

Brillians
(Formerly: SupraVISTA)

Automated Cognitive
Support & Productivity
Enhancement Tools
for VistA/CPRS



Brillians (formerly SupraVISTA)

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*What if your clinical software was more than
an electronic version of paper chart?*

What if it could think like a provider?

What if it could deliver everything you want?

Within seconds...

At point of care...

With just a click or two...

Brillians

**The most advanced Cognitive Support System
for VHA VistA systems.**

*by SupraVISTA Medical DSS, LLC
support@supravista.com*

Brillians (formerly SupraVISTA)

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To all the providers who have helped improve SupraVISTA products with their suggestions.

To skunkworks creators of VHA's VistaA for laying the foundations of modern EHRs.

To our patients who are always teaching us.

And, to all those who are constantly looking for better solutions, more efficiency and higher quality of life - at home and at work.

Disclaimer



Brillians (formerly SupraVISTA) is a software application designed to assist clinicians with data visualization, and to improve clinician efficiency by automating common tasks.

Brillians is NOT designed to, or intended to, provide advice about diagnosis, treatment or any other aspect of any clinical condition, or to influence clinical decision making process. Therefore, Brillians should not be used to make or influence clinical evaluation, choice of medical tests, diagnosis or treatment decisions; or to replace or overrule a qualified healthcare provider's judgment.

In our judgment, no software can substitute the knowledge, experience and clinical judgment of an experienced clinician in his/her respective field. Therefore, Brillians makes no attempt to substitute a qualified human expert's judgment in any aspect of clinical decisions.

With or without using Brillians, the healthcare provider is ultimately responsible for all clinical decisions.

Therefore, anyone associated with programming, promotion, training and other business activities relating to Brillians may not be held responsible for any acts of omission or commission during clinical practice alleged to be due to use of Brillians.

Your use of Brillians implies that you understand and agree with this disclaimer. Otherwise, please shut down this application right away and contact your manager regarding any questions you may have in this regard.

Table of Contents

Foreword	
Part I Introduction	1
1 Welcome	2
2 Imagine this..	2
3 What is a Cognitive Support System?	3
Part II What is SupraVISTA?	4
1 SupraVISTA and clinic work flow	6
2 What makes SupraVISTA unique?	7
Part III SupraVISTA versus CPRS: What is the difference?	8
Part IV Understanding the Basics	15
1 Where does data come from?	16
2 How does it work	17
3 How long does it take?	17
4 Can I harm something?	18
Part V Quick Start	19
1 Uniform Layout	19
2 How to load a patient?	20
3 Menus	21
Part VI User Interface	21
1 Basics of GUI	21
2 Alerts Tab	24
3 Medications Tab	25
4 Labs - All Labs Tab	26
5 Labs - Lab Profiles Tab	27
6 Other Tabs	29
Part VII Understanding Alerts	29
1 What are Alerts	29
2 Why do I need alerts	31

3	Do Alerts imply poor patient care?	32
4	Common questions about Alerts	32
5	Making most of Alerts	33
6	Alerts and the CPRS Problem list	35
Part VIII Understanding Views (reports)		36
1	What are reports?	36
2	Why do I need Views (reports)?	37
3	How to access Views (reports)?	40
Part IX Search Functions		43
1	The need for Search Functions	43
2	Text Search using Keywords	44
3	Search Specialty Documents	46
4	Search Patient Documents	48
5	Other Search Functions	50
Part X Clinical Tools		50
1	Introduction	50
2	Calendar and Alarm	51
3	Letter Writer	52
4	Medical Calculators	57
5	Medical Scales	59
6	Progress Note Writer	61
7	Rx Writer	65
8	Task Manager	72
9	View Alert Helper	76
Index		0



Foreword

Clinical decision making is a complex process that requires evaluation of hundreds of individual data elements as well as interactions between vital signs, patient's medical conditions (diagnoses), laboratory findings, medications, diagnostic reports, etc. Whether working with a paper record or an electronic one, a provider must manually extract numerous data elements and evaluate significance of each element as well as their interactions.

Providers are expected to perform this process on every visit and deliver perfect results every time. A deficiency can result in poor clinical care or a serious clinical error.

Unfortunately, the current generation of electronic health record (EHR) systems is designed to deliver data, not information. This puts the burden of extracting actionable information from large volume of data on the provider.

Inefficient data presentation by EHR systems and need for provider demand an automated solution that provides efficient data analysis, effective information presentation and time saving tools.

SupraVISTA is a software solution developed by the providers for the providers. Therefore, it "thinks" like a provider.

Since 2006, it has been constantly improved by direct provider input. As a result, it is fine-tuned to fit in modern clinical workflow - always ready at point of care.

We know providers will find it extremely user friendly and useful. When providers work more efficiently, performance measures, patient satisfaction and provider satisfaction improve.

Thank You.

SupraVISTA Team.

1 Introduction

Please note that this is a draft version of the help file for version 6.x. The help file is being revised to reflect updates / improvements in Brillians since last major version update. Some screen-shots may be somewhat different than the actual application interface which is always evolving.

Clinical decision making is a complex process that requires evaluation of numerous individual factors as well as interactions between vital signs, patient's medical conditions (diagnoses), laboratory findings, medications, diagnostic View (report)s, etc. Whether working with a paper record or an electronic one, a provider must manually extract important data elements and evaluate significance of each element as well as their interactions.

While human beings are very good at applying logic, we are not so good at systematically processing large number of diverse data points simultaneously. Fortunately, computers are exceedingly good at that.

An objective decision making process involves following steps.

1. **Obtain data** (e.g., from a database or medical record).
2. **Convert data to information:** find important facts out of raw data elements.
3. **Apply business rules:** to determine significance of findings.
4. **Determine if more information is needed.**
5. **Determine if any intervention(s) are desirable.**
6. **Order interventions or request more information** (Rx, Lab tests, imaging, etc.).

Brillians automates steps 1 through 4, leaving steps 5 and 6 to the provider's judgment.

Full scale cognitive support system in medical field have not been practical until recently because there was no easy way to extract data from paper records. The Brillians is the **first and only comprehensive cognitive support system** designed to support CPRS users.

1.1 Welcome

Brillians is a powerful Cognitive Support System that redefines and improves every aspect of your medical practice.

This software application is designed by a practicing physician who struggles with exactly the same issues in daily clinical practice as you do. (Most medical software applications are designed by non-clinician programmers who do not understand the clinical work flow or "how a clinician thinks.")

As you use **Brillians**, you will be pleasantly surprised to notice that it "thinks" like you, the busy clinician. In most cases, a click or a double-click will provide you the information you are looking for. Further, you will love many time-saving facilities that are fully data-aware.

Brillians would not have been possible without VHA's VistA system. That's where the raw clinical data comes from. Needless to say, we could not have implemented such a full-scale cognitive support system using data from paper records.

CPRS is one of the best electronic health record systems available today. We hope **Brillians** makes it even better.

1.2 Imagine this...

As a busy provider you "feel" it every day

- There is more and more to do and you "don't have time to breathe."
- You are getting more patients and there is more to do for each patient.
- PACT (PCMH), JCAHO, performance measures, EPRP, View Alerts, clinical reminders and more.... Yes, quality of care is important but it takes time.
- **As you rush through each day, you are constantly worried about missing something important that may compromise a patient.**

What If...

You have a full time clinical assistant. His job is to review patient's medical record, analyze important findings and memorize important issues to be brought to your attention. As you see the patient, he can answer any questions instantly.

This is what your assistant does for each patient:

- Reviews chart and extracts values for hundreds of items (labs, imaging, meds,

etc.).

- Analyzes clinical data according to pre-set rules. He checks for numerous commonly overlooked issues (is this diabetic with elevated micro-albumin on ACE-I or ARB?, is this patient with AAA getting timely imaging to monitor AAA?).
- Prepares a list of "potential problem." **If you did so personally, at 30 seconds per item, it will take you well over two hour to do such a detailed chart review.**
- For every abnormality, he instantly gives you a detailed report (e.g., for anemia, he instantly shows you CBC profiles, Iron studies, B12/Folate, renal studies, colonoscopy/endoscopy reports and any other values you may want).
- Writes prescriptions for outside pharmacies (Tri-Care, Medicare D, Walmart, etc.).
- Manages your "To do list" (similar to Outlook task manager, only simpler).
- Writes letters to patients.
- Does medical calculations.
- Assists with web searches.
- He has many other tools to help reduce clinical errors and save you time.

Imagine no more. Welcome to [Brillians](#).

1.3 What is a Cognitive Support System?

A "Cognitive Support System" (CSS) can be defined as:

A tool that helps us make better decisions by converting raw data into actionable information.

In theory, a printed page showing "How to choose antibiotic in Critical Care settings" provides some cognitive support.

A better example is CPOE (computerized provider order entry) order checks. CPOE order checks alert provider about possible drug interactions.

However, we don't need to stop at CPOE. That is just the beginning...

Brillians helps provider in many more ways

- **Reduce errors** by alerting provider about abnormal findings and interactions.
- **Save time** by summarizing relevant clinical data.
- **Improve data visualization** to reduce errors due to missed clinical findings.
- **Remind** provider about what needs to be done.
- Provide **time-saving tools** so that provider can focus on the "real" issues.
- **Facilitate easy access** to reference materials (e.g., online drug information).
- And more

2 What is SupraVISTA?

Brillians is the most complete Cognitive Support System (CSS) available today. **It is designed to complement CPRS**, the VHA's Computerized Patient Record System.

Here is a partial list of what Brillians can do for providers and the management.

Avoid clinical errors by alerting provider about potential problem areas

Brillians employs elaborate data analysis mechanisms to find and report any clinical discrepancies using user-defined rules.

CPRS view alerts are **point of event alerts** based on a single event. In contrast, **Brillians** alerts are **point of care alerts** that may be based on one element (e.g., an abnormal lab finding, or multiple findings that may include any combination of demographics, vital signs, labs, diagnoses, medications, etc.).

This powerful alerting mechanism can virtually eliminate expensive lawsuits.

Improve Performance and EPRP measures

Brillians alerts provider where a patient is "not meeting" a performance measure/ EPRP goal. Since provider is advised at point of care, there is ample opportunity to intervene.

Improve provider efficiency by improving data access

Most data access requires just one mouse click since **Brillians** has already parsed

and categorized data when data is imported from CPRS.

We estimate that a provider can obtain over 90% of the commonly used data with just one mouse click.

Enhance data visualization

Most commonly needed data visualization facilities (e.g. ability to sort grids, view only the expired medications or view only the abnormal lab reports) require only one mouse click.

Assist provider with data extraction and summarization

Brillians provides powerful data summarization mechanism in form of "Views" (reports). Views provide all the relevant clinical data about the selected disease or body system.

Brillians comes with a large number of predefined Views. Think of these as "Shared" Views. In addition, each user can create and save his or her own personal Views. This is similar to having shared and personal templates in CPRS.

User Defined Lab Profiles

User defined lab profiles show you desired lab data with one mouse click (no typing required).

Rx Writer

Create and print **ready-to-sign prescriptions** with a few mouse clicks.

Versatile Patient Letters

Create unlimited number of letter templates that not only mail-merge patient's address but also **automatically mail-merge clinical data** you choose. Thus, there is no need to copy and paste data from CPRS.

Task Manager

Manage your "To do list" (similar to Outlook task manager, only simpler).

Provide Common Medical Calculators and Scales

Now you have one click access to commonly used medical calculations and commonly used scales (e.g. mini-mental).

Brillians automatically looks up data items needed for calculations thus there is no manual data lookup, manual data entry or data entry errors. (You can, of course, do calculations with manually entered data for "what if" scenarios.)

Data Mining

Ever wonder which diabetics in you panel have A1c > 9 and LDL > 100 ? Which CAD patients are not on a b-blocker? Which diabetics with micro-albumin of > 2 are not on ACE-I or ARB?

Data mining capability allows you to extract any data elements for a group of patients (e.g. your whole panel). This data can be easily imported into commonly available tools such as Microsoft Access or Excel. Such data mining is indispensable for panel management when you need to **identify a subset of patients to maximize your limited resources** for performance improvement.

Improve Provider's Knowledge-base with one-click access to references materials

Providers maintain up-to-date knowledge-base with one-click, context sensitive links to medical information on Internet sites such as Medline Plus.

Provide facilities frequently requested but missing in CPRS

- Easy, one click, access to numerous, hard-to-find clinical data and reports.
- Keyword highlighting in notes and imaging reports to draw provider's attention.
- Text search capability where relevant.
- Print active medications list for patient with two clicks.
- And many more tools and facilities to streamline daily clinical needs.

And much more...

2.1 SupraVISTA and clinic work flow

We know providers are unlikely to use a software application, no matter how good, if it does not fit in with their clinical work flow.

Designed by a practicing provider, [Brillians](#) seamlessly fits in with our clinic work flow. It loads and processes patient's clinical data within a few seconds in background while user continues to work in CPRS.

Here is the typical work flow on a clinic visit.

Note that only step #3 is new which does NOT interrupt clinician's work-flow and does not need any user action.

1. Clinician greets the patient.
2. Clinician opens patient's record in CPRS. Continue with your normal routine of starting a new progress note, etc.
3. **Brillians automatically loads the clinical data for the patient in CPRS. No action needed.**
(The clinician can also press Control + F12 key or click a button on Brillians's main form to load patient's data). The data loading and analysis process is completed in the background while you continue to work in CPRS. Brillians provides a non-obtrusive visual cue to its progress.
4. Instead of time-consuming, manual scanning of CPRS to discover abnormal findings, look at **Brillians's** Alerts tab. If you want to know more about an alerted item, click on it and review data in the right pane. For more detailed information, double-click on the alert to open a detailed View (report) instantly.

2.2 What makes SupraVISTA unique?

There are a number of Clinical Decision Support System (CDSS) available today. A quick internet search will reveal various implementations claiming to be providing clinical decision support.

Most such systems are designed to be "Expert Systems" with the idea that providers need help with treatment guidelines and protocols. A few are artificial intelligence-based/probability-based program that try to help with diagnosis.

Nearly all such applications fall into one of the following general categories.

- ***Disease specific management based on clinical guidelines***
For example: Athena for Hypertension.
- ***System or specialty specific knowledge-bases***
These provide treatment guidelines/protocols (HIV, Leukemia, etc).
- ***Diagnostic expert systems – probability based diagnosis***
DxPlain: "...uses a set of clinical findings (signs, symptoms, laboratory data) to produce a ranked list of diagnoses..." (OpenClinical.org).

According to information available at the time of this writing, all these applications are "retrospective" with the central theme being: **"if you know the problem, I can help you with the solution."**

But what if the provider does not know that a problem exists?

Brillians is Prospective

- It actively and systematically analyzes the clinical database to identify problem areas which are easily missed by a human being.
- It is NOT limited to a particular disease, system or a specialty.
- For each identified problem, it instantly provides detailed View (report) showing what is noted in the medical record about this problem.
- Views (reports) are "educational" because they point out what we don't know about this problem, but should.
- Views (reports) provide hyperlinks to clinical guidelines and knowledge-bases for immediate access to educational materials.

3 SupraVISTA versus CPRS: What is the difference?

CPRS and Brillians are designed for different purposes. Many of the difference shown below are due to the fact that these applications are trying to achieve different goals.

CPRS is the graphical user interface (GUI) a front-end to the VistA database. VistA is an electronic data storage mechanism for clinical data. As the graphical user interface, CPRS is designed to show what the user requests. **CPRS does not decide what is important nor what user *should* see.**

Brillians is a data analysis and data visualization tool. It converts a subset of patient's raw clinical data into clinically relevant **information**. Thus, using predefined "standard of care" rules, Brillians can identify what is clinically important and what items need user's attention.

Brillians is designed to complement and enhance CPRS. It does not replace CPRS which provides a different set of functionality.

The tables below summarize some of the differences between Brillians and CPRS.

Chart Review	Brillians	CPRS
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	You can do a complete chart review with one click in about one minute (sit back and watch the monitor). You can set the speed of review and, if necessary, go to previous or next item at your own pace.	No equivalent facility
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Grids	Brillians	CPRS
	Grids are used extensively to present data, as they are effective visual tools for displaying tabular data.	Same in CPRS
Sorting	Nearly all grids can be sorted by any column simply by clicking on the column header. For example, try Medications grid on Meds tab. You can sort on any column. (In some grids, this functionality is disabled on purpose).	Grids do not sort in CPRS.
Filtering	One-click options to view only the desired data (e.g., view expired Rx only or abnormal labs only.).	No equivalent facility
Copy	Where relevant, data in selected grid rows can be directly pasted in CPRS progress note or copied to clipboard.	Only once cell in the grid can be copied. User can not copy the whole row or multiple rows.
Print	Where relevant, data in grid can be printed (e.g. Medication list for patient's info).	No equivalent facility

Alerts	Brillians	CPRS
	Automatically analyze patient's record according	

	to predefined rules and show abnormalities as alerts in a sortable grid (see alerts tab).	No equivalent facility
	Single click and double click on alerted item provides extensive, relevant information.	No equivalent facility
	Selected Alerts can be copied and pasted in progress note.	No equivalent facility

Diagnosis	Brillians	CPRS
	(Diagnosis tab in Brillians is equivalent to Problem List tab in CPRS). A double click on diagnosis provides an extensive chart review for the given diagnosis using a user defined, data-summarizing View (report).	No equivalent facility
	Diagnosis tab displays list of medications in the right of the tab so that user can see diagnoses and medications on the same page.	No equivalent facility

Meds	Brillians	CPRS
	Extensive grid sorting and filtering capabilities.	No equivalent facility
	Print active meds list (a frequent patient request) with two clicks.	No simple facility (cumbersome alternatives do exist).
	Any medication can be linked to any user-defined data-summarizing View (report). Double clicking of such medication (e.g.	No equivalent facility

11

Brillians

	Metformin) will execute the View (report) (e.g., Diabetes Review).	
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Vitals	Brillians	CPRS
	Displays extensive vitals data including weight chart and BMI on screen without any user action.	Limited vitals data on cover sheet. Getting more data involves user action. If you don't look, you may not see.

