Department of Veterans Affairs

Emergency Department Integration Software

EDIS 2.1

Technical Manual

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1.Emergency Department Integration Software

1.1.   Introduction

Emergency Department Integration Software (EDIS) incorporates several Web-based views that extend the current Computerized Patient Record System (CPRS) to help healthcare professionals track and manage the flow of patient care in the emergency-department setting. EDIS views are based on a class-three application developed by the Upstate New York Veterans Health Care Network—or Veterans Integrated Services Network (VISN) 2. Most views are site-configurable. EDIS enables you to:

- Add emergency-department patients to the application's electronic whiteboard—or big board—display
- View information about patients on the display board
- Edit patient information
- Remove patients from the display board
- Create administrative and operational reports

The application also includes views for entering patients' dispositions and configuring the display board.

1.2.   About this Guide

Emergency Department Integration Software Technical Manual provides technical information for configuring, managing, and troubleshooting local (M Server) components of the EDIS application.

1.3.   Section 508 of the Rehabilitation Act of 1973

Section 508 Compliance Testing is required for an application utilizing a Graphical User Interface (GUI), such as CPRS or BCMA. Roll and scroll VistA Legacy applications written in MUMPS need not comply with Section 508 Compliance requirements.

EDIS received a 508 exception on 12/17/12.

1.4.   Related Documents

Updated documentation describing the new functionality introduced by this patch is available. The preferred method is to FTP the files from ftp://download.vista.med.va.gov/. This transmits the files from the first available FTP server. Sites may also elect to retrieve software directly from a specific server as follows:
Albany   ftp.fo-albany.med.va.gov <ftp://ftp.fo-albany.med.va.gov>
Hines   ftp.fo-hines.med.va.gov   <ftp://ftp.fo-hines.med.va.gov>
Salt Lake City ftp.fo-slc.med.va.gov   <ftp://ftp.fo-slc.med.va.gov>
Documentation can also be found on the VA Software Documentation Library at:
http://www4.va.gov/vdl/

Table 1: Types of Documentation

Title	File Name	FTP Mode
EDP_2.1_SrvrIG.PDF	Emergency Department Integration Software Version 2.1 Server Installation Guide	Binary
EDP_2.1_TM.PDF	Emergency Department Integration Software Version 2.1 Technical Manual	Binary

EDP_2.1_UM.PDF	Emergency Department Integration Software Version2.1User Guide	Binary
EDP_2.1_ClientIG.PDF	Emergency Department Integration Software Version2.1Client Installation Guide	Binary
EDP_2.1_Glossary.PDF	Emergency Department Integration Software Version2.1Glossary	Binary

1.5.   Document Conventions

Bold type indicates application elements (views, panes, links, buttons, text boxes, and so forth) and key names.

Key names appear in angle brackets <>.

Italicized text indicates special emphasis or user responses.

ALL CAPS indicates M routines and options.

… (Ellipses) indicate omitted text.

2.General Information

2.1.   Architectural Scope

EDIS runs as a Web application on a centrally located Oracle WebLogic server that contains program logic and operational emergency-department data in its Java middle tier. (Refer to **Figure 1**.) The presentation tier is a Flash Player application. The data tier encompasses local sites' Veterans Health Information Systems and Technology Architecture (VistA) systems and a centrally located relational database management system (RDMS) data store containing Standard Data Services (SDS) tables.

The application uses remote procedure calls (RPCs) from local VistA implementations to populate patient- and provider-selection lists, provide limited data synchronization between EDIS and CPRS, and determine users' access levels.

2.1.1.   Web Application

The application's presentation tier runs in users' Web browsers via Adobe Flash Player. The VA's Kernel Authentication and Authorization for Java 2 Enterprise Edition (KAAJEE) provides end-user authentication.

2.1.2.   EDIS Display Boards

Sites can configure one or more electronic whiteboard—or big board—displays. Display boards run in their own browser-based instances of Flash Player.

2.1.3.   URLs

2.1.3.1.   EDIS in Production Accounts

When EDIS is running in your site's production account, use https:// vaww.edis2.med.va.gov /main for user access to the main application and https://vaww.edis.med.va.gov/main/board.html for your main big-board display. For secondary big-board displays, append the following argument: board=your_secondary_board_name. For example, if your site has a secondary display board named *Lab;* its URL would be https://vaww.edis.med.va.gov/main/board.html?board=Lab.

2.1.3.2.   EDIS in Test Accounts

When EDIS is running in your site's test account, use https:// preprod.edis2.med.va.gov /main for user access to the main application.

Figure 1: The EDIS topology—version 2.2
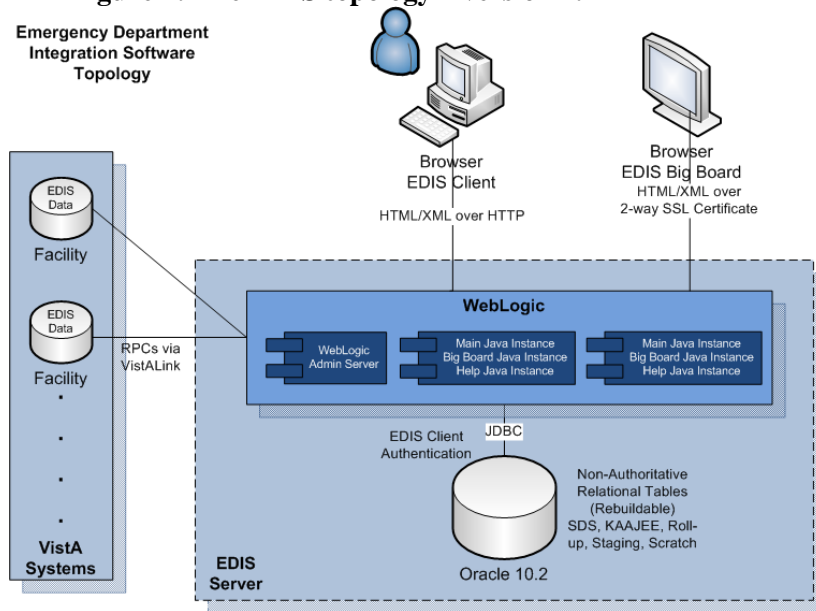
2.2. System Performance

2.2.1. Scaling Guide: Memory and CPU

Workstations should comply with VA Desktop Minimum Acceptable Configurations (http://vaww.vairm.vaco.va.gov/VADesktop). In addition, users' workstations should meet the minimum hardware requirements for running Adobe Flash Player:

Minimum Hardware Requirements

Table 2: Minimum Hardware Requirements

Platform	CPU	RAM
Windows	Intel Pentium II 450MHz or faster processor (or equivalent), AMD Athlon 600MHz or faster processor (or equivalent)	128 MB
Macintosh	PowerPC G3 500MHz or faster processor or Intel Core Duo 1.33GHz or faster processor	128 MB

Optimal Viewing Requirements

Table 3: Optimal Viewing Requirements

Resolution	CPU	RAM
852 x 480 (480 p), 24 frames per second (fps)	Intel Pentium 4 2.33 GHz processor (or equivalent)	256 MB RAM with 64 MB VRAM
1280 x 720 (720 p), 24–30 fps	Intel Pentium 4 3 GHz processor (or equivalent)	128 MB RAM with 64 MB VRAM
1920 x 1080 (1080 p) 24 fps	Intel Core Duo 1.8 GHz processor (or equivalent)	128 MB RAM with 64 MB VRAM

2.2.2. Disk Space

EDIS installation creates files in two global: ^EDP and ^EDPB.

- You can expect ^EDP to grow at the following yearly rate: 2,000 bytes multiplied by the number of emergency-department visits per year. For example, if your emergency department responds to an average of 12,000 visits every year, you can expect ^EDP to grow at a yearly rate of 24 MB. You should place this global in a volume with sufficient space to manage this growth.
- You can expect ^EDPB to remain small. (It is currently about 50 K.)

2.3. EDIS KIDS Host File Install

2.3.1. Retrieve the EDP2_0.KID Host File

Note: *The EDP .ear file for the Graphical User Interface will show a version of 2.1, while the Host File for VistA will show a version of 2.0. This is okay and should not be a reason for concern. The application guides will appear with version 2.1.*

Use ASCII when transferring the .KID file.

The EDP2_0.KID file contains all the files necessary to install the EDIS in VistA. If a new or additional Big Board is being installed, please refer to the EDIS 1.0 Installation Guide for details.

These files are available in the Office of Information Field Office (OIFO) ANONYMOUS.SOFTWARE directories listed below:

```
  File Name        Contents         Retrieval Format
  --------------   ----------       ------------------
  EDP2_0.KID   KIDS Build        ASCII
```

The file listed above may be obtained via FTP. The preferred method is to FTP the files from:

download.vista.med.va.gov

This transmits the files from the first available FTP server. Sites may also elect to retrieve software directly from a specific server as follows:

OIFO	FTP Address	Directory
Albany	ftp.fo-albany.med.va.gov	anonymous.software
Hines	ftp.fo-hines.med.va.gov	anonymous.software
Salt Lake City	ftp.fo-slc.med.va.gov	anonymous.software

2.3.2. VistA Download Site download.vista.med.va.gov anonymous.software Namespace and Number Space

The namespace for EDIS is EDP. The number space is 230-234.

2.3.3. Timeouts

EDIS uses the timeout parameter (EDP APP TIMEOUT). If this parameter is not set for the site's users, EDIS uses the kernel function $$DTIME^XUP to determine timeout. If users' DTIME is set to null, EDIS uses DEFAULT TIME-READ in the Kernel Parameters file. If this file is set to zero, the application uses a timeout of 300 seconds.

2.3.4. Response Times

Insufficient data: response times are still to be determined (TBD).

3.Parameters

3.1. EDIS (EDPF) Parameters

Table 4: Parameters

EDPF Parameter Name	Description
EDPF BIGBOARD KIOSKS	This parameter maps fully qualified computer names to display board names. Sites must add or change values for this parameter via the EDPF BIGBOARD KIOSKS option.
EDPF DEBUG START TIME	This parameter sets a $H timestamp to signal that EDIS should log out its RPCs for 30 minutes following the debug time stamp.
EDPF LOCATION	This parameter holds one or more entries from the Hospital Location (#44) file. Entries correspond to hospital locations that the emergency department uses. With this parameter, VistA prompts sites for a time range or sequence. If sites have multiple Hospital Location file entries, they have two choices when responding to the **Time Range or Sequence** prompt: they can enter a time range or a sequence. Entering a time range allows EDIS to map Hospital Location entries by time of day. EDIS uses this mapping when users create encounters in the Patient Care Encounters (PCE) package: it matches the Hospital Location entry based on the current time of day. The parameter accepts ranges in military time. Entering a sequence allows sites to map Hospital Location entries in order of preference. When users create encounters in PCE, EDIS uses the entry with the lowest sequence number to create visits. When users create appointments by checking in patients via the Scheduling package, any matches on this parameter's list of locations (be they time- or sequence-based) cause EDIS to add the checked-in patient to the display board.
EDPF NURSE STAFF SCREEN	This parameter allows sites to select the type of filtering upon which EDIS bases its nurse-selection list. It applies filtering—or screening—to the New Person file (#200). By default, EDIS allows selections from all entries in the New Person file. Other screening options include the following: - Allow only persons holding the ORELSE key - Allow only persons holding the PSJ RNURSE key - Allow only persons who are present and active in the Nurse Staff file (#210)

EDPF SCHEDULING TRIGGER	This parameter allows sites to specify which Scheduling package event, triggers EDIS to automatically add patients to the board. Sites can choose from one of the following two selections: **1: Patient will be added to the board when an appointment is made** **4: Patient will be added to the board when checked in** Sites can set this parameter at the package, system, or division level.
EDPF SCREEN SIZES	This parameter contains a list of selectable screen sizes for sites' EDIS display boards. The parameter generally lists large-display LCD or plasma screen sizes. Add screen sizes to this parameter using the following format: WxH (width multiplied by height). You can set this parameter at the package, system, or division level.
EDP APP COUNTDOWN	This parameter contains the number of countdown seconds before the application closes. Once the timeout is met, this is the number that the counter will start with as it begins countdown for closure. If this parameter is set at 15, after the timeout has occurred, the user will be given 15 seconds to respond to a dialog.
EDP APP TIMEOUT	This holds the number of seconds until the application times out. If set, this value over rides the user's DTIME value.

