

MEDICS

(MI² Encrypted Data Information Collection System)

Portable Data Entry Application

Users Guide

Overview

MEDICS is designed to allow quick and easy entry and collection of patient health information, usually in the patient's home. The system stores local patient records encrypted using a local private / public encryption key pair. Users may add records manually, or import them from files supplied by the insurance carrier or other sources.

Users will export local records to an outgoing directory, which will render the records unavailable to the local user by deleting the local copy, and storing a copy encrypted using a remote server's public encryption key in an outgoing directory.

Installing & Configuring MEDICS

MEDICS Portable Data Entry Application is configured and ready to run on the provided USB Flash device.

If you wish to install MEDICS on a local computer browse to the USB Flash drive and double-click the file 'medics_b[##]_install.exe'. Select the destination folder when prompted, and click Install.

A window will pop up, prompting you to create a user name and password. It will also ask you to enter the server public key ID which is has been provided separately. Click **Next**. *Note: The user name, password and the server public key ID are case sensitive.*

Next you will be prompted to locate the server's public key which can be found under 'medics\keystoredir\pub_key_[XXXXX].txt' on the USB Flash device. *Note: The actual name of the file will be similar to the server key ID*. Click **Open**. You will then have to wait a short time while the program generates your new private / public encryption key pair.

You will also be prompted to set up a '\backup' directory in which copies of the active records will be stored. It is recommended that you select a folder on your local hard drive so that you will still have access to patients' records in the event that you misplace the USB flash device. Because exported files are deleted from the '\backup' directory, it is also recommended that you wait to export completed patient records until you are ready to send them, for this same reason.

The MEDICS program writes to two separate folders in which patient records are stored: a 'work' directory, where active records are stored as XML files encrypted with the user's public key, and an 'loutgoing' directory, in which exported records are saved before being sent out for processing. The program is configured with existing default locations for these folders. However, if you are installing the program on your local machine, or the USB flash device has been mapped to a non-standard drive letter, the first time you run the MEDICS program you may be prompted to create or select the location of a new 'lwork' directory.

Running the Program

Under the '[x]:\medics' directory, a batch file 'medics.bat' can be executed to launch the application. If you are using the preconfigured version of MEDICS, on most systems, XP will automatically open a window soon after you insert the USB Flash drive, where the first option is to 'Start MEDICS'.

Enter your user name and password to log into the system when prompted. Press the **Login** button and the application will launch on to an empty screen containing menu items as follows: **Records, Tools, Help**

To start entering data select **Records > New Record** or press **Ctrl+N**. This will display a set of screens contained in tabs that divide the information needed into logical sections in the order of a normal health screening process.

Data Entry Overview

See *Appendix A* for a screen shot of each tab, illustrating the placement and text of each field. These represent the set of questions end-users are engaged with during usage of the MEDICS program.

The **Demographics** tab will contain patient demographic and identifying information, such as Name, Address, and Contact Information as well as a place to record the patient's insurance company, primary care physician information and examining provider's information.

The **Family History** tab will contain pertinent medical information of patient family members and the patient's "life style".

The **Medical History** tab will contain notes related to the patient's medical history, such as a record of allergies or surgeries undergone.

The **Medications** tabs (1 and 2) will contain a detailed record of up to 20 current medications being taken by the patient.

The **Preventative History** tab will contain the dates and results of screening exams and procedures undergone by the patient.

The **SOAP: Patient Perceptions** tab will contain a subjective record of the patient's perceptions regarding various typical systems.

The **SOAP: Vitals, Etc** tab will contain a detailed objective record of the patient's vital information, such as Weight, Height, Pulse, and BMI measurements.

The **SOAP: Assessment/Treatment** tab contains sections for notes on the assessment of the patient's health and suggested treatment plans.

The **ICD-9** tab will contain specific records of any ICD-9 codes associated with the patient that are current and, potentially, any historical diagnosis of interest.