Labs	Brillians	CPRS
	<p>Two tabs are provided to display lab data.</p> <p>"Labs Profiles" tab is intended for lab profiles and certain infrequently used labs for which we need a long-term view. It can include any labs that you wish.</p> <p>"Labs (Recent)" tab includes all the labs done in past 3 years (may vary per facility setting) and presents these in a Grid format.</p>	Similar functionality but requires specific user intervention (query) for each selection.
	Grid on "Labs (Recent)" tab provides extensive filtering capabilities. With one click, you may view all labs or abnormal labs only; limit view to selected test only; or limit view to labs in the selected, user-defined lab profile.	No equivalent facility
	"Labs Profiles" tab allows extensive data visualization with one click and no keyboarding needed.	No equivalent facility
	Both lab tabs allow easy data copying to Clipboard, including copying of data from non-contiguous rows of labs grid.	Data in Grids cannot be copied.

13

Brillians

	Any lab test in labs grid can be linked to any user-defined data-summarizing View (report). Double clicking of such lab test (e.g. Glucose) will execute the View (report) (e.g. Diabetes Review).	No equivalent facility
	Grid on "All Labs" tab supports search.	No equivalent facility

Imaging	Brillians	CPRS
	<p>The Imaging tab shows "Imaging Impressions" by default, listing most recent imaging impressions first.</p> <p>Since most imaging impressions are only 3-5 lines long, about 3-4, most recent imaging impressions are visible on screen without any scrolling or other user action</p>	<p>User must select an imaging report from list and can view only a full report.</p> <p>Viewing imaging report almost always requires scrolling down the page.</p>
	<p>One click access to ALL the imaging reports as one document.</p>	<p>No equivalent facility</p>
	<p>Text search is supported (except when showing Imaging Impressions).</p>	<p>No equivalent facility</p>
	<p>Keyword highlighting is supported to draw user's attention to certain words and phrases.</p>	<p>No equivalent facility</p>

Reports	Brillians	CPRS
	<p>"Views" (reports) form provides instant access to a large number of Views in different categories.</p> <p>Since Brillians has already parsed, prepared and categorized needed data, Views are displayed instantly.</p>	<p>No equivalent facility.</p> <p>The user must manually locate desired data in its respective section.</p>

Keyword	Brillians	CPRS

Search		
	Application supports Google-like keyword search. Thus, user can search a large subset of clinical data (progress notes, imaging, labs, immunizations, cytology, etc.) for one or more keywords as if the entire dataset was one piece of text, like a Microsoft Word document.	No equivalent facility. The user must manually locate desired data in its respective section.

Other searches	Brillians	CPRS
	<p>Application supports many ways to find and search progress note, consults, clinical procedures for the desired duration (e.g., past 5 years). For example, Cardiology may have 15 different note titles (Progress notes, consultations, Echo, Stress test, etc.) in a given VAMC. User can load all notes for the selected titles for the desired duration.</p> <p>Loaded progress notes are shown in chronological order. User can easily search the entire text using relevant keywords.</p> <p>User can search VAMC's formulary with a few keystrokes. Typically, the formulary contain 4,000 to 5,000 items that no user can remember.</p>	No equivalent facility. The user must manually locate desired data by loading each progress note.

4 Understanding the Basics

Brillians is very easy to use once user understands some basics.

1. **Brillians** follows all the Windows user interface conventions. Thus, all the user interface elements, menu, buttons, grids, etc., behave as you expect. There is nothing new to learn.

- a. All buttons and grids, etc., are clearly marked with text labels. There are no cryptic icons to remember.
 - b. Where necessary, user interface elements provide "bubble help." Bubble help is one-two lines of information when you move mouse over the user interface element (e.g., a button).
2. The User interface is logical and intuitive. For example,
- a. To reduce learning curve, **Brillians's** tabbed interface mimics CPRS tabs though **Brillians's** tab provides additional functionality.
 - b. All search related buttons are on the top panel of the main form.
 - c. The middle panel is has the tabbed display like CPRS.
 - d. All tools related buttons are on the bottom panel of the main form.
3. For similar functionality, the user interface is similar on various Sub-Forms of the application. For example,
- a. The Forms with long list of items to choose from (e.g., letters templates list on the Letter Writer, Medications list on the Rx Writer form), have similar user interface consistent with Windows conventions.
 - b. User interface to perform text search on various search related Forms is similar across the application.
4. Consistent with modern Windows interface, each Sub-Form (e.g., Rx Writer) opens in its own window and can be independently accessed and closed as needed. There are virtually NO "modal" Forms. (A modal form must be closed before the user can proceed to the next step, for example, Encounter form in CPRS.)

4.1 Where does data come from?

The clinical data used by **Brillians** comes directly from the VA Medical Center's (VAMC) VistA database system. When you ask **Brillians** to analyze a patient's data, it loads a predefined subset of data using the same mechanisms as CPRS. Once the data has been loaded, **Brillians** analyses thousands of lines of text, extracts clinically relevant data elements and applies predefined standard of care rules to identify useful information hiding within the large volume of data.

There are multiple ways to load patient's clinical data:

1. If configured to do so, **Brillians** **automatically synchronizes with patient in CPRS**, i.e., when user changes to a different patient in CPRS, **Brillians** will automatically load that patient.

2. Press "**system-wide**" hot-key: **Control+F12**. User can press this key while continuing to work in CPRS or another applications.
3. A button is provided for this purpose on [Brillians](#) 's main form.

Of course, all the data loading and data processing happens behind the scene while user continues to work in CPRS.

Technical:

For the curious, Brillians uses EXACTLY the same REMOTE PROCEDURE CALLS (RPCs) to load data from VistA that CPRS uses. RPCs are a standard, VA approved method to communicate with the VistA system. All communication with the VistA system is encrypted using SSH which is the VA approved mechanism used by CPRS and other VistA applications.

4.2 How does it work

Wondering how [Brillians](#) performs all the fancy foot-work?

Most of the clinical data loaded from VistA is in form of unstructured text which is not very useful. [Brillians](#) "reads" this text, extracts data and places it in an internal database. Having done so, it now knows where to find the desired data.

For example, when you want to write a letter, [Brillians](#), reads letter template and fills in the mail-merge fields (name, address, lab values, etc.) using information in its internal database. Similarly, it can automatically look-up values to be used by a given calculator.

Want a detailed View (report) on Anemia? [Brillians](#) knows where to find CBC and electrolyte profiles, Iron studies, Colonoscopy and biopsy reports, and just about anything else you may want.

4.3 How long does it take?

Internally, [Brillians](#) performs a two step process. These steps are invoked by user with a key combination or a mouse-click.

1. When you ask [Brillians](#) to load a patient's data, it requests a subset of clinical data from the VistA database. **This step typically takes about 5 seconds.** (If the patient's records contains a lot of data, this may take little longer but rarely over 10-12 seconds.)
2. Once the data is available, [Brillians](#) copies this text into its internal buffer for parsing and analysis. **This step typically takes about 5 seconds** (it may take

a little longer depending on amount of data but rarely over 7-10 seconds).

For a typical patient, the entire process takes about 10-12 seconds. Since the above steps take place in the background, user does not have wait or be interrupted from working in CPRS or other application.

Once you realize the power of **Brillians**, **you will agree that this is the best use of 10 seconds** of your clinic visit time.

Sometimes, when clinicians are busy and running behind, 10 seconds may seem like a long time. **But remember, busier you are, the more you need Brillians.** It is at times like this when we are most prone to clinical errors, and this is when we really need help of a cognitive support system. *As noted previously, Brillians works in background so you may continue doing other tasks e.g., greet the patient, or start a new progress note in CPRS.*

4.4 Can I harm something?

In one word: No. Because **Brillians** works with a copy of clinical data, not the actual data in the VistA database. Therefore, any data manipulation in **Brillians** does not affect the data in VistA or CPRS.

Here is a more detailed answer to: Can I harm something?

Brillians is a stand-alone Windows application. It makes no "live" connection with CPRS.

- You can not harm the computer or any software by doing something in **Brillians**. *So feel free to experiment* - press buttons, try clicking and double-clicking on grid items.
- You can not "accidentally" write anything into CPRS or VistA. You can, of course, copy and paste data from **Brillians** into CPRS, as you can do from any other application.
- **Brillians** does not store any data, nor does it transmit clinical data over your network, intranet or internet. So there are no information security or privacy issues to worry about.

5 Quick Start

If you have not done so already, we strongly recommend that you review items in chapters: "What is Brillians" and "Understanding the Basics" this help file.

From ground up, **Brillians** is designed for ease of use. The interface is simple, logical and somewhat similar to CPRS. Most of the user interaction happens on application's main form. Secondary forms (Sub-Forms) are used for special purposes, e.g., to display Views, Search forms, Medical Calculators, Rx Writer, etc.

Once you understand the basics, you should be able to use **Brillians** intuitively. As described in this section, you will know where to expect and find information quickly and easily.

Note: For technical reasons, you can run only one instance of **Brillians** at a time (there is an option to override this on "User Options" form). Therefore, if you try to start another copy of **Brillians**, it appears to start but shuts down immediately. This is normal.

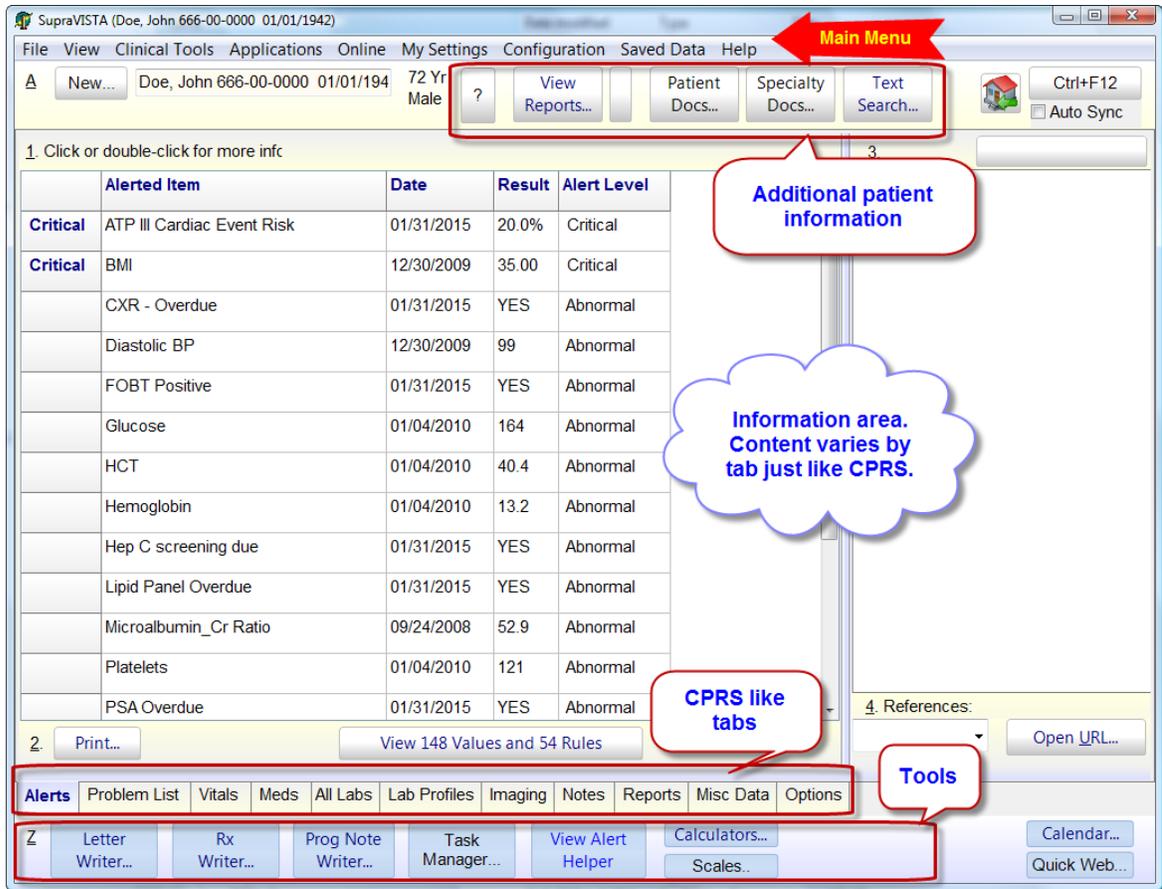
5.1 Uniform Layout

Brillians supports a modern interface. As far as possible, all the information is provided on one (main) form using a familiar tabbed interface. Certain information and tools are always available, e.g., patient ID data, tools (Rx Writer, Calculators) as shown in snapshot below.

Brillians main form user interface

- The top of the form has the menu similar to standard Windows applications like Microsoft Word.
- The panel below the main menu shows patient identification and buttons to access additional information (i.e., find and search clinical data).
- The large middle part of the form organizes clinical data on tabbed pages (similar to CPRS though Tab names and their functionality may be different).
- Commonly used tools (Letters Writer, Rx Writer, Task Manager, Calculators, etc.) can be accessed anytime from the bottom panel. Additional tools are accessible from the "Clinical Tools" menu item on the main menu.

Layout of the Main Form



Brillians secondary form user interface

The secondary forms (i.e., the forms that display search functions, Medical Calculators, Rx Writer, etc.), follow a similar pattern. All action buttons are along the bottom border of the form. The "Close" button is always in the right-lower corner.

5.2 How to load a patient?

Brillians, is designed for data analysis. It obtains clinical data from your VAMC Vista system using the same techniques as CPRS.

How to load a patient's data into Brillians

1. Start <%APPNAME%>, if necessary.
2. Start CPRS and load a patient.

3. At this point, there are multiple ways to load patient's clinical data:
 - a. If configured to do so, **Brillians automatically synchronizes with the patient in CPRS**, i.e., when user changes to a different patient in CPRS, **Brillians** will automatically load that patient.
 - b. User can press "**system-wide**" hot-key: **Control+F12** anytime to load or reload (i.e., refresh) data. User can press this key while continuing to work in CPRS or another applications.
 - c. On **Brillians** 's main form, a button is provided for this purpose .

Important: You can continue to use CPRS while **Brillians** loads data in the background. It displays a small, non-obtrusive window at the top of the screen to show progress. This window disappears automatically once the data loading and analysis processes are complete.

5.3 Menus

Brillians utilizes an open and inviting interface. There is very little that the user needs to remember.

In general, as a clinician, you will rarely use menus. All commonly used functions can be accessed from clearly marked user interface elements (buttons, drop-down boxes, etc.) placed close to clinical data, right where you expect them.

Menus are designed to provide access to infrequently used features. Menus follow standard Windows naming conventions and organization. Menu captions on the main form's menu bar are self explanatory.

6 User Interface

6.1 Basics of GUI

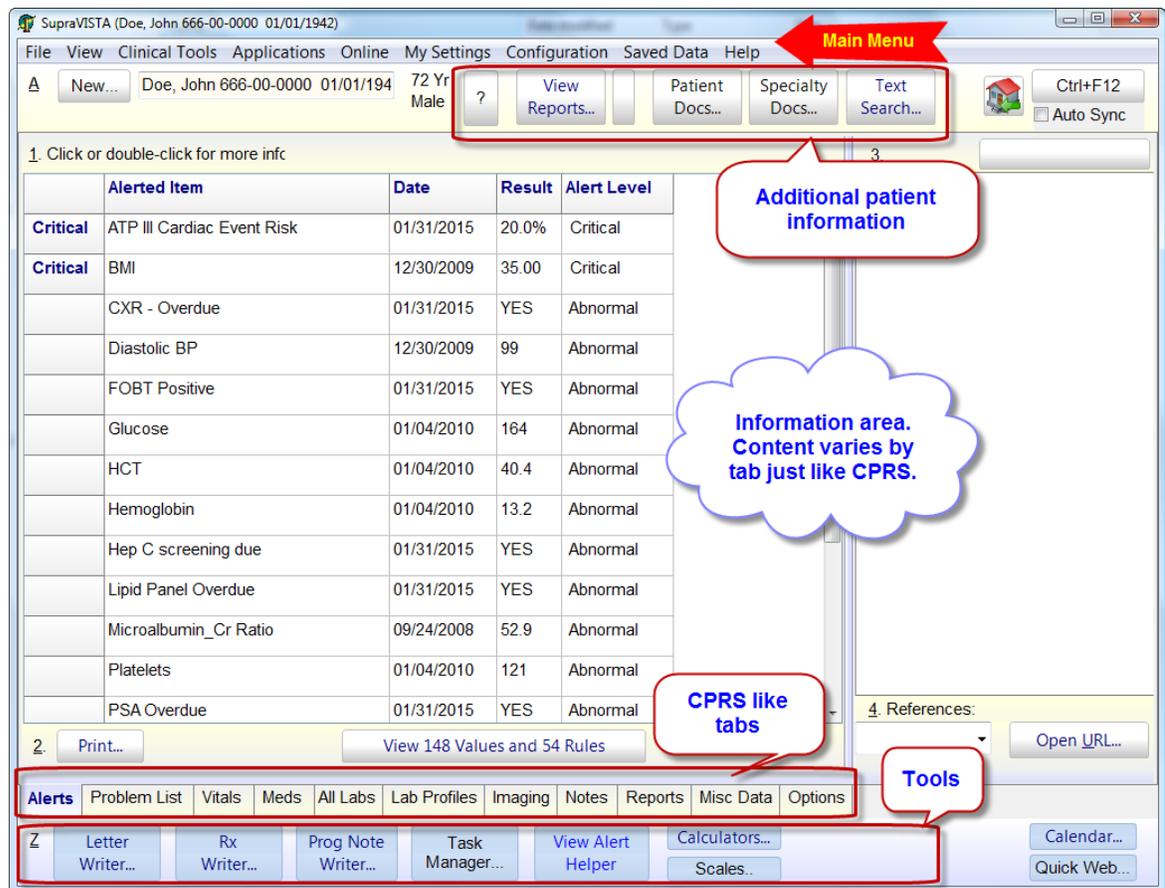
Creating Graphical User Interface (GUI) for clinical applications is a challenging task. At center of this challenge is the fact that a limited amount of screen surface (just over one square foot on a 17" monitor) must accommodate a very large amount of clinical data as well as provide sufficient room for data manipulation controls.

