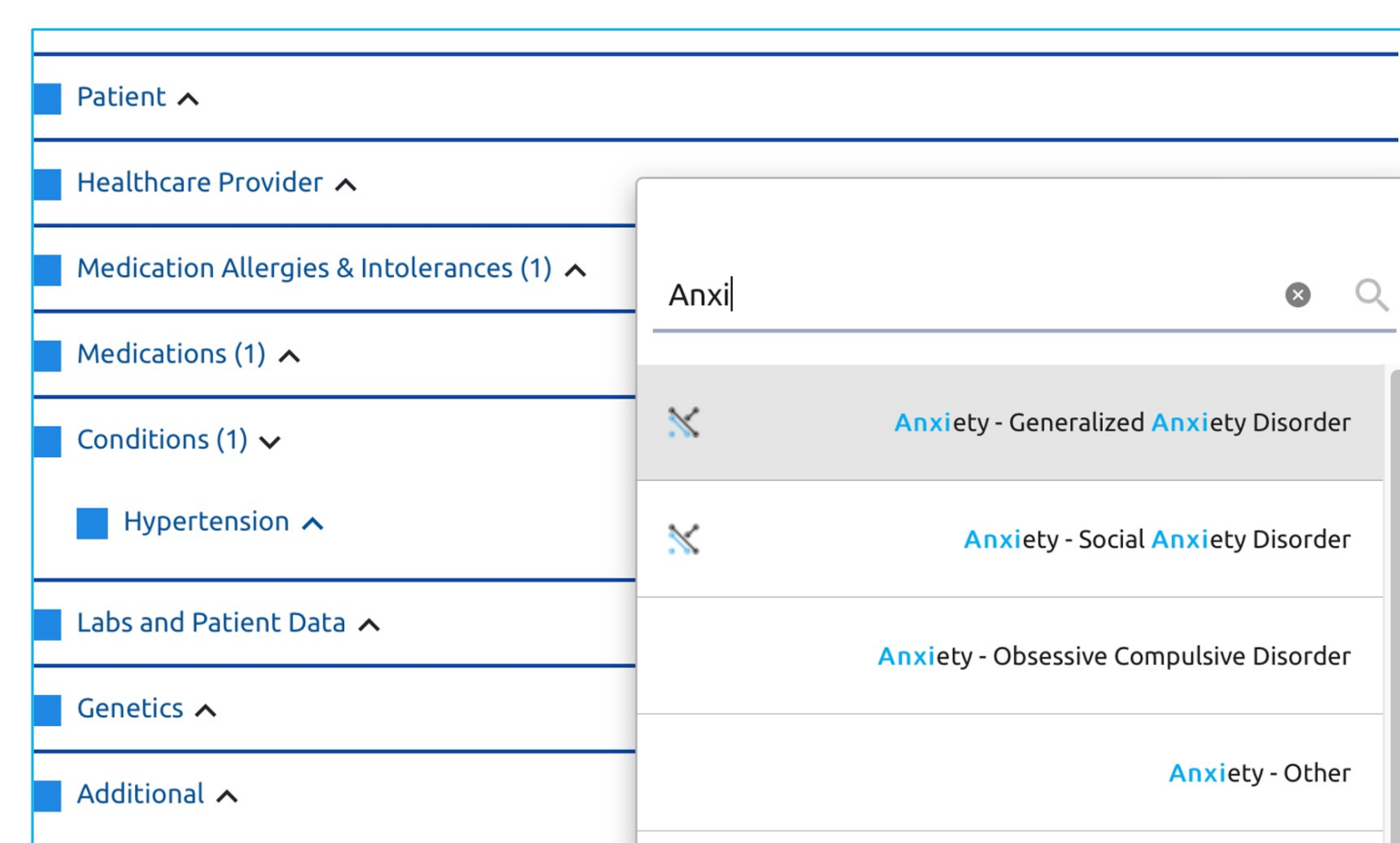
1. Click on the (+) symbol to bring up the conditions search menu.

(Note: This can also be done from the Medication Options page by selecting the “Add Condition” button on the bottom left of the screen.)