3.1.1. Setting Up Synchronization with Patient Care Encounters

The EDPF LOCATION parameter should contain the hospital location or locations that your emergency department uses. If yours is a multi-division site, make an entry for each division.

1. Log in to VistA.
2. At the Select **OPTION NAME** prompt, type *xpar menu* (for **XPAR MENU TOOLS**) and then press the <**Enter**> key.
3. At the **Select General Parameter Tools Option** prompt, type *ep* (for **Edit Parameters**) and then press the <**Enter**> key.
4. At the **Select PARAMETER DEFINITION NAME** prompt, type *edpf l* (for **EDPF LOCATION**)*,* and then press the <**Enter**> key.
5. At the **Select INSTITUTION NAME** prompt, type the name or station number of your institution and then press the <**Enter**> key.
6. At the **Select Time Range (ex. 0800-1200) or Sequence** prompt, type the time range during which the clinic location you are about to select functions as your site's emergency department. Use military time. For example, if the location serves as your site's emergency department 24 hours a day, type *0001-2400* Alternately, type a number that represents the location's preference rating (the number *1* represents the most-preferred location). Press the <**Enter**> key. When users create a PCE encounter, EDIS uses time-of-day-based or preference-based criteria to determine the encounter's location.

Note: When selecting time ranges, take care to account for all hours of emergency-department operation. EDIS does not create PCE appointments for patients whom users add during times that you don't include in the EDPF LOCATION parameter. For example, suppose you set the parameter to use Clinic A from 0700 to 0800 hours and Clinic B from 0900 to 1200 hours. If a user then adds a patient at 0830 hours, EDIS will not create a PCE appointment for the

patient. Also, take care not to overlap hours. In cases where hours overlap, EDIS always creates the patient's PCE appointment for the first clinic.

7. At the **Are you adding [*your time range or sequence*] as a new Time Range or Sequence? Yes//** prompt, press the <**Enter**> key to accept the time range or sequence—or, if you've made a mistake, type the letter *n* (for *No*) and press the <**Enter**> key.
8. VistA displays a confirmation: **Time Range (ex. 0800-1200) or Sequence [*your time range or sequence*]//.** Press the <**Enter**> key to acknowledge this confirmation.
9. At the **ED LOCATION** prompt, type the name of the location that serves as your site's emergency department during this time range (or for this preference rating) and press the <**Enter**> key.
10. Repeat steps 6 through 9 for additional emergency-department locations.

4.Routines

4.1. EDIS Routines

- EDPBCF loads and saves display-board configuration settings—including column values, color maps, room and area values, parameter settings, and screen-size settings. It also loads a list of display boards and their specifications.

- EDPBCM creates and saves configuration settings for color maps. It creates color-map elements, closing tags, map elements for standard urgencies, and single map elements. It also builds color-map selection lists.

- EDPBDL deletes or inactivates configuration entries. It deletes rooms or beds if the application's log entries are not referencing them; otherwise, it inactivates the rooms or beds.

- EDPBKS supports a list template that maps fully qualified machine names to the names of EDIS big-board displays; this routine enables sites to add, change, and delete large displays that run in kiosk mode.

- EDPBLK handles locking and unlocking for configuration settings. It displays one of three error messages when one user attempts to make or save configuration changes while another user is also making or saving changes.

- EDPBPM loads current and saves updated **Configuration** view parameter settings (diagnosis required, coded diagnosis required, disposition required, reason for delay required, number of minutes before reason for delay is required, shift start time and duration, include residents, default room or area, and arriving-ambulance area). It also saves time zone differences (in minutes) and sets the fail node.

- EDPBRM loads a list of all rooms and beds in sequence, builds an XML output file containing this list, and keeps the list updated. It also adds and updates room-and-area records, loads multi-assignment areas and choice lists (display-when, single- and multiple-patient assignments, and so forth).

- EDPBRS sets and resets display-board specifications (default-board specifications, display width, scroll-delay time, column size, column headers and size, font size, row colors, baseline rooms, and baseline parameters).

- EDPBSL loads selection lists (acuity, status, mode of arrival, disposition, and reason for delay) and builds XML output files for them. It also saves selection-list changes; creates new code sets; clears codes from, and adds new codes to, the CODES multiple; and updates existing codes in, and adds new codes to, the Tracking Code file (#233.1).

- EDPBST returns a list of staffing matches from VistA's New Person file (#200). For each of the following three roles, it builds a list of staff members who have an active person class: resident, physician, and nurse. It also saves updated staff members and creates and updates records in the Tracking Staff file (#231.7).

- EDPCBRD is the controller for the EDIS display board. It processes requests via remote procedure calls (RPCs) and also supports a Caché Server Pages (CSP) mode for processing requests via CSP.

- EDPCDBG is the debugging routine for the display-board controller. It turns debugging on and off, enables the EDIS debugging log, logs debugging activities for 30 minutes after the debugging start time, records debugging start and stop times, and saves debugging requests and XML results.

- EDPCONV processes incoming mail to convert emergency-department visits from Syracuse class-three application files to EDIS class-one files. It stores conversion data in the Tracking Code file (#233.1), Tracking Room/Bed file (#231.8), ED Log file (#230), and ED Log History file (#230.1).

- EDPCONV1 converts configuration data from Syracuse class-three application files to EDIS class-one files. It stores converted data in the Tracking Area file (#231.9).
- EDPCSV is a comma-separated-value (CSV) utility that provides a controller for HyperText Transfer Protocol (HTTP) requests.
- EDPCTRL is the controller for EDIS. It processes requests via remote procedure calls (RPCs) and also supports Caché Server Pages (CSP) mode for processing requests via CSP.
- EDPDD provides a test update log.
- EDPFAA provides RPC calls to the local facility. It also sets up EDIS sessions and returns role-based views for users. (EDPFAA code enabled VHA eHealth University [VeHU] training.)
- EDPFLEX provides Lexicon-package utilities: it returns matches from the Lexicon package when users type in free-text dispositions.
- EDPFMON monitors Health Level 7 (HL7) VistA event messages at the facility. It adds new orders to patients' log entries based on visit-related information from the following packages: Radiology, Laboratory, Pharmacy, Consults, Procedures, Dietetics, and Order Entry. It also updates orders' statuses and removes orders from patients' log entries.
- EDPFMOVE is part of the conversion routine. It moves local emergency-department visits to EDIS and provides conversion-related messages—"Visit conversion has completed," for example. This routine also provides users with several conversion-related options—such as the option to convert Syracuse class-three configuration data (in addition to patient data).
- EDPFPER looks up emergency-department staff (providers, residents, and nurses) in VistA's New Person file (#200). The routine adds people who match its screening criteria to EDIS staffing lists.
- EDPFPTC performs patient-selection checks. For example, this routine checks to see if selected patients are already on the **Active Patients** list, have patient records that are marked sensitive (in which case the routine displays a warning), are deceased, or have identifiers that are similar to the identifiers of one or more patients who are already on the **Active Patients** list. (Patients on the **Active Patients** list are ipso facto on the display board.) This routine also gets patient record flags (PRFs) for display within EDIS and makes security-log entries when users access records marked sensitive.
- EDPFPTL accepts as its input patient names and social security numbers (including last four social security numbers and last-name initials concatenated with last four social security numbers) and returns from the local VistA system a list of possible matches.
- EDPGLOB – This routine is used to return a global array. If the amount of data is too large, store errors can occur in VistA. Using the EDPGLOB RPC fixes these errors and utilizes global arrays to store and send back the data.
- EDPLOG updates the EDIS log in response to timestamp changes. It also processes diagnoses and checks for the presence of data in required fields before letting users remove patients from the system.
- EDPLOG1 validates record entries and returns error messages for invalid entries.
- EDPLOGA adds log records for new patients. It sets up patient fields, adds default values to stub entries, creates current log records, and creates initial log-history entries. This routine also deletes the initial history-log stub entry.
- EDPLOGH adds new log-history entries and saves new entries for changed fields. This routine also checks timestamps in the ED Log History file (#230.1) for possible data-entry collisions and displays a warning message—"Since you loaded this entry, changes have been made by someone else"—when collisions are imminent. Similarly, when users update data and select a different view before saving their updates, this routine warns them that

they will lose their changes if they exit the view without first saving their changes. Finally, this routine notifies users when their bed choices are no longer available.

- EDPLPCE creates a visit in the CPRS Patient Care Encounters (PCE) package when users select a provider, resident, nurse, or diagnosis in EDIS. It updates diagnoses for emergency-department visits in EDIS if users enter the diagnoses in CPRS, and in CPRS if users enter the diagnoses in EDIS. This routine also coordinates primary providers between CPRS and EDIS.

- EDPMAIL parses and processes incoming VA MailMan messages from SEND^EDPFMON, which monitors order-related events such as new orders, order changes, deleted orders, and so forth. EDPMAIL also parses and processes patient check-in events.

- EDPQAR logs area information. It returns site-configurable parameters and default areas, and adds default areas in cases where no default areas are assigned.

- EDPQDB displays active log entries on the EDIS display board. It gets display-board data—a list of all beds in sequence for a given area, patient data, and so forth—computes order statuses, and formats data for display.

- EDPQDBS gets display-board specifications for room, area, and staff color configurations.

- EDPQLE retrieves log entries by request and returns XML-formatted log entries for patient demographics, diagnoses (ICD-9-CM coded), fields required for closing entries (delay reasons, physician assignments, and so forth), and time stamps.

- EDPQLE1 retrieves supporting information—such as staff and other selection items—and adds the information to XML pick lists. It also builds nodes for code sets.

- EDPQLP returns lists for the log-entry edit context. It also builds duplicate-name and last-four-Social-Security-number lists for counters.

- EDPQPCE retrieves PCE information such as diagnoses (including primary and free-text diagnoses) for emergency-department visits.

- EDPRPT gets data for reports by site and date range. This routine turns on switches that determine the beginning and ending points of the report date range and the report type. It also returns timestamp-related data—such as the times acuities were first assigned, the times patients left the waiting area, the times admitting decisions were entered, and so forth.

- EDPRPT1 gets data for the Activity report based on site and date range. It gets report headers (CSV), calculates times and averages for column values, initializes counters and sums, returns external values for codes, and includes a list of assigned providers.

- EDPRPT10 gets data for the Admissions report based on site and date range. This routine initializes counters and sums, gets report headers (CSV), calculates times and averages, initializes counters and sums, and returns external values for codes.

- EDPRPT11 gets data for the Patient Intake report based on site and date range. This routine initializes counters and sums, gets report headers, returns counts and averages, performs rounding computations, returns hours (24-hour—or military—clock format), and returns name-of-day (Monday, Tuesday, and so forth).

- EDPRPT12 gets data for the Orders by Acuity report based on site and date range. It gets report headers and returns an acuity-based count of lab, imaging, medication, consult, and other orders.

- EDPRPT2 gets data for the Delay report based on site and date range. It initializes counters and sums, returns counts and averages, and gets column headers. The routine also returns disposition indicators for VA admissions and external values for codes.

- EDPRPT3 gets data for the Missed Opportunities report based on site and date range. It initializes counters and returns a **1** (one) or **0** (zero) to indicate missed opportunities. The

routine also gets column headers, initializes counters, calculates times, and returns totals as CSV- or XML-formatted data.