Modern software applications use two methods to deal with issue of large volume of

data. **Brillians** uses both these methods effectively.

1. Use tabbed pages to maximize use of the screen area as CPRS does. This also allows logical organization of data into meaningful categories, e.g., problem list, medications, labs, etc.
2. Use a separate form (a "Sub-Form") for dedicated functions, e.g., to provide user interface to write prescriptions (Rx Writer).
- 3.

Layout of the Brillians main form



On **Brillians's** tabbed interface each tab's caption clearly shows what kind of data to expect on that tab. As a data analysis and data visualization application, **Brillians** allows extensive control over "what and how" of data display.

Here is a general overview of **Brillians's** user interface and data display elements. Note

that all the elements described below follow standard Windows behaviors. For example, you can select non-contiguous rows in a grid using control-click or sort a grid by clicking on a column header cell.

Buttons:

Buttons are one of the most commonly used GUI elements. In **Brillians** each button's caption clearly show the intended purpose of the button. In general, we have avoided cryptic icons to indicate button's purpose.

Grids:

- In **Brillians**, most of the grids can be re-ordered by any column by a click on a column header cell.
- Nearly all grids allow contiguous and non-contiguous row selection.
- Nearly all grids allow you to paste selected rows in CPRS or copy to Windows clipboard (try Right-Click on Grid).
- If applicable, the GUI elements like buttons and drop-down boxes allow the user to "filter" data so that user can view the desired data only. For example, for Labs, you may want to view "Abnormal Labs only"; or on Meds tab, you may want to view "Active Rx" only.

Text:

Text displayed in **Brillians** can be highlighted and pasted into CPRS progress note (highlight the desired text and right-click on the selected text).

Drop-down boxes:

Drop-down boxes (also known a combo boxes) hold a list of items while taking up minimal screen space. **Brillians** uses drop-down boxes where user needs to choose one item from many choices.

Data specific actions:

Data specific actions fall into two general categories. **Brillians** provides extensive user control over such actions.

1. View data: Setup display so that only the desired data is visible, This is typically used for grids.
2. Use data: for clinical needs e.g., print medications list for patient or paste a letter into CPRS.

Hyperlinks:

Hyperlinks are used in various places and serve the conventional function of taking user to the resource linked to the Hyperlink.

6.2 Alerts Tab

Alerts tab is unique to [Brillians](#). There is no equivalent in CPRS. Therefore, it is described in somewhat greater detail than other tabs.

Alerts tab serves as the "Home" tab for [Brillians's](#) main form. This tab displays one of the most important feature, namely, the ability to analyze patient's clinical data and display a list of abnormalities that need clinician's attention. Please see more details in the chapter titled: Understanding Alerts.

[Brillians](#) Alerts are abnormalities that require clinician's attention. Alerts are generated by automated data analysis and are displayed in a grid in the left pane as shown in the image below.

When user clicks on an alerted item in the grid, additional information is displayed in the details pane (the right pane). Further, user interface dynamically changes to provide additional information.

1. The details pane (the right pane) shows additional information. This could be historical information (e.g., for a blood test) or guidance regarding alerted item.
2. If the Alert is configured to point to a View (report), the user can get detailed information about the alerted item by double-clicking on the Alert in the grid.
3. The button just above the details pane changes its caption. Clicking on this button displays more detailed view of the given alerted item. For example, if the lab test is part of panel (e.g., Potassium is part of Electrolyte Panel), then user can see that panel with one click.
4. Also, just above the details pane, the "Search..." button performs keyword search of the medical record using the search-words associated with the given Alert.
5. The drop-down box below the details pane is updated. User can access Clinical Practice Guidelines (CPGs), review articles or other information on Internet or Intranet that has been linked to this Alert.
6. User can sort the grid by clicking on the column header. For example, the user may want to see the Alerted items in alphabetic order or sort the "Critical" alerts to the top.

Layout of Alerts tab on Brillians main form

The screenshot shows the Alerts tab in the Brillians main form. It features a grid of alerts and a detailed view for a selected item (Potassium). Callouts highlight the following features:

- User can get a detailed report about the selected problem:** A callout points to the 'View Reports...' button.
- This "context relevant" button shows more:** A callout points to the 'View Reports...' button.
- Alerts grid showing abnormalities found:** A callout points to the main alerts grid.
- Info-buttons (URLs) for selected the problem:** A callout points to the 'Hyperkalemia Overview' link in the 'References' section.
- Historical details about the selected abnormality so that user can see the trend:** A callout points to the historical data table for Potassium.

Alerted Item	Date	Result	Alert Level
A1c Overdue	01/31/2015	YES	Abnormal
Critical ATP III Cardiac Event Risk	01/31/2015	10.0%	Critical
Glucose	07/19/2014	184	Abnormal
Hep C screening due	01/31/2015	YES	Abnormal
Critical Lipase	07/19/2014	199	Critical
Potassium	07/19/2014	3.3	Abnormal
Triglyceride	06/13/2014	280	Abnormal

Date	Lab Test	Result	Unit
07/19/2014	POTASSIUM	3.3 L	mmol/L
06/13/2014	POTASSIUM	3.7	mmol/L
10/23/2013	POTASSIUM	4.2	mmol/L
10/09/2013	POTASSIUM	4.1	mmol/L
09/03/2013	POTASSIUM	4.1	mmol/L

6.3 Medications Tab

Medications tab is similar to Meds tab in CPRS. However, it adds many needed features that are not available in CPRS. In addition to displaying medications list in a grid, it displays filtering and other options in the left pane.

User can:

1. Filter the medication list by status (e.g., active, expired, discontinued, etc.).
2. User can sort the grid by clicking on the column header.
3. User can print medications list. User can also edit the list before printing, e.g., to add remarks or highlights (bold, change font color) to emphasize certain medications.
4. User can select desired medications in the grid and paste in CPRS progress note.
5. User can show or hide the ICD codes

Layout of Meds tab on Brillians main form

SupraVISTA (Demo, ProgNote 000-00-)

File View My Settings Configuration Saved Data Help

56 Yr Male ? View Reports... Patient Docs... Specialty Docs... Text Search... Ctrl+F12 Auto Sync

1. Filter by Status 2. All Rx Active Rx Cost/Refill: \$55.41

Medication	Qty	Status	Refills	Last Filled	Expiry Date
ALBUTEROL 90MCG (CFC-F) 200D ORAL INHL	3	ACTIVE	3	07/23/2014	
POTASSIUM CHLORIDE 20MEQ SA TAB	20	ACTIVE	0	07/21/2014	
BUDESONIDE 160/FORMOTER 4.5MCG 120D INH	1	ACTIVE	6	07/21/2014	
ERGOCALCIFEROL (VIT D2) 50,000UNIT CAP	15	ACTIVE	0	07/21/2014	
OMEPRAZOLE 20MG EC CAP	90	ACTIVE	2	07/21/2014	
	1	DISCONTI NUED	0	06/02/2014	

Print: select output: Patient Copy Print...

Alerts Problem List Vitals **Meds** All Labs Lab Profiles Imaging Notes Reports Misc Data Options

Z Letter Writer... Rx Writer... Prog Note Writer... Task Manager... View Alert Helper Calculators... Scales.. Calendar... Quick Web...

6.4 Labs - All Labs Tab

Users access lab information very frequently when providing patient care. Therefore, Brillians provides many features that facilitate lab review and reduce the risk of missing important abnormal findings.

In addition to displaying Labs list in a grid, it displays filtering and other options in the left pane. Many of these options are not available in CPRS. For example, in CPRS, user can not filter-out normal labs, and display abnormal labs only.

User can:

1. Filter the labs by result (e.g., show all or show abnormal, etc.). Mostly, users are interested in abnormal labs only.
2. Display the selected labs only (e.g., A1c or Hemoglobin) to see the long-term trend for the selected lab test.
3. User can sort the grid by clicking on the column header.

- User can ask for the list of labs that have been abnormal at least once. See the "Unique Abnormal" labs panel along the right margin of the image. Though this patient had hundreds of lab tests over past 3 years, only the lab tests shown in the "Unique Abnormal" panel have been abnormal. Clicking on one of the items in this panel will show historical data about that lab.
- User can select desired labs in the grid and paste in CPRS progress note.

Layout of All Labs tab on Brillians main form

Labs grid filter options: View all, abnormal only, abnormal uniques or all instances of the selected lab test.

Search by partial name

"Unique Abnormal" labs. Quickly review historical data about the abnormal labs

Date Time	* Lab Name	Result	Hi_Lo	Unit
07/19/2014	EO %	5.4	H	%
07/19/2014	EOS #	0.47	H	K/cmm
07/19/2014	GLUCOSE	184	H	mg/dl
07/19/2014	POTASSIUM	3.3	L	mmol/L
06/13/2014	EO %	5.5	H	%
06/13/2014	EOS #	0.36	H	K/cmm
06/13/2014	AlkPhos	119	H	U/L
06/13/2014	TRIGLYCERIDE	280	H	mg/dL

Unique Abnormal (16)

- .LYME AB SCREEN
- .LYME IgG P66 Ab.
- .LYME IgM P23 Ab.
- AlkPhos
- ANION GAP
- CHOLESTEROL
- EO %
- EOS #
- GLUCOSE
- HDL
- HEMOGLOBIN A1C
- MONO %
- MPV
- POTASSIUM
- TRIGLYCERIDE
- VIT D, 25-HYDROXY

6.5 Labs - Lab Profiles Tab

Lab Profiles tab serves the following functions.

- Show commonly used Lab Profile with one click. Lab profiles group data about related labs together. For example, "Liver Panel" may include an number of labs test that relate to liver function. Unfortunately, it takes quite a few mouse-clicks and keystrokes to review a lab profile in CPRS. **Brillians reduces this work to ONE click.**

2. CPRS displays lab profiles in a grid. Data in CPRS grids can not be copied to CPRS progress note for documentation purposes. The lab profile data displayed in **Brillians** can be easily copied and pasted elsewhere.
3. Lab Profiles tab show labs for which a long-term historical view is desirable. (For most labs, the latest 3 years data is sufficient. For certain labs, we may want to load all the available data going back many decades.) These labs are specified in the configuration.

Users access information shown on this tab very frequently when providing patient care. Therefore, **Brillians** provides very efficient user interface to allow quick access and use of this data.

Layout of Labs Profiles tab on Brillians main form

Labs profiles Configuration allows the VAMC to include desired labs in each profile

Unlike CPRS lab profiles, the selected Lab profile's data is formatted as plain text that can be easily copied to CPRS.

User interface to access labs that require long-term view of data

Collection DT	Spec	NA	K	CL	GLUCOSE	BUN	CREAT
07/19/2014 23:20	SERUM	137	3.3 L	102	184 H	6.5	0.88
06/13/2014 09:08	SERUM	138	3.7	101	108	11.1	1.00
10/23/2013 12:47	SERUM	138	4.2	102	99	11.3	0.94
10/09/2013 12:37	SERUM	140	4.1	100	88	7.0	0.84
09/03/2013 13:23	SERUM	138	4.1	100	77	9.9	0.95
08/08/2013 13:01	SERUM					8.0	0.96

Alerts | Problem List | Vitals | Meds | All Labs | **Lab Profiles** | Imaging | Notes | Reports | Misc Data | Options

Z Letter Writer... Rx Writer... Prog Note Writer... Task Manager... View Alert Helper | Calculators... Scales... | Calendar... Quick Web...

6.6 Other Tabs

Other tabs provide quick access to data indicated by their name. Typically, the focus is to provide easy access to the data that is difficult or impossible to get from CPRS, or is represented in a unusable format (e.g. CPRS grids from which the data can not be copied).

7 Understanding Alerts

7.1 What are Alerts

Alerts are clinician's best friends! They "alert" you to issues that need your attention, thus they reduce risk of clinical errors and ensure patient safety.

Important:

Brillians designed to assist clinicians by bringing certain abnormalities to their attention. These abnormalities are identified by performing data analysis on a subset of clinical data and do NOT address each and every possible abnormal finding that may exist in a patient's medical record. No software can.

Brillians Alerts are NOT designed to, or intended to provide advice about diagnosis, treatment or any other aspect of any clinical condition, or to influence clinical decision making process. Therefore, Brillians should not be used to make or influence clinical evaluation, choice of medical tests, diagnosis or treatment decisions; or to replace or overrule a qualified healthcare provider's judgment.

Finally, Brillians **Alerts are ADVISORY** in nature. Their **SOLE PURPOSE** is to point out abnormal findings in patient's medical record so that the clinician can review the relevant data and make necessary interventions. In some cases, the alerted findings are acceptable and no action is needed. Some example:

1. Brillians Alerts the clinician to low hemoglobin of 12gm% in a 85 year old male. This may be an acceptable finding if Hemoglobin has not changed much over last 3-4 years, and patient's clinical condition has not changed (i.e., no new symptoms relating to low hemoglobin).
2. Brillians Alerts the clinician to "Patient with Coronary Artery Disease (CAD) is not taking a B-Blocker drug." (The current "standard of care" recommends use of B-Blocker medications in patients with CAD.) Upon chart review, the clinician finds that there are contra-indications to use of B-Blocker in this patient (e.g., heart block or bradycardia). Therefore, no action is needed.
3. Brillians Alerts the clinician that the patient is taking Dilantin

prescription (a seizure medication) but there is no recent labs test done to check Dilantin level. (The "standard of care" is to check blood level every 6 to 12 months). The provider discusses the issue with the patient and orders blood test to check Dilantin level.

Alerts are one of the most important features of **Brillians**. They help us reduce risk of clinical errors due to missed clinical findings. Each facility can redefine the criteria for existing alerts and create new alerts using built-in options to do so.

When you load a patient in **Brillians**, it analyzes clinical data and evaluates hundreds of clinical facts in the following categories.

- Demographics
- Diagnoses (problem list)
- Lab results
- Imaging and procedure reports
- Medications
- Vitals and Weight

Once **Brillians** "knows" clinical facts in the above categories, it uses advanced logic to generate alerts based on criteria set by your facility.

Here are some examples of alerts.

Alerts based on a single criteria ("Simple alerts"):

- TSH is above (or below) the specified "normal" range.
- The patient is taking Amiodarone (a drug that requires close followup).
- The patient is at high risk for heart disease: his/her ATP III Cardiac event risk (a calculated value) is above a certain value.

Alerts based on multiple criteria ("Rules"):

- Systolic BP (though otherwise normal) is above target value for patient's comorbidities (e.g., Diabetes Mellitus).
- Diagnosis of Coronary Artery Disease and patient is not on a Beta Blocker drug (a "standard of care" alert)
- Hemoglobin A1c is overdue (in a diabetic patient, A1c has never done or has not

been done within the specified time-frame).

- History of Lung nodule and no lung imaging has been done within a specified period.
- Patient is on Dilantin (a seizure medication) but there is no recent labs to check Dilantin level (The "standard of care" is to check blood level every 6 to 12 months).

Please do not confuse **Brillians** alerts with CPRS Notifications ("View Alerts") and clinical reminders. They all serve very different purposes.

7.2 Why do I need alerts

Brillians alerts do what clinicians do manually: review the chart and find abnormalities and issues that need to be addressed. Unfortunately, in a busy clinical practice, it is easy to miss important clinical findings. **Brillians Alerts** reduce the risk of such errors.

Alerts in **Brillians** are a way to automate the chart review process and to identify abnormal findings according to preset "standard of care" rules. Alerts do what clinicians do manually but are much faster and far more thoroughly.

Ask yourself: Can I do the following in 10-12 seconds?

Extract nearly 150 clinical facts (default setup) from patient's chart.

Apply about 75 rules (default setup) using the above 150+ facts.

With a click, see more information about an identified abnormality.

With a double-click on an alert, generate a detailed "View" (report) which assists with the chart review of the given abnormality.

But don't we already have "view alerts" in CPRS for this purpose?

No! CPRS View Alerts (also known as "Notifications"), have nothing in common with **Brillians's Alerts**. They server completely different purposes.

The CPRS View Alerts are "**Event Notifications**" generated by an **event** (e.g., a x-ray report became available). Most frequently, clinicians get view alerts when they do not have the patient in front of them.

There is no doubt that CPRS view alerts serve an important function. However, their

major limitation is that they are not presented to you when you need them, i.e., at the point of care. Further, **they do not provide any help** with evaluation of the reported abnormality.

In contrast, **Brillians** alerts are **point of care** alerts, based on **comprehensive chart review** and **evaluation of multiple clinical factors at the Point of Care**. **They provide means to further evaluate the alerted condition** with simplicity of a click and double-click.