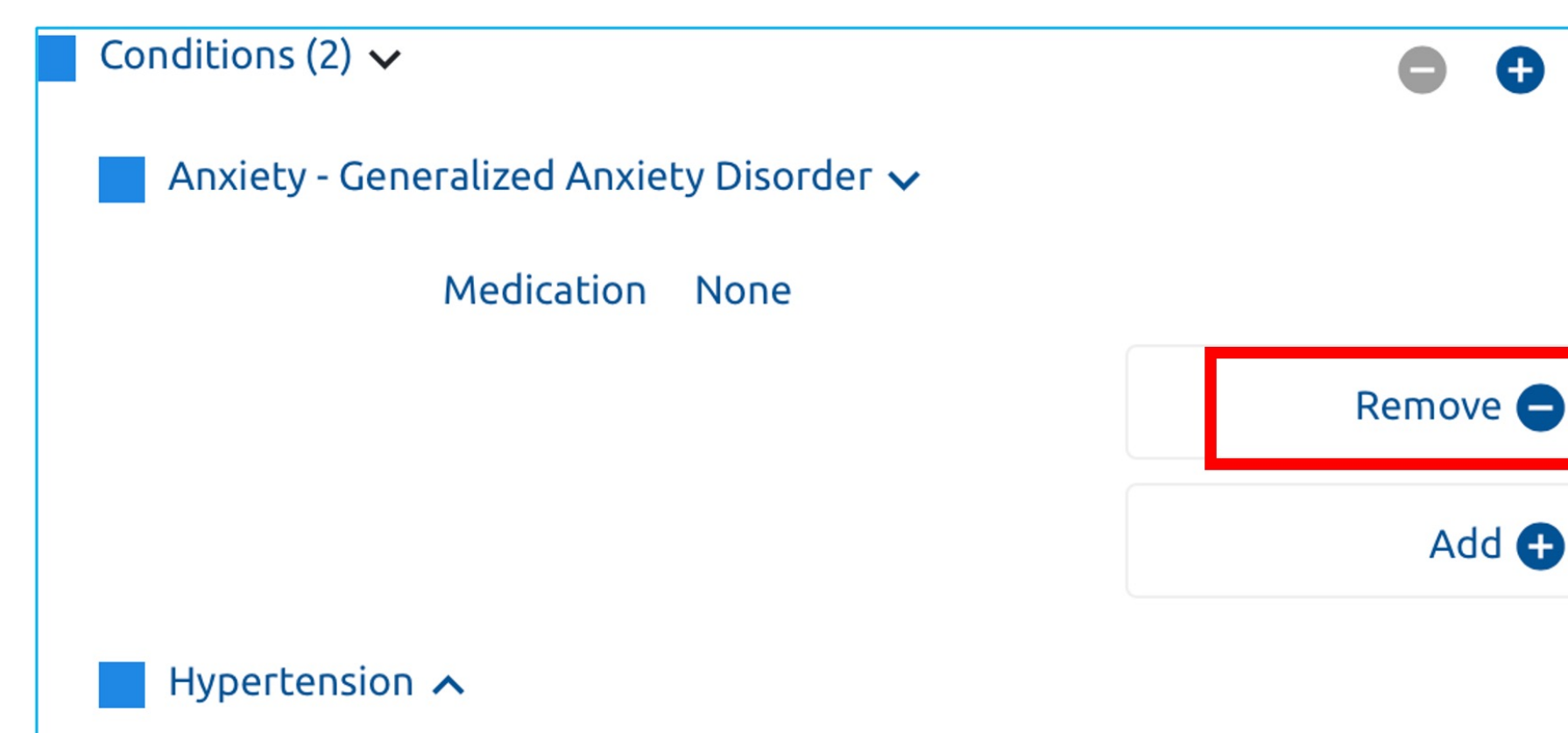


2. Search for the condition by typing it into the search bar or scrolling through the list and clicking on it.

a. The condition may already be populated in this section because of the indication entered for a medication from the previous section



b. To remove a condition from the patient profile, select the Remove button



Tip: Don't forget to click on Save Patient to save all the changes made to the patient profile!

Labs and Patient Data

1. Kidney function must be selected to proceed with the medication review.

- Adjust the eGFR by using the slider and moving it to the left or right, or by clicking anywhere along the scale.
- Select eGFR (mL/min) unknown if you do not have access to the patient's lab data. ReviewGx will flag potential drug-renal issues as per drug monograph information.
- Serum Creatinine may affect certain medications and specific contraindications. It will default as unknown if no number is entered.
- Select hemodialysis or peritoneal dialysis if applicable to your patient.

Note: kidney function (eGFR and serum creatinine) must be entered in order to use TreatGx for medication treatment options. Unknown values for kidney function are only accepted in ReviewGx.

