VIReC RESEARCH USER GUIDE:

VHA PHARMACY PRESCRIPTION DATA

VA INFORMATION RESOURCE CENTER

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VIReC Research User Guide: VHA Pharmacy Prescription Data

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I. Introduction

VIReC Research User Guide: VHA Pharmacy Prescription Data is produced by the VA Information Resource Center (VIReC), a national resource center of the Health Services Research and Development Service (HSR&D), U.S. Department of Veterans Affairs (VA). This first edition of the guide describes the various sources of pharmacy data in the Veterans Health Administration (VHA) and provides detailed information about two of the sources: the Pharmacy Benefits Management (PBM) Database and the Decision Support System (DSS) Pharmacy National Data Extracts (NDEs). VIReC issues this guide to assist health services researchers and other users of these data in understanding the availability of the data and definitions of the variables within the various sources of data.

Using the Guide

This guide is divided into eight chapters, including this introduction. The other seven chapters are listed below. Additional documents are included as appendices. Throughout the document references to Internet addresses are hyperlinked. References to VA intranet addresses are not hyperlinked; instead the intranet address will be provided along with the name of the document or Web page referenced.

- **Overview of the Pharmacy Prescription Data in the VHA.** Chapter II provides a brief description of the three primary sources for pharmacy prescription data and methods for accessing.

- **Special Data Topics.** Chapter III provides information on special topics.

- **DSS NDE Pharmacy SAS®* Dataset Variables.** Chapter IV provides a list of the variables available in the DSS Pharmacy NDE SAS Dataset.

- **DSS NDE Pharmacy SAS® Dataset Variable One-Page Descriptions.** Chapter V presents a one-page description for each variable in the DSS Pharmacy NDE SAS Dataset.

- **PBM Database Variables.** Chapter VI provides a list of the variables available in the PBM Database for outpatient prescriptions and ordering provider.

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- **PBM Database Variable One-Page Descriptions.** Chapter VII presents a one-page description for each variable in the PBM Database for outpatient prescriptions and ordering provider.

- **Selected Bibliography.** Chapter VIII lists references to articles about studies that utilized VA pharmacy databases.

What's New

This guide was revised in May 2005 to add the section entitled DSS NDE Pharmacy SAS® Dataset Cost Variables and to update the Selected Bibliography.

Acknowledgments

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This guide is the product of many people's efforts, experiences, and insights. Contributing authors at VIReC included Noreen Arnold and George Joseph. Chris Schneiderman compiled and prepared the original Selected Bibliography. Ron Cornick compiled and prepared the Selected Bibliography for the revised edition. April Kopp helped in editing and putting final touches to the guide. Cody Tilson designed the cover.

The authors are indebted to Robert Silverman, Pharm.D., Hines VA Hospital and PBM/SHG, for his assistance in developing the overview of the PBM Database and descriptions of the database variables; Ramon Navarro, R. Ph., ADPAC/CAIS Pharmacy Service, Hines VA Hospital, for providing information about VistA files and local pharmacy operations; and to Steve Porter and Judith Garland, M.P.A., C.P.A., DSS Support Office, for their assistance in developing the overview of the DSS NDE Pharmacy SAS Datasets and descriptions of the dataset variables.

Reviewers for this guide included the following data users whose affiliations are listed for identification purposes:

Todd Lee, Pharm.D., Ph.D.	Midwest Center for Health Services and Policy Research
Mark Smith, Ph.D.	Health Economics Resource Center
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VIReC accepts responsibility for any deficiencies in the current guide and welcomes suggestions for improving this resource to better meet the needs of research users.

Suggested Citation

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II. Overview of Pharmacy Prescription Data in the VHA

There are currently three main sources of pharmacy prescription data for researchers:

1) VistA (Veterans Health Information Systems and Technologies Architecture),
2) Pharmacy Benefits Management (PBM) Database, and
3) Decision Support System (DSS) National Data Extract (NDE) Pharmacy SAS Datasets.

All prescription orders are captured in VistA and, therefore, the other two sources of prescription data originate from VistA extracts. (See Figure 1 on the following page.) A general description of the three available sources and methods for accessing them are presented in this chapter. Smith and Joseph provide a more detailed discussion of several of these sources in their article entitled, "Pharmacy Data in the VA Health Care System".*

VistA

All pharmacy data are entered, processed, and stored in VistA, which is the automated environment that supports day-to-day operations at local VA health care facilities. The VistA Pharmacy Package consists of the following thirteen applications that gather, process, and store data for prescription orders written and filled within the VA system:

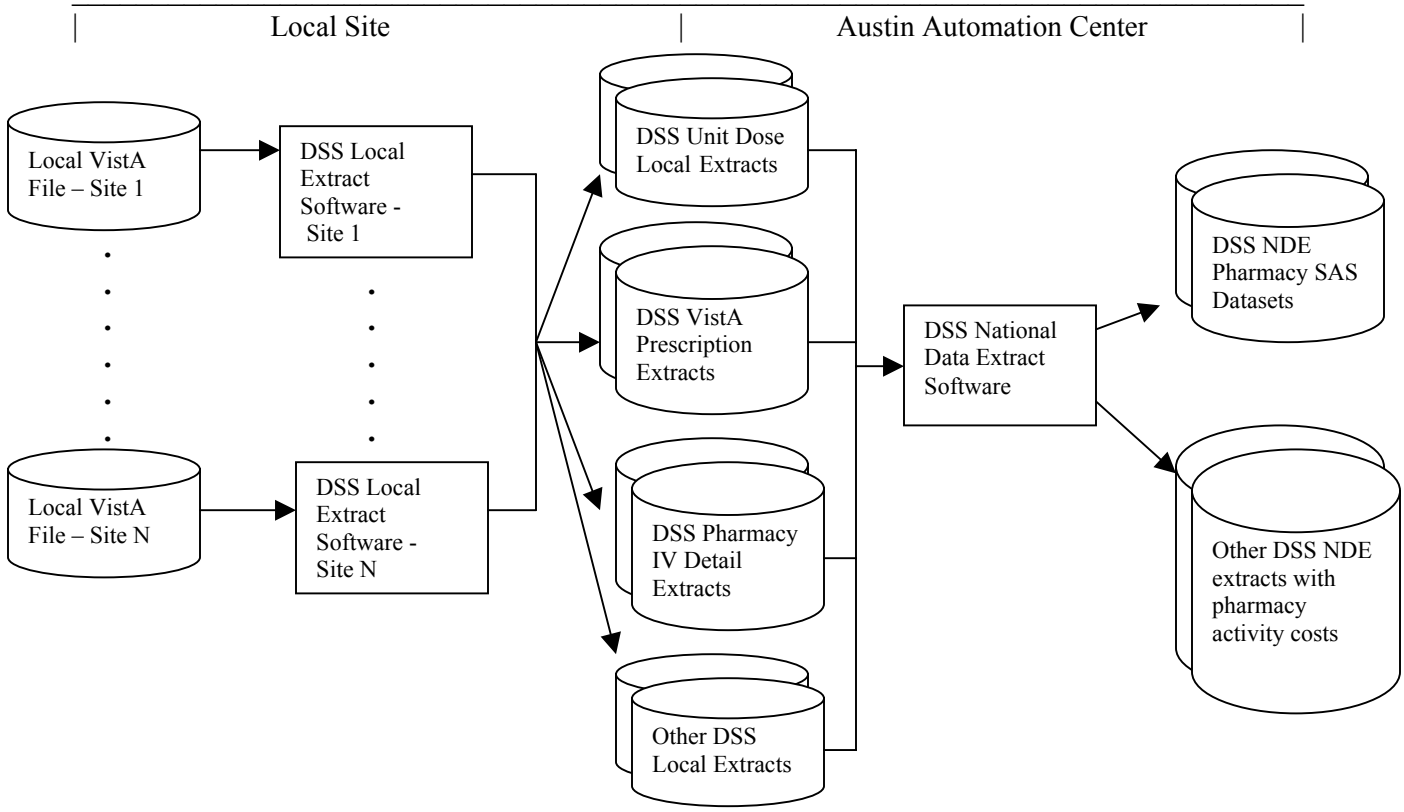
1. Automatic Replacement/Ward Stock (AR/WS)
2. Bar Code Medication Administration (BCMA)
3. Consolidated Mail Outpatient Pharmacy (CMOP)
4. Controlled Substances
5. Drug Accountability/Inventory Interface (DA)
6. Inpatient Medications
7. Inpatient Medications-Intravenous (IV)
8. Inpatient Medications-Unit Dose (UD)
9. National Drug File (NDF)
10. Outpatient Pharmacy
11. Pharmacy Benefits Management (PBM)
12. Pharmacy Data Management (PDM)
13. Pharmacy Prescription Practices (PPP)

The VistA Monograph contains a description of these applications and their functions.

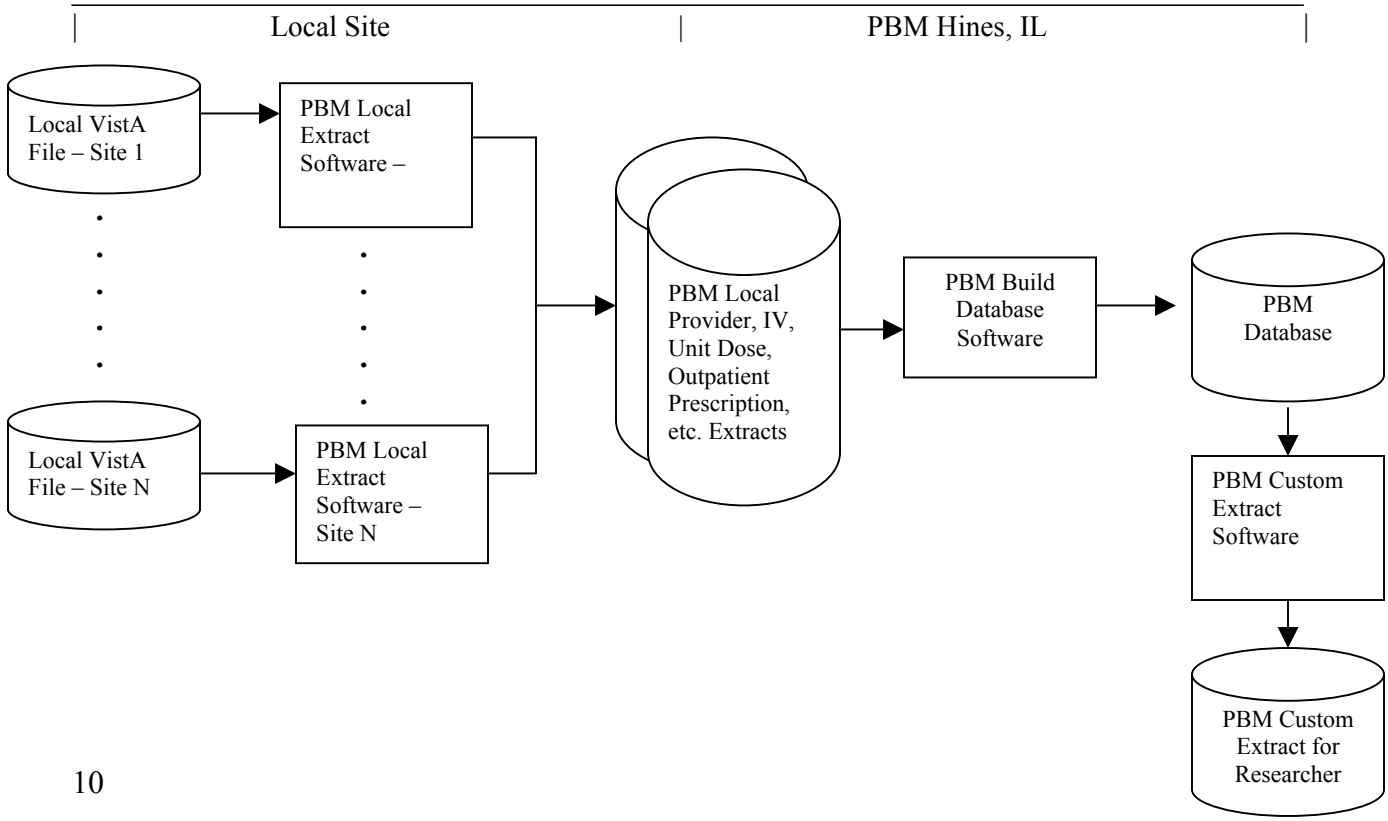
* Smith MW, Joseph G. Pharmacy Data in the VA Health Care System. *Medical Care Research and Review* 2003;60(3 Suppl):92S-123S.

FIGURE 1. Flow of Pharmacy Prescription Data from VistA to Researcher Accessible DSS and PBM Data

DSS



PBM



The following three pharmacy files used by the VistA Pharmacy Package contain information most relevant to prescription orders dispensed:

1. Prescription File (FILE 52)
2. Pharmacy Patient File (FILE 55)
   This file has two sub-files:
   a. IV Orders (FILE 55.01)
   b. Unit Dose Orders (FILE 55.06)
3. Local Drug File (FILE 50)

Completed pharmacy transactions are stored in two locations in VistA: the Prescription File (FILE 52), which contains outpatient medications dispensed including those processed by a CMOP, and the Pharmacy Patient File (FILE 55), which contains inpatient medications dispensed. Information specific to a particular prescription, such as patient identity, product dispensed, start date, and quantity dispensed, is stored in these files. In the prescription process, information about the drug product, supply, or diagnostic ordered will come from the Local Drug File (FILE 50).

Each site operates its own VistA system; therefore, there will be a local set of VistA Pharmacy files at each site. Prescriptions filled by a CMOP will be stored in the local VistA system for the site from which the patient requested the fill or refill. Beginning in 1997 with the VistA Inpatient Medications Version 5.0 and Outpatient Pharmacy Version 7.0, pharmacy data could no longer be purged from or archived in VistA. Therefore, all VistA sites should have pharmacy inpatient and outpatient data beginning in 1997 when these versions were installed (installation dates varied by site). Some sites may have pharmacy data prior to 1997 depending on whether they archived or purged data. For example, at the Hines VA Hospital inpatient pharmacy data goes back to 1987 and outpatient pharmacy data goes back to April 1997. To determine which years' pharmacy data are maintained in a site's VistA system, contact the site's Pharmacy ADPAC (Administrative Data Processing Applications Coordinator).

VA FileMan is the hierarchical database management system used to access and manage VistA data. Documentation of VistA files and their fields is available under the FileMan List File Attributes [DILIST] option. There are three methods available for extracting data from VistA files: MUMPS, FileMan and SQL. M or MUMPS (Massachusetts General Hospital Utility Multi-Programming System) is the primary programming language used to access VistA files. FileMan can also be used to extract data from VistA files, and some sites have implemented an SQL interface to the VistA files. For further information on VistA and extracting data from VistA please consult the following *VIReC Insights*: Veterans Health Information Systems and Technology Architecture (VistA) as a Research Tool.

Some VISNs (Veterans Integrated Service Networks) have created warehouses of data from all VistA installations within their region. VISNs are VHA organizational business units comprised of multiple medical centers and clinics within a geographic region. These data warehouses may contain prescription data. For example, Consumer Health

Information & Performance Sets (CHIPS), the VISN 20 Data Warehouse, contains inpatient pharmacy and outpatient prescription data (http://vaww.visn20.med.va.gov/technology/datman/index.html). For research that requires only VISN or site specific data, researchers may find that prescription data is available in a VISN data warehouse and should contact the local Information Resource Management (IRM) office to determine existence of a data warehouse and access procedures for the warehouse.

Because each site operates its own VistA system that requires local Institutional Review Board (IRB) approval for research access, and few researchers are trained in using M or accessing hierarchical databases, researchers will most likely find it easier to obtain the data they need from one of the other two primary data sources that are national in scope. These national sources are PBM Database and the DSS NDE Pharmacy SAS Datasets for inpatient and outpatient pharmacy utilization and costs.

Decision Support System National Data Extracts (DSS NDE)

DSS NDE Pharmacy SAS® Datasets

The DSS NDE Pharmacy SAS Datasets for inpatient and outpatient pharmacy utilization and costs are available beginning with fiscal year 2002. These datasets reside at the Austin Automation Center and are built from the DSS VistA Prescription Extracts, Unit Dose Local Extracts, and Pharmacy IV Detail Extracts generated at each VistA site. Due to their size, the SAS datasets are split into multiple files by VISN and inpatient and outpatient status at time the order was dispensed. The dataset names are:

File Name	VISNs and Inpatient/Outpatient Indicator
RMTPRD.MED.DSS.SAS.FYXX*.V1TO5I.PHA	VISNS 1 – 5, Inpatient
RMTPRD.MED.DSS.SAS.FYXX.V1TO5O.PHA	VISNS 1 – 5, Outpatient
RMTPRD.MED.DSS.SAS.FYXX.V6TO10I.PHA	VISNS 6 – 11, Inpatient
RMTPRD.MED.DSS.SAS.FYXX.V6TO10O.PHA	VISNS 6– 11, Outpatient
RMTPRD.MED.DSS.SAS.FYXX.V11TO16I.PHA	VISNS 11 – 16, Inpatient
RMTPRD.MED.DSS.SAS.FYXX.V11TO16O.PHA	VISNS 11 – 16, Outpatient
RMTPRD.MED.DSS.SAS.FYXX.V17TO 22I.PHA	VISNS 17 – 22, Inpatient
RMTPRD.MED.DSS.SAS.FYXX.V17TO22O.PHA	VISNS 17 – 22, Outpatient
*XX is equal to the fiscal year	

Both inpatient and outpatient datasets will include IV orders, unit dose orders, and outpatient prescription orders. The files contain a record for:

1) each outpatient prescription filled by a VA Pharmacy or CMOP,
2) each day for every inpatient unit dose order, and
3) each additive and solution in every IV mixed and dispensed per day.

The final SAS datasets for a fiscal year are normally produced in January after the end of the fiscal year (September 30th). The final fiscal year 2003 datasets became available in January 2004. Interim SAS datasets are created monthly and contain cumulative, year-to-

date information. The interim datasets are usually not available until well into the year. If you use an interim dataset, please keep in mind that DSS smoothes month-to-month cost variations over the course of the year. Therefore, costs on the interim datasets may not agree with those on the final year's datasets.

Information about obtaining access to these datasets is available on the VSSC Web site (http://klfmenu.med.va.gov). Once you logon to this site: 1) Click on "DSS" in the leftmost column, 2) Click on "DSS Reports", 3) Click on the "National Data Extracts (NDE) Reports" button, 4) Click on "Info About Reports" header, and 5) Click on "NDE File & SSN Access." See Chapter IV and Chapter V for a list and description of the contents of these SAS datasets.

The *VIReC Research User Guide: VHA Decision Support System (DSS) Clinical Extracts* also provides information about the DSS NDE Pharmacy SAS Datasets as well as other clinical extracts. including laboratory and radiology extracts.

DSS VistA Extracts

The DSS VistA Prescription Extracts, Unit Dose Local Extracts, and Pharmacy IV Detail Extracts used to build the SAS datasets do contain additional data elements. These extract files are not as easily accessible as the SAS datasets and are short lived, especially the Prescription Extracts. Use of these extract files requires authorization from each site. For more details about these files, consult the DSS Technical Guides located at the DSS Web site (vaww.dss.med.va.gov). To access the guides at the DSS homepage: 1) Place the cursor on "Program Documents" in the left column; and 2) Click on "Technical Guides" in the menu that appears. Refer to the links provided at the end of this section for further details on access to these files.

DSS NDEs with National Pharmacy Activity Costs

There are three other DSS National Data Extracts that provide costs for national pharmacy activity: Outpatient Extract, Inpatient Discharge Extract, and Inpatient Treating Specialty Extract. These DSS NDEs are SAS datasets created for each fiscal year beginning with 1998.