7.3 Do Alerts imply poor patient care?

I am seeing a lot of alerts on my patients, does it mean I am providing poor care? **Not at all.**

The purpose of alerts is not to judge the quality of care but to help improve it. If the clinician knows what needs to be taken care of, he/she will take care of.

It is a fact that even the most careful providers miss important clinical findings due to time constraints, patient's focus on unrelated, trivial issues and other distractions of modern clinical setting.

With VHA's adoption of Patient Aligned Care Teams (PACT) model and the emphasis on less-frequent clinic visits, it is more important than ever that we identify and address important issues in a timely fashion.

7.4 Common questions about Alerts

Common questions:

1. **Is the clinician required to respond to EVERY alert? Not at all.** Clinician is expected to review the abnormal finding pointed to by the Alerted item and take necessary action, if needed. Many Alerts require no action. However, it is a good practice to document in CPRS that finding X was noted but no action was necessary.
2. **Do alert become part of CPRS medical record? No.** However, the clinician can select desired alerts (Control-Click on desired rows in the grid) and paste in CPRS progress note or addendum with a right-click.
3. **How do I generate Alerts? Just load the patient in Brillians.** When you load a patient in **Brillians**, it automatically analyzes a subset of clinical data. Alerts are automatically generated as part of the data analysis process, and displayed on the "Alerts" tab. In other words, alerts are an integral feature of **Brillians** data processing. Therefore the user does not need to do anything special to generate

alerts.

4. [Can the criteria for alerts be changed per each clinician's personal preferences?](#)

No. The alert's criteria is set for the entire VAMCs and can be changed as needed. However, it can not be changed for any individual clinician.

If you re-load patient's data in middle of clinic visit, the clinical data is reloaded and re-analysed and the alerts will be regenerated according to the fresh set of data.

[Brillians alerts are intended to be advisory in nature.](#) They are designed to draw clinicians attention to the issues identified as "potential problem areas" according to the preset, standard of care rules. They do not dictate intervention(s) or substitute for the clinician's clinical judgment.

Many times, there are very good reasons why the clinician would not take any action in response to an alert. For example, an alert is generated for a CAD patient who is not on B-Blocker. There may be a very good reason why patient is not on a B-blocker (severe Asthma or significant bradycardia).

Technically, it is possible to suppress this alert by changing the rule in [Brillians](#) so that it considers heart rate and diagnosis of Asthma while evaluating this alert. However, showing this alert allows the clinician to re-evaluate the co-morbid conditions, as well as the need for B-blocker, and optionally, document why B-blocker was not prescribed.

7.5 Making most of Alerts

[Brillians](#) displays alerts on "Alerts" tab page. Alerts provide a lot of information about the alerted item with a single click or a double click.

[Brillians alerts are "intelligent."](#) Each alerted item "knows" how to display more information about itself when the clinician clicks or double-clicks on it. To make best of alerts, you should know the following information about alerts.

Alert Display

Alerts are displayed on the "Alerts" tab in a grid. Like most grids, you can click on any column header on the grid to order items by that column.

A single-click on an alerted item

A single-click on an alerted item shows more information about it in the details pane in right half of the screen. Depending on the type of the alert, you may see more clinical data (e.g. an abnormal lab). For a rule-based alert, the text area displays the explanation for displaying this alert and may provide related clinical information.

If the selected alert item is linked to a lab profile, the button above the details pane

displays name of that lab profile. A click on the button will take the user to that lab profile.

The "Search..." button above the details pane allows keyword search of the medical record using the search-words associated with the given alert.

As you click through each item one by one and review the data in the details pane, we strongly recommend using the abnormal findings as "talking points" to discuss clinical issues with the patients. **Such discussion improves patient engagement, patient satisfaction and compliance.** For example,

- The clinician may point out that Lab-A was abnormal on the last visit but it is much improved today (or vice-versa).
- The alert points to the need for lung imaging because of history of Asbestosis or Lung Nodule. Clinician may want to discuss the importance of, and the need for, lung imaging which will be ordered today.

A double-Click on an alerted item

A double-click on an alerted item provides a lot more information in one of the following ways.

- Displays a detailed "View" (report) related to alerted item. It may ask you to select a View if more than one View is "attached" to this alert item.
- If alerted item is a calculated value (e.g., ATP III Cardiac Event Risk or Weight Change), it takes you to that calculator.

To copy selected alerted item(s) from grid to CPRS progress note

- Select desired rows in alerts grid with Control-click, Shift-click or dragging. **Note: Use Control-click to select (highlight) non-contiguous items in grid.**
- With desired items highlighted as above, right-click on the grid and select desired action from the pop-up menu.
 - "Paste in CPRS..." choices directly paste data in CPRS progress note at the cursor location.
 - "Copy to clipboard..." choices copy data to Windows clipboard but do not paste it in CPRS.

To copy text in Alert's details pane to CPRS progress note

- Select text (highlight by dragging or by key strokes) that you want to copy.

- With desired text highlighted as above, right-click on the highlighted area and select desired action from pop-up menu.
- "Paste in CPRS..." choices directly paste data in CPRS progress note at the cursor location.
- "Copy to clipboard..." choices copy data to Windows clipboard but do not paste it in CPRS.

Please provide feedback

Each alert's criteria (e.g. abnormal and critical range for labs and rule definition for "rules") can be changed to suit your facilities goals and wishes. Please provide feedback to your Brillians support staff who will communicate with the Brillians support staff.

7.6 Alerts and the CPRS Problem list

Brillians needs to know patient's demographics, diagnoses, medications, labs, imaging studies, pathology reports, etc., to provide cognitive support via alerts and reports.

As we know, all the data categories in CPRS, except problem list, are updated by other services (lab, imaging, etc.). All we need to do as clinicians is to click on CPRS labs or medications page and the data is there.

To make best use of Brillians's alerts system, it is very important that Problem list is kept up-to-date. As providers, it is our responsibility to do so.

Why properly maintained problem list is so important?

- Brillians identifies patient's diagnoses by reading ICD codes in CPRS Problem list.
- Many "rules" used for generating alerts need to "know" patient's diagnoses.

For example:

If patient is noted to have a diagnosis of Abdominal Aortic aneurysm (AAA), Brillians will check to see if an abdominal CT or ultrasound has been done within last n months. If not, it will generate an alert indicating the need for such a study.

If the patient has AAA but it is not listed on the CPRS Problem list then Brillians does not know that patient has AAA and it will not check for the above alert.

Similar logic applies to other "alert rules" that are based on a particular diagnosis. Some examples:

- Lung nodule (or asbestosis or carotid stenosis) and periodic imaging.
- Hepatitis C and periodic AFP monitoring (or check for Acetaminophen use).
- Colon cancer and periodic CEA monitoring (or advise for periodic colonoscopy).
- Colonic polyposis - advise for periodic colonoscopy.
- And many other similar situations.

8 Understanding Views (reports)

8.1 What are reports?

Views (reports) are one of the most powerful features of Brillians. They display all the data relevant to a given condition as one document. View (report)s are designed to save us time! **A "View" gives a focused insight into clinical data** in the patient's medical record.

For example, a Cardiologist wants to "view" ONLY the data that relates to his/her specialty. He/she does not want to sift through large volume of data which is NOT relevant to his/her needs. In contrast, a primary care provider wants a complete overview of the clinical findings including recent hospitalizations, emergency room visits, consultation, diagnostic procedures, etc.

Views can be designed to display all the relevant data in one place:

1. **Disease specific Views:** display data about the given disease, e.g., Anemia, Diabetes or Congestive Heart Failure
2. **Body-System related Views:** display data about the given body system, e.g., Liver or kidneys
3. **Summary Views:** display data about specific needs, e.g., Primary Care chart review, nurse "scrubbing" clinic.
4. **Specialty Care related Views:** display data needed by the given specialty clinic, e.g., Cardiology, Urology, Hematology.
5. **Views to address unique needs:** Pre-op chart review, spinal cord injury clinic, chronic pain management clinic.

Views (reports) are fully customizable:

1. Brillians includes a large number of well designed Views.
2. Each facility can design its own reports or edit reports provided with default installation of Brillians.
3. Each user can create his/her own Views. Think of these options as "Shared" and "Personal" templates in CPRS.
4. There is no limit on the number of Views a facility or an individual user can have.

What kinds of clinical data can be displayed in a View?

Virtually any component of clinical data can be included in a View (report). The report definition give the report designer full control on what kind of data to include in the View (report), how much data to include and how to display it.

Following is an incomplete list of what you can include in a View (report).

- List of critical alerts or all alerts.
- Individual labs and/or labs profiles.
- Whether patient is on a particular Rx or Rx group (e.g., Statins).
- Procedure reports (Colonoscopy, PFT, etc.)
- Imaging reports
- Whether patient has specified diagnoses (co-morbidities).
- Cyto-pathology, surgical pathology and other diagnostic reports
- Immunizations
- Hyperlinks (to intranet or internet resources, clinical guide-lines, etc.)
- And more...

A separate help manual is provided which details elements of the scripting language used for creating reports.

8.2 Why do I needs Views (reports)?

Key point: Views (reports) aggregate all the relevant clinical data in one place so you don't have to do so manually.

- Normally, clinicians go from tab-to-tab to search for each data item in CPRS.

Depending on the situation, **this may take 5-7 minutes.**

- Brillians displays the same data in a highly usable format in with **one click and 1-2 seconds.**

Normally, when the provider identifies an abnormality, he/she will have to manually look for relevant data in various places in CPRS.

Suppose clinician noticed low hemoglobin on the patient she is seeing. Typically, she will do the following which may easily take 5+ minutes. If she want to copy and paste data into CPRS, that takes extra time and effort.

- Check labs:
 1. Look up CBC profiles for last one-two years.
 2. Check Iron studies
 3. Check B12 and folate level
 4. Check electrolyte profile for renal insufficiency.
- Lookup for procedures to see if patient has had EGD or Colonoscopy recently.
 - If yes, check cytopathology section for biopsy reports.
- If EGD or Colonoscopy are not found, check imaging to see if patient has had UGI or Barium enema.
- Check medications tab to see:
 - if patient on any offending Rx (e.g., NSAIDs) that can cause GI bleeding.
 - Is patient taking an anticoagulant?
 - Is patient taking Iron or B12?
- Check problem list - any bleeding disorder? Diagnoses that may cause GI bleeding?

There is an easier way

In Brillians if the clinician can double-click on Hemoglobin (either on alerts grid or labs grid) and she will instantly see a View (report) like the following. You can highlight any part of text in report and copy it to CPRS progress note with a right-click.

Chart Review for Anemia

CBC

Collection DT	Spec	WBC	HGB	HCT	MCV	PLT	NEUT #	LYMPH
---------------	------	-----	-----	-----	-----	-----	--------	-------

	12/16/2005	09:13	BLOOD	3.4	L	13.0	L	36.5	L	92.0	164	2.5	0.4
	12/09/2005	07:28	BLOOD	3.2	L	13.8	L	38.6	L	90.9	184	2.4	0.3
	12/02/2005	07:26	BLOOD	3.2	L	13.5	L	38.9	L	91.5	230	2.0	0.5
	11/23/2005	07:44	BLOOD	3.9	L	13.8	L	39.3	L	91.3	293	2.6	0.7
	11/14/2005	07:02	BLOOD	6.4		14.3		41.4	L	90.6	315	5.6	0.8
a	10/21/2005	07:50	BLOOD	15.0	H	16.2		46.4		90.6	388	14.3	H
	09/29/2005	12:27	BLOOD	7.8		15.6		45.2		90.5	314	4.9	1.6
	09/13/2005	08:00	BLOOD	8.2		15.4		44.1		91.1	318	5.5	1.6
	04/08/2005	09:33	BLOOD	6.9		16.3		47.0		92.1	303	4.6	1.4
	06/11/2004	10:31	BLOOD	8.7		15.9		46.0		93.8	295	5.9	1.8

Electrolytes / Renal Function

Collection DT	Spec	GLUCOSE	BUN	CREAT	NA	K	CL	CO2
12/09/2005 07:28	SERUM	129	H	13	0.9	138	3.6	105
12/02/2005 07:26	SERUM	92		17	0.9	138	3.5	107
11/23/2005 07:44	SERUM	97		19	0.8	140	4.0	107
10/21/2005 07:50	SERUM	152	H	17	0.9	139	4.3	104
09/29/2005 12:27	SERUM	89		11	0.9	136	4.0	102

Anemia_Profile

Collection DT	Spec	FE	FERRITI	TRANSFE	B 12	TIBCc
08/01/2006 08:23	SERUM	87	29.0	200	692	298
07/08/2004 10:36	SERUM				1930	H
03/19/2003 09:28	SERUM	111		240		358
03/19/2003 09:28	SERUM		92		>2000.0	H
04/11/2002 14:07	SERUM	53		229		341
04/11/2002 14:07	SERUM		52			
11/19/2001 10:47	SERUM				981	H

Haptoglobin (Low in Hemolytic Anemia)

HAPTOGLOBIN: No data found.

RETICULOCYTE COUNT (High in Hemolytic Anemia)

RETICULOCYTE, #: No data found.

Iron, B12 and Folic Acid Rx

Patient is NOT on Rx: Ferrous

Patient is NOT on Rx: B12

Patient is NOT on Rx: Folic

NSAID Rx

Patient is NOT on any Rx listed in the Rx Group: NSAID

Following Rx are included in the Rx Group:

CELECOXIB
DICLOFENAC
DIFLUNISAL
ETODOLAC
IBUPROFEN
INDOMETHACIN
KETOROLAC
NAPROXEN
PIROXICAM
SALSALATE

Endoscopy Procedure(s) if any

12/12/2004 13:33 Title: COLONOSCOPY CONSULT

Colonoscopy completed by GI Consultants of XYZ on: 12/12/04.

Results: No Diverticulosis
No Hemorrhoids
2 small Polyps: one was tubular adenoma

CLINICAL REMINDER ACTIVITY

COLON POLYPS FOLLOW-UP:

Reassess in 3 years for colonoscopy.

Signed by: /es/ XXXX X Doe, MD
12/12/2004 11:11

Barium Studies, if any

No report(s) found for: BARIUM

8.3 How to access Views (reports)?

In **Brillians**, Views (reports) can be accessed in various ways. The goal is to facilitate a "context relevant" access - if you are looking at an abnormal lab, then you should be able to access the related report from that location.

Question:

When a provider notices abnormal Hemoglobin on Alerts grid (or labs grid), why

should she have to go to another location in the user interface to find a View named "Anemia"? Well, we could not think of any good reason either.

Brillians thinks like a Clinician! Clinicians want to see more information when and where they notice an abnormality.

When you are reviewing data in Brillians and you notice an abnormality, just double-click on it. Most items in the following areas are linked to a View (report).

- Abnormal finding noted in Alerts grid.
- A diagnosis noted on problem list (on Diagnosis tab in Brillians).
- A Lab item in labs grid ("All Labs" tab).
- Meds grid (some chronic disease related medications are linked to respective Views (reports)).
- View's (reports) name on the Views form.

Any of the above options will take you to the Views (reports) Form shown below. Please notice the list of large number of Views in the left pane. The user can easily switch to another View (report) simply by clicking on the View's name.

SupraVISTA Reports | Report's Script | Misc VistA Data | Zoom: |

1. SupraVISTA Reports

- _Endocrinology Review
- _GI_Review
- _Liver Review
- _Primary Care - Female
- _Primary Care - Male
- _Renal Review
- Abdominal Imaging
- ACE Inhibitors
- Anemia
- Atrial Fibrillation
- CAD
- Cardiology Reports
- Carotid Stenosis
- CHF
- Colon Ca/Polyps
- Colon Visualization
- Diabetes Mellitus**
- GI Reports
- GU / Renal Reports
- Hyperlipidemia
- Hypertension
- Lung Imaging
- Metabolic Syndrome
- Methotrexate Monitoring
- Neurology Reports
- PSA Elevation
- Pulmonary Reports
- Thyroid Disorders
- Vascular Reports
- Warfarin Chart Review
- Womens Health
- 77Care Plan

2. Diabetes Mellitus | References: [Diabetes Type II - Overview \(eMedic](#)

A1c

Date	Lab Test	Result	Unit	Range
06/11/2014	HEMOGLOBIN A1C	6.8 H	%	4.6 - 6.1
09/11/2013	HEMOGLOBIN A1C	7.4 H	%	4.6 - 6.1

Micro-albumin

_Microalbumin: No data found.

Urine Protein

Date	Lab Test	Result	Unit
09/09/2013	URINE PROTEIN	NEG	mg

GFR (if n/a here, use "Calculators")

Date	Lab Test	Result	Unit	Range
07/07/2014	GFR,Estimated	90	mL/min	60 - Variable
06/06/2014	GFR,Estimated	78	mL/min	60 - Variable
10/10/2013	GFR,Estimated	84	mL/min	60 - Variable

Electrolyte Profile

Collection DT	Spec	NA	K	CL	GLUCOSE	BUN	CREAT
07/07/2014 23:20	SERUM	137	3.3 L	102	184 H	6.5	0.88
06/06/2014 09:08	SERUM	138	3.7	101	108	11.1	1.00
10/10/2013 12:47	SERUM	138	4.2	102	99	11.3	0.94
10/10/2013 12:37	SERUM	140	4.1	100	88	7.0	0.84
09/09/2013 13:23	SERUM	138	4.1	100	77	9.9	0.95

Lipid Profile

Collection DT	Spec	CHOL	HDLd	LDLc	LDL/HDL	TRIG
06/06/2014 09:08	SERUM	178	35 L	87	2.5	280 H
09/09/2013 13:23	SERUM	202 H	27 L	97.4	3.6	388 H

Diabetic Medications

Patient is NOT on any Rx listed in the Rx Group: DIABETES MELLITUS RX
Following Rx are included in the Rx Group:
GLARGINE
GLIMEPIRIDE

ACE Inhibitor Rx

Patient is NOT on any Rx listed in the Rx Group: ACE-I
Following Rx are included in the Rx Group:
BENAZEPRIL
CAPTOPRIL
ENALAPRIL
FOSINOPRIL
LISINOPRIL
QUINAPRIL

Reports list

More options to find the desired data.