Labs and Patient Data ▾

Kidney Function ⬆

eGFR (mL/min)

Kidney Failure

Severe Kidney Impairment

Moderate Kidney Impairment

Mild Kidney Impairment

Normal Function (but may have kidney disease)

☐ eGFR (mL/min) unknown

Serum Creatinine (mg/dL)

mg/dL ▾

☒ Serum Creatinine (mg/dL) unknown

On hemodialysis

☐

On peritoneal dialysis

☐

2. Liver function must be selected to process with the medication review.

- Select the severity of liver disease, if present (Child-Pugh score), otherwise select "No liver disease."
- Select Unknown if you do not have access to the patient's lab data. ReviewGx will flag potential drug-hepatic issues as per drug monograph information.
- Check box for elevated liver enzymes, hepatitis, or cirrhosis if applicable.

Note: the degree of hepatic impairment (Child-Pugh score) must be entered in order to use TreatGx for medication treatment options. Unknown values for liver function are only accepted in ReviewGx.

Liver function ⬆

Hepatic Impairment Scale (Child-Pugh)

☐ No liver disease

☐ Mild liver disease (Child Pugh A)

☐ Moderate liver disease (Child Pugh B)

☐ Severe liver disease (Child Pugh C)

☐ Unknown

Elevated liver enzymes

☐

Hepatitis

☐

Cirrhosis

☐

3. Complete "Other" Section

Select your patient's sex at birth. Add the weight and height of your patient in the appropriate fields (optional). Units may be toggled.

Other ⬆

Sex

☒ Female

☐ Male

☐ Unknown

Weight (lbs)

lbs ▾

Height (in)

in ▾

Genetics

Genetic information will automatically populate when a patient's pharmacogenetic test results are imported. If the results were imported by the Health Care Provider accepting an Invitation from the lab when results are ready, the Genetics Section will be filled in with these results, which are grayed out and cannot be modified. If any genes were not included on the panel tested, they will appear as Unknown.

Genetics ▼

- ABCG2 rs2231142 ☒ Normal Function (G/G or C/C)
☐ Decreased Function (G/T or C/A)
☐ Poor Function (T/T or A/A)
☐ Unknown
- ADD1 rs4961 ☐ G/G
☐ G/T
☐ T/T
☒ Unknown
- ADRB2 rs1042713 ☐ A/A
☒ A/G
☐ G/G
☐ Unknown
- ANKK1 rs1800497 ☒ A/A
☐ A/G
☐ G/G
☐ Unknown
- ATIC rs4673993 ☐ C/C
☐ C/T
☐ T/T
☒ Unknown

Additional Information

Patient concerns and questions can be documented in a free text box. These notes will be visible in the Patient Profile only. There will be other available areas to enter notes within ReviewGx that will appear during the medication review process and on the final report.

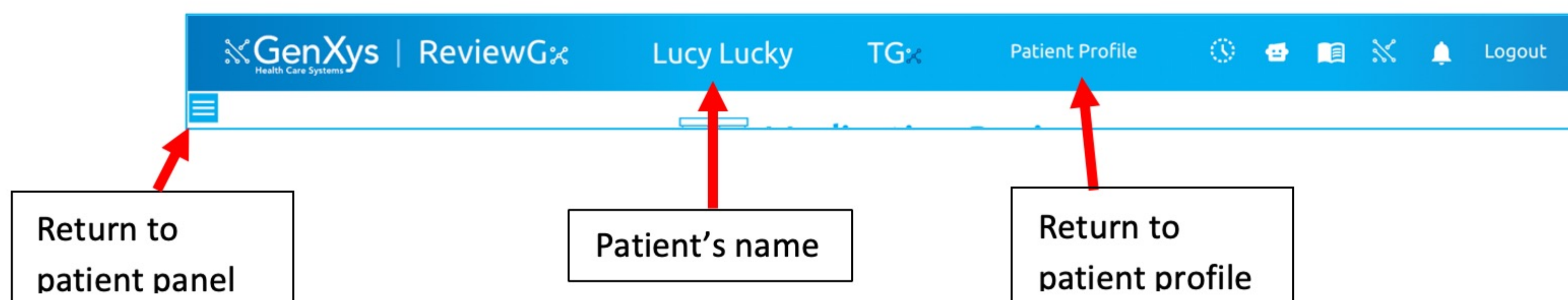
Additional ▼

Notes

Patient is asking whether the side effects are

Generating Medication Options

From the page banner, you can return to the patient panel, see the current patient's name, or return to the patient's profile



To view the Medication Review pages select a patient from the patient panel.

Generating Medication Options

The Medication Review page has three sections:

1. Current Medications

Depression

☒ Sertraline HCl 100 mg Extende...

