PHARMACY DATA MANAGEMENT

USER MANUAL

Version 1.0
September 1997

(Revised November 2013)

Department of Veterans Affairs
Product Development

Revision History

Each time this manual is updated, the Title Page lists the new revised date and this page describes the changes. If the Revised Pages column lists "All," replace the existing manual with the reissued manual. If the Revised Pages column lists individual entries (e.g., 25, 32), either update the existing manual with the Change Pages Document or print the entire new manual.

Date	Revised Pages	Patch Number	Description
11/13	i-iv, v-vi, 26a-26b, 102a-102f	PSS*1*174	• Update TOC • Identical additives and solutions • Additive and Generic Drug Distinction • Additive and Generic Drug Distinction, Solution Strength, and Quick Codes • Additive Strength
01/13	i - vi, 4 - 4a, 26 – 26b, 100 - 100b, 101a – 101b, 102a – 102f, 103, 104-104d, 105, 205 - 208	PSS*1*164 & PSS*1*169	• Added REQuest Change to Dose Unit example to the Request Change Dose Unit section. • Added note to Check PEPS Services Setup section. • Added check options to the Vendor Database Reachable; Enhanced Order Checks Executed example. • Added Print Interface Data File option • Added Section 1.21 Inpatient Drug Management as this information was missing from patch PSS*1*146 release. • Added Section 1.22 Check Drug Interaction option • Added Find Unmapped Local Possible Dosages option • Updated the heading number for the Stand-Alone Menu Options section this was previously 1.21 and is now 1.23. • Updated Index (G. Tucker, PM; G. Scorca, Tech Writer)
06/12	i, ii, iii, 3-4, 4a – 4b, 44c, 44ib, 44j, 105	PSS*1*146	New sub-menu named Inpatient Drug Management [PSS INP MGR]. Enter/Edit dosages Additive Solution enhancement. (N. Goyal, PM; J. Owczarzak Tech Writer)
01/12	i, ii, iii, 27, 44ia – 44ib, 89	PSS*1*156	New multiple named Outpatient Pharmacy Automation Interface (OPAI) in the DRUG file (#50) sub-file (#50.0906). (N. Goyal, PM; J. Owczarzak Tech Writer)
12/11	i, ii, iii, 38-40b, 62d-64d	PSS*1*159	Updated screens. Updated the Edit Orderable Items option for the default medication route. Due to data being moved, pages 62e and 62f have been removed. (N. Goyal, PM; C. Bernier Tech Writer)
08/11	i-iii, 101- 101b, 102	PSS*1*163	Updated the Schedule/Reschedule Check PEPS Interface section • Updated overview of Schedule/Reschedule Check PEPS Interface • Updated the Schedule/Reschedule Check PEPS Interface example • Added a warning regarding the DEVICE FOR