Note: ICD-9 codes are now fully search able by using the button to open the **Code Search Window**. Typing any 3-digit code into the search window will bring up a list of valid ICD-9 codes which you can select by clicking the '>' button next to the desired code. You can also simply type a code directly into the 'ICD-9' field, and the code description will be filled in for you. The **Help** menu also contains a list of common diagnoses and their corresponding ICD-9 codes in PDF format, named 'Coding_Reference'.

The **Billable Actions** tab will contain the date of service for this exam as well as the codes for any additional services that should be billed. It also has a place for follow-up notes and the provider's employer (Service Clinic).

The following fields are required before exporting a patient record:

- Insurance Company
- Member ID
- Eff. Date of Ins.
- Patient's Last & First Name
- HIPPA Notice Given
- Examining Provider's NP ID, Last & First Name
- HCFA ICD9 1 Code (defaulted to 'V70.0')
- **Diag Status 1** (defaulted to 'Current')
- Service From Date
- Service Thru Date
- **CPT 1 Code** (defaulted to '99345')
- Service Clinic Name, Address etc. (defaults provided)

All required fields (and any tabs that contain required fields) are indicated by *italic* text and an asterisk: *

Note: Date fields (except for those in the **Preventative History** tab) use the following format: **MM-DD-YYYY** If the date, or other formatted data such as '**SSN**', is entered incorrectly, the field will be cleared. Also, using the **DEL** key in formatted fields leaves blank spaces, rather than pulling in the right side of the text. It is recommended that you use **Backspace** instead.

User Interface and Work Flow

The MEDICS Portable Data Entry Application window will present a main drop-down menu, located in the standard upper-left quadrant.

The **Records** drop-down menu will contain basic patient record options.

The **New Record** menu item will create a new, blank record.

The **Edit Record** menu item will present a screen with a list of all active patient records, and allow the user to perform the following actions on them:

Edit opens the selected record and allows you to view and make changes to it.

Delete just deletes the work file from disk.

Export will save a gpg-encrypted version of the record, using the server public-key, to the selected '\outgoing' directory and delete the local copy. All exported records will use the MEDICS XML format, with the file extension '.pgp'. The client will not be able to access or decrypt exported records. Note: All required fields must be completed before a record can be exported. Incomplete records will have their 'export' button grayed out

The **Save Record** menu item will save the currently open patient record to the MEDICS XML file format. The system will encrypt the XML document using the local gpg key, and store the encrypted record in the '\work' directory. The local naming convention used will be:

[last name]-[first name]-[member id]

If a record already exists in the '\work' folder with the same [derived] name, the file will be overwritten. The application will not make any attempt to preserve multiple historical copies of patient records.

The **Quit** menu item will exit the application, alerting the user that any unsaved data will be lost.

The **Tools** drop-down menu includes the following options:

The **Import Records** option will contain utilities for importing patient demographic data into the system that has been encrypted using the local user's public encryption key. Invoking the menu item will present a dialog allowing the

user to browse to, and select a file containing multiple patient records located on the local file system.

The **Batch Export Records** option creates encrypted copies of all records in the work folder, and compresses them into a single .zip file for convenient upload to the server. *Note: All required fields must be completed before a record can be exported. All records in the '\work' folder must be completed to execute the batch export function.*

The Change Outgoing Directory option allows the user to select which folder to save exported patient records to. The default location is '[x]:\medics\outgoing'

The **Change Backup Directory** option allows the user to choose the folder in which backup copies of patient records will be saved. The default location is '[x]:\medics\backup' though it is recommended that you change the default to a directory on your local hard drive.

The **Help** drop-down menu contains information about the MEDICS program and other helpful documents. Viewable with MEDICS' built in PDF viewer, the help menu will provide the user with a list of any PDF documents contained in the '[x]:\medics\docs' folder, including the MEDICS Users Guide, HIPPA Privacy Notification documents, and the ICD9 Coding Reference.