Hypertension

☒ Ramipril 1.25 mg Oral Capsule

2. Review

Category Filters

General Warnings

Increased risk of falls and fractures due to use of 3 or more central nervous system (CNS) active drugs. Consider minimizing the number of CNS-active drugs.

This medication list includes one or more medications that cause QTc prolongation and/or torsades de pointes (TdP). See the individual medication warnings for risk categorization. All identified medications should be avoided in those with congenital long QT due to high risk of TdP.

Conditions

Depression

Sertraline

No Change

Unknown CYP2C19 status – may have risk of adverse effects with Sertraline

3. Recommendations

Note To Healthcare Provider

Medication Action Plan

General Warnings

Increased risk of falls and fractures due to use of 3 or more central nervous system (CNS) active drugs. Consider minimizing the number of CNS-active drugs.

This medication list includes one or more medications that cause QTc prolongation and/or torsades de pointes (TdP). See the individual medication warnings for risk categorization. All identified medications should be avoided in those with congenital long QT due to high risk of TdP.

Generate Review

Generate Recommendations

Generate Report

Current Medications (Left Column)

The Current Medications column is a list of all medications the patient is currently taking and is sorted by the condition being treated. If a medication is taken to treat more than one condition, it will appear in all relevant conditions. Within this section, medications can be selected or deselected by clicking the checkbox beside the drug. Only selected drugs will be reviewed further.

The Review column is generated when “Generate Review” is selected at the bottom of the Current Medications column

Current Medications (Left Column)

The Review lists all conditions with the selected medication used to treat that condition. Within each drug, the ReviewGx software may generate one or more of the following icons with informative statements:

- Warnings and Adjustments:** These appear in the General Warnings section or within the information for a specific drug. In the General Warnings any overall warning regarding the medication plan are specified, and in a specific drug any risks associated with that drug are noted e.g., monograph information about kidney or liver impairment.
- Pharmacogenetic Information:** This appears where genetic variation has been associated with the safety or efficacy of the drug. If a patient’s pharmacogenetic information is available, the review will indicate the possible effects of their genetics on the action of the drug. If pharmacogenetic information is not available, the relevant gene will be listed as unknown with the effects that the gene may have on the drug.
- Deprescribing Opportunities:** This appears to identify a medication or group of medications that may be appropriate targets for deprescribing.
- No Adjustments:** This is listed with a specific drug if there are no dose adjustments or contraindications based on the information entered into the patient’s profile.
- No information:** This indicates that a medication ingredient entered in the patient’s profile does not currently have information in the ReviewGx database; therefore, no recommendation can be made by the software.
- Other Conditions:** This appears when a drug is used for more than one condition. The other condition(s) it is used for are listed.

Category Filters

Conditions

Heart Failure - Chronic

Eplerenone

No Change

Dosage of Eplerenone may need to be adjusted based on serum potassium levels.

Add Medication Note

Carvedilol

No Change

Unknown CYP2D6 status – may have risk of adverse effects with Carvedilol use.