Date	Revised Pages	Patch Number	Description
			QUEUED JOB OUTPUT field • Added a blank page for two-sided copying (G. Tucker, PM; G. Scorca, Technical Writer)
04/11	i-iii, 3-4b, 7-16b, 44d-j, 114, 118, 121, 129, 137, 204-206	PSS*1*155	Utilized three new fields that were added to the VA PRODUCT file (#50.68) with PSN*4*261. The fields are used during the Match/Rematch process of the *Drug Enter/Edit* [PSS DRUG ENTER/EDIT] and the *Enter/Edit Dosages* [PSS EDIT DOSAGES] options to determine whether possible dosages should be auto-created for supra-therapeutic drugs. Retired the *Auto Create Dosages* [PSS DOSAGE CONVER-SION] option and removed the option from the *Dosages* [PSS DOSAGES MANAGEMENT] menu. Updated Index. (N. Goyal, PM; E. Phelps/C. Bernier Tech Writers)
04/11	i, ii, iii, added iv, v; changed 3, 4, 45, 46; added 46a-46d, re-numbered all sections starting on page 87 and ending with page 106; changed page. 89; added 90e and 90f; changed 99-106; added 106a-b; deleted 107-112; changed 151, 153, 154; added 154a-b; updated index;	PSS*1*136 & PSS*1*117	Besides the developer's changes, this document incorporates the comments from Lina Bertuzis and colleagues for the PRE functionality included with patch PSS*1*117 (a combined patch with PSS*1*136). Sections changed are: • Changed overview of menu item descriptions to match application • Changed menu item description named ***Drug Interaction Management*** to ***Order Check Management*** and changed text • Changed submenu item ***Enter/Edit Local Drug Interaction*** [PSS-INTERACTION-LOCAL-ADD] to ***Request Changes to Enhanced Order Check Databas***e. [PSS ORDER CHECK CHANGES] and changed text. • Changed example in ***Report of Locally Entered Interactions*** option Section deleted: • Deleted ***Enhanced Order Checks Setup Menu*** and all its sub-menu items (*Find Unmapped Local Medication Routes; Map Local Medication Route to Standard; Medication Route Mapping Report; Medication Route File Enter/Edit; Medication Route Mapping History Report; Request Change to Standard Medication Route; Find Unmapped Local Possible Dosages; Map Local Possible Dosages; Local Possible Dosages Report; Strength Mismatch Report; Enter/Edit Dosages; Request Change to Dose Unit; Mark PreMix Solutions; IV Solution Report; Administration Schedule File Report; Medication Instruction File Report*) The deleted Enhanced Order Checks Setup Menu and its submenus is replaced by the following addition: • Added ***PEPS Services*** menu and its submenus: *Check Vendor Database Link; Check PEPS Services Setup; and Schedule/Reschedule PEPS Interface* Added a heading for ***Stand-Alone Menu Options*** with the description for the *Enable/Disable Vendor Database Link* option and a short description for the *Other Language Translation*

Date	Revised Pages	Patch Number	Description
			Setup option. Added definitions in the glossary for PECS and PEPS, and updated the index. Jim Pollard, Project Manager, Ron Ruzbacki, Bill Tatum, Developers; Marella Colyvas, Technical Writer
04/11	i-ii, 38, 40, 62d-f, 64, 64a	PSS*1*153	Renamed the MED ROUTE field (#.06) of the PHARMACY ORDERABLE ITEM file (#50.7) to be DEFAULT MED ROUTE. Provided the ability to print the POSSIBLE MED ROUTES multiple on *the Default Med Route For OI Report* [PSS DEF MED ROUTE OI RPT] option. (N. Goyal, PM; E. Phelps, Tech Writer)
02/11	i, 63	PSS*1*142	Added functionality to denote the default med route for IV orders in the selection list in CPRS if all of the orderable items on the order have the same default med route defined. Updated TOC. Released with CPRS version 28. (N. Goyal, PM; E. Phelps/C. Bernier Tech Writers)
06/10	i, iii, 84, 84a-84b, 203, 205-206	PSS*1*143	Added new Schedule Validation Requirements. Updated Index. (R. Singer, DM; B. Thomas, Tech. Writer)
02/10	iii-iv, 3-4, 44a-d, 47-48, 61-62d, 89-90b, 112, 203-206	PSS*1*147	Described new process for requesting changes to Standard Medication Routes and the New Term Rapid Turnaround (NTRT) process; Added *IV Additive/Solution Reports* menu, with suboptions *IV Solution Report* option and *V Additive Report* [PSS IV ADDITIVE REPORT] option Added *Default Med Route for OI Report* option to the *Medication Routes Management...* menu.(this change was made but not documented with PSS*1*140) Updated *Drug Enter/Edit* option to display NUMERIC DOSE and DOSE UNIT fields defined for Local Possible Dosage Updated the Drug Enter/Edit option display to include the new ADDITIVE FREQUENCY field Updated Table of Contents and Index J.Freese, DM; K. Lowry, Tech. Writer
10/09	i, 64a-b, 65, 65a-b, 66	PSS*1*141	Added ASSOCIATED IMMUNIZATION field to *Edit Orderable Items* option and *Dispense Drug/Orderable Item Maintenance* option. Reorganized content within sections to accommodate new information. (R. Singer, DM; D. Dertien/R. Silverman, Tech Writer)
08/09	iii-iv, 53, 62a-b, 63, 81, 203	PSS*1*140	Added DEFAULT MED ROUTE FOR CPRS field and *Default Med Route For OI Report* [PSS DEF MED ROUTE OI RPT] option for the enhancement of default medication route being defined for an orderable item. (G. Tucker, PM; S. B. Scudder, Tech. Writer)
07/09	27-34	PSS*1*131	Added explanations of DEA special handling code U for sensitive drug. (M. Anthony, PM; C. Liles, Tech. Writer)
05/09	81	PSS*1*137	Added Automate CPRS Refill field to the *Pharmacy System Parameters Edit* [PSS MGR] option. (G. Tucker, PM; S. B. Scudder, Tech. Writer)

