# Flux Notes Manual

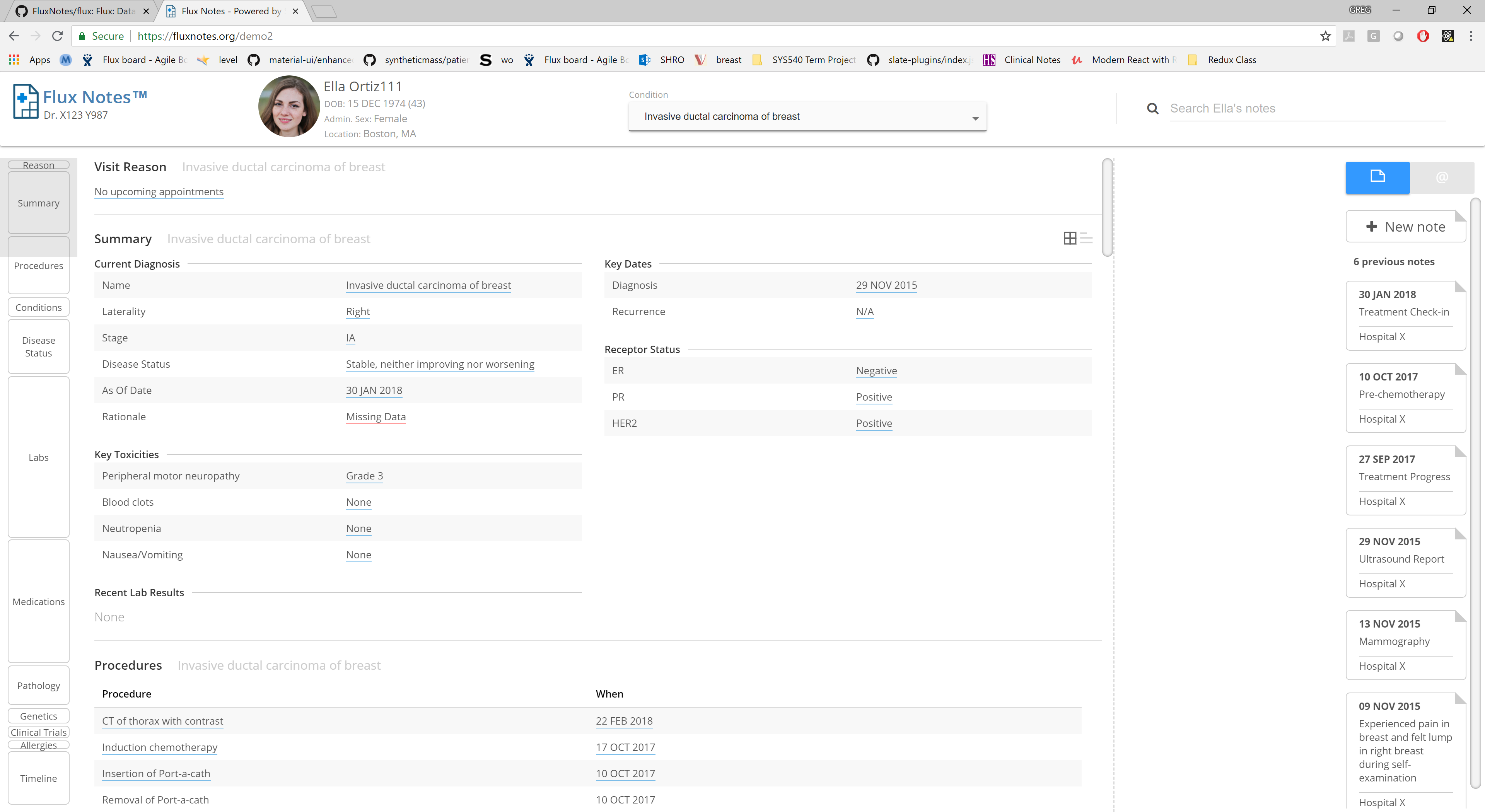
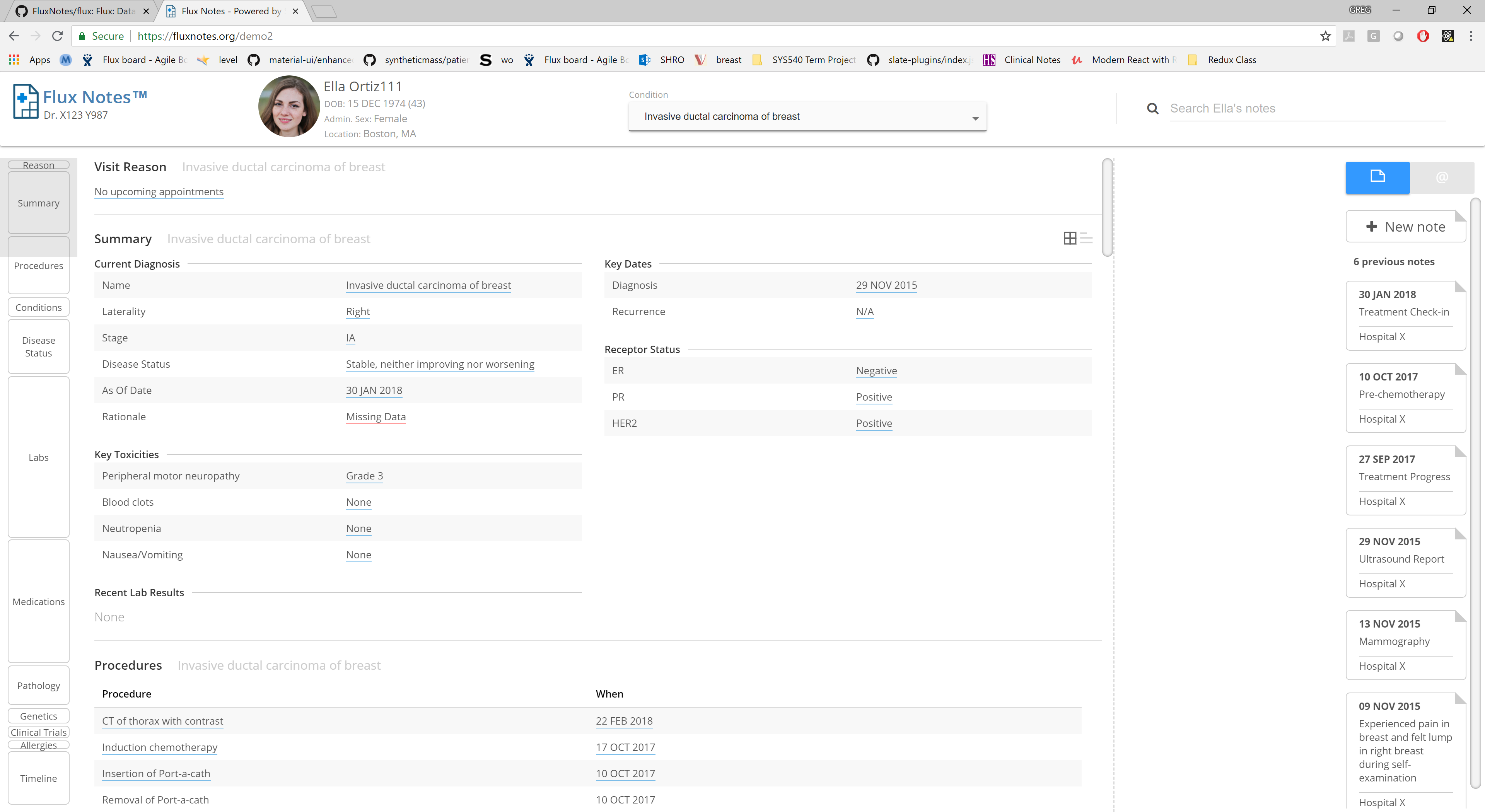
This document provides a tutorial on using Flux Notes™. Flux Notes is a concept demonstration of an evolving approach to the low-burden capture of structured treatment data at the point of care while a clinician authors their clinical notes. Flux Notes also demonstrates various uses of the resulting structured data to help lower clinician burden.

