# Dashboard Technical Manual

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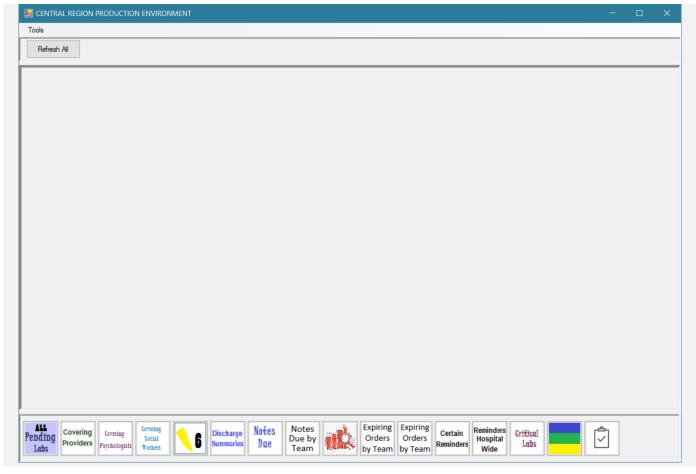


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### What Is It?

Simply stated, the Dashboard is a container used to display data from a mumps database. It is written in C# to run in Microsoft Windows. The data is displayed by object-oriented "modules" meaning that each module is responsible for its own behavior. Modules are defined solely in the mumps database. Up to four modules can be displayed on the Dashboard at any one time.

This is a picture of the Dashboard with no modules displayed:



At the top, you see "Central Region Production Environment". This text is returned by a remote procedure call (RPC) that returns the first line of text in the INTRO MESSAGE field in the KERNEL SYSTEM PARAMETERS file. We use this to let the user know which of our many VistA environments they are currently accessing.

The "Tools" menu currently has only one option which will allow you to enlarge the display font.

The "Refresh All" button will force a refresh of the data in all modules currently displayed. In this case there are no modules currently displayed.

The large blank section in the middle is the real estate used to display up to four modules at a time. Currently no modules are displayed.

At the bottom are icons representing each module currently defined in VistA. These can be restricted by security key as will be explained later.

There are two possible types of modules:

- 1) Datagrid displays data in a grid of rows and columns
- 2) RichText displays data in blocks of text

To display a module, double click on or drag the icon into the display area. Up to four modules can be displayed at one time.

### Disclaimers (and Diatribe)

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This applies to all source code in this release.

Additionally, I am aware that the mumps routines do not fully comply with VA standards. We are not the VA and did not have the time or manpower for this extra requirement. If you want them to comply, please make the changes you need for your site. You will also notice, I'm sure peculiarities in my programming style, both in mumps and C#. For example, I usually use Fileman to write data while using direct reads. I like and respect George Timson as much as anyone; that's just how I choose to code. I make extensive and perhaps unnecessary use of \$GET. I use complete \$PIECE commands even if I want only the first default piece. Again, this all works at our site and has for many years. If you want to modify the style, that is your prerogative. Some of the routines distributed are very complex and may have overlap where code could have been more streamlined and reusable. This is the direct result of everchanging specifications and requirements in our dynamic live environment. I'm sure Hardhats reading this will understand. If it pleases you to simplify, go right ahead! In many routines, my dot levels are insane. I know that. Just do your thing for your site! Some of the modules are dependent on proprietary files and code that is not being released at this time, but some supporting RPC's and routines are provided as examples of how this tool may be used. This includes at least the Sticky Notes, Covering Providers, Covering Social Workers, and Covering Psychologists modules.

### **Supporting Files**

There are two main mumps database files that support the dashboard in general. File number 300894, C9C DASHBOARD MODULES and file number 300896, C9C DASHBOARD USER SETTINGS.

#### **C9C DASHBOARD MODULES**

```
^C9C(300894,D0,0)= (#.01) NAME [1F] ^ (#.05) ACTIVE [2S] ^ (#.5) REQUIRED KEY [3P:19.1] ^
^C9C(300894,D0,1)= (#1) BUTTON TEXT [1F] ^
^C9C(300894,D0,2,0)=^300894.02^^ (#2) BUTTON IMAGE
^C9C(300894,D0,2,D1,0)= (#.01) BUTTON IMAGE [1W] ^
^C9C(300894,D0,3)= (#3) MODULE TYPE [1S] ^
^C9C(300894,D0,4,0)=^300894.04^^ (#4) DATAGRID COLUMN HEADERS
^C9C(300894,D0,4,D1,0)= (#.01) DATAGRID COLUMN HEADER [1F] ^ (#.5) COLUMN DATA TYPE [2S] ^
^C9C(300894,D0,4,D1,1)= (#1) ORDER [1N] ^
^C9C(300894,D0,4,D1,2)= (#2) DISPLAY THIS COLUMN [1S] ^
^C9C(300894,D0,4,D1,3)= (#3) CLICK RPC [1P:8994] ^ (#3.2) CLICK RPC PARAMETER COLUMN IENS [2F] ^
^C9C(300894,D0,4,D1,4)= (#4) HINT [1F] ^
^C9C(300894,D0,4,D1,5)= (#2.5) DISPLAY HIDDEN COLUMN LOGIC [E1,245K] ^
^C9C(300894,D0,6)= (#6) DATA POPULATION RPC [1P:8994] ^
^C9C(300894,D0,7)= (#7) POSSIBLE LOCATIONS RPC [1P:8994] ^
^C9C(300894,D0,8)= (#8) LOCATIONS LABEL OVERRIDE TEXT [1F] ^
^C9C(300894,D0,10)= (#10) RPC GET POSSIBLE FILTER VALUES [1P:8994] ^
^C9C(300894,D0,11,0)=^300894.01P^^ (#.06) ACTIVE DIVISIONS
^C9C(300894,D0,11,D1,0)= (#.01) ACTIVE DIVISIONS [1P:4] ^
^C9C(300894,D0,12)= (#12) ACTION BUTTON TEXT [1F] ^
^C9C(300894,D0,13)= (#13) ACTION BUTTON RPC [1P:8994] ^
```

NAME: Name of the module. Shows as hint when hovering over the icon and shows up in header of the module when displayed.