- EDPRPT4 gets data for the Delay Summary report based on site and date range. It initializes counters and sums and returns counts and averages as CSV- or XML-formatted data. This routine also returns external values for acuity and other codes, and codes (**1** or **0**) for IEN statuses that indicate observation.
- EDPRPT5 returns data for the Shift report based on site and day. It initializes counters and sums, calculates the number of visits that carried over, and returns the following: column information (headers, counts and averages—as CSV- and XML-formatted data), the names of shifts (one, two, three, and so forth—based on shift times), and external values for acuity codes.
- EDPRPT6 gets data for the Provider report based on site and date range. It initializes counters and sums, calculates and returns averages as CSV- and XML-formatted data, and returns external values for acuity codes.
- EDPRPT7 gets data for the Exposure report based on site and the infected person's time in and time out of the emergency department. It returns a list of patients who were in the waiting room and treatment rooms during the infected patient's stay (adding a row for each room the infected patient used —including laboratory and x-ray). It also returns on-duty staff assignments. EDPRPT7 returns external values for codes.
- EDPRPT7C gets data for the Exposure report in CSV format.
- EDPRPT8 gets data for the Acuity report based on site and date range. It initializes counters and sums and returns external values for acuity codes. The routine returns counts and averages for acuity-based entries, all admissions, and VA admissions.
- EDPRPT9 gets data for the Patient Cross Reference (XRef) report based on site and date range. It uses the ED Log file (#230) to provide information about patients' identities.
- EDPRPTBV gets data for the BVAC report based on site and date range. This routine initializes counters and sums, gets column headers, calculates sums and averages, and returns external values for codes.
- EDPX provides a group of common utilities that includes the following: ESC (X), escape for XML transmission; UES (X), unescape XML; UESREQ (REQ), unescape HTTP post; VAL (X,R), returns parameter value or null; NVPARSE (LST, IN), parses tab and delimited name-value pairs into an array; XMLS (TAG, DATA, LBL), returns an XML node as <TAG data="9" label="XXX" />; XMLA (TAG, ATT, END), returns an XML node as <TAG att1="a" att2="b"… />; SMLE (SRC), appends lists to XML arrays as elements; XML (X), adds the line of XML that is to be returned; CODE (X), returns internal values for codes; MSG (MSG), writes out error messages.
- EDPYCHK performs a pre-installation environment check.
- EDPYPRE is the pre-initialization routine.
- EDYPST is the post initialization routine.

- EDPBWS is the main routine for processing, building, retrieving, and modifying worksheets for the EDIS User Interface

4.2.   EDIS Checksums

The following list contains routine names with checksums:

Routine Name: EDP2ENV
   Before: n/a   After: B653636

Routine Name: EDPBCF
  Before: B25096927 After: B25433175
Routine Name: EDPBCM
  Before: B17076528 After: B17332251
Routine Name: EDPBDL
  Before: B11063047 After: B11063047
Routine Name: EDPBKS
  Before: B15371728 After: B15371728
Routine Name: EDPBLK
  Before: B7330093 After: B7330093
Routine Name: EDPBPM
  Before: B6216911 After: B6261242
Routine Name: EDPBRM
  Before: B24385375 After: B25575594
Routine Name: EDPBRS
  Before: B19077772 After: B19233483
Routine Name: EDPBSL
  Before: B20029785 After: B20029785
Routine Name: EDPBST
  Before: B8664749 After: B8664749
Routine Name: EDPBWS
  Before: n/a After: B52550125
Routine Name: EDPCBRD
  Before: B4350223 After: B4768831
Routine Name: EDPCDBG
  Before: B4038807 After: B4038807
Routine Name: EDPCONV
  Before: B47887788 After: B69787121
Routine Name: EDPCONV1
  Before: B10237522 After: B10237522
Routine Name: EDPCSV
  Before: B906612 After: B906612
Routine Name: EDPCTRL
  Before: B33410398 After: B73485587
Routine Name: EDPDD
  Before: B1560959 After: B1577854
Routine Name: EDPDTL
  Before: n/a After: B80102068
Routine Name: EDPFAA
  Before: B5372812 After: B24518510
Routine Name: EDPFLEX
  Before: B1745474 After: B1745474
Routine Name: EDPFMON
  Before: B27211876 After: B26481799
Routine Name: EDPFMOVE
  Before: B43728958 After: B44917407
Routine Name: EDPFPER
  Before: B3427509 After: B3427509
Routine Name: EDPFPTC
  Before: B14885802 After: B14885802
Routine Name: EDPFPTL
  Before: B4915038 After: B4915038
Routine Name: EDPFX233
  Before: n/a After: B2082229
Routine Name: EDPGLOB
  Before: n/a After: B2277682

Routine Name: EDPHIST
  Before: n/a   After: B59451957
Routine Name: EDPLAB
  Before: n/a   After: B49753454
Routine Name: EDPLOG
  Before: B42149061 After: B56585715
Routine Name: EDPLOG1
  Before: B2583250 After: B2583250
Routine Name: EDPLOGA
  Before: B10789313 After: B11867179
Routine Name: EDPLOGH
  Before: B9457380 After: B12449970
Routine Name: EDPLPCE
  Before: B32802123 After: B32808524
Routine Name: EDPMAIL
  Before: B7335309 After: B7450955
Routine Name: EDPMED
  Before: n/a   After: B4429388
Routine Name: EDPQAR
  Before: B6639632 After: B6897621
Routine Name: EDPQDB
  Before: B37231235 After: B55055961
Routine Name: EDPQDBS
  Before: B3113182 After: B3118586
Routine Name: EDPQLE
  Before: B40300302 After: B41785417
Routine Name: EDPQLE1
  Before: B9736825 After: B10666213
Routine Name: EDPQLP
  Before: B12368052 After: B12368052
Routine Name: EDPQLW
  Before: n/a   After: B6750208
Routine Name: EDPQPCE
  Before: B2442064 After: B2442064
Routine Name: EDPQPP
  Before: n/a   After: B92368102
Routine Name: EDPQPPS
  Before: n/a   After: B3126500
Routine Name: EDPRPT
  Before: B17619722 After: B25243776
Routine Name: EDPRPT1
  Before: B33605254 After: B44256046
Routine Name: EDPRPT10
  Before: B19172294 After: B26044910
Routine Name: EDPRPT11
  Before: B8054102 After: B8059237
Routine Name: EDPRPT12
  Before: B7797789 After: B7802924
Routine Name: EDPRPT13
  Before: n/a   After: B7380759
Routine Name: EDPRPT2
  Before: B15843773 After: B22188672
Routine Name: EDPRPT3
  Before: B8721424 After: B14278258
Routine Name: EDPRPT4
  Before: B24084771 After: B25030915

Routine Name: EDPRPT5
  Before: B35383693   After: B52072453
Routine Name: EDPRPT6
  Before: B9613057   After: B9636184
Routine Name: EDPRPT7
  Before: B19582712   After: B20666458
Routine Name: EDPRPT7C
  Before: B19611509   After: B20628134
Routine Name: EDPRPT8
  Before: B14454195   After: B15247059
Routine Name: EDPRPT9
  Before: B1592058   After: B1597193
Routine Name: EDPRPTBV
  Before: B21129991   After: B21134846
Routine Name: EDPUPD
  Before: n/a   After: B6705060
Routine Name: EDPVIT
  Before: n/a   After: B32884634
Routine Name: EDPWS
  Before: n/a   After: B17524272
Routine Name: EDPWSL
  Before: n/a   After: B7192929
Routine Name: EDPWSLM
  Before: n/a   After: B3855274
Routine Name: EDPWSP
  Before: n/a   After: B7526722
Routine Name: EDPX
  Before: B9797287   After: B10778850
Routine Name: EDPXML
  Before: n/a   After: B13678293
Routine Name: EDPYCHK
  Before: n/a   After: B1074868
Routine Name: EDPYP2
  Before: n/a   After: B8435306
Routine Name: EDPYPRE
  Before: B8226400   After: B13981628
Routine Name: EDPYPST   Before: B35872203   After: B35872203

5.Files and Globals

5.1.   Globals

EDIS uses the following globals:

^EDP

^EDPB

The ^EDP global holds a list of patients who are currently checked in at the emergency-department (that is, the list of active patients). The ^EDPB global holds a comprehensive list of emergency-department activities.

Table 5: Global Placement and Protection

Global	Type	Placement	Journal	Protection
^EDP	Dynamic	Place this global in a volume set that can accommodate the following yearly growth rate: 2,000 bytes * visits per year	Yes	RWP or D
^EDPB	Static	No recommendation (this global should remain small)	Yes	RWP or D

5.2.   Files

Table 6: XE Files

File #	File Name	Root Global	Global Protection
230	ED LOG	^EDPB(230	@
230.1	ED LOG HISTORY	^EDP(230.1	@
231.6	TRACKING BOARD	^EDPB(231.6	@
231.7	TRACKING STAFF	^EDPB(231.7	@
231.8	TRACKING ROOM-BED	^EDPB(231.8	@
231.9	TRACKING AREA	^EDPB(231.9	@
232.5	CPE ROLE	^EDPB(232.5	@
232.6	WORKSHEET SPECIFICATION	^EDPB(232.6	@
232.71	WORKSHEET SECTION	^EDPB(232.71	@
232.72	WORKSHEET MODEL	^EDPB(232.72	@
233.1	TRACKING CODE	^EDPB(233.1	@
233.2	TRACKING CODE	^EDPB(233.2	@

File #	File Name	Root Global	Global Protection
	SET		
233.8	NHAMCS REASON FOR VISIT	^EDPB(233.8	@
233.81	NHAMCS REASON FOR VISIT DISPLAY	^EDPB(233.81	@
233.82	ED COMPLAINT	^EDPB(233.82	@
234	CLINICAL EVENTS	^EDP(234	@

5.2.1. File Descriptions

5.2.1.1. ED Log (#230)

The ED Log file serves as the log of emergency-department visits and as EDIS's key source of information for display-board data. EDIS refreshes the display board every 30 seconds, and many of the indices in this file assist in making the application's refresh code as efficient as possible.

The file works together with the ED Log History file (#230.1) to track activities associated with typical emergency-department visits from beginning to end. The log records key clinical events—triage and disposition, for example. It also records where each patient went after his or her emergency-department visit, and who was responsible for the patient.