Ultimately, Flux Notes demonstrates an alternative approach to authoring clinical notes and viewing patient data that can be integrated into current Electronic Health Record (EHR) software; Flux Notes would not be an additional task or burden on clinicians.

The screen shots in this document were extracted from a synthetic patient depicted in a demonstration version of Flux Notes located on the public web at <https://fluxnotes.org/demo2>.

## Starting View / No-Note View

The Flux Notes application starting view appears in Figure 1. When the clinician launches Flux Notes, the view will appear as in the figure. Labels for the key areas or panels within the initial application view have been overlaid onto the screen shot and are shown in red.



Patient Context

Patient Care

Summary

Note

Area

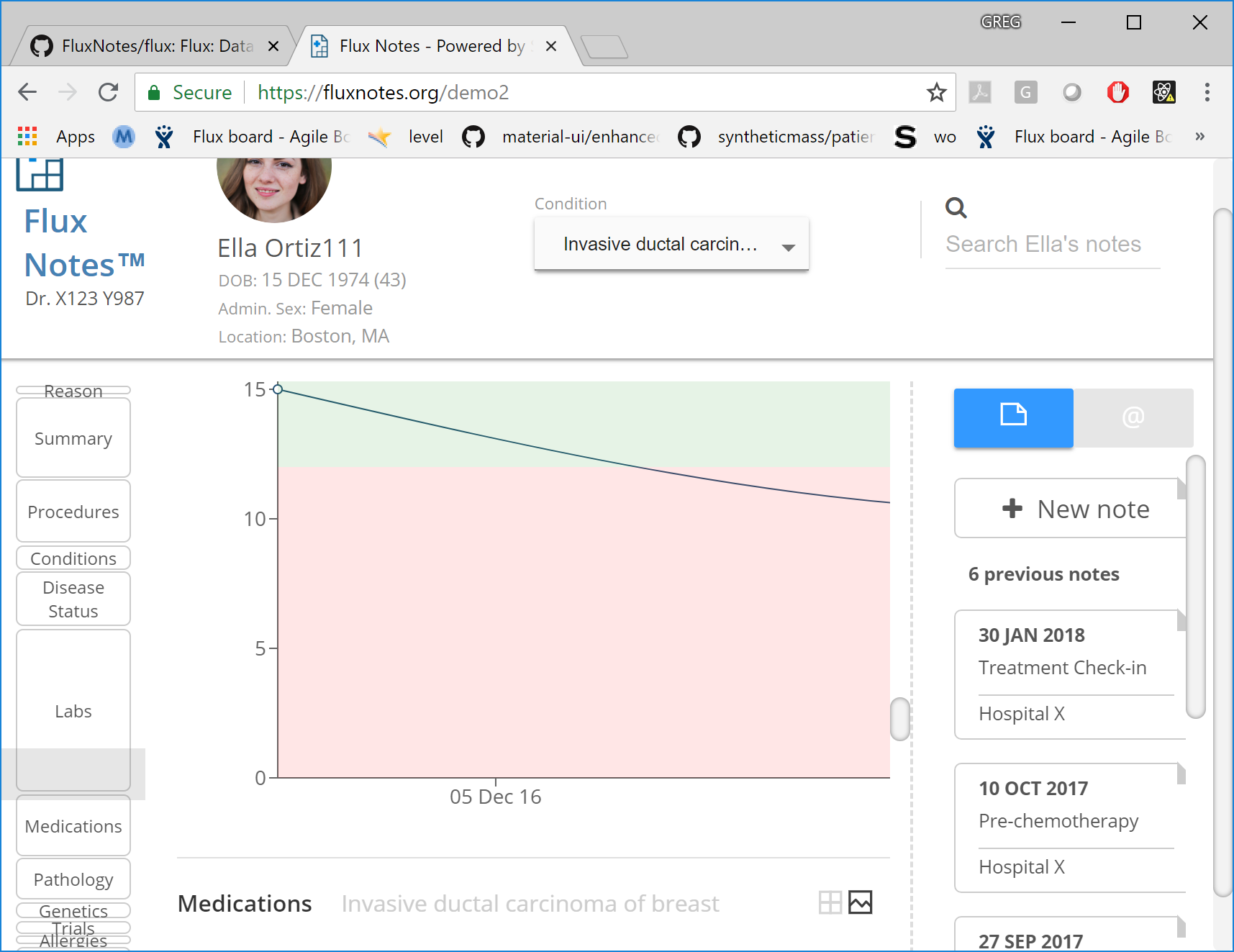
Figure 1 - Flux Notes Starting View Screen Shot

At the top, the **Patient Context** area shows basic demographic information about the patient as stored in the EHR including their name, date of birth (and resulting current age), administrative sex, and where they live. A drop-down menu of the patient’s conditions allows the clinician to filter the Patient Care Summary area (described next) to see the most important information relevant to the treatment of that condition based on the clinician’s role and preferences. Finally, a search box on the far right allows the clinician to search through all of the patient clinical notes (in the future, the search will also find desired text within Patient Care Summary).