ACTIVE: Allows you to deactivate modules. If you hold the key called INACTIVE DASHBOARD MODULES, you will see deactivated modules when opening the dashboard. This allows developer access when coding or repairing modules.

REQUIRED KEY: If populated, only users with the designated key will see this module.

BUTTON TEXT: If no image is defined, this text will show up on the icon.

BUTTON IMAGE: Base64 representation of a 60x60 pixels image that will become the icon for the module. Another C# program I wrote, PngToBase64, will be provided with this release to help with this coding.

MODULE TYPE: Datagrid or RichText

DATAGRID COLUMN HEADERS: Multiple to hold datagrid column definitions.

DATAGRID COLUMN HEADER: Text to be used in the datagrid header for this column.

COLUMN DATA TYPE: TEXT, DATE, NUMERIC, ROW COLOR, WEBSITE. The first three are obvious. ROW COLOR is usually set as a column that is not displayed, but will be used in any case to determine what color to use as the background for each row. The mumps return data should return the color for each row as part of it's data. WEBSITE is a url that can be clicked on to get more data about the results as a whole or a specific row. It will show up in blue text similar to a normal hyperlink.

ORDER: Order in which to display this column.

DISPLAY THIS COLUMN: Sounds obvious, but there are valuable uses for hidden columns. One is described above in the row color description. Another is described below in the CLICK RPC PARAMETER COLUMN IENS description.

CLICK RPC: Remote procedure to run when you click on a data cell in this column. Should return a textual value to display back to the user.

CLICK RPC PARAMETER COLUMN IENS: A semicolon separated list of the iens for the column(s) data to send as parameters for the CLICK RPC. Often hidden columns are used for this. For example, the end user is not interested in the patient DFN, but your RPC may need it

to return the correct data. It is key that you use the IEN for the column in the subfile, NOT the order of display for the column(s).

HINT: Text to display when hovering over a cell in this column.

DISPLAY HIDDEN COLUMN LOGIC: Great for developers. You can have your RPC return any data you need to troubleshoot and add mumps logic here that will display it based on having a security key or other criteria. We use a parameter called "VIEW NOTES DUE RULE APPLIED". It can also be used to display highly sensitive data to a subset of users.

DATA POPULATION RPC: This is the main workhorse for returning the data for this module. If the module type is DataGrid, it must return an array of rows each containing the expected number of column values delimited by carets. Data types must also be honored. Empty values are ok, but be careful when using them for parameters in RPC calls. Note: Remember to add these RPC's as well as all click RPC's, get possible filter values, action button, and possible locations RPC's to the C9C DASHBOARD option RPC multiple in file 19.

POSSIBLE LOCATIONS RPC: If populated, this presents a combobox to the user so that a particular location can be chosen, often a ward. The chosen location will be sent to the data population RPC so that results will be specific to that location. This can also be repurposed to allow a user to choose from other types of values, for example a team.

LOCATIONS LABEL OVERRIDE TEXT: If you want the combobox label to say something other than Select Location, enter it here. For example, it may say Select Team.

RPC GET POSSIBLE FILTER VALUES: RPC you write to return a list that can be used to further filter results when retrieving data for this module. A user will be able to choose one or more values from this list to include in the results. I'll describe this more fully later in this document.

ACTIVE DIVISIONS: We are serious about divisionalization at Central Regional and the Dashboard is no exception. This multiple allows us to specify which divisions can see this module.

ACTION BUTTON TEXT: If populated this will cause a button to be displayed that will act on the selected richtext block. Note that this feature is currently available only for richtext modules and needs further development for datagrid use.

ACTION BUTTON RPC: RPC to run when the action button text is clicked. Note that this feature is currently available only for richtext modules and needs further development for datagrid use.

#### **C9C DASHBOARD USER SETTINGS**

```
^C9C(300896,D0,0)= (#.01) USER [1P:200] ^
^C9C(300896,D0,10,0)=^300896.02P^^ (#.5) DIVISION
^C9C(300896,D0,10,D1,0)= (#.01) DIVISION [1P:4] ^
^C9C(300896,D0,10,D1,1,0)=^300896.21P^^ (#1) MODULE
^C9C(300896,D0,10,D1,1,D2,0)= (#.01) MODULE [1P:300894] ^
^C9C(300896,D0,10,D1,1,D2,1,0)=^300896.212^^ (#2) MODULE INSTANCE
^C9C(300896,D0,10,D1,1,D2,1,D3,0)= (#.01) MODULE INSTANCE [1N] ^
^C9C(300896,D0,10,D1,1,D2,1,D3,1,0)=^300896.2121^^ (#1) FILTER ITEMS SHOWN
^C9C(300896,D0,10,D1,1,D2,1,D3,1,D4,0)= (#.01) FILTER ITEM SHOWN IEN [1N] ^
^C9C(300896,D0,10,D1,1,D2,1,D3,1,D4,1)= (#1) FILTER ITEM SHOWN NAME [1F] ^
^C9C(300896,D0,10,D1,1,D2,1,D3,2)= (#2) NOW SHOWING [1S] ^
^C9C(300896,D0,10,D1,1,D2,1,D3,3)= (#3) ORDER SHOWN [1S] ^
^C9C(300896,D0,10,D1,1,D2,1,D3,4)= (#4) LOCATION SELECTION IEN [1N] ^
^C9C(300896,D0,10,D1,1,D2,1,D3,5)= (#5) SORT COLUMN [1N] ^
^C9C(300896,D0,10,D1,1,D2,1,D3,6)= (#6) SORT DIRECTION [1S] ^
^C9C(300896,D0,10,D1,2)= (#2) OVERALL WINDOW WIDTH [1N] ^
^C9C(300896,D0,10,D1,3)= (#3) OVERALL WINDOW HEIGHT [1N] ^
^C9C(300896,D0,10,D1,4)= (#4) FONT SIZE [1S] ^
^C9C(300896,D0,10,D1,5)= (#5) SPLITTER LEFT HORIZONTAL POSITION [1N] ^
^C9C(300896,D0,10,D1,6)= (#6) SPLITTER RIGHT HORIZONTAL POSITION [1N] ^
^C9C(300896,D0,10,D1,7)= (#7) SPLITTER VERTICAL POSITION [1N] ^
^C9C(300896,D0,10,D1,8)= (#8) WINDOW LEFT [1N] ^
^C9C(300896,D0,10,D1,9)= (#9) WINDOW TOP [1N] ^
```