Add Medication Note

Drug-Drug Interactions

Eplerenone - Carvedilol: Minor

Note To Healthcare Provider

Add Notes

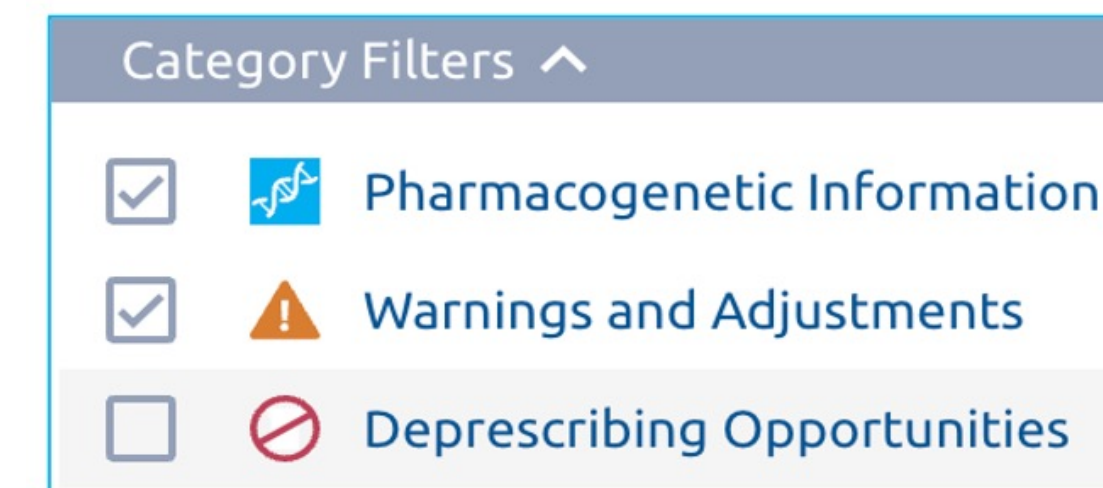
Medication Action Plan

Add Notes

Generate Recommendations

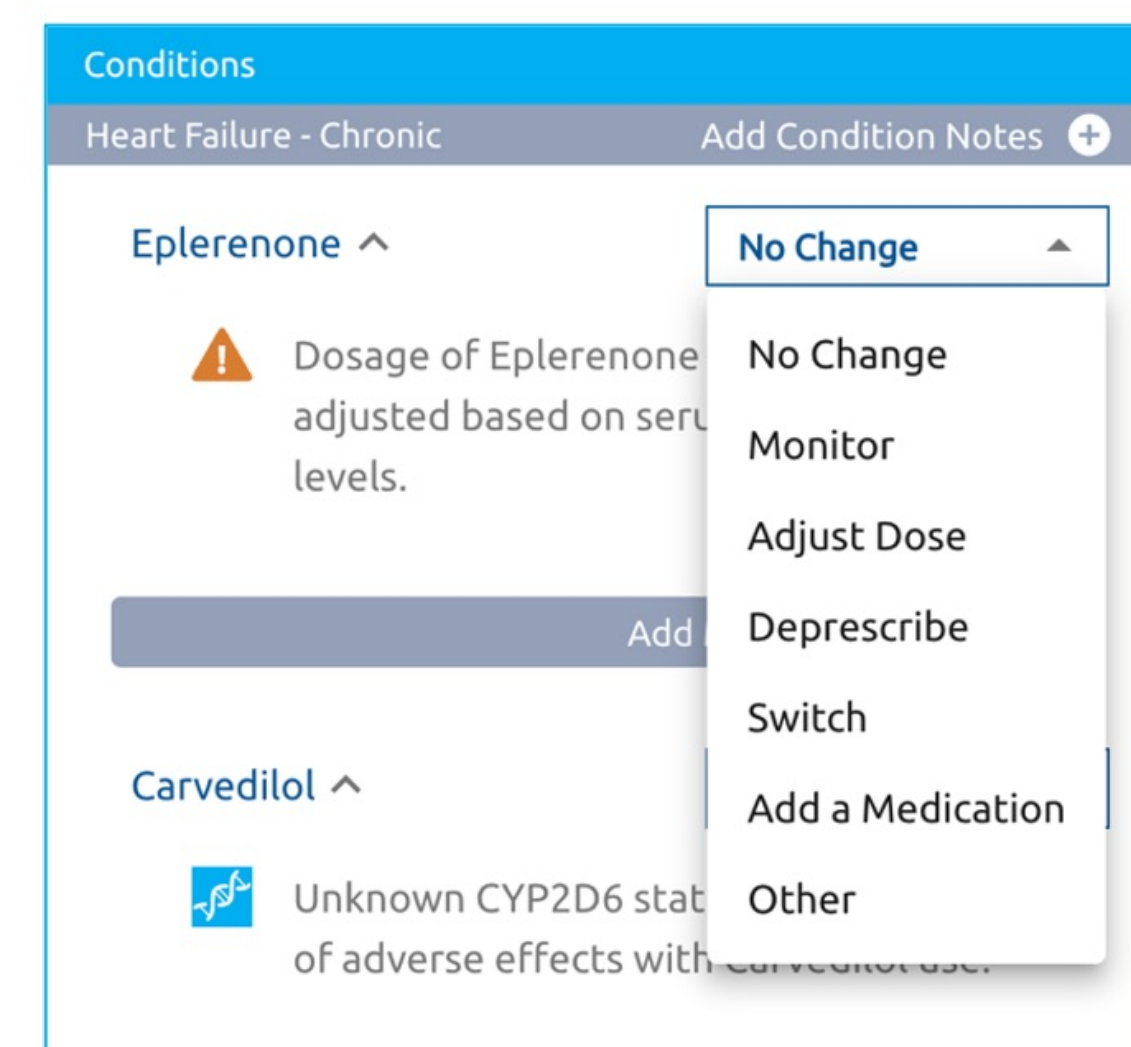
Filtering

From within the “Category Filters” section at the top of the Review column, the review section can be filtered. E.g., Deprescribing opportunities can be hidden.