Search Options:

9 Search Functions

9.1 The need for Search Functions

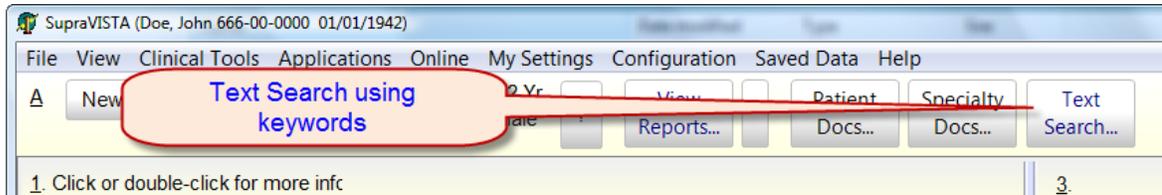
Clinicians frequently need to find relevant data quickly to make clinical decisions. However, CPRS provides very limited functionality in this regard. In most case, searching for data is a manual process.

[Brillians](#) provides a number of powerful tools that facilitate search functions.

1. **Keyword search:** Keyword search across many data domains (progress notes, imaging, procedure notes, surgical pathology reports, immunizations, labs, etc.). [Brillians](#) load a subset of data in selected domains. The application searches the loaded data for the given keyword(s) across all the data domains and presents results in chronological order.
2. **Multiple ways to find and search documents:** [Brillians](#) provides multiple ways to find documents and perform a full-text search on those documents. The clinician can find document with incomplete information (e.g., without knowing the title or author of the document). This functionality is not available in CPRS.
3. **Patient Documents:** Search all progress notes under a given title. To do this, [Brillians](#) load all (yes, all) the progress note titles (but not the full text) under which the given patient has documentation. [Brillians](#) displays unique note titles' list to the user, i.e., a patient may have 20 progress notes under "Cardiology Consult" but the title "Cardiology Consult" will appear only once in the list. If the user clicks on this title, full text of all the progress notes with this title is loaded. Clinician can perform text search on this text.
4. **VA and DoD Remote Data:** [Brillians](#) can download remote data from multiple remote VAMCs for the specified date-range within a few seconds. Application displays remote data on CPRS like tabs. The clinician can perform keyword search on the remote data from multiple sites as if it is local data. Same applies to the Department of Defense (DoD) data.
5. **Formulary Search:** A typical VA Medical Center's formulary contains 4,000 to 5,000 items (drugs and various supplies). No one can remember all these items. Frequently, clinicians have to call pharmacy to find the needed item which may take a few minutes. [Brillians](#) can search formulary instantly by partial name(s) of items.

9.2 Text Search using Keywords

Text search using keywords is one of most efficient way to locate data. It is accessible from "Text Search..." button located in the top panel of the main form.



How does this work?

Brillians loads a fairly large subset of data for each patient. How much data is loaded depends on your facility's configuration. It internally organizes this data to support keyword search across various data domains. As of this writing, the supported data domains are show in the screenshots in this section.

1. User can search using one keyword or multiple keywords separated by semi-colon. When multiple keywords are used, search is performed using Boolean "OR" logic. This means that if any of the keywords is matched in a document, it is included in the results (a positive match).
2. Spaces at the start or end of the words are ignored. If you need to include a space at the beginning or end of a word, then use an underscore character ("_" , do not confused this with a dash character). Any spaces within a search string are part of the searched keyword and are respected.
3. Though a very large amount of data is searched, the search shows results almost instantaneously. Therefore, a user may perform multiple searches without effectively and efficiently.
4. Each search result includes date and title of the document where a matching keyword is found.
5. Each search results also displays a "View Details" link. Clicking this link opens the source document in a separate window.
6. The bottom panel of the forms provides buttons for additional search options.

The screenshot shows results of a single keyword search.

Search Record (Demo, ProgNote)

File

Enter keyword(s) to search. Use semi-colon to separate words.

5

Zoom Text

You are searching a ****SUBSET**** of data loaded from the following categories/sections per your VAMC's configuration.

Keyword search: Simultaneously searches data in various sections/categories.

Patient ID: Demo, ProgNote (0000)

This report uses

Searching for one keyword

Showing 5 lines of text from selected categories/sections where any of the following keyword(s) was/were found.

colon

07/07/2014 07:07 Local Title: PC Team X [View Details](#)

Colon Polyps
(Last colonoscopy in 11/13)
Tobacco use disorder
(Patient has tried and failed many times).

09/09/2013 09:09 Local Title: Patient Care Note [View Details](#)

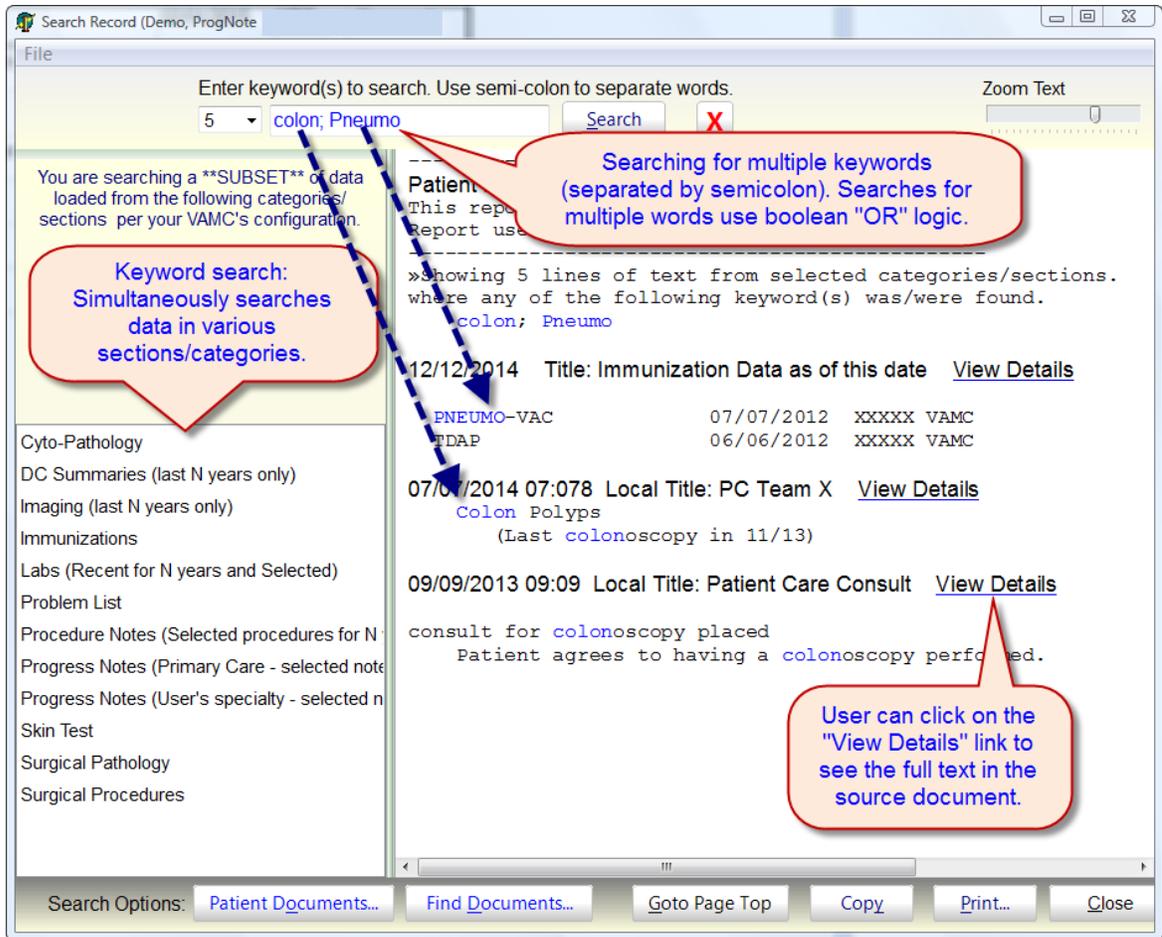
Consult for colonoscopy placed
Patient agrees to having a colonoscopy performed

Additional search options

User can click on the "View Details" link to see the full text in the source document.

Search Options:

The screenshot shows results of multiple keyword search.

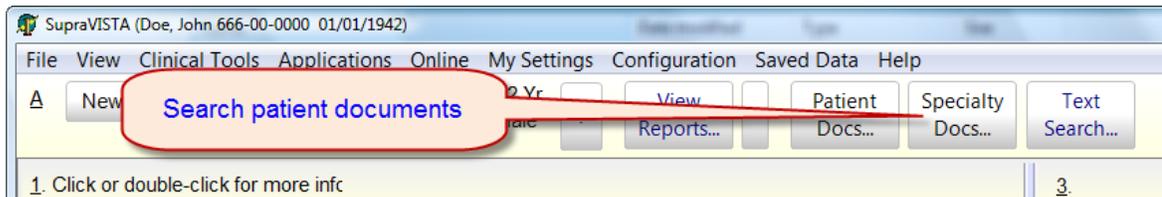


9.3 Search Specialty Documents

There are times when the clinician needs to find information relating to a particular specialty. However, each specialty in a VAMC has numerous progress note titles - some of which the user may not even be aware of. For example, a VAMC has 25 different titles that are used by the Cardiology service.

How can a user load all progress note under 25 different titles in chronological order for the past 5 years and search the combined text?

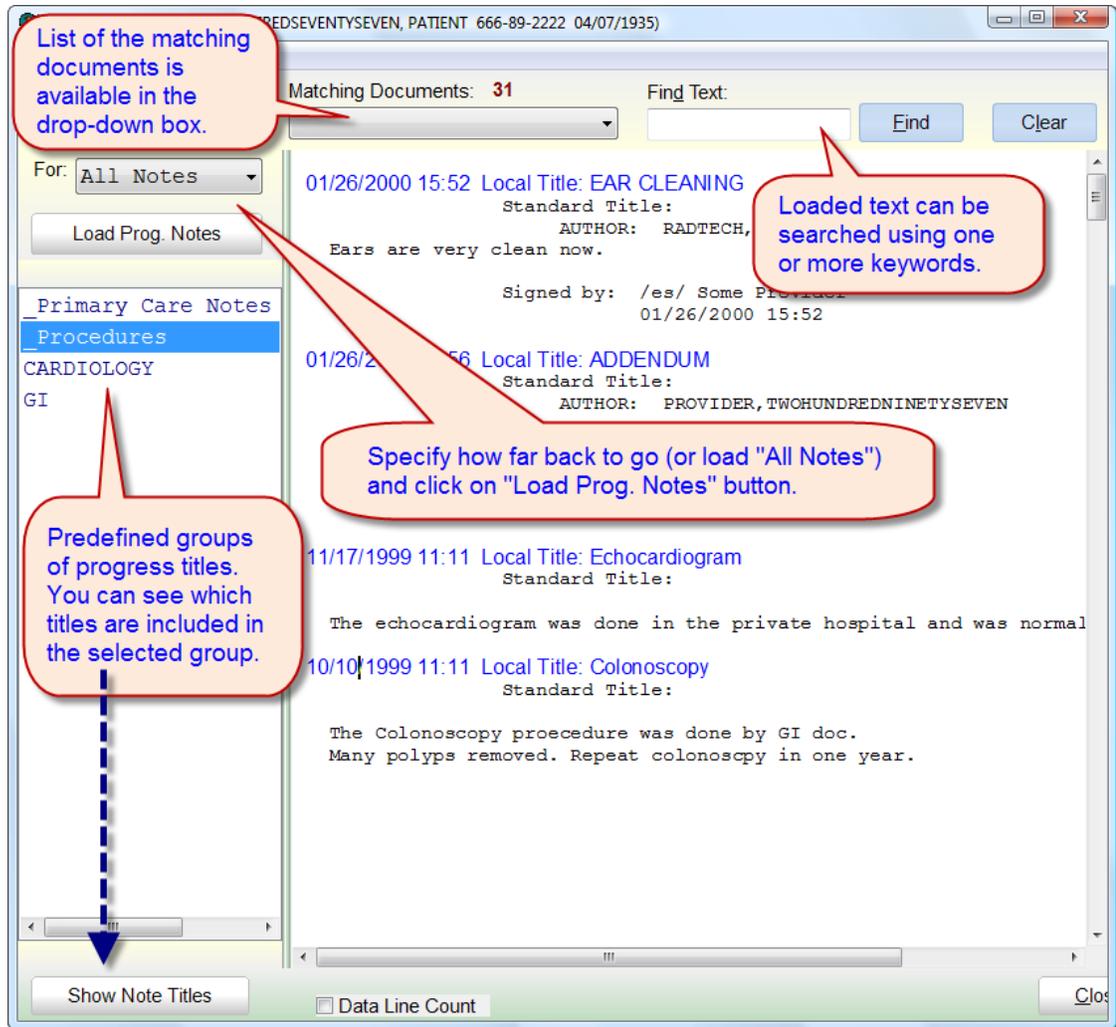
To handle this issue, Brillians offers the ability to load all the progress note titles in the predefined progress note groups. Each group is given a descriptive name and can contain any number of progress note titles. Thus, the functionality really works for any grouping of progress notes. Since it is mostly needed for grouping of specialty care related progress notes, it has been named to reflect that need.



How does this work?

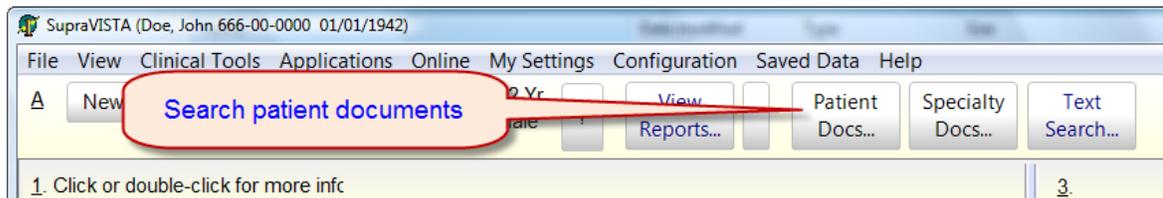
When the form first opens, no documents have been loaded because, at this point, **Brillians** does not know which document user want to load and search. To begin using this feature:

1. Click on the drop-down box near top of the left pane and select the how far back you want load the notes (e.g., 5 years).
2. Click on a progress note group (typically, name of a specialty) for which you want to load progress notes. List of available progress note groups is shown in the list box in the left pane.
3. Click on the "Load Prog. Notes" button to load the desired notes. **Brillians** loads all the documents found under selected titles for the selected duration. Therefore, this may take a few seconds to complete.
4. Once the data is loaded, the text of all the loaded documents is shown in the text box in the middle of the form.
5. This text can be searched for desired keywords using the text box and buttons provided on top of the documents' text.
6. If you want to search for multiple keywords at the same time, please separate each keyword with a semi-colon.



9.4 Search Patient Documents

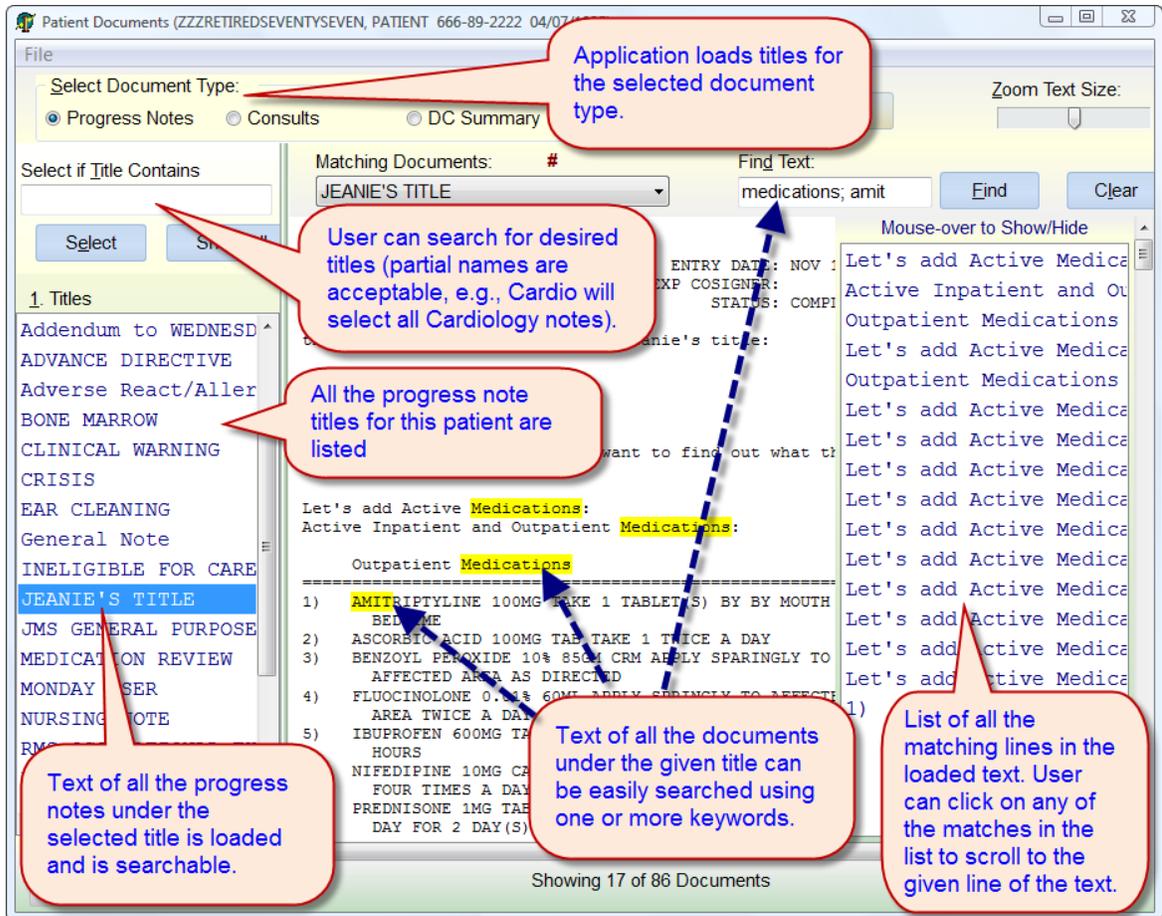
When simple keyword search does not help, we need to dig deeper. To do this **Brillians** offers additional tools. One such tools is the ability to search patient documents (progress notes, discharge summaries and consults). It is accessible from "Patient Docs..." button located in the top panel of the main form.