I'm not going to describe each field in the user settings file. Basically, it saves and returns division specific settings for each user. It keeps up with modules that are open, filters in place, and visual settings. These are saved each time a user closes the application and retrieved when opened.

### **Getting Started**

I have provided KIDS builds for the two files above and include the module definitions we have developed at Central Regional along with the remote procedures for each one. Our VistA version is highly customized and I feel certain that these modules will not work for you without some changes. We also have more than a few custom fields in standard VA files, some of which may affect these modules. The only one provided in this build is the DIVISION multiple in the TIU DOCUMENTS DEFINITION file. You'll need to populate this field if you want to use the Rules Engine or any of the three Notes Due modules provided.

One of our more complex module groups is the Notes Due, Notes Due By Team, and Notes Due Forecast set of modules. I say set because they are very similar to each other and all make use of the same basic logic. They also take advantage of another GUI that we are releasing here called the Rules Engine. There are other documents describing the Rules Engine. However, all the code and data that we use is provided. The note titles we use are not provided. Keep in mind that this was evolutionary and that is reflected in the rather complex code.

The GUI applications can reside on a network. Just make sure that you include in the directory Medsphere's two dll files: Medsphere.OpenVista.Remoting.dll and Medsphere.OpenVista.Shared.dll. Thank you Medsphere! You'll also need a shortcut set up like you would a shortcut to CPRS. It will look something like this: N:\WorldVistA\Dashboard\Dashboard\Dashboard.exe S=192.168.33.39 P=9004 These are fictitious ip address and port. Use the same ones you'd use for CPRS.

The Dashboard runs in the C9C DASHBOARD context. The Rules Engine runs in the C9C RULES ENGINE context. These options are provided in the build. If a user does not have the XUPROGMODE key, they will need these options as secondary menus. Each module that you want to use will have to be edited to be sure that the RPC pointers are correct and that your Division is in the multiple.

In this release, simple access code/verify code are used for authentication. They are hashed using the standard released algorithm. Our proprietary active directory login code has been removed.

If you have never logged into this application before, and you made all the required changes to get this to run in your environment, the application will open with a default module and settings. Simply drag modules into the center window or double-click on them. There are splitters and scrollbars that you can use to change individual module window sizes.

### **Installation and Configuration**

- 1) Install the provided KIDS multibuild. There are so many differing flavors and versions of VistA installs out there that I cannot even attempt to cover what may or may not be missing. My tests were on a fresh WVEHR instance.
- 2) Place the GUI clients in a folder together with the provided Medsphere dll's. Create shortcuts as described above in this document with the parameters for Server and Port.
- 3) Make sure that the users who will be running the GUI's have either the XUPROGMODE key or the C9C DASHBOARD and C9C RULES ENGINE secondary menus.
- 4) At this point, the GUI's should run, but be somewhat useless with the provided modules. For them to be more useful, you may need to do some more configuration as described next.
- 5) If you are not using VOE OFFICE INSTITUTION as your Division (DUZ(2)), you will need to add your division (pointer to file 4) to the Active Divisions multiple in each of the entries in the C9C DASHBOARD MODULES file.
- 6) If you do not have inpatient wards at your location and you want to use our provided modules, you will need to add at least a test ward. You will find my steps to do this in Appendix A, Adding Inpatient Ward and Room/Bed.
- 7) Having the inpatient ward is great but will do no good unless you admit a patient into it. There are a number of ways to do this, but you can use the bed control menu if you are unsure. You can find my steps in Appendix B, Admitting A Patient.
- 8) If you want to use Rules Engine and Notes Due modules, you'll need to add your Division (DUZ(2)) to the newly created Division multiple in the TIU DOCUMENT DEFINITION file for active note titles that you intend to set up rules for. In raw WVEHR, there are limited active titles. I show adding the Division to two of these in Appendix C, Adding Division To Note Titles. Then you will need to add some rules for those notes titles using the Rules Engine described in other documents in this release.

You want to use and our user(s) to teams.		created and add

Step By Step – Build A Module

Let's create a very simple example module from start to finish. Suppose we want to see on the dashboard every patient that has an active order for drugs used to treat GERD. Further, we want to be able to choose the ward to see and to have different row colors for males and females. Here is how I would approach it:

First, I would write a routine to retrieve the desired data. In looking at the orderable items file, there is an AOI index that allows you to see which patients have an active order for specified orderable items. We'll use this.