Although these DSS NDEs do not contain prescription data, they are mentioned here because they do provide costs for national pharmacy activity on:

1) an outpatient encounter level (pharmacy costs for each outpatient encounter in the extract fiscal year),
2) an inpatient discharge level (pharmacy costs for an inpatient stay with a discharge date in the extract fiscal year), and
3) an inpatient treating specialty level (pharmacy costs per month per treating specialty for each inpatient stay for the extract fiscal year).

The following fields are available on the Outpatient Extract, Inpatient Discharge Extract, and Inpatient Treating Specialty Extract:

Field	Description
Pharmacy Fixed Direct Cost	Costs that can be directly attributed to the pharmacy department and are incurred regardless of the volume of services provided.
Pharmacy Variable Direct Cost	Costs of supplies, labor, etc., that vary with the workload of the pharmacy department. Includes the cost of the drug product, supply, or diagnostic dispensed.
Pharmacy Indirect Cost	Costs of overhead departments such as housekeeping, engineering, and administration.
Pharmacy Units – Pharmacy Days	The number of days that medications were received by a patient (i.e., the number of days pharmacy costs are reported). This is not the number of prescriptions.
Pharmacy Variable Supply Cost	This is a calculated cost that is also included in the Pharmacy Variable Direct Cost. It is the Pharmacy Variable Direct Cost multiplied by a factor. The factor is the Total Pharmacy Variable Supply Cost for the year divided by the Total Pharmacy Department Direct Variable Cost for the year. A factor is developed for each medical center.

The following links provide a more detailed discussion of the DSS NDEs and procedures for obtaining access to the datasets: *VIReC Insights*: The VA Decision Support System: A Tool for Health Services Research, the VIReC DSS page, the DSS Web site (http://vaww.dss.med.va.gov), and the HERC Web site.

PBM Database

To facilitate its work, Pharmacy Benefits Management Strategic Health Group (PBM/SHG) has developed software systems and databases to organize and analyze medication data. Every month, the PBM Database Extraction Software is run against each site's VistA system to create pharmacy data extracts for that site. Details of these data extracts may be found in the PBM Database Monographs in the VistA Documentation Library.

The extracted data are electronically sent to the PBM/SHG field office located on the premises of Hines VA Hospital, Hines, IL. The data extracts are then passed through a translation process and checked for quality. For example, if necessary, local drug names (**Generic Drug Name**) are assigned a VA standard drug name (**VA Product Name**) and local dispensing units are converted to a common dispensing unit. After translation, the

monthly extracts are added to the PBM Database, which is a Microsoft®* SQL database. The PBM Database contains all individual pharmacy transactions (prescription orders, refills, etc.) from October 1, 1998, until about 60 days prior to the current date.

Extracts of the PBM Database are made available to researchers as either a Visual FoxPro®*, Microsoft® Access, or SAS file. The process to request an extract for research can be found at the PBM Web site (PBM Research Data Request Form, http://vaww.pbm.va.gov/research-qualityimprovement/rdrf.asp) or in the following issue of *VIReC Insights*: The Pharmacy Benefits Management (PBM) Database: A Primary Resource for Nation-Wide VA Medication Data on the PBM database.

See Chapter VI and Chapter VII for a list and description of the outpatient prescription variables and inpatient IV and unit dose variables available for extracting from the PBM database.

National Drug File (NDF) and the VA National Formulary

There are two other files of interest to researchers that may be downloaded from the PBM/SHG Web site: the National Drug File (NDF) and the VA National Formulary. The NDF is created and maintained by the PBM/SHG and provides for standardization of the Local Drug Files (FILE 50) in all VA medical facilities. For drugs approved by the Food and Drug Administration (FDA), the NDF contains information concerning dosage form, strength, and unit; package size and type; manufacturer's trade name; and National Drug Code (NDC). The NDF is updated bimonthly.

A Microsoft® Access database version of the NDF is available for download from the PBM Web site and has over 95,000 entries (http://vaww.pbm.va.gov/pbm/natform.htm). A description of the variables in the database is also available on the PBM Web site.

The VA National Formulary is a list of products available for prescribing by all physicians providing services at VA facilities. A Microsoft® Excel spreadsheet version of the VA National Formulary is available for download from the PBM Web site and contains over 1,200 products (http://vaww.pbm.va.gov/pbm/natform.htm). The spreadsheet includes the **VA Drug Class** and any restrictions on usage of the product.

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III. Special Data Topics

This section presents information that cuts across individual variables or relates to a single variable but goes beyond what can be covered in the one-page description of the variable. The information here is necessarily brief. VIReC welcomes suggestions of topics for expanded attention in the form of technical reports or peer-reviewed published manuscripts. Proposals of possible collaboration are also welcome.

Pharmacy ADPAC

The Pharmacy ADPAC (Administrative Data Processing Applications Coordinator) is responsible for administering the VistA Pharmacy Package for a site. When using pharmacy data, the researcher should discuss the medications under study with a local Pharmacy ADPAC to determine whether there are any issues affecting data quality and completeness of medications dispensed and administered.

Ward Stock

Some medications and supplies are delivered to a ward, specialty unit, or clinic as "ward stock". Ward stock often contains medications not available in unit dose form (e.g., nitroglycerin tablets, insulin, Maalox, etc.) or needed for emergency situations. These medications are maintained on the ward as general stock; they are not ordered for a specific patient but are stored on the ward for future use. When ward stock is administered to a patient policy normally requires that an order be entered and the administration be recorded via the Bar Code Medication Administration (BCMA) Application. Occasionally, ward stock may be administered and not recorded in the patient's medication record if the person administering the medication fails to record the administration in VistA. This was more common before the implementation of the BCMA Application, which varies by site. The BCMA Application for unit dose administration became available in September 1999 and for IV dosing in August 2002. Full implementation may not have occurred at some sites until 2002 or later.

You may find that medications dispensed in a Dialysis Unit such as EPO (erythropoietin) are often dispensed from ward stock. Because the amount of a drug dispensed can vary with each dialysis treatment, sites may differ in how the orders are recorded in VistA. Orders may or may not change with each change in the amount of drug administered in a treatment. If orders are not changed, the dispensing information found in VistA could vary significantly from what was administered. Thus, pharmacy-dispensing data may not be the most reliable source for records on the administration of drugs such as EPO.

Inpatient Medication Dispensed vs. Inpatient Medication Administered

Administration of inpatient medications is recorded via the BCMA. When medications are administered the patient's wristband and the medication are scanned with a bar code reader. The BCMA Application verifies and records the administration from the scanned bar codes in the BCMA Application Files. These files are not the same as the Pharmacy Inpatient Files that are used by the extracts described in this guide, which contain medication orders that were dispensed. It is possible a medication may have been dispensed but not administered for several reasons. A patient may refuse the medication or not be available for administration. Medications dispensed and not administered are returned to the VA Pharmacy or destroyed. This will be recorded in the Pharmacy Inpatient Files. It is also possible that a medication may have been administered but not recorded in the BCMA Application. If the BCMA Application is not available (i.e., the system is down), the administration may not be recorded or the person administering the medication may just fail to properly scan or enter the act of administration. Thus, the researcher should keep in mind that when using the extracts described in this guide they are working with the data that records medications dispensed which may differ from data that records administration of medications.

National Drug Code (NDC)

The NDC is a unique 10-digit, 3-segment number (labeler code - product code - package code) for a drug product. The labeler code is assigned by the FDA and identifies the firm that manufactures, repackages, or distributes a drug product. The product code identifies a specific strength, dosage form, and formulation. The package code identifies package sizes. The firm assigns both the product and package codes. The NDC will be in one of the following configurations: 4-4-2 (4-digit labeler, 4-digit product and 2-digit package), 5-3-2, or 5-4-1. See the FDA's National Drug Code Directory for additional information about the codes and links for searching or listing the codes.

You may also find an 11-digit or 12-digit version of the NDC. The 11-digit version has a 5-4-2 configuration and is a format often used in commercially available software. The 12-digit version has a 6-4-2 configuration and is generated by the PBM/SHG to provide a standardized configuration for use in their National Drug File (NDF).

PLEASE NOTE: The NDC on the dispensing record may not be the NDC for the drug product actually dispensed to the patient. It always will be an NDC for the same drug, but the manufacturer or package size may be different from the actual drug product dispensed. This will occur if the Local Drug File (FILE 50) has not been updated to reflect the currently stocked supply at the time the drug product was dispensed.

Outpatient Prescription Returns

Occasionally, outpatient prescriptions that have been "released" by the VA Pharmacy or CMOP (i.e., the pharmacist has scanned the bar code on the prescription label) may be refused, not picked up by the patient, or returned by the patient. Released prescriptions

have the **Release Date** initialized. Both PBM and DSS use the release date to extract prescriptions from VistA. All CMOP prescriptions released are mailed using the local medical center's address as the return address. VA Pharmacies usually mail released prescriptions to the patient if they are not picked up.

VA Pharmacies process all returns (including those from a CMOP). Most returns are due to incorrect addresses on a mailed prescription. The VA Pharmacy will correct the address and resend the prescription. If a valid address cannot be found the prescription record will be updated indicating that the prescription was returned, but the release date will remain unchanged. Therefore, it is possible that some prescriptions on the PBM and DSS extracts may have not actually reached the patient. These prescriptions apparently represent an insignificant number of all prescriptions. Gail Krug, Outpatient Pharmacy Supervisor at the Hines VAMC, indicates that they encounter only about ten returned prescriptions each month for which they cannot find a valid address.[*] Normally returns that cannot be resent to a patient are destroyed because of the possibility of tampering or alteration.

Data Quality Issues

We found no published studies on the quality of VHA pharmacy prescription data in our literature review. Researchers are encouraged to investigate and report on the quality of these data and are invited to contact VIReC if they encounter any data quality issues when using pharmacy prescription data so that their findings may be included in future versions of this guide. General information about the quality of VA health care utilization data may be found in the *VIReC Research User Guide: FY2002 VHA Medical SAS® Inpatient Datasets* and the *VIReC Research User Guide: FY2002 VHA Medical SAS® Outpatient Datasets*.

DSS NDE Pharmacy SAS® Dataset Cost Variables

There are three cost variables on the DSS NDE Pharmacy SAS Datasets: **ACT_COST**, **DISPCOST** and **VS_COST**. The Pharmacy Department costs are unique in that DSS has two intermediate product costs for a Pharmacy product: 1) an average dispensing cost and 2) a drug product cost. The **ACT_COST** variable contains the drug product cost, and the **DISPCOST** variable contains the dispensing cost for the prescription. Thus, the total cost of a prescription is the sum of the **ACT_COST** and the **DISPCOST.** Overhead and indirect labor costs are also included in the **ACT_COST**. From fiscal year 2003 onward the **VS_COST** is included in the **ACT_COST** variable and represents the cost of the drug plus other supplies used to produce the dispensed product such as the bottle and label. The **VS_COST** variable in the fiscal year 2002 dataset should not be used.

[*] Gail Krug, Outpatient Pharmacy Supervisor at the Hines VAMC, telephone conversation with author, December 10, 2003.

The VA is required by the Joint Financial Management Improvement Program (JFMIP) standards and public law to tie workload (including pharmacy drug and supply costs) and labor costs (including pharmacists' labor) back to the actual costs reported by the VA cost centers. DSS uses Activity-Based Costing (ABC) to assign costs to products and services including those provided by VA Pharmacies. The ABC methodology volume-weights each component of cost (labor, supplies, equipment, and overhead). Minutes are used to weight pharmacist labor (ranging from five minutes for a refill to twenty minutes for dispensing an investigational drug) and the local VA Medical Center (VAMC) drug cost lists are used to weight drug products. A weight is also called a relative value unit (RVU).

The **DISPCOST** variable contains the direct labor costs plus any mailing costs associated with dispensing the prescription. The direct labor costs vary by type of prescription fill (new prescription, IV, unit dose, investigational, CMOP, mailed, etc.) and by site. For each activity associated with a fill type a number of minutes of labor (or RVUs) required for the activity is established along with the mailing costs. The cost of a labor minute is computed for each pharmacy department based on the department's annual costs and volumes (i.e., number of RVUs associated with the work performed). Table 1 contains the DSS recommended Dispensing RVUs and mailing costs. A site may modify these values.

Table 1: Pharmacy Dispensing RVUs

Activity	LABOR RVUs (Minutes)	Mailing Supplies
New Prescription Counsel - Mailed by VA Pharmacy	5.00	
New Prescription Counsel - Picked Up at VA Pharmacy Window	5.00	
Outpatient Prescription - VA Pharmacy	5.00	
Outpatient Prescription - VA Pharmacy Investigational Drug	20.00	
Outpatient Prescription - VA Pharmacy Mailing	1.50	$3.00
Copay	0.00	
New Prescription Counsel - CMOP Fill (performed at a VA Pharmacy Window)	5.00	
Outpatient Prescription - CMOP Fill	0.00	$2.10
Unit Dose - Investigational Drug Dispensing	20.00	
Unit Dose - Dispensing	0.85	
IV - Investigational Drug	20.00	
IV - Piggy Back	5.70	
IV - Syringe	2.00	
IV - Chemotherapy	14.00	
IV – Large Volume Parenteral	5.70	
IV - TPN	15.00	
IV - Return	2.00	

The **DISPCOST** is calculated by summing the costs of each activity performed to fill the prescription. For example, the dispensing cost for a new outpatient prescription that is mailed from a VA Pharmacy will equal the sum of the basic fill cost (basic fill minutes multiplied by the cost per minute of pharmacist labor at the site), a new prescription counseling cost via mail (counseling via mail minutes multiplied by the cost per minute of labor), and the VA Pharmacy mailing costs (mailing minutes multiplied by the cost per minute of labor plus a flat rate mailing fee for supplies).

The method for populating the **DISPCOST** variable was different in the fiscal year 2002 SAS Datasets than in the fiscal year 2003 SAS Datasets. In 2002, the **DISPCOST** was an average of the dispensing costs for all prescriptions for a patient by day by feeder system (Unit Dose, IV, VA Pharmacy, or CMOP). For example, if a patient had three outpatient prescriptions filled by a VA Pharmacy (two refills and a new prescription) the cost in the **DISPCOST** for each of the three prescriptions was the same (the sum of the dispensing costs for the three prescriptions divided by three) even though the new prescription would have had a higher dispensing cost amount. In 2003, the **DISPCOST** was no longer an average for the patient day, but was the actual dispensing cost calculated for the prescription. Therefore, in fiscal year 2003, using the same example of three outpatient prescriptions, the new prescription will have a higher amount in the **DISPCOST** variable than the two refills.

As noted above from fiscal year 2003 onward, the **VS_COST** variable contains the cost of the drug plus other supplies used to produce the dispensed product. At the beginning of every year, each VAMC establishes a cost or number of relative value units (RVUs) for a unit of each drug dispensed at the VAMC. RVUs for these costs are measured in dollars.

What follows is a simplified example of how DSS assigns the cost of the drug prescribed using RVUs to a prescription plus a comparison of the DSS method with the method used by PBM to obtain the cost of the drug dispensed. Table 2 lists the drug products purchased by the VAMC in fiscal year 2003 and the price paid to the supplier for the drug products. The VAMC paid $415,000 for two drug products during the year. Drug 1 was purchased three times during the year at a different price each time.

Table 2: VAMC Purchases for FY2003

Drug Product	Date	Units Purchased	Supplier Unit Cost	Supplier Total Cost	VistA Local Drug File (FILE 50) Unit Price	Average Annual Cost Per Unit
Drug 1	10/1/2002	10,000	$10.00	$100,000	10.00	$12.50
Drug 1	1/15/2003	10,000	$12.50	$125,000	12.50	$12.50
Drug 1	9/1/2003	10,000	$15.00	$150,000	12.50	$12.50
Drug 2	7/22/2003	10	$4,000.00	$40,000	4,000.00	$4,000.00
Total		30,010		$415,000		

Table 3 shows how the cost per unit of drug product is calculated using the RVUs assigned to the drug at the beginning of the year. In this example all drugs purchased

were dispensed. The cost per RVU for each drug is calculated by multiplying the RVU for the drug product by the Total Supplier Costs for all drug products from Table 1 divided by the Total RVUs for all drug products. For example, the Cost per RVU for Drug 1:

= (RVU Assigned to Drug)*(Total Supplier Cost /Total RVUs Dispensed)
= ($10)* ($415,000 /$340,000)
= $12.206

As you can see from this example the total costs assigned to dispensed prescriptions (Total Costs Dispensed) tie back to the total price paid to the suppliers ($415,000 in Table 1).

Table 3: Calculation of DSS Drug Product Cost Per RVU

Drug Product	RVU Assigned	Dispensed	Total RVUs Dispensed	Cost Per RVU	Total Costs Dispensed
Drug 1	$10	30,000	$300,000.00	$12.206	$366,176.47
Drug 2	$4,000	10	$40,000.00	$4,882.353	$48,823.53
Total		30,010	$340,000.00		$415,000.00

Finally, Table 4 shows how the drug product cost assigned to a dispensed prescription by DSS and PBM can vary. This table contains two prescriptions dispensed on October 1st, one for each drug product. Ten units of Drug1 were dispensed for Prescription 1. The DSS drug product cost for Prescription 1 was calculated by multiplying the cost per RVU in Table 2 by the quantity dispensed ($12.206 * 10). The PBM Drug Product Cost for Prescription 1 was calculated by multiplying the unit price for the drug product in the Local Drug File (FILE 50) on the dispensing date by the quantity ($12.50 * 10). The Local Drug File had not been updated to reflect the price paid to the supplier for the current inventory from which the drug product was dispensed that was $15.00 per unit on October 1st (See Table 1). The product costs for Prescription 2 were calculated in the same manner.

Table 4: Assignment of the Cost of Drug Product Dispensed

Prescription	Date	Drug Product	Quantity	DSS Drug Product Cost	PBM Drug Product Cost	Price paid to Supplier for Drug Product
1	10/1/2003	Drug 1	10	$122.06	$125.00	$150.00
2	10/1/2003	Drug 2	1	$4,882.35	$4,000.00	$4,000.00

This example illustrates how several factors can cause drug product prices to vary between DSS and PBM and within each system across prescriptions. The variation within DSS is based on how well the RVUs assigned to a drug product reflect the relationship between the cost of that drug product and the cost of all other drug products. The variation within PBM is dependent on how well the Local Drug File (FILE 50) is updated to reflect the price of the current inventory from which the drug product is dispensed. It is also important to note that DSS and PBM costs are established at the department level. Thus, costs will vary by VAMC because each VAMC:

- purchases drugs from the suppliers and maintains a Local Drug File;
- establishes RVUs for each drug; and
- has a different ratio of Total Supplier Costs to Total RVUs Dispensed.

The **VS_COST** also contains the cost of other supplies used to produce the prescription (bottles, caps, labels, etc). These are similarly allocated to a prescription based on the prescriptions RVUs: total RVUs dispensed multiplied by the ratio of total departmental other supply costs to total departmental RVUs. For example, if the total annual costs of other supplies for the Pharmacy Department were $300, the **VS_COST** would include other supply costs in the amount of:

= (RVUs Dispensed in Prescription)*(Total Other Supply Costs/Total RVUs Dispensed)
= ($10*10)*($300/$340,000)
= $.09

for Prescription 1 in Table 4 and $3.53 [($4,000*1)*($300/$340,000)] for Prescription 2.