Actions

After considering the Review messages and discussion with the patient, the health care provider can select a recommended action for each medication. The action selected will appear on the report, which can then be forwarded to other health care providers as consultation notes e.g., to the physician to recommend changes to medication therapy. The default for all actions is set to “No change.” If the user is creating a report, it is important to update these dropdowns to reflect the health care provider’s recommendations based on the information provided in ReviewGx

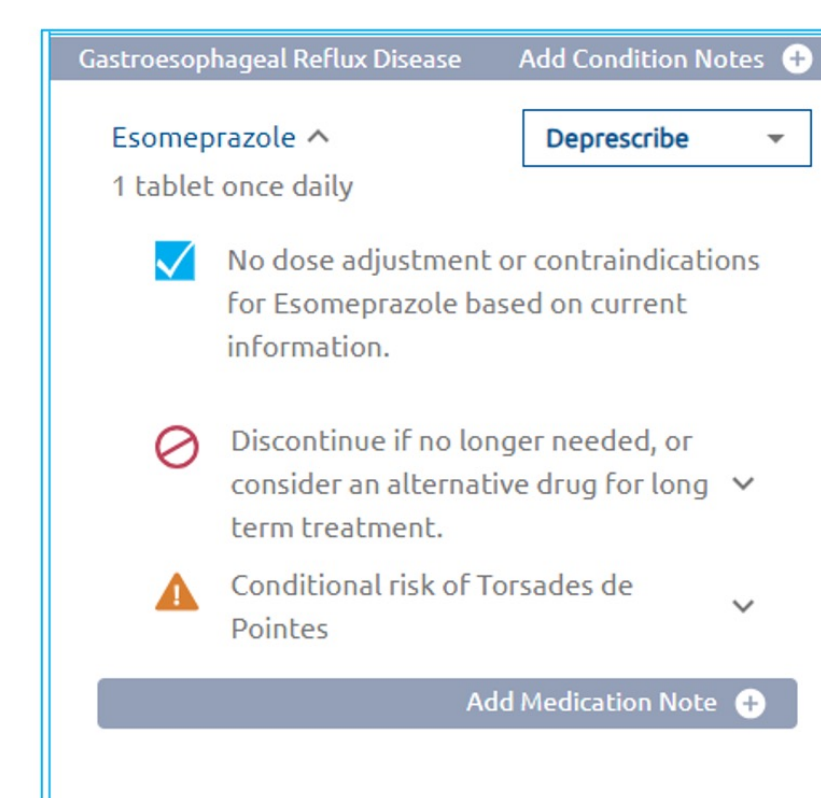


Notes to Healthcare Provider, Medication Action Plan, Condition and Medication Notes

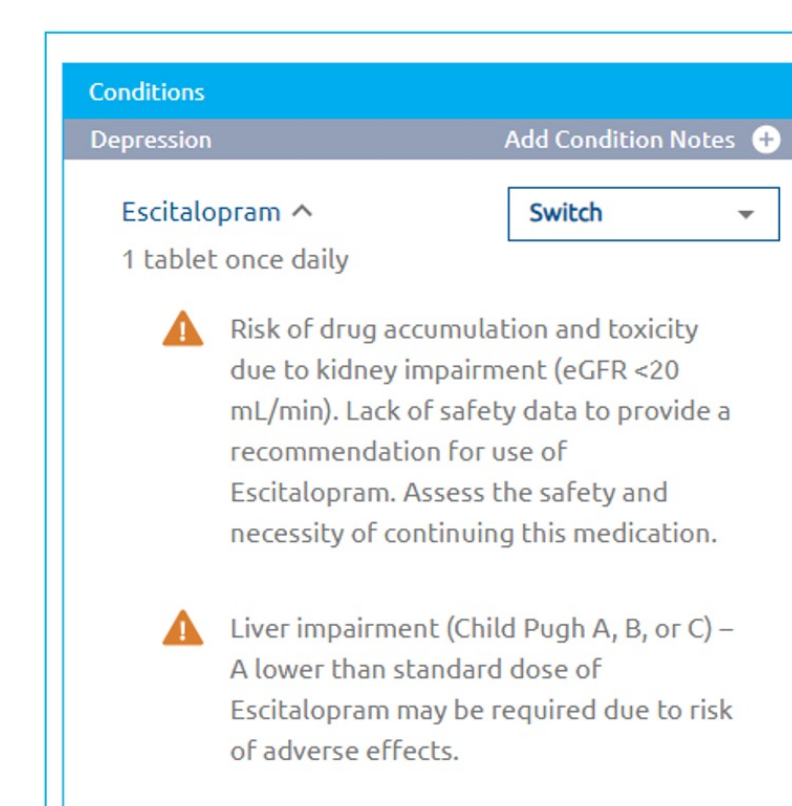
Notes can be added by selecting the + button and typing into the box that appears. **(Optional)**.