How does this work?

When the form first opens, no documents have been loaded because, at this point, **Brillians** does not know what type of document user wants to search. To begin using this feature:

1. Click on a radio button to select the type of documents you want to search (Progress Notes, Consults or Discharge Summary).
2. Once the data has been loaded, the found items list is displayed in the left pane of the form.
3. If the list of titles is too long, you can search for the desired title(s) using the text box on top of the list box.
4. Click on the desired document title. **Brillians** loads all the documents found under that title. Therefore, this may take a few seconds to complete.
5. Text of all the loaded documents is shown in the text box in the middle of the form.
6. This text can be searched for desired keywords using the text box and buttons provided on top of the documents' text.
7. If you want to search for multiple keywords at the same time, please separate each keyword with a semi-colon.



9.5 Other Search Functions

All search features can be accessed from top panel of the main form, or from the "Search..." menu.

Each feature is displayed on its own sub-form. The user interface is simple, intuitive and similar to other forms. Our user have been able to use these search features without any special instructions.

10 Clinical Tools

10.1 Introduction

In medical practice, as in any profession, well designed tools:

- Make clinicians more efficient.

- Reduce risk of errors.
- Improve quality of care and documentation.
- Reduce time-wasting "scut" work and increase provider satisfaction.
- Allow more time for eye-contact with the patient and improve patient satisfaction.

Brillians tools are readily accessible using buttons along the bottom edge of the main form, and also from Tools menu. In this sections, tools are described in alphabetic order.

Brillians provides a complete set of tools for the busy practitioner. What sets these tools apart from similar tools available elsewhere is the fact that **Brillians tools are fully data aware.**

For example:

- Calculators provide results with one-click (no typing or data entry required) because each calculator "knows" what values are needed and how to get them.
- Letters templates not only mail-merge patient's address, they can automatically mail-merge any component of clinical data (just as you can include any data in Views (reports)). For documentation, the clinician can copy letters to the CPRS progress notes with one click.
- Create and print Rx with virtually no typing. Access web resources while writing Rx.
- Task manager not only maintains your "To do list" - it also knows how to load the patient in CPRS (so you don't have to).
- "Quick Web" tool knows how to search popular medical and non-medical websites. Just type in what you want to search, select the web-site and click a button.
- And the list goes on.

10.2 Calendar and Alarm

Calendar

Many of us can never find a calendar when we need it. Brillians includes an easy to navigate, 20 year (current year +/- 10 years) calendar.

Click on "Calendar..." button along bottom edge of main form. A form opens with calendar showing (Alarms tab may be showing if you have an Alarm set (see below). Click on "Calendar" tab to view calendar.)

Alarm

Running behind on your schedule, you look at next patient in schedule and get the feeling, "Oh, no. Mrs. Jones again...she is never going to leave my office." Or may be you have an important meeting and you don't want to be late.

To set alarm ON:

Click on "Calendar..." button. A form opens with calendar showing.

Click on "Alarm" tab (on top border). A form opens with calendar showing.

Use drop-down box "Set alarm for <nn> minutes from now" (or manually set hour and minute for alarm in text boxes).

Click on "Click here to set alarm" button. Button's caption changes to "Click here to stop and clear alarm".

Click on "Close" button to close the form and return to work.

An audible alarm will sound at specified time (audio must be enabled on your workstation). Mrs. Jones understands you have to be somewhere else.

To be least disruptive, alarm sounds just for a few seconds and stops. It will continue to sound periodically at increasing intervals.

To set alarm OFF:

On Alarm form, **click on "Click here to stop and clear alarm" button.**

10.3 Letter Writer

Letter Writer is one of the most popular and most used tools. It is accessible from "Letters..." button along the bottom border of the main form or from the Clinical Tools menu.

Written communication with patients, for clinical or legal reasons, is an essential part of medical practice. Patients appreciate the fact that you take time to keep them informed. Letters are also powerful education tools. You can also use them for work excuse, Jury duty excuse, etc.

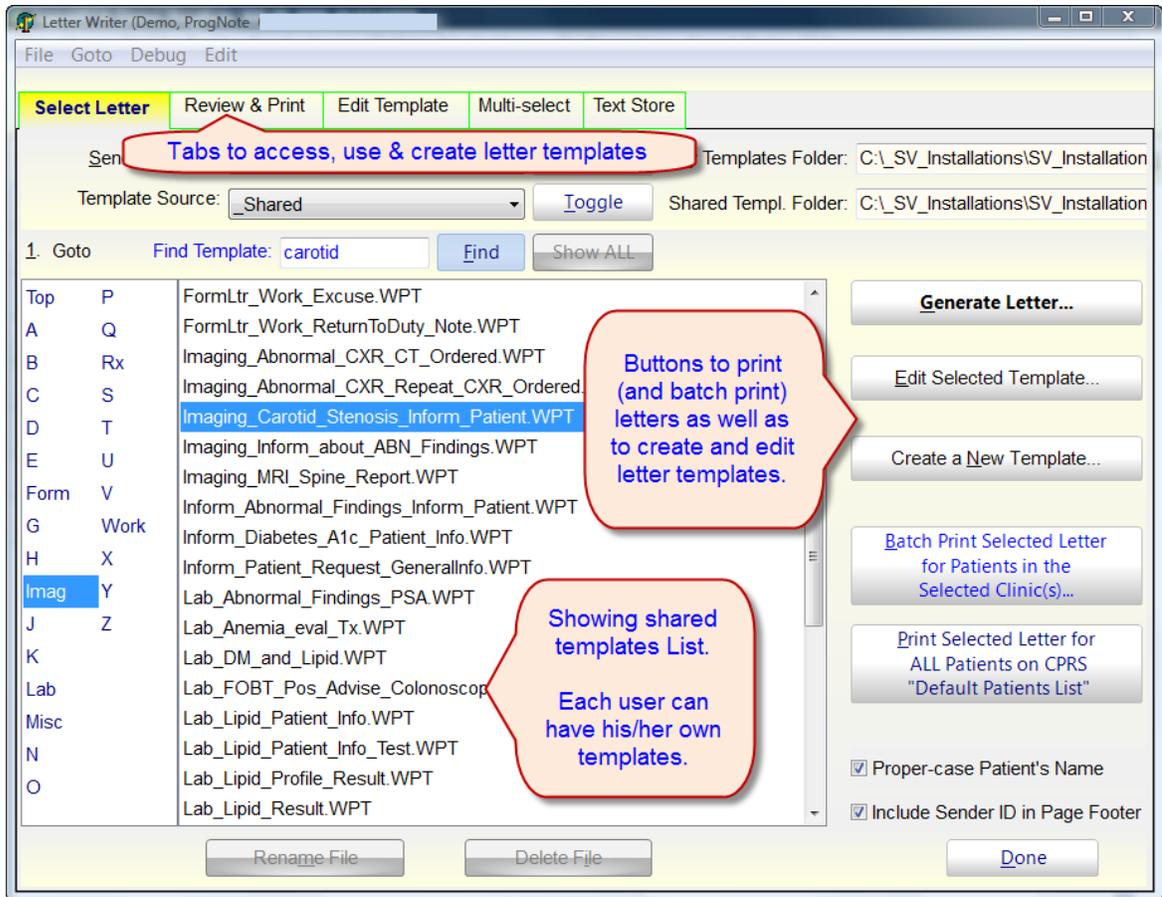
However, writing letters manually is an unpleasant, time-consuming task. Even if you start with templated text in Microsoft Word, you still need to manually insert patient's address and clinical data and do necessary formatting.

Brillians Letter Writer turns letter writing into a simple, 3 click process:

1. Select a letter template.
2. Click "Generate Letter..." button. Instantly, a fully mail-merged letter is shown on the "Review and Print" tab.
3. Print (Print button is on "Review and Print" tab; not shown in the image below)
(Optionally, copy this letter to CPRS progress note with one click for documentation purposes.)

Brillians Letter Writer includes many commonly used letter templates with informative names. It allows each facility to create an unlimited number of "Shared" letter templates. In addition, each user can create his/her own templates.

The screenshot below shows the user interface and a partial list of templates in the "Shared" folder



A. You can easily switch to a different area in Letter Writer using tabbed interface.

Select Letter Tab: Select a letter from list of available letter templates (shown above).

Review and Print Tab: Review mail-merged letter. Optionally edit, print and copy to CPRS.

Edit Template: You can edit any template (shared, personal or other user's) and save as your own.

B. Select Letter Sender and template source.

Sender's name: Your clinic nurse can prepare letters on your behalf by selecting your name as sender.

Template Source: Drop-down box allows you to select templates from any user (including your own).

C. Buttons allow you to create a new template or edit an existing one.

Select any template from any user (including shared, your own or another user) and click on "Edit Selected Template..." button. You will see the template text in a text editor on the "Edit Template" tab page.

When done editing, click "Save As..." button to rename and save this template in your personal letters folder. This [modified] template now shows in user's personal templates.

1, 2, 3 - what do you get?

Following sample letter was generated with 3 clicks and no editing. Note that LDL cholesterol date and value were inserted automatically. For emphasis, letters support use of color and paragraph shading as shown below.

Oct 01, 2006

Mr. John Doe (1234)
0000 Some Street
Anytown, My State 00000

Dear Mr. Doe:

As you know, heart disease is the number one killer today. Good cholesterol control is very important to reduce your chances of having a heart attack and avoiding untimely death. **Lowering bad cholesterol improves your heart health, no matter how old you are.**

On reviewing your reports, I have noticed that **your cholesterol is more than it should be.** I know that we, working together, can do much better.

Your **"bad"** cholesterol:

09/09/2006	LDL-CHOL	175
------------	----------	-----

It is **better** to have "bad" cholesterol in this range:

LDL (the "bad") Cholesterol: 80 to 95 mg%

It is **best** to have "bad" cholesterol in this range:

LDL (the "bad") Cholesterol: Below 80 mg%

- Even if you are taking prescription drugs, **you must follow proper diet to have good cholesterol control**. Therefore, please make sure you [follow low fat diet](#) as you have been advised.
- Of course, prescription drugs do help and **we may need to adjust your prescriptions to get your cholesterol under really good control**.
- If you use tobacco, please try to **stop tobacco use as soon as possible**.

Please contact our clinic to schedule a cholesterol test and a clinic visit within four to six weeks so that we can take care of this problem.

Sincerely,

Good Doc, MD
VA Medical Center, XYZ
My Street Address here.

The Source Template for the above letter:

Note that "{**LDL-Chol**}" is all you need to put in your template to insert latest LDL value (can it get any simpler that this?) Please examine other letter templates to see how you can automatically insert other data elements.

{Date}

{Title} {FirstName LastName} ({LAST4})
{ADDRESS}

Dear {Title} {LastName}:

As you know, heart disease is the number one killer today. Good cholesterol control is very important to reduce your chances of having a heart attack and avoiding untimely death. [Lowering bad cholesterol improves your heart health, no matter how old you are.](#)

On reviewing your reports, I have noticed that [your cholesterol is more than it should be](#). I know that we, working together, can do much better.

Your "bad" cholesterol:

{LDL-Chol}

It is **better** to have "bad" cholesterol in this range:

LDL (the "bad") Cholesterol: 80 to 95 mg%

It is **best** to have "bad" cholesterol in this range:

LDL (the "bad") Cholesterol: Below 80 mg%

- Even if you are taking prescription drugs, **you must follow proper diet to have good cholesterol control**. Therefore, please make sure you [follow low fat diet](#) as you have been advised.
- Of course, prescription drugs do help and **we may need to adjust your prescriptions to get your cholesterol under really good control**.
- If you use tobacco, please try to **stop tobacco use as soon as possible**.

Please contact our clinic to schedule a cholesterol test and a clinic visit within four to six weeks so that we can take care of this problem.

Sincerely,

{Sender Name}

{Sender Address}

10.4 Medical Calculators

Brillians provides many commonly used medical calculators. All the calculators are located on the Calculator form which is accessible from "Calculators..." button along bottom border of main form or from the Clinical Tools menu.

Unlike other calculators (Internet or hand-held devices), you do not need to enter data into Brillians Calculators - they are smart enough to know what is needed for given calculations and where to find it. This not only saves time but also avoids data entry errors. Additionally, you can copy results of calculations with a click rather than having to type in results manually.

The screen shot below shows the layout of a calculator. All calculators are organized similarly. User can go to the desired calculator by clicking on a tab at top of the form or by using the "Goto" menu item.

It takes just one click on the "Calculate using patient data" button to get the results.

The screenshot shows a software window titled 'Calculators (Demo, ProgNote)'. The main content area is titled 'BMI, BMR, Lean Weight and Body Surface Area (BSA)'. It includes a 'Gender' section with radio buttons for 'Male' (selected) and 'Female'. Below that are input fields for 'Weight: 167 Pound' and 'Height: 70 Inches'. On the right, there are two columns of results: 'Du Bois' and 'Mosteller'. The 'Du Bois' column shows 'Body Surface Area (square meters): 1.93', 'Lean Body Weight (Kg): 60.09', 'BMR (Cal/Day): 1667.98', and 'BMI (Kg/Meter Squared): 23.96'. The 'Mosteller' column shows 'Body Surface Area (square meters): 1.93'. There are buttons for 'Calculate using Patient Data', 'Calculate using User entered data', 'Copy/Paste Options', and 'Clear Data and Result Fields'. A 'Close' button is in the bottom right corner. Several callout boxes are overlaid on the image:

- 'Tabs show the available calculators' points to the tab bar at the top.
- 'We can calculate using patient data (auto filled) or manually entered data.' points to the two calculation buttons.
- 'Results of the calculations' points to the numerical output fields.
- 'Options to copy results to CPRS' points to the 'Copy/Paste Options' button.
- '"Close" buttons is always in the right lower corner.' points to the 'Close' button.
- 'Data elements needed for the given calculator are automatically looked up and filled in or can be cleared and filled in manually.' points to the input fields.

1. "Calculate using Patient data" button

When you click this button, **Brillians** looks up data and fills in values in text boxes. It does the calculation and displays the results.

2. "Calculate using User entered data" button

Brillians uses data in text boxes thus allowing you to do calculations with manually entered data (real or hypothetical, so that you can play-out "what if..." scenarios).

3. "Clear" button

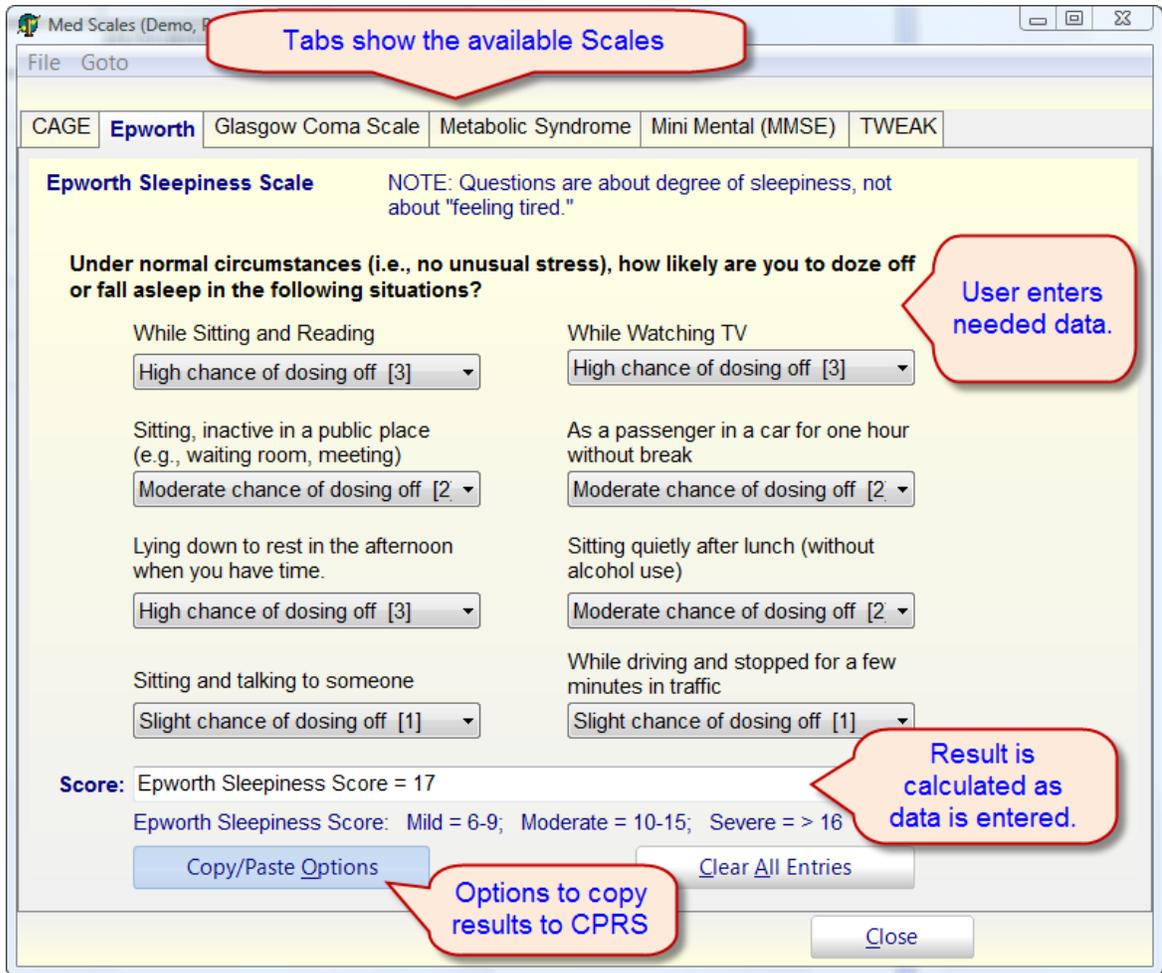
You can manually clear data anytime. A click on "Calculate using Patient data" button will fill these with patient data again. (You don't need to clear data unless you want to type in the data manually).