The sum of the **ACT_COST** and the **DISPCOST** in the DSS NDE Pharmacy SAS Datasets for an encounter is equal to the sum of the Pharmacy Fixed Direct Cost, the Pharmacy Variable Direct Cost, and the Pharmacy Indirect Cost on the DSS NDE Outpatient Extract, Inpatient Discharge Extract, and Inpatient Treating Specialty Extract for the same encounter. An encounter may be the outpatient prescription fills for a day, the prescriptions dispensed for an inpatient stay or the prescriptions dispensed for an inpatient treating specialty month. The **VS_COST** and **DISPCOST** are types of Pharmacy Variable Direct Costs and would be included in the Pharmacy Variable Direct Costs for the encounter on the DSS NDE Outpatient Extract, Inpatient Discharge Extract, and Inpatient Treating Specialty Extract.

Choosing Between PBM and DSS Data Sources

Decisions on using the PBM Database versus the DSS NDE Pharmacy SAS Datasets should be based on two main factors: 1) availability of the data source and 2) contents of the data source.

Availability

The PBM Database contains pharmacy prescription data beginning with fiscal year 1999 prescription orders. The DSS NDE Pharmacy SAS Datasets have data beginning with fiscal year 2002 prescription orders. Both sources extract inpatient prescription data, but to date the PBM/SHG has not released inpatient prescription orders to researchers. The DSS Datasets are available on the Austin Automation Center host and can be accessed directly by the researcher once access is granted. Researchers cannot directly access the PBM Database. PBM/SHG must process a custom extract for the researcher that may take several months to complete.

Contents

In general the PBM Database contains more information about the medication dispensed and the dispensing details than the DSS NDE Pharmacy SAS Datasets, and the DSS Datasets contain more demographic and clinical information about the patient than the PBM Database. See Chapters IV and VI, respectively, for a list of the variables in the DSS Datasets and the PBM Database.

The most significant difference in the contents of these two data sources is in the dispensing details. The DSS Datasets do not contain the dosing instructions or dispensing unit variables that are available in the PBM Database. In addition, the quantity for a unit dose order reflects the number of doses dispensed, not the quantity of the drug dispensed. Therefore, for some orders it is impossible to determine the amount of drug dispensed to a patient or daily dosage when using the DSS Datasets.

It is also important to note that the cost variables in the DSS Datasets include labor and overhead. The PBM Database variables contain only the cost of the drug product. In addition, the origin of the drug product costs differs between these two data sources. The PBM drug product costs contain the value in the VistA Local DRUG File (FILE 50) on the dispensing date. The DSS drug product costs are obtained from a local DSS standard table. This local DSS table is originally populated based on values in the Local DRUG File, but the table is usually updated not more than once a year. Also, as noted in other sections of this guide, the Local DRUG File is not always updated to reflect the costs of the most current supply. Therefore, the drug product costs are more an approximation than an actual cost. For some drug products, such as generic drugs, it will be a rather close approximation.

IV. DSS NDE Pharmacy SAS® Dataset Variables

The following table lists the variables contained on the DSS Pharmacy NDE SAS datasets and indicates if the variable is extracted for inpatients or outpatients. This list of variables is based on the contents of the final FY2002 files and the interim FY2003 files.

SAS® Name	Name	Inpatient	Outpatient	Page Number
A_PCP	Associate Provider for Primary Care	X	X	28
ACT_COST	Drug Product Total Cost	X	X	29
ADMITDAY	Date of Admission	X		30
BORNDAY	Date of Birth	X	X	31
CLSNUM	Clinic Stop Code		X	32
CLSTOP	Clinic Stop Code		X	33
CMOP*	CMOP Flag	X	X	34
DAY_SUPPLY*	Days Supply	X	X	35
DCM_DEPT	Department Cost Manager Department	X	X	36
DISDAY	Date of Discharge	X		37
DISPCOST	Average Dispensing Labor Cost	X	X	38
DIVPERF	Division Performed	X	X	39
DRUGDESC	Drug Description	X	X	40
DXCODE	Diagnosis Code	X	X	41
ENC_NUM*	Encounter Number	X	X	42
ENRLPRTY*	Enrollment Priority	X	X	43
FEED_KEY	DSS Feeder Key (Includes National Drug Code)	X	X	44
FEED_LOC	Feeder Location	X	X	45
FP	Fiscal Period	X	X	46
FY	Fiscal Year	X	X	47
IN_OUT	Inpatient/Outpatient Indicator	X	X	48
INVEST*	Investigational Drug Flag	X	X	49
IPNUM	Intermediate Product Number	X	X	50
MEANS	Means Test Indicator Code	X	X	51
ORD_PROV	Ordering Provider's IEN	X	X	52
PCP_DSS	Primary Care Provider	X	X	53
PCTEAM	Primary Care Team	X	X	54
QUANTITY	Quantity of Drug Dispensed	X	X	55
SCRSSN	Scrambled Social Security Number	X	X	56

SAS® Name	Name	Inpatient	Outpatient	Page Number
SEX	Sex of Patient	X	X	57
STA3N	Parent Station	X	X	58
STA6A	Substation Identifier	X	X	59
SUFFIX	Suffix			60
SVC_DTE	Date of Service	X	X	61
TRTSP	Treating Specialty	X	X	62
TRTSP_C	Treating Specialty	X	X	63
VA_CLASS	VA Drug Classification	X	X	64
VISN	Veterans Integrated Service Network	X	X	65
VS_COST	Variable Supply Cost	X	X	66
WARD	Inpatient Ward	X	X	67
ZIP	Zip Code	X	X	68
ZIP_4	Zip Code + 4	X	X	69

*Available beginning with fiscal year 2003 files.

V. DSS NDE Pharmacy SAS® Dataset Variable One-Page Descriptions

Each description includes a table with the following information, when applicable.

Data Type: This indicates whether the variable is numeric, character, or a date.
VistA File: This is the VistA file where data for the variable originate. In VistA, files are identified by both a number and a name.
VistA Field: This is the field where data for the variable originate in VistA. In VistA, fields are identified by both a number and a name.

Where applicable, and where space allows, a second table lists the values that the variable can assume with a description of each value. In cases where the possible values exceed the space available, the table will be in an Appendix. For selected variables, the reader is given a reference source to obtain the possible values and their descriptions.

(One-page descriptions begin on the following page.)

SAS Name: **A_PCP**

Definition: Patient's Associate Provider for Primary Care

Remarks: This variable contains the IEN (Internal Entry Number) of the Patient's Associate Provider for Primary Care prefixed with the character "2", which indicates the source file is the VistA NEW PERSON File (#200). The IEN may be used as a pointer to obtain information about the provider in the VistA NEW PERSON File (#200). The Primary Care Management Module (PCMM) is the source of the IEN.

For any provider in Station 506 (Ann Arbor), these numbers will not be unique and thus, cannot be used as a pointer to the VistA NEW PERSON File (#200). Ann Arbor provider numbers are too long and the least significant digit is truncated. In FY2004, the Ann Arbor provider numbers will not be preceded by a "2" and will not be truncated. Therefore, the Ann Arbor provider numbers will be unique beginning with the FY2004 files. This change began in mid-FY2003, and you will see a mixed format (i.e., some provider numbers will be preceded by a "2" and some will not) for this variable in the FY2003 files for Ann Arbor.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **ACT_COST**

Definition: Drug product total cost

Remarks: For prescription fills, the drug product total cost is the total of the pharmacy fixed direct costs, variable direct costs excluding the direct labor costs of dispensing, and indirect costs. It includes the cost of the drug product, supply, or diagnostic dispensed. **ACT_COST** includes the value in the **VS_COST** variable.

The direct labor costs of dispensing can be found in the variable **DISPCOST**. The sum of **DISPCOST** and **ACT_COST** represents the total cost of filling the prescription order.

The value of this variable will be negative on returns (dispensed orders not administered and returned to the VA Pharmacy).

The fiscal year 2002 files have records other than dispensing records, and the value of this variable in these records contains other costs such as ward stock charges and consulting charges. It is recommended that only those costs included on dispensing records in fiscal year 2002 be utilized. Dispensing records can be identified as containing one of the values documented as such in the **FEED_LOC**.

For a more detailed discussion of the cost variables see the DSS NDE Pharmacy SAS® Dataset Cost Variables special data topics section in Chapter III.

Data Type	Numeric
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **ADMITDAY**

Definition: Date of admission of the inpatient stay

Remarks: This variable indicates the date when an episode of care began in the hospital or other setting. Because the DSS system requires a value in admission date, outpatient records will contain a date that is usually the **SVC_DTE**. Even though populated for outpatients, only the **SVC_DTE** should be used for outpatients.

Data Type	Date
VistA File	PATIENT MOVEMENT File (#405)
VistA Field	DATE/TIME (#.01)

SAS Name: **BORNDAY**

Definition: Date of patient's birth

Remarks: This date may be between December 31, 1870, and the current date. If the date cannot be determined from the data in the VistA field specified below, the date will be set to January 1, 1942.

Data Type	Date
VistA File	PATIENT File (#2)
VistA Field	DATE OF BIRTH (#.03)

SAS Name: **CLSNUM**

Definition: Clinic stop code of the clinic where treatment was given and the prescription was written or where the prescription was filled

Remarks: This variable is null for inpatients. For outpatients it is the value contained in the VistA field specified below referenced by the VistA Field CLINIC (#5) in the PRESCRIPTION File (#52). This field will usually contain the value "160" indicating "Clinical Pharmacy". Other values may be found in this field often for outpatients held for observation. Use of the standard SAS format "YCLINIC." will provide stop code descriptions. A list of clinic stop codes is available in the *VIReC Research User Guide: FY2002 VHA Medical SAS® Outpatient Datasets*.

Data Type	Numeric
VistA File	INSTITUTION File (#44)
VistA Field	STOP CODE (#8)

SAS Name: **CLSTOP**

Definition: Clinic stop code of the clinic where treatment was given and where the prescription was written or filled

Remarks: This variable contains the value of the **CLSNUM** variable stored in character format.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **CMOP**

Definition: Indicates whether Consolidated Mail Outpatient Pharmacy (CMOP) filled the prescription

Remarks: This variable indicates that a CMOP processed the fill and mailed it to the patient. Routine high-volume medications are most often processed by a CMOP. Some drugs, such as controlled substances, may not be mailed.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

CMOP can assume the following values:

Value	Description
Blank	Dispensed by VA Pharmacy
Y	Dispensed by CMOP

SAS Name: **DAY_SUPPLY**

Definition: Number of days of dosing the fill will satisfy

Remarks: The maximum value of this field is 180 (i.e., a six month supply). Any value above 180 should be handled as an error. The value in this variable may be zero or missing for a small percent of fills. Occasionally VistA is unable to calculate an appropriate days supply or the value of zero was entered manually.

Data Type	Character
If this is a New Prescription the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	DAYS SUPPLY (#8)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	DAYS SUPPLY (#1.1)
If this is a Partial Fill the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	DAYS SUPPLY (#.041)

SAS Name: **DCM_DEPT**

Definition: Department Cost Manager (DCM) department

Remarks: The Department Cost Manager is the DSS cost accounting system that focuses on the control and management of costs at the department and product level. A DCM department is a cost center for the assignment of costs at a department or division level. The naming convention for a DCM department follows:

1) the first character identifies the clinical service responsible for products;
2) the second and third characters indicate the national DSS production unit or department; and
3) the fourth, fifth and sixth characters may be used locally to indicate multiple divisions for a DSS department type identified by the second and third characters.

The values for pharmacy DCM departments are listed below. Although, the value of the fourth character in this list is always "1", you will find other values in the fourth character and values in a fifth and sixth character, which will vary by site. For example, a site may use DA31 and DA32 to identify costs separately for two different outpatient windows. A list of all valid **DCM_DEPT** codes and their descriptions can be found at the DSS Web site (http://vaww.dss.med.va.gov). At the homepage: 1) Place the cursor on "Program Documents" in the left column; 2) Click on "VHA Product Departments and Production Units" in the menu that appears; and 3) Select the "ALBCC Master List".

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

DCM_DEPT can take the following values for pharmacy departments:

Value	Description
D001	Administration
D011	Pharmacy Research (includes Investigational Drug)
D021	Pharmacy Teaching
D031	Pharmacology Consults
DA31	Outpatient Window
DA61	Clinical Pharmacist Consult
DA81	Ward Stock
DAA1	CMOP Supply
DAB1	CMOP Dispense
DAC1	IVP (IV Product)
DAD1	UDP (Unit Dose Product)
DMG1	Coumadin Clinic

SAS Name: **DISDAY**

Definition: Date of discharge for the inpatient stay

Remarks: Because the DSS system requires a value in the discharge date, outpatient records will contain a date that is usually the **SVC_DTE**. Even though this field is populated for outpatients, only the **SVC_DTE** should be used for outpatients.

Data Type	Date
VistA File	PATIENT MOVEMENT File (#405)
VistA Field	DATE/TIME (#.01)

SAS Name: **DISPCOST**

Definition: Labor cost to process the fill

Remarks: This variable contains the direct labor costs associated with dispensing the prescription order. It is an average cost for the type of prescription filled. Average direct labor costs are established for new prescriptions, refills, CMOP fills, IV piggybacks, IV syringes, IV chemotherapy preparations, unit dose fills, etc. Average costs vary by site according to the salary level of pharmacy employees.

The sum of **DISPCOST** and **ACT_COST** represents the total cost of filling the prescription order.

Please note: Unlike **ACT_COST**, **DISPCOST** will be positive not negative on returns (dispensed orders not administered and returned to the VA Pharmacy).

For a more detailed discussion of the cost variables see the DSS NDE Pharmacy SAS® Dataset Cost Variables special data topics section in Chapter III.

Data Type	Numeric
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **DIVPERF**

Definition: Division where service (fill or dispensing) was performed

Remarks: This variable contains the three-digit station number with modifiers if the **DIVPERF** is a substation. If this is a CMOP fill, this variable will contain the facility the patient contacted to request the fill or refill.

Data Type	Character
Outpatient Prescription	
VistA File	OUTPATIENT SITE File (#59)
VistA Field	SITE NUMBER (#.06)
IV or Unit Dose	
VistA File	MEDICAL CENTER DIVISION File (#40.8)
VistA Field	FACILITY NUMBER (#1)

SAS Name: **DRUGDESC**

Definition: Drug description

Remarks: The drug description is obtained from a DSS Product Table, which originates from the National Drug File (NDF). The **IPNUM** is used to point to the appropriate entry in the DSS Product Table. If no entry is found in the DSS Product Table for the **IPNUM**, the **DRUGDESC** will contain blanks.

The **DRUGDESC** is limited to 30 characters, but the VA Product Name field has 64 characters on the NDF. Therefore, the **DRUGDESC** has been shortened through the elimination of spaces in and truncation of the VA Product Name.

For new products the **DRUGDESC** may contain the description of one of ten price categories below or one of three DSS standard categories of low, medium or high. The ten price categories are:

NEW DRUG 1 ≤0.01
NEW DRUG 2 .011- .02
NEW DRUG 3 .021- .10
NEW DRUG 4 .11- 1.00
NEW DRUG 5 1.01- 2.00
NEW DRUG 6 2.01- 5.00
NEW DRUG 7 5.01-10.00
NEW DRUG 8 10.01-25.00
NEW DRUG 9 25.01-50.00
NEW DRUG 10 ≥50.01

The most current version of the DSS Product Table may be found on the DSS Web site (vaww.dss.med.va.gov). At the homepage: 1) Place cursor on "Program Documents" in the left column; 2) Click on "Products" in the menu that appears; and 3) Select the Products document.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **DXCODE**

Definition: Diagnosis code (ICD-9-CM)

Remarks: For outpatient prescriptions this variable contains the primary diagnosis for the encounter. The source field specified below is obtained using the pointer in the VistA DIAGNOSIS Field (#.01) that has a value of "1" in the corresponding VistA DIAGNOSIS RANKING Field (#.03) in the OUTPATIENT DIAGNOSIS File (#409.43) record for that encounter.

For inpatients, this variable contains the DXLSB Field on the VHA Medical SAS Inpatient Bed Section Datasets record for the corresponding **SCV_DTE.** A description of this field is contained in the *VIReC Research User Guide: FY2002 VHA Medical SAS® Inpatient Datasets*. This code is the ICD-9-CM diagnostic code responsible for the length of stay within the bed section

Data Type	Character
Outpatient Prescription	
VistA File	ICD DIAGNOSIS (#80)
VistA Field	DIAGNOSIS (#.01)
IV and Unit Dose	
VistA File	Not applicable
VistA Field	Not Applicable

SAS Name: **ENC_NUM**

Definition: Encounter number

Remarks: The encounter number is a unique identifier for a patient encounter. The encounter number can be used to link records for one encounter across all DSS National Data Extracts. For example, pharmacy records on the DSS NDE Pharmacy SAS® Datasets can be linked to laboratory records on the DSS NDE Laboratory Results SAS® Datasets for the same encounter. This variable is not available on the FY2002 files.

Positions 15-18 of this field will contain '161' if the prescription was filled as under the Transitional Pharmacy Benefits program (VHA Directive 2003-047, dated August 14, 2003).

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **ENRLPRTY**

Definition: Patient's enrollment priority

Remarks: The Veterans' Health Care Eligibility Reform Act of 1996 (Public Law 104-262) mandated the VA to establish and implement a national enrollment system to manage the delivery of health care services. At enrollment the veteran is assigned a priority group based on his or her specific eligibility status for VA health care. The priority groups have been established to help ensure that VA resources are allocated to veterans with the highest priority for VA health care. Priority groups range from 1 to 8 with 1 being the highest priority for enrollment.

ENRLPRTY can assume the values shown in Appendix A on page 138.

Data Type	Character
VistA File	PATIENT ENROLLMENT File (#27.11)
VistA Field	ENROLLMENT PRIORITY (#.07)

SAS Name: **FEED_KEY**

Definition: DSS Feeder Key

Remarks: This variable contains a 17-digit number for dispensing records. The first five digits contain an IEN (Internal Entry Number) which points to the entry in the VistA VA PRODUCT File (#50.68) for the drug dispensed. The last 12 digits contain the 12-digit version of the National Drug Code (NDC).

The 17-digit number may be used to link the records to the NDF (National Drug File) and obtain additional information about the drug product dispensed such as formulary status.

The **FEED_KEY** may contain values other than a 17-digit number. Only records with a 17-digit number should be used to identify drugs dispensed.

Data Type	Character
Source for the first five digits:	
VistA File	DRUG File (#50)
VistA Field	PSNDF VA PRODUCT NAME ENTRY (#22)
Source for the last 12 digits:	
VistA File	DRUG File (#50)
VistA Field	NDC (#31)

SAS Name: **FEED_LOC**

Definition: Feeder location

Remarks: This variable indicates the site-specific location where the drug was dispensed. It includes a number that identifies an operational unit within the facility. Operational units are established and differ by site and refer to a medical center division or outpatient site. The contents of this variable will vary depending on the location and type of services as specified below:

Location/Type	Contents
IV Order	"IVP" concatenated with the operational unit
Unit Dose Order	"UDP" concatenated with the operational unit
Outpatient Prescription Order - VA Pharmacy	"PRE" concatenated with the operational unit
Outpatient Prescription Order - CMOP	"CMOPDSU" concatenated with the operational unit

In fiscal year 2002, this variable may also contain numbers indicating the record type is other than a dispensing record (e.g., records that contain data regarding consultations or ward stock charges). Only records that contain one of the values in the above table should be used to select prescription data for dispensed drugs, supplies or diagnostics.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **FP**

Definition: Month (fiscal period) in which service was performed

Remarks: Each month is a fiscal period. October is the first period in a fiscal year. The period is based on the **SVC_DTE**.

Data Type	Numeric
VistA File	Not applicable
VistA Field	Not applicable

FP can assume the following values:

Value	Description
1	October
2	November
3	December
4	January
5	February
6	March
7	April
8	May
9	June
10	July
11	August
12	September

SAS Name: **FY**

Definition: Fiscal year in which service was performed

Remarks: The year is based on the **SVC_DTE**.

