MASTER PATIENT INDEX PATIENT DEMOGRAPHICS (MPI/PD)

PROGRAMMER MANUAL

Version 1.0

April 1999

Revised July 2013

Department of Veterans Affairs
Office of Information Technology
Product Development

Revision History

Table i. Documentation Revision History

Date	Description	Author
7/2013	Documentation updates: • Organization references and links were updated this manual to reflect the most current changes in the Dept of Veterans Affairs with the release of Patches DG*5.3*863, RG*1.0*60, MPIF*1.0*57.	Susan Strack, Technical Writer, Oakland OIFO; Chris Chesney, Team Lead, Birmingham OIFO; Gregory St. Julien, Project Manager
7/2012	Patch DG*5.3*837 updates: • Replaced VistA Logo w/VA Seal on title page. • Updated appendix titled: "Data Stored on the MPI in Austin" to reflect current MPI VETERAN/CLIENT file (#985). • Updated appendix and table titled: "Primary View Identity Traits" to reflect Primary View of the MPI. • Updated Glossary based on HC IdM feedback.	Susan Strack, Technical Writer, Oakland OIFO; Chris Chesney, Team Lead, Birmingham OIFO; Gregory St. Julien, Project Manager
08/02/11	Two updates _not_ generated from a patch release: • The appendix titled: *"MPI/PD Business Rules"* has been updated to remove the CMOR references and renamed to *"MPI Glossary of Working Concepts.* • Reviewed documentation to update for current organizational references and standards.	Susan Strack, Oakland OIFO; Christine Chesney, Birmingham OIFO; Gregory St. Julien (SPAWAR), Project Manager
07/2010	Patch DG*5.3*821 updates to support the James A Lovell Joint VA/DOD Medical Center in North Chicago: • New Treating Facility updates. The SOURCE ID (#20) multiple has been added to the TREATING FACILITY LIST file (#391.91) in VistA. The SOURCE ID (#.01) and IDENTIFIER STATUS (#1) fields are updated by a Treating Facility update from the Master Patient Index (MPI).	Susan Strack, Oakland OIFO; Chris Chesney, Birmingham OIFO; Paulette Davis, Birmingham OIFO; Danila Manapsal, Oakland OIFO, Project Manager
11/2009	Final updates to documentation implementing feedback from Product Support (PS) for national release.	Susan Strack, Oakland OIFO; Danila Manapsal, Oakland OIFO, Project Manager
8/2009	Updates based on developer feedback.	Susan Strack, Oakland OIFO;

Revision History

Date	Description	Author
		Chris Chesney, Birmingham OIFO; Danila Manapsal, Oakland OIFO, Project Manager
7/2009	MPI_CodeCR1713: Identity Management Data Quality (IMDQ) name change to Healthcare Identity Management (HC IdM).	Susan Strack, Oakland OIFO; Danila Manapsal, Oakland OIFO, Project Manager
6/2008	Patch RG*1*52 makes the following changes in the MPI/PD software: • MPI/PD Patient Admin User Menu Removed The MPI/PD Patient Admin User Menu [RG ADMIN USER MENU] was distributed with patch RG*1.0*49 (released 4/10/08) as obsolete with an Out of Order message. This option is being distributed in this build as DELETE AT SITE in order to remove it from the menu structure. There are other MPI/PD options in the MPIF* and VAFC* namespaces that are also obsolete that will be removed in future MPIF* and DG* patches. • The following Date of Death exceptions in the MPI/PD Exception Handler have been made obsolete: - **Exception Type:** Death Entry on MPI not in VISTA. **Description:** MPI had Date of Death field populated. Vista did not have Date of Death. **Exception number:** 215. - **Exception Type:** Death Entry on Vista not in MPI. **Description:** VISTA had Date of Death field populated. MPI did not have Date of Death. **Exception number**: 216. - **Exception Type:** Death Entries on MPI and Vista DO NOT Match. **Description:** MPI and VistA had different dates of death for this patient. **Exception number:** 217. • REMOTE DATE OF DEATH INDICATED Bulletin Made Obsolete: - The Remote Date of Death Indicated notification message generated from the MPI has been made obsolete. This bulletin indicated that the patient had a date of death entered from the sending site but not at the receiving site. • Obsolete Data Removed from the Unresolved Exception Summary report: Data referencing the Patient Data Review and CMOR Requests Status has been removed from the Unresolved Exception Summary report. Those issues were made obsolete in earlier patches.	Susan Strack, Oakland OIFO; Paulette Davis, Birmingham OIFO; Danila Manapsal, Oakland OIFO, Project Manager
3/2008	As of Patch DG*5.3*756, the ALIAS [#1] multiple in the PATIENT (#2) file will be updated in VistA resulting from the edits made to that	Susan Strack, Oakland OIFO;

Date	Description	Author
	information on the MPI by the IMDQ team. The VistA data will be synchronized to match the MPI values. Additionally, when a facility revises their local ALIAS data, the information will be transmitted to the MPI, which in turn will update all treating facilities where the patient is known. NOTE: Patch DG*5.3*756 was released on September 6, 2007.	Chris Chesney, Birmingham OIFO

8/2007	Documentation updates for the Patches RG*1*48 and MPIF*1*48, including functionality from Patch DG*5.3*756, which is part of the Master Patient Index (MPI) Changes Project, Iteration 4.
	
	• VA facilities now have the ability to remotely view Primary View patient identity fields on the Master Patient Index (MPI). This information is available on the MPI in the MPI Patient Data Inquiry [MPI DATA MGT PDAT MPI] option. The report generated by this option displays the current activity scores for individual patient identity fields (i.e., Primary View of the MPI).
	
	• In the Primary View of the MPI, the ALIAS multiple (#50) is stored in the MPI VETERAN/CLIENT file (#985). In VistA, the ALIAS multiple (#1) is stored in the PATIENT file (#2). All edits made by Identity Management Data Quality (IMDQ) staff to any of the fields in the ALIAS multiple on the MPI via the Edit PV Alias Values [MPI DATA MGT EDIT PV ALIAS] option, including any pre-existing alias data in that same patient entry that was not edited, is sent to the Primary View of the MPI and now synchronized out to all systems of interest (e.g., VistA treating facilities) for that patient. Site updates to the ALIAS multiple (#1) in the VistA PATIENT file (#2) will be updated in VistA and synchronized to match the MPI values. Additionally, when a VA facility updates their local ALIAS data, the information is sent to the Primary View of the MPI and synchronized back out to all other treating facilities (systems of interest) in which that patient has been seen for care.
	
	• The CIRN HL7 EXCEPTION LOG file (#991.1) has been modified to record VA facility personnel who use the MPI/PD Exception Handling option to resolved exceptions and the date/time the resolution occurred. Patch RG*1*48 adds the following new fields to File #991.1:
	
	   - DATE/TIME PROCESSED field (#7)
	
	   - WHO MARKED PROCESSED field (#8)
	
	This data is now being captured and Identity Management Data Quality (IMDQ) staff will have the capability to view this information.
	
	• A change has been made in the MPI/PD EXCEPTION HANDLING [RG EXCEPTION HANDLING] option. Upon selecting the MPI/PD Exception Handling option, instead of being prompted to run the exception purge, you are now notified when the last purge took place. The purge process runs automatically if it has not run within the past two hours; however, the MPI/PD EXCEPTION PURGE [RG EXCEPTION PURGE] option should be scheduled to run once an hour via Taskman. It can take a few minutes to run, but once the job is finished, you can go back to the Message Exception Menu and choose MPI/PD Exception Handling to view the results of the purge
		Susan Strack, Oakland OIFO; Danny Reed, Paulette Davis, Chris Chesney, Chris Link, and Dan Ihlenfeld, all from Birmingham OIFO; Dan Soraoka, Oakland OIFO, Project Manager

Date	Description	Author
	process. • A stand-alone option named View VistA Exceptions for Patient [MPI DATA MGT VISTA EXCEPTION] has been implemented on the MPI in Austin for the Identity Management Data Quality (IMDQ) team allowing them to query a VistA site for a selected patient and view all the existing VistA exceptions for a given date range. The VistA side support for this new MPI option came in as part of Patch RG*1*48.	
3/2007	As of Patches MPIF*1*46 and RG*1*44, this documentation has been updated to reflect the following: Patch MPIF*1*46: • Processing to account for the HL7 PID segment message being greater than 245 characters. • Resume correct prompting for identity fields in the first part of PIMS Registration options for new patients. • Updated screening to prevent Primary View Reject exceptions from entering the Potential Matches Returned logic. • Changed exception text for the new Primary View Reject exception. Patch RG*1*44: • Functionality incorporated into the MPI/PD Exception Handling RG EXCEPTION HANDLING option to automatically process the "Primary View Reject" exceptions. Name change for exception action that processes reject exceptions "PVR View PV Rej Detail." • MPI/PD Exception Purge process updated. For every date that an exception occurs for a patient, the exception occurs in the Exception Handler for review. However, if more than one active Primary View Reject exception occurs during the same day for the same patient, the purge will remove the duplicate occurrences, leaving only the most recent. • Alias Social Security Numbers included in the HL7 ADT-A31 update message. • Processing to ensure that pending updates to the Primary View waiting in the ADT/HL7 PIVOT file (#391.71) are not lost in IMDQ override process.	Susan Strack, Oakland OIFO; Danny Reed, Birmingham OIFO; Paulette Davis, Birmingham OIFO; Chris Chesney, Birmingham OIFO; Dan Ihlenfeld, Birmingham OIFO; Dan Soraoka, Oakland OIFO, Project Manager
1/2007	As of Patches MPIF*1*44 and RG*1*45, this documentation has been updated to reflect the following: • The concept of a "CMOR facility" is being phased out and will be replaced by the Primary View when Patch MPI*1*40 is installed on the Austin MPI. VistA Patch MPIF*1*44 sets all VistA options related to "CMOR" out of order, rendering them obsolete. The OUT OF ORDER MESSAGE field for these options is marked as "Obsolete with Patch MPIF*1*44." • As of Patch MPIF*1*44, the Site Parameters Edit for CMOR [MPIF SITE PARAMETER] option, located on the MPI/PD Patient Admin Coordinator Menu, is obsolete and has been placed out of order. • As of Patch MPIF*1*44, the AUTO CHANGE CMOR NIGHT JOB	Susan Strack, Oakland OIFO; Danny Reed, Birmingham OIFO; Paulette Davis, Birmingham OIFO; Chris Chesney, Birmingham OIFO; Dan Ihlenfeld, Birmingham OIFO; Dan Soraoka, Oakland OIFO, Project Manager

Date	Description	Author
	[MPIF CMOR REQUEST AUTO JOB] option is obsolete. Sites that have this option scheduled to run via TaskMan, should unschedule it. • SSN VERIFICATION STATUS field (#.0907) is now synchronized out to Sites when updated by Enrollment System Redesign (ESR) as of Patch RG*1*45.	
4/2006	Updates to documentation based on Patches MPIF*1*43 and RG*1*43, which comprise the changes to the MPI/PD software resulting from the Health Eligibility Center (HEC) Enumeration to the Master Patient Index (MPI).	Susan Strack, Oakland OIFO; Christine Chesney, Birmingham OIFO; Paulette Davis, Birmingham OIFO; Dan Soraoka, Oakland OIFO, Project Manager
1/2005	Changed references to ICNs to include that they follow the ASTM e1714-95 standard for a universal health identifier, edited/clarified description references to ICNs, and provided new example for the 29 character ICNs as described in the standard.	Susan Strack, Oakland OIFO; Danny Reed, Birmingham OIFO
12/2004	Implemented new conventions for displaying TEST data. See Orientation section for details.	Susan Strack, Oakland OIFO
5/2004	Updates to the MPI/PD VistA Version 1.0 Programmer Manual release based on Patches MPIF*1*33, RG*1*35 and DG*5.3*589 to support the MPI Changes Iteration 2 project	Susan Strack, Oakland OIFO; Christine Chesney, Oakland OIFO; Christine Link, Birmingham OIFO; Paulette Davis, Birmingham OIFO
6/2003	MPI/PD VistA Version 1.0 Programmer Manual released in conjunction with patches DG*5.3*505, and MPIF*1*28 of the MPI Changes Iteration I project	Susan Strack, Oakland, OIFO
4/1999	Initial MPI/PD and MPI VistA User Manuals were created for release with the MPI/PD V.1.0 software in April 1999.	Dianne Barker, Silver Spring OIFO, Susan Strack, Oakland OIFO

Patch History

For the current patch history related to this software, please refer to the Patch Module (i.e., Patch User Menu [A1AE USER]) on FORUM.

Contents

Tables and Figures

Orientation

How to Use this Manual

This manual uses several methods to highlight different aspects of the material. The following symbols are used in the manual to alert the reader about special information:

- Various symbols are used throughout the documentation to alert the reader to special information. The following table gives a description of each of these symbols:

Table ii. Documentation Symbol Descriptions

Symbol	Description
ℹ️	**NOTE:** Used to inform the reader of general information including references to additional reading material
⚠️	**CAUTION: Used to caution the reader to take special notice of critical information**

- Descriptive text is presented in a proportional font (as represented by this font).

- "Snapshots" of computer online displays (i.e., character-based screen captures/dialogs) and computer source code are shown in a *non*-proportional font and enclosed within a box. Also included are Graphical User Interface (GUI) Microsoft Windows images (i.e., dialogs or forms).

  - User's responses to online prompts will be boldface type.

  - The "**<Enter>**" found within these snapshots indicate that the user should press the Enter or Return key on their keyboard.

  - Author's comments are displayed in italics or as "callout" boxes.

    ℹ️ **NOTE:** Callout boxes refer to labels or descriptions usually enclosed within a box, which point to specific areas of a displayed image.

- All uppercase is reserved for the representation of M code, variable names, or the formal name of options, field and file names, and security keys (e.g., the XUPROGMODE key).

- Conventions for displaying TEST data in this document are as follows:

  - The first three digits (prefix) of any Social Security Numbers (SSN) will begin with either "000" or "666".

  - Patient and user names will be formatted as follows:

    [Application Name]PATIENT,[fictitious given name] and [Application Name]USER,[fictitious given name] respectively

    The "Fictitious given name" represents a fabricated given name for the patient or user.

This is done to more clearly represent patient and user names used in descriptive text in this documentation. For example, for the Master Patient Index (MPI) test patient and user names would be documented as follows: MPIPATIENT,NANCY; MPIPATIENT,SAM; MPIPATIENT,DEBRA; etc. and MPIUSER,RICH; MPIUSER,JOHN; etc.

Who Should Read this Manual?

This manual is written with the assumption that the reader is familiar with the VistA computing environment. If you need more information, it is suggested that you look at the various OIT Product Development Web pages for a general orientation to VistA at this address:

http://vaww.vista.med.va.gov
NOTE: This is an internal VA Web site and is not available to the public.

Reference Materials

Readers who wish to learn more about the Master Patient Index/Patient Demographic (MPI/PD) software should consult the following Web sites:

- VHA Software Document Library (VDL) at the following address:

    http://www.va.gov/vdl/application.asp?appid=16

    The MPI/PD product documentation, as found at the link above, includes the following manuals:

    - *Master Patient Index/Patient Demographics (MPI/PD) User Manual*

    - *Master Patient Index/Patient Demographics (MPI/PD) HL7 Interface Specifications*

    - *Master Patient Index/Patient Demographics (MPI/PD) Technical Manual*

    - *Master Patient Index/Patient Demographics (MPI/PD) Exception Handling*

    - *Master Patient Index/Patient Demographics (MPI/PD) Programmer Manual*

    - *Master Patient Index (MPI) Monograph*

    Also see the following Duplicate Record Merge product documentation, found at the following link http://www.va.gov/vdl/application.asp?appid=2 , includes the following manuals:

    - *Duplicate Record Merge: Patient Merge Release Notes for Kernel Toolkit Patch XT*7.3*113.*

    - *Duplicate Record Merge: Patient Merge User Manual, Version 7.3, Patch XT*7.3*113*

    - *Duplicate Record Merge: Patient Merge Technical Manual, Version 7.3, Patch XT*7.3*113*

- Master Patient Index (MPI) Web site:

    http://vista.med.va.gov/mpi/index.asp
    NOTE: This is an internal VA Web site and is not available to the public.

- Healthcare Identity Management (HC IdM) team at:

http://vaww.vhadataquality.va.gov/index.php?lang=en
NOTE: This is an internal VA Web site and is not available to the public.

Installation Information and Procedures

The Master Patient Index and Patient Demographics were distributed and installed together. All installation information and procedures involved with the MPI is included in the following MPI/PD document:

- *CIRN Patient Demographics (CIRN-PD) Pre-Installation and Implementation Guide v.5*

NOTE: One of the major pre-implementation tasks is the merging of duplicate patient records at a site. The *"Duplicate Record Merge: Patient Merge (Patch XT*7.3*23) User Manual"* is required for this task. Patches XT*7.3*49, RG*1*6, and RG*1*10 allow sites with MPI/PD to resolve duplicate records. If you do not have these patches installed, it is recommended that the option to merge patient records be placed out of order.

Interaction Between MPI/PD and Other Packages

Because of the close interaction between MPI/PD and other packages, you may also find it helpful to review the documentation for the following VistA software:

- VistA *HL7 V. 1.6*

- *PIMS V. 5.3 Admission, Discharge and Transfer (ADT)*

VistA documentation is made available online in Microsoft Word format and in Adobe Acrobat Portable Document Format (PDF). Adobe Acrobat Portable (PDF) documents *must* be read using the Adobe Acrobat Reader (i.e., ACROREAD.EXE), which is freely distributed by Adobe Systems Incorporated at the following web address:

http://www.adobe.com/

How to Obtain Technical Information Online

Exported VistA M-based file, routine, and global documentation can be generated using Kernel, MailMan, and VA FileMan utilities.

NOTE: Methods of obtaining specific technical information online will be indicated where applicable under the appropriate topic.

Help at Prompts

VistA M-based software provides online help and commonly used system default prompts. Users are encouraged to enter question marks at any response prompt. At the end of the help display, you are immediately returned to the point from which you started. This is an easy way to learn about any aspect of VistA software.

To retrieve online documentation in the form of Help in VistA character-based software:

- Enter a single question mark ("**?**") at a field/prompt to obtain a brief description. If a field is a pointer, entering one question mark ("**?**") displays the HELP PROMPT field contents and a list of choices, if the list is short. If the list is long, the user will be asked if the entire list should be displayed. A YES response will invoke the display. The display can be given a starting point by prefacing the starting point with an up-arrow ("**^**") as a response. For example, **^M** would start an alphabetic listing at the letter M instead of the letter A, while **^127** would start any listing at the 127th entry.