Date	Revised Pages	Patch Number	Description
02/09	All	PSS*1*129	Pages renumbered to accommodate added pages. Pharmacy Reengineering (PRE) V.0.5 Pre-Release. Restructured *Pharmacy Data Management* menu: - Grouped related options under the following new sub-menus: *Drug Text Management, Medication Instruction Management, Medication Routes Management,* and *Standard Schedule Management* - Added temporary *Enhanced Order Checks Setup Menu* - Added the following options: *Find Unmapped Local Medication Routes, Find Unmapped Local Possible Dosages, Map Local Medication Route to Standard, Map Local Possible Dosages, Mark PreMix Solutions, Request Change to Dose Unit*, and *Request Change to Standard Medication Route* - Added the following reports: *Administration Schedule File Report, IV Solution Report, Local Possible Dosages Report, Medication Instruction File Report, Medication Route Mapping Report, Medication Route Mapping History Report,* and *Strength Mismatch Report* - Updated Table of Contents, Index, and Glossary (G. Tucker, PM; V. Howell, Tech. Writer)
09/97			Original Release of User Manual

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1.3 Drug Enter/Edit
[PSS DRUG ENTER/EDIT]

The *Drug Enter/Edit* option allows users to make a new Dispense Drug entry into the DRUG file (#50) or to make changes to existing DRUG file (#50) Dispense Drug entries. This option consolidates entries for all Pharmacy packages if the user possesses the proper package key. It will also allow the user to match Dispense Drugs to corresponding NATIONAL DRUG file (#50.6) and Pharmacy Orderable Item entries and to tie the Dispense Drug to a DRUG TEXT file (#51.7) entry. Dispense Drug formulary status is designated via this option and formulary alternatives may be designated for non-formulary Dispense Drug entries.

Furthermore, addition of identically named IV ADDITIVES and IV SOLUTIONS from the DRUG ENTER/EDIT [PSS DRUG ENTER/EDIT] option is allowed when linking an additive or solution to the drug.

Example – Identically Named Additives

```
AN IV ITEM? Yes// Y  (Yes)
Edit Additives or Solutions:

     Select one of the following:

          A          ADDITIVES
          S          SOLUTIONS

Enter response: ADDITIVES

 CEFAZOLIN SOD 1GM INJ currently linked to the following IV Additives:



  1. TESTDRUG                 Additive Strength: 10 MG

  2. TESTDRUG                 Additive Strength: 5 GM

  3. TESTDRUG                 Additive Strength: 12 GM

  4. TESTDRUG                 Additive Strength: 12.5 GM
Select 1-4 from list above or type 'NEW' to link to a new IV Additive: NEW

Select IV ADDITIVES PRINT NAME: TESTDRUG
  Lookup: PRINT NAME
     1    TESTDRUG        Additive Strength: 10 MG

     2    TESTDRUG        Additive Strength: 5 GM

     3    TESTDRUG        Additive Strength: 12 GM

     4    TESTDRUG        Additive Strength: 12.5 GM

CHOOSE 1-4:
  Are you adding 'TESTDRUG' as a new IV ADDITIVES (the 78TH)? No// Y
(Yes)
```