Table 7: File Descriptions

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.01	LOG ENTRY TIME	The Log Entry field (.01) of the ED Log History file (230.1) points to this field	230^B AC (#787) ADUP1 (#788) ADUP2 (#789) AL (#790) AN (#791) AO (#784) AP (#792) APA (#806) AS (#793) ATI (#794) ATO (#795) PDFN (#801) PN (#796)	Date-and-time field (required): Contains the date and time EDIS added this log record to the file

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.02	INSTITUTION	Pointer to the Institution file (#4)	AC (#787) ADUP1 (#788) ADUP2 (#789) AL (#790) AN (#791) AP (#792) AS (#793) ATO (#795) PN (#796) PDFN (#801)	Free-text field (required): This field allows EDIS to associate log entries with the stations that originated the entries; it allows the same EDIS system to serve multiple institutions
.03	AREA	Pointer to the Tracking Area file (#231.9)	AC (#787) ADUP1 (#788) ADUP2 (#789) AL (#790) AN (#791) AP (#792) AS (#793) PN (#796) PDFN (#801)	Pointer field Points to the hospital area to which records apply—initially only to the site's emergency-department locations; will allow sites to expand EDIS's use to other departments

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.04	PATIENT NAME			Free-text field: Contains the patient's name Allows sites to enter patients' names in cases of humanitarian intervention or where patients do not yet have entries in VistA; assists in checking for duplicate names and similar names on the display; this field is set to the following value in cases where ambulances are arriving and the names of the patients are unknown: (ambulance en route); when patients are added to VistA during their ED visits, their names in VistA replace clerk-entered names; when users select patients from VistA, the software gets the patients' VistA names and places them in this field The field uses this format: Surname,Firstname Names must be 3 to 30 characters in length
.05	PATIENT SSN		AS (#793)	Free-text field: Contains the patient's Social Security number Allows sites to enter patients' Social Security numbers in cases of humanitarian care or when patients do not yet have entries in VistA

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.06	PATIENT ID	Pointer to Patient file (#2)	AP (#792) APA (#806) PDFN (#801)	Pointer field: Points to the patient's data file number (the DFN is the IEN in the Patient file) Contains the patients in VistA for whom EDIS is creating its log entries; entries may be absent in cases where ambulances are arriving with unknown patients and where sites are rendering humanitarian aid to non-VA patients
.07	CLOSED		AC (#787) ADUP1 (#788) ADUP2 (#789) AL (#790) AN (#791) AP (#792) AS (#793) APA (#806) Triggers CLOSED DATE/TIME (.071)	A setting: 1 (Yes) 0 (No) EDIS sets this flag to *1* when users remove properly disposed patients from the area (emergency department); closed entries no longer appear on the display board
.071	CLOSED DATE/TIME	Date/Time	Triggered by the CLOSED field (.07)	Date-and-time field: Contains the date/time when the log entry was 'closed'.
.072	CLOSED BY	Pointer to New Person file (#200)		Pointer field: Contains the IEN of the user who closed the log entry.
.073	REMOVED IN ERROR	Set of Codes		Set of codes: 1 (Yes) This field indicates whether or not this patient was 'removed in error'. 1 will indicate that the patient was removed in error. Null indicates not removed in error.

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.074	RESTORED BY	Pointer to New Person file (#200)	Triggers RESTORED BY DATE/TIME	Pointer field: Contains the IEN of the user who restored the patient to the board. This only occurs if a patient has been removed in error and has been restored.
.075	RESTORED BY DATE/TIME	Date/Time	ARIE (#886) Triggered by 'RESTORED BY' field (.074)	Date/Time: This holds the date/time when the patient was 'restored' to the board.
.08	TIME IN		ATI (#794)	Date-and-time field: Contains the time and date when the patient actually arrived at the emergency department EDIS measures patients' length of visit from this date and time
.09	TIME OUT		ATO (#795)	Date-and-time field: Contains the patient's discharge time and date EDIS prompts users for delay reasons based on the difference between time-in and time-out entries
.1	ARRIVAL MODE	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the source of the patient's visit Currently applies only to the sources of emergency-department visits—nursing homes or clinics, for example; values are associated with the <stn>.arrival and edp.arrival code sets

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.11	PATIENT BRIEF ID		ADUP2 (#789)	Free-text field: Contains the patient's display-board identifier; can store identifiers for patients who are arriving by ambulance and for non-VA patients; the identifier should be in the X9999 format When VistA patients are selected, the field stores X9999-formatted identifiers that the application constructs from the Patient file (#2); this allows the application to indicate on the display board patients who have identical X9999-formatted identifiers
.12	VISIT	Pointer to the Visit file (#9000010)	230^AVISIT^MUMPS (increments and decrements the dependency counter in the Visit file [#9000010]) 230^V (PCE uses this cross reference to help identify dependent entries)	Pointer field: Points to the visit associated with this emergency-department encounter Because emergency departments don't normally use appointments, EDIS records patient visits in this field; EDIS can then create visits in PCE so subsequent caregivers can associate orders and progress notes with the same visit; EDIS creates this visit when it collects data for any PCE-related field, allowing it to call DATA2PCE; triage nurses usually enter this data

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.13	CREATION SOURCE			A setting to identify the visit-creation source: 0 (EDIS) 1 (Scheduling) 2 (CPRS) EDIS generally populates the VISIT field by calling DATA2PCE; users can also create visits by entering emergency-department appointments or writing progress notes for emergency-department locations; this field records the mechanism responsible for creating the entry in the Visit file (#9000010)
.14	CLINIC	Pointer to the Hospital Location file (#44)		Pointer field Holds a pointer to the specific emergency-department clinic that EDIS will associate with the patient's visit. When users check in patients through the Scheduling package, EDIS stores a pointer to the clinic they select here until it creates a visit. When the application creates the visit, it uses the location stored in this field
1.1	COMPLAINT			Free-text field: Contains the complaint with which the patient presented; sites can include this complaint on the display board, so it should be brief enough to fit within a display-board column; this field accepts 1–50 characters

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
1.2	DISPOSITION	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the patient's end-of-visit disposition; values for this field are associated with the <stn>.disposition and edp.disposition code sets
1.3	DISPOSITION TIME			Time-and-date field: Contains the time and date of the patient's most recent disposition-field update
1.4	DIAGNOSIS TIME			Time-and-date field: Contains the date and time of the patient's last diagnosis-field update
1.5	DELAY REASON	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the reason for delay (for patient stays that exceed the maximum length of stay); associated with the <stn>.delay and edp.delay code sets
2	COMPLAINT (LONG)			Free-text field The patient's long complaint (free text); an optional field that allows staff to enter complaints in a longer form than EDIS allows for its display-board complaint; this field holds from 1 to 220 characters
3.2	STATUS	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the record of a patient's statuses during the course of his or her emergency-department visit (awaiting triage, ED patient, and so forth); associated with the <stn>.status and edp.status code sets

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
3.3	ACUITY	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the patient's acuity level, which is based on the Emergency Severity Index (ESI) algorithm (acuity levels 1 – 5); associated with the edp.acuity code set
3.4	LOC	Pointer to the Tracking Room-Bed file (#231.8)	AL (#790)	Pointer field: Points to the patient's current location; locations can be a specific room or bed, or a conceptual area (such as the hallway, parking lot, or radiology department); locations need not be physical locations; this field allows checking for unoccupied beds or areas
3.5	MD ASSIGNED	Pointer to the New Person file (#200)		Pointer field: Points to the patient's current physician (provider) assignment
3.6	NURSE ASSIGNED	Pointer to the New Person file (#200)		Pointer field: Points to the patient's current nurse assignment
3.7	RESIDENT ASSIGNED	Pointer to the New Person file (#200)		Pointer field: Points to the patient's current resident assignment
3.8	COMMENT			Free-text field (optional): Contains comments associated with the patient's emergency department stay; users can enter and update this field for patients' current visits; sites can optionally include comments on the display board; this field accepts 1–80 characters

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
4	DISCHARGE DIAGNOSIS	Multiple (230.4)		Contains the patient's diagnosis or diagnoses for this emergency-department visit; when sites have enabled free-text diagnoses, EDIS stores patients' diagnoses lists in this field; when sites have enabled coded diagnoses, this field holds patients' diagnoses until their PCE visits become available, after which EDIS transfers their diagnoses lists to PCE; in this latter case, PCE becomes the real holder of patients' diagnoses lists; however, the lists remain synchronized with EDIS to cover rare cases in which sites change parameter settings to allow free-text diagnoses; the parameter that controls diagnoses lists is in the Tracking Area file (#231.9)
8	ORDERS	Multiple (230.08)		Tracks orders during the course of the patient's emergency-department visit; an order-entry event monitor populates this multiple and identifies orders that are related to patients' current emergency-department visits; the event monitor enables EDIS display boards to offer up-to-date order-related information with every display-board refresh; it also allows reports to track the history of orders related to emergency-department visits

Discharge Diagnosis 230.04

Sites have the option to synchronize patients' diagnoses with PCE. If diagnoses are synchronized, every time a diagnosis changes in EDIS, the application passes the change to PCE. If sites do not synchronize patients' diagnoses with PCE, EDIS simply keeps patient-diagnoses lists in this file. Clinical staff can later access the file's contents and enter patients' diagnoses into PCE.

Table 8 Discharge Diagnosis Files

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.01	DISCHARGE DIAGNOSIS		230.04^B	Free-text field (multiply asked): Contains the free text entries of the patient's discharge diagnoses for the visit If sites set EDIS parameters to require coded diagnoses, the text in this field will match ICD-9-CM text from Clinical Lexicon entries; some entries map to more than one ICD code; $$ICDONE^LEXU determines which code to store in this field
.02	ICD9 CODE	Pointer to the ICD Diagnosis file (#80)		Pointer field: Contains ICD-9-CM codes for the patient's diagnoses The application uses Clinical Lexicon utilities to look up diagnoses; some Clinical Lexicon entries map to more than one ICD 9 CM code; EDIS uses $$ICDONE^LEXU to determine which code to store here; this becomes the code that EDIS stores in PCE The diagnosis-coding system will likely switch from ICD-9-CM to SNOMED CT in the future

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.03	PRIMARY			A setting: (0) No (secondary) (1) Yes (primary) This setting indicates which diagnosis is the primary diagnosis

Orders 230.08

The order-entry event monitor identifies orders that are related to patients' current emergency-department visits and populates this multiple with these orders. This subfile enables EDIS to quickly update display boards (which EDIS refreshes every few seconds to provide up-to-date order-status information). It also allows EDIS reporting functionality to track the history of orders that are related to patients' emergency-department visits.

Table 9: XE Orders

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.01	ORDER		230.08^B AO (#784)	Free-text field (multiply asked): Contains order IDs for patients' emergency-department-related orders (order IEN); EDIS uses this field to locate orders when the event monitor needs to update them
.02	SERVICE		230.08^AC	A setting: M (medication) L (lab) R (radiology) C (consult) A (all others) Provides a general identification of the service to which orders are related and allows quick checks for orders associated with the patient's emergency-department visit

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.03	STATUS			A setting: N (new) A (active) C (complete) Provides the general status of orders; sites can use order status to highlight orders on the display board, enabling sites to monitor the board for orders that have been outstanding for too long
.04	STAT			A setting: 1 (STAT) 0 (not STAT) A setting of *1* indicates stat orders; sites can optionally use colors to highlight stat orders on the display board
.05	RELEASE TIME			Date-and-time field: Contains the date and time of an order's release to its service; allows sites to monitor orders for delay

Record Indices for File #230.

Table 10: Record Indices for File#230

Record Index	Indexed Fields	Description
AC (#787)	SITE, AREA, IEN (active entries only)	EDIS uses this index to list patients with currently active entries on the display board
ADUP1 (#788)	SITE, AREA, LASTNAME, IEN (active entries only)	EDIS uses this index to contribute patients' last names to the ADUP cross reference, which helps identify patients with similar names or similar brief identities (X9999 formatted identifiers)
ADUP2 (#789)	SITE, AREA, LAST4, IEN (active entries	EDIS uses this index to contribute patients' identifiers in X9999 format

Record Index	Indexed Fields	Description
	only)	
AL (#790)	SITE, AREA, LOC, IEN (active entries only)	EDIS uses this index to check for beds and areas that are currently occupied
AN (#791)	SITE, AREA, PTNAME, IEN (active entries only)	EDIS uses this index to check patients' active statuses in cases where patients do not have DFNs (as is the case with humanitarian interventions); the application references this index before adding patients to the display board to determine whether or not patients are already on the board
AP (#792)	SITE, AREA, DFN, IEN (active entries only)	EDIS uses this index to test for duplicate entries when users select patients who have DFNs (that is, VistA patients) for addition to the display board
ARIE (#886)	RESTORED DATE/TIME,IEN	EDIS uses this index to search for patients who were removed in error.
AS (#793)	SITE, AREA, SSN, IEN (active entries only)	EDIS uses this index to see if patients are already on the display board in cases where patients don't have DFNs and users are identifying these patients by their SSNs
ATI (#794)	SITE, TIME IN (for reports)	EDIS uses this index to get a range of visits within a user-specified time range
ATO (#795)	SITE, TIME OUT (for reports)	EDIS uses this index to get a range of visits that were closed within a user-specified time span

Record Index	Indexed Fields	Description
PDFN (#801)	SITE, AREA, DFN, IEN (for all patients)	This index organizes all entries by patient DFN. When EDIS performs special lookups against the patient file (by SSN, for example), the lookup service returns a DFN; this index allows EDIS to find visits that correspond to these DFNs; the index contains all visit entries (closed and active)
PN (#796)	SITE, AREA, PTNAME, IEN (for all patients)	EDIS uses this index of *all* patient names—including the names of patients who do not have DFNs—for selecting patients when visits (closed or otherwise) need to be corrected.