- Enter two question marks ("**??**") at a field/prompt for a more detailed description. Also, if a field is a pointer, entering two question marks displays the HELP PROMPT field contents and the list of choices.

- Enter three question marks ("**???**") at a field/prompt to invoke any additional Help text that may be stored in Help Frames.

Obtaining Data Dictionary Listings

Technical information about VistA M-based files and their associated fields is stored in data dictionaries. You can use the List File Attributes option on the Data Dictionary Utilities submenu in VA FileMan to print formatted data dictionaries.

NOTE: For details about obtaining data dictionaries and about the formats available, please refer to the "List File Attributes" chapter in the "File Management" section of the *VA FileMan Advanced User Manual*.

DISCLAIMER: The appearance of external hyperlink references in this manual does not constitute endorsement by the Department of Veterans Affairs (VA) of this Web site or the information, products, or services contained therein. The VA does not exercise any editorial control over the information you may find at these locations. Such links are provided and are consistent with the stated purpose of the VA.

Chapter 1: Introduction

This is the Programmer Manual for the Master Patient Index/Patient Demographics (MPI/PD) VistA. It is designed to provide you, the Veterans Health Information Systems and Technology Architecture (VistA) developer, with information about the programming functions of MPI/PD. This manual covers the Application Programming Interfaces (APIs) involved with MPI/PD. It provides information on which call(s) to use to perform a particular task, how to use the call(s), and if applicable, which messages to subscribe to. This manual also dedicates a chapter to MPI/PD Frequently Asked Questions (FAQ). It provides an overview of the technical aspects of this software and how VistA developers use the APIs to and get ICN assignments and retrieve patient data for patients. This is among other pertinent topics geared for a technical audience.

Overview of Master Veteran Index (MVI)

The Master Veteran Index (MVI) is the authoritative source for *person identity data*. It maintains identity data for persons across VA systems, provides a unique universal identifier for each person, stores identity data as correlations for each system where a person is known, provides a probabilistic matching algorithm, and includes the Master Patient Index (MPI), Person Service Identity Management (PSIM), and Toolkit (TK). It maintains a "gold copy" known as a "Primary View" of the person's identity data. Broadcasts identity trait updates to systems of interest.

The MPI is the data store of patient records and one of the component pieces of the Master Veteran Index. It is a cross-reference or index of patients that includes the patient's related identifiers and other patient identifying information. The MPI is used to associate a patient's identifiers among multiple ID-assigning entities, possibly including a Health Data Repository, to support the consolidation and sharing of a patient's health care information across VHA. The MPI is the authoritative source for *patient identity*.

REF(S): For more information on the Master Veteran Index (MVI):

- See the Identity Services TSPR Project Notebook at the following address:

  http://tspr.vista.med.va.gov/warboard/anotebk.asp?proj=1385&Type=Active
  NOTE: This is an internal VA Web site and is not available to the public.

- See the "Glossary" in this manual, specifically the entries for Person Service Identity Management (PSIM), Master Patient Index (MPI), and Toolkit (TK).

- See Chapter 2 "Product Description—What Comprises the Master Patient Index?"

MPI Identity Hub for the Healthcare Identity Management (HC IdM) Team

As of the release of MPI/PD Patches MPIF*1*52 and RG*1*54, the MPI Identity Hub for Healthcare Identity Management (HC IdM) was implemented enabling the change from the current MPI patient deterministic lookup to an Identity Hub based probabilistic patient lookup.

Initiate was purchased to be integrated with the MPI and Person Service Identity Management (PSIM) for the purpose of improving the matching of patients and persons across VHA. PSIM will serve as the interface to the commercial Identity Management system and the MPI will interact with PSIM.

The Initiate centralized probabilistic search algorithm will replace the local VistA KERNEL DUPLICATE RECORD MERGE search process for identifying local potential duplicate PATIENT file (#2) records. When the search algorithm identifies potential duplicates, they are automatically added to the VistA DUPLICATE RECORD file (#15).

NOTE: For more information on the VistA DUPLICATE RECORD MERGE release, please refer to Kernel Toolkit Patch XT*7.3*113.

Product Description—What Comprises the Master Patient Index?

Master Patient Index (Austin)

The Master Patient Index (MPI) is located at the Austin Information Technology Center (AITC). It is composed of a unique list of patients and an associated list of VAMCs (Veterans Affairs Medical Centers) and other systems of interest where each patient has been seen. This enables the sharing of patient data between operationally diverse systems. Each patient record (or index entry) on the MPI contains multiple demographic fields which are updated to the Primary View of the MPI.

When a patient is first presented into the MPI for an Integration Control Number (ICN) assignment, that patient's identifying information (i.e., name, Social Security Number (SSN), date of birth, gender, mother's maiden name, multiple birth indicator, place of birth city and state) is passed to the MPI.

The MPI checks to see if an exact match on Name (first and last), SSN, date of birth, and gender is found. A check is also made to see if the patient's internal entry number (DFN) from the querying site is already known to the MPI. If so, this is also considered an exact match. If an exact match is found, the ICN, and ICN Checksum are returned to the requesting site. The requesting site is added to the list of treating facilities (TF) in which this patient has been seen and the updated list is broadcasted to all systems of interest, including VAMCs.

If an exact match is not found, the MPI returns a message indicating this. The patient entry is then added to the MPI. If a potential match is found, a potential match exception is logged for the HC IdM group to review, the patient is still added to the MPI.

> **NOTE:** The term "systems of interest" refers to VA facilities that have seen patients and entered them as entries onto the MPI. This also refers to non-VistA systems that have a registered interest in a patient (e.g., Federal Health Information Exchange [FHIE], HomeTeleHealth, Person Service Identity Management [PSIM], Health Data Repository [HDR], etc).

HC IdM Team is Data Steward for the Master Patient Index (MPI)

The Healthcare Identity Management (HC IdM) team is the Data Steward for the Master Patient Index (MPI). The HC IdM team is comprised of analysts who have considerable experience working with the MPI and patient data updates. They have the ability to perform the following functions on the Primary View of the MPI:

- View and/or edit the authority values for the Primary View business rules criterion.

- Override Primary View identity traits for selected identity fields in the MPI VETERAN/CLIENT file (#985) and broadcast the new Primary View out to the systems of interest.

- View the Primary View Reject Report from the data in the MPI REJECTED UPDATE file (#985.65).

Master Patient Index/Patient Demographics (VistA)

The Master Patient Index/Patient Demographics (MPI/PD) software resides in VistA enabling sites to:

- Request an ICN assignment
- Resolve a potential duplicate on the MPI.
- Review and process exceptions received from MPI including Primary View Reject exceptions.
- Query the MPI (Austin) for known data.
- Update the MPI when changes occur to demographic fields stored on the MPI or of interest to other facilities/systems of interest.

Requesting an ICN Assignment

During the initialization of the MPI database in Austin, each VA Medical Center sent batch HL7 messages to the MPI (Austin) requesting ICNs for all of its patients whose records reflected activity in the past three fiscal years (i.e., active patient records).

In day-to-day operations, patients are presented to the MPI via:

- PIMS options:

    - Load/Edit Patient Data
    - Register a Patient
    - Electronic 10-10EZ Processing

- Local/Missing ICN Resolution background job

When a new patent record is created via the PIMS options, a real-time connection is established to the MPI requesting an ICN assignment. If communication cannot be established or is lost with the MPI before the ICN assignment process has completed, a local ICN is assigned. Otherwise, a national ICN is assigned to the patient. The ICN can either be newly created or already on the MPI for that patient. The ICN, ICN checksum, and list of facilities, including other systems of interest (e.g., FHIE and HDR), are updated in the site's VistA system.

If an existing patient record is edited via the PIMS options, and if this patient does not have an ICN (national or local), the same process occurs as was illustrated for a newly created patient.

If a patient record is edited or created outside of the PIMS options, they are presented to the MPI for ICN assignment via the Local/Missing ICN Resolution background job.

If an exact match is not found the MPI returns a message indicating this and that the patient is being added to the MPI. If potential matches are found, a new ICN is assigned to the patient, and an exception is logged for the Health Care Identify Management (HC IdM) group to review and provide the appropriate action. If the patients are truly the same person, then the records will be linked together with one ICN becoming the primary ICN that all records will be linked under and the other will be deactivated. The sites that had the deactivated ICN will be updated to the primary ICN.

> **NOTE:** As of MPI/PD Patch MPIF*1*52, all screens and actions associated with the MPI/PD Exception Handler functionality for resolving Potential Match Exceptions have been removed from MPI/PD. This functionality is now supported in the Identity Management Toolkit.

NOTE: MPI/PD updates as of VistA Patches MPIF*1*43 and RG*1*43:

- The only times local ICNs are assigned to patient records are when:

    - The connection to the MPI cannot be established, or has been lost before the ICN assignment was completed.

        This happens regardless of which process is used to present the patient to the MPI for ICN assignment (i.e., Register a Patient, Load/Edit Patient Data, Electronic 10-10EZ Processing, and/or the Local/Missing ICN Resolution Background Job).

    - The site edits an existing patient or adds a new patient using an option that doesn't directly interact with the MPI (e.g., VistA Lab or VA FileMan).

- All existing exceptions that were active in the CIRN HL7 EXCEPTION LOG file (#991.1) of the types listed below, were marked with a status of PROCESSED:

    - Required field(s) missing for patient sent to MPI
    - SSN Match Failed
    - Name Doesn't Match

    These three exceptions listed are no longer generated.

- As part of RG*1*43, the View Potential Match Patient [RG EXCEPTION POTENTIAL MATCH] option has been removed from the Message Exception Menu [RG EXCEPTION MENU] as it is obsolete.

The Display Only Query option allows the site to query the MPI to see what the MPI would return if the patient was presented for ICN assignment without actually making the request. The patient can be an existing patient or the user can choose to enter the name, date of birth and SSN (not required) and see what the MPI returns.

NOTE: More information about the "Potential Duplicate PATIENT records found by MPI" message is available via the installation of VistA Kernel Toolkit Patch XT*7.3*113.

Primary View Replaces Obsolete CMOR View

As part of the MPI Changes Project, Iteration 4, the concept of a "CMOR facility" is being phased out and will be replaced by the Primary View when Patch MPI*1*40 is installed on the Austin MPI. VistA Patch MPIF*1*44 sets all VistA options related to "CMOR" out of order, rendering them obsolete. The OUT OF ORDER MESSAGE field for these options is marked as "Obsolete with Patch MPIF*1*44." Obsolete options will be removed from the Coordinating Master of Record (CMOR) Request [MPIF CMOR MGR] menu at a future date.

Systems of Interest to the MPI—Treating Facilities and Non-VistA Systems

The term "systems of interest" refers to VA facilities that have seen patients and entered them as entries onto the MPI. This also refers to non-VistA systems that have a registered interest in a patient (e.g., Federal Health Information Exchange [FHIE], HomeTeleHealth, Person Service Identity Management [PSIM], Health Data Repository [HDR], etc).

A facility's relationship to a patient determines what information it receives and sends. MPI/PD stores this information.

Any facility where a patient is identified by the same ICN (regardless of VISN) is placed on the Treating Facility List. The list may contain other systems of interest that are not VAMCs (e.g., FHIE and HDR).

> **NOTE:** The Treating Facility List is utilized by several other VistA applications, including Inter-facility Consults and Remote Data Views in CPRS.

Primary View—How are VistA Sites Affected by this Change to the MPI?

What is the Primary View?

Patch MPI*1*40 constituted a change in the business process that updates the patient identity fields across VA facilities referred to as the Primary View of the MPI. It is an enterprise view of the most current data for a patient based on authority scoring and the latest data rules. Edits to patient identity traits are evaluated based on the same. The highest score achieves the best quality of data updates to the Primary View. Overview:

- Primary View is an update to the patient identity fields across VA facilities.

- Primary View creates a centralized view of the patient data aka a Primary View

- Primary View has the best data from any combination of sites for the patient

- Synchronizing the patient identity fields becomes centralized under a new set of business rules on the MPI.

- Primary View is a transition from and *disassociated* with the Coordinating Master of Record (CMOR) view of the MPI.

- Primary View allows for:

    - VistA sites to continue to edit patient data at their site.

    - Patient data is sent to a central system (i.e., the Master Patient Index) to determine validity and quality

How Does the Primary View Work?

Before Patch MPI*1*40, patient data reviews were done at the CMOR sites. All VA facilities nation-wide had responsibility to manage and maintain their set of patients. With the release of Patch MPI*1.0*40, patient updates are controlled by centralized business rules and Primary View scoring on the Master Patient Index (MPI). HC IdM staff have the ability to override the rejection process of any valid edits.

In the transition to Primary View, when a patient is new to the MPI or an existing patient is initialized under the latest business rule changes, the CMOR process for resolving Patient Data Reviews no longer exists. Instead, edits are processed against the centralized data rules and Primary View scoring on the MPI. If the data update is rejected, the editing site receives a Primary View Reject Exception report. This took the burden off CMOR sites to review other sites' edits for acceptance or rejection.

Business Rules for Data Validity and Integrity

The Healthcare Identity Management (HC IdM) team has developed two spreadsheets that dictate business rules for the Primary View:

- "Business Processes That Update Person Identity"—Authority score

- "Primary View Data Rules"—Data rules

Patient identity fields in the Primary View of the MPI are evaluated and updated based on scoring and data rules. The Primary View score is evaluated based on criteria captured from patient encounters at VA facilities (e.g., active prescriptions, admission or registration in the last year, lab test, or radiology exam in the last year) that are sending the inbound update (i.e., data entered by users or sent from a system of interest) to the MPI. The score is calculated from data updates coming from the site. Data is weighed on a field-by-field basis against any differences on the MPI to determine if the score for the inbound edits is equal to or greater than the score for the existing Primary View. Next, the inbound edit is evaluated against Primary View data rules.

Edits to key patient identity fields accepted for the update to the Primary View are broadcasted out to all systems of interest that subscribe to updates for that patient that do not already have the updated data. Data that does not meet or exceed the current score and pass the data rules generate reject exceptions, which are sent back to the site that attempted the edit. As of Patch MPI*1*40, sites received a new exception type in their MPI/PD Exception Handling option and a new exception action named View PV Rej Detail (PVR). This new exception shows them when their edit was rejected and why.

NOTE: The term "systems of interest" refers to VA facilities that have seen patients and entered them as entries onto the MPI. This also refers to non-VistA systems that have a registered interest in a patient (e.g., Federal Health Information Exchange [FHIE], HomeTeleHealth, Person Service Identity Management [PSIM], Health Data Repository [HDR], etc).

NOTE: For information on Primary View Reject exceptions, see the following topic:

- "MPI/PD Exception Handling: Primary View Reject Type and View PV Rej Detail (PVR) Action"

NOTE: The MPI VETERAN/CLIENT file (#985) comprises the Primary View, which is all the pertinent identity fields and general demographic fields and is resident on the Austin MPI.

MPI Fields Broadcast to Systems of Interest

The following fields are auto-updated from the MPI to the VistA PATIENT file (#2) and broadcast by the MPI to systems of interest:

- Name

- Social Security Number

- Date of Birth

- Gender

- Multiple birth indicator (Sent and updated to Primary View as of Patch RG*1*45. Added to the list of fields auto-updated [synchronized] in VistA as of Patch RG*1*47.)

- SSN Verification Status (Verified, Invalid Per SSA, and null) (Added to File #985 as of Patch MPI*1*40. Populated to the Primary View of the MPI and systems of interest to the MPI as of DG*5.3*688 [EVC R2].)

- Pseudo SSN Reason (Added to File #985 as of Patch MPI*1*40. Populated to the Primary View of the MPI and systems of interest to the MPI as of RG*1*47 and DG*5.3*653 [EVC R1].)

- Alias (As of Patch DG*5.3*756, the ALIAS [#1] multiple in the PATIENT (#2) file is updated in VistA resulting from the edits made to that information on the MPI by the HC IdM team. The VistA data is synchronized to match the MPI values. Additionally, when a facility revises their local ALIAS data, the information is transmitted to the MPI, which in turn updates all treating facilities where the patient is known.)

The concept of the Primary View was introduced with Patch MPI*1*40, which utilizes central business rules and removes the manual review process (Patient Data Review) from the sites. This allows for faster updates and the ability to have the best data from multiple locations. The site-to-HC IdM communication happens when there is a need for an override of a valid edit that received a Primary View Reject exception to the centralized business rules.

Site edits to patient identity fields *must* pass the Primary View data rules as well as meet or exceed the current authority score value for that field *before* updating the Primary View on the MPI. If local data fails because the authority score has not weighed in high enough, the edit is rejected. Sites receive an exception message for rejected edits on their MPI/PD Exception Handling option named Primary View Reject. This exception informs sites why edits failing the initial tests were not accepted for update to the MPI.

NOTE: The term "auto-update" refers to fields that are updated from a central database (i.e., the Master Patient Index).

Enhanced MPI-to-VistA Synchronization—Additional Patient Identity Fields

SSN Verification Status Synchronized to Systems of Interest

The SSN Verification Status is populated on the MPI and broadcast to treating facilities and systems of interest. The field values VERIFIED and INVALID PER SSA are triggered as a result of an update from the ESR application and subsequent update to the Primary View.

The SSN Verification Status is an existing field on the MPI with the current values listed below. In order to bring these values in line with the Enrollment VistA Changes (EVC) requirements and Standard Data Services (SDS) tables as well as support the later migration of data into the Administrative Data Repository (ADR), a change is needed to the internal and external value on the MPI. The current values are listed below; however, only the values of Null, Verified and Invalid Per SSA are synchronized with the sites.

- Null
- New Record
- In-Process
- Invalid Per SSA
- Resend to SSA
- Verified

SSN and Pseudo SSN Reason Synchronized to Systems of Interest

When a VistA instance or Enrollment System Redesign (ESR) updates the Pseudo SSN Reason, the MPI updates the MPI FACILITY ASSOCIATION file (#985.5). If the VistA instance is the Primary View, that value is updated in File #985 and broadcasted out to all sites.

Multiple Birth Indicator Synchronized to Systems of Interest

As of Patch RG*1*45, the MULTIPLE BIRTH INDICATOR field is sent and stored on the MPI; however, it is not synchronized to all of the "systems of interest" (i.e., Treating Facilities). As of Patch RG*1*47, the MULTIPLE BIRTH INDICATOR is included in the list of patient identity fields that are synchronized from the MPI out to all systems of interest.

If synchronization of the MULTIPLE BIRTH INDICATOR field fails, an exception is logged on the MPI. This functionality is in support of the Patient Safety Office's effort to reduce the number of local duplicate record merges on records that are related to patients with similar trait values to their siblings.