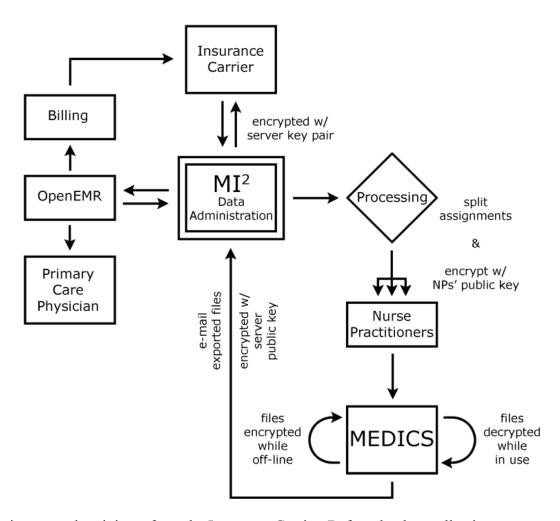
Keyboard Shortcuts

The system is designed to allow you to use just the keyboard for faster data entry. The mouse will (of course) always work, but it may not be as convenient or quick. The following keystrokes will allow you to move around through out the application and perform various, needed actions.

- **Ctrl+N** Starts a new record for data entry.
- Ctrl+E Opens the selection screen to choose an existing record to edit.
- Ctrl+S Saves the current record.
- Ctrl+I Opens the import records dialog to select a data set to import.
- Ctrl+X Executes the batch export function.
- Ctrl+O Opens the change outgoing directory dialog to select a new folder
- Ctrl+B Opens the change backup directory dialog to select a new folder
- **Ctrl+Q** Quits MEDICS entirely.
- **Tab Key** The Tab key will move the cursor from the current data entry field it is in to the next field. If the cursor is in the last field on a screen the current screen tab will be highlighted.
- **Arrow keys** Left and Right arrows will move from the current tab section to the next or previous if one if the tab is highlight.

MEDICS Data Flow

MEDICS Portable Data Entry Application is a fully HIPPAA compliant data collection tool. Patient information is protected at all times by PGP encryption on both the user's end and the remote server's using private / public encryption key pairs. Medical Information Integration (MI²) acts as a server for the client (the insurance carrier), and performs all necessary data administration and processing functions. In order for the user to perform the necessary import and export functions in MEDICS, it is helpful to understand how data is handled outside the MEDICS program.



Patient records originate from the Insurance Carrier. Before the data collection process can begin, MI² must decrypt the information from the Insurance Carriers and convert it to the MEDICS XML format. MI² will also split the records based on location and assign them to the appropriate Nurse Practitioner (the user). Patient records will then be encrypted with the user's public key and sent to the user via e-mail, so that they can be imported into the program.

The MEDICS user is responsible for patient records during the data collection process. Patient information may be provided for import into the program (as described above) or it can be entered manually during a routine visit. The MEDICS program is designed so that patient records are encrypted with the user's private / public key pair at all times. When you select a record to edit, MEDICS will decrypt the file so that the user may view or make modifications to it. Once you have saved the file, or returned to the records screen, the file is encrypted again. *Note: Stored patient records are unreadable by third-parties without access to the user's private key and / or the MEDICS program and the user's login & password.*

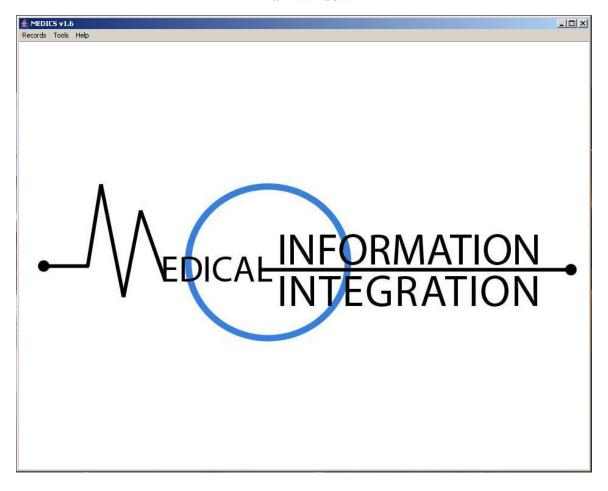
Once the data collection process is complete, the patient records must be exported. Once a file is exported it is encrypted by the MEDICS program using the remote server's public key, and is no longer viewable by the user. The user will then need to take the exported records (located in the 'outgoing\' directory) and send them to the server, via e-mail. Once received, MI² will again decrypt the records and import them into OpenEMR for processing / billing and transmit updated patient records to the Insurance Carriers and well as the patient's Primary Care Physician.