The largest area is the **Patient Care Summary**. This area displays the key information for the clinician relevant to the treatment of the condition selected in the Patient Context as described above. The Patient Care Summary is divided into sections like Visit Reason, Summary, Procedures, Conditions, etc. The left side of the Patient Care Summary is a mini-map which provides to-scale blocks for each section allowing quick navigation by clicking on a section or by clicking and dragging to scroll the Patient Care Summary. In the future, which sections are shown and in what order will be customizable by each clinician. The sections shown depend on the condition selected in the Patient Context. In the future, the shown sections will also depend on what role the current clinician has (e.g., medical oncologist, nurse practitioner, surgical oncologist, etc.) and on the current clinician’s preferences.

Each section can be divided further into subsections and can support multiple visualizations. If a section supports multiple visualizations, buttons at the top right of the section allow the clinician to switch between them. For example, the summary section shown in Figure 1 supports a tabular view (A close up of a window

Description generated with high confidence) and a narrative view (![A close up of a screen

Description generated with high confidence](data:image/png;base64,iVBORw0KGgoAAAANSUhEUgAAACIAAAAeCAYAAABJ/8wUAAAABGdBTUEAALGPC/xhBQAAAJlJREFUWAljZAACBweHKYyMjKogNrng////tw8cOJBDrn4WqEYBoEHC5BoC1feaEv1MlGimpt5B4xBY1IDiFsYm16N/yNU4qm80BEZDYEiHACPI9dSoaygMhT5YIUaNuoZstwArXI5BU8QPGofAooYadQ3ZUSMvL/+FbM2jGkdDYDQEBjoERusa5BgYrWuQQwPGHq1rYCEBowHQbBuL1p7+3AAAAABJRU5ErkJggg==)) currently. In addition, some sections support a graphical view ().

Any pieces of information displayed in a section that is missing (not captured in a structured form within the patient’s record) appears with a red underline.

Displayed information has a blue underline and can be clicked on. Clicking on a piece of information offers an Open Source Note option. If that piece of structured information was captured in an existing clinical note, the open source note option will cause the note where it was entered to be opened. If no source note exists because it was captured in a structured form directly, then a message will appear at the bottom of screen saying that no source note is available.

Finally, if an in-progress note (an editable note) is open, clicking on a piece of information supports the insertion of that information into the current note at the current cursor location.

If a piece of information has a dashed blue underline instead of the normal solid blue underline, that piece of information has been created via a current in-progress note and therefore has not been signed yet. Information is not part of the patient’s record until the source note is signed.

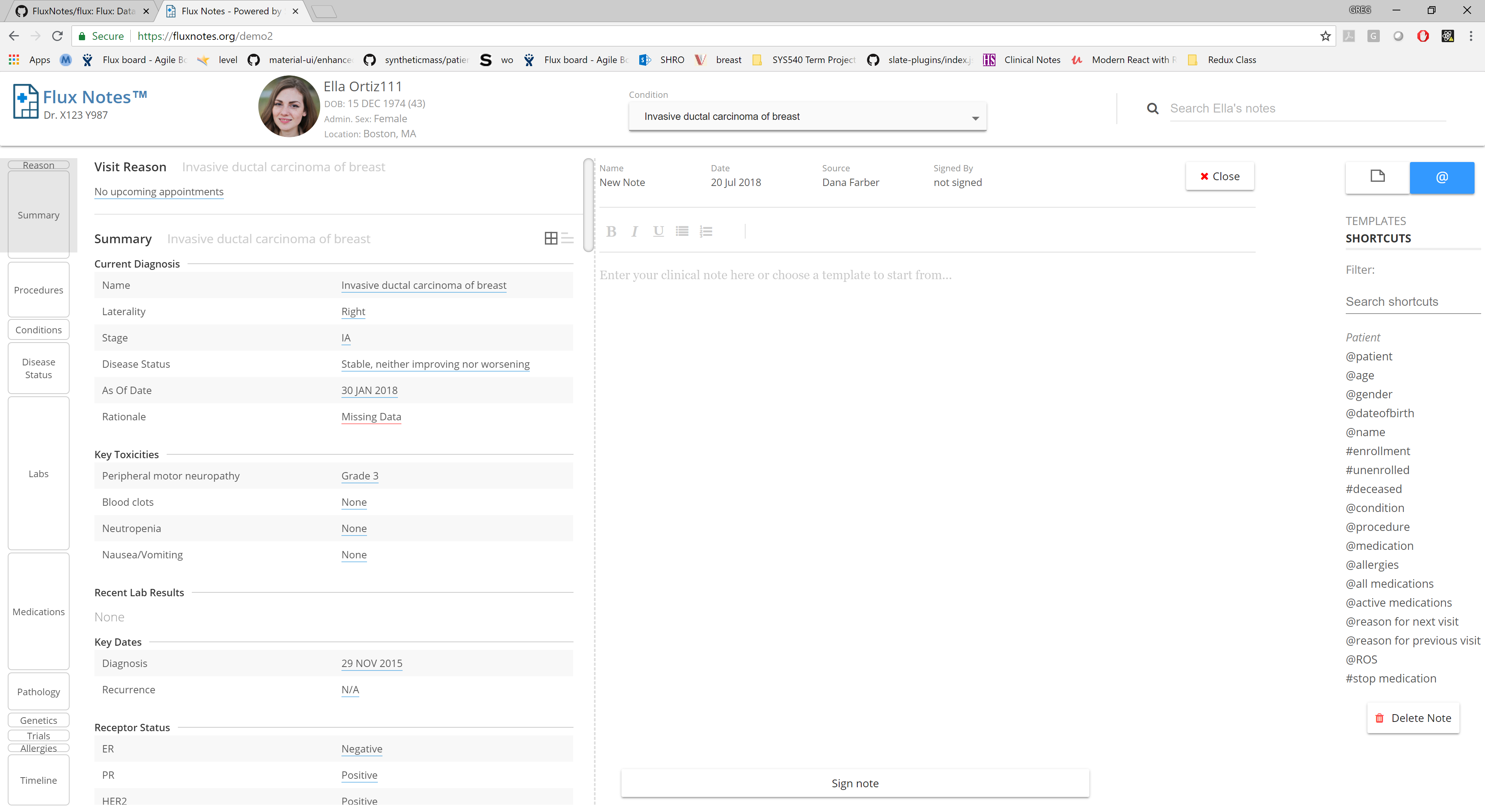
Note that the Patient Care Summary area will always be visible but can be wide (as shown in Figure 1) or narrow when a note is being edited or viewed.

The **Note Area** is on the right side of the application and in the starting view shows a list of existing notes in the patient’s record along with a New Note button.

Clicking an existing note’s icon in the list will switch to note view which will include showing the contents of the selected note. If the note was an in-progress note (always appear at the top), the note view will be in author mode. If the note clicked on was an existing note, the note view will be in read-only mode.