> **NOTE:** The Duplicate Record Merge: Patient Merge software has already been modified to display the MULTIPLE BIRTH INDICATOR field value if present.

The ALIAS Multiple Stored on MPI and Synchronized to VistA

In the Primary View of the MPI, the ALIAS multiple (#50) is stored in the MPI VETERAN/CLIENT file (#985) as an aggregated list from all the treating facilities associated with that ICN. In VistA, the ALIAS multiple (#1) is stored in the PATIENT file (#2). All edits made by Healthcare Identity Management (HC IdM) staff to the ALIAS multiple on the MPI via the Edit PV Alias Values [MPI DATA MGT EDIT PV ALIAS] option are updated in the Primary View on the MPI and synchronized out to all systems of interest (e.g., VistA treating facilities) for that patient. Site edits to the ALIAS multiple (#1) in the VistA PATIENT file (#2) are updated in VistA and sent to the MPI for updates to the Primary View. The updates are then synchronized back out to all other treating facilities (systems of interest) associated with that ICN.

Process Sequence for Inbound Edits: How Does the Primary View Work?

In the process for updating the Primary View of the MPI, the first check is for potential catastrophic edits to patient identity, which is defined as an edit to two or more of the following identity traits:

- Name (First, Last)
- Date Of Birth
- Social Security Number (SSN)
- Gender

If the potential catastrophic edit affects two or more identity traits, an exception is generated that becomes a manual HC IdM catastrophic edit review process. HC IdM processes potential catastrophic edits as follows:

- Accept All
- Reject All
- Partial Accept

If there are no catastrophic edits:

- All fields in Primary View are compared to the inbound data sent for that correlation.

- If there are differences, a series of computations begin to "score" the data to determine if it meets the criteria for acceptance. The Primary View score is based on data captured from a patient encounter with a Veterans Affairs facility (e.g., active prescriptions, admission or registration in the last year, lab test, or radiology exam in the last year).

- The score is then calculated from the data update coming from the site.

- Each field is then evaluated against any fields that are different in the current Primary View to see if the score is equal to or greater than the existing Primary View field's score and that the data update meets the business rules for data validity and integrity.

- Any of the fields, all of the fields, or none of the fields may be updated based upon the scoring and the business rules.

NOTE: The MPI FACILITY ASSOCIATION file (#985.5) contains the sites' last update. This correlation should be a duplicate of the same data in the PATIENT file (#2) at the sites.

MPI/PD Exception Handling: Primary View Reject Type and View PV Rej Detail (PVR) Action

When patient identity fields are edited at VA facilities and sent to the MPI, those edits *must* meet or exceed the existing authority score and pass the Primary View Data Rules on a field-by-field basis. If an edit fails to pass both of these tests, the edit to that patient identity field is rejected. If multiple rejects have occurred for a patient and are still active, a PVR exception is not be generated. When the exception is reviewed and the details reviewed, it shows all the rejections to date.

The transition from the Coordinating Master of Record (CMOR) "view" to the Primary View introduces the following new exception type and exception action to the MPI/PD Exception Handling option [RG EXCEPTION HANDLING]:

- **Primary View Reject exception type─**Rejected edits to the Primary View on the MPI generate this exception, which is sent back to the site that attempted the edit. Site personnel can use this exception to view more details about rejected data from the MPI in Austin, allowing them to see why their edit was rejected.

- **View PV Rej Detail (PVR) exception action─**Site personnel can use the View PV Rej Detail (PVR) action to view the Primary View Reject exception type.

> **NOTE:** For more information on the Primary View Reject exception type and exception action on the MPI/PD Exception Handling option, see the "Primary View Reject Exception Type and View PV Rej Detail (PVR) Exception Action" topic located in the "Message Exception Menu" section in the MPI/PD User Manual.

HC IdM View/Edit Authority Values for Business Rules Criterion

Healthcare Identity Management (HC IdM) staff can view or edit the current authority values for the Primary View business rules criterion. These authority values weigh and score inbound edits to the patient entries on the MPI based on patient activity at the site.

Chapter 2: MPI/PD Frequently Asked Questions (FAQ)

What is the Master Patient Index (MPI)?

The Master Patient Index (MPI) is located at the Austin Information Technology Center (AITC). It is composed of a unique list of patients and an associated list of VAMCs (Veterans Affairs Medical Centers) and other systems of interest where each patient has been seen. This enables the sharing of patient data between operationally diverse systems. Each patient record (or index entry) on the MPI contains multiple demographic fields which are updated to the Primary View of the MPI. MPI data is maintained in a centralized, dynamic database that is available to meet multiple information needs across many systems.

The Master Patient Index/Patient Demographics (MPI/PD) software resides in VistA enabling sites to:

- Request an ICN assignment.

- Resolve a potential duplicate on the MPI.

- Review and process exceptions received from MPI including Primary View Reject exceptions.

- Query the MPI (Austin) for known data.

- Update the MPI when changes occur to demographic fields stored on the MPI or of interest to other facilities/systems of interest.

> **NOTE:** For more information see the section titled: "Product Description—What Comprises the Master Patient Index?" in this manual.

> **NOTE:** The MPI/PD software (i.e., routines in the MPIF* and RG* namespace) SHOULD NOT reside/run on Legacy systems. Any VistA applications utilizing APIs in the MPIF and RG namespace on Legacy systems should check for the existence of these routine(s) before trying to access them.

How do I Get Primary View Data?

To get Primary View data, use the Remote Procedure Call (RPC): MPI RETURN PRIMARY VIEW DATA. This RPC returns Primary View data from the MPI VETERAN/CLIENT File (#985) for a specified ICN.
Input Parameter:

- ICN: This is the Integration Control Number of the patient for whom Primary View data is requested.

Example:

```
S ICN=1234567890V123456
D PVDATA^MPIRPC1(.RET,ICN)
```

How do I Get Correlation Data?

To get correlation data, use the Remote Procedure Call (RPC): MPI RETURN CORRELATION DATA. This RPC returns Correlation data from the MPI FACILITY ASSOCIATION File (#985.5) for a specified ICN, either for one specified correlation or all correlations.

Input Parameters:

- ICN: This is the Integration Control Number of the patient for whom Correlation data is requested.

- CORRELATION: This is the data requested for all correlations or only a selected facility. For a single correlation, pass the station number for the requested correlation. If no station number is sent in this parameter, then all correlations for the ICN will be returned.

Example:
```
S ICN=1234567890V123456
S CORR=789 (optional; if null will send ALL)
D CORDATA^MPIRPC2(.RET,ICN,.CORR)
```

Is the MPI the Authoritative Source for this Information?

The MPI is the authoritative source for the ICN and the following five identity fields:

- Name (all components),
- SSN,
- Date of Birth,
- Gender,
- Mother's Maiden Name,

and the correlated domains (treating facilities/systems of interest) that know that ICN.

What is an Integration Control Number (ICN)?

The Integration Control Number (ICN) follows the ASTM e1714-95 standard for a universal health identifier. This standard describes the identifier as 29 characters (i.e., 16-digit sequence + 'V' delimiter + 6-digit checksum + 6-digit encryption). The short version of the ICN/VPID can be 17 characters (i.e., 10-digit sequence + 'V' delimiter + 6-digit checksum), with the leading zeros of the sequence and trailing zeros encryption trimmed off.

An Integration Control Number (ICN) is a unique identifier assigned to each patient entry in the Master Patient Index linking patients to their records across VA systems

ICNs fall under two categories: national and local. Both are described as follows:

National ICNs

During the initialization of the MPI database in Austin, each VA Medical Center sent batch HL7 messages to the MPI (Austin) requesting ICNs for all of its patients whose records reflected activity in the past three fiscal years (i.e., active patient records).

In day-to-day operations, patients are presented to the MPI via:

- PIMS options:
    - Load/Edit Patient Data [DG LOAD PATIENT DATA]
    - Register a Patient [DG REGISTER PATIENT]
    - Electronic 10-10EZ Processing [EAS EZ 1010EZ PROCESSING]

- Local/Missing ICN Resolution [MPIF LOC/MIS ICN RES] background job

When a new patent record is created via the PIMS options, a real-time connection is established to the MPI requesting an ICN assignment. If communication cannot be established or is lost with the MPI before the ICN assignment process has completed, a local ICN is assigned. Otherwise, a national ICN is assigned to the patient. The MPI uses patient traits to determine whether this patient is already known to the MPI and thus already has an ICN, or whether this is a new patient which causes a new ICN to be created. The ICN, ICN checksum, CMOR, and list of facilities, including other systems of interest (e.g., FHIE and HDR), are updated in the site's VistA system.

If an existing patient record is edited via the PIMS options, and if this patient does not have an ICN (national or local), the same process occurs as was illustrated for a newly created patient.

If a patient record is edited or created outside of the PIMS options, they are presented to the MPI for ICN assignment via the Local/Missing ICN Resolution background job.

If an exact match is not found the MPI returns a message indicating this and that the patient is being added to the MPI. If potential matches are found, a new ICN is assigned to the patient, but an exception is logged for the Health Care Identify Management (HC IdM) group to review and provide the appropriate action. If the patients are truly the same person then the records will be linked together with one ICN becoming the primary ICN that all records will be linked under and the other will be deactivated. The sites that had the deactivated ICN will be updated to the primary ICN.

Local ICNs

ICNs are created for new patients locally at the site when the MPI is unavailable or when the connection is lost prior to the assignment an ICN (e.g., the Direct Connect could not be established). A local ICN is also assigned as a placeholder when a patient has been sent to be added to the MPI. This is to ensure identification of these patients as these records await a response from the MPI. Local ICNs look like a national ICN. They contain the same number of digits as a national ICN. The only difference is that the first three digits are the VAMCs station number.

> **NOTE:** It is not recommended that Local ICNs be sent to remote databases as they will only be known at the local facility that assigned them.

A background job named Local/Missing ICN Resolution will find all patients in the local PATIENT file (#2) with either a Local ICN or that have been flagged as missing an ICN and send these patients to the MPI for a national ICN assignment.

Missing ICNs

Missing ICNs result from patient records which have been added to the PATIENT file (#2) via other means than through the PIMS options that establish the real-time connection with the MPI (Load/Edit Patient Data, Register a Patient, and Electronic 10-10EZ Processing). These records are flagged internally for inclusion in the Local/Missing ICN Resolution job.

What Does an ICN Look Like?

The ICN follows the ASTM e1714-95 standard for a universal health identifier. This standard describes the identifier as 29 characters (i.e., 16-digit sequence + 'V' delimiter + 6-digit checksum + 6-digit encryption). For example:

0000001000720100**V**271387000000

The short version of the ICN/VPID can be 17 characters (i.e., 10-digit sequence + 'V' delimiter + 6-digit checksum), with the leading zeros of the sequence and trailing zeros encryption trimmed off. For example:

1000720100**V**271387

How Does a Patient Get an ICN?

In day-to-day operations, a patient record can get an ICN assignment by one of the following ways:

1. Through a real-time TCP/IP connection (i.e. Direct Connect) via one of the following PIMS options:

    - Load/Edit Patient Data [DG LOAD PATIENT DATA]
    - Register a Patient [DG REGISTER PATIENT]
    - Electronic 10-10EZ Processing [EAS EZ 1010EZ PROCESSING]

    When a new patent record is created via the PIMS options, a real-time connection is established to the MPI requesting an ICN assignment. If communication cannot be established or is lost with the MPI before the ICN assignment process has completed, a local ICN is assigned. Otherwise, a national ICN is assigned to the patient. The ICN can either be newly created or already on the MPI for that patient. The ICN, ICN checksum, and list of facilities, including other systems of interest (e.g., FHIE and HDR), are updated in the site's VistA system.

2. If an existing patient record is edited via the PIMS options, and if this patient does not have an ICN (national or local), the same process occurs as was illustrated for a newly created patient.

3. If a patient record is edited or created outside of the PIMS options, they are presented to the MPI for ICN assignment via the Local/Missing ICN Resolution background job.

4. If an exact match is not found the MPI returns a message indicating this and that the patient is being added to the MPI. If potential matches are found, a new ICN is assigned to the patient, and an exception is logged for the Health Care Identify Management (HC IdM) group to review and provide the appropriate action. If the patients are truly the same person, then the records will be linked together with one ICN becoming the primary ICN that all records will be linked under and the other will be deactivated. The sites that had the deactivated ICN will be updated to the primary ICN.

Where is the ICN Stored?

Besides being stored on the MPI, the ICN is also stored in two fields in the PATIENT file (#2):

The Integration Control Number, field (#991.01).

The ICN Checksum, field (#991.02).

Both of these fields are stored on the "MPI" node, ^DPT(DFN,"MPI").

 CAUTION: Direct access to ICNs in the PATIENT file is not allowed.

An ICN can also be stored in the ICN History multiple (#2.0992). ICNs found in the ICN History multiple are ones that have previously been assigned to the patient, but are not the current ICN. Stored in the ICN History multiple are the following fields: ICN (#.01), ICN checksum (#1), CMOR (#2) and Date/Time of Change (#3).

The ICN History multiple is stored in ^DPT(<DFN>,"MPIFHIS",<IEN>,0).

What is a Local ICN?

A Local ICN is created by a local VistA system, and not the MPI. A Local ICN is assigned when:

- the site edits an existing patient or adds a new patient using an option that doesn't directly interact with the MPI (e.g., VistA Lab or VA FileMan).

- communication can't be established or is lost with the MPI before the ICN assignment process has completed, a local ICN is assigned.

Each facility is currently responsible for appropriately resolving their local exceptions on a daily basis. These requirements are stated in VHA DIRECTIVE 1906 (*NOTE: This is an internal VA Web site and is not available to the public.*).

All Local ICNs created in a given day are sent up to the MPI via the LOCAL/MISSING ICN RESOLUTION JOB that runs every 600 seconds. The result of this job will be a national ICN.

Under What Conditions are Local ICNs Assigned to Patient Records?

The following are conditions in which local ICNs are assigned to patient records:

- The site's VistA system can't connect to the MPI.

- The site edits an existing patient or adds a new patient using an option that doesn't directly interact with the MPI (e.g., VistA Lab or VA FileMan).

- The site attempts to add a patient; however, something happens to hold up transmission to the MPI causing a delay in national ICN assignment. In this instance, a local ICN is assigned as an interim placeholder to the patient entry until a national ICN is returned. Local ICN assignments made in this situation facilitate these types of patient entries to be easily identifiable.

> **NOTE: Local ICN Assignment as Placeholders**
>
> When a patient is sent to the MPI, a local ICN is assigned as placeholder to that entry until a national ICN is returned. In addition, if the patient sent to the MPI is an existing patient that doesn't have a national ICN assignment, and if that record has been edited outside the PIMS options that interact directly with the MPI, when the UPDATE BATCH JOB FOR HL7 v2.3 [VAFC BATCH UPDATE] job runs it will create a local ICN for that patient. This ensures that patient records of this nature are sent to the MPI for national ICN assignment when the Local/Missing ICN Resolution background job [MPIF LOC/MIS ICN RES] is run at the site.

> **NOTE:** When Local ICNs are assigned to patient records, they continue to be resolved through the Local/Missing ICN Resolution Background Job [MPIF LOC/MIS ICN RES].

How Can I Retrieve a Patient's ICN as a VistA Developer/Application?

> **NOTE:** The ICN follows the ASTM e1714-95 standard for a universal health identifier. The standard describes the identifier to be 29 characters (i.e., 16-digit sequence + 'V' delimiter + 6-digit checksum + 6-digit encryption). The short version of the ICN/VPID may be 17 characters (i.e., 10-digit sequence + 'V' delimiter + 6-digit checksum), with the leading zeros of the sequence and trailing zeros encryption trimmed off.

The API $$GETICN^MPIF001(DFN) will return a complete ICN. This function call is passed the IEN for the patient in the PATIENT file (#2). Returned is a -1^error message or the ICN. For example:

Function call: S ICN=$$GETICN^MPIF001(3404040)
Returned value: 1000720100V271387

> **NOTE:** This API returns the active ICN for the patient. If there was an ICN assigned, which is no longer active, no ICN will be returned.

Use the API $$GETDFN^MPIF001(ICN) if you have the ICN and need to find the patient's entry in the PATIENT file (#2). This function call is passed the ICN of the patient you are looking for in the PATIENT file (#2). You can pass the ICN either with or without the checksum and "V". Returned is a –1^error message or the IEN for the patient in this site's PATIENT file (#2).

Function call: S DFN=$$GETDFN^MPIF001("1000720100V271387")
Returned value: 3404040

What Causes a Patient Record Not to Have a National ICN Assignment?

- If the patient record was not included as part of the initial seeding process to the MPI. When the MPI was first initialized, patient records showing no activity in the last three fiscal years prior to the initialization were not enumerated with an ICN.

- If the patient record has not been edited or has not had clinical activity since approximately 1989, it would not have been sent up to the MPI for an ICN and CMOR assignment during the initial seeding of the index.

- If the patient record has not been processed into the system via any of the following PIMS options: Load/Edit, Register a Patient, or Electronic 10-10EZ Processing since the initial seeding of the index.

- Prior to this patch MPIF*1*33, the following criteria were not sent to the Master Patient Index (MPI) for national ICN assignment:

    - Patient records with last names beginning with ZZ

    - Patient records that have 5 leading zeros for the Social Security Number (SSN)

    - Patients records with last names beginning with "EEE"

    - Patients records with last names beginning with the word "Merging" (This applies to patients in the process of being merged via the Duplicate Record Merge software.)

    Patient records having met these criteria were either prevented from being sent to the MPI or were removed. Thus, these records currently exist in sites' PATIENT file (#2) without a national ICN assignment.

- If the patient record had been merged with another.

NOTE: VistA Patch MPIF*1*33 removed the Inactivate Patient from MPI [MPIF PAT INACT] option from the Master Patient Index Menu [MPIF VISTA MENU]. This option allowed users to inactivate patient records for any reason as long as they were not shared by another VistA system. Patient records having no activity since inactivation do not have national ICN assignments.

NOTE: As of Patch DG*5.3*589, the AMPIZZ and ATSSN cross-references have been removed from the PATIENT file (#2). These cross-references were used to automatically inactivate patient entries from the MPI if records were found to be ZZ'd and/or if the first five digits of patient Social Security Numbers were replace with zeros.

What Causes a Patient Record to Have Only a Local ICN Assignment?

Answer:

- If communication can't be established or is lost with the MPI before the ICN assignment process has completed.

- If the site edits an existing or adds a new patient using an option that doesn't directly interact with the MPI (e.g., VistA Lab or VA FileMan).

- If the patient is being added to the MPI (via the HL7 ADT-A28 message) as a placeholder until a National ICN is assigned. A local ICN is assigned to prevent processing the patient again on the MPI during that interim period.