Appendix A – Screen Shots

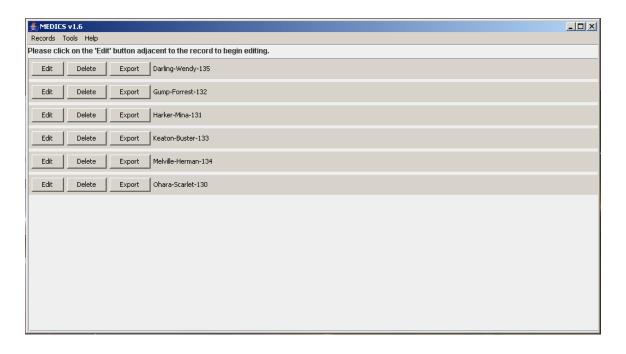
MEDICS Portable Data Entry Application Login



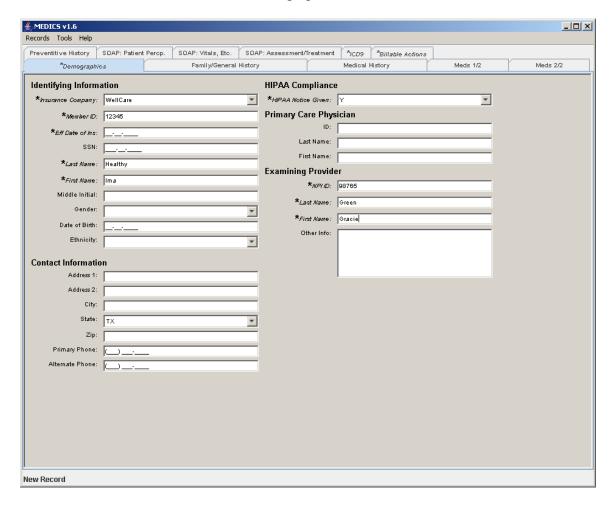
Main Window



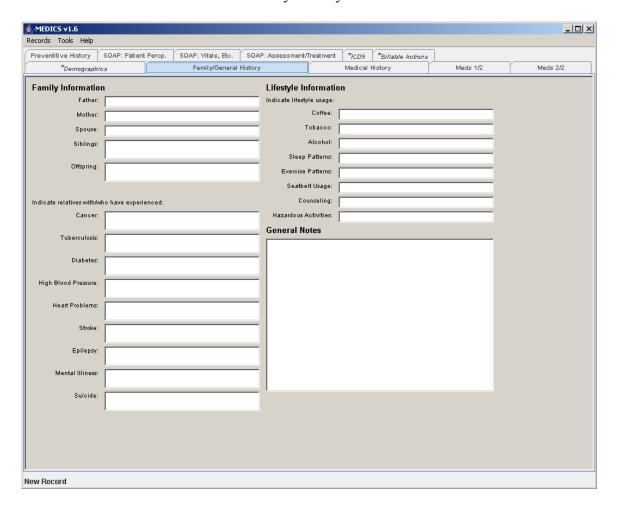
Edit Records Screen