10.5 Medical Scales

Brillians provides many commonly used medical scales. All the scales are located on the Scales form which is accessible from "Med Scales..." button along bottom border of main form or from Tools menu.

Brillians medical scales make data entry as easy as possible. Using drop-down boxes, check boxes, etc., you can answer all the questions with no typing. This not only saves time but also ensures complete and valid data entry. You can copy score on a given scale to CPRS progress note with a click rather than having to type in results manually.

The screen shot below shows the layout of a medical scale. All scales are organized similarly though data entry format may be different depending on the given scale. User can select a different Medical Scale by clicking on a Tab or from the "Goto" menu.



1. User provides data using easy to use data entry methods.

The score updates as you answer each question. In the above example, provider has answered each question using the drop-down boxes.

2. "Clear All Entries" button:

Clears all the previous entries. When you change to a new patient, this is done automatically.

10.6 Progress Note Writer

The Progress Note Writer is one of the most powerful and most complex tool built into Brillians.

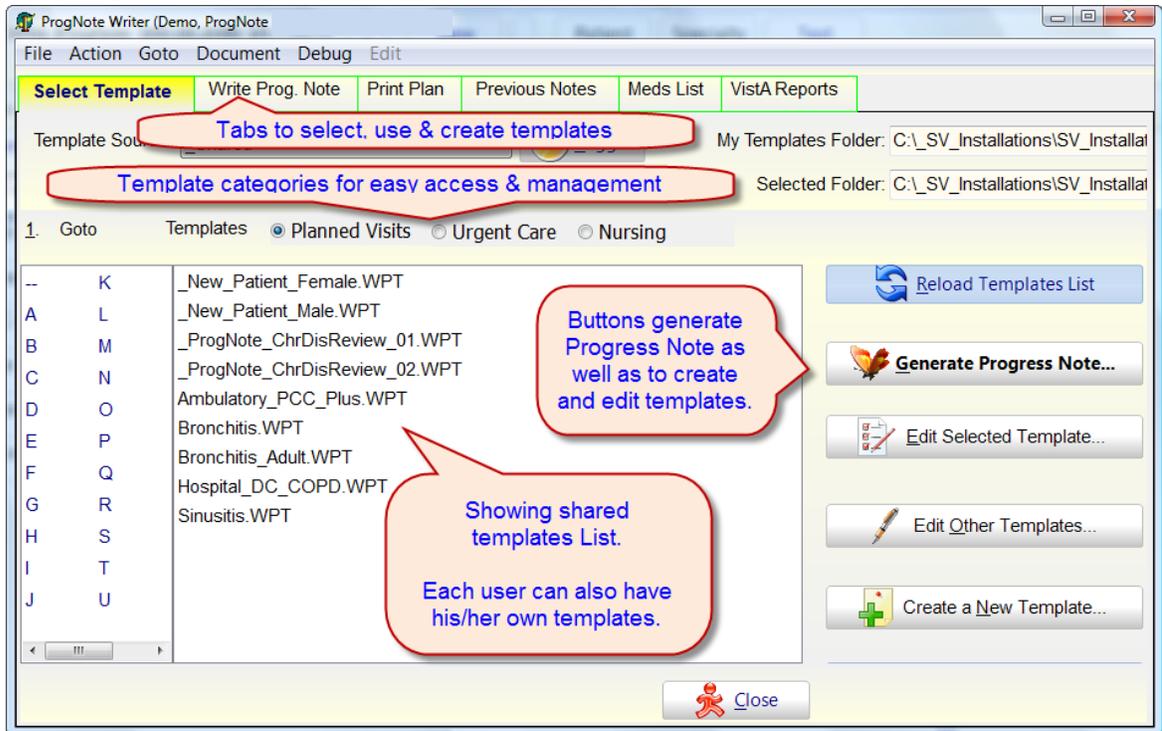
The Progress Note Writer was introduced in 2013 and is modeled after Letter Writer. Letter Writer functionality has been in use since 2007 and has been refined over many years. Therefore, it was logical to create a new component similar to a well tested and highly functional component. Both components are similar in many ways: both use predefined templates and both merge clinical data to create their well formatted text output in form of a letter or a progress note.

Brillians Progress Note Writer simplifies progress note writing process by providing a near-complete progress note that can be easily modified by the user.:

1. Select a progress note template. Templates are grouped into (1) Planned Visits (2) Urgent Care Visits and (3) Nursing for easy access.
2. Click "Generate Progress Note..." button. Instantly, a nearly complete progress note is shown on the "Review and Print" tab.
3. Review and edit the progress note generated by the Progress Note Writer.
4. Start a progress note in CPRS and copy Brillians progress note to CPRS. User can further edit the progress note before signing.

Brillians Progress Note Writer includes many commonly used templates with informative names. It allows each facility to create an unlimited number of "Shared" templates. In addition, each user can create his/her own templates.

The screenshot below shows the user interface and a partial list of templates in the "Shared" folder.



Progress Note Editor

Though Progress Note Writer does considerable work for the user, each patient and each visit is different. Therefore, it provides many facilities to add and edit text and data as shown in the images below.

The screenshot displays the ProgNote Writer interface with a progress note for a 56-year-old male patient. The note includes sections for 'Active Medical Problems' and 'Medical conditions reviewed today'. Callouts highlight key features: auto-created notes, data insertion from TIU objects, automatic transfer of active medical problems, and search tools for additional data.

Showing a part of the auto-created, unedited progress note

User can add additional items to the progress note

User can drop-in additional data including data generated by TIU objects

Active Medical problems can be automatically brought over from a previous note.

Lab data relevant to the selected problems is automatically inserted.

User can access/search additional data using built-in tools

CC/Reason for visit:
 Mr. Demo is a 56 old Male. He is here for evaluation and treatment of medical conditions noted in history provided.
 [x] Doing well and does not have any health issues.
 [-] New medical problems since previous Primary Care visit are as follows:

Active Medical Problems:
 =====
 DM Type 2 (diet controlled)
 COPD and Asthma
 Depression
 Anxiety and Panic Attacks.
 Colon Polyps
 (Last colonoscopy on 11/11/13)
 Tobacco use disorder
 (Patient has tried and failed many times).

::: Medical conditions reviewed today:
 =====
 DM - Good diabetes control per available lab data
 06/06/2014 A1c 6.5
 Hyperlipidemia - Lab data reviewed with patient
 06/06/2014 Cholesterol 178
 06/06/2014 LDL-CHOL 87
 06/06/2014 HDL-CHOL 35
 06/06/2014 Triglyceride 280

LDL Cholesterol is at the desirable level.
 Triglyceride is above the desired value. Pt advised regarding lab value and diet.

COPD - Subjective control status: [-] Good [X] Fair [-] Poor
 Recent history of to indicate COPD exacerbation
 [X] None [-] SOB [-] Wheezing [-] Increased DOE
 Patient advised to avoid all dust, smoke and fume exposure.

Depression - Subjective control status: [-] Good [X] Fair [-] Poor
 Recent history of depression related symptoms:
 [-] Feeling depressed [-] Poor sleep
 [-] Loss of Appetitie [-] Poor interest in hobbies

::: REVIEW OF SYSTEMS: ([x] denotes positive, [-] denotes negative)
 =====
 General: [-] Fever [-] Weight loss [-] Nightsweats

The screenshot displays the ProgNote Writer interface with a progress note. The note content includes:

Lab Review:
 Following tests are outside of normal range (if any):

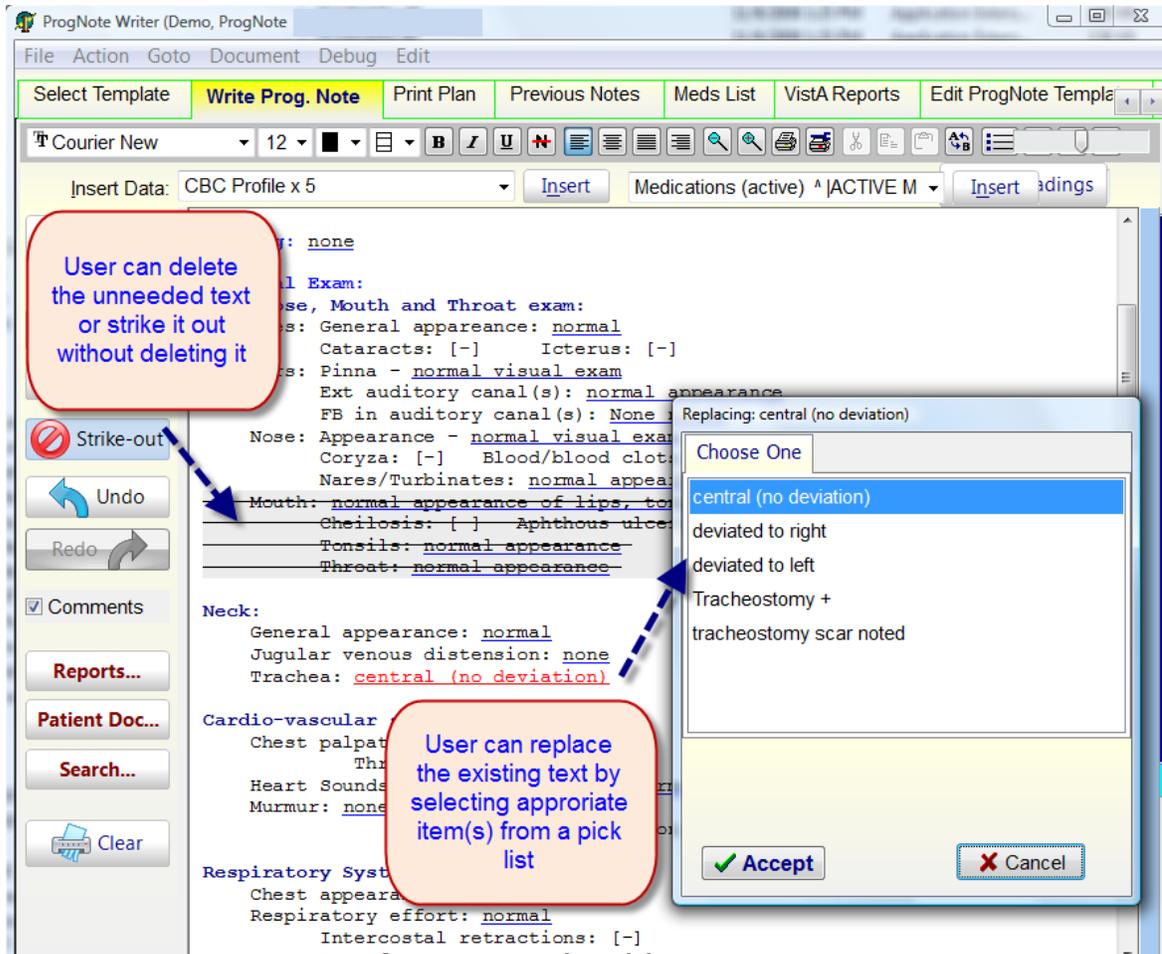
Date	Lab Test	Result	Unit
07/07/2014	GLUCOSE	184 H	mg/dl
06/06/2014	HEMOGLOBIN A1C	6.5 H	%
06/06/2014	HDL	35 L	mg/dl
06/06/2014	TRIGLYCERIDE	280 H	mg/dl
07/06/2014	POTASSIUM	3.3 L	mmol/L

Other sections in the note include PFSH, Tobacco use, Personal history, Family History, PMH, Non-VA Providers, MISC, and Physical Exam.

Callouts:

- Abnormal lab tests can be automatically documented in the progress note.** (Points to the Lab Review table)
- User can navigate to the desired part of the progress note with one click.** (Points to the PFSH section)
- Past, family and social history can be automatically forwarded to a new note and updated as needed.** (Points to the Family History and PMH sections)

Mouse-over to Hide (Points to the right-hand sidebar menu)



10.7 Rx Writer

Brillians Rx Writer is one of the most popular and most used tools. It is accessible from "Rx Writer..." button along bottom border of main form or from Tools menu.

Prescription writing is an essential part of medical practice. Though VA providers write most of the prescriptions in CPRS (to provide from VA formulary), more and more patients are requesting prescription for outside pharmacies due to cost reasons (Tri-Care, Medicare Part D, cheaper generic alternatives, etc.).

Brillians Rx Writer provides about 400 Rx (more being added) which are linked to about 650 brand and generic Rx names. The list includes 300 most prescribed Rx in 2005 (excluding Schedule II drugs). Each Rx provides "How supplied", common dosage, route and frequency information which are shown as pick lists. Thus, user can create a Rx just with point-and-click (no typing).

Manual prescription writing is an repetitive, time-consuming task. If you write five prescriptions for a patient, you need to hand-write patient and provider related information five times.

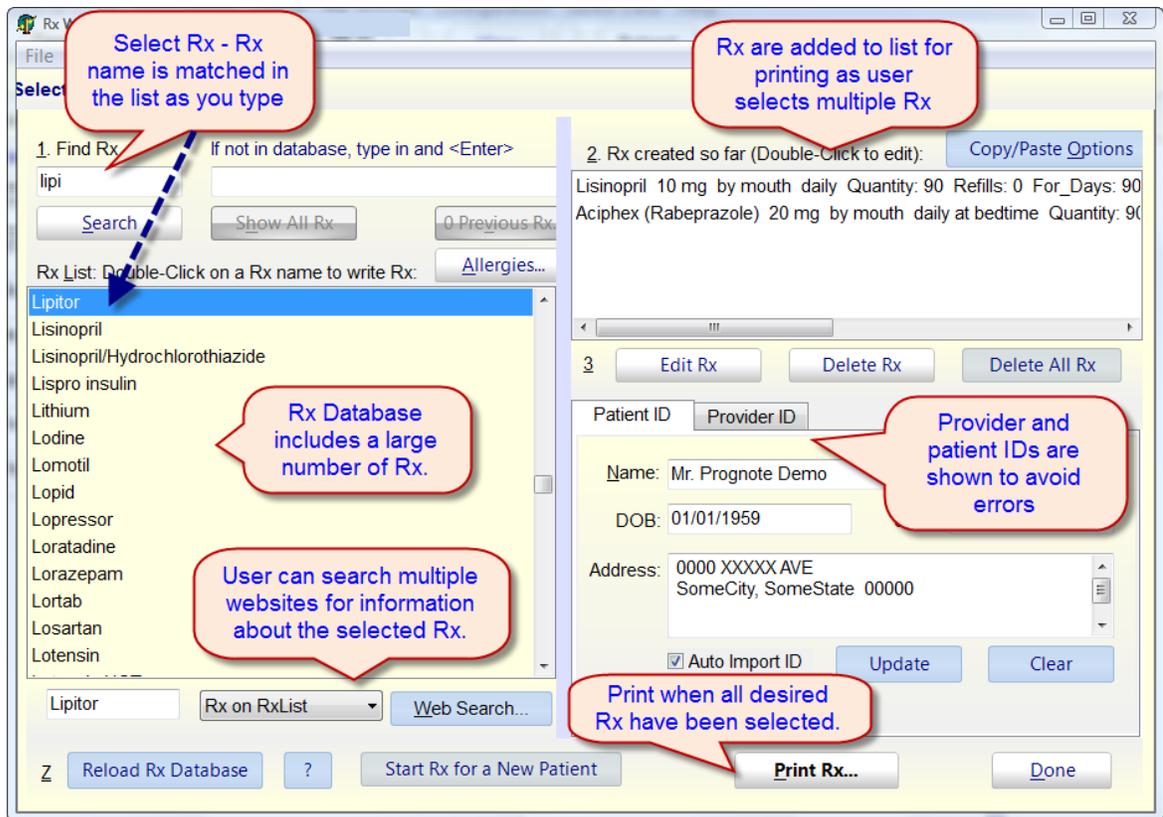
This section describes how to:

- Select a medication to prescribe
- Fill in Rx details
- Print Rx

Select a medication to prescribe

Brillians Rx Writer **turns prescription writing into a simple point-and-click process** (see the screenshots below)

1. Select a medication from list.
2. Create Rx by filling in details (mostly select from list - dose, route, etc.) and add to list (See the 2nd screenshot below)
3. Print Rx.