Data Type	Numeric
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **IN_OUT**

Definition: Inpatient/outpatient indicator

Remarks: Code identifying if the patient was an inpatient or outpatient on the event date (the day the drug, diagnostic, or supply was dispensed).

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

IN_OUT can assume the following values:

Value	Description
I	Inpatient
O	Outpatient

SAS Name: **INVEST**

Definition: Investigational drug indicator

Remarks: This variable is set to "I" if the VistA DEA, SPECIAL HDLG field specified below contains an "I".

Data Type	Character
VistA File	DRUG File (#50)
VistA Field	DEA, SPECIAL HDLG (#3)

INVEST can assume the following values:

Value	Description
(Blank)	Not an investigational drug
I	Investigational drug

SAS Name: **IPNUM**

Definition: Intermediate Product Number

Remarks: This number is a pointer to the DSS Product Table that contains information specific to a drug product, supply, or diagnostic such as the **VA_CLASS** and **DRUGDESC**. See **DRUGDESC** for the link to the DSS Product Table.

Data Type	Numeric
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **MEANS**

Definition: Means Test Indicator Code

Remarks: Certain nonservice-connected and 0% noncompensable service-connected veterans are required to fill out a financial worksheet, referred to as the "Means Test". A means test is the assessment of a veteran's financial information by which the VA determines a veteran's priority group for enrollment in VA Health Care System, and whether or not the veteran is required to make co-payments for the services received. A veteran is rated as either above or below the Means Test Threshold. Below the Means Test Threshold is defined as those veterans whose attributable income and net worth are such that they are unable to defray the expenses of care and therefore are not subject to co-payment charges for hospital and outpatient medical services. Above the Means Test Threshold is defined as those veterans whose attributable income and net worth are such that they are able to defray the expenses of care and must agree to pay a co-payment for hospital care and outpatient medical services. The Means Test Thresholds are established January 1st of each year. There are four different co-payments: prescription, inpatient, outpatient and long-term care.

A separate pharmacy co-payment exemption test is required for the prescription co-payment. Service-connected veterans rated 50% or more, service-connected veterans receiving medications for a service-connected condition, or non-service-connected veterans who meet the low-income criteria are exempt from the prescription co-payment. To meet the low-income criteria a veteran's annual income must not exceed the maximum annual rate of a VA pension that would be payable to the veteran if the veteran were eligible for a pension. A veteran may be exempt from inpatient and outpatient co-payments, but still be required to pay a pharmacy co-payment.

This variable contains the current means test status in the VistA field specified below referenced by the VistA CURRENT MEANS TEST STATUS Field (#.14) in the PATIENT File (#2).

MEANS can assume the values shown in Appendix A on page 139.

Data Type	Numeric
VistA File	MEANS TEST STATUS File (#408.32)
VistA Field	CODE (#.02)

SAS Name: **ORD_PROV**

Definition: Ordering provider's IEN

Remarks: This variable contains the IEN (Internal Entry Number) of the ordering provider preceded by the character "2" which indicates the source file is the VistA NEW PERSON File (#200). The IEN may be used as a pointer to obtain information about the provider from the VistA NEW PERSON File (#200). This variable may contain the character string "NONE" for records containing ward stock charges.

For any provider in Station 506 (Ann Arbor) these numbers will not be unique and thus, cannot be used as a pointer to the VistA NEW PERSON File (#200). Ann Arbor provider numbers are too long, and the least significant digit is truncated. In FY2004, the Ann Arbor provider numbers will not be preceded by a "2" and will not be truncated. Therefore, the Ann Arbor provider numbers will be unique beginning with the FY2004 files. This change began in mid-FY2003, and you will see a mixed format (i.e., some provider numbers will be preceded by a "2" and some will not) for this variable in the FY2003 files for Ann Arbor.

Data Type	Character
Outpatient Prescription	
If this is a New Prescription, the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	PROVIDER (#4)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	PROVIDER (#15)
If this is a Partial Fill, the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	PROVIDER (#6)
IV or Unit Dose	
If this is an IV order, the source is:	
VistA File	IV Sub-file (#55.01)
VistA Field	PROVIDER (#.06)
If this is a Unit Dose order, the source is:	
VistA File	UNIT DOSE Sub-file (#55.06)
VistA Field	PROVIDER (#1)

SAS Name: **PCP_DSS**

Definition: Primary care provider

Remarks: This variable contains the IEN (Internal Entry Number) of the primary care provider preceded by the character "2" which indicates the source file is the VistA NEW PERSON File (#200). The IEN may be used as a pointer to obtain information about the provider from the VistA NEW PERSON File (#200).

The value of this variable is obtained by a call to the Scheduling API, which returns the IEN of the primary care provider for the patient on the **SVC_DTE**. If no primary care provider was identified, the field will contain blanks.

For any provider in Station 506 (Ann Arbor), these numbers will not be unique and thus, they cannot be used as a pointer to the VistA NEW PERSON File (#200). Ann Arbor provider numbers are too long and the least significant digit is truncated. In FY2004, the Ann Arbor provider numbers will not be preceded by a "2" and will not be truncated. Therefore, the Ann Arbor provider numbers will be unique beginning with the FY2004 files. This change began in mid-FY2003, and you will see a mixed format (i.e., some provider numbers will be preceded by a "2" and some will not) for this variable in the FY2003 files for Ann Arbor.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **PCTEAM**

Definition: Primary care team

Remarks: This variable contains the IEN (Internal Entry Number) of the primary care team. The IEN may be used as a pointer to obtain information about the team the VistA TEAM File (#404.51).

The value of this variable is obtained from the Scheduling API, which returns the IEN of the primary care team for the patient on the **SVC_DTE**. If no primary care team was identified, the field will contain blanks.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **QUANTITY**

Definition: Quantity of drug dispensed

Remarks: For Outpatient Prescription orders this variable contains the quantity of drug dispensed for each new prescription, refill, or partial fill.

For an IV order additive, this quantity equals the quantity of additive used in the manufacture of the IV order. For an IV order solution, this variable contains the volume measured in milliliters. An IV order dispensed will have multiple records in the DSS SAS file: one for each solution in the IV order and one for each additive in the IV order. Records will be generated for each IV manufactured and dispensed on the **SVC_DTE**.

For a Unit Dose order this is the number of doses dispensed on the **SVC_DTE**; therefore, only one record will be generated per day for each Unit Dose order. The DSS SAS file does not contain the number of dispensed units (tablets, etc.) in a dose.

Because the DSS SAS file does not contain the unit of measure for the **QUANTITY** and the unit dose **QUANTITY** contains the number of doses, it will be difficult if not impossible to determine the total amount of drug dispensed for some orders.

Data Type	Numeric
Outpatient Prescription	
If this is a New Prescription the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	QTY (#7)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	QTY (#1)
If this is a Partial Fill the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	QTY (#.04)
IV and Unit Dose	
If this is an IV order additive the source is:	
VistA File	ADDITIVE Sub-file (#55.02)
VistA Field	STRENGTH (#.02)
If this is an IV order solution the source is:	
VistA File	SOLUTION Sub-file (#55.11)
VistA Field	VOLUME (#1)
If this is a Unit Dose order the source is:	
VistA File	DISPENSE DRUG Sub-file (#53.53)
VistA Field	#DOSES ACTUALLY DISPENSED (#.03)

SAS Name: **SCRSSN**

Definition: Scrambled Social Security Number

Remarks: Scrambled Social Security Number was created in FY1986 as a replacement for the patient's real Social Security Number (SSN). It is a formula manipulation of the real SSN and not a randomly generated number. Therefore, SCRSSN may be used to identify a patient across fiscal years and datasets. Any patient with "00000" in the first five digits of their SSN will not be included in the DSS Extract. The real SSN from the source listed below is scrambled.

If a researcher needs the real SSN, a cross-reference file will be made available to convert the scrambled SSN to the real SSN. The functional tasks codes required to obtain access to the cross-reference file are listed on the DSS Web site. See the DSS NDE Pharmacy SAS® Datasets section in this guide for the Web site link.

Data Type	Numeric
VistA File	PATIENT File (#2)
VistA Field	SOCIAL SECURITY NUMBER (#.09)

SAS Name: **SEX**

Definition: Sex of patient

Remarks: The variable indicates the gender of the patient.

Data Type	Character
VistA File	PATIENT (#2)
VistA Field	SEX (#.02)

SEX can assume the following values:

Value	Description
F	Female
M	Male

SAS Name: **STA3N**

Definition: Parent station identifier

Remarks: This is the 3-digit numeric identifier of a VAMC facility. This variable indicates the parent station (VA hospital) or the parent station of a branch to which the patient was admitted or received outpatient services. Use of the standard SAS format "STA3NL." will provide parent station descriptions.

STA3N can assume the values shown in Appendix A on page 140.

Data Type	Numeric
Outpatient	
VistA File	INSTITUTION File (#4)
VistA Field	STATION NUMBER (#99)
IV and Unit Dose	
VistA File	MEDICAL CENTER DIVISION File (#40.8)
VistA Field	FACILITY NUMBER (#1)

SAS Name: **STA6A**

Definition: Substation identifier

Remarks: The first three characters of this field contain the **STA3N**. The last three characters are either the substation identifier or a number that identifies an operational unit within the facility. Operational units are established and differ by site and refer to an outpatient site or medical center division. The standard SAS format "$STA6AL." will provide substation descriptions if the last three characters contain the substation identifier.

For inpatients, the DIVISION Field (#3.5) in the HOSPITAL LOCATION File (#44) is used to link the VistA field specified in the table below. For outpatients with IV orders, the DIVISION Field (#.02) in the IV ROOM File (#59.5) is used to link to the VistA field specified in the table below.

Since there are over one thousand substations, they are not listed in this document. Instead, users are referred to the VA Site Tracking (VAST) database, maintained by the Planning Systems Support Group (PSSG) of the Office of Policy and Planning and available on their Web site (http://vaww.pssg.med.va.gov).

Data Type	Character
Outpatient	
VistA File	INSTITUTION File (#4)
VistA Field	STATION NUMBER (#99)
IV and Unit Dose	
VistA File	MEDICAL CENTER DIVISION File (#40.8)
VistA Field	FACILITY NUMBER (#1)

SAS Name: **SUFFIX**

Definition: This field is a temporary work field.

Remarks: Do not use.

SAS Name: **SVC_DTE**

Definition: Date of service

Remarks: For an IV or Unit Dose order, this variable is the date the medication was dispensed. For an outpatient prescription, it is the date when the prescription was released from the VA Pharmacy to the patient or mailed by a CMOP.

Data Type	Date
Outpatient Prescription	
If this is a New Prescription the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	RELEASE DATE/TIME (#31)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	RELEASED DATE/TIME (#17)
If this is a Partial Fill the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	RELEASED DATE/TIME (#8)
IV and Unit Dose	
If this is an IV order the source is:	
VistA File	IV EXTRACT DATA File (#728.113)
VistA Field	DATE/TIME (#4)
If this is a unit dose order the source is:	
VistA File	UNIT DOSE EXTRACT DATA File (#728.904)
VistA Field	DATE (#2)

SAS Name: **TRTSP**

Definition: Treating specialty associated with the patient when the drug product was dispensed

Remarks: This variable contains the IEN (internal entry number) to the SPECIALTY File (#42.4), which contains information about the treating specialty such as the name of the treating specialty. This variable normally contains null values for outpatients but may contain a value if the patient was held for observation. The standard SAS format "BEDSECN." may be used with this variable to obtain a description of the Treating Specialty.

TRTSP can assume the values shown in Appendix A on page 144.

Data Type	Numeric
VistA File	SPECIALTY File (#42.4)
VistA Field	PTF CODE (#.001)

SAS Name: **TRTSP_C**

Definition: Treatment specialty

Remarks: This variable contains the value of the **TRTSP** variable in character format.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **VA_CLASS**

Definition: VA Drug Classification of the drug, supply, or diagnostic dispensed

Remarks: The VA Drug Classification system separates drugs, supplies, and diagnostics into different categories based upon their characteristics. The classes are assigned by the PBM. Diagnostic classes begin with "DX" and contain drugs or items used in diagnostic tests such as barium sulfate or glucose test strips. Supply classes begin with "XA" or "XX". Supply classes contain items such as solutions, syringes, ostomy belts and pouches, bandages, and catheters. All other classes are drugs.

The VA drug class is obtained from the DSS Product Table which has the VA Drug Classification added from the NDF. The **IPNUM** is used to point to the appropriate entry in the DSS Product Table. This variable may be blank when there is no entry in the DSS Product Table for the **IPNUM**. The **VA_CLASS** will also be blank if the record is not a dispensing record. For example, it will be blank for ward stock charges and clinical pharmacy consults.

A list of the most current VA Drug Class values is available on the PBM Web site (http://vaww.pbm.va.gov/natform/vaclass.xls). If drug product, supply, or diagnostic does not have a VA Drug Class identified by the PBM, you may see a non-standard name in this field such as "SUPPLY" or "STUDY".

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **VISN**

Definition: Veterans Integrated Service Network (VISN) where the care was received

Remarks: The value of this field is established by the software that creates the SAS file based on the value of the **STA3N** variable (the parent station).

Data Type	Numeric
VistA File	Not applicable
VistA Field	Not applicable

VISN can assume the following values:

Value	Description
1	VA New England Healthcare System
2	VA Healthcare Network Upstate New York
3	VA NY/NJ Veterans Healthcare Network
4	VA Stars & Stripes Healthcare Network
5	VA Capitol Health Care Network
6	VA Mid-Atlantic Network
7	The Atlantic Network
8	VA Sunshine Healthcare Network
9	Mid South Veterans Healthcare Network
10	VA Healthcare System of Ohio
11	Veterans In Partnership
12	The Great Lakes Health Care System
15	VA Heartland Network
16	South Central VA Health Care Network
17	VA Heart of Texas Health Care Network
18	VA Southwest Healthcare Network
19	Rocky Mountain Network
20	Northwest Network
21	Sierra Pacific Network
22	Desert Pacific Healthcare Network
23	VA Midwest Health Care Network

SAS Name: **VS_COST**

Definition: Variable supply cost

Remarks: The **VS_COST** is calculated by DSS and is included in the **ACT_COST** variable. It contains the cost of the drug and supplies used to fill the prescription such as bottles, caps and labels.

The value of this variable will be negative on returns (dispensed orders not administered and returned to the VA Pharmacy).

Due to data quality issues this variable on the FY2002 datasets should not be used.

For a more detailed discussion of the cost variables see the DSS NDE Pharmacy SAS® Dataset Cost Variables special data topics section in Chapter III.

Data Type	Numeric
VistA File	Not applicable
VistA Field	Not applicable

SAS Name: **WARD**

Definition: Location of the patient on the date a drug was dispensed

Remarks: The ward on which the patient's IV drug was administered or the location of the patient when he/she received a unit dose. The IEN may be used as a pointer to obtain information about the ward in the VistA HOSPITAL LOCATION File (#44). This field is normally blank for outpatients but may contain a value for outpatients admitted for observation.

Data Type	Character
VistA File	HOSPITAL LOCATION File (#44)
VistA Field	IEN (#.001)

SAS Name: **ZIP**

Definition: ZIP Code

Remarks: This variable is the five-digit ZIP Code of the patient's residence.

Data Type	Numeric
VistA File	PATIENT File (#2)
VistA Field	ZIP CODE (#.1112)

SAS Name: **ZIP_4**

Definition: ZIP Code plus 4

Remarks: This is the ZIP Code with optional four-digit extension of the patient's residence.

Data Type	Character
VistA File	PATIENT File (#2)
VistA Field	ZIP+4 (#.1112)

VI. PBM Database Variables

The following table lists those variables extracted from VistA Systems for the PBM Prescription Extract, Unit Dose Extract, IV Extract, and Provider Extract. The variables documented in this section are those extracted in the VistA Pharmacy Benefits Management Application V. 3.0, PBM Extracts Enhancements Phase 1 (patch, PSU*3*19). This version became available in June 2002.

The PBM Extract columns indicate which variables are extracted from VistA or created in each of these extracts. The Prescription Extract ("PRE EXT" column) pulls information about each outpatient new prescription, refill, and partial fill. The Unit Dose Extract ("UNT EXT" column) pulls information about each inpatient unit dose order. The IV Extract ("IV EXT" column) pulls information about each inpatient IV order. The Provider Extract ("PRO EXT" column) pulls information about any provider who placed a prescription order. The SAS Name is the commonly used SAS Name (where known) for research extracts provided as a SAS file by the PBM.

Variable Name	PBM Extract				SAS® Name	Page Number
	PRE EXT	UNT EXT	IV EXT	PRO EXT		
Average Cost Per Unit			X			73
Cancel Date	X					74
CMOP Indicator	X				CMOP_IND	75
Days Supply of Medication	X				DAY_SUPPLY	76
DEA, Special Handling	X	X	X		DEA_SHF	77
Dispense Unit	X	X			DSP_UNT	78
Dispensed Amount		X				79
Dispensing Occurrences			X			80
Dosing Instructions (Outpatient Prescription)	X				SIG	81
Dosing Instructions (IV)			X			82
Drug Unit			X			83
Fill/Refill/Partial Date	X				FRP_DATE	84
Generic Drug Name	X	X	X		STN_NAME	85
IV Additive or Solution Print Indicator			X			86
IV Additive or Solution Print Name			X			87
IV Order Number			X			88
IV Type			X			89
Local Formulary Indicator	X	X	X		FORMULARY	90
Mail/Window Indicator	X				MW_IND	91
Medication Counseling Indicator	X				MED_C	92
National Drug Code (NDC)	X	X	X		NDC	93

Variable Name	PBM Extract				SAS® Name	Page Number
	PRE EXT	UNT EXT	IV EXT	PRO EXT		
National Formulary Indicator	X	X	X		NFORM	94
National Formulary Restrictions Indicator	X	X	X		NFORMR	95
New/Refill/Partial Indicator	X				NRP_IND	96
Order Indicator			X			97
Outpatient IV			X			98
Patient ID (SSN)	X	X	X		PAT_SSN	99
Patient's ICN	X	X	X			100
Prescription Number	X				PRE_NUM	101
Prescription Patient Status	X				PRE_PSTAT	102
Price Per Dispense Unit	X	X			PRICE_DSP	103
Provider Class				X	PROV_CLASS	104
Provider ID (SSN)	X	X	X	X	PROV_ID	105
Provider Local IEN	X	X	X	X		106
Provider Service/Section				X	PROV_SERV	107
Provider Specialty				X	PROV_SPEC	108
Provider Station Number				X		109
Provider Subspecialty				X	PROV_SUB	111
Provider Type	X				PROV_TYPE	111
Release Date	X				REL_DATE	112
Schedule		X				113
Sender	X	X	X		STA_NUM	114
Start Date of Order		X	X			115
Stop Date of Order		X	X			116
Thirty-Day Equivalent of the Prescription	X				DAY30RXS	117
Total Cost of Prescription	X				TL_COST	118
Total Quantity Dispensed	X				TL_QTY	119
Total Units Dispensed			X			120
Unit Dose Order Number		X				121
Units Per Dose		X				122
VA Drug Class	X	X	X		VA_CLASS	123
VA Product Name	X	X	X		VA_PRODUCT	124
VISN Formulary Indicator	X	X	X			125

VII. PBM Database Variable One-Page Descriptions

Each description includes a table with the following information, when applicable.

Data Type: This indicates whether the variable is numeric, character, or a date.
VistA File: This is the VistA file where data for the variable originate. In VistA, files are identified by both a number and a name.
VistA Field: This is the field where data for the variable originate in VistA. In VistA, fields are identified by both a number and a name.

Where applicable and where space allows, a second table lists the values that the variable can assume with a description of each value. In cases where the possible values exceed the space available, the table will be in an Appendix. For selected variables, the reader is given a reference source to obtain the possible values and their descriptions.