Can a Patient's ICN Change?

Yes. A patient's ICN can change in any of the following two ways:

1. An ICN will change when the patient has a local ICN assigned and the patient traits are sent to the MPI for a national ICN assignment. All previously assigned ICNs are stored in the ICN History Multiple in the PATIENT file (#2) . The GETDFN Application Programmer Interface will return the patient given a passed ICN.

2. When a patient is presented to the MPI and there are potential matches found for that patient, the patient is added to the MPI and assigned a new national ICN. A Potential Matches Returned exception is generated in Person Service Identity Management (PSIM). The HC IdM team will review and resolve Potential Matches Returned exceptions. If HC IdM determines that two potential match patients are the same person, one of the two national ICNs will be selected as the prime ICN, and that ICN will be assigned to both patients. So the old national ICN for one of the patients will be replaced with the prime ICN selected by HC IdM, both on the MPI records, and on the PATIENT record in VistA. This is referred to as "linking" the existing patient to a new ICN.

How Can I Tell if an ICN has Change?

All VistA systems are subscribers to MPI messaging automatically. You will be notified via the ADT-A24 message of a change in National ICN for a given patient. If the patient's ICN changed from a local to a national, there isn't a message generated specifically for that change. If the subscribing system has requested to be notified about a change to a DFN/SITE pair then they would get the ADT-A24 message.

Please feel free to consult the MPI development team and/or Healthcare Identity Management (HC IdM) if you any further questions.

Can a Vendor Use an ICN to Identify a Patient?

If a vendor application requires an ICN and would like to attempt to get one as part of the processing, a request needs to be sent to the MPI development team for evaluation. The development staff will review the request and if approved, provide the appropriate APIs and code to accomplish this task.

How Can My VistA Application Get an ICN Assignment for a Patient?

If your application requires an ICN and would like to attempt to get one as part of your processing, a request needs to be sent to the development team for evaluation. The development staff will review the request and if approved, provide the appropriate APIs and code to accomplish this task.

What is the Communication Procedure with the MPI?

See the MPI/PD HL7 Interface Specifications (***NOTE: This is an internal VA Web site and is not available to the public.***) on the Master Patient Index (MPI) section of the VA Software Documentation Library.

How Do I Ensure Test System Data is Not Sent to the MPI?

"I remember there was some discussion among the MPI Development Team regarding mirroring the test account and implementing a special process to ensure that test data was not sent to the MPI. Do you know who I could contact about that?"

The routine is the Test Account Reset Utility, NVSTAR, created by EIE Health Systems Technical Support, distributed via KIDS build, and is platform independent. The software and all the supporting documentation are available at all the CIOFO FTP servers in the test system directory (just below the root). See Figure 2-1, for an example of how to use the NVSTAR Test Account Reset Utility.

Figure 2-1. How to use the NVSTAR Test Account Reset Utility

```
ES40A2$ ftp download.vista.med.va.gov     ← User Input—Start File Transfer.
220 ISC4A1.ISC-CHICAGO.MED.VA.GOV FTP Server (Version 5.6) Ready.
Connected to ISC-CHICAGO.VA.GOV.
Name (ISC-CHICAGO.VA.GOV:system): anonymous
331 Guest login OK, send ident as password.
Password:    ← User Input—Not echoed. Usually just your email address.
230 Guest login OK, access restrictions apply.
FTP> pwd   ← User Input—Find out where you are.
257 "ANON$:[ANONYMOUS]" is current directory.
FTP> cd [.cache.mirtestacct] ← User Input—Get to proper target directory.
250-CWD command successful.
250 New default directory is ANON$:[ANONYMOUS.CACHE.MIRTESTACCT]
```

```
FTP> ls   ← User Input—List directory.
200 PORT command successful.
150 Opening data connection for ANON$:[ANONYMOUS.CACHE.MIRTESTACCT]*.*;*
(10.6.21.15,55719)
NVSTAR7.KID;1
NVSTAR7_CACHE_MIRTEST.DOC;1
NVSTAR7_XQ_XU273_CACHE.RSA;1
ZSTU_TEST521.RSA;1
ZSTU_TEST523.RSA;1

226 NLST Directory transfer complete
114 bytes received in 00:00:00.03 seconds (2.85 Kbytes/s)
FTP> hash   ← User Input—Turn on hash marks.
Hash mark printing on (1024/hash mark).
FTP> ascii   ← User Input—ASCII files being retrieved.
200 TYPE set to ASCII.
FTP> mget *   ← User Input—[mget * transfers all of the files in this directory into the default directory
                 at your site that FTP was started.  You might like to create a directory locally on your
                 machine and set that as your default before the transfer.]
#200 TYPE set to IMAGE.
200 PORT command successful.
150 Opening data connection for
ANON$:[ANONYMOUS.CACHE.MIRTESTACCT]NVSTAR7.KID;1
 (10.6.21.15,55771) (269695 bytes)
########################################################################
########################################################################
########################################################################
######################
226 Transfer complete.
local: SYS$COMMON:[SYSMGR]NVSTAR7.KID;2  remote: NVSTAR7.KID;1
269695 bytes received in 00:00:00.50 seconds (523.69 Kbytes/s)
200 PORT command successful.
150 Opening data connection for
ANON$:[ANONYMOUS.CACHE.MIRTESTACCT]NVSTAR7_CACHE
_MIRTEST.DOC;1 (10.6.21.15,55772) (454656 bytes)
########################################################################
########################################################################
########################################################################
########################################################################
########################################################################
############################################
226 Transfer complete.
local: SYS$COMMON:[SYSMGR]NVSTAR7_CACHE_MIRTEST.DOC;2  remote:
NVSTAR7_CACHE_MIR
TEST.DOC;1
454656 bytes received in 00:00:00.72 seconds (614.43 Kbytes/s)
200 PORT command successful.
150 Opening data connection for
ANON$:[ANONYMOUS.CACHE.MIRTESTACCT]NVSTAR7_XQ_XU
273_CACHE.RSA;1 (10.6.21.15,55773) (19868 bytes)
###################
226 Transfer complete.
local: SYS$COMMON:[SYSMGR]NVSTAR7_XQ_XU273_CACHE.RSA;2  remote:
NVSTAR7_XQ_XU273
```

```
_CACHE.RSA;1
19868 bytes received in 00:00:00.17 seconds (110.38 Kbytes/s)
200 PORT command successful.
150 Opening data connection for
ANON$:[ANONYMOUS.CACHE.MIRTESTACCT]ZSTU_TEST521.
RSA;1 (10.6.21.15,55774) (3765 bytes)
###
226 Transfer complete.
local: SYS$COMMON:[SYSMGR]ZSTU_TEST521.RSA;2  remote: ZSTU_TEST521.RSA;1
3765 bytes received in 00:00:00.05 seconds (72.41 Kbytes/s)
200 PORT command successful.
150 Opening data connection for
ANON$:[ANONYMOUS.CACHE.MIRTESTACCT]ZSTU_TEST523.
RSA;1 (10.6.21.15,55775) (6773 bytes)
######
226 Transfer complete.
local: SYS$COMMON:[SYSMGR]ZSTU_TEST523.RSA;2  remote: ZSTU_TEST523.RSA;1
6773 bytes received in 00:00:00.11 seconds (57.40 Kbytes/s)
FTP> exit   ← User Input—Everything successfully transferred. So, let's Exit.
221 Goodbye.
```

NOTE: HL7 cleanup is only one of the rather large lists of cleanup/reset procedures the software does now.

If you have further questions about, or need help with getting and using the NVSTAR, contact the VA Service Desk at 1-888-596-4357 or log a Remedy ticket to SystemsVistA/VMSCache/General.

How Do I Block Automatic Calls to a Patient if Other Treating Facilities Don't Use the Same Characters?

MUMPS Audio Fax, Figure 2-2, allows you to place a site-specified non-numeric character in the phone number to block automatic calls to a patient. This value is overwritten if the patient's treating facilities don't use the same character. Is there another way to block the calls?

Mumps AudioFax outbound calling applications will look for an identified character in the patient phone number and will also look for an entry in the VEXM APPOINTMENT CALLS EXCLUDED PATIENTS file as a basis for excluding the patient from calls. Use EXCLUDE PATIENT FROM CALLING option on the MAF APPOINTMENT SYSTEM MENU to correct this.

Figure 2-2. Exclude Patient From Calling Option Blocks Automatic Calls to a Patient

```
Select MAF APPOINTMENT SYSTEM MENU Option: 8 <Enter> EXCLUDE PATIENT FROM
CALLING


Select PATIENT NAME: DEMONSTRATION
   1   MPIPATIENT,ROE    12-24-19  000008888  NO  NSC VETERAN
   2   MPIPATIENT,GIL    01-01-25  000001333  NO  NON-VETERAN (OTHER)
   3   MPIPATIENT,DEVIN 07-04-53  000006666  NO  NSC VETERAN
```

```
    4    MPIPATIENT,RYAN   02-14-01   000007777   YES   SC VETERAN
    5    MPIPATIENT,SAGE   06-06-60   000000606   NO    NSC VETERAN


ENTER '^' TO STOP, OR CHOOSE 1-5: 2 <Enter> MPIPATIENT,GIL    01-01-25
000001333 NO     NON-VETERAN (OTHER)


Select PATIENT NAME: DEMONSTRATION <<<--- Need to enter the name again.
    1    MPIPATIENT,ROE    12-24-19   000008888   NO    NSC VETERAN
    2    MPIPATIENT,GIL    01-01-25   000001333   NO    NON-VETERAN (OTHER)
    3    MPIPATIENT,DEVIN 07-04-53   000006666   NO    NSC VETERAN
    4    MPIPATIENT,RYAN   02-14-01   000007777   YES   SC VETERAN
    5    MPIPATIENT,SAGE   06-06-60   000000606   NO    NSC VETERAN


ENTER '^' TO STOP, OR CHOOSE 1-5: 2 <Enter> MPIPATIENT,GIL 01-01-25
000001333 NO NON-VETERAN (OTHER)


Warning : You have selected a test patient.
 Enrollment Priority:            Category: NOT ENROLLED  End Date:


Select PATIENT NAME: DEMONSTRATION
    1    MPIPATIENT,ROE    12-24-19   000008888   NO    NSC VETERAN
    2    MPIPATIENT,GIL    01-01-25   000001333   NO    NON-VETERAN (OTHER)
    3    MPIPATIENT,DEVIN 07-04-53   000006666   NO    NSC VETERAN
    4    MPIPATIENT,RYAN   02-14-01   000007777   YES   SC VETERAN
    5    MPIPATIENT,SAGE   06-06-60   000000606   NO    NSC VETERAN


ENTER '^' TO STOP, OR CHOOSE 1-5: 5 <Enter> MPIPATIENT,SAGE 06-06-60
000000606 NO NSC VETERAN


Warning : You have selected a test patient.
 Enrollment Priority: GROUP 5    Category: IN PROCESS     End Date:


Select PATIENT NAME: DEMONSTRATION <<<--- Need to enter the name again.
    1    MPIPATIENT,ROE    12-24-19   000008888   NO   NSC VETERAN
    2    MPIPATIENT,GIL    01-01-25   000001333   NO   NON-VETERAN (OTHER)
    3    MPIPATIENT,DEVIN 07-04-53   000006666   NO   NSC VETERAN
    4    MPIPATIENT,RYAN   02-14-01   000007777   YES  SC VETERAN
    5    MPIPATIENT,SAGE   06-06-60   000000606   NO   NSC VETERAN


ENTER '^' TO STOP, OR CHOOSE 1-5: 5 <Enter> MPIPATIENT,SAGE 06-06-60
000000606 NO NSC VETERAN


Warning : You have selected a test patient.
Enrollment Priority: GROUP 5    Category: IN PROCESS     End Date:


Select PATIENT NAME: <Enter>


Select MAF APPOINTMENT SYSTEM MENU Option: <Enter>


Select MAF APPOINTMENT SYSTEM MENU Option: FM <Enter> VA FileMan


VA FileMan Version 22.0


 Select VA FileMan Option: Inquire to File Entries


OUTPUT FROM WHAT FILE: VA PHONE// VEX
     1    VEXM APPOINTMENT CALLS CLINIC IDENTIFIERS    (0 entries)
     2    VEXM APPOINTMENT CALLS EXCLUDED PATIENTS    (0 entries)
CHOOSE 1-2: 2 <Enter> VEXM APPOINTMENT CALLS EXCLUDED PATIENTS     (0
entries)


 Select VEXM APPOINTMENT CALLS EXCLUDED PATIENTS PATIENT NAME: ?


Answer with VEXM APPOINTMENT CALLS EXCLUDED PATIENTS PATIENT NAME
```

```
Choose from:
   MPIPATIENT,GIL
   MPIPATIENT,SAGE
```

There are two other "don't call" control parameters both on the client system located on the DHCP-Appointment Options screen. The first one, "Exclude Phone #s With", is on the VistA-Appointment Parameters screen. It allows the user to define the character. If that character is in the phone number string, the system will not make the call. The second one is named "Excluded #s." It allows the user to enter the exact telephone # for a patient and not be called by the system.

How/Where Do We Find the Correct Patient DFN Used in Exception Messages?

"We're having difficulty finding the correct patient with the DFN used in the exception messages? "

Using FileMan Inquiry in your PATIENT file (#2) , you can find the patient by entering the backwards apostrophe (`) and the DFN at the "Select Patient" prompt.

Should Sensitive Patients be Shared Between Sites?

"If a patients is flagged as sensitive at another site, should we make them sensitive at our site? We received a Remote Sensitivity Indicated message stating that the patient was flagged as sensitive at another site but not at our site. Who in the receiving facility should act on this message?"

REMOTE SENSITIVITY INDICATED is an informational bulletin where the patient is marked as sensitive at the sending site but not at receiving site; the site can act or not. There are at least two schools of thought on the issue:

1. A patient that is sensitive at one site should be sensitive at all sites where seen.

2. The patient is sensitive at a site for a particular reason that may not be valid at another site.

Forward the message to the person at your facility that normally evaluates whether or not a patient is sensitive. That person may contact the other facility to determine why the patient is sensitive there and decide if the patient meets the criteria for sensitivity at your facility.

MPI/PD FAQ—HL7, Links, Background Jobs, Etc.

Re-enable MPIVA DIR Link?

"When I checked the HL7 links yesterday I noticed a link I don't remember seeing before - MPIVA DIR. It was in a "shutdown" state, supposedly shutdown on 12/20/00 (we installed MPI/PD last weekend). On the HL7 Monitor there is no "type of link" displayed; there are messages "received", none "processed", some "to send" and an equal number "sent". Should this link be re-enabled?"

The MPIVA DIR is the MPI direct connect which is the interactive connection with the Austin MPI and it should always be in a shutdown state. The field values you reported are normal for this link. The differences in the messages To Send, Sent, To Be Processed, and Processed are normal and can be ignored.

Are TCP/IP Links Managed Differently Than Other Links?

"I've seen some links with "read errors" and "openfail." From reading the documentation, it appears that "openfail" would indicate some problem with the remote site's listener or UCX service; correct? What does a "read error" signify, and how can it be corrected? I tried shutting down and restarting the problem link. I was able to once; however it didn't correct the problem. When I tried to do it again, the HL7 Monitor reported that the link was already running and didn't offer a prompt to shut it down. Are TCP/IP links managed differently than other types of links?"

The following info was pulled from the HL7 documentation file hl71_6p56_p66.pdf:

3.2.2 Operational Link States (Normal)

State	Explanation
Bidding	X3.28 links: Switching roles, server to sender
Check Out	Checking the "Out" queue for messages to send.
Disconnect	X3.28: Line is disconnected.
Done	HLLP: Message was validated.
Enabled	Non-persistent TCP links: Link has been started.
Idle	No messages are waiting to be sent or received. Idle cycle time is 3 seconds.

Inactive	Non-persistent TCP links: Link has been started and has delivered messages, but because there are no messages to deliver currently, the background job has been inactivated. The TCP Link Manager will reactivate it as needed.
Open	Link is attempting to open a connection.
Polling	X3.28: Link is checking if there is a message to send.
Reading	Link is reading a new message from the connected system.
Retention	Non-persistent TCP: Link has delivered messages, but has no more to send; the background process is waiting until either the retention time expires or new messages show up that need to be delivered.
Send	Link is transmitting a message.
Validate	HLLP: Link is calculating a checksum and verifying the value.
Wait ACK	X3.28: Link is waiting for an acknowledgment.
Writing	HLLP: Link is sending a message.

3.2.3 Abnormal or Non-Operational Link States

State	Explanation
Error	Link encountered an error.
Halting	Link has been asked to shut down.
NAK	HLLP: A negative acknowledgment has been sent.
OpenFail	Link could not open a connection to its associated device or target system.
Send NAK	X3.28: Link is sending a negative acknowledgment.
Shutdown	Link has been shut down.
Timeout	HLLP: When trying to read from the connected system, a timeout was encountered.

How Do I Interpret a DNS Address?

"Interpreting Ping of HL7 link: I tried to ping a site; the dialog stated "DNS returned: ..." with an IP address, tried that address, then failed with an error of "DNS lookup failed". How could the DNS lookup fail when it said that DNS returned an address? Is the DNS address it referred to the one it found in File #870?"

The ping first tries to make a successful connection to the TCP/IP address and Port number associated with that link in the HL LOGICAL LINK file (#870). If the ping is unsuccessful, the message "DNS returned" is returned from the KERNEL call $$ADDRESS^XLFNSLK("HL7.domain.MED.VA.GOV"). Next, it tries to make a successful connection to that address. If unsuccessful, the message "DNS lookup failed" is returned. I know this is somewhat confusing because it isn't the lookup that failed, but the value that was returned from the lookup that failed.

How Do I Interpret the HL7 Systems Monitor?

"Whenever I look at this in the HL7 Systems Monitor, the "messages sent" count is usually at least 250 behind the "messages to send". Is this normal, or does something need to be adjusted? We currently have 2 incoming and 1 outgoing filer running."

Typically, the number of "messages sent" should equal the number of "messages to send.". If these numbers do not equal, this might be an indication that you've had too many retransmissions of the same message. Check the ^RGMTUT98 call and see if there are any backlogged messages. If not, there isn't really a problem. You can always use the HL7 option, Clear a Queue of all Entries, to reset the numbers. If this situation continues, you can log an HL7 NOIS to resolve the issue.

```
VAWNY  44887  44887  44727  44467  MS  0 server
>D ^RGMTUT98
 <<Run - Jan 19, 2001@14:53:20>>
 Outgoing messages:
 VAMAN - 1 messages.          STATE: Open
 VALEB - 1 messages.          STATE: Openfail
 VACMO - 2 messages.          STATE: Open
 ZZDGRUBATH - 3 messages.     STATE: Halting

 Incoming messages:
 VAWNY - 1 messages.          STATE: 0 server
```

How Do I Correctly Shutdown the UCX Service For My Listener?