Example - New Solution

```
AN IV ITEM? Yes//   (Yes)
Edit Additives or Solutions:
```

```
Select one of the following:

        A           ADDITIVES
        S           SOLUTIONS

Enter response: SOLUTIONS

 CEFAZOLIN SOD 1GM INJ currently linked to IV Solutions:

  1. 0.9% SODIUM CHLORIDE    300 ML
  2. 0.9% SODIUM CHLORIDE    300 ML
  3. 0.9% SODIUM CHLORIDE    450 ML
  4. 0.9% SODIUM CHLORIDE    254 ML

Select 1-4 from list above or type 'NEW' to link to a new IV Solution: NEW
Select IV SOLUTIONS PRINT NAME: 0.9% SODIUM CHLORIDE
  Lookup: PRINT NAME
     1   0.9% SODIUM CHLORIDE           250 ML

     2   0.9% SODIUM CHLORIDE           50 ML

     3   0.9% SODIUM CHLORIDE           25 ML
     4   0.9% SODIUM CHLORIDE           10 ML
     5   0.9% SODIUM CHLORIDE           1000 ML

Press <RETURN> to see more, '^' to exit this list, '^^' to exit all
lists, OR
CHOOSE 1-5:
  Are you adding '0.9% SODIUM CHLORIDE' as a new IV SOLUTIONS (the 33RD)? No// Y
(Yes)
```

Dosages created as the result of National Drug File matching or auto creation of dosages may be reviewed and edited via this option.

Outpatient Pharmacy designated Dispense Drug entries may be marked or unmarked as a LAB MONITOR or CLOZAPINE DRUG. This will allow lab values to print on the Outpatient Action Profile for the designated drug and provide lab monitor checks for Clozapine drugs during the medication order entry process.

The *Drug Enter/Edit* option allows the user to enter a dosage in a language other than English. PDM does not translate English terms into another language; instead, it allows the user to enter a translation of a term. If a value has not been entered in the OTHER LANGUAGE DOSAGE NAME field, PDM defaults to the value entered in the LOCAL POSSIBLE DOSAGE field. If no values exist in the LOCAL POSSIBLE DOSAGE and OTHER LANGUAGE DOSAGE NAME fields, the system will not display default values for those fields during CPRS or Outpatient Pharmacy prescription order entry processing. However, when building the SIG, Outpatient Pharmacy will default to the value the user input during order entry.

1.21 Inpatient Drug Management
[PSS INP MGR]

Patch PSS*1*146 corrected a patient safety issue in which editing the IV ADDITIVES file (#52.6) and/or IV SOLUTIONS file (#52.7) using the Drug Enter/Edit [PSS DRUG ENTER/EDIT] option was problematic. The functionality was changed to prevent erroneous matching with Dispense Drugs.

The software now gives the user the choice to enter and link the dispense drug to a new Additive or Solution as well as a confirmation of the selected dispense drug that will be linked to the selected additive/solution.

The Inpatient Drug Management [PSS INP MGR] sub-menu contains the following options:

- ADditives File
- Dispense Drug Fields
- Dispense Drug/ATC Set Up
- Edit Cost Data
- EDit Drug Cost (IV)
- MARk/Unmark Dispense Drugs For Unit Dose
- PRimary Solution File (IV)

1.21.1 ADditives File
[PSSJI DRUG]
This option allows the applications coordinator to add, change, or inactivate drugs that are to be used as additives in the IV room. All drug information is contained within the IV additives file.

To avoid confusion when users are linking an IV Additive to a Generic Drug at the GENERIC DRUG prompt in menu option ADditives File [PSSJI DRUG], the option now clearly shows which is the IV Additive and which is the Generic Drug.