(One-page descriptions begin on the following page.)

Variable: **Average Cost Per Unit**

Definition: Average cost per **Drug Unit**

Remarks: For solutions this will be the average cost per milliliter. For additives this will be the average cost per **Drug Unit**. The **Average Cost Per Unit** is calculated and entered by the Pharmacy ADPAC. The **Average Cost Per Unit** may not reflect the actual price of the dispense unit of the drug product dispensed. This will occur if VistA files specified below have not been updated to reflect the price of the currently stocked supply at the time the drug was dispensed.

The total cost of the IV order from the **Start Date of Order** until the **Stop Date of Order** will equal the sum of the **Average Cost Per Unit** multiplied by the **Total Units Dispensed** for each solution and additive in the IV preparation.

Data Type	Character
If the IV Additive or Solution Print Indicator equals "A" the source is:	
VistA File	IV ADDITIVE (#52.6)
VistA Field	AVERAGE DRUG COST PER UNIT (#7)
If the IV Additive or Solution Print Indicator equals "S" the source is:	
VistA File	IV SOLUTION (#52.7)
VistA Field	AVERAGE DRUG COST (#7)

Variable: **Cancel Date**

Definition: Date on which a prescription was cancelled or explicitly discontinued

Remarks: This date applies only to those prescriptions specifically cancelled or discontinued by authorized providers or under their authority.

Data Type	Date
VistA File	PRESCRIPTION File (#52)
VistA Field	CANCEL DATE (#26.1)

Variable: **CMOP Indicator**

Definition: Indicates whether Consolidated Mail Outpatient Pharmacy (CMOP) filled the prescription

Remarks: This variable indicates that a CMOP processed the fill and mailed it to the patient. Routine high-volume medications are most often processed by a CMOP. Some drugs, such as controlled substances, may not be mailed.

Even though the CMOP Indicator is set to "N", a local VA Pharmacy may have mailed the prescription. Please refer to **Mail/Window Indicator** variable to determine whether the prescription was actually mailed.

The PBM/SHG Extraction Software sets the value of this field. If the fill was processed by the CMOP, evidenced by an entry in the CMOP Event File (#52.01), the **CMOP Indicator** is set to "Y"; otherwise, it is set to "N".

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

CMOP Indicator can assume the following values:

Value	Description
Y	Yes, the prescription was processed by a CMOP
N	No, the prescription was not processed by a CMOP

Variable: **Days Supply of Medication**

Definition: Number of days of dosing the fill will satisfy

Remarks: The maximum value of this field is 180 (i.e., a six month supply). Any value above 180 should be handled as an error. The value in this variable may be zero or missing for a small percent of fills because occasionally VistA is unable to calculate an appropriate days supply or the value of zero was entered manually.

Data Type	Numeric
If this is a New Prescription the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	DAYS SUPPLY (#8)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	DAYS SUPPLY (#1.1)
If this is a Partial Fill the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	DAYS SUPPLY (#.041)

Variable: **DEA, Special Handling**

Definition: Drug Enforcement Agency (DEA) schedule code and/or special handling codes

Remarks: This variable contains the special handling codes associated with a drug product, which include an indication whether a drug is on the DEA's Controlled Substance List. Up to six codes may be associated with a drug. If applicable, the schedule code (DEA Controlled Substances Schedule) must appear in the first position. For example, a Schedule III narcotic will be coded "3A". See list of allowed codes below.

Each site can set the values of these codes for a drug product so the **DEA, Special Handling** variable may vary across VistA systems for the same drug product.

Data Type	Character
VistA File	LOCAL DRUG FILE (#50)
VistA Field	DEA, SPECIAL HDLG (#3)

DEA, Special Handling variable may contain up to six of the following codes:

Value	Description
0	Manufactured in pharmacy
1	Schedule I item
2	Schedule II item
3	Schedule III item
4	Schedule IV item
5	Schedule V item
6	Legend item
9	Over-the-counter
L	Depressants and stimulants
A	Narcotics and alcohols
P	Dated drugs
I	Investigational drugs
M	Bulk compound items
C	Controlled substances – non-narcotic
R	Restricted items
S	Supply items
B	Allow refill
W	Not renewable
F	Non-refillable

Variable: **Dispense Unit**

Definition: Dispense unit of the prescription

Remarks: Examples of a dispense unit include:

"TAB" – tablet;
"ML" – liquid;
"CAP" – capsule;
"GM" – gram; and
"EA" or "EACH" – products such as inhalers.

Each site can establish the value of the **Dispense Unit** for a drug product so the **Dispense Unit** variable may vary across VistA systems for the same drug product.

Data Type	Character
VistA File	LOCAL DRUG FILE (#50)
VistA Field	DISPENSE UNIT (#14.5)

Variable: **Dispensed Amount**

Definition: Total quantity dispensed for a unit dose order

Remarks: The quantity unit of measure is the **Dispense Unit**. The total quantity dispensed equals the total of all units for every unit dose dispensed less returns from the **Start Date of Order** through the **Stop Date of Order**. Therefore, this is the number of units sent to the floor, not the number of doses.

Unit doses may be returned to the pharmacy if not administered. This usually occurs if an order is cancelled between the time a unit dose was sent out from the VA Pharmacy and the scheduled administration time or if a patient is not available for a dose or refuses a dose.

The **Dispensed Amount** is calculated based on the values in the VistA fields specified below. The **Dispensed Amount** is incremented by the value in the AMOUNT field for every unit dose logged with a value of "1" (from pick list), "2" (pre-exchange units), or "3" (extra units dispensed) in the HOW field. The **Dispensed Amount** is decremented by the value in the AMOUNT field for every unit dose logged with a value of "4" (returns) in the VistA HOW field.

The **Dispensed Amount** multiplied by the **Price Per Dispense Unit** will equal the total cost of the drug dispensed from the **Start Date of Order** through the **Stop Date of Order** for a unit dose order.

Data Type	Numeric
VistA File	UNIT DOSE Sub-file DISPENSE LOG Multiple (#55.06)
VistA Field	AMOUNT (#.03) HOW (#.05)

Variable: **Dispensing Occurrences**

Definition: Number of times an IV preparation (i.e., bag, syringe, etc.) was dispensed from the **Start Date of Order** until the **Stop Date of Order**

Remarks: This variable is only populated on parent orders (see **Order Indicator**).

The PBM/SHG Extraction Software calculates the **Dispensing Occurrences** based on the values in the VistA Fields ACTION and DAILY USAGE. **Dispensing Occurrences** will be incremented if the DAILY USAGE field is set to "1" (label printed counted as daily usage) and ACTION is set to "1" (dispensed). **Dispensing Occurrences** will be decremented if ACTION is set to "2" (recycled) or "4" (canceled).

Data Type	Character
VistA File	IV Sub-file LABEL TRACKING (#55.1111)
VistA Field	ACTION (#2) DAILY USAGE (#6)

Variable: **Dosing Instructions (Outpatient Prescription)**

Definition: Dosing instructions printed on the prescription

Remarks: When an authorized provider places the prescription order, he or she may select dosing instructions from a standard menu, enter the instructions free format, or use a combination of standard options with additional free format text. The dosing instructions extracted by the PBM/SHG Extraction Software may include Latin abbreviations. For example, for a medication that should be taken twice a day, you may find "twice a day" in some instructions and "bid" in others.

Data Type	Character
If the order is placed via VistA the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	SIG (#10)
If the order place via CPRS the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	SIG1 (#52.04)

Variable: **Dosing Instructions (IV)**

Definition: Dosing instructions for the IV

Remarks: This variable contains the dosing instructions either as a schedule or infusion rate. If the variable contains an infusion rate the format will be either a number or "free text@number of items per day". Examples include:

"125" = 125 ml/hr
"TITRATE@1" or "T@1" = titrate with 1 label per day
"125@2" = 125ml/hr with 2 labels per day

Label per day indicates how many labels print automatically with the "morning" IV batch of labels. The pharmacy will prepare and send one bag for each label printed.

Schedules may be a standard schedule or nonstandard schedule and may include Latin abbreviations. Examples of standard schedules include:

"TID" = three times a day
"Q5H" = every five hours

The PBM/SHG Extraction Software sets the value of this variable to either the VistA Field SCHEDULE or INFUSION RATE specified below based on the IV type.

Data Type	Character
VistA File	IV Sub-file (#55.01)
VistA Field	SCHEDULE (#.09) INFUSION RATE (#.08)

Variable: **Drug Unit**

Definition: Unit of measure for the additive or solution

Remarks: The value of this variable is set to "ML" if a solution. For additives, it will contain the value of the VistA field specified below.

Data Type	Character
VistA File	IV ADDITIVE File (#52.6)
VistA Field	DRUG UNIT (#2)

Drug Unit can assume the following values:

Value	Description
ML	Milliliter
LITER	Liter
MCG	Microgram
MG	Milligram
GM	Gram
IU	International Unit
MEQ	Milliequivalent
MM	Millimole
MU	Million units
THOUU	Thousand units
UNITS	Units

Variable: **Fill/Refill/Partial Date**

Definition: Process date of new fill, refill, or partial fill

Remarks: This variable should be used in conjunction with the **New/Refill/Partial Indicator** variable that specifies whether the date refers to a new prescription, a refill, or a partial fill.

The **Fill/Refill/Partial Date** is the date the fill was processed by a VA Pharmacy or CMOP and the prescription label was printed. For new prescriptions, this date may be the same day or several days following the date the provider entered the order. In general, VA policy requires that a refill cannot be processed more than ten days before the previous fill's supply is due to run out. CMOPs are allowed to process refills earlier than this authorized refill date. Whether a VA Pharmacy or a CMOP processes a refill, the patient must request the refill.

There is one case where the **Fill/Refill/Partial Date** is not the date the fill was processed. When the CMOP receives notification of a refill request, it may actually fill and mail the prescription up to ten days prior to the authorized refill date. Even so, the **Fill/Refill/Partial Date** will never be earlier than ten days before the previous fill's supply is due to run out. For example, assuming the previous fill's supply will run out on January 30th and the CMOP processes and mails the refill on January 15th, the **Fill/Refill/Partial Date** will still be January 20th. The **Release Date** will be January 15th.

Data Type	Date
If this is a New Prescription the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	FILL DATE (#22)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	REFILL DATE (#.01)
If this is a Partial Fill the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	PARTIAL DATE (#.01)

Variable: **Generic Drug Name**

Definition: Generic name assigned by the individual station to the drug, supply, or diagnostic product

Remarks: A given drug, supply, or diagnostic product may not have the same **Generic Drug Name** across all VA sites because this name is assigned at the station level. Therefore, it is best to use the **VA Product Name** for drugs, which is standard across all stations. However, the **Generic Drug Name** may be more descriptive for supplies and diagnostics. A **VA Product Name** is not assigned to all supplies and diagnostics because the names and types of medical supplies and diagnostics are too numerous and change frequently. Thus, for diagnostics and supplies you may need to check both the **Generic Drug Name** and the **VA Product Name** for a descriptive name of the product.

Data Type	Character
VistA File	LOCAL DRUG File (#50)
VistA Field	GENERIC NAME (#.01)

Variable: **IV Additive or Solution Print Indicator**

Definition: IV additive or solution record indicator

Remarks: This variable indicates whether information for the record is extracted for the IV solution from the VistA IV SOLUTION File (#52.6) or the IV additive from the VistA IV ADDITIVE File (#52.7). For an IV order there may be multiple records in the PBM/SHG Database: one for each additive and solution in the IV preparation. These records will have the same **IV Order Number**.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

IV Additive or Solution Print Indicator can assume the following values:

Value	Description
A	Additive
S	Solution

Variable: **IV Additive or Solution Print Name**

Definition: Name of the additive or solution printed on the IV label, Ward list, Manufacturing list, etc.

Remarks: This name should contain only the name of the drug or solution. It should be free of any indication of strength or volume. The Pharmacy ADPAC establishes the **IV Additive or Solution Print Name** at every VistA site; therefore, this name may vary across sites for the same drug or solution.

Data Type	Character
If the IV Additive or Solution Print Indicator equals "A" the source is:	
VistA File	IV ADDITIVE (#52.6)
VistA Field	PRINT NAME (#.01)
If the IV Additive or Solution Print Indicator equals "S" the source is:	
VistA File	IV SOLUTION (#52.7)
VistA Field	PRINT NAME (#.01)

Variable: **IV Order Number**

Definition: Record number of the IV order

Remarks: This is a unique number for the IV order and patient. An order may cover multiple administrations of an IV preparation.

Data Type	Numeric
VistA File	IV Sub-file (#55.01)
VistA Field	ORDER NUMBER (#.01)

Variable: **IV Type**

Definition: Indicator of IV type

Remarks: This indicator specifies the type of IV as detailed in the table below. This indicator is only set on parent orders (see **Order Indicator**).

Data Type	Character
VistA File	IV Sub-file (#55.01)
VistA Field	TYPE (#.04)

IV Type can assume the following values:

Value	Description
A	Admixture
C	Chemotherapy
H	Hyperalimentation
P	Piggyback
S	Syringe
(Blank)	Not a parent order. See **Order Indicator**.

Variable: **Local Formulary Indicator**

Definition: Local Formulary flag

Remarks: This variable indicates whether a drug is approved for the Local Formulary. If a drug is on the Local Formulary, it is available for prescribing by all providers authorized by the local station to write medication orders. With rare exception, a drug on the Local Formulary is also on the VISN Formulary. Occasionally, you may find a drug on the Local Formulary that is not on the VISN Formulary because the VISN has not yet addressed addition of the drug.

The PBM/SHG Extraction Software translates the values in the VistA Field LOCAL NON-FORMULARY INDICATOR specified below to one of two values. If the LOCAL NON-FORMULARY INDICATOR is set to "1" (Non-Formulary), the value of the **Local Formulary Indicator** is set to "N/F"; otherwise, it is set to null values. These values are subsequently translated to the allowed values indicated below.

Data Type	Character
VistA File	LOCAL DRUG FILE (#50)
VistA Field	LOCAL NON-FORMULARY INDICATOR (#51)

Local Formulary Indicator can assume the following values:

Value	Description
F	Formulary
N	Non-Formulary

Variable: **Mail/Window Indicator**

Definition: Fill mail or pick up flag

Remarks: This variable indicates whether the fill was picked up at the window or mailed out to the patient. A CMOP or a local VA Pharmacy may mail a fill.

Data Type	Character
If this is a New Prescription the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	MAIL/WINDOW (#11)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	MAIL/WINDOW (#2)
If this is a Partial Fill the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	MAIL/WINDOW (#.02)

Mail/Window Indicator can assume the following values:

Value	Description
M	Fill was mailed to the patient
W	Fill was picked up by the patient or their representative at a VA Pharmacy

Variable: **Medication Counseling Indicator**

Definition: Medication counseling flag

Remarks: This variable indicates whether the pharmacist counseled a patient about his or her prescription. The pharmacist sets the **Medication Counseling Indicator** to "Y" if he or she counseled the patient.

Data Type	Character
VistA File	PRESCRIPTION File (#52)
VistA Field	WAS THE PATIENT COUNSELED (#41)

Medication Counseling Indicator can assume the following values:

Value	Description
Y	Yes, the patient was counseled
N	No, the patient was not counseled

Variable: **National Drug Code (NDC)**

Definition: NDC code for the drug dispensed

Remarks: The NDC is a unique three-segment number (labeler code - product code - package code) for a drug product. This code is explained in Chapter III, Special Data Topics.

Data Type	Character
Outpatient Prescription	
If the Fill was processed by a CMOP the source is:	
VistA File	CMOP EVENT File (#52.01)
VistA Field	NDC (#4)
If this is a New Prescription not processed by a CMOP the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	NDC (#27)
If this is a Refill not processed by a CMOP the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	NDC (#11)
If this is a Partial Fill not processed by a CMOP the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	NDC (#1)
If there was no NDC on the fill the source is:	
VistA File	Drug File (#50)
VistA Field	NDC (#31)
If there was no NDC on the fill or in the Drug File (#50), set to "NO NDC DATA".	
IV or Unit Dose	
VistA File	Drug File (#50)
VistA Field	NDC (#31)

Variable: **National Formulary Indicator**

Definition: VA National Formulary flag

Remarks: This variable indicates whether or not a drug is on the VA National Formulary. If a drug is on the VA National Formulary, it may be prescribed by all providers authorized to write prescription orders anywhere in the VA.

The VA National Formulary is available in a Microsoft® Excel spreadsheet on the PBM Web site (http://vaww.pbm.va.gov/pbm/natform.htm).

Data Type	Numeric
VistA File	VA PRODUCT FILE (#50.68)
VistA Field	NATIONAL FORMULARY INDICATOR (#17)

National Formulary Indicator can assume the following values:

Value	Description
1	Yes, the drug is on the VA National Formulary
0	No, the drug is not on the VA National Formulary

Variable: **National Formulary Restrictions Indicator**

Definition: VA National Formulary restrictions flag

Remarks: This variable indicates if the VA National Formulary has any restrictions on usage of the drug. The PBM/SHG Extraction Software converts the contents of the VistA Field NATIONAL FORMULARY RESTRICTION specified below to one of two values. If the NATIONAL FORMULARY RESTRICTION field contains any data (i.e., a restriction), the value of the **National Formulary Restrictions Indicator** is set to "1"; otherwise, it is set to "0".

The VA National Formulary, available on the PBM/SHG Web site, lists all drugs on the formulary and their restrictions (http://vaww.pbm.va.gov/pbm/natform.htm).

Data Type	Numeric
VistA File	VA PRODUCT FILE (#50.68)
VistA Field	NATIONAL FORMULARY RESTRICTION (#50.6818, .01)

National Formulary Restrictions Indicator can assume the following values:

Value	Description
1	Yes, the VA National Formulary has restrictions on the drug
0	No, the VA National Formulary does not have restrictions on the drug

Variable: **New/Refill/Partial Indicator**

Definition: New prescription, refill, or partial fill flag

Remarks: This variable indicates if the prescription is new prescription, a refill, or a partial fill. The PBM/SHG Extraction Software sets the value of this variable based on the origin of the prescription as follows:

"N" if the origin is the PRESCRIPTION File (#52)
"R" if the origin is the REFILL Sub-file (#52.1)
"P" if the origin is the PARTIAL Sub-file (#52.2).

A partial fill is where a quantity smaller than requested on the prescription is dispensed. Partial fills are processed for several reasons. For example, a patient may accidentally lose or spoil medication. Partial refills do not count against the total number of refills for a prescription.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

New/Refill/Partial Indicator can assume the following values:

Value	Description
N	New Prescription
R	Refill Prescription
P	Partial Prescription

Variable: **Order Indicator**

Definition: Parent order record flag

Remarks: This variable indicates whether the record is the parent order. For an IV order there will be multiple records all with the same **IV Order Number**: one for each solution in the IV preparation and one for each additive in the IV preparation. Only one record will be identified as a parent order, and thus contain a "P" in this variable. All other records will contain a blank.

The following variables will only be populated on the parent order: **Dispensing Occurrences**, **IV Type**, and **Outpatient IV**.

Data Type	Character
VistA File	Not applicable
VistA Field	Not applicable

Order Indicator can assume the following values:

Value	Description
P	Parent order
(Blank)	Not the parent order

Variable: **Outpatient IV**

Definition: Outpatient IV indicator

Remarks: This variable indicates if the IV was administered to an outpatient. This indicator is only set on parent orders (see **Order Indicator**).

The PBM/SHG Extraction Software translates the values in the VistA Field WARD specified below to one of two values. If the WARD is set to ".5" (Outpatient IV), the value of the **Outpatient IV** is set to "Y"; otherwise, it is set to "N".