## Note View – Author Mode

Note view is in author mode when a note is being edited. The New Note button creates an empty, editable note and always puts Note View in author mode as depicted in Figure 2. The Patient Context and Patient Care Summary sections are the same as described above except the Patient Care Summary has less horizontal real estate due to the enlarged Note Area.



Note

Area

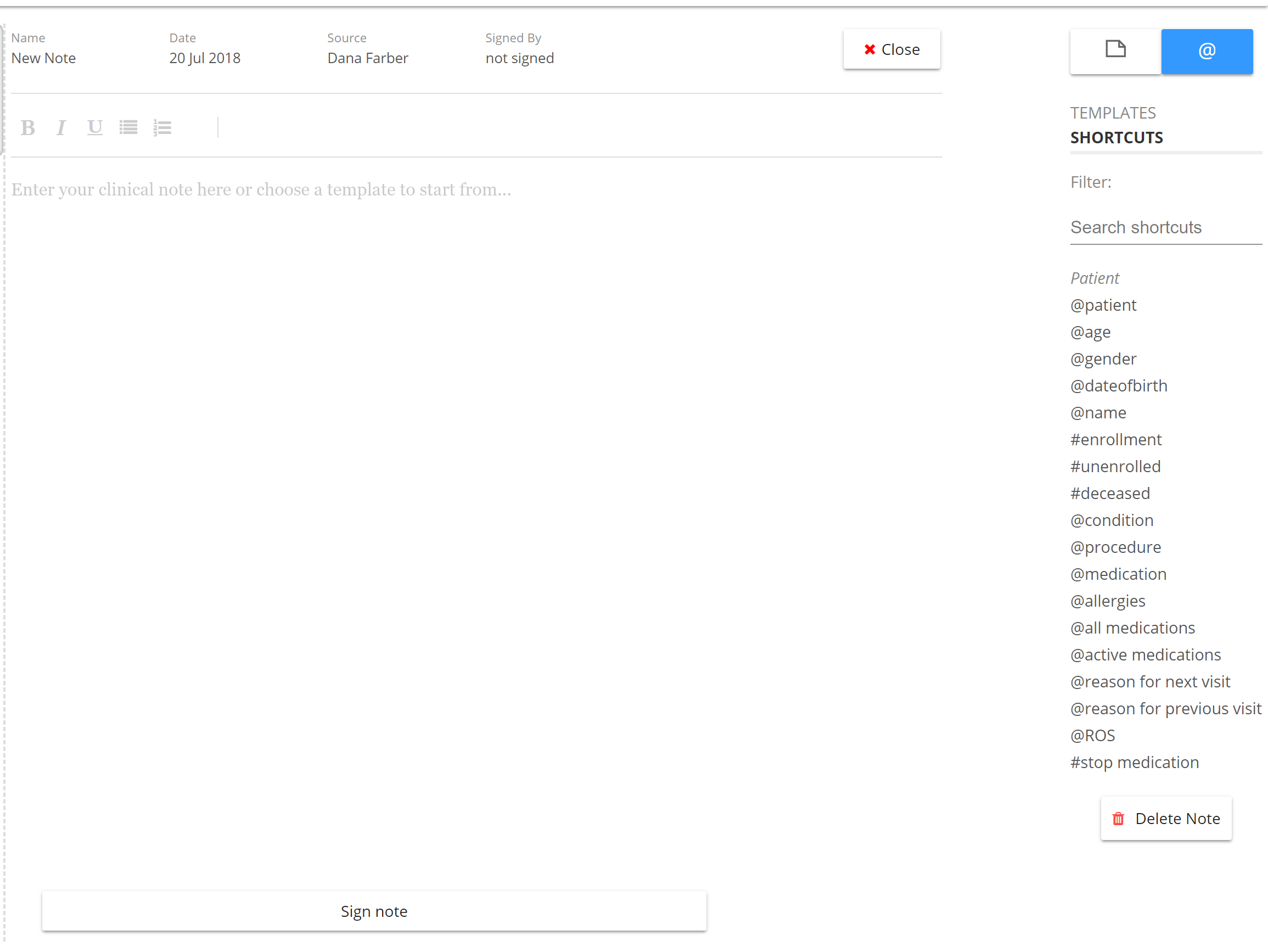
Patient Care

Summary

Patient Context

Figure 2 - Note View - Author Mode

The Note Area consists of four sub-areas shown in Figure 3 labelled in red: (1) Header, (2) Toolbar, (3) Note Content, and (4) Note Assistant.