This is the relatively untested routine I put together quickly for this:

```
C9CMODCD; CRH JHT 2020 - show patients with orders for particular drugs
 Q ;no entry from top
RPCFILT(C9CRET); RPC: C9C GERD DRUG FILTER
;C9CRET - return array
;find orderable item ien's for drugs we're interested in
;unfortunately in our environment, lot's of drug names have a trailing space
;so we need to check for that
N OHEN.CNT
S CNT=0
N DN
F DN="FAMOTIDINE TAB","FAMOTIDINE TAB ","OMEPRAZOLE CAP,EC","OMEPRAZOLE CAP,EC ",
"OMEPRAZOLE/SODIUM BICARBONATE ","PANTOPRAZOLE TAB,EC","PANTOPRAZOLE TAB,EC ",
"PANTOPRAZOLE INJ,PWDR","PANTOPRAZOLE INJ,PWDR ","RANITIDINE TAB","RANITIDINE TAB ",
"RANITIDINE INJ", "RANITIDINE INJ ", "ESOMEPRAZOLE CAP, EC", "ESOMEPRAZOLE CAP, EC",
"ESOMEPRAZOLE CAP,SA", "ESOMEPRAZOLE CAP,SA ", "LANSOPRAZOLE CAP,EC",
"LANSOPRAZOLE CAP,EC ","LANSOPRAZOLE TAB,ORAL DISINTEG","RABEPRAZOLE TAB,EC",
"RABEPRAZOLE TAB,EC ","DEXLANSOPRAZOLE CAP,EC","DEXLANSOPRAZOLE CAP,EC " D
.S OIIEN=$O(^ORD(101.43,"B",DN,0))
.I OIIEN>0 S C9CRET($I(CNT))=OIIEN_"^"_$$TRIM^XLFSTR(DN)
RPC(C9CRET,WARD,FILTER);RPC: C9C ON GERD DRUGS
;C9CRET - return array
;WARD - ward name from ward/location file
;FILTER - optional Filter Values As Set By User
Q:SG(WARD)=""
I '$D(FILTER) D ;if no filter, populate with all possible values
.D RPCFILT(.FILTER)
Q:'$D(FILTER)
```

```
order status we are interested in - from status file 100.01
N AX, STATIEN, STAT
F AX="ACTIVE", "PENDING", "RENEWED", "DELAYED", "SCHEDULED" D
.S STATIEN=$O(^ORD(100.01,"B",AX,0))
.I STATIEN>0 S STAT(STATIEN)=AX
Q:\$D(STAT)
N CNT S CNT=0
N CX
S CX=""F S CX=$O(FILTER(CX)) Q:CX="" D ;filters come in from C# in zero based array
.N TD ;orderable item ien
.S TD=$P(FILTER(CX),"^",1)
.N PAT; AOI index has global reference like "4167; DPT("
.S PAT="" F S PAT=$O(^OR(100,"AOI",TD,PAT)) Q:PAT="" D
..N IDT ;inverse date/time, patient may have multiple orders
..S IDT=0 F S IDT=$O(^OR(100,"AOI",TD,PAT,IDT)) Q:IDT'>0 D
...N ORNO :order number in file 100
...S ORNO=0 F S ORNO=$O(^OR(100,"AOI",TD,PAT,IDT,ORNO)) Q:ORNO'>0 D
....N STATUS
....S STATUS=$P($G(^OR(100,ORNO,3)),"^",3)
....Q:'$D(STAT(STATUS))
....N PATDFN I $P(PAT,";",2)="DPT(" S PATDFN=$P(PAT,";",1)
....Q:$G(PATDFN)'>0
....N PATWARD
....S PATWARD=$P($G(^DPT(PATDFN,.1)),"^",1)
....I PATWARD=WARD D
.....N EDATE ;external date
.....S EDATE=$$FMTE^XLFDT(9999999-IDT)
.....N ROWCOLOR S ROWCOLOR="" ;Default
.....N MF; male, female, etc.
.....S MF=$P($G(^DPT(PATDFN,0)),"^",2)
.....I MF="M" S ROWCOLOR="LightGreen"
.....I MF="F" S ROWCOLOR="LightCoral"
.....N PATNAME S PATNAME=$P($G(^DPT(PATDFN,0)),"^",1)
.....N DRUGNAME S DRUGNAME=$P(FILTER(CX),"^",2)
.....S C9CRET($I(CNT))=PATDFN_"^"_PATNAME_"^"_WARD_"^"_DRUGNAME_"^"_EDATE_"^"_ORNO_
"^"_STAT(STATUS)_"^"_ROWCOLOR
Q
```

Now we'll need to create the remote procedures to access the above routine.

These are what I created:

```
NUMBER: 3174

ROUTINE: C9CMODCD

RETURN VALUE TYPE: ARRAY

AVAILABILITY: PUBLIC

RETURN PARAMETER DESCRIPTION:

IEN^DRUGNAME

M-CODE LINE (c): RPCFILT^C9CMODCD(C9CRET) ;RPC: C9C GERD DRUG FILTER
```

NUMBER: 3175 NAME: C9C ON GERD DRUGS TAG: RPC

ROUTINE: C9CMODCD RETURN VALUE TYPE: ARRAY

**AVAILABILITY: PUBLIC** 

**DESCRIPTION:** 

Returns Dashboard data for patients on GERD drugs specified in same

routine

INPUT PARAMETER: WARD PARAMETER TYPE: LITERAL

MAXIMUM DATA LENGTH: 50 REQUIRED: YES

**SEQUENCE NUMBER: 1** 

DESCRIPTION: Ward Name

INPUT PARAMETER: FILTER PARAMETER TYPE: LITERAL

MAXIMUM DATA LENGTH: 50 REQUIRED: NO

SEQUENCE NUMBER: 2

**DESCRIPTION:** 

Array of IEN^DRUGNAME

RETURN PARAMETER DESCRIPTION:

PATDFN\_"^"\_PATNAME\_"^"\_WARD\_"^"\_DRUGNAME\_"^"\_EDATE\_"^"\_ORNO\_"^"\_STAT(STATU

S)\_"^"\_ROWCOLOR

M-CODE LINE (c): RPC^C9CMODCD(C9CRET,WARD,FILTER) ;RPC: C9C ON GERD DRUGS

#### Add these new RPC's to the rpc multiple of file 19.

Select OPTION NAME: C9C DASHBOARD C9C DASHBOARD Select RPC: C9C SHOW OVERRIDES// C9C GERD DRUG FILTER

Are you adding 'C9C GERD DRUG FILTER' as a new RPC (the 42ND for this OPTION) ? No// y (Yes)

Select RPC: C9C ON GERD DRUGS

Are you adding 'C9C ON GERD DRUGS' as a new RPC (the 43RD for this OPTION)? N o// y (Yes)

Now let's create a picture for the icon. First create a .png that is 60x60 pixels. Using Microsoft Paint, this is a simple one I created:



Using my PngToBase64.exe, provided in this release, convert to Base64 and copy to the Windows clipboard.