Data Type	Character
VistA File	IV Sub-file (#55.01)
VistA Field	Ward (#104)

IV Type can assume the following values:

Value	Description
Y	Yes, outpatient IV
N	No

Variable: **Patient ID (SSN)**

Definition: Patient's Social Security Number (SSN)

Remarks: Even though the PBM/SHG does extract the patient's real SSN from VistA, only a coded SSN will be provided to the researcher. If the researcher needs to link the prescription data to other VA Health Services data on an individual patient level, the PBM/SHG will provide a method for the researcher to decode the SSN for linkage.

Data Type	Character
VistA File	PATIENT File (#2)
VistA Field	SOCIAL SECURITY NUMBER (#.09)

Variable: **Patient's ICN**

Definition: Patient's Integration Control Number (ICN)

Remarks: This number is a unique patient identifier. There are two types of ICNs: a local ICN and a national ICN. The local ICN begins with the station number and a national ICN begins with "100" or "101". A patient is temporarily assigned a local ICN until a national ICN can be assigned.

The ICN is used to tie together all of a patient's records found within the Veterans Health Administration's information systems. The Master Patient Index (MPI) is the authoritative source for a patient's ICN (http://vaww.vhaco.va.gov/dataquality/mpidqteam.htm).

Data Type	Numeric
VistA File	PATIENT File (#2)
VistA Field	INTEGRATION CONTROL NUMBER (#991.01)

Variable: **Prescription Number**

Definition: Unique number assigned to the prescription by the pharmacy

Remarks: This number is assigned only to the original prescription. All initial fills, refills, and partial fills of a prescription will have the same prescription number. This number is unique to the station where the prescription was finished (i.e., the new prescription was checked by a pharmacist) and the date when the prescription was filled.

Data Type	Character
VistA File	PRESCRIPTION File (#52)
VistA Field	PRESCRIPTION NUMBER (#.01)

Variable: **Prescription Patient Status**

Definition: Status of the patient when the prescription was finished (i.e., the new prescription was checked by a pharmacist)

Remarks: If the value of the VistA Field TPB RX (#201) in the PRESCRIPTION File (#52) equals "1" (Yes), then the value of **Prescription Patient Status** is set to "NVA". Otherwise the PBM/SHG extraction software maps the values in the VistA Field SC/AA/OTHER/INPATIENT specified below into four possible values because the contents of this VistA Field vary across the VistA Systems. Appendix B contains an example of the mapping for one site.

Data Type	Character
VistA File	RX PATIENT STATUS File (#53)
VistA Field	SC/AA/OTHER/INPATIENT (#6)

Prescription Patient Status can assume the following values:

Value	Description
AA	Aid and Attendance (Payments from the Department of Veterans Affairs to a veteran or spouse if they are blind, nearly blind, helpless, or nearly helpless and require the aid and attendance of another person.)
IP	Inpatient
NVA	Non-VA (Prescription was filled under the Transitional Pharmacy Benefits program.)
OT	Other
SC	Service Connected (Rating that a veteran's illness or injury was incurred in or aggravated by the military service.)

Variable: **Price Per Dispense Unit**

Definition: Price of the **Dispense Unit** at the time of dispensing

Remarks: For example, this will be the price of each tablet dispensed. The **Price Per Dispense Unit** multiplied by the **Total Quantity Dispensed** equals the **Total Cost of Prescription** for outpatient prescriptions.

The **Dispensed Amount** multiplied by the **Price Per Dispense Unit** will equal the total cost of the drug dispensed from the **Start Date of Order** through the **Stop Date of Order** for a unit dose order.

The **Price Per Dispense Unit** may not reflect the actual price of the dispense unit of the drug product dispensed. This will occur if Drug File (#50) has not been updated to reflect the price of the currently stocked supply.

Data Type	Numeric
Outpatient Prescription	
If this is a New Prescription the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	UNIT PRICE OF DRUG (#17)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	CURRENT UNIT PRICE OF DRUG (#1.2)
If this is a Partial Fill the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	CURRENT UNIT PRICE OF DRUG (#.042)
Unit Dose	
VistA File	DRUG File (#50)
VistA Field	PRICE PER DISPENSE UNIT (#16)

Variable: **Provider Class**

Definition: Abbreviated classification or title of the provider ordering the medication

Remarks: The values of this variable are established by site and will vary across VistA systems.

Data Type	Character
VistA File	PROVIDER CLASS File (#7)
VistA Field	ABBREV. TITLE (#1)

The following are sample values that may be found in this variable:

ATTENDING PHYSICIAN
CARDIOLOGY FELLOW
CLINICAL NURSE SPECIALIST
D.O.
DDS
GASTRO RESIDENT
INTERNAL MEDICINE
M.D.
MD
NEPHROLOGY STAFF
NURSE PRACTITIONER
OD
OPTOMETRIST
PHARMACIST
PHYSICIAN
PHYSICIAN ASSISTANT
RESIDENT SURGEON
RHEUMATOLOGY STAFF
RN

Variable: **Provider ID (SSN)**

Definition: Provider's Social Security Number (SSN)

Remarks: Even though the PBM/SHG does extract the provider's real SSN from VistA, only a coded SSN will be provided to the researcher. If the researcher needs to link the prescription data to other VA Health Services data on an individual provider level, the PBM/SHG will provide a method for the researcher to decode the SSN for linkage.

Data Type	Numeric
VistA File	NEW PERSON File (#200)
VistA Field	SSN (#9)

Variable: **Provider Local IEN**

Definition: Locally assigned Internal Entry Number (IEN) for the provider

Remarks: This is an internal number assigned to a provider that is unique to a particular site and is constant for the duration of service of the provider at that particular site.

Data Type	Numeric
VistA File	NEW PERSON File (#200)
VistA Field	Internal Entry Number

Variable: **Provider Service/Section**

Definition: Section or service affiliation of the provider

Remarks: The PBM/SHG Extract maps the contents of the VistA Field NAME specified below to a defined set of abbreviations. See Appendix C for the mapping. If the contents of the NAME field cannot be mapped, the value of the **Provider Service/Section** will be set to null values.

Data Type	Character
VistA File	SERVICE/SECTION File (#49)
VistA Field	NAME (#.01)

Provider Service/Section can assume the following values:

Value	Description
AMB	Ambulatory Care
ANES	Anesthesiology
CV	Cardiology
CPHAR	Clinical Pharmacy
DDS	Dental
IM	Intermediate Medicine
MED	Medicine
NEUR	Neurology
NUM	Nuclear Medicine
RN	Nursing
OPH	Ophthalmology
ORTHO	Orthopedics
PSY	Psychiatry, Mental Health
PUL	Pulmonary
RAD	Radiology
SUR	Surgery
U	Urology

Variable: **Provider Specialty**

Definition: Specialty of the provider ordering the medication

Remarks: A site can add specialties to the standardized set of specialties. Therefore, the allowed values of the **Provider Specialty** variable may vary by VISN. See Appendix D for a list of the standard **Provider Specialty** values.

Data Type	Character
VistA File	PERSON CLASS File (#8932.1)
VistA Field	CLASSIFICATION (#1)

Variable: **Provider Station Number**

Definition: Outpatient site/station number where the **Provider Local IEN** was assigned

Remarks: This variable contains a three-digit numeric identifier for a VAMC (VA Medical Center) facility. Use of the standard SAS format "STA3NL." will provide parent station descriptions.

Provider Station Number can assume the values shown in Appendix A on page 140 for the variable **STA3N**.

Data Type	Character
VistA File	INSTITUTION File (#4)
VistA Field	STATION NUMBER (#99)

Variable: **Provider Subspecialty**

Definition: Area of specialization of the provider

Remarks: A site can add subspecialties to the standardized set of subspecialties. Therefore, the allowed values of the **Provider Subspecialty** variable may vary by VISN. There are over 700 unique **Provider Specialty** and **Provider Subspecialty** combinations. See Appendix E for a selected list of the standard **Provider Specialty** and **Provider Subspecialty** combinations.

Data Type	Character
VistA File	PERSON CLASS File (#8932.1)
VistA Field	AREA OF SPECIALIZATION (#2)

Variable: **Provider Type**

Definition: Staff or fee provider indicator

Remarks: This variable indicates whether the provider is employed by the VA, has a contract with the VA to provide services, or wrote the prescription under the Transitional Pharmacy Benefits program (VHA Directive 2003-047, dated August 14, 2003). If the value of the VistA Field TPB RX in the PRESCRIPTION File (#52) equals "1" (Yes), then the value of **Provider Type** is set to "NVA". Otherwise the PBM/SHG Extract maps the contents of the VistA Field PROVIDER TYPE specified below to one of two values. If the contents of the PROVIDER TYPE field equals "4" (Fee Basis), the value of the **Provider Type** variable is set to "F"; if not it is set to "S".

Data Type	Character
VistA File	NEW PERSON File (#200)
VistA Field	PROVIDER TYPE (#53.6)

Provider Type can assume the following values:

Value	Description
NVA	Non-VA (Prescription was filled under the Transitional Pharmacy Benefits program)
S	Staff (Provider is employed by the VA)
F	Fee (Provider performs services for the VA under contract and is paid a fee for those services)

Variable: **Release Date**

Definition: Date when the prescription was released from the VA Pharmacy to the patient or mailed by a CMOP

Remarks: This date is recorded in the system when the pharmacist scans the bar code on the prescription label.

For prescriptions processed by a VA Pharmacy, this date will be the same day as or several days after the **Fill/Refill/Partial Date**.

For prescriptions processed by a CMOP, this date may actually be before the **Fill/Refill/Partial Date**.

Please note that you may find missing values in the **Release Date** prior to 2002. These records should be ignored because they indicate that a prescription was filled but never picked up or mailed to the patient.

Data Type	Date
If this is a New Prescription the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	RELEASED DATE/TIME (#31)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	RELEASED DATE/TIME (#17)
If this is a Partial Fill the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	RELEASED DATE/TIME (#8)

Variable: **Schedule**

Definition: Dosage frequency for a unit dose

Remarks: The schedule is entered as a free form text usually in an abbreviated form. Examples include:

"Q6H" – Every six hours
"09-12-15" – At 9:00 A.M., 12:00 P.M., and 3:00 P.M.
"0900-1200-1500" - At 9:00 A.M., 12:00 P.M., and 3:00 P.M.
"STAT" – Immediately
"QOD" – Every other day
"MO-WE-FR@1100" – Monday, Wednesday, and Friday at 11:00 A.M.

Data Type	Character
VistA File	UNIT DOSE Sub-file (#55.06)
VistA Field	Schedule (#26)

Variable: **Sender**

Definition: Outpatient site/station number of the facility where the prescription was ordered

Remarks: This field could have either a three-digit parent station number or a six-character substation identifier. The parent station number may be entered even though the prescription was ordered at a substation.
If **Sender** is a parent station number it can assume the values shown in Appendix A on page 140 for the variable **STA3N**. Since there are over one thousand substations, they are not listed in this document. Instead, users are referred to the VA Site Tracking (VAST) database, maintained by the Planning Systems Support Group (PSSG) of the Office of the Assistant Deputy Under Secretary for Health for Policy and Planning. VAST is available on the PSSG Web site (http://vaww.pssg.med.va.gov).

Data Type	Character
Outpatient Prescription	
VistA File	OUTPATIENT SITE File (#59)
VistA Field	SITE NUMBER (#.06)
IV or Unit Dose	
VistA File	MEDICAL CENTER DIVISION File (#40.8)
VistA Field	FACILITY NUMBER (#1)

Variable: **Start Date of Order**

Definition: Date the unit dose order or IV order began

Remarks:

Data Type	Date
If this is a Unit Dose order the source is:	
VistA File	UNIT DOSE Sub-file (#55.06)
VistA Field	START DATE/TME (#10)
If this is an IV order the source is:	
VistA File	IV Sub-file (#55.01)
VistA Field	START/DATE TIME (#.02)

Variable: **Stop Date of Order**

Definition: Date the last dose was given or the IV order ended

Remarks:

Data Type	Date
If this is a Unit Dose order the source is:	
VistA File	UNIT DOSE Sub-file (#55.06)
VistA Field	STOP/DATE TIME (#34)
If this is a IV order the source is:	
VistA File	IV Sub-File (#55.01)
VistA Field	STOP DATE/TIME (#.03)

Variable: **Thirty-Day Equivalent of the Prescription**

Definition: Number of thirty-day supplies the prescription satisfies

Remarks: The PBM/SHG Extract Software generates this variable from the **Days Supply of Medication** variable. For example, a ninety-day supply would convert to three (3) thirty-day equivalents.

Data Type	Numeric
VistA File	Not applicable
VistA Field	Not applicable

Thirty-Day Equivalent of the Prescription can assume the following values:

Value	Description
1	0-30 Days Supply
2	31-60 Days Supply
3	61-180 Days Supply

Variable: **Total Cost of Prescription**

Definition: Total cost of the outpatient prescription

Remarks: The PBM/SHG Extraction Software calculates the value of this variable by multiplying **Total Quantity Dispensed** by the **Price per Dispense Unit**.

Data Type	Numeric
VistA File	Not applicable
VistA Field	Not applicable

Variable: **Total Quantity Dispensed**

Definition: Total quantity of the drug, supply, or diagnostic dispensed for this fill

Remarks: The quantity's unit of measure is the **Dispense Unit**. For example, if the **Dispense Unit** is a tablet, the **Total Quantity Dispensed** will be the number of tablets dispensed.

Data Type	Numeric
If this is a New Prescription the source is:	
VistA File	PRESCRIPTION File (#52)
VistA Field	QTY (#7)
If this is a Refill the source is:	
VistA File	REFILL Sub-file (#52.1)
VistA Field	QTY (#1)
If this is a Partial Fill the source is:	
VistA File	PARTIAL Sub-file (#52.2)
VistA Field	QTY (#.04)

Variable: **Total Units Dispensed**

Definition: Total number of units dispensed of a solution or additive in an IV preparation from the **Start Date of Order** until the **Stop Date of Order**

Remarks: The unit of measure is the **Drug Unit**. The value in this variable for additives is calculated by multiplying **Dispensing Occurrences** by either of the two VistA fields specified below depending on the value of the **IV Additive or Solution Print Indicator**.

Data Type	Character
If the IV Additive or Solution Print Indicator equals "A" the source is:	
VistA File	IV Sub-file – IV ADDITIVE Multiple (#55.02)
VistA Field	STRENGTH (#7)
If the IV Additive or Solution Print Indicator equals "S" the source is:	
VistA File	IV Sub-file - IV SOLUTION Multiple (#55.11)
VistA Field	VOLUME (#1)

Variable: **Unit Dose Order Number**

Definition: Record number of the order

Remarks: This is a unique number for the order. Multiple doses may be administered under a single order number.

Data Type	Numeric
VistA File	UNIT DOSE Sub-file (#55.06)
VistA Field	ORDER NUMBER (#.01)

Variable: **Units Per Dose**

Definition: Number of **Dispense Units** (tablets, capsules, etc.) to be dispensed in the unit dose

Remarks: The number may be a fraction. For example, if the **Dispense Unit** is a 60ml bottle, the **Units Per Dose** may be .5 if half the bottle or 30ml should be dispensed.

Data Type	Numeric
VistA File	UNIT DOSE Sub-file DISPENSE DRUG Multiple (#55.07)
VistA Field	UNITS PER DOSE (#.02)

Variable: **VA Drug Class**

Definition: VA Drug Classification of the drug, supply, or diagnostic dispensed

Remarks: The VA Drug Classification system separates drugs, supplies, and diagnostics into different categories based upon their characteristics. The classes are assigned by the PBM. A more detailed description of this classification system may be found in the VistA National Drug File Technical Manual.

Diagnostic classes begin with "DX" and contain drugs or items used in diagnostic tests such as barium sulfate or glucose test strips. Supply classes begin with "XA" or "XX". Supply classes contain items such as solutions, syringes, ostomy belts, pouches, bandages, and catheters. All other classes are drugs.

A list of the most current **VA Drug Class** values is available on the PBM Web site (http://vaww.pbm.va.gov/natform/vaclass.htm). If a drug product, supply, or diagnostic does not have a **VA Drug Class** identified by the PBM you may see a non-standard name in this field such as "SUPPLY" or "STUDY".

Data Type	Character
VistA File	LOCAL DRUG File (#50)
VistA Field	VA CLASSIFICATION (#2)

Variable: **VA Product Name**

Definition: Official standardized VA name for a drug product, supply, or diagnostic established by the PBM for formulary and non-formulary items

Remarks: This is a unique name assigned to a product. For drug products, the name includes strength, unit, and dosage form. It does not vary by station unlike the **Generic Drug Name**, which varies by site.

The National Drug File (http://vaww.pbm.va.gov/pbm/natform.htm) contains the most current **VA Product Name** values and is the original source of the **VA Product Name**. If a drug product, supply, or diagnostic does not have a **VA Product Name** established by the PBM, you may see a non-standard name in this field such as "*SUPPLY", "*LOCAL", or "*STUDY".

Data Type	Character
VistA File	LOCAL DRUG File (#50)
VistA Field	VA PRODUCT NAME (#21)

Variable: **VISN Formulary Indicator**

Definition: VISN Formulary flag

Remarks: This variable indicates if the drug is included on the VISN Formulary. If a drug is on the VISN Formulary, it is available for prescribing by all providers authorized to write prescription orders for any station within the VISN.

The PBM/SHG Extract maps the contents of the VistA Field VISN NON-FORMULARY specified below to a one of two values. If the contents of the VISN NON-FORMULARY field equals "1" (Non-Formulary), the value of the **VISN Formulary Indicator** will be set to "N/F"; otherwise, it will be set to null values.

Data Type	Character
VistA File	LOCAL DRUG File (#50)
VistA Field	VISN NON-FORMULARY (#52)

VISN Formulary Indicator can assume the following values:

Value	Description
N/F	Drug is not on the VISN formulary
Null	Drug is on the VISN formulary

VIII. Selected Bibliography

This bibliography contains references to articles about studies that utilized VA pharmacy data. To construct this bibliography, a PubMed search was conducted on 3/7/05 using the following search criteria in all text fields:

[(veteran OR veterans) OR (VA AND patient) OR (VA AND patients))

AND (medication OR medications OR prescription OR prescriptions OR drug OR drugs OR pharmaceutical OR pharmaceuticals OR pharmacy OR pharmacies OR formulary OR formularies)

AND (PBM OR "pharmacy benefit" OR "pharmacy benefits" OR VISTA OR MUMPS OR DSS OR "decision support system" OR database OR databases OR "data base" OR "data bases" OR warehouse OR warehouses)]

The search yielded 155 articles, and the full text of each article was read to determine whether VA pharmacy data was utilized. Ninety-six articles were found to be relevant and are included in this bibliography. The references are listed alphabetically by author and year.

Ten additional articles will be found in this bibliography and are noted with an asterisk (*) after the hyperlink to the PubMed abstract. These articles were contributed by the reviewers of this guide.

We have identified, where possible, the VA pharmacy databases or files that were used in the research reported in the article. The databases or files used are indicated by bracketed numbers following the hyperlink to the PubMed abstract. The table below specifies the correspondence between data sources and bracketed numbers.