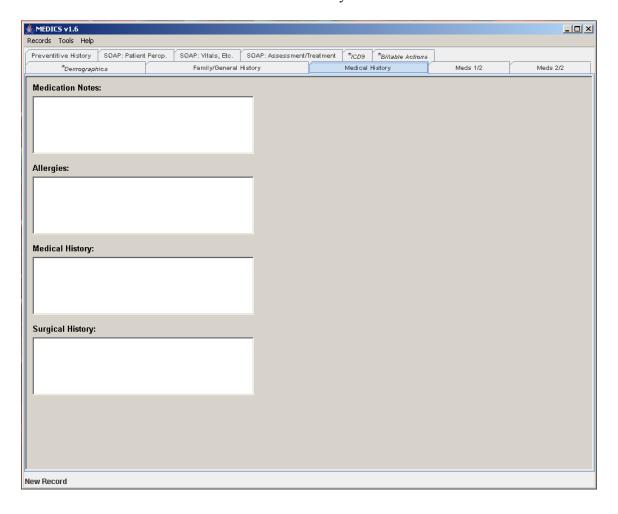
Demographics Tab



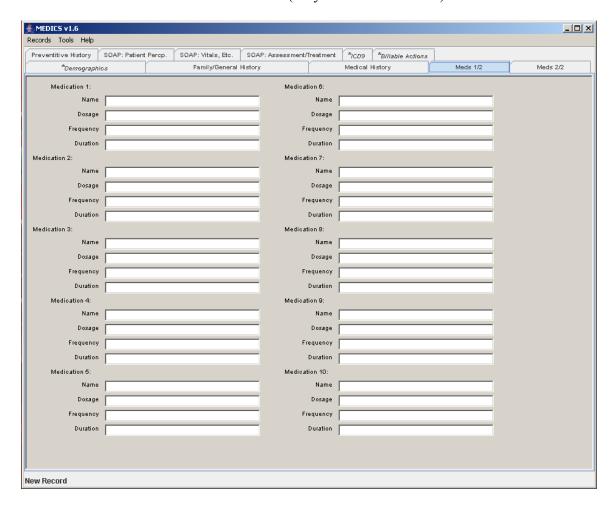
Family History Tab



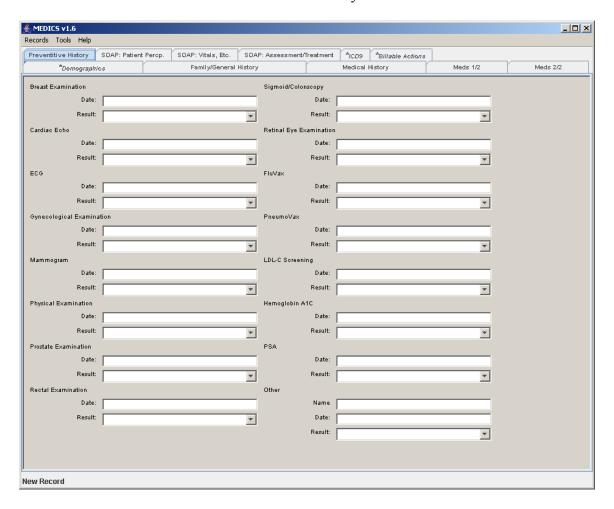
Medical History Tab



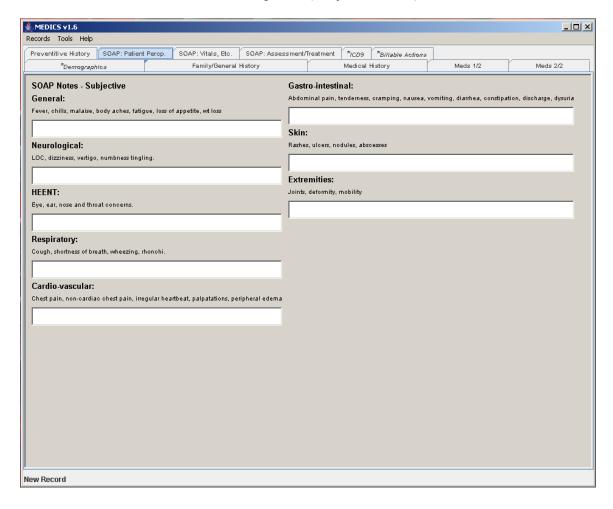
Medications Tabs (only one of two shown)