"Shutting down UCX service (VAWNY): How do you correctly shutdown this link? Do you only disable the UCX service, or do you also have to shutdown the link in the HL7 menu?"

Disabling the service will stop the inbound message, so yes you only have to disable the service. Disabling the service won't stop a connection that has already been established and is sending messages. To be sure that the listener is shutdown, set the SHUTDOWN LLP? field to Yes via VA FileMan. Remember to set this field back to NO before you restart the UCX service.

How Do I Resolve Links in ERROR or SHUTDOWN State?

These links (for sites that have installed), need to be restarted. For all sites up and running on MPI/PD, all the VA* and MPIVA links need to be monitored and kept running.

If you see that a link keeps going into ERROR state and staying there, or if you notice a link in OPENFAIL state, contact the National Help Desk at 1-888-596-4357 and log a Remedy ticket.

HL7 Patch 49 will start up TaskMan jobs when the links have messages to send, but will not remove the link from an error state. It will also not start if the link has not been "enabled" via Patch 49.

If a link remains down for seven days or more, the messages waiting on that link may be purged by the HL7 purge, and will be lost. If possible, the MPI Team would like to avoid this happening.

How Do I Restart MPIVA DI if in SHUTDOWN State?

"MPIVA DI is in a shutdown state. Should I restart the link? In addition, we have VABOS in a shutdown state until they come up. We are a LEDI site and VABOS link came up when we installed MPI/PD."

MPIVA DI - does not need to be started. This link is not like typical HL7 links. It is used for the real-time connections. If the shutdown state is confusing, you can change it via VA FileMan to something else.

How Do I Resolve a Link in an ERROR State?

"We have VAWPB is in an error state, and also received an alert HL7 Message IEN 672808 exceeded retries for LL VAWPB. VADET is in an openfailed state."

Stop and restart VAWPB; this should take care of it. The excessive retries are to alert you to go check out the link. If restarting the link doesn't solve the problem and you can successfully PING via HL7 the VAWPB link, you should contact the National Help Desk at 1-888-596-4357 and log a NOIS to the HL7 team for assistance. There may be a message stuck at the top of the queue that needs to be manually removed from the queue.

What is the INACTIVE State?

The Inactive state means that the link has been enabled under HL7 patch 49 and currently has no messages to send. It is just waiting for something to do. There isn't a TaskMan job until the link is actually sending messages (this is a good thing).

Purging the HL7 Globals?

"Can we begin to purge some of the LLP nodes? We installed phase II of CIRN on February 4th. On our SAGG report that was run on 1/28/2000 the HLMA global size was 16,033. The SAGG report run on 3/24/00, HLMA has grown to 165,530."

You should be running the HL7 purge on a weekly basis, at least. Be sure to schedule it to run via TaskMan and in the off hours. There are parameters that also can be set, at least take the default. That should give you back some disk space.

> **NOTE:** Be sure to keep successfully completed messages at least two days. Some messages require that the original message still be in the HLMA global in order to be processed successfully.

Chapter 3: Callable Routines

This section documents the following categories of supported calls as they relate to the MPI/PD package.

1. The first category is titled "Supported APIs." This section lists and describes the callable routines, which are supported for general use in interacting with the MPI/PD software (MPIF and RG namespaces).

2. The second category is titled "Supported APIs (IA Required)." This section lists and describes the MPI/PD callable routines, for which you must obtain an IA in to use.

3. The third category is titled "Supported APIs (IA Required) to Which MPI/PD is a Subscriber." This section lists and describes the callable routines that the MPI/PD package subscribes to, for which IAs were obtained.

4. The forth category is the section titled "MPI Direct Connect." You must also obtain an IA for adding the MPI Direct Connect functionality to your VistA package.

NOTE: The list of Integration Agreements (IAs) in which the MPI/PD software (MPIF and RG namespaces) is either custodian or subscriber to can be found on FORUM. For information on how to access these Integration Agreements, see the chapter titled "Callable Routines" in the *Master Patient Index/Patient Demographics (MPI/PD) VistA Technical Manual*.

NOTE: The MPI/PD software (i.e., routines in the MPIF* and RG* namespaces) SHOULD NOT reside/run on Legacy systems. Any VistA applications utilizing APIs in the MPIF and RG namespaces on Legacy systems should check for the existence of these routines before trying to access them.

Supported APIs

This section documents all the supported APIs belonging to the MPI/PD package for retrieving information from the MPI node in the PATIENT file (#2) or MPI /PD related information. They are sorted by routine name within Integration Agreement (IA) number. The following information is provided for each API listed:

1. API name (highlighted in boldface) and description

2. Associated IA

Table 3-1. MPI/PD Supported APIs

API and Description	Input Parameter(s)	Output Parameter(s)	IA
$$CMOR2^MPIF001(DFN) This API returns the CMOR (Coordinating Master Of Record) Site Name for any given patient.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	CMOR Site Name Or -1^error message	2701
$$CMORNAME^MPIF001(CIEN) This API returns the CMOR Site Name for any given Institution IEN.	CIEN (i.e., The CIEN is the IEN entry from the INSTITUTION file [#4].)	CMOR Site Name Or	2701

API and Description	Input Parameter(s)	Output Parameter(s)	IA
		-1^error message	
$$EN2^MPIFAPI() This API creates and returns the next local ICN and ICN Checksum.	None	Local ICN_V_ICN Checksum	2702
$$GETDFN^MPIF001(ICN)** This is the supported API for retrieving the IEN from the PATIENT file (#2) for any given ICN passed as the input parameter. The ICN should be passed without the V or its checksum. Returned is a –1^error message or the IEN for the patient in this site's PATIENT file (#2). **Function call:** S DFN=$$GETDFN^MPIF001(1000720100V271387) **Returned value: 3404040	ICN (i.e., Integration Control Number without the checksum or V separator.)	PATIENT file (#2) IEN (i.e., IEN of the patient found to have the passed ICN)	2701
$$GETICN^MPIF001(DFN)** This API returns the ICN and ICN checksum for the patient passed. ICN is a 10-digit number followed by the capital letter V and a six-digit checksum. This API returns the complete ICN. It is passed the IEN for the patient in the PATIENT file (#2) . Returned is a -1^error message or the ICN, include the ICN Checksum. For example: **Function call:** S ICN=$$GETICN^MPIF001(3404040) **Returned value: 1000720100V271387 ⓘ **NOTE:** This will return only the active ICN for the patient. If there was an ICN assigned, but is no longer active, NO ICN will be returned.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	ICN_V_ICN CHECKSUM	2701
$$GETVCCI^MPIF001(DFN) This API returns the CMOR Station Number for the patient who was passed.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	Station Number of the CMOR for the given patient.	2701

API and Description	Input Parameter(s)	Output Parameter(s)	IA
$$HL7CMOR^MPIF001(DFN,SEP) This API returns the CMORs Station Number and Institution Name for any given patient.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].) SEP is the delimiter used to separate Station Number and Name. This is not a required field. Default value is ^.	Station Number SEP Institution Name or -1^error message	2701
$$IFLOCAL^MPIF001(DFN) This API is used to check if a patient has a Local ICN.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	0 (zero) or 1 The returned value of 0 (zero) means that: 1. the patient does not exist, 2. the DFN (i.e., The DFN is the IEN entry from the PATIENT file [#2].) is not defined, 3. the MPI node does not exist, or 4. the patient does not have a local ICN. The returned value of 1 means that the patient has a Local ICN.	2701
$$IFVCCI^MPIF001(DFN) This API is used to determine if your site is the CMOR for the given patient.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	If the number 1 is returned, your site is the CMOR for the given patient. If a minus number 1 (–1) is returned, your site is NOT the CMOR for the given patient.	2701
$$MPILINK^MPIFAPI() This API returns the name of the HL7 Logical Link that is used to send messages to the MPI. If you are sending a message to the MPI, this is the call to make to get the name of the link.	none	HL7 Logical Link name	2702
$$MPINODE^MPIFAPI(DFN) This API returns the MPI node for any given patient from the PATIENT file (#2).	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	MPI node or -1^error message.	2702

API and Description	Input Parameter(s)	Output Parameter(s)	IA
$$SUBNUM^MPIFAPI(DFN) This API returns the Subscription Control Number from the MPI node for any given patient in the PATIENT file (#2).	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	Subscription Control Number or -1^error message	2702
GETADFN^MPIFAPI(ICN,DFN) This API returns the DFN for a given ICN ONLY if the ICN is the active ICN for a patient.	ICN (i.e., Integration Control Number without the checksum or V separator.)	DFN (The IEN of the patient in the Patient (#2) file that currently has this ICN as the active ICN (stored in field 991.01). ICN is not found -1^error message is returned.)	2702

Supported APIs (IA Required)

This section documents all the supported APIs (IA required) belonging to the MPI/PD package for retrieving information from the MPI node in the PATIENT file (#2) , or MPI /PD related information sorted by routine name. The following information is provided for each API listed:

1. API name (highlighted in boldface) and description.

2. Associated IA.

Table 3-2. Supported MPI/PD APIs for which an IA is required

API and Description	IA
^MPIF(984.9,D0,0) .01 REQUEST NUMBER 0;1 Read w/Fileman .03 DATE REQUESTED 0;3 Read w/Fileman .06 STATUS 0;6 Read w/Fileman .07 SITE 0;7 Read w/Fileman .08 TYPE OF MESSAGE 0;8 Read w/Fileman **^MPIF(984.9,D0,1)** 1.03 TYPE OF REQUEST 1;3 Read w/Fileman **^MPIF(984.9,'C',** .02 PATIENT 'C' x-re Direct Global Read To identify all requests for a specific patient we are looping through the 'C' cross reference on the PATIENT (#.02) field. **^MPIF(984.9,'AC',** The Registration package is requesting a DBIA with Master Patient Index (MPIF) to read with FileMan the MPIF CMOR REQUEST (#984.9) file as well as a direct global read on the "C" and "AC" cross references. This information is used to display need information need to make decision about changing the CMOR.	3298
$$CHANGE^MPIF001(DFN,VCCI) This API updates the CIRN MASTER OF RECORD (#991.03) field in the PATIENT file (#2) on the MPI node. NOTE: Patch RG*1*9 changed user visible references from CIRN to MPI/PD except in file names and most field names where it appears. CIRN Master of Record is now Coordinating Master of Record.	2703
$$ICNLC^MPIF001 This API will return an ICN if one exists or create and return a Local ICN and will update the appropriate fields if a Local was created.	3072
$$A31^MPIFA31B(DFN,ERR) This API will create an A31 HL7 2.4 standard message for the patient specified by DFN. DFN (input) is the patient's Internal Entry Number from the Patient file (#2) . ERR (output) is the -1 ^ Error message OR the resulting HL7 message number.	3765

API and Description	IA
A40^MPIFA40(DFN,DFN2) This API is being called via the special processing routine during a duplicate record merge process. It is the entry point used to tell the MPI that two records at a local site have been merged and that they both had National ICNs that should know be under one ICN. It will build an A40 Merge Patient HL7 message. DFN (input) is the Internal Entry Number from the Patient (#2) file that will remain after the merge process has completed. DFN2 (input) - Internal Entry Number from the Patient (#2) file that will no longer exist (FROM record) after the merge process has completed. This API will return the message ID returned from the HL7 GENERATE^HLMA call if successful OR -1^error message if unsuccessful.	4294
MPIFQ^MPIFAPI(DFN) This API provides support for the Registration package to provide real-time queries to the MPI for assignment of an ICN and CMOR. If the MPI is not available, a local ICN will be assigned instead. If the MPI does not already know of this patient, the patient will be added and assigned an ICN. The DFN is the IEN of the patient in the PATIENT file (#2) . This code is to be inserted after all of the required data has been collected on a new patient (new to the PATIENT file (#2)). If the patient is already known, this code should be inserted after the patient has been selected. Interaction will only occur with the MPI if the patient does not have an ICN assignment. NOTE: The following fields will be updated in the PATIENT file (#2) when a successful interaction with the MPI has occurred: INTEGRATION CONTROL NUMBER (#991.01), ICN CHECKSUM (#991.02), and COORDINATING MASTER OF RECORD (#991.03). If the MPI is unavailable, in addition to the fields noted above, the LOCALLY ASSINGNED ICN (#991.04) will be set to yes.	2748
$$MPIFQQ^MPIFAPI(DFN) This API tasks off the real-time connection to the MPI for an ICN request. This process is the same as the API: MPIQ^MPIFAPI(DFN), but will task the process off to the background.	3300
$$UPDATE^MPIFAPI(DFN,ARR) This API allows the calling package to update the MPI node fields (#991.01- #991.05) in the PATIENT file (#2).	2706
VTQ^MPISAQ(.MPIVAR) This API allows users to do a Display Only Query to the MPI through the MPI/PD Exception Handling Option.	2941
EXC^RGHLLOG(RGEXC,RGERR) This API will log the exception type of RGEXC with a textual message to include RGERR	2796
START^RGHLLOG(RGMSG,RGDC) This API allows the exceptions to be logged for a particular HL7 message that is being processed.	2796
STOP^RGHLLOG(RGQUIT) This API stops the specified (input variable- RGQUIT) exceptions being logged for an HL7 message.	2796

API and Description	IA
CALC^RGVCCMR2(RGDFN) This API calculates the CIRN CMOR Activity Score for an individual patient. This is being provided for the MPI developers to allow for re-calculating the CIRN CMOR activity score during the CMOR Batch comparison job.	2710

Supported APIs (IA Required) to Which MPI/PD is a Subscriber

This section documents all the supported APIs (IA required) to which the MPI/PD package subscribes sorted by routine name. The following information is provided for each API listed:

1. API name (highlighted in boldface) and description.

2. Associated IA.

Table 3-3. Supported APIs to which MPI/PD subscribes

API and Description	IA
$$EN^VAFCPID(DFN,VAFSTR,VAFNUM) This API creates a PID segment when a patient is: admitted, discharged, and/or checked out of a clinic. This segment is part of a HL7 message used by MPI/PD to DATE LAST TREATED (#.03) and the ADT/HL7 EVENT REASON fields (#.07) in the TREATING FACILITY LIST file (#391.91). This is patient/facility specific information. The API is passed three input parameters: internal entry number of the PATIENT file (#2), string of fields requested separated by commas, and sequential number for SET ID (default=1).	3015
$$QUERYTF^VAFCTFU1(ICN,.ARRAY,INDX) This routine returns (given an Integration Control Number or a DFN) a list of facilities the patient was seen for care. Input: ICN—Patient Integration Control Number. Both (Input/ Output: ARRAY—This variable is an array variable that the function uses to store the results of the treating facility list. It will be in the structure of x(1), x(2), etc., (e.g., X(1)=500^2960101, where the first piece is the IEN of the institution and the second piece is the current date on record for that institution.) Input: INDX—The cross-reference to $O through. 'APAT' for patient information linked to treating facilities, 'AEVN' for patient info linked with an event reason. INDX will equal one if 'AEVN' is used, else 'APAT' is used. Output: $$QUERYTF—Output is 0 if no error exists, or 1^error description, If error exists or no data in the array.	2990
TFL^VAFCTFU1(.LIST,DFN) This routine returns (given an Integration Control Number or a DFN) a list of facilities the patient was seen for care. Both (Input/ Output): LIST: • LIST(1)=-1^error message Example error messages: parameter missing, no treating facility, missing DFN, missing ICN, etc. The only time LIST(1) will always be defined is if there is an error; the first piece will be a -1. • Alternatively, this can be an array of treating facilities; they may or may not be VAMCs: - LIST(1)=500^ALBANY^3020513.092^3^VAMC - LIST(2)=662^SAN FRANCISCO^3020311.14^3^VAMC	2990

API and Description	IA
- LIST(3)=200^AUSTIN^^^DPC Input: DFN—Required second input parameter equals the IEN in the PATIENT file (#2).	
DELALLTF^VAFCTFU(PAT) This API is called to remove all associated treating facilities for a patient who's ICN has been inactivated.	2988
$$DELETETF^VAFCTFU(PAT,INST) This API is used to address the issue of duplicate treating facilities assigned to a patient; therefore the variable being passed is the IEN in TREATING FACILITY LIST file (#391.91) , not the IEN for a site that the other calls are using.	2988
$$EVN^VAFHLEVN This API creates an EVN segment when a patient is admitted, discharged, and/or checked out of a clinic. This segment is part of a HL7 message used by MPI/PD to DATE LAST TREATED (#.03) and the ADT/HL7 EVENT REASON (#.07) fields in the TREATING FACILITY LIST file (#391.91) . This is patient/facility specific information. The API is passed two input parameters: the HL7 Event Type and the HL7 Event Reason Code.	3016
$$EN^VAFHLPV1 This API is called to set a PV1 segment when a patient is checked out of a clinic.	3018
FILE^VAFCTFU(PDFN,FSTRG,TICN) This API is used to file data into the TREATING FACILITY LIST file (#391.91) (via the ADT/HL7 PIVOT file [#391.72]) under certain conditions.	2988
DIRECT^XWB2HL7(RET,LOC,RPC,RPCVER,P1,P2,P3,P4,P5,P6,P7,P8,P9,P10) This API is used to make a RPC to a remote facility. Users should be prepared to modify their calls to support strong authentication when made available by Infrastructure. NOTE: MPI/PD is only to call its own RPCs!	3144
RTNDATA^XWBDRPC(RET,HDL) Contains APIs for deferred RPCs used by HL7 utilities. NOTE: MPI/PD is only to call its own RPCs!	3149

MPI Direct Connect

The Direct Connect is a real-time Transmission Control Protocol/Internet Protocol (TCP/IP) connection to the Master Patient Index to allow for an immediate request for an ICN. It is activated during the Register A Patient, Load/Edit Patient Data, and Electronic 10-10EZ Processing processes when:

1. A new patient is added to the system, or

2. When a patient exists but doesn't have an ICN

This event causes creation of a VQQ-Q02, which is sent to the MPI to find out if the patient is known. If the MPI returns a message stating that the patient is not known, an ADT-A28 Add Person message is then sent to the MPI. If the patient was known or added via the ADT-A28 message, the MPI will return the known information and the patient's entry is updated.

The Display Only Query option, used to view the data the MPI knows about a patient, also utilizes the TCP/IP direct connect with the MPI. A VTQ query is sent to the MPI.