Example: IV Additive and Generic Drug
```
PRINT NAME: CEFAZOLIN//
GENERIC DRUG: CEFAZOLIN SOD 10GM M/D INJ// CEFAZ
     1   CEFAZOLIN OPTH SOLN 50MG/CC  (15CC)
     2   CEFAZOLIN SOD 10GM M/D INJ          AM115
     3   CEFAZOLIN SOD 1GM INJ          AM115     N/F
CHOOSE 1-3: 3  CEFAZOLIN SOD 1GM INJ          AM115     N/

You are about to change the GENERIC DRUG linked to this ADDITIVE.
ADDITIVE CEFAZOLIN is currently linked to
GENERIC DRUG CEFAZOLIN SOD 10GM M/D INJ.

Are you sure you want to link ADDITIVE CEFAZOLIN
to GENERIC DRUG CEFAZOLIN SOD 1GM INJ? No//
```

PSS*1*174 resolved the issue of ambiguous IV Additive strength when a pharmacist is finishing an IV by adding a STRENGTH (#19) field to the IV ADDITIVES File (#52.6). The new STRENGTH (#19) field can be populated when adding a new IV Additive or when editing an existing IV Additive via menu option ADditives File [PSSJI DRUG].

Example: Added Strength Field

```
PRINT NAME: CEFAZOLIN//
GENERIC DRUG: CEFAZOLIN SOD 10GM M/D INJ//        AM115
USED IN IV FLUID ORDER ENTRY: YES//
DRUG UNIT: GM//
STRENGTH: 1// ??

This field identifies the numeric amount of medication that is provided by one unit-of-use for
the identified product.

For example, if one vial contains 50 MG of medication, the STRENGTH will be entered as '50'.  The
DRUG UNIT of 'MG' is populated by the DRUG UNIT (#2) field.
```

Whenever a lookup is performed on the IV ADDITIVES File (#52.6), the STRENGTH (#19) field will display next to the NAME (#.01) field with the words "Additive Strength:" and then its value. Additionally, the DRUG UNIT (#2) field will be appended to the STRENGTH (#19) field. If the STRENGTH (#19) field is not populated for the IV Additive, the text "N/A" will display, and the DRUG UNIT (#2) field will not display.

Example: Additive Strength Field (continued)

```
Select IV TYPE: PIGGYBACK.
Select ADDITIVE: CEFAZOL
     1   CEFAZOLIN          Additive Strength: 1 GM
             IV ROOM ONLY
     2   CEFAZOLIN          Additive Strength: 2 GM

     3   CEFAZOLIN PREMIX       Additive Strength: N/A

CHOOSE 1-3:
```

Quick Codes are displayed during the selection of an IV ADDITIVE during order entry. When a lookup is performed on an IV ADDITIVE, and there are QUICK CODES defined for the IV ADDITIVE, the QUICK CODE STRENGTH (#1) field and the USUAL IV SCHEDULE (#4) field from the QUICK CODE Subfile (#52.61) will display next to the QUICK CODE. If the QUICK CODE STRENGTH (#1) field is null, "N/A" will be displayed. If the USUAL IV SCHEDULE (#4) field is null, "N/A" will be displayed.

Example: Display of Quick Codes
```
Select ADDITIVE: CEFAZ
     1   CEFAZOLIN          Additive Strength: 1 GM


      - CEFAZ1GM -        Quick Code Strength: 1 GM     Schedule: N/A
      - CEFAZ2GM -        Quick Code Strength: N/A     Schedule: BID
     2   CEFAZOLIN        Additive Strength: 2 GM
             IV ROOM ONLY
     3   CEFAZOLIN PREMIX       Additive Strength: N/A

CHOOSE 1-3:
```

PSS*1*174 also enhanced the capabilities of the IV ADDITIVES File (#52.6) so that a user can enter a new additive that has the same name as an existing entry. Previously, a Fileman workaround had to be used to enter an identically named entry. Now, if the user types in a name that already exists in the file, they will first be presented with a list of available selection. If the

user scrolls through the list without selecting an entry, they will be presented with the prompt to add a new entry.