Then define the module in the C9C DASHBOARD MODULES file. This is how my Definition looks. There are a couple of RPC's being used that already existed, one

from CRH, one standard VA. They have already been registered in file 19 as well.

NUMBER: 17 NAME: Patients With GERD Drug Orders ACTIVE: YES

**BUTTON TEXT: GD BUTTON IMAGE:** 

137^80^78^71^13^10^26^10^0^0^013^73^72^68^82^0^0^0^60^00^060^8^2^0^0^0^0 181^158^78^37^0^0^0^1^115^82^71^66^0^174^206^28^233^0^00^04^103^65^77^65^0 ^0^177^143^11^252^97^5^0^0^0^9^112^72^89^115^0^0^18^116^0^0^18^116^1^222^1 02^31^120^0^0^1^128^73^68^65^84^104^67^237^211^193^113^194^48^16^133^97^21 5^69^61^12^117^80^65^134^59^55^247^96^106^224^70^1^46^0^46^212^64^20^73^20 ^181^87^236^155^40^246^77^20^251^38^138^125^19^133^254^241^150^1^82^209^98 ^1^82^209^98^1^82^209^98^1^82^209^98^1^82^209^98^1^82^209^98^1^82^209^98^1 ^82^209^98^1^82^209^98^1^242^21^244^184^219^126^116^81^109^134^187^159^92^ 207^155^116^228^106^119^49^51^254^202^149^29^229^167^211^177^179^0^185^132 ^46^176^186^227^88^153^86^208^221^182^63^92^139^211^146^27^200^58^250^126^ 216^251^227^102^119^104^56^153^46^160^221^53^36^121^126^115^127^118^179^21 1^209^253^48^189^36^63^13^199^186^75^98^128^172^162^107^38^155^31^67^63^19 8^161^143^166^12^144^85^244^101^112^7^249^167^246^108^109^217^91^146^95^15 ^251^16^166^155^151^22^110^237^12^157^221^16^32^127^21^29^129^136^230^127^ 165^1^114^253^122^248^211^83^244^194^122^132^11^8^43^91^188^211^223^94^143 ^204^139^24^62^89^133^142^158^146^87^2^157^30^59^11^144^117^116^105^1^76^8 5^214^195^61^226^18^43^125^17^211^202^238^134^9^144^75^232^175^240^15^166^ 163^87^160^227^87^194^44^125^6^93^18^155^0^249^10^250^239^3^164^162^197^2^ 164^162^197^2^164^162^197^2^164^162^197^2^164^162^197^2^164^162^197^2^164^1 162^197^2^164^162^197^2^164^162^197^2^164^162^197^2^228^191^64^183^81^236^ 155^40^246^77^20^251^247^175^254^246^9^110^84^37^61^85^100^215^18^0^00^0^0 73^69^78^68^174^66^96^130^

MODULE TYPE: DataGrid

DATAGRID COLUMN HEADER: DFN **COLUMN DATA TYPE: TEXT** ORDER: 1

DISPLAY THIS COLUMN: NO HINT: DFN

**DATAGRID COLUMN HEADER: Patient** COLUMN DATA TYPE: TEXT ORDER: 2

Type <Enter> to continue or '^' to exit:

DISPLAY THIS COLUMN: YES **HINT: Patient Name** 

DATAGRID COLUMN HEADER: Ward COLUMN DATA TYPE: TEXT ORDER: 3

DISPLAY THIS COLUMN: YES **HINT: Patient Ward** 

DATAGRID COLUMN HEADER: Orderable Item COLUMN DATA TYPE: TEXT ORDER: 4

DISPLAY THIS COLUMN: YES HINT: Orderable Item

DATAGRID COLUMN HEADER: Start Date **COLUMN DATA TYPE: DATE ORDER: 5** 

DISPLAY THIS COLUMN: YES **HINT: Start Date** 

DATAGRID COLUMN HEADER: Order Number COLUMN DATA TYPE: NUMERIC ORDER: 6

DISPLAY THIS COLUMN: YES CLICK RPC: ORQOR DETAIL CLICK RPC PARAMETER COLUMN IENS: 6;1 HINT: Order Number

DATAGRID COLUMN HEADER: Status COLUMN DATA TYPE: TEXT ORDER: 7

DISPLAY THIS COLUMN: YES HINT: Order Status DATAGRID COLUMN HEADER: Row Color COLUMN DATA TYPE: ROW COLOR ORDER: 8

DISPLAY THIS COLUMN: NO

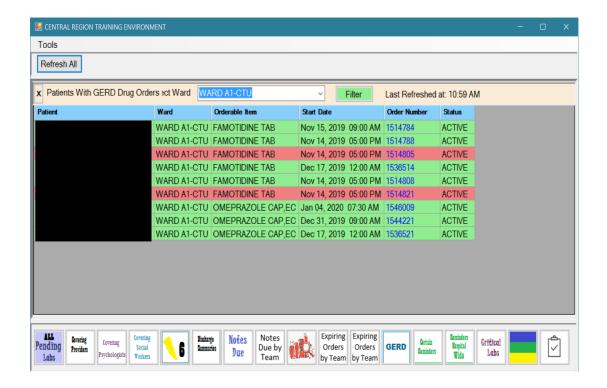
DATA POPULATION RPC: C9C ON GERD DRUGS POSSIBLE LOCATIONS RPC: C9C WARDS AND UNITS LOCATIONS LABEL OVERRIDE TEXT: Select Ward