Chapter 4: Background Jobs

LOCAL/MISSING ICN RESOLUTION
Background job: MPIF LOC/MIS ICN RES

This option starts a background job that assigns ICNs to the following types of patient records, which have not been sent to the MPI:

- Patient records that have local ICNs

- Patient records that have been flagged as being active but do not have an ICN assignment.

It is recommended that this option be scheduled to run via TaskMan every 600 seconds (Patch MPIF*1*35).

> **NOTE:** As of Patch MPI*1*38 (MPI Austin side for the MPIF*1*43 and RG*1*43), this background job no longer automatically adds patients to the MPI.
>
> Previous to the release of this patch, when the Local/Missing ICN Resolution job was processed on the MPI, if a match wasn't found, the patient was added immediately. As of Patch MPI*1*38, this functionality has been changed in that if a match for a patient isn't found on the MPI, a message is sent back to the site indicating this. On the site's side, this triggers an HL7 A28—Add Patient message, which then adds the patient to the MPI.

> **NOTE:** A new field, LOCAL/MISSING DATE LAST RAN (#.04), was created in the CIRN SITE PARAMETER file (#991.8) to hold the last date the Local/Missing ICN Resolution Background job ran. The field will be populated by the routine ^MPIFRES.

Local ICNs

ICNs are created for new patients locally at the site when the MPI is unavailable or when the connection is lost prior to the assignment an ICN (e.g., the Direct Connect could not be established). A local ICN is also assigned as a placeholder when a patient has been sent to the MPI but not yet added. This is to ensure identification of these patients as these records await a response from the MPI. Local ICNs look like a national ICN. They contain the same number of digits as a national ICN. The only difference is that the first three digits are the VAMCs station number.

> **NOTE:** It is not recommended that local ICNs be sent to remote databases as they will only be known at the local facility that assigned them.

Missing ICNs

Missing ICNs result from patient records which have been added to the PATIENT file (#2) via other means than through the Patient Information Management System (PIMS) options that establish the real-time connection with the MPI (Load/Edit Patient Data, Register a Patient, and Electronic 10-10EZ Processing). These records are flagged internally for inclusion in the Local/Missing ICN Resolution job.

Resolution of Local/Missing ICNs

The Local/Missing ICN Resolution background job should be scheduled via TaskMan to run every 600 seconds (Patch MPIF*1*35). The Local/Missing ICN Resolution job will find either of the following:

- All patient entries in the local PATIENT file (#2) with a local ICN

- Patient entries that have been flagged as missing an ICN

It then sends these patients to the MPI for a national ICN assignment. These patient entries are sent to the MPI requesting an ICN, in batch HL7 messages (maximum of 100 patient entries each). They are processed on the MPI in the same manner as the patient entries presented in the real-time connection, only in batch form instead of individual entries.

MPI/PD EXCEPTION PURGE
[RG EXCEPTION PURGE]

This option purges entries from the CIRN HL7 EXCEPTION LOG file (#991.1) . Entries that are purged include duplicate entries, resolved entries over 30 days old, and entries for patients where the name field is null or the patient has been merge (e.g., has a -9 node.) Additionally, only the most recent Primary View Reject exception for a given patient/date is retained.

The MPI/PD EXCEPTION PURGE [RG EXCEPTION PURGE] option should be scheduled to run once an hour via Task Manager. Contact Information Resource Management (IRM) to verify that this job is scheduled and running.

UPDATE BATCH JOB FOR HL7 v2.3
VAFC BATCH UPDATE

The event of updating patient information can take place from several different options within VistA, including VA FileMan. Changes to any of the fields, listed in the table below, are recorded and an entry is created in the ADT/HL7 PIVOT file (#391.71). The entry is then marked as pending transmission. Direct sets to the globals cannot be collected. This background job will periodically collect (via a scheduled job) these marked events and broadcast an ADT-A08 Update Patient Information message. Because it is not possible to determine if the editing of the field is complete, this background job will periodically collect these marked events and broadcast an ADT A08 message (i.e., Update Patient Information). This is a PIMS-generated HL7 message.

Table 4-1. Data elements monitored in the PATIENT file (#2) for changes

Field Number	Field Name
.01	NAME
.02	SEX
.03	DATE OF BIRTH
.05	MARITAL STATUS
.08	RELIGIOUS PREFERENCE
.09	SOCIAL SECURITY NUMBER
.111	STREET ADDRESS [LINE 1]
.1112	ZIP+4
.112	STREET ADDRESS [LINE 2]
.113	STREET ADDRESS [LINE 3]
.114	CITY
.115	STATE
.116	ZIP CODE
.117	COUNTY
.121	BAD ADDRESS INDICATOR
.131	PHONE NUMBER [RESIDENCE]
.132	PHONE NUMBER [WORK]
.133	EMAIL ADDRESS
.134	PHONE NUMBER [CELLULAR]
.211	K-NAME OF PRIMARY NOK
.219	K-PHONE NUMBER
.2403	MOTHER'S MAIDEN NAME
.301	SERVICE CONNECTED?
.302	SERVICE CONNECTED PERCENTAGE
.31115	EMPLOYMENT STATUS
.313	CLAIM NUMBER
.323	PERIOD OF SERVICE
.351	DATE OF DEATH
.361	PRIMARY ELIGIBILITY CODE
.525	POW STATUS INDICATED? (added with Patch DG*5.3*648)
1	ALIAS (Patch DG*5.3*575)
2	RACE INFORMATION (Patch DG*5.3*575)
6	ETHNICITY INFORMATION (Patch DG*5.3*575)
391	TYPE
991.01	INTEGRATION CONTROL NUMBER
991.02	ICN CHECKSUM
991.03	COORDINATING MASTER OF RECORD
994	MULTIPLE BIRTH INDICATOR (added with Patch DG*5.3*575)
1901	VETERAN (Y/N)?

This background job also sends out Treating Facility "add me" and Treating Facility Update messages.

NOTE: For more information on the ADT A08 Message- Update Patient Information, see the *Master Patient Index (MPI) VistA HL7 Interface Specifications.*

NOTE: This background job was originally exported in patch DG*5.3*91.

Glossary

Table G-1. Glossary

.001 Field	A field containing the internal entry number of the record.
.01 Field	The one field that must be present for every file and file entry. It is also called the NAME field. At a file's creation the .01 field is given the label NAME. This label can be changed.
10-10EZ	Form used to apply for health benefits.
abbreviated response	This feature allows you to enter data by typing only the first few characters for the desired response. This feature will not work unless the information is already stored in the computer.
Accept Agreement	Part of the validation and agreement to the privacy regulations associated with Toolkit (IdM TK).
access code	A code that, along with the Verify code, allows the computer to identify you as a user authorized to gain access to the computer. Your code is greater than 6 and less than 20 characters long; can be numeric, alphabetic, or a combination of both; and is usually assigned by a site manager or application coordinator. It is used by the Kernel's Sign-on/Security system to identify the user (see Verify Code).
active patients	Patients who have been seen at a site within the past three years.
ADPAC	Automated Data Processing Application Coordinator.
ADR	The Administrative Data Repository is the authoritative data store within VHA for cross-cutting person administrative information. The Administrative Data Repository contains identification and cross-cutting demographics data as well as other administrative information. Patient Information Management System (PSIM) uploads the identity demographic data to the ADR. May also include subset of the Enrollment database. May also be referred to as ADR-N or ADR-L to designate a national or local instance.
ADT	Admission Discharge and Transfer- Part of the Patient Information Management System (PIMS).
ADT/HL7 PIVOT File	Changes to any of the fields of patient information will be recorded and an entry created in the ADT/HL7 PIVOT file (#391.71). When an update to a patient's treating facility occurs, this event is to be added to the ADT/HL7 PIVOT file (#391.71) and marked for transmission. A background job will collect these updates and broadcast the appropriate HL7 message (ADT-A08 Patient Update).
AITC	The Master Patient Index (MPI) is located at the Austin Information Technology Center (AITC).
alerts	Brief online notices that are issued to users as they complete a cycle through the

menu system. Alerts are designed to provide interactive notification of pending computing activities, such as the need to reorder supplies or review a patient's clinical test results. Along with the alert message is an indication that the View Alerts common option should be chosen to take further action.

Ancillary Reviewer   This can be a single person or group of people given the responsibility to conduct reviews of potential duplicate record pairs with data in files other than the PATIENT file (#2). For example, selected personnel in Laboratory, Radiology, and Pharmacy.

ANSI   American National Standards Institute.

ANSI M   The M (formerly known as MUMPS) programming language is a standard recognized by the American National Standard Institute (ANSI). M stands for Massachusetts Utility Multi-programming System.

API   Program calls provided for use by application programmers. APIs allow programmers to carry out standard computing activities without needing to duplicate utilities in their own software. APIs also further DBA goals of system integration by channeling activities, such as adding new users, through a limited number of callable entry points. VistA APIs fall into the following three categories:

- The first category is "Supported API" These are callable routines, which are supported for general use by all VistA applications.

- The second category is "Controlled Subscription API." These are callable routines for which you must obtain an Integration Agreement (IA - formerly referred to as a DBIA) to use.

- The third category is "Private API," where only a single application is granted permission to use an attribute/function of another VistA package.

These IAs are granted for special cases, transitional problems between versions, and release coordination.

application   Any software that executes logic or rules which allow people to interface with the computer and programs which collect, manipulate, summarize, and report data and information. .

application coordinator   Designated individuals responsible for user-level management and maintenance of an application package such as IFCAP, Lab, Pharmacy, Mental Health, etc.

application server   Software/hardware for handling complex interactions between users, business logic, and databases in transaction-based, multi-tier applications. Application servers, also known as app servers, provide increased availability and higher performance.

array   An arrangement of elements in one or more dimensions. An M array is a set of nodes referenced by subscripts that share the same variable name.

AT-SIGN ("@")   A VA FileMan security Access code that gives the user programmer-level access to files and to VA FileMan's developer features. See Programmer Access. Also, the character "@" (i.e., at-sign, Shift-2 key on most keyboards) is used at VA FileMan field prompts to delete data.

attribute   **VHA** Definition:

- These are Persons Traits or Meta-Data about the Primary View or the Correlation.

     Identity Hub™ Definition:

- Members have attributes, like Name, Gender, Address, Phone, Birth Date, SSN.

- Attributes are stored in tables according to Segments. Segments are "attribute types" The MEMPHONE segment can hold Home Phone, Cell Phone, and Fax Number information.

authentication   Verifying the identity of the end-user.

authorization   Granting or denying user access or permission to perform a function.

Auto Link Threshold or Threshold, Auto Link   The Auto Link Threshold is the level that a Comparison Score must meet or exceed in order for two or more Identity Profiles to be considered the same unique Person Identity.

auto-resolved   Exception cases automatically closed by the System without action by the HealthCare Identity Management (HC IdM) staff.

auto-update   The term "auto-update" refers to fields that are updated from a central database (i.e., the Master Patient Index).

Bad Address Indicator (BAI)   The Bad Address Indicator field applies to the address at which the patient resides. This field should be set as follows (if applicable):

- "UNDELIVERABLE" - Bad Address based on returned mail.

- "HOMELESS" - Patient is known to be homeless.

- "OTHER" - Other Bad Address Reason

     Setting this field will prevent a Bad Address from being shared with HEC and other VAMC facilities. It will also be used to block Means Test Renewal Letters from being sent. Once the Bad Address Indicator is set, incoming "newer" addresses will automatically remove the Bad Address Indicator, and allow the "updated" address to be transmitted to HEC and other VAMC Facilities.

batch acknowledgements   The format of a HL7 batch acknowledgement message consists entirely of a group of ACK (acknowledgment) messages. In the case of MPI, batch

acknowledgements are returned during the initialization process and during the Local/Missing ICN Resolution job. The background job files the ICN, ICN checksum and CMOR, updates the MPI, and then the associated treating facilities and systems. Data returned from this process constitute the acknowledgment of the batch message.

batch messages There are instances when it is convenient to transfer a batch of HL7 messages. Common examples related to MPI are queries sent to the MPI for an ICN during the initialization process, the resolution of Local or Missing ICNs, and CMOR Batch Comparisons. Such a batch could be sent online using a common file transfer protocol. In the case of the MPI, the HL7 Batch Protocol uses the Batch Header Segment (BHS) and Batch Trailer Segment (BTS) message segments to delineate the batch.

BHIE Bidirectional Health Information Exchange

bulletins Electronic mail messages that are automatically delivered by VistA MailMan under certain conditions. For example, a bulletin can be set up to "fire" when database changes occur, such as adding a new Institution in the INSTITUTION file (#4). Bulletins are fired by bulletin-type cross-references.

business requirements
- Requirements state the customer needs the project output will satisfy. Requirements typically start with phrase "The system shall …" Business requirements refers to how the project will satisfy the business mission of the customer.

- Business requirements refer to business functions of the project, such as project management, financial management, or change management.

business rule
- A policy imposed by the business, or an external entity, on the system used in the process of conducting that business.

- A special category of a requirement. A business rule is directive, policy, or procedure within an organization that describes the relationship between two or more entities. Business rules may also come from outside sources such as government regulations and membership association guidelines.

cache Cache memory is a small area of very fast RAM used to speed exchange of data. Also, a file or directory included on your computer's hard drive which automatically stores the text and graphics from a web page you pull up, which, in turn, allows you to go back to that web page, without having to wait for the information to reload.

CAIP Cross-Application Integration Protocol. A framework which provides both applications and services with support for software procedure calls across systems and applications that rely upon infrastructure and middleware technologies, while simultaneously minimizing the direct dependencies of these same applications and services upon these enabling technologies.

callable entry point   An authorized programmer call that may be used in any VistA application package. The DBA maintains the list of DBIC-approved entry points.

CAPRI   Compensation & Pension Records Interchange (CAPRI). This Graphical User Interface (GUI) software is used to access veterans' electronic medical records throughout the VA. The Healthcare Identity Management (HC IdM) Team uses CAPRI as a resource for reviewing patient demographic and clinical data.

CHDR   Clinical Data Repository (CDR) Health Data Repository

checksum   The result of a mathematical computation involving the individual characters of a routine or file.

client   A single term used interchangeably to refer to the user, the workstation, and the portion of the program that runs on the workstation. In an object-oriented environment, a client is a member of a group that uses the services of an unrelated group. If the client is on a local area network (LAN), it can share resources with another computer (server).

Clinical Patient Record System (CPRS)   Clinical Patient Record System provides a computer-based patient record and organizes and presents all relevant data on a patient in a way that directly supports clinical decision-making. CPRS integrates the extensive set of clinical and administrative applications available within VistA.

common menu   The Common menu consists of options that are available to all users. Entering two question marks at the menus select prompt displays any secondary menu options available to the signed-on user, along with the common options available to all users.

Controlled Subscription Integration Agreement   This applies where the IA describes attributes/functions that must be controlled in their use. The decision to restrict the IA is based on the maturity of the custodian package. Typically, these IAs are created by the requesting package based on their independent examination of the custodian package's features. For the IA to be approved, the custodian grants permission to other VistA packages to use the attributes/functions of the IA; permission is granted on a one-by-one basis where each is based on a solicitation by the requesting package. An example is the extension of permission to allow a package (e.g., Spinal Cord Dysfunction) to define and update a component that is supported within the Health Summary package file structures.

correlation   Comparison of person identity traits for multiple records with the Primary View in the ADR and/or MPI databases.

COTS   Commercial Off The Shelf applications sold by vendors through public catalogue listings. COTS software is not intended to be customized or enhanced.

cross reference   There are several types of cross-references available. Most generally, a VA FileMan cross-reference specifies that some action be performed when the field's value is entered, changed, or deleted. For several types of cross-references, the action consists of putting the value into a list; an index used when looking-up an entry or when sorting. The regular cross-reference is used for sorting and for

lookup; you can limit it to sorting only.

data attribute   A characteristic unit of data such as length, value, or method of representation. VA FileMan field definitions specify data attributes.

data dictionary (DD)   The Data Dictionary is a global containing a description of the kind of data that is stored in the global corresponding to a particular file. VA FileMan uses the data internally for interpreting and processing files.

It contains the definitions of a file's elements (fields or data attributes), relationships to other files, and structure or design. Users generally review the definitions of a file's elements or data attributes; programmers review the definitions of a file's internal structure.

data dictionary access   A user's authorization to write/update/edit the data definition for a computer file. Also known as DD Access.

data integrity   This term refers to the condition of patient records in terms of completeness and correctness. It also refers to the process in which a particular patient's data is synchronized at all the sites in which that patient receives care.

data type   A specific field or type of information, such as Name, Social Security Number, etc.

database   A set of data, consisting of at least one file, that is sufficient for a given purpose. The VistA database is composed of a number of VA FileMan files. A collection of data about a specific subject, such as the PATIENT file (#2); a data collection has different data fields (e.g. patient name, SSN, Date of Birth, and so on). An organized collection of data about a particular topic.

Database Management System (DBMS)   A collection of software that handles the storage, retrieval, and updating of records in a database. A Database Management System (DBMS) controls redundancy of records and provides the security, integrity, and data independence of a database.

date of death   A patient may be entered as deceased at a treating facility. If a shared patient is flagged as deceased, an RG CIRN DEMOGRAPHIC ISSUES bulletin is sent to each treating facility telling where, when, and by whom the deceased date was entered. Each site can then review whether the patient should be marked as deceased at their site.

DBA   Database Administrator, oversees software development with respect to VistA Standards and Conventions (SAC) such as namespacing. Also, this term refers to the Database Administration function and staff.