There are 4 types of notes:

1. Medication Note – found below each medication’s warnings and linked to the specific medication. The box to enter a medication note automatically appears when the Action for that medication is selected or modified. For example, if “Adjust Dose” is selected, the medication note can be used for dosage suggestions. This note will appear on the final report under the medication name



2. Condition Note – found beside the heading for each condition and linked to the specific condition. This note does not appear on the final ReviewGx report and is for use during the review process only



Notes to Healthcare Provider, Medication Action Plan, Condition and Medication Notes

3. Note to Health Care Provider – found at the bottom of the middle column of ReviewGx. This note will appear on the top of the final ReviewGx report.

4. Medication Action Plan – found at the bottom of the middle column of ReviewGx. This note will appear on the top of the final ReviewGx report

The screenshot shows a vertical list of items. At the top, there are three dropdown menus: 'Trazodone - Spironolactone: Minor' and 'Trazodone - Rosuvastatin: Minor'. Below these are two sections, each with a blue header bar and a text input area. The first section is 'Note To Healthcare Provider' with an 'Add Notes +' button. The second section is 'Medication Action Plan' with an 'Add Notes +' button. Arrows from the text blocks point to these sections.

Recommendations (Right Column)

Recommendations are generated by selecting “Generate Recommendations” at the bottom of the Review column. The information that appears under “Recommendations” shows what will appear on the final ReviewGx report, including the suggested action for each medication, any added notes, and all selected medications.

Notes may also be added within this column. These will appear on the report when it is generated and will be visible to the prescriber and/or patient receiving the report.

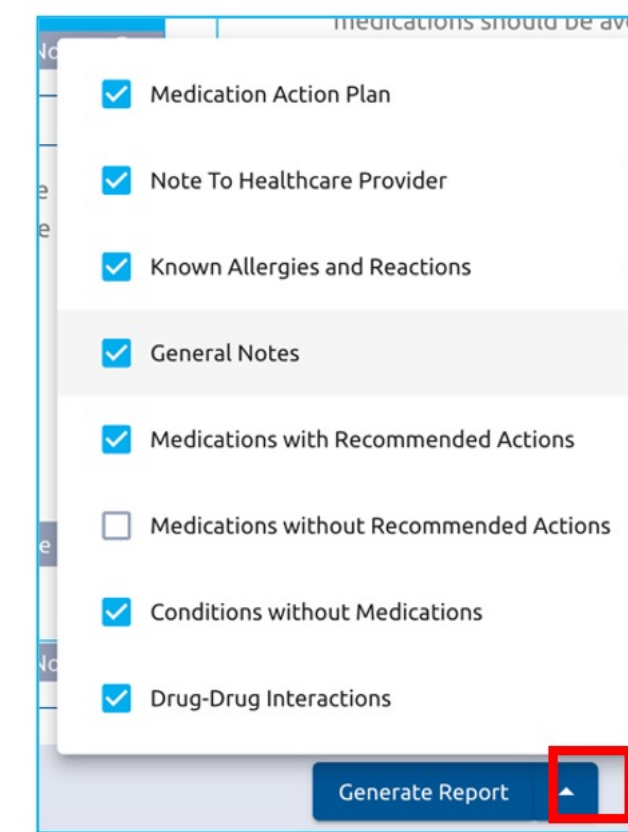
At any time, the reviewer can make changes to the Review column and these changes will be automatically reflected in the Recommendations column.

The screenshot shows the 'Recommendations' section. It has a blue header bar with 'Recommendations' and a '+' icon. Below it is a 'Medication Action Plan' section with a '+' icon. The main area is titled 'General Warnings' and contains two warning boxes. The first box has a red circle with a slash icon and text about increased risk of falls and fractures. The second box has a yellow triangle with an exclamation mark icon and text about QTc prolongation and torsades de pointes. Below this is a 'Depression' section with a '+' icon. It shows 'Sertraline' with a dropdown arrow and a 'No Change' button. Below this are three warning boxes: one about unknown CYP2C19 status, one about CNS-active medication, and one about conditional risk of Torsades de Pointes. At the bottom is a 'Generate Report' button with a dropdown arrow.