User Steps:

1. Select a Rx from list:

Brillians Rx Writer provides easy ways to select a Rx

2. Enter details and add to "Rx create so far" list

Enter details (see Fill in Rx details) and add Rx to "Rx created so far" list. You can edit or delete Rx in this list at any time.

3. "Print Rx..." button

Once all the Rx are created, print (see "Print Rx" screen shot below) , sign and give to patient .

User Interface Features and elements:

A. Rx selection:

Given the large number of Rx in database, Brillians Rx Writer provides easy ways to find selected Rx. As you type a few letters in "Find Rx in list" text

box, list scrolls and matching Rx is highlighted as shown in screen shot.

Search button allows you to search a Rx by indication, generic or brand name or class (e.g., ACEI). After search, list shows only the matching Rx.

For a rare Rx which is not in database, you can type in its name in **"If not in list..." text box**, press <Enter> key and fill in details on "Create Rx" (see "Create Rx" screen shot below).

B. List of available Rx:

All available Rx are show (list includes brand and generic names).

C. "Allergies..." button:

Displays allergies/adverse reaction as documented in CPRS.

D. Search online resources:

Search selected website for any Rx (select from list or type in).

E. List of Rx created so far:

You can edit or delete Rx before printing.

Using Right-click pop-up menu, **you can easily copy list of Rx provided to patient into your CPRS progress note**. This documents Rx in progress note but not in "Non-VA Rx" in medications list.

F. Patient and provider info:

Editable patient and provider information fields. Provider information is looked-up automatically (name, license number, DEA number, etc.) and entered on printed Rx.

Fill in details for the Rx you are writing

Like every other tool, [Brillians Rx Writer](#) is designed to make this process as easy as possible. In most cases, you can just click and choose from lists and drop-down boxes and create a Rx without any typing.

In the screen shot below, notice that **all the options for "How supplied", dose, route, frequency, if PRN, quantity, refill and indications are already filled with default values**. Provider can easily change any value with a click on that entry.

1. Review and Select "How supplied," dose, route, frequency, etc. from the list:

Text boxes with white background are editable (select or type in).

2. "Accept Rx" button:

Once all the entries are filled-in, click on this button to accept this Rx. This Rx is added to "Rx created so far" list and display changes to "Select Rx" window so that you can add more Rx or print Rx.

3. "Cancel" button:

Cancels Rx creation/editing process. Display returns to the "Select Rx" window.

User Interface Features and elements:

A. Name of the Rx you are prescribing.

B. "Click and Select" options:

These allow you to fill in (edit) various entries required for each Rx. Light-yellow background indicates that you must make selection from the list. White background means you can select or type-in the information.

C. Basic info about medication you are prescribing:

Very basic info about starting and usual dosage. This is not a substitute for your standard drug reference.

D. Search online resources:

Search selected website for information about medication you are prescribing.

Print Rx

Once all the desired Rx have been created, it is time to print. [Brillians](#) offers one more opportunity to verify that everything is OK before printing Rx. Note that [Brillians](#) does not perform "order-checks" to check for drug interactions.

RxWriter: Please verify Patient ID, Rx Data and Allergies

Warning: Rx Writer does NOT perform any Order-Checks.

Name: Mr. Prognote Demo

DOB: 01/01/1959 SSN: 000-00-0000

Address: 0000 XXXXX AVE
SomeCity, SomeState 00000

List of Rx being prescribed

Rx to be Printed

Lisinopril 10 mg by mouth daily Quantity: 90 Refills: 0 For_Days: 90
 Aciphex (Rabeprazole) 20 mg by mouth daily at bedtime Quantity: 90 Refills: 2 For_Days: 90
 Lipitor (Atorvastatin) 20 mg by mouth daily in evening Quantity: 90 Refills: 3 For_Days: 90

Allergies

Title: ALLERGY/ADVERSE REACTION (AR)

Drug:
 ALLERGY: BACTRIM DS (AV/Historical)
 DIARRHEA, RASH, FEVER

Allergies and adverse reations as documented in VistA/CPRS

Warning: Rx Writer does NOT perform any Order-Checks.

Cancel Goto Print Rx...

If everything is OK, click on "Goto Print Rx..." button. Printed Rx include all the necessary details and only need provider's signatures.

10.8 Task Manager

Task Manager does what its name suggests: it keeps track of user's tasks!

Please see disclaimer on the "Legal" tab regarding purpose and limitations of Task Manager and its intended use.

The current implementation of Task Manager is user-centric, i.e., each user's tasks are saved in a separate file and these are not visible to other users. This may change to a patient-centric format where all tasks about all patients are saved in the same database and are visible to all users.

Like many other tools, it is accessible from "Task Manager..." button along the bottom border of the main form or from the Clinical Tools menu.

Task Manager allows all the functions one would expect in an easy to use interface:

1. Create and edit tasks.
2. Assign priority and due date to each task.
3. Categorize tasks by type of action needed (e.g., review labs, call patient).
4. Filter tasks by due date (overdue now, due within next 7 days). See 2nd image showing a drop-down box with filter options.
5. Set completion status (e.g., active, completed (done) or deleted (Trash can)).
6. Periodically shows reminders about status of tasks (number of active, overdue tasks, etc.). See screenshot below.

Tasks List is displayed when user opens the Task Manager.

The screenshot shows the Task Manager (SupraVISTA) window. At the top, there is a 'File' menu and a status bar indicating 'Data is saved to file when you close this form.' Below the menu, there are tabs for 'Tasks List' and 'Legal'. A 'Set View' dropdown is set to 'All Tasks', and a 'Set Status' dropdown is set to 'Active'. A 'Set' button is next to the status dropdown. Below this, there is a note: 'To Open selected patient in CPRS double-click or <Enter>'. A table of tasks is displayed with columns: Priority, Due Date, Status, Name, Age, Phone, Category, Subject, and Provider Notes. Two tasks are visible: one with Priority 'High' and Due Date '3/3/2014', and another with Priority 'Medium' and Due Date '2/8/2014'. Below the table, there is a 'List of open tasks' section. A 'Subject' field contains the text 'Send letter regarding: H Pylori, Lipids and Liver Panel'. A 'Notes' field contains the text 'To talk about lab abnormalities.'. Below the subject and notes fields are buttons for 'Delete Task' and 'Empty Trash'. At the bottom of the window, there is a toolbar with buttons: 'New Task...', 'Edit Task...', 'Print List...', 'Details...', 'Undo', 'Save', 'Save and Close', and 'Close'. Three callouts are present: one pointing to the 'Set View' and 'Set Status' dropdowns, one pointing to the 'Subject' and 'Notes' fields, and one pointing to the 'Delete Task' and 'Empty Trash' buttons.

Filter by "Due Date" and update status (active, done, etc.)

List of open tasks

Purpose(subject) and user notes

Available actions are executed using the buttons on the bottom panel

Priority	Due Date	Status	Name	Age	Phone	Category	Subject	Provider Notes
High	3/3/2014	Active	Doe_02, Jerry	67 M	(555)555-686	Imaging	Review: CT Abdomen/Pelvis and CT	Unexplained weight loss
Medium	2/8/2014	Active	SEVENTYFIVE,	69 M		Lab	Send letter regarding: H Pylori, Lipids	To talk about lab

Subject: Send letter regarding: H Pylori, Lipids and Liver Panel

Notes: To talk about lab abnormalities.

Delete Task

Empty Trash

New Task... Edit Task... Print List... Details... Undo Save Save and Close Close

Task Manager filter options allow user to focus on the desired tasks

The screenshot shows the 'Task Manager (SupraVISTA)' application window. At the top, there is a 'File' menu and a status bar that says 'Data is saved to file when you close this form.' Below this, there are tabs for 'Tasks List' and 'Legal'. A 'Filter Options' callout points to a dropdown menu currently set to 'All Tasks'. The dropdown menu lists several options: 'Overdue now', 'Due within next 7 days', 'Due within next 14 days', 'Active Tasks', 'Completed tasks (Done)', 'Tasks in Trash can', 'Start date in future', and 'All Tasks'. A blue dashed arrow points from the 'Tasks in Trash can' option to a callout box that says 'Deleted tasks are flagged but are not removed from the file until user clicks on "Empty Trash" button.' Below the dropdown, there is a 'Set View:' section with a value of '2' and a 'Set Status:' dropdown set to 'Active' with a 'Set' button. A table displays task information with columns for 'Priority', 'Due Date', 'Phone', 'Category', and 'Subject'. The table contains two rows: one with 'High' priority and due date '3/3/2014' for 'Review: CT Abdomen/Pelv', and another with 'Medium' priority and due date '2/8/2014' for 'Send letter regarding: H Py'. Below the table, there is a 'Subject:' field containing 'Review: CT Abdomen/Pelvis and CT Chest' and a 'Notes:' field containing 'Unexplained weight loss'. At the bottom of the window, there are buttons for 'Delete Task' and 'Empty Trash'. The bottom-most bar contains buttons for 'New Task...', 'Edit Task...', 'Print List...', 'Details...', 'Undo', 'Save', and another 'Save' button.

Edit a new or existing task

Task Manager (SupraVISTA)

File

Click on "Edit Task" button to edit this record.

Edit Task

Patient ID and Phone: Doe_02, Jerry 67 M (555)555-6866 666-00-0000 **Get ID from CPRS**

1. Action:

Admin action:
Call regarding:
Remind patient:
Review:
Schedule:
Send copy of:
Send letter re:

2. Category:

Imaging
Lab
Life-style
New finding
Procedure
Report
Vitals

3. Topic (check all applicable):

Bone Density
 Bone scan
 Chest X-Ray
 CT - Other
 CT Abdomen/Pelvis
 CT Chest
 CT Head
 Fracture
 IVP
 Mammogram
 MRI - Brain
 MRI- C Spine
 MRI- L Spine

4. Subject (Type in or edit): **Delete Line** **Delete All**

Send letter re: CT Abdomen/Pelvis and CT Chest

Start Reminding from (date): 2/24/2014

Task Due Date: 3/3/2014

Priority: Critical
High
Medium
Routine

Notes:
Unexplained weight loss

You must Accept or Cancel changes before exiting.

Edit Task **Accept** **Cancel** **Done**

All fields of a new or existing task can be edited with a few clicks on this easy to use form.

Set dates using drop-down Calendar

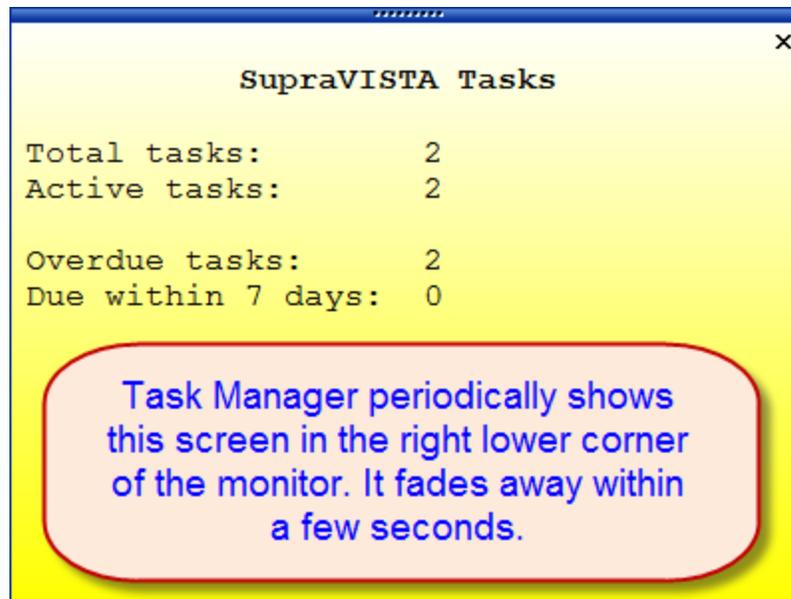
Set "Due Date" and Priority

Available actions are executed using the buttons on the bottom panel

Categorize task and create/edit text for the "Subject" and "Notes" fields.

Periodic reminder about the tasks

The following screen is shown for a few seconds. It automatically fades away within a few seconds without any user action.



10.9 View Alert Helper

Providers spend considerable amount of time every day responding to notifications, popularly known as "View Alerts." Some of these tasks may be done well over a hundred times a day, e.g., signing a progress note or addendum where the provider is an "Additional Signer" or a "Co-Signer."

Many of these tasks require multiple mouse-clicks, opening context menu with right-click and then selecting a menu item, switching hands between keyboard and mouse and so on. These tasks, though taken for granted, are time consuming and mentally tiring.

Brillians View Alert Helper turns many of these tasks to a one click operation.

Here are some of the key features of the "View Alert Helper" functionality:

1. It is visible only when CPRS's main form is the active window. If user selects another application (e.g., Microsoft Word or VistA Imaging), the View Alert Helper hides itself. It come back in view when CPRS main form becomes the active Window.
2. View Alert Helper can be shrunk to different sizes including a very small size that does not cover any functional area of CPRS. It can be resized simply by moving the mouse pointer over certain parts of the this form.
3. It can sign a progress note, create an addendum or open CPRS' "Add Additional Signer" form with one click. Please note that **View Alert Helper does NOT sign your View Alerts automatically. User reviews the data in CPRS and the**

progress note is only signed when user clicks the appropriate button.

The goal is to reduce mouse-clicks and keyboard work. No sensible application will blindly sign the progress notes on behalf of the user.

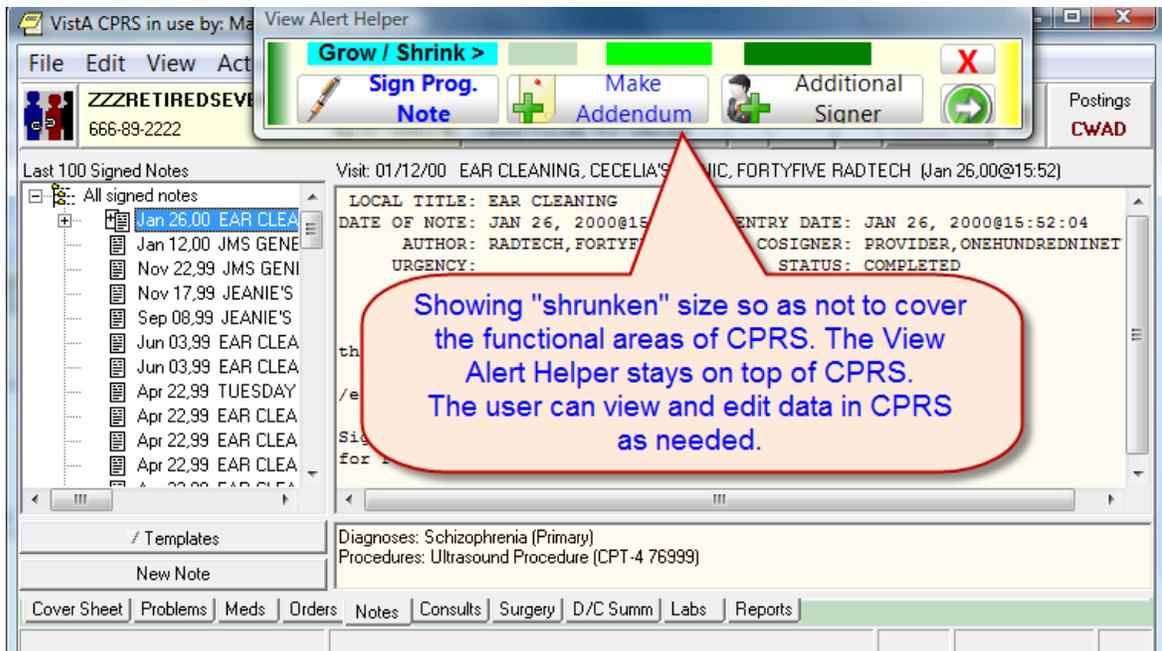
4. It can change view of CPRS orders tab to show Unsigned Orders only. The present implementation can sign selected orders in all categories except controlled drugs that require PIV card. Like progress notes, orders are signed only upon user's explicit action (i.e. a click on "Sign Order" button).
5. It can insert commonly used text snippets in the progress note or addendum with a button click as shown in the image below.

Fully expanded view of the View Alert Helper form

The screenshot shows the 'View Alert Helper' window overlaid on the CPRS interface. The window contains several buttons: 'Sign Prog. Note', 'Make Addendum', 'Additional Signer', 'Select UnSigned', 'Sign Order', and 'View Active'. Below these buttons is a text entry field with a placeholder 'This request has been taken care of'. There are also checkboxes for 'Do NOT prompt to load patient while showing this form.' and an 'Add' button. A callout box points to the 'Sign Prog. Note' and 'Sign Order' buttons, labeled 'Progress Notes' and 'Orders' respectively. Another callout points to the text entry field, labeled 'Data entry in and open progress note or addendum'. A large callout at the bottom states: 'Showing fully expanded "View alert Helper" form overlaying CPRS. This form can be shown in various "shrunken" sizes so as not to cover the functional areas of CPRS.'

Shrunken view of the View Alert Helper form showing Progress Notes related buttons only.

This is most frequently needed functionality. Note that the View Alert Helper form "floats" over CPRS while the user has full access to CPRS. So, the user can review notes, check labs, make addendum to a progress note and so on.



Shrunken view of the View Alert Helper form.