RPC GET POSSIBLE FILTER VALUES: C9C GERD DRUG FILTER

ACTIVE DIVISIONS: CENTRAL REGIONAL HOSPITAL

ACTIVE DIVISIONS: WHITAKER ACTIVE DIVISIONS: BLACKLEY

So now if you run the Dashboard, you should see the additional icon. Once you drag it into the center window or double-click, be sure to click on the filter button since only the first drug will be selected by default. After that, the program will remember your selections. The data will refresh when you choose a different ward or filter, when you click on Refresh All, or every fifteen minutes. You can sort on any column. This is how mine looks:



### Released Modules RPC Table

					DATAGRID	
	DATA POPULATION	POSSIBLE	RPC GET POSSIBLE	ACTION BUTTON	COLUMN	
Module Name	RPC	LOCATIONS RPC	FILTER VALUES	RPC	HEADER	CLICK RPC
All Pending Labs T-10 To	C9C GET PENDING	C9C WARDS AND	TIETER VALUES	I C	HEADER	CEICK NI C
T+5	LABS	UNITS			Order Number	ORQOR DETAIL
113	C9C COVERING	011113			Order Hamber	ONGON BETTIE
Covering Providers	PROVIDERS MODULE					
	C9C COVERING					
Covering Psychologists	PSYCHOL MODULE					
5 , 5	C9C COVERING SW					
Covering Social Workers	MODULE					
Lab Draws Today Not At	C9C LAB DRAWS	C9C WARDS AND				
6AM	OTHER THAN SIX	UNITS			Order Number	ORQOR DETAIL
Missing Discharge	C9C MISSING DSCG					
Summaries	SUMMARIES					
	C9C MODULE GET	C9C WARDS AND	C9C NOTES DUE ALL			C9C DB MODULE
Notes Due	NOTES DUE	UNITS	FILTERS		Last Completed	NOTE TEXT
	C9C MODULE GET	C9C WARDS AND	C9C NOTES DUE ALL			C9C SHOW
Notes Due	NOTES DUE	UNITS	FILTERS		Rule Applied	OVERRIDES
		C9C GET ALL				
	C9C NOTES DUE BY	APPROPRIATE	C9C NOTES DUE ALL			C9C DB MODULE
Notes Due By Team	TEAM	TEAMS	FILTERS		Last Completed	NOTE TEXT
		C9C GET ALL				
	C9C NOTES DUE BY	APPROPRIATE	C9C NOTES DUE ALL			C9C SHOW
Notes Due By Team	TEAM	TEAMS	FILTERS		Rule Applied	OVERRIDES
	C9C FORECAST NOTES		C9C NOTES DUE ALL			C9C DB MODULE
Notes Due Forecast	DUE	C9C ND GET TEAMS	FILTERS		Last Completed	NOTE TEXT
Natas Dua Farasat	C9C FORECAST NOTES	COC NID CET TEANAC	C9C NOTES DUE ALL		Dula Ameliad	C9C SHOW
Notes Due Forecast	DUE COS EVENING FOR	C9C ND GET TEAMS	FILTERS		Rule Applied	OVERRIDES
Orders Expiring Next 10	C9C EXPIRING FOR DASHBOARD	COC NID CET TEAMS			Order Number	ODOOD DETAIL
Days By Team Orders Expiring Next 5	C9C EXPIRING FOR	C9C ND GET TEAMS			Order Number	ORQOR DETAIL
Days By Team	DASHBOARD	C9C ND GET TEAMS			Order Number	ORQOR DETAIL
Patients With GERD Drug	DASTIDOARD	C9C WARDS AND	C9C GERD DRUG		Order Namber	ONQON DETAIL
Orders	C9C ON GERD DRUGS	UNITS	FILTER		Order Number	ORQOR DETAIL
Oracis	C9C DASHBOARD	C9C WARDS AND	C9C C AND R		Oraci ivanibei	ONQONDETAIL
Reminders	REMINDER MODULE	UNITS	FILTERS			
	C9C ALL PATIENTS		C9C C AND R			
Reminders Hospital Wide	REMINDERS		FILTERS			
Show Critical Chem Lab	C9C GET CRITICAL LAB					
Results Last 7 Days	RESULTS					
,	C9C DASHBOARD	C9C WARDS AND	C9C FILTER STICKY	C9C FORCE		
Sticky Notes	STICKY NOTES	UNITS	NOTES	STICKY NOTE EXP		
	C9C UNVERIFIED FOR	C9C WARDS AND				
Unverified orders > T-30	DASHBOARD	UNITS			Order Number	ORQOR DETAIL

# **Appendix A**

### **Adding Inpatient Ward and Room/Bed**

Added a HOSPITAL LOCATION and a WARD LOCATION: INPUT TO WHAT FILE: HOSPITAL LOCATION// **EDIT WHICH FIELD: ALL//** Select HOSPITAL LOCATION NAME: ZZTESTWARD Are you adding 'ZZTESTWARD' as a new HOSPITAL LOCATION (the 4TH)? No// y (Yes) **HOSPITAL LOCATION TYPE: W WARD HOSPITAL LOCATION TYPE EXTENSION: WARD// ABBREVIATION: ZZT** TYPE: WARD// **TYPE EXTENSION: WARD//** INSTITUTION: VOE OFFICE INSTITUTION 100 **DIVISION: EHR OFFICE MODULE: DEFAULT DEVICE: DISPOSITION ACTION: VISIT LOCATION:** STOP CODE NUMBER: PSYCHIATRY - INDIVIDUAL SERVICE: PSY PSYCHIATRY TREATING SPECIALTY: PSYCH RESID REHAB PROG **PHYSICAL LOCATION:** \*OKC A: \*OKC B: Select SYNONYM: ZZT **SPECIAL AMIS STOP: CATEGORY OF VISIT: DEFAULT PROVIDER: Select PROHIBITED TERMINAL:** AGENCY: **ASK FOR CHECK IN/OUT TIME:** \*CLINIC SERVICES RESOURCE: **WORKLOAD VALIDATION AT CHK OUT: CLINIC GROUP (REPORTS):** WARD LOCATION FILE POINTER: ZZTESTWARD Are you adding 'ZZTESTWARD' as a new WARD LOCATION (the 1ST)? No// y (Yes) WARD LOCATION HOSPITAL LOCATION FILE POINTER: ZZTESTWARD **WARD LOCATION G&L ORDER: 97 PATIENT FRIENDLY NAME:** 