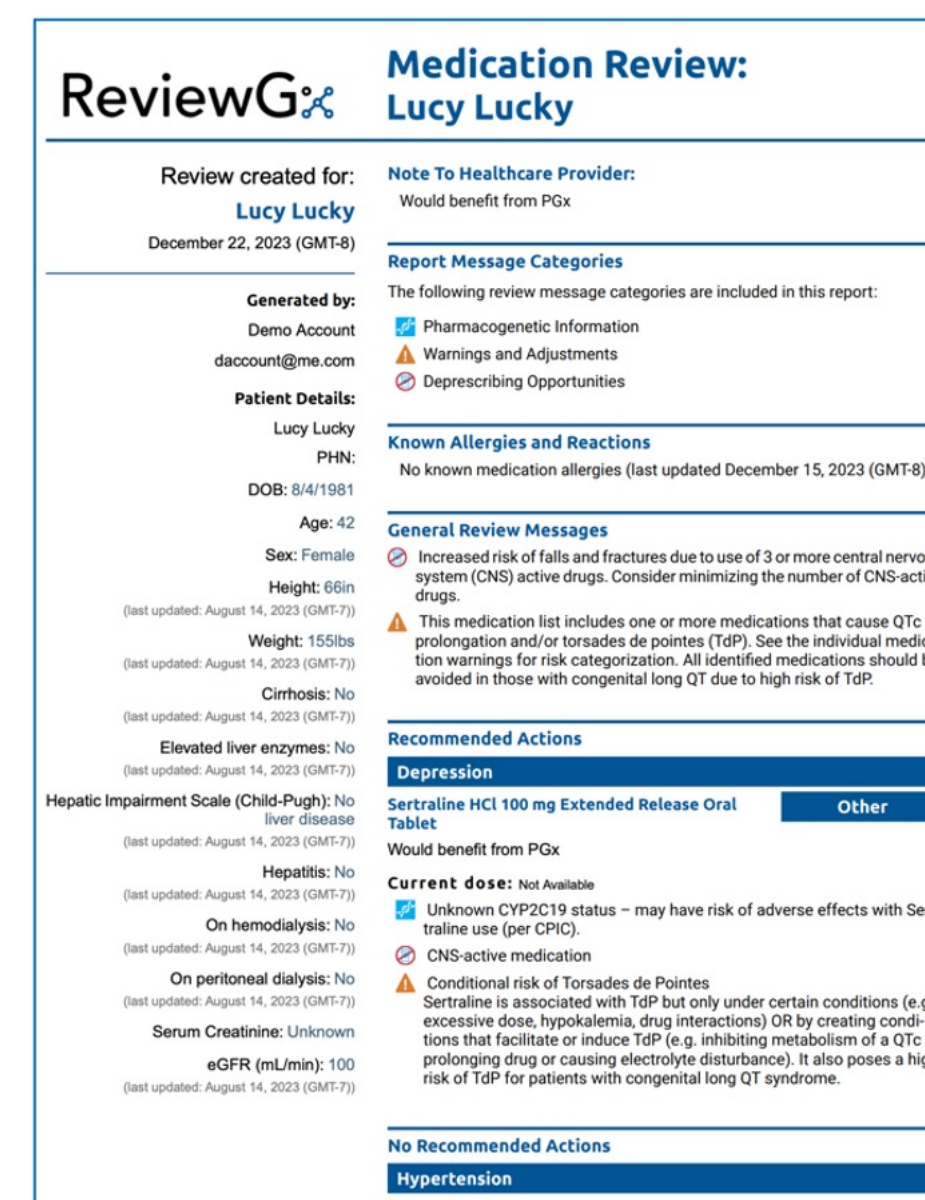
Report

The report is generated from the Recommendations by selecting **“Generate Report”** at the bottom of the column.

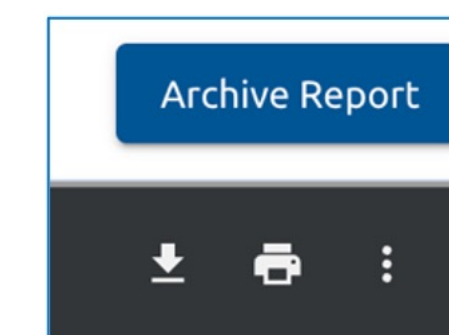
Before the final report is generated, clicking the arrow beside Generate Report allows the user to choose which sections will be included in the report. E.g. “Medications without Recommendations” can be deselected to create a more focused report.



The report is a PDF document with current patient information and any additions or changes suggested through the review process, e.g. deprescription. If any drugs were not selected in the Current Medications section, they will appear listed at the bottom of the Report.



The Report can be archived within the ReviewGx software, saved, or printed directly from the PDF (top right of screen).



The user can access archived reports through the “report history” button found at the top right of Medication Review screen