Preventative History Tab



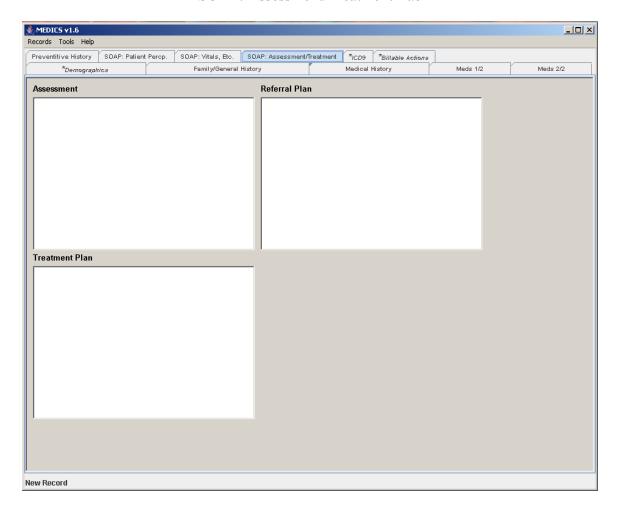
SOAP 1: Perceptions (Subjective Data) Tab



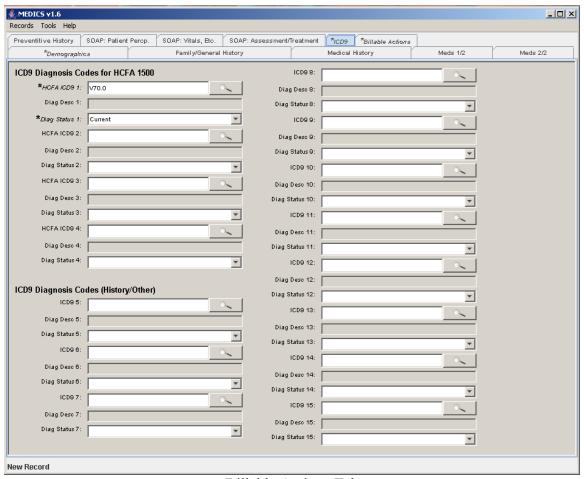
SOAP: Vitals, Etc (Objective Data) Tab

≜ MEDICS v1.6									_
Records Tools Help									
Preventitive History	SOAP: Patient	Percp.	SOAP: Vitals, Etc.	SOAF	: Assessment/Treatment	*1009	*Billable Actions		
*Demographi	es		Family/General	History	<u> </u>	Medical	History	Meds 1/2	Meds 2/2
SOAP Notes - Objective									
Mental Status:					Pulse:				
BPS:					Pulse Note:				
BPS Note:					Respiration:				
Bpd:					Respiration Note:				
BPD Note:					BMI:				
Weight:					BMI Note:				
Weight Note:					Waist Circ:				
Height:					Waist Circ Note:				
Height Note:					Head Circ:				
Temperature:					Head Circ Note:				
Temp Methods:					02 Sat:				
Temperature Note:					O2 Sat Note:				
New Record									
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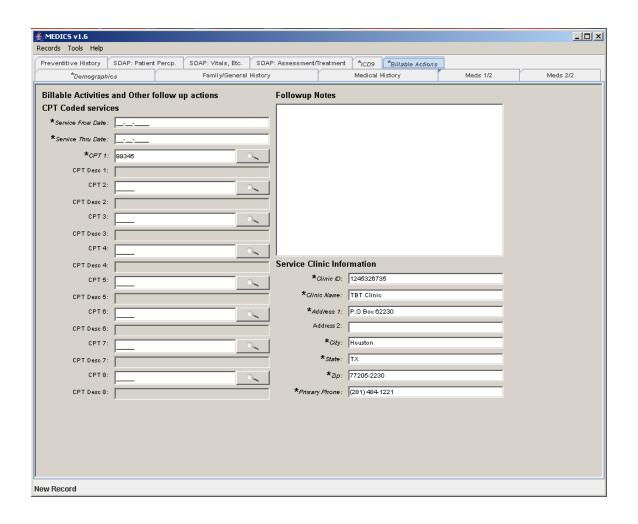
SOAP: Assessment/Treatment Tab