**Added an associated Nursing Ward:** 

**DISPLAY CLIN APPT TO PATIENTS?: ^** 

Select OPTION NAME: NURSFL-LOC Nursing Location File, Edit

#### **Nursing Location File, Edit**

**Select NURSING UNIT NAME: ZZTESTWARD** 

Are you adding 'NUR ZZTESTWARD' as a new HOSPITAL LOCATION? No// y (Yes) NU

**R ZZTESTWARD** 

Are you adding 'ZZTESTWARD' as a new NURS LOCATION (the 1ST)? No// y (Yes)

NAME: ZZTESTWARD//

**HOSPITAL LOCATION INSTITUTION: VOE OFFICE INSTITUTION** 

//

**PATIENT CARE STATUS: A ACTIVE** 

**WARD STATUS: A ACTIVE** 

There are no MAS wards associated with this Nursing unit.

Would you like to (A)dd new MAS wards or (B)ypass

this prompt (A/B): A// B BYPASS PROMPT

There are no AMIS bed sections associated with this Nursing unit.

Would you like to (A)dd new AMIS bed sections or (B)ypass

this prompt (A/B): A// B BYPASS PROMPT

#### **CARE SETTING: ?**

Enter an "I" if this is an inpatient location or an "O" for other.

Choose from:

I Inpatient

O Other

**CARE SETTING: I Inpatient** 

UNIT TYPE: MENTAL HEALTH ACUTE INPATIENT DSS DEPARTMENT:

PROFESSIONAL PERCENTAGE:

**UNIT EXPERIENCE:** 

Select POC DATA ENTRY PERSONNEL:

**Select POC DATA APPROVAL PERSONNEL:** 

**Select SERVICE POSITION:** 

#### Added a bed to the newly created ward:

INPUT TO WHAT FILE: HOSPITAL LOCATION// room-b

1 ROOM-BED (0 entries)

2 ROOM-BED DESCRIPTION (0 entries)

CHOOSE 1-2: 1 ROOM-BED (0 entries)

**EDIT WHICH FIELD: ALL//** 

Select ROOM-BED NAME: ZZT-40-01

Are you adding 'ZZT-40-01' as a new ROOM-BED (the 1ST)? No// y (Yes)

DESCRIPTION: SEMI-PRIVATE
Are you adding 'SEMI-PRIVATE' as

a new ROOM-BED DESCRIPTION (the 1ST)? No// y (Yes)

Select WARD(S) WHICH CAN ASSIGN: ZZTESTWARD

Are you adding 'ZZTESTWARD' as

a new WARD(S) WHICH CAN ASSIGN (the 1ST for this ROOM-BED)? No// y (Yes)

Select WARD(S) WHICH CAN ASSIGN:

**Select OUT-OF-SERVICE DATE:** 

**Changed the Medical Center to allow inpatient wards:** 

Select MEDICAL CENTER DIVISION NAME: EHR OFFICE 050

**OUTPATIENT ONLY: OUTPATIENT ONLY//??** 

Enter yes if this division has only outpatient medical services (no

inpatient wards).

**Choose from:** 

1 OUTPATIENT ONLY

OUTPATIENT ONLY: OUTPATIENT ONLY// @ SURE YOU WANT TO DELETE? y (Yes)

Added more data for WARD LOCATION:

INPUT TO WHAT FILE: ROOM-BED// WARD LOCATION (1 entry)

**EDIT WHICH FIELD: ALL//** 

Select WARD LOCATION NAME: ZZTESTWARD

NAME: ZZTESTWARD// DIVISION: EHR OFFICE

SPECIALTY: PSYCH RESID REHAB PROG

**BEDSECTION: ZZT** 

**SERVICE: PSY PSYCHIATRY** 

**RAI/MDS WARD:** 

PRINT WARD ON WRISTBAND:

FY TARGET: SERIOUSLY ILL: TERMINAL:

PRIMARY LOCATION: ZZT INTERMEDIATE MEDICINE - LTC:

Select SYNONYM: ZZT

HOSPITAL LOCATION FILE POINTER: ZZTESTWARD// Select AUTHORIZED BEDS DATE: N APR 18, 2020

Are you adding 'APR 18, 2020' as

a new AUTHORIZED BEDS DATE (the 1ST for this WARD LOCATION)? No// y (Yes)

NUMBER OF AUTHORIZED BEDS: 50 Select OUT-OF-SERVICE DATE(S):

G&L ORDER: 97//
Select TOTALS: ^

Added MAS Ward to the Nursing Location:

INPUT TO WHAT FILE: NURS LOCATION//

EDIT WHICH FIELD: ALL// 2 MAS WARD (multiple)

**EDIT WHICH MAS WARD SUB-FIELD: ALL//** 

THEN EDIT FIELD:

Select NURSING UNIT NAME: ?

NOTE: The letters NUR may be in front of the location name.

This is not to be corrected under any circumstance.

DO YOU WANT THE ENTIRE 1-ENTRY NURSING UNIT LIST? y (Yes)

**CHOOSE FROM:** 

ZZTESTWARD

Select NURSING UNIT NAME: ZZTESTWARD

Select MAS WARD: ?