Toolbar

Header

Note

Assistant

Note

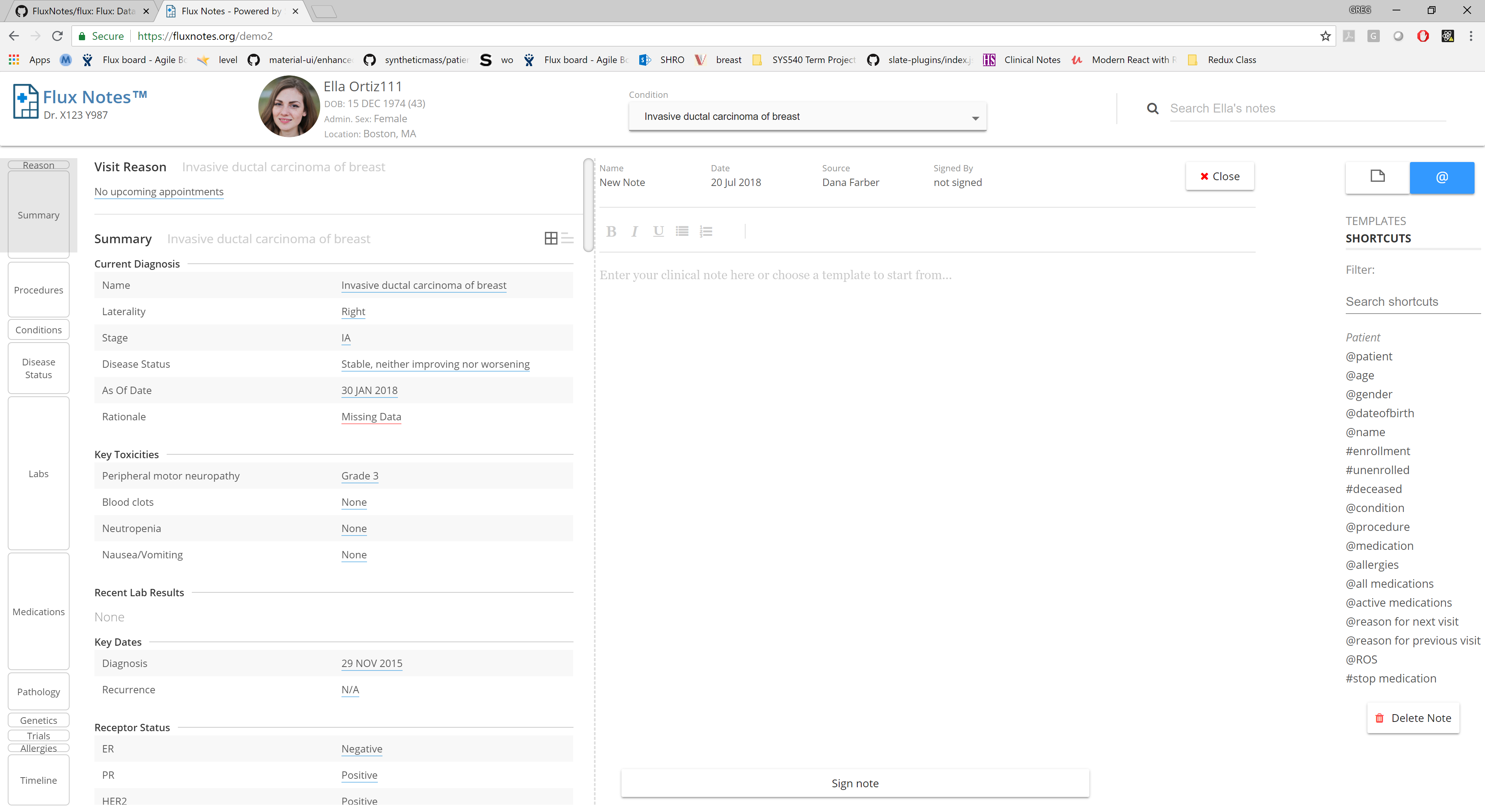
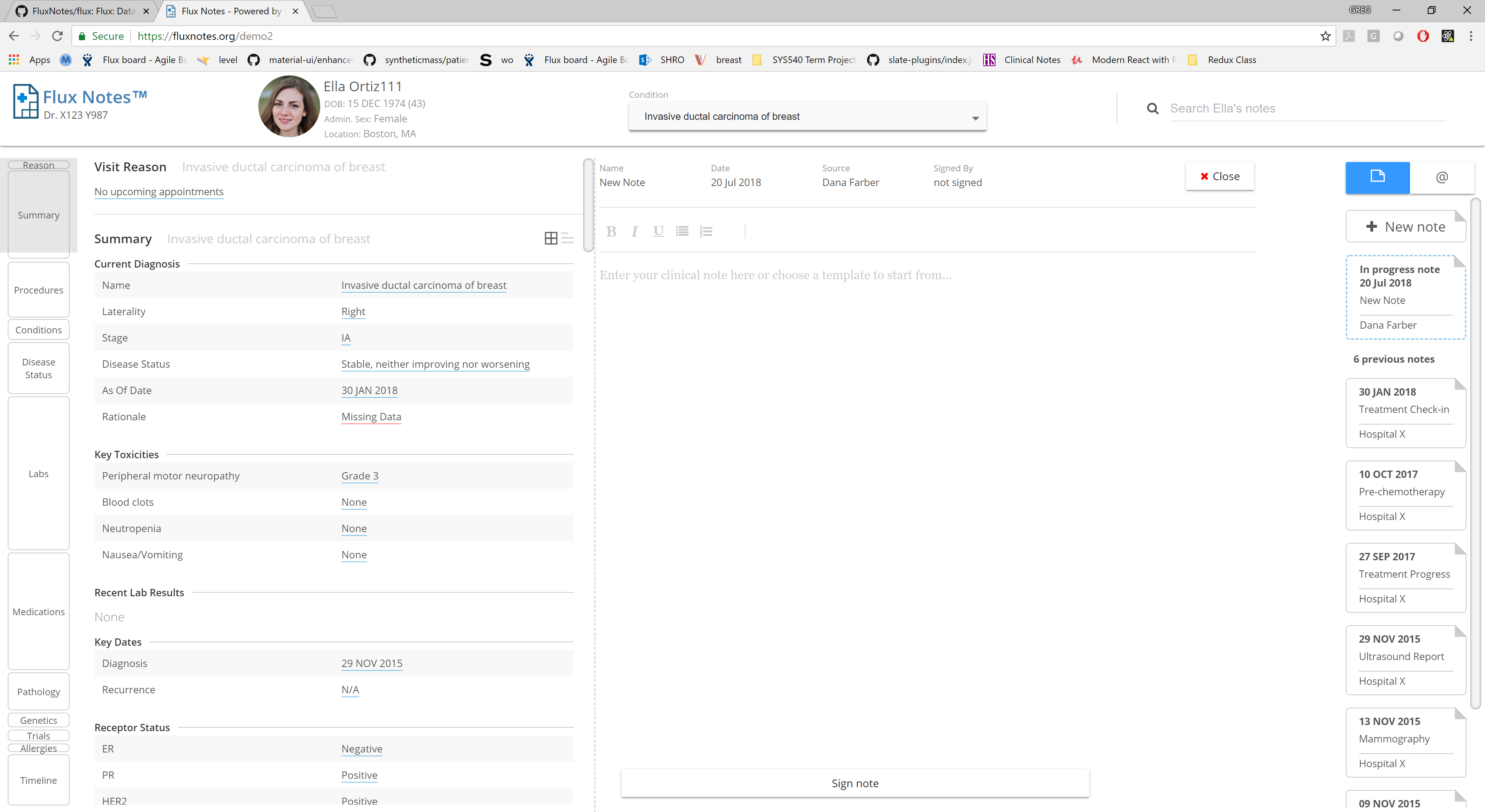
Content