Brackets [ ]	**Data Source**
1	PBM/SHG Database
2	Local VistA file
3	VISN data warehouse
4	DSS National Data Extract
5	DHCP (Decentralized Hospital Computer Program) – the original VistA system

Year 2005

Cramer JA, Pugh MJ. "The influence of insulin use on glycemic control: How well do adults follow prescriptions for insulin?" *Diabetes Care* 2005; 28 (1): 78-83. (Abstract) [1]

Fincke BG, Snyder K, Cantillon C, Gaehde S, Standring P, Fiore L et al. "Three complementary definitions of polypharmacy: methods, application and comparison of findings in a large prescription database." *Pharmacoepidemiol Drug Saf* 2005; 14 (2): 121-128. (Abstract)

French DD, Campbell R, Spehar A, Angaran DM. "Benzodiazepines and injury: a risk adjusted model." *Pharmacoepidemiol Drug Saf* 2005; 14 (1): 17-24. (Abstract) [1]

Jonk YC, Sherman SE, Fu SS, Hamlett-Berry KW, Geraci MC, Joseph AM. "National trends in the provision of smoking cessation aids within the Veterans Health Administration." *Am J Manag Care* 2005; 11 (2): 77-85. (Abstract) [1]

Murata GH, Duckworth WC, Shah JH, Wendel CS, Mohler MJ, Hoffman RM. "Hypoglycemia in stable, insulin-treated veterans with type 2 diabetes: a prospective study of 1662 episodes." *J Diabetes Complications* 2005; 19 (1): 10-17. (Abstract)

Preskorn SH, Silkey B, Shah R, Neff M, Jones TL, Choi J et al. "Complexity of Medication Use in the Veterans Affairs Healthcare System: Part I: Outpatient Use in Relation to Age and Number of Prescribers." *J Psychiatr Pract* 2005; 11 (1): 5-15. (Abstract) [2]

Sales MM, Cunningham FE, Glassman PA, Valentino MA, Good CB. "Pharmacy benefits management in the Veterans Health Administration: 1995 to 2003." *Am J Manag Care* 2005; 11 (2): 104-112. (Abstract) [1]

Silkey B, Preskorn SH, Golbeck A, Shah R, Neff M, Jones TL et al. "Complexity of Medication Use in the Veterans Affairs Healthcare System: Part II. Antidepressant Use Among Younger and Older Outpatients." *J Psychiatr Pract* 2005; 11 (1): 16-26. (Abstract) [2]

Year 2004

Blumentals WA, Foulis PR, Schwartz SW, Mason TJ. "Analgesic therapy and the prevention of bladder cancer." *Urol Oncol* 2004; 22 (1): 11-15. (Abstract)

Blumentals WA, Foulis PR, Schwartz SW, Mason TJ. "Does warfarin therapy influence the risk of bladder cancer?" *Thromb Haemost* 2004; 91 (4): 801-805. (Abstract)

Bosworth HB, Calhoun PS, Stechuchak KM, Butterfield MI. "Use of psychiatric and medical health care by veterans with severe mental illness." *Psychiatr Serv* 2004; 55 (6): 708-710. (Abstract)

Burk M, Furmaga E, Dong D, Cunningham F. "Multicenter drug use evaluation of tamsulosin and availability of guidance criteria for nonformulary use in the veterans affairs health system." *J Manag Care Pharm* 2004; 10 (5): 423-432. (Abstract) [1]

Busch SH, Leslie DL, Rosenheck RA. "Comparing the quality of antidepressant pharmacotherapy in the Department of Veterans Affairs and the private sector." *Psychiatr Serv* 2004; 55 (12): 1386-1391. (Abstract) [1]

Butt AA, Fultz SL, Kwoh CK, Kelley D, Skanderson M, Justice AC. "Risk of diabetes in HIV infected veterans pre- and post-HAART and the role of HCV coinfection." *Hepatology* 2004; 40 (1): 115-119. (Abstract)

El Serag HB, Aguirre TV, Davis S, Kuebeler M, Bhattacharyya A, Sampliner RE. "Proton pump inhibitors are associated with reduced incidence of dysplasia in Barrett's esophagus." *Am J Gastroenterol* 2004; 99 (10): 1877-1883. (Abstract) [2]

Hamed A, Lee A, Ren XS, Miller DR, Cunningham F, Zhang H et al. "Use of antidepressant medications: are there differences in psychiatric visits among patient treatments in the Veterans Administration?" *Med Care* 2004; 42 (6): 551-559. (Abstract) [1]

Hermos JA, Young MM, Gagnon DR, Fiore LD. "Characterizations of long-term oxycodone/acetaminophen prescriptions in veteran patients." *Arch Intern Med* 2004; 164 (21): 2361-2366. (Abstract) [2]

Huang JV, Casebeer AW, Plomondon ME, Shroyer AL, McDonald GO, Fullerton D et al. "Prescription-filling rates for key medications in Veterans Affairs patients after coronary artery bypass grafting." *Am J Health Syst Pharm* 2004; 61 (12): 1248-1252. (Abstract) [1]

Kaboli PJ, McClimon BJ, Hoth AB, Barnett MJ. "Assessing the accuracy of computerized medication histories." *Am J Manag Care* 2004; 10 (11 Pt 2): 872-877. (Abstract)

McGwin G, Jr., McNeal S, Owsley C, Girkin C, Epstein D, Lee PP. "Statins and other cholesterol-lowering medications and the presence of glaucoma." *Arch Ophthalmol* 2004; 122 (6): 822-826. (Abstract) [2]

Miller DR, Safford MM, Pogach LM. "Who has diabetes? Best estimates of diabetes prevalence in the Department of Veterans Affairs based on computerized patient data." *Diabetes Care* 2004; 27 Suppl 2 B10-B21. (Abstract) [1]

Pugh MJ, Cramer J, Knoefel J, Charbonneau A, Mandell A, Kazis L et al. "Potentially inappropriate antiepileptic drugs for elderly patients with epilepsy." *J Am Geriatr Soc* 2004; 52 (3): 417-422. (Abstract) [1]

Sajatovic M, Blow FC, Ignacio RV, Kales HC. "Age-related modifiers of clinical presentation and health service use among veterans with bipolar disorder 25." *Psychiatr Serv* 2004; 55 (9): 1014-1021. (Abstract)

Sernyak MJ, Rosenheck R. "Clinicians' reasons for antipsychotic coprescribing." *J Clin Psychiatry* 2004; 65 (12): 1597-1600. (Abstract) [1]

Singh JA, Holmgren AR, Noorbaloochi S. "Accuracy of Veterans Administration databases for a diagnosis of rheumatoid arthritis 12." *Arthritis Rheum* 2004; 51 (6): 952-957. (Abstract) [2]

Smith MW, Chen S. "Current trends in outpatient pharmacy in VA specialized mental health treatment." *Psychiatr Serv* 2004; 55 (3): 315-317. (Abstract) [1] *

Smith NL, Chen L, Au DH, McDonell M, Fihn SD. "Cardiovascular risk factor control among veterans with diabetes: the ambulatory care quality improvement project." *Diabetes Care* 2004; 27 Suppl 2 B33-B38. (Abstract) [2]

Steinman MA, Fischer MA, Shlipak MG, Bosworth HB, Oddone EZ, Hoffman BB et al. "Clinician awareness of adherence to hypertension guidelines." *Am J Med* 2004; 117 (10): 747-754. (Abstract) [2]

Valenstein M, Taylor KK, Austin K, Kales HC, McCarthy JF, Blow FC. "Benzodiazepine use among depressed patients treated in mental health settings 41." *Am J Psychiatry* 2004; 161 (4): 654-661. (Abstract) [1]

Weinstock RS, Hawley G, Repke D, Feuerstein BL, Sawin CT, Pogach LM. "Pharmacy costs and glycemic control in the Department of Veterans Affairs 35." *Diabetes Care* 2004; 27 Suppl 2 B74-B81. (Abstract) [2]

Yesavage JA, Sheikh J, Noda A, Murphy G, O'Hara R, Hierholzer R et al. "Use of a VA pharmacy database to screen for areas at high risk for disease: Parkinson's disease and exposure to pesticides." *J Geriatr Psychiatry Neurol* 2004; 17 (1): 36-38. (Abstract) [2]

Yu W, Cowper D, Berger M, Kuebeler M, Kubal J, Manheim L. "Using GIS to profile health-care costs of VA Quality-Enhancement Research Initiative diseases." *J Med Syst* 2004; 28 (3): 271-285. (Abstract) [4]

Year 2003

Charbonneau A, Rosen AK, Ash AS, Owen RR, Kader B, Spiro A, III et al. "Measuring the quality of depression care in a large integrated health system." *Med Care* 2003; 41 (5): 669-680. (Abstract) [1]

Chen S, Smith MW, Wagner TH, Barnett PG. "Spending for specialized mental health treatment in The VA: 1995-2001." *Health Aff (Millwood)* 2003; 22 (6): 256-263. (Abstract) [1] *

Dobscha SK, Anderson TA, Hoffman WF, Winterbottom LM, Turner EH, Snodgrass LS et al. "Strategies to decrease costs of prescribing selective serotonin reuptake inhibitors at a VA Medical Center." *Psychiatr Serv* 2003; 54 (2): 195-200. (Abstract) [2,3]

Fuller MA, Shermock KM, Secic M, Grogg AL. "Comparative study of the development of diabetes mellitus in patients taking risperidone and olanzapine." *Pharmacotherapy* 2003; 23 (8): 1037-1043. (Abstract) [3]

Kramer TL, Owen RR, Cannon D, Sloan KL, Thrush CR, Williams DK et al. "How well do automated performance measures assess guideline implementation for new-onset depression in the Veterans Health Administration?." *Jt Comm J Qual Saf* 2003; 29 (9): 479-489. (Abstract) [2]

Leslie DL, Rosenheck RA. "Benchmarking the quality of schizophrenia pharmacotherapy: a comparison of the Department of Veterans Affairs and the private sector." *J Ment Health Policy Econ* 2003; 6 (3): 113-121. (Abstract) [1]

Liu CF, Sales AE, Sharp ND, Fishman P, Sloan KL, Todd-Stenberg J et al. "Case-mix adjusting performance measures in a veteran population: pharmacy- and diagnosis-based approaches." *Health Serv Res* 2003; 38 (5): 1319-1337. (Abstract) [3]

Liu CF, Hedrick SC, Chaney EF, Heagerty P, Felker B, Hasenberg N et al. "Cost-effectiveness of collaborative care for depression in a primary care veteran population." *Psychiatr Serv* 2003; 54 (5): 698-704. (Abstract) [3] *

Metlay JP, Hardy C, Strom BL. "Agreement between patient self-report and a Veterans Affairs national pharmacy database for identifying recent exposures to antibiotics." *Pharmacoepidemiol Drug Saf* 2003; 12 (1): 9-15. (Abstract) [1]

Metlay JP, Strom BL, Asch DA. "Prior antimicrobial drug exposure: a risk factor for trimethoprim-sulfamethoxazole-resistant urinary tract infections." *J Antimicrob Chemother* 2003; 51 (4): 963-970. (Abstract) [1]

Petrakis IL, Leslie D, Rosenheck R. "Use of naltrexone in the treatment of alcoholism nationally in the Department of Veterans Affairs." *Alcohol Clin Exp Res* 2003; 27 (11): 1780-1784. (Abstract) [1]

Render ML, Nowak J, Hammond EK, Roselle G. "Methods for estimating and comparing VA outpatient drug benefits with the private sector." *Med Care* 2003; 41 (6 Suppl): II61-II69. (Abstract) [1]

Rubins HB, Nelson DB, Noorbaloochi S, Nugent S. "Effectiveness of lipid-lowering medications in outpatients with coronary heart disease in the Department of Veterans Affairs System." *Am J Cardiol* 2003; 92 (10): 1177-1182. (Abstract) [2]

Sales AE, Liu CF, Sloan KL, Malkin J, Fishman PA, Rosen AK et al. "Predicting costs of care using a pharmacy-based measure risk adjustment in a veteran population." *Med Care* 2003; 41 (6): 753-760. (Abstract) [3] *

Sernyak MJ, Leslie D, Rosenheck R. "Use of system-wide outcomes monitoring data to compare the effectiveness of atypical neuroleptic medications." *Am J Psychiatry* 2003; 160 (2): 310-315. (Abstract) [1]

Siva C, Eisen SA, Shepherd R, Cunningham F, Fang MA, Finch W et al. "Leflunomide use during the first 33 months after food and drug administration approval: experience with a national cohort of 3,325 patients." *Arthritis Rheum* 2003; 49 (6): 745-751. (Abstract) [1]

Sloan KL, Sales AE, Liu CF, Fishman P, Nichol P, Suzuki NT et al. "Construction and Characteristics of the RxRisk-V: A VA-Adapted Pharmacy-Based Case-mix Instrument." *Med Care* 2003; 41 (6): 761-774. (Abstract)

Smith MW, Joseph GJ. "Pharmacy data in the VA health care system." *Med Care Res Rev* 2003; 60 (3 Suppl): 92S-123S. (Abstract) [1,2,4]

Spiegel BM, Targownik L, Dulai GS, Gralnek IM. "The cost-effectiveness of cyclooxygenase-2 selective inhibitors in the management of chronic arthritis." *Ann Intern Med* 2003; 138 (10): 795-806. (Abstract) *

Yu W, Ravelo A, Wagner TH, Phibbs CS, Bhandari A, Chen S et al. "Prevalence and costs of chronic conditions in the VA health care system." *Med Care Res Rev* 2003; 60 (3 Suppl): 146S-167S. (Abstract) [4] *

Year 2002

Au DH, Curtis JR, Every NR, McDonell MB, Fihn SD. "Association between inhaled beta-agonists and the risk of unstable angina and myocardial infarction." *Chest* 2002; 121 (3): 846-851. (Abstract) [2]

Dolder CR, Lacro JP, Dunn LB, Jeste DV. "Antipsychotic medication adherence: is there a difference between typical and atypical agents?" *Am J Psychiatry* 2002; 159 (1): 103-108. (Abstract) [3]

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Krein SL, Hofer TP, Kerr EA, Hayward RA. "Whom should we profile? Examining diabetes care practice variation among primary care providers, provider groups, and health care facilities." *Health Serv Res* 2002; 37 (5): 1159-1180. (Abstract) [2]

Maciejewski ML, Chapko MK, Hedeen AN, Fortney JC. "VA community-based outpatient clinics: cost performance measures." *Med Care* 2002; 40 (7): 587-595. (Abstract) [4] *

Nelson SJ, Brown SH, Erlbaum MS, Olson N, Powell T, Carlsen B et al. "A semantic normal form for clinical drugs in the UMLS: early experiences with the VANDF." *Proc AMIA Symp* 2002; 557-561. (Abstract) [1,2]

Ren XS, Kazis LE, Lee A, Zhang H, Miller DR. "Identifying patient and physician characteristics that affect compliance with antihypertensive medications." *J Clin Pharm Ther* 2002; 27 (1): 47-56. (Abstract)

Sernyak MJ, Leslie DL, Alarcon RD, Losonczy MF, Rosenheck R. "Association of diabetes mellitus with use of atypical neuroleptics in the treatment of schizophrenia." *Am J Psychiatry* 2002; 159 (4): 561-566. (Abstract) [1]

Wannemacher AJ, Schepers GP, Townsend KA. "Antihypertensive medication compliance in a Veterans Affairs Healthcare System." *Ann Pharmacother* 2002; 36 (6): 986-991. (Abstract) [2]

Year 2001

Carter BL, Malone DC, Billups SJ, Valuck RJ, Barnette DJ, Sintek CD et al. "Interpreting the findings of the IMPROVE study." *Am J Health Syst Pharm* 2001; 58 (14): 1330-1337. (Abstract)

Chen RS, Rosenheck R. "Using a computerized patient database to evaluate guideline adherence and measure patterns of care for major depression." *J Behav Health Serv Res* 2001; 28 (4): 466-474. (Abstract) [2]

Keiser P, Nassar N, Kvanli MB, Turner D, Smith JW, Skiest D. "Long-term impact of highly active antiretroviral therapy on HIV-related health care costs." *J Acquir Immune Defic Syndr* 2001; 27 (1): 14-19. (Abstract) *

Rabeneck L, Menke T, Simberkoff MS, Hartigan PM, Dickinson GM, Jensen PC et al. "Using the national registry of HIV-infected veterans in research: lessons for the development of disease registries." *J Clin Epidemiol* 2001; 54 (12): 1195-1203. (Abstract) [2]

Raisch DW, Klaurens LM, Hayden C, Malagon I, Pulliam G, Fass R. "Impact of a formulary change in proton pump inhibitors on health care costs and patients' symptoms." *Dig Dis Sci* 2001; 46 (7): 1533-1539. (Abstract) [2]

Rosenheck R, Leslie D, Sernyak M. "From clinical trials to real-world practice: use of atypical antipsychotic medication nationally in the Department of Veterans Affairs." *Med Care* 2001; 39 (3): 302-308. (Abstract) [1] *

Sernyak MJ, Rosenheck R, Desai R, Stolar M, Ripper G. "Impact of clozapine prescription on inpatient resource utilization." *J Nerv Ment Dis* 2001; 189 (11): 766-773. (Abstract) [1]

Year 2000

Brown S, Black K, Mrochek S, Wood A, Bess T, Cobb J et al. "RADARx: Recognizing, Assessing, and Documenting Adverse Rx events." *Proc AMIA Symp* 2000; 101-105. (Abstract) [2]

Carter BL, Malone DC, Ellis SL, Dombrowski RC. "Antihypertensive Drug Utilization in Hypertensive Veterans With Complex Medication Profiles." *J Clin Hypertens (Greenwich)* 2000; 2 (3): 172-180. (Abstract) [1]

Chen RS, Nadkarni PM, Levin FL, Miller PL, Erdos J, Rosenheck RA. "Using a computer database to monitor compliance with pharmacotherapeutic guidelines for schizophrenia." *Psychiatr Serv* 2000; 51 (6): 791-794. (Abstract) [2]

Elliott ME, Farrah RM, Binkley NC, Carnes ML, Gudmundsson A. "Management of glucocorticoid-induced osteoporosis in male veterans." *Ann Pharmacother* 2000; 34 (12): 1380-1384. (Abstract) [2]

Every NR, Fihn SD, Sales AE, Keane A, Ritchie JR. "Quality Enhancement Research Initiative in ischemic heart disease: a quality initiative from the Department of Veterans Affairs. QUERI IHD Executive Committee." *Med Care* 2000; 38 (6 Suppl 1): I49-I59. (Abstract) [4]

Gerson LB, Hatton BN, Ryono R, Jones W, Pulliam G, Sampliner RE et al. "Clinical and fiscal impact of lansoprazole intolerance in veterans with gastro-oesophageal reflux disease." *Aliment Pharmacol Ther* 2000; 14 (4): 397-406. (Abstract) [2,4]

Hamby L, Weeks WB, Malikowski C. "Complications of warfarin therapy: causes, costs, and the role of the anticoagulation clinic." *Eff Clin Pract* 2000; 3 (4): 179-184. (Abstract) [4] *

Zaman A, Goldberg RJ, Pettit KG, Kaniecki DJ, Benner K, Zacker C et al. "Cost of treating an episode of variceal bleeding in a VA setting." *Am J Gastroenterol* 2000; 95 (5): 1323-1330. (Abstract)

Year 1999

Keiser P, Kvanli MB, Turner D, Reisch J, Smith JW, Nassar N et al. "Protease inhibitor-based therapy is associated with decreased HIV-related health care costs in men treated at a Veterans Administration hospital." *J Acquir Immune Defic Syndr Hum Retrovirol* 1999; 20 (1): 28-33. (Abstract) *

Malone DC, Okano GJ. "Treatment of urge incontinence in Veterans Affairs medical centers." *Clin Ther* 1999; 21 (5): 867-877. (Abstract) [2]

Malone DC, Billups SJ, Valuck RJ, Carter BL. "Development of a chronic disease indicator score using a Veterans Affairs Medical Center medication database. IMPROVE Investigators." *J Clin Epidemiol* 1999; 52 (6): 551-557. (Abstract) [2]

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Strauss WE, Alexis G, Tapley RD. "Use of a tiered review for evaluation of appropriate use of hydroxymethylglutaryl coenzyme A reductase-inhibitor therapy." *Clin Ther* 1999; 21 (2): 422-429. (Abstract) [5]