For example - IV ADDITIVES File (#52.6)

```
CHOOSE 1-2: 1  PSSJI DRUG    ADditives File
ADditives File
Select IV ADDITIVES PRINT NAME: TESTDRUG
  Lookup: PRINT NAME
    1    TESTDRUG        Additive Strength: 10 MG

    2    TESTDRUG        Additive Strength: N/A
    3    TESTDRUG        Additive Strength: 5 GM

    4    TESTDRUG        Additive Strength: 12 GM

CHOOSE 1-4:
  Are you adding 'TESTDRUG' as a new IV ADDITIVES (the 77TH)? No// Y
(Yes)
```

1.21.2   Dispense Drug Fields
[PSSJU DRG]

This option allows the user to enter data into fields that are used as default values, and in calculating default values, when the drug is chosen in Unit Dose ORDER ENTRY. This option allows the selection of any drug, including INACTIVE or NON-FORMULARY items.

1.21.3   Dispense Drug/ATC Set Up
[PSSJU DRUG/ATC SET UP]

This allows the user to edit the drug fields necessary to send drugs to ATC Unit Dose dispensing machine. In order for a drug to be sent to the ATC, the drug must have a CANISTER NUMBER for each ward group that will be sending a pick list to the ATC, and the drug must also have a MNEMONIC.

1.21.4   Edit Cost Data
[PSSJU DCC]

Allows the user to edit the dispensing cost data used for the cost reports. If any data is changed, a MailMan message is sent to all users holding the PSJU MGR security key (supervisors).

1.21.5   EDit Drug Cost (IV
[PSSJI EDIT DRUG COST]

This menu option allows the cost per unit to be entered for drugs (both additives and solutions).

1.21.6   MARk/Unmark Dispense Drugs For Unit Dose
[PSSJU MARK UD ITEMS]

This allows users to easily mark or unmark items from the Drug file (#50) for use by the Unit Dose Medications package. Only those items marked for Unit Dose are selectable for Unit Dose orders. When the Inpatient Medications package is first installed, it marks all items in the Drug file for use by Unit Dose so that users may immediately continue to use the package. This can be used to unmark those dispense items that Unit Dose users should not be able to select.

1.21.7 PRimary Solution File (IV)
[PSSJI SOLN]

This option is for the applications coordinator to add, change, or inactivate primary solutions used in the IV section. The solution must already exist in the Drug File to be selected here. If use of a primary solution is to be discontinued, the solution should be inactivated by entering an inactivation date, rather than by deleting the solution from the file.

PSS*1*174 enhanced the capabilities of the IV SOLUTIONS File (#52.7) so that a user can enter a new solution that has the same name as an existing entry. Previously, a Fileman workaround had to be used to enter an identically named entry. Now, if the user types in a name that already exists in the file, they will first be presented with a list of available selections. If the user scrolls through the list without selecting an entry, they will be presented with the prompt to add a new entry.

Example: IV SOLUTIONS File (#52.7)

```
Select OPTION NAME: PSSJI SOLN       PRimary Solution File (IV)
PRimary Solution File (IV)
Select IV SOLUTIONS PRINT NAME: 0.9% SODIUM CHLORIDE
  Lookup: PRINT NAME
     1   0.9% SODIUM CHLORIDE          250 ML
     2   0.9% SODIUM CHLORIDE          50 ML
     3   0.9% SODIUM CHLORIDE          25 ML

CHOOSE 1-3:

  Are you adding '0.9% SODIUM CHLORIDE' as
  a new IV SOLUTIONS (the 32ND)? No// Y  (Yes)
```

1.22 Check Drug Interaction
[PSS CHECK DRUG INTERACTION]

The *Check Drug Interaction* option is a new option that shall be provided to allow a user to check for drug interaction and Therapeutic Duplications between two or more drugs. This option shall be patient independent. This option shall be placed on the PDM Manager [PSS MGR] Menu. The drugs shall be selectable from the Drug File #50. The system will allow selection of drugs marked for application package use O, U, I, and/or X. The system will only allow selection of drugs that are matched to NDF and have a GCNSEQNO associated with that match. The software shall check for values in the FDB custom tables before using the FDB standard reference tables. The values in the custom tables shall take precedence over the values in the standard tables.