5.2.1.2.   ED Log History (230.1)

The ED Log History file provides a forward- and reverse-chronological list of updates to each emergency-department log record. The timestamps contained in this file make it possible to generate a variety of reports.

Table 11: XE ED Log History Files

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.01	LOG ENTRY	Pointer to the ED Log file (#230)	230.1^B ADF (#797)	Pointer field: Points to an entry in the ED Log file; file entries record modifications (updates) to entries in the ED Log file
.02	TIME		ADF (#797)	Time-and-date field: Contains the time and date of the log record's last modification (if the patient's log record was modified)
.03	ENTERED BY	Pointer to the New Person file (#200)		Pointer field: Contains the identities of users who have updated log data

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.04	PATIENT NAME			Free-text field: The updated value of the patient's name (if updated)
.05	PATIENT SSN			Free-text field: Contains the updated value of the patient's social security number (if updated) The class-three product recorded Social Security numbers when patients without DFNs came to the emergency room; EDIS is not currently using this field; the field is present for the sake of compatibility with the class-three version Patients' DFNs are their IENs in the Patient file (#2)
.06	PATIENT ID	Pointer to the Patient file (#2)		Pointer field: Points to the updated value of the patient's DFN (if updated)
.07	COMPLAINT			Free-text field: Contains the updated value of the patient's display-board complaint (if updated)
.0701	CLOSED			Set of codes: 1 (Yes) 0 (No)
.071	CLOSED DATE/TIME		Triggered by the CLOSED field (.07)	Date-and-time field: Contains the date/time when the log entry was 'closed'.
.072	CLOSED BY	Pointer to New Person file (#200)		Pointer field: Contains the IEN of the user who closed the log entry.

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.073	REMOVED IN ERROR			Set of codes: 1 (Yes) This field indicates whether or not this patient was 'removed in error'. 1 will indicate that the patient was removed in error. Null indicates not removed in error.
.074	RESTORED BY	Pointer to New Person file (#200)	Triggers RESTORED BY DATE/TIME	Pointer field: Contains the IEN of the user who restored the patient to the board. This only occurs if a patient has been removed in error and has been restored.
.075	RESTORED BY DATE/TIME		Triggered by 'RESTORED BY' field (.074)	Date/Time: This holds the date/time when the patient was 'restored' to the board.
.08	TIME IN			Time-and-date field: Contains the updated value of the patient's arrival time (if updated)
.09	TIME OUT			Time-and-date field: Contains the updated value of the patient's departure time (if updated)
.1	ARRIVAL MODE	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the updated value of the source of the patient's visit (a nursing home or hospital ward, for example—if updated)
.11	DISPOSITION	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the updated value of the patient's disposition (if updated)

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.12	DELAY	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the updated reason that the patient's stay exceeded the maximum stay limit (if updated)
.14	CLINIC	Pointer to the Hospital Location file (#44)		Pointer field: Points to the updated value of the clinic location (if updated)
2	COMPLAINT (LONG)			Free-text field: Contains the updated value of the patient's long complaint (if updated)
3.2	STATUS	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the updated value of the patient's status (if updated)
3.3	ACUITY	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the updated value of the patient's acuity (if updated)
3.4	LOC	Pointer to the Tracking Room-Bed file (#231.8)		Pointer field: Points to the updated value of the patient's room, bed, or area assignment (if updated)
3.5	MD ASSIGNED	Pointer to the New Person file (#200)		Pointer field: Points to the identity of the patient's updated emergency-department physician assignment (if updated)
3.6	NURSE ASSIGNED	Pointer to the New Person file (#200)		Pointer field: Points to the patient's updated nurse assignment (if updated)
3.7	RESIDENT ASSIGNED	Pointer to the New Person file (#200)		Pointer field: Points to the patient's updated resident assignment (if updated)

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
3.8	COMMENT			Free-text field Contains updated comments associated with the patient's emergency-department visit (if any—comments are optional)
9.1	MODIFIED FIELDS			Free text field: Contains a list of fields that users modified in the corresponding ED LOG record at the time of the update; the list contains field numbers and is semicolon delimited

Record Indices for File 230.1.

Table 12: XE File Record Indices: 230.1

Record Index	Indexed Fields	Description
ADF (#797)	LOG, TIME, IEN	This index provides a forward-chronological list of updates to the log record of a single entry in the ED Log file.

5.2.1.3. Tracking Staff (231.7)

The Tracking Staff file contains staff assignments for particular areas (currently sites' emergency departments). It allows for concise staff-selection lists and enables sites to associate colors with staff members so that emergency-department personnel can more easily tell which staff members are assigned to which patients.

Table 13: XE Files: Tracking Staff #231.7

Field Number	Field Name	Pointers	Cross Reference	Description
.01	PERSON	Pointer to the New Person file (#200)	231.7^B AD (#807)	Pointer field: Points to the identity of a person who is assigned to work as staff in the emergency department (required)

Field Number	Field Name	Pointers	Cross Reference	Description
.02	INSTITUTION	Pointer to the Institution file (#4)	AC (#800) AD (#807)	Pointer field: Points to entries in the Institution file (#4); allows each station to have its own set of staff assignments
.03	AREA	Pointer to the Tracking Area file (#231.9)	AC (#800) AD (#807)	Pointer field: Points to the area to which the person is assigned as staff EDIS currently supports only emergency departments but is capable of supporting other areas in the future
.04	INACTIVE		AD (#800)	A setting: 0 (active) 1 (inactive) A setting of *1* indicates that the person is no longer an active staff member in the associated area
.06	ROLE		AC (#800)	A setting: P (provider) R (resident) N (nurse) A setting of *P*, *R*, or *N* indicates that the staff member's role is provider, resident, or nurse, respectively

Field Number	Field Name	Pointers	Cross Reference	Description
.08	COLOR			Free-text field: Contains red-green-blue (RGB) values for the foreground and background colors (if any) that sites have used to highlight the staff member's identifier on the display board Colors are hexadecimal; this field accepts values having the following format: <use color>,<foreground color>,<background color> (for example, the following entry specifies a red foreground and a white background: 1, 0xff0000,0xffffff)

Record Indices for File 231.7

Table 14: XE Files Record Indices: 231.7

Record Index	Indexed Fields	Description
AC (#800)	SITE, AREA, ROLE, IEN	This index enables EDIS to construct a list of currently active staff for a particular role
AD (#807)	SITE, AREA, DUZ, IEN	This index allows EDIS to search the file for an entry that matches a particular DUZ (user ID)—to look up a color map, for example; a given person may work as staff in multiple areas; this index allows EDIS to find the staff record that applies to the person's activity in a certain area

5.2.1.4.   Tracking Room-Bed (231.8)

As patients progress through their visits, they may stop at a number of areas. The Tracking Room-Bed file allows sites to set up these areas in EDIS so that they can track patients throughout their visits. Areas can be physical or conceptual, and may include specific beds, waiting areas, and other areas of the hospital (radiology, exam rooms, and so forth).

Table 15: XE Files: Tracking Room Bed

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.01	NAME		231.8^B	Free-text field (required): The internal name of the room, bed, or area that the patient is occupying at this stage of his visit
.02	INSTITUTION	Pointer to Institution file (#4)	AC (#802) C (#803)	Pointer field: Allows each station (division, for example) to manage its own set of rooms, beds, and areas
.03	AREA	Pointer to the Tracking Area file (#231.9)		Pointer field: Points to the hospital area associated with this room, bed, or area; EDIS currently supports only the emergency department, but will probably support additional areas in the future Trainers can use this field to set up separate areas for each trainee, allowing each trainee to configure his or her own set of rooms and beds
.04	INACTIVE			A setting: 0 (active) 1 (inactive) A setting of *1* makes the associated room or area unavailable for selection in EDIS; however, inactive rooms and areas still appear on reports and in views for previous entries
.05	SEQUENCE			A number: Represents the sequential order in which EDIS should display the associated room or area on the big-board display; the field accepts numbers from one (1) to 9999

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.06	DISPLAY NAME		AC (#802)	Free-text field: Contains the name of the room or area as it should appear on the big-board display; display names should be concise to save display-board space; supports names from 1–30 characters in length
.07	DISPLAY WHEN			A setting: 0 (occupied) 1 (always) 2 (never) A setting of *0*, *1*, or *2* determines whether EDIS should display the associated room or area when occupied, always, or never, respectively
.08	DEFAULT STATUS	Pointer to the Tracking Code file (#233.1)		Pointer field: Points to the default status (if any) of the room, bed, or area; when sites select a default status for a room, bed, or area, EDIS automatically assigns this default status to patients who are occupying the room, bed, or area
.09	MULTIPLE ASSIGN			A setting: 0 (single—accepts one patient assignment at a time) 1 (multiple—accepts multiple simultaneous patient assignments) 2 (waiting—a special case of the multiple-assignments designation for reporting) 3 (single, non-ED—single-assignment designation in an area outside the emergency department) 4 (multiple, non-ED—multiple-assignment designation in an area outside the emergency department)

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.1	SHARED NAME			Free-text field: Contains a common name for several beds or areas that share the same physical space; using a shared name in such cases allows sites to run reports that identify patients and staff who are at risk for exposure to contagious organisms
.11	BOARD			Free-text field: Contains the name of the particular display board on which the room or area is to appear
.12	COLOR			Free-text field: Contains values for colors; allows sites to map specific rooms and areas to particular foreground and background colors for use with the display-board's room-bed-area list; this field accepts values that have the following format: <use color>,<foreground color>,<background color> (for example, the following entry specifies a red foreground and a white background: 1, 0xff0000,0xffffff)

Record Indices for 231.8

Table 16: XE Files: Record Indices 231.8

Record Index	Indexed Fields	Description
AC (#802)	SITE, AREA, DISPLAYNAME, IEN	This index enables EDIS to search for a room or area (when setting baseline parameters, for example) based on a specific abbreviation (AMBU or WAIT, for example)
C (#803)	INSTITUTION, AREA	This index allows EDIS to collect all of the rooms for a specific area within a division (station number)

5.2.1.5. Tracking Area (231.9)

This file contains parameters that control EDIS's tracking behavior. It also contains XML descriptions that client software uses to control display-board

column appearance, row content, and cell color. The AREA field (#.03) of the
ED Log files (#230) points to this file.