DBIA   Database Integration Agreement (see Integration Agreements [IA]).

default   Response the computer considers the most probable answer to the prompt being given. It is identified by double slash marks (//) immediately following it. This allows you the option of accepting the default answer or entering your own answer. To accept the default you simply press the Enter (or Return) key. To change the default answer, type in your response.

demographic data	Identifying descriptive data about a patient, such as: name, sex, date of birth, marital status, religious preference, SSN, address, etc.
demographics	Information about a person, such as name, address, service record, next of kin, and so on.
Department of Veterans Affairs	The Department of Veterans Affairs (formerly known as the Veterans Administration.)
device	Peripheral connected to the host computer, such as a printer, terminal, disk drive, modem, and other types of hardware and equipment associated with a computer. The host files of underlying operating systems may be treated like devices in that they may be written to (e.g., for spooling).
DFN	IdM – Data File Number which is the Patient Internal Entry Number (IEN) in Legacy Vista for a specific Site. Additionally, this is a defined variable in VistA that refers to the IEN of the Patient currently in memory.
DHCP	Decentralized Hospital Computer Program (now known as Veterans Health Information Systems and Technology Architecture [VistA]). VistA software, developed by VA, is used to support clinical and administrative functions at VA Medical Centers nationwide. It is written in M and, via the Kernel, runs on all major M implementations regardless of vendor. VistA is composed of packages that undergo a verification process to ensure conformity with namespacing and other VistA standards and conventions.
dictionary	Database of specifications of data and information processing resources. VA FileMan's database of data dictionaries is stored in the FILE of files (#1).
direct connect	The Direct Connect is a real-time TCP/IP connection to the MPI to allow for an immediate request for an ICN. Direct Connect is activated when using any of the following PIMS options:

- Register A Patient,

- Load/Edit Patient Data,

- Electronic 10-10EZ Processing,

and when using the:

- Display Only Query

direct mode utility	A programmer call that is made when working in direct programmer mode. A direct mode utility is entered at the MUMPS prompt (e.g., >D ^XUP). Calls that are documented as direct mode utilities cannot be used in application software code.
DNS	Domain Name Server

DOB	Date of Birth
DOD	IdM– Date of Death
DoD	Department of Defense.
domain	A site for sending and receiving mail.
double quotes ("")	Symbol used in front of a Common option's menu text or synonym to select it from the Common menu. For example, the five-character string "TBOX" selects the User's Toolbox Common option.
Duplicate Record Merge: Patient Merge	Patient Merge is a VistA application that provides an automated method to eliminate duplicate patient records within the VistA database (i.e., the VistA PATIENT file [#2]).
DUZ	Locally defined variable in VistA that refers to the IEN of the logged on user (From the New Person file).
DUZ(0)	Locally defined variable that holds the File Manager Access Code of the signed-on user.
electronic signature code	Secret password that some users may need to establish in order to sign documents via the computer.
eligibility codes	Codes representing the basis of a patient's eligibility for care.
encryption	Scrambling data or messages with a cipher or code so that they are unreadable without a secret key. In some cases encryption algorithms are one directional, that is, they only encode and the resulting data cannot be unscrambled (e.g. access/verify codes).
entry	VA FileMan record. An internal entry number (IEN, the .001 field) uniquely identifies an entry in a file.
error trap	A mechanism to capture system errors and record facts about the computing context such as the local symbol table, last global reference, and routine in use. Operating systems provide tools such as the %ER utility. The Kernel provides a generic error trapping mechanism with use of the ^%ZTER global and ^XTER* routines. Errors can be trapped and, when possible, the user is returned to the menu system.
ESR	Enrollment Systems Redesign is a centralized and Reengineered enrollment system.
exception	A task that has encountered an error in personal data. Any Data Quality issue that requires detailed documentation. HC IdM finds an Exception based on business rules.
exception message	MPI/PD generates messages and bulletins to alert the user to problems that occur in generating or processing HL7 messages. The MPI/PD Message Exception

Menu contains options to manage the problems.

extrinsic function   Extrinsic function is an expression that accepts parameters as input and returns a value as output that can be directly assigned.

facility   Geographic location at which VA business is performed.

FHIE   Federal Health Information Exchange – A Federal IT health care initiative that facilitates the secure electronic one-way exchange of patient medical information between Government health organizations.

The project participants are the Department of Defense (DoD) and the Department of Veterans Affairs (VA). (http://vaww.va.gov/FHIE-BHIE/
NOTE: This is an internal VA Web site and is not available to the public.)

field   HL7: An HL7 field is a string of characters defined by one of the HL7 data types.

VistA: In a record, a specified area used for the value of a data attribute. The data specifications of each VA FileMan field are documented in the file's data dictionary. A field is similar to blanks on forms. It is preceded by words that tell you what information goes in that particular field. The blank, marked by the cursor on your terminal screen, is where you enter the information.

field components   A field entry may also have discernible parts or components. For example, the patient's name is recorded as last name, first name, and middle initial, each of which is a distinct entity separated by a component delimiter (sub-subfield in ASTM e1238-94).

file   Set of related records treated as a unit. VA FileMan files maintain a count of the number of entries or records.

File Manager (VA FileMan)   VistA's Database Management System (DBMS). The central component of Kernel that defines the way standard VistA files are structured and manipulated.

FIN   Foreign ID Number

FIPS   Standards published by the U.S. National Institute of Standards and Technology, after approval by the Department of Commerce; used as a guideline for federal procurements.

FOIA   Freedom of Information Act

FORUM   The central E-mail system within VistA. Developers use FORUM to communicate at a national level about programming and other issues. FORUM is located at the OI Field Office—Washington, DC (162-2).

free text   A DATA TYPE that can contain any printable characters.

FTP   File Transfer Protocol

function point count   The function point method is used to establish a meaningful unit-of-work measure

(FPC)	and can be used to establish baseline costs and performance level monitors. Function point analysis centers on its ability to measure the size of any software deliverable in logical, user-oriented terms. Rather than counting lines of code, function point analysis measures the functionality being delivered to the end user.
GAL	Global Address List.
gender	The following are listed in Legacy Vista as Standard Gender values: • F – Female • M – Male SDS table Values: • F – Female • M – Male • A – Ambiguous • N – Not Applicable • - Other • U – Unknown • UN – Undifferentiated
global variable	Variable that is stored on disk (M usage).
GUI	Graphical User Interface.
HC IdM	Healthcare Identity Management
HDR	Health Data Repository – A repository of clinical information normally residing on one or more independent platforms for use by clinicians and other personnel in support of patient-centric care. The data is retrieved from heritage, transaction-oriented systems and is organized in a format to support clinical decision-making in support of patient care. Formerly known as Clinical Data Repository.
Health Level 7 (HL7) Batch Protocol	Protocol utilized to transmit a batch of HL7 messages. The protocol generally uses FHS, BHS, BTS and FTS segments to delineate the batch. In the case of the MPI, the protocol only uses the BHS and BTS segments.
Health Level Seven (HL7)	National standard for electronic data exchange/messaging protocol. HL7 messages are the dominant standard for peer-to-peer exchange of clinical, text-based information.
Health Level Seven (HL7) VistA	Messaging system developed as VistA software that follows the HL7 Standard for data exchange.
Healthcare Identity Management (HC IdM)	The Healthcare Identity Management team (formerly the Identity Management Data Quality team) • Serves as business steward for patient identity data for the patient's electronic health record (such as name, SSN, date of birth, gender, mother's maiden name, place of birth) as well as managing the patient's longitudinal health record across the enterprise.

- Defines business rules and processes governing healthcare identity management data collection and maintenance.

- Monitors and resolves data integrity issues and conflicts on the MPI and local systems related to the individual's identity data within their health record, including the resolution of duplicates, mismatches and catastrophic edits to patient identity, which affect patient care and safety.

Health*e*Vet-VistA   The next generation of VistA, Health*e*Vet-VistA, will retain all of the capabilities of legacy VistA but will provide enhanced flexibility for future health care and compliance with the One VA Enterprise Architecture. It will allow seamless data sharing between all parts of VA to benefit veterans and their families.

HEC   Health Eligibility Center.

help frames   Entries in the HELP FRAME file (#9.2) that can be distributed with application packages to provide online documentation. Frames can be linked with other related frames to form a nested structure.

help prompt   The brief help that is available at the field level when entering one or more question marks.

HINQ   Hospital Inquiry- The HINQ module provides the capability to request and obtain veteran eligibility data via the VA national telecommunications network. Individual or group requests are sent from a local computer to a remote Veterans Benefits Administration (VBA) computer where veteran information is stored. The VBA network that supports HINQ is composed of four computer systems located in regional VA payment centers.

HIPAA   Health Insurance Portability and Accountability Act – A law passed by Congress in 1996 that requires the Department of Health and Human Services to implement regulations that will require the use of specific standards related to health care claims, code sets, identifiers (individual, provider, employer, and health plan), and security. Protects the privacy of individually identifiable health information.

HL7   Health Level 7 – National standard for electronic data exchange/messaging protocol. A standards organization primarily focused on message-oriented middleware for healthcare. HL7 messages are the dominant standard for peer-to-peer exchange of clinical, text-based information.

HLO   HL7 Optimized. VistA HL7 package routines.

ICN   Patients are assigned a unique identifier, Integration Control Number (ICN), within the process of being added to the MPI database. This number links patients to their records across VHA systems. The Integration Control Number is a unique identifier assigned to patients when they are added to the MPI. The ICN follows the ASTM-E1714-95 standard for a universal health identifier.

ID State   An attribute of the ICN, which describes the state of the record as Permanent, Temporary, or Deactivated. ID State is composed of the following two fields from

the MPI VETERAN/CLIENT file (#985):

- ID STATE (#80) is a set of codes: PERMANENT, TEMPORARY, and DEACTIVATED. Auditing is enabled for this field.

- DATE OF ID STATE (#81) identifies when the ID STATE field was last updated.

Identity Services	A business and data service that provides a consistent interface for access and maintenance of person identification to trusted client applications and services. It is the authoritative source for person identification in the Veterans Health Administration (VHA) domain.
IdM	Identity Management
IdM TK	Toolkit
IdM Toolkit (IdM TK) Administrator	An IdM Toolkit Administrator is a user with additional privileges and security beyond the IdM Toolkit User's available functionality in the system.
IEN	Internal Entry Number. The IEN number and Station Number comprise the Source ID of the person targeted for the search. The Source ID is used to uniquely identify a person.
IMDQ **New name: "Healthcare Identity Management (HC IdM)"**	The Identity Management Data Quality team (renamed the Healthcare Identity Management team) is a group of Data Management Analysts committed to improving and safeguarding the quality and accessibility of patient data throughout the VA enterprise. They are involved in many data quality initiatives, but their primary role is to assist VHA facilities in all matters related to the MPI.
Initiate Identity Hub™	The Initiate Identity Hub™ is a third-party proprietary off-the-shelf software package that makes use of a Probabilistic Matching Algorithm.
Initiate Identity Hub	Initiate Systems Inc. software that provides a trusted on-demand system of record for multiple organizations or other entities by accurately identifying the relevant duplicate and fragmented records and linking them – within, as well as across, all data sources
input template	A pre-defined list of fields that together comprise an editing session.
institution	A Department of Veterans Affairs (VA) facility assigned a number by headquarters, as defined by Directive 97-058. An entry in the INSTITUTION file (#4) that represents the Veterans Health Administration (VHA).
integration agreements (IA)	Integration Agreements define agreements between two or more VistA software applications to allow access to one development domain by another. VistA software developers are allowed to use internal entry points (APIs) or other software-specific features that are not available to the general programming public. Any software developed for use in the VistA environment is required to adhere to this standard; as such, it applies to vendor products developed within the

boundaries of DBA assigned development domains (e.g., MUMPS AudioFax). An IA defines the attributes and functions that specify access. The DBA maintains and records all IAs in the Integration Agreement database on FORUM. Content can be viewed using the DBA menu or the Health Systems Design & Development's Web page.

Integration Control Number (ICN)	Patients are assigned a unique identifier, known as an Integration Control Number (ICN), within the process of being added to the MPI database. This number links patients to their records across VHA systems. The Integration Control Number is a unique identifier assigned to patients when they are added to the MPI. The ICN follows the ASTM-E1714-95 standard for a universal health identifier.
internal entry number (IEN)	The number used to identify an entry within a file. Every record has a unique internal entry number.
IRM	Information Resource Management. A service at VA medical centers responsible for computer management and system security.
ISO	Information Security Officer.
ISS	Infrastructure and Security Services (now known as Common Services Security Program).
IV&V	IV&V is the principal activity that oversees the successful implementation and execution of all internal control processes for financial and interfacing systems. In order to ensure overall systems integrity, IV&V is accomplished organizationally independent from the elements that acquire, design, develop or maintain the system.
KERNEL	VistA software that functions as an intermediary between the host operating system and other VistA software applications so that VistA software can coexist in a standard operating-system-independent computing environment. Kernel provides a standard and consistent user and programmer interface between software applications and the underlying M implementation.
LAN	Local Area Network.
LAYGO Access	A user's authorization to create a new entry when editing a computer file. (**L**earn **A**s **Y**ou **GO** allows you the ability to create new file entries.)
LDAP	Lightweight Directory Access Protocol.
Lookup	To find an entry in a file using a value for one of its fields.
M (ANSI Standard)	Massachusetts General Hospital Utility Multi-Programming System (M, formerly named MUMPS). The Mumps language originated in the mid-60's at the Massachusetts General Hospital. Although most implementations are proprietary, consolidated into the hands of a small number of companies, an open source version of the language has been developed which is distributed freely under the GNU GPL and LGPL licenses.

mail message	An entry in the MESSAGE file (#3.9). The VistA electronic mail system (MailMan) supports local and remote networking of messages.
Mailman	VistA software that provides a mechanism for handling electronic communication, whether it's user-oriented mail messages, automatic firing of bulletins, or initiation of server-handled data transmissions.
Manager Account	UCI that can be referenced by non-manager accounts such as production accounts. Like a library, the MGR UCI holds percent routines and globals (e.g., ^%ZOSF) for shared use by other UCIs.
mandatory field	Field that requires a value. A null response is not valid.
master files	A set of common reference files used by one or more application systems. These common reference files need to be synchronized across the various applications at a given site. The Master Files Notification transactions provide a way of maintaining this synchronization.
Master Patient Index (Austin) or MPI Austin	The MPI is a separate computer system located at the Austin Information Technology Center. It maintains a record for VA patients and stores data such as a unique patient identifier and Treating Facility lists (which tracks the sites where that ICN is known).
Master Patient Index or MPI	A data store of patient records. Master Patient Index is a cross-reference or index of patients that includes the patient's related identifiers and other patient identifying information. It is used to associate a patient's identifiers among multiple ID-assigning entities, possibly including a Health Data Repository, to support the consolidation and sharing of a patient's health care information across VHA. The MPI is the authoritative source for patient identity. Systems of interest include VA facilities where patients are seen for care and other systems that have a registered interest in a patient, such as Federal Health Information Exchange (FHIE), Home TeleHealth, Person Service Identity Management (PSIM), and Health Data Repository (HDR). The ability to uniquely identify patients assists in the elimination of duplicate records throughout all VA systems and other agencies, and allows the systems to share information for patients that receive care from more than one facility/agency.
Master Patient Index/Patient Demographics (MPI/PD) VistA or MPI/PD	Master Patient Index/Patient Demographics (MPI/PD) software initializes entries in the PATIENT file (#2) with the Master Patient Index, itself. The initialization process assigns an Integration Control Number (ICN), Coordinating Master of Record (CMOR), and creates a Treating Facility list of all sites at which the patient has received care. This information is then updated in the PATIENT file (#2) at all sites where the patient has been treated.
Master Veteran Index or MVI	The authoritative source for person identity data. Maintains identity data for persons across VA systems. Provides a unique universal identifier for each person. Stores identity data as correlations for each system where a person is known. Provides a probabilistic matching algorithm. (Includes MPI, PSIM, and IdM TK) Maintains a "gold copy" known as a "Primary View" of the person's identity data.

	Broadcasts identity trait updates to systems of interest. Maintains a record locator service.
match threshold	The Match Threshold is the level at which an Identity Profile must score against a set of identity traits in order to be considered a match. For most enterprise applications the Match Threshold would be set at or near the Auto Link Threshold. Internal Identity Management Systems (MPI/PSIM) may use a lower score, perhaps the Task Threshold, as a Match Threshold for identity management decision processes.
menu system	The overall Menu Manager logic as it functions within the Kernel framework.
menu text	The descriptive words that appear when a list of option choices is displayed. Specifically, the Menu Text field of the OPTION file (#19). For example, User's Toolbox is the menu text of the XUSERTOOLS option. The option's synonym is TBOX.
menu text	The descriptive words that appear when a list of option choices is displayed. Specifically, the Menu Text field of the OPTION file (#19). For example, User's Toolbox is the menu text of the XUSERTOOLS option. The option's synonym is TBOX.
message segments	Each HL7 message is composed of segments. Segments contain logical groupings of data. Segments may be optional or repeatable. A [ ] indicates the segment is optional, the { } indicates the segment is repeatable. For each message category, there will be a list of HL7 standard segments and/or "Z" segments used for the message.
MMN	Mother's Maiden Name: The family name under which the mother was born (i.e., before marriage). It is used to distinguish between patients with the same last name
MPI Initialization	The process of initializing a site's PATIENT file (#2) with the Master Patient Index (MPI). Initialization synchronizes PATIENT file (#2) information (for active shared patients) with the MPI and identifies facilities where the patient has been treated. This process transfers the Integration Control Number (ICN), and Treating Facility list for each patient to the patient's record in the VistA PATIENT file (#2) at all sites where the patient has been treated. It is also possible to initialize an individual patient to the MPI. This is done through menu options. The initial synchronization of PATIENT file (#2) information (for active, shared patients) with the Master Patient Index and with the patient's treating facilities is an important step in the implementation of the MPI/PD software system.
Namespace	A convention for naming VistA package elements. The Database Administrator (DBA) assigns unique character strings for package developers to use in naming routines, options, and other package elements so that packages may coexist. The DBA also assigns a separate range of file numbers to each package.
namespacing	Convention for naming VistA software elements. The DBA assigns unique two to four character string prefix for software developers to use in naming routines, options, and other software elements so that software can coexist. The DBA also

assigns a separate range of file numbers to each software application.

NDBI   National Database Integration

node   In a tree structure, a point at which subordinate items of data originate. An M array element is characterized by a name and a unique subscript. Thus the terms: node, array element, and subscripted variable are synonymous. In a global array, each node might have specific fields or "pieces" reserved for data attributes such as name.

NPI   National Provider Index

null   Empty—A field or variable that has no value associated with it is null.

numeric field Response that is limited to a restricted number of digits. It can be dollar valued or a decimal figure of specified precision.

OI   Office of Information

OIFO   Office of Information Field Office.

OIT   Office of Information Technology

option   An entry in the OPTION file (#19). As an item on a menu, an option provides an opportunity for users to select it, thereby invoking the associated computing activity. Options may also be scheduled to run in the background, non-interactively, by TaskMan.

option name Name field in the OPTION file (e.g., XUMAINT for the option that has the menu text "Menu Management"). Options are namespaced according to VistA conventions monitored by the DBA.

package (software) The set of programs, files, documentation, help prompts, and installation procedures required for a given application (e.g., Laboratory, Pharmacy, and PIMS). A VistA software environment is composed of elements specified via the PACKAGE file (#9.4). Elements include files, associated templates, namespaced routines, and namespaced file entries from the OPTION, HELP FRAME, BULLETIN, and FUNCTION files. As public domain software, VistA software can be requested through the Freedom of Information Act (FOIA).

person correlation A profile of an Identity that is maintained by an Associated System and is correlated to only one ICN. (Source - PIDS)

PIMS   Patient Information Management System- VistA software package that includes Registration and Scheduling packages.