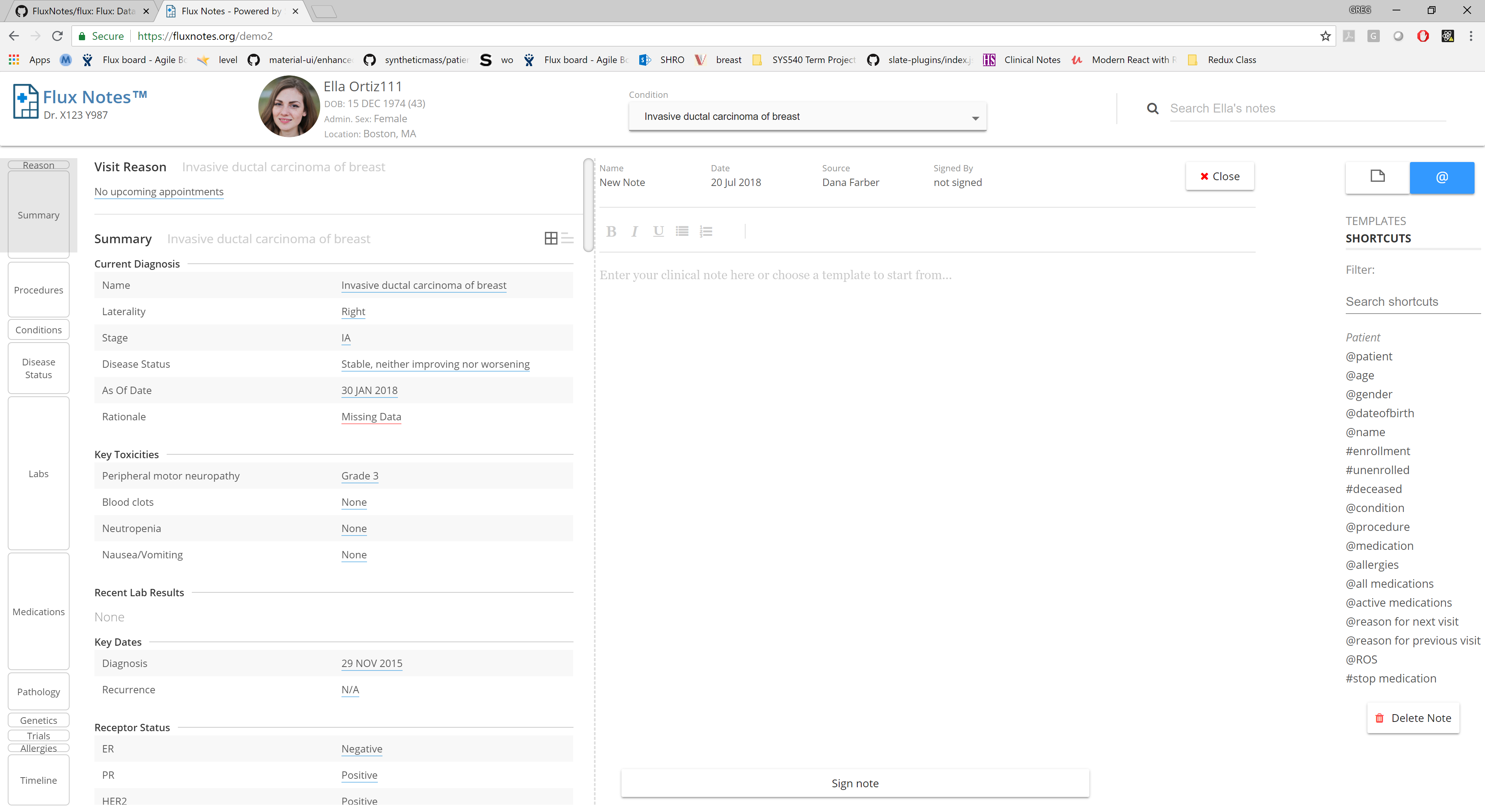
Figure 3 - Note Area

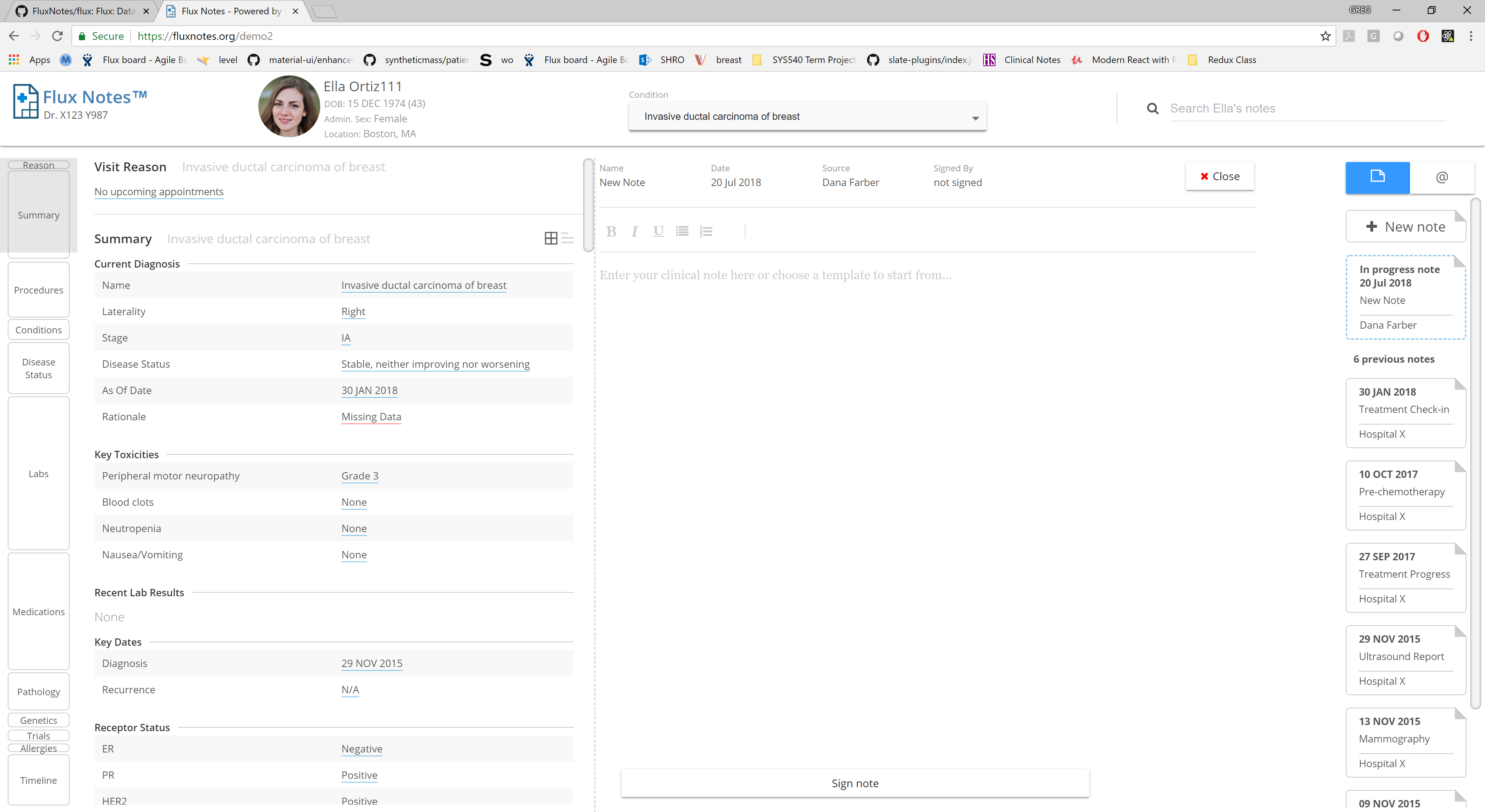
The Header sub-area provides basic information about the new note including its assigned name, the date it was created (today’s date), the source which is the medical facility where the care was provided, and who signed the note which in this case is ‘not signed’ because the note is new and has not been signed yet. Finally, the Header sub-area includes a Close button which will close the note (but it will still exist as an in-progress note) and return to the No-Note View.