Table 17: XE Files Tracking Area 231.9

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
.01	NAME		231.9^B	Free-text field Contains the name of an area within the hospital; EDIS currently supports only sites' emergency department areas
.02	INSTITUTION	Pointer to Institution file (#4)	231.9^C	A pointer field: Allows each station within a given VistA system to have its own set of areas
.03	LAST UPDATE			Date-and-time field: Contains the date and time that the site last updated the display-board configuration; this helps client software determine if it is necessary to reload configuration parameters
1.1	DIAGNOSIS REQUIRED			A setting: 0 (no) 1 (yes) A setting of *1* indicates that users must enter diagnoses before removing patients from the display board
1.11	AMBULANCE	Pointer to Tracking Room-Bed file (#231.8)		Pointer field: Points to the entry in the Tracking Room-Bed file that represents an arriving ambulance
1.12	INITIAL ROOM	Pointer to Tracking Room-Bed file (231.8)		Pointer field: Points to the tracking-file entry that specifies the default room or area (often the waiting room) to which patients are first assigned
1.2	CODED DIAGNOSIS			A setting: 0 (no—free-text) 1 (yes—ICD-9-CM) A setting of *1* indicates that users must enter diagnoses using ICD-9-CM codes before removing patients from the board; otherwise, users may enter free-text diagnoses

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
1.3	DISPOSITION REQUIRED			A setting: 0 (no) 1 (yes) A setting of *1* indicates that users must enter patients' dispositions before removing them from the display board
1.4	DELAY REQUIRED			A setting: 0 (no) 1 (yes) For patients whose emergency-department stays have exceeded the number of minutes identified in the DELAY MINUTES field (#1.5), unless patients are admitted to an observation ward, a setting of *1* indicates that users must select a reason for delay before removing the patients from the display board
1.5	DELAY MINUTES			Number field: Contains the number of minutes after which EDIS requires a reason for delay as a precondition for removing patients from the display board; accepts whole numbers between 1 and 1440
1.6	FIRST SHIFT START			Number field: Contains the number of minutes from midnight to the first shift's starting time; accepts whole numbers between 0 and 1440; EDIS currently assumes that all shifts are of equal length
1.7	SHIFT DURATION			Number field: Contains the number of minutes that comprise the duration of a shift; accepts whole numbers between 0 and 1440; for eight-hour shifts, the value recorded in this field will be 480 (8*60)

Field Number	Field Name	Pointers	Cross References and Record Indices	Description
1.8	PROMPT RESIDENTS			A setting: 0 (no) 1 (yes) A setting of *1* indicates that the application must prompt users to enter resident assignments (in addition to provider assignments)
1.9	PROMPT CLINICS			A setting: 0 (no) 1 (yes) A setting of *1* (yes) indicates that the application must prompt users to select a clinic; this allows EDIS to create visits based on explicitly selected clinics
3	COLOR SPEC			Word-processing field (#231.93) (no wrap): Contains an XML document that maps colors to display-board values
4	DISPLAY BOARD CONFIGURATION	Multiple #231.94		Contains an XML description of each display board's definition
230.1	TRACKING UPDATED			Free-text field: Contains a timestamp: EDIS sets this timestamp each time it updates the data on any display board for a given area
231.1	CHOICES UPDATED			Free-text field: Contains a timestamp; EDIS sets this timestamp each time users modify the definition of any display board for a given area

Display Board Configuration Subfile (231.94)

Table 18: XE Files Display Board Configuration Subfile

Field Number	Field Name	Pointers	Cross Reference	Description
.01	NAME		231.94^B	Free-text field: Contains the name of a specific display board

Field Number	Field Name	Pointers	Cross Reference	Description
1	SPEC			Word-processing field #231.941 (no wrap): Contains the XML description for a specific display board

5.2.1.6.   Tracking Code (233.1)

The Tracking Code file contains entries that EDIS tracking functionality uses in selection lists. The software may eventually roll up selection-list entries to the emergency-department director for reporting.

The following files point to the Tracking Code file:

ED Log file (#230)	ARRIVAL MODE field (#.1)
ED Log file	DELAY REASON field (#1.2)
ED Log file	STATUS field (#3.2)
ED Log file	ACUITY field (#3.3)
ED Log History file (#230.1)	ARRIVAL MODE field (#.1)
ED Log History file	DISPOSITION field (#.11)
ED Log History file	DELAY field (#.12)
ED Log History file	STATUS field (#3.2)
ED Log History file	ACUITY field (#3.3)
Tracking Room-Bed file (#233.1)	DEFAULT STATUS field (#.08)
Tracking Code file (#233.1)	NATIONAL CODE field (#.04)
Tracking Code Set (#233.2)	CODE field (#.02) of the CODES subfield (233.21)

Table 19: Tracking Code 233.1

Field Number	Field Name	Pointers	Cross References	Description
.01	NAME		233.1^B	Free-text field: Contains unique names for values in the selection lists that EDIS is using. To distinguish local list selections from national list selections, EDIS prefixes locally defined entries with sites' station numbers and nationally defined entries with the letters *edp*
.02	DISPLAY NAME		AB (#804) AC (#805)	Free text field: Contains the selection's display-board name
.03	ABBREVIATION		AB (#804)	Free-text field: Contains display-name abbreviations that EDIS uses in some reports
.04	NATIONAL CODE	Pointer to Tracking Code file (#233.1)		Free-text field: Will contain mappings from site-defined codes to national codes when national codes exist
.05	FLAGS			EDIS uses flags to further classify specific codes; possible flags are: M (Missed opportunity) A (Admission) VA (VA admission) O (Observation) EDIS allows multiple flags with no delimiters
2	DESCRIPTION			Word processing field (#233.12): Contains a further explanation: allows sites to further explain codes (233.12)

Record Indices for Tracking Code File (#233.1)

Table 20: Record Indices for Tracking Code File 233.1

Record Index	Indexed Fields	Description
AB (#804)	NAME (without prefix), ABBREVIATION	This index enables EDIS to find all abbreviations for a name, without regard to prefix; prefixes are *edp.* for nationally exported names and *nnn.* for local names, where *nnn.* is the station number
AC (#805)	NAME (without prefix), DISPLAY NAME	This index allows EDIS to find all display names for a name, without regard to site prefix; prefixes are *edp.* for nationally exported names and *nnn.* for local names, where *nnn.* is the station number

5.2.1.7. Tracking Code Set (233.2)

The Tracking Code Set file contains collections of codes that represent specific selection lists (acuities, patient statuses, dispositions, delay reasons, and so forth) used within EDIS.

Table 21: XE Files Tracking Code Set

Field Number	Field Name	Pointers	Cross References	Description
.01	NAME		233.2^B	Free-text field (required): Contains the names of tracking code sets that EDIS uses in selection lists; sites may modify selection lists to meet their needs
1	CODES	Multiple (#233.21)		Contains lists of codes that are available in selection lists

Codes (233.21)

Table 22: XE File Codes 233.21

Field Number	Field Name	Pointers	Cross References	Description
.01	SEQUENCE		233.21^B	Number field (multiply asked): Contains a number that indicates the order in which the associated code should appear in the selection list; accepts whole numbers between 1 and 9999
.02	CODE	Pointer to the Tracking Code file (#233.1)	233.2^AS^MUMPS	Pointer field: Points to codes that are to be included in selection lists
.03	INACTIVE			A setting: 1 (inactive) 0 (active) A setting of *1* indicates codes that are temporarily inactivated
.04	NAME AT SITE		233.2^AS^MUMPS	Free-text field: Contains site-specific names; allows sites to use different names for display purposes without changing underlying national codes
.05	ABBREVIATION AT SITE		233.2^AS^MUMPS	Free-text field: Contains site-specific abbreviations: allows sites to use different abbreviations for national-code abbreviations without changing the underlying meaning of the national codes

5.2.1.8.   CPE Role (232.5)

The CPE Role file contains the definitions for roles to be used with EDIS.

Table 23: XE Files Tracking Code Set

Field Number	Field Name	Pointers	Cross References	Description
.01	ROLE	USR CLASS (#8930)	232.5^B	Pointer to the USR CLASS file This field contains the role used for the clinical practice environment.
.02	INSTITUTION	INSTITUTION (#4)		Pointer to the INSTITUTION file. The institution using this role.
.03	AREA	TRACKING AREA (#231.9)	232.5^B	Pointer to the TRACKING AREA file. Contains the tracking area for this role.
.04	DEFAULT WORKSHEET	WORKSHEET SPECIFICATION file (#232.6)		Point to the WORKSHEET SPECIFICATION file This is the default worksheet for this role.
.05	DEFAULT BOARD			Free Text This contains the name of the default board for this role.

5.2.1.9.   Worksheet Specification (#232.6)

The Worksheet Specification file holds worksheet definitions for each institution/area. The Worksheet specification file also allows worksheets to be associated with user roles.

Table 24: Worksheet Specification #232.6

Field Number	Field Name	Pointers	Cross References	Description
.01	NAME		233.6^B	Free-text field (required): Contains the names of worksheets to be used with EDIS.

Field Number	Field Name	Pointers	Cross References	Description
.02	INSTITUTION	INSTITUTION (#4)	232.6^C	Pointer to the INSTITUTION file: Contains the institution associated with this worksheet.
.03	AREA	TRACKING AREA (#231.9)		Pointer to the TRACKING AREA file: The tracking area associated with this worksheet.
.04	TYPE			Set of codes: 'V' for Visit 'A' for Assess 'P' for Plan This is the type of this worksheet.
.05	ROLE	USR CLASS (#8930)		Pointer to the USR CLASS file Identifies the role associated with this worksheet.
.06	DISABLED			Set of codes: 0 – False 1 – True This indicates whether this worksheet is disabled or not.

SPEC (232.61)

Table 25: Specification 232.61

Field Number	Field Name	Pointers	Cross References	Description
.01	SPEC		233.61^B	Free-text field (required): Contains the XML for the worksheet specification.

SECTION (232.62)

Table 26: Section 232.62

Field Number	Field Name	Pointers	Cross References	Description
.01	SEQUENCE		232.62^B	Numeric: Contains the sequence for the section (order).
.02	SECTION	WORKSHEET SECTION (232.71)		Pointer to the WORKSHEET SECTION file (232.71)
.03	INITIALLY OPEN			Set of Codes: 0 – false 1 – true
1	CONFIGURATION			Word processing: Contains configuration information

5.2.1.10.   Worksheet Section (#232.71)

The Worksheet Section file holds the definitions for each section of a worksheet.

Table 27: Worksheet Section #232.71

Field Number	Field Name	Pointers	Cross References	Description
.01	DETAIL PLUGIN		233.71^B	Free-text field (required): This field holds the plug-in detail name.
.02	PACKAGE	Multiple (#233.21)	233.71^C	Free-text field: Holds the package information
.03	SUMMARY PLUGIN			Free-text field:
.04	DEFAULT DISPLAY NAME			Free-text field:

Field Number	Field Name	Pointers	Cross References	Description
.05	TASK TYPE			Set of codes: '0' – None '1' – Checkbox '2' – Timed This field contains the 'type' associated with this worksheet.
.06	INITIALLY OPEN			Set of codes: 0 – False 1 – True This indicates whether or not the worksheet section should be open or closed initially.
1	MODELS	Multiple (232.711) Pointer to WORKSHEET MODEL file (#233.72)		Pointer to WORKSHEET MODEL file: This field holds the models that will be used in this worksheet section.

5.2.1.11.   Worksheet Model

The Worksheet Model file holds the definition for each worksheet model.

Table 28: Worksheet Model

Field Number	Field Name	Pointers	Cross References	Description
.01	CLASS		233.72^B	Free-text field (required): Indicates the worksheet Model class
.02	PACKAGE		232.72^B	Free-text field (required): This holds the package that this worksheet model is associated with.
.03	FULLY QUALIFIED NAME			Computed field: PACKAGE:CLASS
.04	TYPE			Set of codes: 'R' – Reference 'V' - Visit

Field Number	Field Name	Pointers	Cross References	Description
.05	MONIKER			Free-text field: Unknown purpose
1.1	LOAD TAG			Free-text field:
1.2	LOAD ROUTINE			Free-text field
1.3	LOAD TYPE			Set of codes: '0' – Array '1' – XML This is the type of data that will be returned to the client for display.
2.1	SAVE TAG			Free-text field:
2.2	SAVE ROUTINE			Free-text field:
3.1	PREVIEW TAG			Free-text field:
3.2	PREVIEW ROUTINE			Free-text field:
5	SAMPLE XML			Word-processing field: Holds sample XML.

5.2.1.12.   NHAMCS Reason for Visit

The NHAMCS Reason for visit file holds reasons for visits.