PKI   Public Key Infrastructure

POB (City)   PLACE OF BIRTH [CITY]: The city in which this applicant was born (or foreign country if born outside the U.S.).

POB (State)	PLACE OF BIRTH [STATE]: State in which patient was born.
pointer	The address at which a data value is stored in computer memory. A relationship between two VA FileMan files, a pointer is a file entry that references another file (forward or backward). Pointers can be an efficient means for applications to access data by referring to the storage location at which the data exists.
potential match threshold	The level at which an Identity Profile must score against a set of identity traits in order to be considered a Potential Match for HC IdM decision processes.
primary key	A Data Base Management System construct, where one or more fields uniquely define a record (entry) in a file (table). The fields are required to be populated for every record on the file, and are unique, in combination, for every record on the file.
primary menu	The list of options presented at sign-on. Each user must have a primary menu in order to sign-on and reach Menu Manager. Users are given primary menus by Information Resource Management (IRM). This menu should include most of the computing activities the user needs.
primary reviewer	This can be a single person or group of people given the overall responsibility to initiate reviews of potential duplicate record pairs. For example, selected personnel in Patient Administration or a task force or group formed to oversee and conduct the effort of reducing or eliminating the occurrence of duplicate records in the site's database.
primary view	Provides the most accurate, current, and complete identity information for a VA patient. The Primary View from the MVI business rules make determinations about data additions and updates to identity traits (Name, SSN, Date of Birth, Gender, Mother's Maiden Name, Place of Birth, and Multiple Birth Indicator) based on the authoritativeness of the update or edits as they are received by the MVI.
private integration agreement	Where only a single application is granted permission to use an attribute/function of another VistA package. These IAs are granted for special cases, transitional problems between versions, and release coordination. A Private IA is also created by the requesting package based on their examination of the custodian package's features. Example: one package distributes a patch from another package to ensure smooth installation.
probabilistic comparison score	In a Probabilistic Search, these are the points assigned to an identity to indicate the level of confidence of matching to a given set of traits. If the Comparison Score is above a certain level called the **Match Threshold**, then the profile is considered to be a match and the profile would be returned to the calling application.
probabilistic matching algorithm	A method to determine that a person identity profile has been matched in the PS Datastore based on the Comparison Score, which is calculated for each profile compared to the set of traits used for matching.

probabilistic search	A search using a matching algorithm to determine that a person's identity profile matches a set of defined traits. The algorithm assigns a comparison score and returns results based on a defined match threshold.
prompt	The computer interacts with the user by issuing questions called prompts, to which the user issues a response.
protocol	Entry in the PROTOCOL file (#101). Used by the Order Entry/Results Reporting (OE/RR) package to support the ordering of medical tests and other activities.
PS	Product Support
Pseudo SSN Reason	The reason that a pseudo SSN has been collected for the patient. The PSEUDO SSN REASON value is a set of codes pulled from the PATIENT (#2) file.
pseudo-SSNs	False Social Security Numbers that are calculated internally to VistA and cannot be mistaken for valid SSNs because they end in P.
PSIM	Person Service Identity Management (PSIM) enumerates and maintains person identities.
queuing	Requesting that a job be processed in the background rather than in the foreground within the current session. Jobs are processed sequentially (first-in, first-out). Kernel's TaskMan module handles the queuing of tasks.
queuing required	Option attribute that specifies that the option must be processed by Task Manager (the option can only be queued). The option may be invoked and the job prepared for processing, but the output can only be generated during the specified times.
receiving site	Receiving Site- As it relates to HL7 Messages, it is the site that the message was sent to.
record	Set of related data treated as a unit. An entry in a VA FileMan file constitutes a record. A collection of data items that refer to a specific entity (e.g., in a name-address-phone number file, each record would contain a collection of data relating to one person).
REEME	Registration/Eligibility/Enrollment Maintenance and Enhancement
registration process	During a registration, if a patient does not have an ICN, the patient is checked against the entries in the MPI to determine if the patient already is established or needs to be added. The MPI may return a list of patients who are possible matches. If the patient is truly new and there are no potential matches on the MPI, the MPI will assign an ICN. If the patient is already known at the MPI, the ICN and CMOR is returned and a HL7 message is sent to the CMOR to add this new facility to the list of Treating Facilities for this patient. Registration for patients who already have an ICN at the Facility. The MPI will return either that a match was found or that no match was found. If a potential match was found the MPI will log an exception in the Toolkit for review and not found will be returned to the user. If the MVI did not find a match, the request is sent to add a new record to MVI. If the match was found, the date last treated site will be contacted to pull

data back as part of Register Once functionality. Once the registration process has completed, the ADT-A04 Registration HL7 message will be sent to the MPI and if the MPI updates primary view as a result of that A04, the updates will be broadcasted out to all appropriate facilities.

remote procedure call (RPC)	Remote Procedure Call is a protocol that one program can use to request a service from a program located on another computer network. Essentially M code may take optional parameters to do some work and then return either a single value or an array back to the client application.
requesting site	Requesting Site- As is relates to HL7 Messages, it is the site initiating a message to another site requesting some action be taken.
required field	A mandatory field, one that must not be left blank. The prompt for such a field will be repeated until the user enters a valid response.
Resolution Journal Case Number	IDM – Number associated with each Resolution Journal Case. Used by the HealthCare Identity Management (HC IdM) team to document detailed information mostly for duplicate exception resolution but may also be used to denote details for resolving any type of exception.
RG CIRN DEMOGRAPHIC ISSUES mail group	The RG CIRN DEMOGRAPHIC ISSUES bulletin controls the sending of the following patient related bulletin: • Patient Related Bulletin—REMOTE SENSITIVITY INDICATED • Cause—Patient is marked as sensitive at the sending site but not at receiving site. • Action to take—No action: message is informational
routine	Program or a sequence of instructions called by a program that may have some general or frequent use. M routines are groups of program lines, which are saved, loaded, and called as a single unit via a specific name.
SAC	Standards and Conventions. Through a process of quality assurance, all VistA software is reviewed with respect to SAC guidelines as set forth by the Standards and Conventions Committee (SACC).
SACC	VistA's Standards and Conventions Committee. This Committee is responsible for maintaining the SAC.
scheduling options	The technique of requesting that Task Manager run an option at a given time, perhaps with a given rescheduling frequency.
screen editor	VA FileMan's Screen-oriented text editor. It can be used to enter data into any WORD-PROCESSING field using full-screen editing instead of line-by-line editing.
ScreenMan forms	Screen-oriented display of fields, for editing or simply for reading. VA FileMan's Screen Manager is used to create forms that are stored in the FORM file (#.403) and exported with a software application. Forms are composed of blocks (stored in the BLOCK file [#.404]) and can be regular, full screen pages or smaller, "pop-up"

pages.

screen-oriented   A computer interface in which you see many lines of data at a time and in which you can move your cursor around the display screen using screen navigation commands. Compare to Scrolling Mode.

security key   The purpose of Security Keys is to set a layer of protection on the range of computing capabilities available with a particular software package. The availability of options is based on the level of system access granted to each user.

sending site   Sending Site—As it relates to HL7 Messages, it is the site that is transmitting the message to another site.

sensitive patient   Patient whose record contains certain information, which may be deemed sensitive by a facility, such as political figures, employees, patients with a particular eligibility or medical condition. If a shared patient is flagged as sensitive at one of the treating sites, a bulletin is sent to the DG SENSITIVITY mail group at each subscribing site telling where, when, and by whom the flag was set. Each site can then review whether the circumstances meet the local criteria for sensitivity flagging.

server   The computer where the data and the Business Rules reside. It makes resources available to client workstations on the network. In VistA, it is an entry in the OPTION file (#19). An automated mail protocol that is activated by sending a message to a server at another location with the "S.server" syntax. A server's activity is specified in the OPTION file (#19) and can be the running of a routine or the placement of data into a file.

Set Of Codes   Usually a preset code with one or two characters. The computer may require capital letters as a response (e.g., M for male and F for female). If anything other than the acceptable code is entered, the computer rejects the response.

shared patient   A patient who has been seen at more than one VistA site. The MPI keeps the Treating Facility list updated every time a new facility is added. The MPI broadcasts out an updates to the treating facility list, including date last treated and event reason.

Site Manger/IRM Chief   At each site, the individual who is responsible for managing computer systems, installing and maintaining new modules, and serving as a liaison to the CIO Field Offices.

software (package)   The set of programs, files, documentation, help prompts, and installation procedures required for a given application (e.g., Laboratory, Pharmacy, and PIMS). A VistA software environment is composed of elements specified via the PACKAGE file (#9.4). Elements include files, associated templates, namespaced routines, and namespaced file entries from the OPTION, HELP FRAME, BULLETIN, and FUNCTION files. As public domain software, VistA software can be requested through the Freedom of Information Act (FOIA).

source ID   PSIM – A Source ID is a term used to describe the components that define a unique correlation in PSIM/ADR. There are 4 components of a Source ID in

PSIM:

1. Assigning Authority (ex. USVHA)
2. Assigning Location (ex. Station #)
3. IDType (e.g. NI, PI, EI)
4. Internal Identifier - A code used at the assigning location used to uniquely identify a person.

The Initiate Identity Hub also uses the term Source ID, but with a slightly different context. The Source ID in the IDHub is the unique identifier of a correlated system. PSIM would translate the components Assigning Authority, Assigning Location, and IDType to an IDHub Source ID. The fourth PSIM Source ID component, IEN, would translate to the Member ID in the ID HUB. Thus, the IDHub uses 2 components to uniquely identify a member: Source ID and Member ID.

spacebar return	You can answer a VA FileMan prompt by pressing the spacebar and then the Return key. This indicates to VA FileMan that you would like the last response you were working on at that prompt recalled.
special queuing	Option attribute indicating that Task Manager should automatically run the option whenever the system reboots.
SSA	Social Security Administration
SSDI	Social Security Death Index (SSDI). The SSDI is a database used for genealogical research as well as enabling users to locate a death certificate, find an obituary, and discover cemetery records and track down probate records. The Healthcare Identity Management (HC IdM) Team uses the SSDI (http://www.genealogybank.com/gbnk/ssdi/) as a resource for verifying patients' dates of death.
SSN	Social Security Number
station identifier	The number assigned to a VAMC facility or a System Association. The station identifier may be three characters in length designating the facility as a parent organization or up to six characters in length designating the facility as a child of a parent organization.
subscriber	A subscriber is an entity, which receives updates to a patient's descriptive data from other sites. All treating facilities are also made subscribers as part of the MPI/PD processes.
subscript	A symbol that is associated with the name of a set to identify a particular subset or element. In M, a numeric or string value that: is enclosed in parentheses, is appended to the name of a local or global variable, and identifies a specific node within an array.
supported reference integration agreement	This applies where any VistA application may use the attributes/functions defined by the IA (these are also called "Public "). An example is an IA that describes a standard API such as DIE or VADPT. The package that creates/maintains the Supported Reference must ensure it is recorded as a Supported Reference in the IA

database. There is no need for other VistA packages to request an IA to use these references; they are open to all by default.

synchronized patient data	Key descriptive fields in the PATIENT file (#2) that are updated in all the descriptive subscriber's PATIENT files whenever the fields are edited by a subscriber.
systems of interest	The term "systems of interest" refers to VA facilities that have seen patients and entered them as entries onto the MPI. This also refers to non-VistA systems that have a registered interest in a patient (e.g., Federal Health Information Exchange [FHIE], HomeTeleHealth, Person Service Identity Management [PSIM], Health Data Repository [HDR], etc).
Task Manager	Kernel module that schedules and processes background tasks (also called TaskMan)
task threshold or threshold, task	The Task Threshold (also called the Clerical Review Threshold) is a value that is less than the Auto Link Threshold. A Comparison Score above the Task Threshold and below the Auto Link Threshold needs to be reviewed by an Identity Management expert to determine whether the Identity Profile is either a match or not a match for the traits being compared. The Task Threshold is determined and tuned by Identity Management experts and may change over time as software systems and business processes improve. The ideal goal for automated identity matching is to minimize the difference between the Task Threshold and the Auto Link Threshold.
TCP/IP	Transaction Control Protocol/Internet Protocol. A set of protocols for Layers 3 (Network) and 4 (Transfer) of the OSI network model. TCP/IP has been developed over a period of 15 years under the auspices of the Department of Defense. It is a de facto standard, particularly as higher-level layers over Ethernet. Although it builds upon the OSI model, TCP/IP is not OSI-compliant.
template	Means of storing report formats, data entry formats, and sorted entry sequences. A template is a permanent place to store selected fields for use at a later time. Edit sequences are stored in the INPUT TEMPLATE file (#.402), print specifications are stored in the PRINT TEMPLATE file (#.4), and search or sort specifications are stored in the SORT TEMPLATE file (#.401).
TIN	Temporary ID Number
Toolkit (IdM TK)	The User Interface for the HealthCare Identity Management team. With the IdM TK, authorized users can search and view identity and exception information from the Administrative Data Repository (ADR). Specifically, you can view the Primary View record and any associated correlations, correlation data, history, audit trails and IdM exceptions. A side-by-side comparison of the ADR and Master Patient Index (MPI) patient information is included. In addition, you can search for exceptions, review exception details, and then view and resolve Potential Duplicate Exceptions.
treating facility	Any facility (VAMC) where a patient has applied for care, or has been added to

the local PATIENT file (#2) (regardless of VISN) and has identified this patient to the MPI will be placed in the TREATING FACILITY LIST file (#391.91).

treating facility list   Table of institutions at which the patient has received care. This list is used to create subscriptions for the delivery of patient clinical and demographic information between sites.

trigger   A type of VA FileMan cross-reference. Often used to update values in the database given certain conditions (as specified in the trigger logic). For example, whenever an entry is made in a file, a trigger could automatically enter the current date into another field holding the creation date.

trigger event   The event that initiates an exchange of messages is called a trigger event. The HL7 Standard is written from the assumption that an event in the real world of health care creates the need for data to flow among systems. The real-world event is called the trigger event. For example, the trigger event "a patient is admitted" may cause the need for data about that patient to be sent to a number of other systems. There is a one-to-many relationship between message types and trigger event codes. The same trigger event code may not be associated with more than one message type.

TSPR   Technical Services Project Repository

UAT   User Acceptance Testing.

user access   This term is used to refer to a limited level of access, to a computer system, which is sufficient for using/operating a package, but does not allow programming, modification to data dictionaries, or other operations that require programmer access. Any option, for example, can be locked with the key XUPROGMODE, which means that invoking that option requires programmer access.

The user's access level determines the degree of computer use and the types of computer programs available. The System Manager assigns the user an access level.

VA   Department of Veterans Affairs

VA Domiciliary   Provides comprehensive health and social services in a VA facility for eligible veterans who are ambulatory and do not require the level of care provided in nursing homes.

VA FileMan   VistA's Database Management System (DBMS). The central component that defines the way standard VistA files are structured and manipulated.

VA hospital   An institution that is owned, staffed and operated by VA and whose primary function is to provide inpatient services. NOTE: Each division of an integrated medical center is counted as a separate hospital.

VA Medical Center (VAMC)   A unique VA site of care providing two or more types of services that reside at a single physical site location. The services provided are the primary service as tracked in the VHA Site Tracking (VAST) (i.e., VA Hospital, Nursing Home,

Domiciliary, independent outpatient clinic (IOC), hospital-based outpatient clinic (HBOC), and CBOC).

The definition of VA medical center does not include the Vet Centers as an identifying service. NOTE: This definition was established by the Under Secretary for Health.

VA Nursing Home Care Units (NHCU)

Provide care to individuals who are not in need of hospital care, but who require nursing care and related medical or psychosocial services in an institutional setting. VA NHCUs are facilities designed to care for patients who require a comprehensive care management system coordinated by an interdisciplinary team. Services provided include nursing, medical, rehabilitative, recreational, dietetic, psychosocial, pharmaceutical, radiological, laboratory, dental and spiritual.

variable

Character, or group of characters, that refer(s) to a value. M (previously referred to as MUMPS) recognizes 3 types of variables: local variables, global variables, and special variables. Local variables exist in a partition of main memory and disappear at sign-off. A global variable is stored on disk, potentially available to any user. Global variables usually exist as parts of global arrays. The term "global" may refer either to a global variable or a global array. A special variable is defined by systems operations (e.g., $TEST).

VBA SHARE

This is a VBA application which is utilized by the Regional Offices to access BIRLS, C&P, PIF, PHF, Corporate Database, Social Security and COVERS records. The Healthcare Identity Management (HC IdM) Team uses VBA SHARE as a resource for verifying patient identity data as well as military information.

verify code

The Kernel's Sign-on/Security system uses the Verify code to validate the user's identity. This is an additional security precaution used in conjunction with the Access code. Verify codes shall be at least eight characters in length and contain three of the following four kinds of characters: letters (lower- and uppercase), numbers, and, characters that are neither letters nor numbers (e.g., "#", "@" or "$"). If entered incorrectly, the system does not allow the user to access the computer. To protect the user, both codes are invisible on the terminal screen.

Vet Center

A data source under the direct supervision of the Readjustment Counseling Service (RCS). The Vet Center provides professional readjustment counseling, community education, outreach to special populations, brokering of services with community agencies, and access to important links.

VHA

Veterans Health Administration.

VIS

Veterans Information Solution (VIS). This intranet-based application is designed to provide a consolidated view of information about veterans and active service members. The HC IdM Team uses VIS as a resource for verifying patient identity data as well as military information.

VISN

Veterans Integrated Service Network

VistA

Veterans Health Information Systems and Technology Architecture (VistA) of the Veterans Health Administration (VHA), Department of Veterans Affairs (VA).

VistA software, developed by the VA, is used to support clinical and administrative functions at VHA sites nationwide. It is both roll-and-scroll- and GUI-based software that undergoes a quality assurance process to ensure conformity with namespacing and other VistA standards and conventions (see the [SACC SharePoint Site](#) – ***NOTE:*** *This is an internal VA Web site and is not available to the public.*).

Server-side code is written in M, and, via Kernel, runs on all major M implementations regardless of vendor. Client-side code is written in Java or Borland Delphi and runs on the Microsoft operating system.

VPID (replaced with ICN.)	Veterans Administration Personal Identifier – An enterprise-level identifier uniquely identifying VA „persons‟ across the entire VA domain.
WAN	Wide Area Network.
Z st	All message type and trigger event codes beginning with Z are reserved for locally defined messages. No such codes will be defined within the HL7 Standard.

REF: For a comprehensive list of commonly used terms and definitions, please visit the Process Management OIT Master Glossary :

http://vaww.oed.wss.va.gov/process/OIT%20Master%20Glossary/Home.aspx

NOTE: *This is an internal VA Web site and is not available to the public.*

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