The Toolbar sub-area serves two purposes. The left side has styling buttons to create bold, italics, or underlined text in the editor, and it has buttons to create bulleted and numbered lists. The right side shows breadcrumbs for contexts within the note, but there are no contexts in an empty note so it’s empty in Figure 3. See the discussion of context below for a description of what appears in the breadcrumbs half of the Toolbar.

The Note Content sub-area is the actual editor that allows typing or dictating a note in Author Mode. Typing, dictating, pasting, shortcut insertion (see Note Assistant below) and insertion from the Patient Care Summary all happen at the current cursor location. At the bottom of an in-progress note, a Sign Note button is available. Clicking on the Sign Note button will (1) make all structured data created via # shortcuts part of patient record, (2) sign the note so it is no longer in-progress but a signed note on the patient’s record, and (3) close the note putting the application back into No-Note View.

The Note Assistant provides two tabs. The Note tab () is the only one available in the Starting View (No-Note View) when no note is open. The Shortcut tab () is only available in Author Mode.

The Note tab () was described in the No-Note View already as it was the entirety of the Note Area. It supports the creation of a new note or the opening of an existing note – whether in-progress or signed.

The Shortcut tab () on the other hand, is only available when authoring a note. At the top of the Shortcut tab are two options – TEMPLATES and SHORTCUTS.

The SHORTCUTS option lists shortcuts that make sense in the current context. First, the concept of context must be explained. When a clinician is authoring a clinical note using English, they identify subjects or concepts such as the patient or one of the patient’s conditions and then proceed to discuss information related to that concept. These subjects or concepts are referred to as contexts. A new note starts with only one context – the patient. If the clinician refers to the patient or pt, it is clear to a reader that they are referring to Ella Ortiz111 in the example shown in the screen shot because the note is being authored as part of her record. If the clinician then referred to her presenting with Invasive Ductal Carcinoma of Breast, future statements in the clinical note can be understood to be about that condition. For example, after identifying that condition, mentioning that her disease status is stable would imply that her invasive ductal carcinoma of the breast is stable. Mentioning a condition using an @ shortcut creates a context for that condition which provides context for future shortcuts. The breadcrumbs section of the Toolbar described above provides a summary of the current contexts from oldest to most recent. If the list must be truncated, the older ones are dropped to make sure the most recent context is always shown. Note that the context is always relative to the cursor location. Any shortcuts after the current cursor don’t provide context for any new content entered so they do not show up in the current breadcrumbs list of contexts. In addition, all contexts other than the default patient context and condition contexts automatically end when a new paragraph is started. Patient and condition contexts are referred to as global contexts because they apply to the entire note from the point they start (for the patient context that’s the start of the note) to the end. All other contexts are local contexts that apply from the point they are started to the end of the paragraph they are in.

Two types of shortcuts are supported - @ shortcuts and # shortcuts. @ shortcuts insert data from the patient’s current structured data into the note. Some @ shortcuts allow the user to pick one of a set of items to insert (e.g., @condition requires that the user select one active condition).

# shortcuts create new structured data values on the patient’s record. # shortcuts are the important feature that supports the creation of new structured data while authoring a clinical note. That data is not officially part of the patient’s record until the clinician signs the note. # shortcuts often come in sets where one establishes a context to provide individual data values for a new entry in the patient’s record via additional # shortcuts. For example, the #disease status shortcut establishes that the clinician is providing a new disease status value for the current condition in context for the current patient. Additional # shortcuts like #stable or #progressing can be used within the #disease status context to set the actual status value on the new disease status entry. Other data attributes of the disease status can also be set via additional # shortcuts.

Both @ shortcuts and # shortcuts can start a new context.

The list of shortcuts in the Shortcuts tab are the ones that make sense given the current active contexts from most recent context to the oldest (always the patient). For example, the #stable shortcut mentioned above would not appear in that list unless an @condition shortcut was inserted followed at some point later by #disease status. Within the same paragraph and after #disease status, #stable would be in context and therefore shown in the Shortcuts tab near the top. If a status value has already been provided, however, no status values will be shown because it only makes sense to have one per disease status entry.

The TEMPLATES option shows a list of available templates. Templates are unfinished notes that a clinician can start from. Ultimately, clinicians would be able to create, update, and delete templates but right now those functions aren’t available because they aren’t critical to the concept demonstration goals. Templates can include @ shortcuts. If the @ shortcut requires user input, the user will be given a list of the options on the right side of a modal prior to inserting the template. See Figure 4.