You may enter a new MAS WARD, if you wish

۸

Answer with WARD LOCATION NAME, or SERVICE, or \*NSERV, or SYNONYM:

**ZZTESTWARD** 

**Select MAS WARD: ZZTESTWARD** 

Are you adding 'ZZTESTWARD' as a new MAS WARD (the 1ST for this NURS LOCATION

)? No// y (Yes)

MAS WARD AMIS BED SECTION:

# **Appendix B**

### **Admitting A Patient**

Then I admitted one existing patient to ZZTESTWARD:

GTM-Conference>D ^XUP

Setting up programmer environment

This is a TEST account.

Terminal Type set to: C-VT100

You have 109 new messages.

Select OPTION NAME: bed control MENU DG BED CONTROL Bed Control Menu

**Admit a Patient** 

**Cancel a Scheduled Admission** 

**Check-in Lodger** 

**Delete Waiting List Entry** 

**Detailed Inpatient Inquiry** 

**Discharge a Patient** 

**DRG Calculation** 

Enter preliminary cause of death for a patient

**Extended Bed Control** 

**Lodger Check-out** 

**Provider Change** 

**Schedule an Admission** 

**Seriously III List Entry** 

**Switch Bed** 

**Transfer a Patient** 

**Treating Specialty Transfer** 

Waiting List Entry/Edit

You've got PRIORITY mail!

Select Bed Control Menu <TEST ACCOUNT> Option: Admit a Patient

```
Admit PATIENT: ZZ
```

\*\*\*WARNING\*\*\*

<sup>\*\*\*</sup>RESTRICTED RECORD\*\*\*

### \*\*\*WARNING\*\*\* \*\*\*RESTRICTED RECORD\*\*\*

Means Test not required based on available information

Status : PATIENT HAS NO INPATIENT OR LODGER ACTIVITY IN THE COMPUTER

Religion : Marital Status : MARRIED Eligibility : REIMBURSABLE INSURANCE (NOT VERIFIED)

<C>ontinue, <M>ore, or <Q>uit? CONTINUE// CONTINUE

Select ADMISSION DATE: NOW// (APR 18,2020@09:05:23)

SURE YOU WANT TO ADD 'APR 18,2020@09:05:23' AS A NEW ADMISSION DATE? // y (Yes)

DOES THE PATIENT WISH TO BE EXCLUDED FROM THE FACILITY DIRECTORY?: N NO

ADMITTING REGULATION: 1 ACTIVE PSYCHOSIS 17.33
TYPE OF ADMISSION: 1 DIRECT ADMISSION ACTIVE

DIAGNOSIS [SHORT]: None WARD LOCATION: ZZTESTWARD

ROOM-BED: ZZT-40-01

**FACILITY TREATING SPECIALTY: PSY** 

1 PSYCH RESID REHAB PROG PSYCH RESID REHAB PROG

2 PSYCHIATRIC OBSERVATION PSYCHIATRIC OBSERVATION

CHOOSE 1-2: 1 PSYCH RESID REHAB PROG PSYCH RESID REHAB PROG

PRIMARY PHYSICIAN: DOCTOR, EIGHT Physician
ATTENDING PHYSICIAN: DOCTOR, EIGHT Physician

DIAGNOSIS: None

Edit? NO//

SOURCE OF ADMISSION: 2A NON-VETERAN OTHER THAN MILITARY HOSPITAL

**Patient Admitted** 

**Updating PTF Record #1...** 

Now updating ward MPCR information...completed.

Updating automated team lists...completed.

**Executing HL7 ADT Messaging** 

**Executing HL7 ADT Messaging (RAI/MDS)** 

...Inpatient Medications check...

...discontinuing Inpatient Medication orders....done...

Entering a request in the HINQ suspense file...completed.

Updating visit status...completed.

# **Appendix C**

### **Adding Division To Note Titles**

I then used Fileman to add a division to two titles:
INPUT TO WHAT FILE: TIU DOCUMENT DEFINITION//
EDIT WHICH FIELD: ALL// DIVISION (multiple)
EDIT WHICH DIVISION SUB-FIELD: ALL//
THEN EDIT FIELD:

Select TIU DOCUMENT DEFINITION NAME: DISCHARGE

- 1 DISCHARGE SUMMARIES DOCUMENT CLASS
- 2 DISCHARGE SUMMARY TITLE

**Std Title: DISCHARGE SUMMARY** 

- 3 DISCHARGE SUMMARY CLASS
- 4 DISCHARGE FINAL DISCHARGE NOTE TITLE
- 5 DISCHARGE CARE COORDINATION HOME TELEHEALTH DISCHARGE NOTE TITLE

CHOOSE 1-5: 2 DISCHARGE SUMMARY TITLE

**Std Title: DISCHARGE SUMMARY** 

Select DIVISION: VOE OFFICE INSTITUTION 100

Are you adding 'VOE OFFICE INSTITUTION' as a new DIVISION (the 1ST for this T

IU DOCUMENT DEFINITION)? No// y (Yes)

Select DIVISION:

INPUT TO WHAT FILE: TIU DOCUMENT DEFINITION//
EDIT WHICH FIELD: ALL// DIVISION (multiple)
EDIT WHICH DIVISION SUB-FIELD: ALL//
THEN EDIT FIELD:

Select TIU DOCUMENT DEFINITION NAME: CRISIS NOTE

1 CRISIS NOTE TITLE

**Std Title: CRISIS INTERVENTION NOTE** 

2 CRISIS NOTE DOCUMENT CLASS

CHOOSE 1-2: 1 CRISIS NOTE TITLE

Std Title: CRISIS INTERVENTION NOTE
Select DIVISION: VOE OFFICE INSTITUTION

Are you adding 'VOE OFFICE INSTITUTION' as a new DIVISION (the 1ST for this T

IU DOCUMENT DEFINITION)? No// y (Yes)

**Select DIVISION:**