Table 29: NHAMCS Reason for Visit

Field Number	Field Name	Pointers	Cross Reference	Description
.01	NAME		233.8^B	Free-text field (required): Contains the name of the reason for visit
2	CODE		233.8^C	Free-text field (required): The code value associated with this reason for visit.

Field Number	Field Name	Pointers	Cross Reference	Description
3	PARENT CODE	NHAMCS REASON FOR VISIT (233.8)		Pointer to NHAMCS REASON FOR VISIT FILE: Holds the parent visit code (if this is a child code).

5.2.1.13.   NHAMCS Reason for Visit Display (#233.81)

The NHAMCS Reason for Visit display file contains the display for an entry in the NHAMCS Reason for Visit file.

Table 30: NHAMCS Reason for Visit Display #233.81

Field Number	Field Name	Pointers	Cross Reference	Description
.01	NAME		233.81^B 233.81^D	Free-text field (required): Contains the name of the reason for visit display.
2	NHAMCS CODE	NHAMCS REASON FOR VISIT (233.8)	233.81^C	Pointer to NHAMCS REASON FOR VISIT file:

5.2.1.14.   ED Complaint (#233.82)

The ED Complaint file holds the ED complaints as well as the associated NHAMCS codes, attributes, and possible values.

Table 31: ED Complaint #233.82

Field Number	Field Name	Pointers	Cross Reference	Description
.01	NAME		233.82^B	Free-text field (required): Contains the name of the reason for this ED complaint.
2	NHAMCS CODE	NHAMCS REASON FOR VISIT DISPLAY (233.81)	233.81^C	Pointer to NHAMCS REASON FOR VISIT DISPLAY file:
10	ATTRIBUTE	Multiple (233.821)		

Field Number	Field Name	Pointers	Cross Reference	Description
20	ASSOCIATED SYMPTOM	Multiple (233.822)		

Attribute (233.821)

Table 32: Attribute 233.821

Field Number	Field Name	Pointers	Cross Reference	Description
.01	NAME		233.821^B	Free-text field (required): This is the attribute that will be prompted to the user in the note template when this complaint is selected.
1	POSSIBLE VALUE	Multiple (#233.8211)		Contains a list of possible values for this attribute.
2	DISPLAY TEXT			Free-text field: Contains the display value:
3	NHAMCS Code	NHAMCS REASON FOR VISIT DISPLAY (#233.81)		Pointer to NHAMCS RESASON FOR VISIT DISPLAY: Contains the NHAMCS reason for visit.

Possible Value (#233.8211)

Table 33: Possible Value #233.8211

Field Number	Field Name	Pointers	Cross Reference	Description
.01	SEQUENCE		233.8211^B	Number: Sequence for this value
2	DISPLAY TEXT			Free-text field: This is the display text for this possible value.
3	NHAMCS CODE	NHAMCS REASON FOR VISIT DISPLAY (#233.81)		Pointer to NHAMCS REASON FOR VISIT DISPLAY This contains the reason for visit display value.

Associated Symptom (#233.822)

Table 34: Associated Symptom #233.822

Field Number	Field Name	Pointers	Cross Reference	Description
.01	SEQUENCE		233.822^B	Number: Sequence for this value
2	NAME			Free-text field: This is the name of the associated symptom.

5.2.1.15.   Clinical Events (#234)

The Clinical events file tracks the date/time of clinical events along with vitals, medication, orderable items, and labs associated with the events.

Table 35: Clinical Events #234

Field Number	Field Name	Pointers	Cross Reference	Description
.01	DATE/TIME		234^B 234^AL 234^AV	Date/time (required): This is the date/time of the clinical event.
1	TITLE			Free-text field: This is the title of the event, which will be displayed on data graphs
2	PATIENT	PATIENT file (#2)	234^C	Pointer to PATIENT file: This is the patient for this event.
3	USER	NEW PERSON file (#200)		Pointer to the NEW PERSON file: This is the user responsible for creating this event.

Field Number	Field Name	Pointers	Cross Reference	Description
4	TREATMENT	ORDERABLE ITEMS file (#101.43)		Pointer to the ORDERABLE ITEMS file: This is the medication or treatment the patient was receiving at the time of this event.
5	LAB TEST	Pointer to the LABORATORY TEST file (#60)		Pointer to the LABORATORY TEST file: This is the lab test used to monitor the efficacy of this treatment, and whose result triggered this event.
6	VITAL SIGN			Set of codes: 'BP' – Blood Pressure *Note* - this DD field appears to be incomplete.. Only BP is listed in the set of codes***
10	DESCRIPTION			Free-text field: The description of this event.

6.Exported Remote Procedure Calls

6.1. EDIS Remote Procedure Calls

6.1.1. EDPCBRD RPC

This RPC acts as the front controller for the EDIS display board. It accepts requests that the Java middle tier initially passes to the EDIS Web server. The RPC uses these parameters to determine which command to execute. EDPCBRD allows proxy-user access.

Input parameter SESS identifies requesting users and sites, which the application passes in via its Java middle tier.

Input parameter PARAMS is a list of the parameters that the application passes to the Java middle tier via Hypertext Transfer Protocol (HTTP) post messages.

EDPCBRD RPC formats and returns data as Extensible Markup Language (XML) documents. The XML structure varies based on the nature of the data request.

6.1.2. EDPCTRL RPC

This RPC acts as the front controller for the EDIS tracking application. It accepts requests that the Java middle tier initially passes into the EDIS Web server. The RPC uses the PARAMS parameter to determine which command to execute. The PARAMS parameter is a list of the parameters that users pass to the system's Java middle tier via HTTP post messages. The RPC's returned data are formatted as XML documents, the structure of which varies based upon the types of data requests.

6.1.3 EDPGLOB RPC

This RPC utilized global arrays to store and return data rather than the previous RPC's which used only local arrays. During testing, errors were encountered due to stack sized getting too large in the local arrays. Creating and using this RPC for the calls that are more data intensive creates a way to avoid these stack <STORE> errors for larger amounts of data. In the future, if the amount of data is in question, this RPC should be used to avoid any potential issues. Currently this RPC is being used for Lab data retrieval, Worksheet.

7. Exported Options

7.1. EDIS Options

Table 36: EDIS Options

Name	Type	Description
EDP CONVERSION	Run Routine	Allows sties to trigger the conversion of local data in their ^DIZ(1720xx) files to the new EDIS files; the option uses routine EDPFMOVE, which transfers local configuration data first, followed by all currently open visits; EDPFMOVE also queues a task to copy closed visits, thus permitting reporting functionality to run normally Uppercase menu text: CONVERT LOCAL ER DATA TO EDIS
EDPF BIGBOARD KIOSKS	Action	Allows facilities to edit the EDPB BIGBOARD KIOSKS parameter; editing parameter values via XPAR utilities is prohibited Entry Action: D EN^EDPBKS Uppercase menu text: DISPLAY BOARD KIOSKS
EDPF TRACKING MENU ALL	Menu	Provides access to all EDPF TRACKING VIEW options Timestamp: 61055,41714 Uppercase menu text: ALL TRACKING VIEWS
EDPF TRACKING MENU CLINICIAN	Menu	Provides access to EDPF TRACKING VIEW options typically associated with clinicians (the **Update**, **Disposition**, and **Display Board** views) Timestamp: 61055,41714 Uppercase menu text: CLINICIAN TRACKING VIEWS
EDPF TRACKING MENU SIGNIN	Menu	Provides access to the EDPF TRACKING VIEW options associated with signing in patients to the emergency department (the **Sign In** and **Display Board** views) Timestamp: 61055,41714 Uppercase menu text: SIGN-IN TRACKING VIEWS
EDPF TRACKING MENU TRIAGE	Menu	Provides access to the EDPF TRACKING VIEW options associated with triaging patients (the **Triage** and **Display Board** views) Timestamp: 61055,41714 Uppercase menu text: TRIAGE TRACKING VIEWS
EDPF TRACKING SYSTEM	Broker (client-server)	A context option for EDIS remote procedure calls (RPCs) at local facilities; the option uses EDPCTRL RPC and EDPCBRD RPC; assigning any EDPF TRACKING MENU or EDPF TRACKING VIEW option implicitly provides users with access to this option Uppercase menu text: EDIS VERSION 1.0-T28

Name	Type	Description
EDPF TRACKING VIEW BOARD	Menu	Provides access specifically to the EDIS **Display Board** view Timestamp: 61514,54336 Uppercase menu text: DISPLAY BOARD
EDPF TRACKING VIEW CONFIGURE	Menu	Provides access specifically to the EDIS **Configure** view Timestamp: 61514,54336 Uppercase menu text: CONFIGURE TRACKING BOARD
EDPF TRACKING VIEW DISPOSITION	Menu	Provides access specifically to the EDIS **Disposition** view Timestamp: 61514,54336 Uppercase menu text: DISPOSITION PATIENT
EDPF TRACKING VIEW EDIT CLOSED	Menu	Provides access specifically to the EDIS **Edit Closed** view, which allows users to change any emergency department visit; assign this view to users who are authorized to correct data discrepancies; access should be limited; EDIS logs all changes Timestamp: 61514,54336 Uppercase menu text: EDIT CLOSED PATIENT
EDPF TRACKING VIEW REPORTS	Menu	Provides access specifically to the EDIS **Reports** view; security keys further restrict access to some reports Timestamp: 61514,54336 Uppercase menu text: TRACKING REPORTS
EDPF TRACKING VIEW SIGNIN	Menu	Provides access specifically to the EDIS **Sign In** view Timestamp: 61514,54336 Uppercase menu text: SIGN IN PATIENT
EDPF TRACKING VIEW STAFF	Menu	Provides access specifically to the EDIS **Assign Staff** view for configuring staff assignments Timestamp: 61514,54336 Uppercase menu text: ASSIGN STAFF
EDPF TRACKING VIEW TRIAGE	Menu	Provides access specifically to the EDIS **Triage** view Timestamp: 61514,54336 Uppercase menu text: TRIAGE PATIENT
EDPF TRACKING VIEW UPDATE	Menu	Provides access specifically to the EDIS **Update** view Timestamp: 61514,54336 Uppercase menu text: UPDATE TRACKING BOARD
EDPS BOARD CONTEXT	Broker (client-server)	Uses EDPCBRD RPC to set the tracking board's context Uppercase menu text: ED TRACKING BOARD CONTEXT

Name	Type	Description
EDPSERVER	Server	Uses the EDPMAIL routine to process incoming scheduling events from VA MailMan Uppercase menu text: PROCESS INCOMING SCHEDULING EV

7.2. Include EDIS Options in Users' Menu Trees

Include one or more of the following options in each user's menu tree:

- EDPF TRACKING MENU ALL
- EDPF TRACKING MENU CLINICIAN
- EDPF TRACKING MENU SIGNIN
- EDPF TRACKING MENU TRIAGE
- EDPF TRACKING VIEW BOARD
- EDPF TRACKING VIEW CONFIGURE
- EDPF TRACKING VIEW DISPOSITION
- EDPF TRACKING VIEW EDIT CLOSED
- EDPF TRACKING VIEW REPORTS
- EDPF TRACKING VIEW SIGNIN
- EDPF TRACKING VIEW STAFF
- EDPF TRACKING VIEW TRIAGE
- EDPF TRACKING VIEW UPDATE

Note: The KIDS installation process does not rebuild VistA menu trees before you assign new EDIS menus. You must therefore perform a menu rebuild after you assign these menus for the first time. If you do not, graphical user interface (GUI) applications like EDIS won't know who has access to the new options. Again, performing a menu rebuild is necessary only once, and only for menus that have never before been assigned.

7.2.1. Assign EDIS Views to Users

Work with your site's clinical application coordinators (CACs) and emergency-department managers to gather a list of EDIS users and determine which views each user needs. Assign to each user only views that he or she needs.