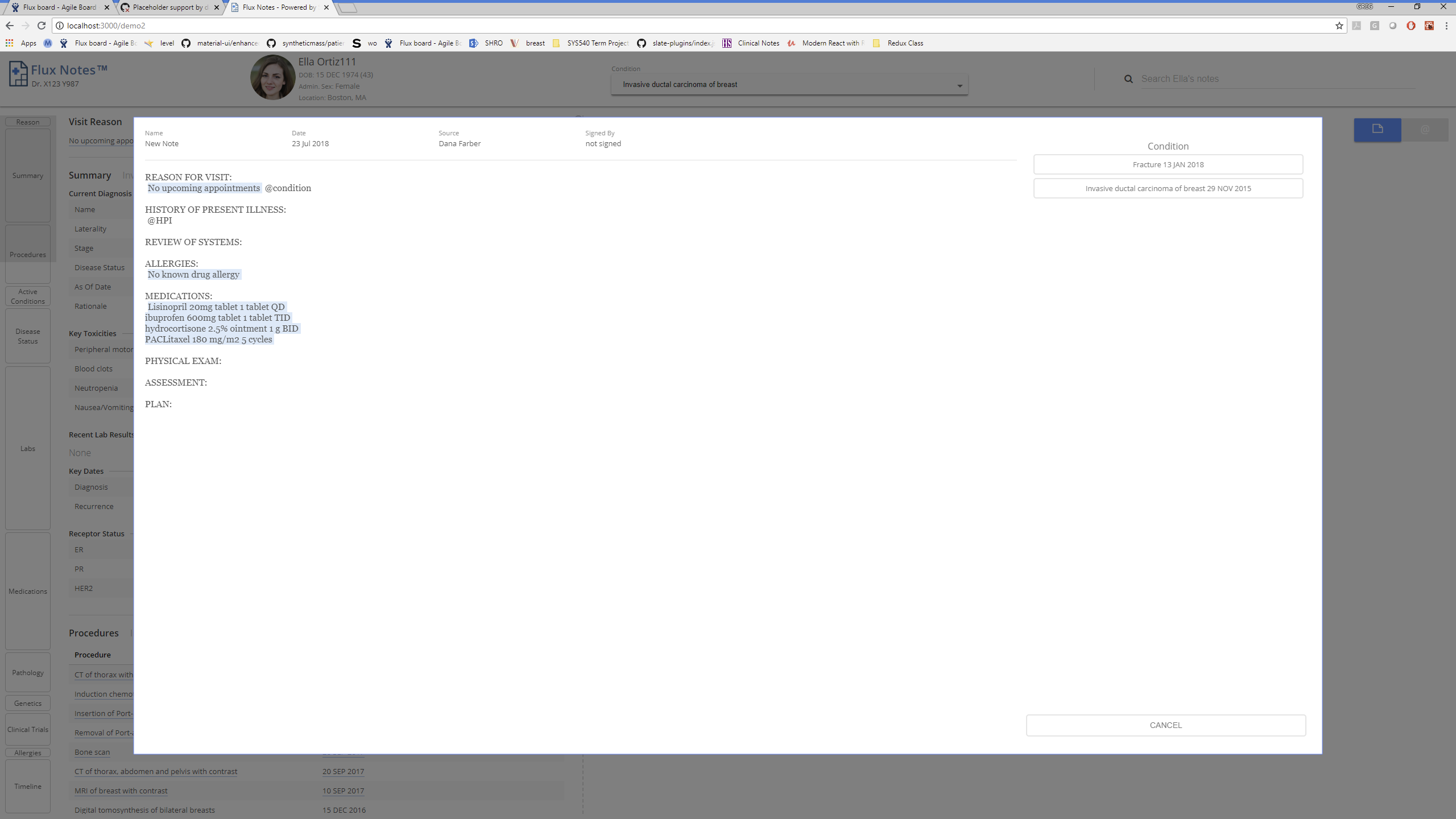


Figure - Modal for Selecting Options During Template Insertion

At the bottom of the Shortcut tab is the Delete Note button that allows you to delete the currently displayed note (only available in Author Mode for an in-progress note). Deleting the currently displayed in-progress note will remove it from the in-progress note list and close it thus returning to the Starting / No-Note View.

## Note View – Read-Only Mode

When an existing, already-signed note is displayed in the Note area, the note view is in read-only mode. In read-only mode, the note view Toolbar is inactive, and no sign button is available. The user can select and copy content from the note, but no editing is allowed. The Note Assistant has no tabs and only shows the content of the Note tab; i.e., no Shortcut tab is available. See Figure 5.

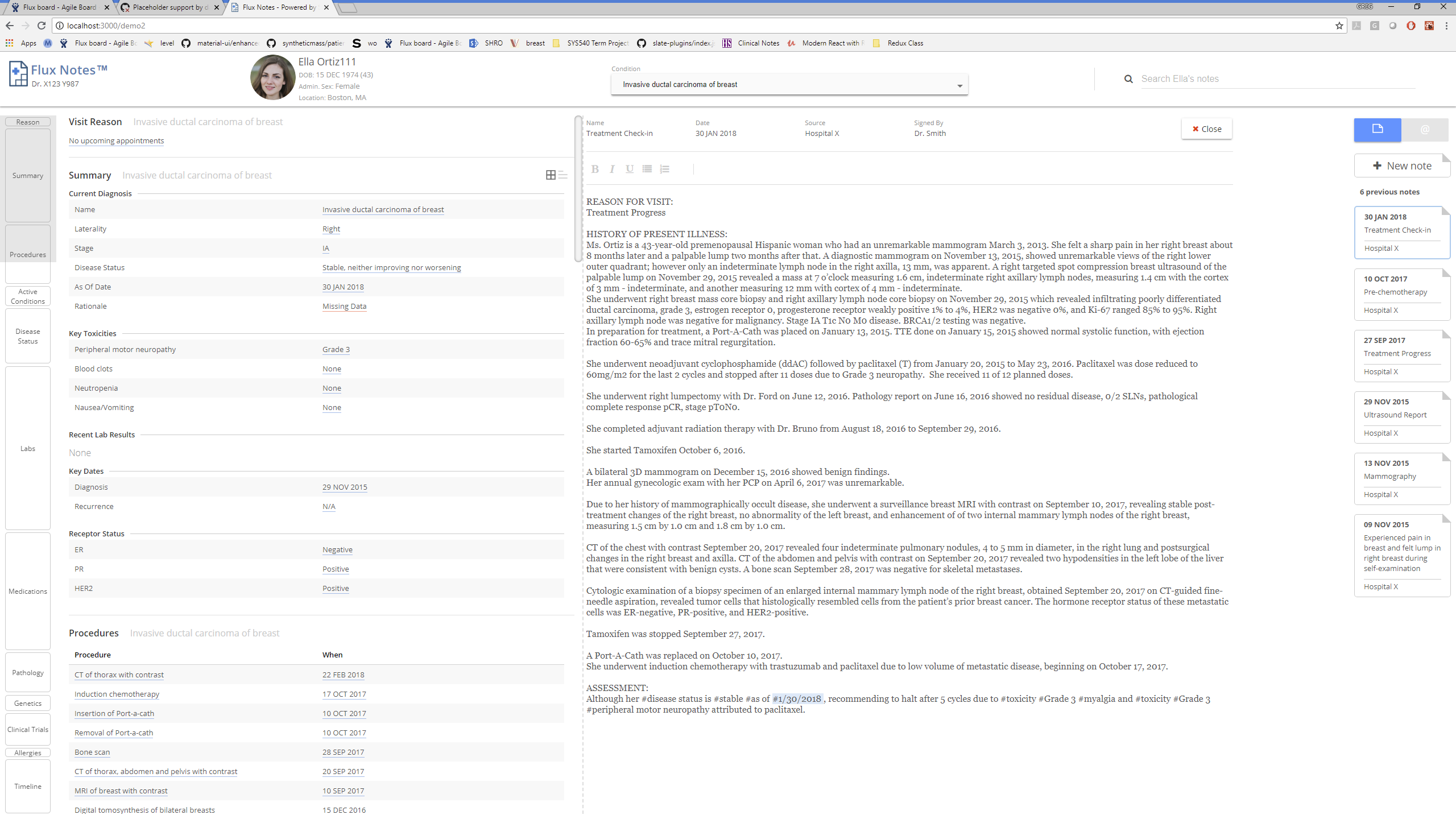


Figure - Note View - Read-Only Mode