Swislocki AL, Khuu Q, Liao E, Wu E, Beza F, Lopez J et al. "Safety and efficacy of metformin in a restricted formulary." *Am J Manag Care* 1999; 5 (1): 62-68. (Abstract) [5]

Year 1998

Guo JJ, Diehl MC, Felkey BG, Gibson JT, Barker KN. "Comparison and analysis of the national drug code systems among drug information databases." *Drug Information Journal* 1998; 32 (3): 769-775. (Abstract)

Pogach LM, Hawley G, Weinstock R, Sawin C, Schiebe H, Cutler F et al. "Diabetes prevalence and hospital and pharmacy use in the Veterans Health Administration (1994). Use of an ambulatory care pharmacy-derived database." *Diabetes Care* 1998; 21 (3): 368-373. (Abstract)

Year 1996

Fenn HH, Robinson D, Luby V, Dangel C, Buxton E, Beattie M et al. "Trends in pharmacotherapy of Schizoaffective and bipolar affective disorders: a 5-year naturalistic study." *Am J Psychiatry* 1996; 153 (5): 711-713. (Abstract) [5]

Graber SE, Seneker JA, Stahl AA, Franklin KO, Neel TE, Miller RA. "Development of a replicated database of DHCP data for evaluation of drug use." *J Am Med Inform Assoc* 1996; 3 (2): 149-156. (Abstract) [5]

Marcelino JJ, Feingold KR. "Inadequate treatment with HMG-CoA reductase inhibitors by health care providers." *Am J Med* 1996; 100 (6): 605-610. (Abstract)

Year 1995

Hammond KW, Snowden M, Risse SC, Adkins TG, O'Brien JJ. "An effective computer-based tardive dyskinesia monitoring system." *Am J Med Qual* 1995; 10 (3): 133-137. (Abstract) [5]

Stitt FW. "A standards-based clinical information system for HIV/AIDS." *Medinfo* 1995; 8 Pt 1 402. (Abstract) [5]

Year 1994

Nielson C, Smith CS, Lee D, Wang M. "Implementation of a relational patient record with integration of educational and reference information." *Proc Annu Symp Comput Appl Med Care* 1994; 125-129. (Abstract) [2,3,5]

Year 1993

Chapko M, Rothman ML, Ehreth J, Hedrick SC, Sullivan J, Erdly W et al. "Data collection in the Adult Day Health Care Evaluation Study." *Med Care* 1993; 31 (9 Suppl): SS15-SS25. (Abstract)

Year 1992

Fish CA, Kirking DM, Martin JB. "Information systems for evaluating the quality of prescribing." *Ann Pharmacother* 1992; 26 (3): 392-398. (Abstract)

Zieve FJ, Ciesco E. "Computer-focused modification of physician prescribing behavior." *Proc Annu Symp Comput Appl Med Care* 1992; 617-620. (Abstract)

Year 1991

Kolb KW, Israel MK. "Use of computerized databases for drug therapy quality management." *Top Hosp Pharm Manage* 1991; 11 (2): 44-50. (Abstract) [5]

Year 1989

Andrews RD, Beauchamp C. "A clinical database management system for improved integration of the Veterans Affairs Hospital Information System." *J Med Syst* 1989; 13 (6): 309-320. (Abstract) [2,5]

Appendix A: Values for Selected Variables

(Values and their descriptions begin on the following page.)

ENRLPRTY can assume the following values:

Value	Description
(Blank)	Priority group not assigned.
1	Veterans with service-connected disabilities rated 50% or more disabling.
2	Veterans with service-connected disabilities rated 30% or 40% disabling.
3	Veterans who are former POWs; veterans awarded the Purple Heart; veterans whose discharge was for a disability that was incurred or aggravated in the line of duty; veterans with service-connected disabilities rated 10% or 20% disabling; and veterans awarded special eligibility classification under Title 38, U.S.C., Section 1151, "benefits for individuals disabled by treatment or vocational rehabilitation".
4	Veterans who are receiving aid and attendance or housebound benefits, and veterans who have been determined by the VA to be catastrophically disabled.
5	Nonservice-connected veterans and nocompensable service-connected veterans rated 0% disabled whose annual income and net worth are below the established VA Means Test thresholds; veterans receiving VA pension benefits; and veterans eligible for Medicaid benefits.
6	Compensable 0% service-connected veterans, World War I veterans, and Mexican Border War veterans. Also, veterans solely seeking care for disorders associated with: exposure to herbicides while serving in Vietnam; or exposure to ionizing radiation during atmospheric testing or during the occupation of Hiroshima and Nagasaki; or for disorder associated with service in the Gulf War; or for any illness associated with service in combat in a war after the Gulf War or during a period of hostility after November 11, 1998.
7	Veterans who agree to pay specified copayments with income and/or net worth above the VA Means Test threshold and income below the HUD geographic index.
8	Veterans who agree to pay specified copayments with income and/or net worth above the VA Means Test threshold and the HUD geographic index.

MEANS can assume the following values:

Value	Description
A	Category A. Veteran is below the Means Test Threshold and is exempt from co-payments.
AN	Category A Veteran, Non-Service Connected (NSC). The veteran is exempt from co-payments. This means test category includes NSC veterans who are required to complete a means test and those NSC veterans in receipt of VA pension, aid and attendance or housebound allowance or entitled to State Medicaid. This category may also include 0% non-compensable service-connected veterans when they are not treated for a service connected condition and are placed in this category based on completion of a means test.
AS	Category A Veteran, Service Connected. The veteran is exempt from co-payments. This means test category includes all compensable service-connected (0-101%) veterans and Special Category veterans. This category also includes 0% non-compensable service connected veterans when they are treated for a service-connected condition and those veterans treated for any condition during their first year after their discharge from active duty
C	Category C. Veteran is above the Means Test Threshold, and co-payments are required.
I	The veteran is below the Means Test Threshold, but the pharmacy co-pay test is incomplete.
N	This value for outpatients indicates that the means test is not required and for inpatients indicates that the person receiving care is a non-veteran.
P	Results of means test are pending adjudication.
R	A means test is required, but the veteran has not submitted a financial worksheet.
X	This Means Test category includes treatment of patients who are not required to complete the Means Test for the care being provided. If the veteran was admitted prior to July 1, 1986, with no change in the level of care being received, (i.e., if the patient was in the Nursing Home Care Unit (NHCU) on June 30, 1986, and has remained in the NHCU since that date with no transfer to the hospital for treatment), the "X" Means Test indicator will be accepted. This category also includes patients admitted to the domiciliary, patients seen for completion of a compensation and pension examination and Class II dental treatment.

STA3N can assume the following values:

Value	Description
402	Togus
405	White River Junction
436	Fort Harrison, Montana Health Care System (HCS)
437	Fargo
438	Sioux Falls
442	Cheyenne
452	VAMC Wichita, KS
459	Honolulu
460	Wilmington
501	New Mexico Health Care System (HCS)
502	Alexandria
503	James E. Van Zandt VAMC (Altoona)
504	Amarillo Health Care System (HCS)
506	Ann Arbor Health Care System (HCS)
508	Decatur, Atlanta
509	Augusta
512	Baltimore
515	Battle Creek
516	Bay Pines
517	Beckley
518	Bedford
519	West Texas Health Care System (HCS)
520	Gulf Coast Health Care System (HCS)
521	Birmingham
523	VA Boston Health Care System (HCS) – Boston Division
526	Bronx
528	Upstate New York Health Care System (HCS)
529	Butler
531	Boise
534	Charleston
537	Chicago Health Care System (HCS)
538	Chillicothe
539	Cincinnati
540	Clarksburg
541	Cleveland – Wade Park
542	Coatesville
544	Columbia SC
546	Miami
548	West Palm Beach

STA3N can assume the following values (continued):

Value	Description
549	Dallas VAMC
550	Illiana Health Care System (HCS) (Danville)
552	Dayton
553	Detroit (John D. Dingell)
554	Denver, Eastern Colorado Health Care System (HCS)
556	North Chicago IL
557	Dublin
558	Durham
561	East Orange, New Jersey Health Care System (HCS)
562	Erie
564	Fayetteville AR
565	Fayetteville NC
568	Fort Meade
570	Fresno, Central California Health Care System (HCS)
573	North Florida/South Georgia Health Care System (HCS) – Gainesville
575	Grand Junction
578	Hines
580	Houston
581	Huntington
583	Indianapolis
585	Iron Mountain MI
586	Jackson, G. V. (Sonny) Montgomery VAMC
589	VAMC Heartland, Kansas City
590	Hampton
593	Las Vegas, Southern Nevada Health Care System (HCS)
595	Lebanon
596	Lexington – Leestown
598	Little Rock, Central AR Veterans Health Care System (HCS)
600	Long Beach Health Care System (HCS)
603	Louisville
605	Loma Linda VAMC
607	Madison WI
608	Manchester
610	N. Indiana Health Care System (HCS) – Marion
612	NCHC Martinez
613	Martinsburg
614	Memphis
618	Minneapolis
619	Montgomery

STA3N can assume the following values (continued):

Value	Description
620	Montrose, Hudson Valley Health Care System (HCS)
621	Mountain Home
623	Muskogee
626	Middle Tennessee Health Care System (HCS)
629	New Orleans
630	New York Harbor Health Care System (HCS) – NY Division
631	Northampton
632	Northport
635	Oklahoma City
636	Omaha Division – Central Plains Health Network
637	Asheville – Oteen
640	Palo Alto – Palo Alto
642	Philadelphia
644	Phoenix
646	Pittsburgh Health Care System (HCS) – University Dr
648	Portland
649	Northern Arizona Health Care System (HCS)
650	Providence
652	Richmond
653	Roseburg Health Care System (HCS)
654	Sierra Nevada Health Care System (HCS)
655	Saginaw
656	St Cloud
657	St Louis – John Cochran
658	Salem
659	W.G. (Bill) Hefner Salisbury VAMC
660	Salt Lake City Health Care System (HCS)
662	San Francisco
663	Seattle, Puget Sound Health Care System (HCS)
664	San Diego Health Care System (HCS)
666	Sheridan
667	Shreveport, Overton Brooks VAMC
668	Spokane
671	San Antonio VAMC
672	San Juan
673	Tampa
674	Temple VAMC
676	Tomah
678	S. Arizona Health Care System (HCS)
679	Tuscaloosa

STA3N can assume the following values (continued):

Value	Description
687	Walla Walla
688	Washington
689	West Haven
691	Greater Los Angeles Health Care System (HCS)
693	Wilkes Barre
695	Milwaukee WI

TRTSP can assume the following values:

Value	Description
1	Allergy
2	Cardiology
3	Pulmonary Tuberculosis (TB)
4	Pulmonary Non-TB
5	Gerontology
6	Dermatology
7	Endocrinology
8	Gastroenterology
9	Hematology/Oncology
10	Neurology
11	Epilepsy Center
12	Medical Intensive Care Unit
14	Metabolic
15	General (Acute) Medicine
16	Cardiac Step Down
17	Telemetry
19	Neurology Off Board Server (OBS)
20	Rehabilitation Medicine
21	Blind Rehabilitation
22	Spinal Cord Injury
25	Psychiatric Residence Rehabilitation Treatment
27	Substance Abuse Residence Rehabilitation
29	Substance Abuse Compensated Work Therapy (CWT)/Trans
31	Geriatric Evaluation and Management (GEM) Acute Medicine
32	GEM Intermediate
33	GEM Psychiatry
34	GEM Neurology
35	GEM Rehabilitation
36	Blind Rehabilitation OBS
37	Domiciliary Care for Homeless Veterans (DCHV)
38	Post Traumatic Stress Disorder (PTSD)/CWT/TR
39	General CWT/TR
40	Intermediate Medicine
41	Rehabilitation Medicine OBS
50	Surgery (General)
51	Gynecology
52	Neurosurgery
53	Ophthalmology
54	Orthopedic
55	Ear, Nose, & Throat

TRTSP can assume the following values (continued):

Value	Description
56	Plastic Surgery
57	Proctology
58	Thoracic Surgery
59	Urology
60	Oral Surgery
61	Podiatry
62	Peripheral Vascular
63	Surgical Intensive Care Unit
65	Surgical OBS
70	Acute Psychiatry
71	Long-Term Psychiatry
72	Alcohol Dependency – High Intensity
73	Drug Dependency – High Intensity
74	Substance Abuse – High Intensity
75	Halfway House
76	Psychiatric Medically Infirm
77	Psychiatric Residence Rehabilitation
79	Special Inpatient PTSD Unit
80	Nursing Home Care
81	GEM Nursing Home Care Unit (NHCU)
83	Respite Care
84	Psychiatric Substance Abuse (Intermediate Care)
85	Domiciliary
86	Domiciliary Substance Abuse
87	GEM Domiciliary
88	Domiciliary PTSD
89	Sustained Treatment and Rehabilitation (STAR) I, II, & III Programs
90	Substance Abuse Star I, II, & III
91	Evaluation/Brief Treatment PTSD
92	Psychiatry – General Intervention
93	High Intensity General Psychiatry - Inpatient
94	Psychiatric OBS
95	NHCU – Intermediate Long-Term Care LTC
96	NHCU – Hospice Long-Term Care
98	Non-Department of Defense (DOD) Beds
99	DOD Beds

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Appendix B: VistA Mapping of Prescription Patient Status Field From One Site

VistA values	**PBM Values***
SC (Service Connected)	SC
HB/A&A/WWI (House Bound/Aid and Attendance/World War I)	AA
SC LESS THAN 50% (Service Connected less than 50%)	SC
PENSION NSC (Pension Non Service Connected)	OT
OPT NSC (Out-Patient Treatment Non Service Connected)	OT
OTHER FEDERAL	OT
AUTH ABS –96 (Authorized Absence for less than 96 hours)	AA
AUTH ABS +96 (Authorized Absence for more than 96 hours)	AA
INPATIENT	IP
EMPLOYEE	OT
REG DISCH (Regular Discharge)	OT
NBC (Non-Bed Care)	OT
PBC (Pre-Bed Care)	OT
CNH (Community Nursing Home)	OT
OPC (Outpatient Care)	OT
OTHER	OT
BLIND CENTER	IP
DOM (Domiciliary)	IP
FEE A&A	AA
FEE-SC	SC

*SC= Service Connected, AA=Aid and Attendance, OT=Other, IP=Inpatient.

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Appendix C: Mapping of the VistA Provider Service/Section Field to the PBM Abbreviation

SERVICE/SECTION FIELD VALUE	PBM ABBREVIATION
AMBU	AMB
PRIMARY	AMB
CBOC	AMB
ANESTH	ANES
CARDIO	CV
PHARM	CPHAR
DENT	DDS
INTERMED	IM
MEDIC	MED
NEUROL	NEUR
NUCLEAR	NUM
NURSING	RN
OPHTH	OPH
ORTHOPED	ORTHO
PSYCHIA	PSY
MENTAL	PSY
PULM	PUL
RADIOL	RAD
SURG	SUR
UROLOG	U

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Appendix D: Standard Provider Specialties

Acupuncturist
Art Therapist
Assistant, Podiatric
Audiologist
Audiologist-Hearing Aid Fitter
Chiropractor
Christian Science Practitioner/Nurse
Clinical Nurse Specialist
Clinical Pathology
Clinical Services
Clinical Specialist
Contractor
Contractor
Counselor
Dance Therapist
Dental Assistant
Dental Hygienist
Dental Laboratory Technician
Dental Resident
Dentist
Dentist - (D.D.S. or D.M.D.)
Denturist
Dietary Manager
Dietetic Technician
Dietician, Registered
Driver
Electrologist
Emergency Medical Technician, Basic
Emergency Medical Technician, Intermediate
Emergency Medical Technician, Paramedic
Emergency Medicine
First Responder (lower skill level)
Funeral Director
Hearing Instrument Specialist
Home Health Aide
Homemaker
Homeopath
Intern, Allopathic
Intern, Osteopathic
Kinesiotherapist
Legal Medicine
Licensed Practical Nurse
Licensed Vocational Nurse
Marriage & Family Therapist
Massage Therapist
Medical Genetics: Ph.D. Medical Genetics
Medical Record Administrator
Medical Record Technician
Midwife, Certified
Midwife, Certified Nurse
Midwife, Lay (Non-nurse)
Music Therapist
Naturopath
Neuropsychologist
Nurse Anesthetist (CRNA)
Nurse Anesthetist, Certified Registered
Nurse Massage Therapist (NMT)
Nurse Midwife (CNM)
Nurse Practitioner
Nurse's Aide
Nursing Administrator
Nursing Administrator, Long-Term Care
Nursing Home Administrator
Nutrition
Nutritionist
Occupational Therapist
Occupational Therapy Assistant
Opthal-ot-laryngo-rhinlogy
Optometric Assistant/Technician
Optometrist
Orthotics/Prosthetics Fitter
Orthotist

Appendix D: Standard Provider Specialties (continued)

Other
Other (as specified)
Other Nursing Services (Non-R.N.s)
Perfusionist
Personal Care Attendant
Pharmacist
Phlebotomist (non-nurse)
Physical Therapist
Physical Therapy Assistant
Physician Assistant
Physician/Osteopath
Physician/Osteopath (Other Roles)
Podiatrist
Prosthetist
Psychiatry and Neurology
Psychoanalysis
Psychoanalyst
Psychologist
Pulmonary Function Technologist
Radiologic Sciences
Radiologic Technologist
Radiology
Recreation Therapist
Registered Nurse
Rehabilitation Counselor
Rehabilitation Practitioner
Research
Resident, Allopathic
Resident, Osteopathic
Respiratory Care Practitioner
Respiratory Therapist
Social Worker
Specialist
Specialist/Technologist
Specialist/Technologist, Cardiology
Specialist/Technologist, Health Information
Specialist/Technologist, Other
Specialist/Technologist, Pathology
Speech and Hearing Therapist
Speech-Language Pathologist
Surgery
Surgery, Maxillofacial
Surgery, Neurological
Surgery, Orthopaedic, Sports Medicine
Surgery, Plastic Facial, Otolaryngology
Technician
Technician, Cardiology
Technician, Health Information
Technician, Other
Technician, Pathology
Technician/Technologist
Veterinarian

Appendix E: List of Selected Specialties and Subspecialties

Specialty	Subspecialty
Audiologist	Assistive Technology Practitioner
Chiropractor	Orthopedic
Clinical Nurse Specialist	Critical Care Medicine
Clinical Pathology	Technologist in Chemistry
Clinical Services	IV Therapist
Clinical Specialist	Gerontological Nursing
Dentist	Endodontics
Dietician, Registered	Nutrition, Renal
Nurse Practitioner	Critical Care Medicine
Nutritionist	Nutrition, Education
Occupational Therapist	Hand
Optometrist	Low Vision
Pharmacist	Pharmacotherapy
Physical Therapist	Geriatrics
Physician/Osteopath	Cardiology
Physician/Osteopath	Dermatopathology
Physician/Osteopath	Geriatric Medicine: Internal Medicine
Physician/Osteopath	Hematology & Oncology
Physician/Osteopath	Internal Medicine: Peripheral Vascular Disease
Physician/Osteopath	Nephrology
Physician/Osteopath	Oncology
Physician/Osteopath	Otology
Physician/Osteopath	Pain Management - Anesthesiology
Physician/Osteopath	Psychiatry, Geriatric
Physician/Osteopath	Radiology
Physician/Osteopath	Surgery, Thoracic
Radiologic Technologist	Cardiovascular-Interventional Technology: Radiography
Registered Nurse	Dialysis, Peritoneal
Rehabilitation Practitioner	Rehabilitation Coordinator
Respiratory Care Practitioner	Registered Respiratory Therapist
Specialist/Technologist, Cardiology	Cardiopulmonary-Cardiovascular
Technician, Pathology	Medical Laboratory