1. Log in to VistA.
2. At the **Select OPTION NAME** prompt type *eve* and then press the <**Enter**> key.
3. At the **Choose 1-5** prompt, type *1* (for **EVE Systems Manager Menu**) and press the <**Enter**> key.
4. At the **Select Systems Manager Menu Option** prompt, type *User Management* and press the <**Enter**> key.
5. At the **Select User Management Option** prompt, type *Edit* (for **Edit an Existing User**) and press the <**Enter**> key.
6. At the **Select NEW PERSON NAME** prompt, type the user's name using the following format: lastname,firstname. Press the <**Enter**> key. VistA displays the **Edit an Existing User** dialog.

7. In the **Edit Existing User** dialog, press the <**Down Arrow**> key to highlight the **Select SECONDARY MENU OPTIONS** field. (Type a question mark [*?*] to see a list of the secondary options that are currently assigned to the user.)
8. Type in the secondary menu options field one of the options listed above and then press the <**Enter**> key:
9. At the **Are you adding …as a new SECONDARY MENU OPTIONS (the…for this NEW PERSON)? No**// prompt, type *Yes* and press the <**Enter**> key.
10. Press the <**Enter**> key again to accept this new option.
11. In the **SYNONYM** field, type a synonym for the option (optional). Press the <**Enter**> key.
12. Press the <**Enter**> key to close the **COMMAND** field and return to the **Select SECONDARY MENU OPTIONS** field.
13. Repeat steps 8 through 11 to assign other options as necessary.
14. Press the <**Down Arrow**> key to move through the **Edit Existing User** dialog. At the end of each page, type the letter *n* in the **COMMAND** field to enter the following page.
15. Stop on page 3.
16. Check the user's person class, which appears on page 3, to make sure the user's person class is active.
17. If the user's person class is not active, select an active person class for the user.
18. When you have entered all applicable secondary menu options and verified that the user has an active person class, type the word **Exit** in the **COMMAND** field.
19. At the **Save changes before leaving form (Y/N)?** prompt, type the letter *Y* and press the <**Enter**> key.

8.Security

8.1.   KAAJEE

EDIS uses Kernel Authentication and Authorization for J2EE (KAAJEE) to authenticate users. KAAJEE enables Java applications to use VistA security features. Specifically, it authenticates users against your local VistA (M) system and uses VistA options and security keys to authorize access to role-based functionality. KAAJEE also transforms VistA login credentials into J2EE-compatible login credentials. For more information about KAAJEE, visit http://vista.med.va.gov/kernel/kaajee.

8.2.   Secure Sockets Layer

EDIS uses Secure Sockets Layer (SSL) to secure communications between the EDIS Web server and sites' display boards. To set up these two-way secure communications for each machine that will power a display board, you must first set up the display board to run in kiosk mode. Kiosk mode locks down the machine's user interface to protect the application from accidental or deliberate misuse. You must then contact the VA National Helpdesk at 888.596.4357 or create a Remedy ticket. If you call the helpdesk, inform the helpdesk analyst that you are making a display-board setup request. If you create a Remedy ticket, select the **Display Board Setup Request** option.

The helpdesk analyst will add the computer to a group that enables it to automatically receive its SSL certificate for two-way authentication. This group also forces a lockdown on the machine to run in kiosk mode. See the EDIS Server Installation Guide for detailed instructions on setting up large display boards.

8.2.1.   PKI Encryption Basics

To encrypt communications between the EDIS Web-application server and browsers that sites are using to run their display boards, the server and browsers exchange certificates containing their public keys.

After this exchange takes place, the browser sends a random number that it has encrypted using the server's public key. The server decrypts this number using its private key. The browser and server then use this random number to generate session keys, which they use in conjunction with their private keys to encrypt and decrypt data exchanges during the communications session.

8.3.   Security Keys

8.3.1.   EDPF KIOSKS

This security key grants access to the EDPF BIGBOARD parameter. This parameter maps fully qualified computer names to display board names. Sites must add or change values for this parameter via the EDPF BIGBOARD KIOSKS option.

8.3.2.   EDPR EXPORT

This security key enables holders to export EDIS reports to Microsoft Excel.

8.3.3.   EDPR PROVIDER

This security key enables holders to view and run the EDIS Provider report, which lists statistics for each emergency department provider.

8.3.4. EDPR XREF

This security key enables holders to view and run the EDIS Cross Reference (XRef) report, which matches emergency department visit numbers with associated patient-identity information.

8.3.5. Assign Keys for Emergency Department Users

Assign keys to users who need access to additional reporting capabilities.

1. Log in to VistA
2. At the **Select OPTION NAME** prompt, type *eve* and then press the <**Enter**> key.
3. At the **Choose 1-5** prompt, type the number *1* (for **EVE Systems Manager Menu**) and then press the <**Enter**> key.
4. At the **Select Systems Manager Menu Option** prompt, type *menu* (for **Menu Management**) and then press the <**Enter**> key.
5. At the **Select Menu Management Option** prompt, type the word *key* (for **Key Management**) and then press the <**Enter**> key.
6. At the **Select Key Management Option** prompt, type the word *allocation* (for **Allocation of Security Keys**).
7. At the **Allocate key** prompt, type the name of the security key you want to assign—*EDPF EXPORT*, for example.
8. At the **Holder of key** prompt, type the name of the first user to whom you are assigning the key and then press the <**Enter**> key.
9. At the **Another holder** prompt, type the name of a second user to whom you are assigning the key and then press the <**Enter**> key. Repeat this step for all users to whom you are assigning the key
10. At the **You are allocating keys. Do you wish to proceed? YES//** prompt, press the <**Enter**> key to accept the default response.

9.Protocols

9.1.   EDIS Protocols

EDP CHECK-IN monitors local VistA systems for Scheduling-package events that indicate VA personnel are checking patients into the emergency department. This protocol is placed on the SDAM APPOINTMENT EVENTS protocol, which is an appointment-event driver.

EDP MONITOR monitors order events for the EDIS display board. This protocol is placed on the * EVSEND OR protocols to check for updates that ancillary packages send to the Order Entry/Results Reporting package. (The asterisk in the expression *EVSEND OR* stands as a placeholder for other package namespaces, such as PS or RA.) It monitors when ancillary packages transmit orders and when they complete the orders.

EDP NEW PATIENT defines variables to support some of the devices that previously monitored SDAM APPOINTMENT EVENTS. The application processes this protocol when users or applications add new patients to the board. Items may look for EDPDATA (EDPDATA = ED Log IEN^DFN^Time In^Hospital Location IEN). This protocol also defines the following variables:

- DFN = Patient file (#2) IEN
- SDT = Time In
- SDCL = Hospital Location file (#44) IEN
- SDATA = ^DFN ^ SDT ^ SDCL
- SDAMEVT = 1 (unscheduled new visit)

EDP OR MONITOR monitors ordering events for the EDIS display board. It is placed on the * EVSEND OR protocols to look for order numbers that are assigned to new orders from ancillary packages.

EDPF ADD BOARD provides support for an entry action (D ADD^EDPBKS) that adds a display board.

EDPF BIGBOARD MENU defines the menu of actions for the EDPF BIGBOARD KIOSKS list template. This protocol allows facilities to edit the EDPF BIGBOARD KIOSKS parameter. Menu items include:

- EDPF ADD BOARD (sequence 11)
- EDPF REMOVE BOARD (sequence 12)
- EDPF CHANGE BOARD (sequence 21)
- EDPF SELECT DIVISION (sequence 31)
- EDPF QUIT (sequence 32)
- EDPF BLANK 1 (sequence 22)
- EDPF BLANK 2 (sequence 13)
- EDPF BLANK 3 (sequence 23)

EDPF BLANK 1 displays a blank line; EDIS uses this protocol to provide white space on menus. (Item text is three spaces.)

EDPF BLANK 2 displays a blank line; EDIS uses this protocol to provide white space on menus. (Item text is three spaces.)

EDPF BLANK 3 displays a blank line; EDIS uses this protocol to provide white space on menus. (Item text is three spaces.)

EDPF CHANGE BOARD supports entry action D CHG^EDPBKS, which changes a computer name or display board.

EDPF QUIT supports entry action Q, which exits the EDPF BIGBOARD KIOSKS list template.

EDPF REMOVE BOARD supports entry action D REM^EDPBKS, which removes a display board.

EDPF SELECT DIVISION supports entry action D NEWDIV^EDPBKS, which allows the EDIS editor to switch to values for another division.

9.2.   Other Protocols

FH EVSEND OR sends Health Level 7 (HL7) messages from the Dietetics package to the Order Entry/Results Reporting package.

GMRC EVSEND OR sends consult requests and tracking data to the Order Entry/Results Reporting package.

LR70 CH EVSEND OR sends orders from the Laboratory package to the Order Entry/Results Reporting package.

OR EVSEND FH sends diet-message events.

OR EVSEND GMRC sends consult-message events.

OR EVSEND LRCH sends laboratory-message events.

OR EVSEND ORG sends generic event messages.

OR EVSEND PS sends pharmacy-message events.

OR EVSEND RA sends radiology and imaging events.

PS EVSEND OR sends inpatient and outpatient medication orders from the Pharmacy package to the Order Entry/Results Reporting package.

RA EVSEND OR sends radiology and imaging message events to the Order Entry/Results Reporting package.

SDAM APPOINTMENT EVENTS performs all necessary actions associated with Scheduling-package events (such as patient check in).

10. List Templates

10.1. EDIS List Templates

EDPF BIGBOARD KIOSKS maps fully qualified machine names to the names of
EDIS big-board displays.

11. Troubleshooting

11.1. Check-in via Scheduling

If EDIS does not automatically add patients when users create an appointment for them or check them in via the Scheduling package, make sure your site's emergency-department location is set in the EDPF LOCATION parameter. Check this parameter to ensure that its value coincides with the value of your emergency department location in file #44 (Hospital Location). EDIS uses values in the EDPF LOCATION parameter to add patients to its log when you create appointments for, or check in, emergency-department visits.

11.2. Blank View

If users don't see view selections when they log in to EDIS, you may not have assigned EDIS options for them. Users need at least one assigned option to access EDIS views. If users already have one or more assigned options, you may need to rebuild your site's menu trees in VistA. Rebuilding menus is necessary only after you assign new menu options for the first time.

11.3. PCE Visits

EDIS creates a Patient Care Encounter (PCE) encounter in CPRS when users select a provider or diagnosis in EDIS. If this functionality isn't working at your site, check:

- The location entry in the EDPF LOCATION parameter
- Physicians' and nurses' person-class status

11.3.1. Check the EDPF LOCATION Parameter

EDIS uses the entry in this parameter to create PCE encounters in CPRS.

11.3.2. Check for Active Person Class

Before EDIS creates PCE encounters based on physician, nurse, or resident assignments, it checks to make sure the physician, nurse, or resident has an active person class. If a user selects a provider whose person class is expired, EDIS does not create an encounter based on the user's selection. To remedy this problem, check each person's class for each provider on your site's staff pick lists.

11.4. Nurse Assignments

By default, EDIS bases its nursing-staff list on all entries in the New Person file (#200). Sites can elect to have EDIS filter its nurse-selection list to allow only people who hold the ORELSE security key, only people who hold the PSJ RNURSE security key, or only people who are present and active in the Nurse Staff file (#210).

If you do not see emergency-department nurses when you are using the **Assign Staff** view to create the EDIS **Nurse** pick list, check the status of your site's emergency-department nursing staff in the Nurse Staff file. Or, if your site has configured EDIS to base its selection list on the ORELSE or PSJ RNURSE security key, check to make sure your site's emergency-department nurses hold the appropriate keys.

11.5. Intermittent Login Difficulties

If your site is experiencing intermittent login difficulties and it uses a load balancer that passes control to different instances of VistA, be sure that each VistA instance is running a VistALink listener. Every system that handles VistALink connections must be running a VistALink listener.

12. Index