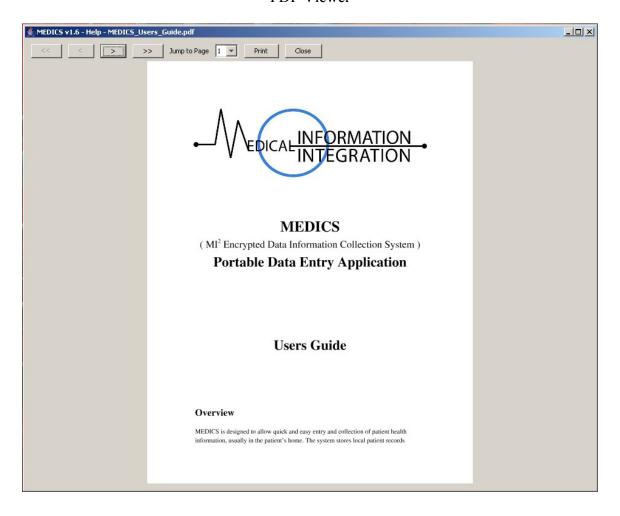
ICD9 (Diagnosis) Tab



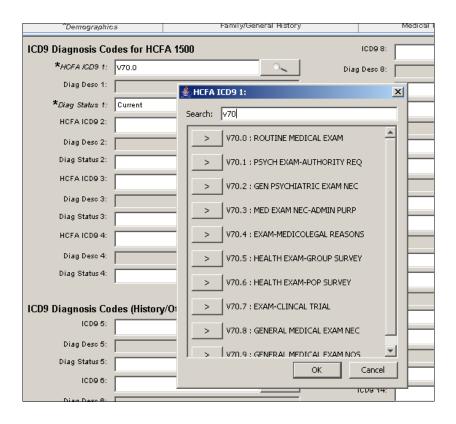
Billable Actions Tab



PDF Viewer



ICD9 & CPT Code Search Window



Appendix B – Import and Export Data Structure

See: [x]:medics\conf\blank_pt.xml See: [x]:medics\conf\import_defs.ini

Appendix C – Release Notes & Known Issues

v1.5 Release Notes:

- Added selection list field that identifies Insurance Co., Bravo or WellCare.
- Repaired upgrade, so that installer can now be pointed to existing MEDICS install without overwriting config.ini.
- Batch export via zip, or combining the individual XMLs into one batch XML now supported, all files placed in a date stamped ZIP is the default.
- Dates in Preventative History fields changed to plain text.
- All missing required fields OK to save but not OK to export.
- Updated validation pop ups (save patient, import patient, batch export), improving formatting and usability.

v1.6 Release Notes:

- Required Fields are 'Starred' and TAB that contain required fields are also 'Starred'
- Help files (any PDF) are now accessible from the 'Help' Menu
- New Note Fields for each measurement (temp/bpm/etc) in Objective SOAP TAB
- New General Notes field on History TAB
- New Effective Date Field for coverage
- New HIPAA Notice Given indication field and Notice is a PDF in the Help menu
- User's Guide and Bravo Coding Guide are available in the Help Menu
- User/Systems actions have better/more notification dialog boxes
- All formatted fields have visible character masks so it's easier to tell what's required (ie: ___.
- Diagnosis Codes are all on-line, validated and search able.
 - o Ability to jump to the search TAB/window from a button (magnifier)

- Check box or button in search TAB/window populates the field the user jumped from with ICD9 code and displays the description.
- Typing the a code directly in a IDC9 field validates it and displays the description or a error message if not found

Known Issues:

- Saving records without patient name or ID# MEDICS allows users to save a file without filling out all required fields, however, if the first name, last name, and patient ID fields are left blank, the file with be saved as 'empty-empty' (using the naming convention 'fname-lname-ID#') It is recommended that you make sure all three of those fields are complete before you save a new record.
- Delete key malfunction in formatted fields Using the **DEL** key in formatted fields, such as 'date' or 'SSN', leaves blank spaces rather than pulling in the right side of the text. It is recommended that you use **Backspace** instead.