Example: Check Drug Interaction

```
Select PHARMACY DATA MANAGEMENT Option:

        CMOP Mark/Unmark (Single drug)
        Dosages ...
        Drug Enter/Edit
        Order Check Management ...
        Electrolyte File (IV)
        Lookup into Dispense Drug File
        Medication Instruction Management ...
        Medication Routes Management ...
```

```
                Orderable Item Management ...
                Formulary Information Report
                Drug Text Management ...
                Pharmacy System Parameters Edit
                Standard Schedule Management ...
                Synonym Enter/Edit
                Controlled Substances/PKI Reports ...
                Send Entire Drug File to External Interface
                IV Additive/Solution ...
                Warning Builder
                Warning Mapping
                PEPS Services ...
                Check Drug Interaction

Select PHARMACY DATA MANAGEMENT Option:  Check Drug Interaction
Drug 1:    SIMVASTATIN 40MG TAB          CV350
          ...OK? Yes//   (Yes)

Drug 2: WARFARIN 1MG TAB
  Lookup: GENERIC NAME
WARFARIN 1MG TAB          BL110
          ...OK? Yes//   (Yes)

Drug 3:

Now Processing Enhanced Order Checks!  Please wait...



*** DRUG INTERACTION(S) ***
===========================================================
***Significant*** with SIMVASTATIN 40MG TAB and
                  WARFARIN 1MG TAB

CLINICAL EFFECTS:  Increase hypoprothrombinemic effects of warfarin.

===========================================================
Press Return to Continue...:

Display Professional Interaction monograph? N// YES

DEVICE: HOME//   SSH VIRTUAL TERMINAL     Right Margin: 80//



-------------------------------------------------------------
Professional Monograph
Drug Interaction with SIMVASTATIN 40MG TAB and WARFARIN 1MG TAB
     This information is generalized and not intended as specific medical
     advice. Consult your healthcare professional before taking or
     discontinuing any drug or commencing any course of treatment.

     MONOGRAPH TITLE:  Selected Anticoagulants/Selected HMG-CoA Reductase
     Inhibitors

     SEVERITY LEVEL:  3-Moderate Interaction: Assess the risk to the
     patient and take action as needed.

     MECHANISM OF ACTION:  The exact mechanism of this interaction is
     unknown. The HMG-CoA reductase inhibitor may inhibit the hepatic
     hydroxylation of warfarin.  The HMG-CoA reductase inhibitors, which
     are highly plasma protein bound, may displace warfarin from its
     binding site.

Professional Monograph
  Drug Interaction with SIMVASTATIN 40MG TAB and WARFARIN 1MG TAB

    CLINICAL EFFECTS:  Increase hypoprothrombinemic effects of warfarin.

    PREDISPOSING FACTORS:  None determined.
```

```
     PATIENT MANAGEMENT:  Patients should be monitored for changes in
     prothrombin time when a HMG Co-A reductase inhibitor is added to or
     discontinued from warfarin therapy, or if the dosage of the HMG Co-A
     reductase inhibitor is adjusted.

     DISCUSSION:  Case reports in the medical literature and to the
     manufacturer have documented an interaction between lovastatin and
     warfarin. A case report has documented an interaction between
     pravastatin and fluindione (an orally administered indanedione
     anticoagulant), suggesting that pravastatin could also interact
     similarly with warfarin. Information concerning a potential
     interaction with simvastatin is conflicting. A case report has
     documented an interaction between simvastatin and acenocoumarol while
     another case report showed no interaction with warfarin. One group of
     authors reported three case reports of increased international
     normalized ratios (INRs) following the addition of fluvastatin to
     warfarin therapy. The addition of rosuvastatin to patients stabilized
     on warfarin resulted in clinically significant changes in INR.


Professional Monograph
   Drug Interaction with SIMVASTATIN 40MG TAB and WARFARIN 1MG TAB

     REFERENCES:
     1.Ahmad S. Lovastatin. Warfarin interaction. Arch Intern Med 1990 Nov;
     150(11):2407.
     2.Hoffman HS. The interaction of lovastatin and warfarin. Conn Med
     1992 Feb; 56(2):107.
     3.Iliadis EA, Konwinski MF. Lovastatin during warfarin therapy
     resulting in bleeding. Pa Med 1995 Dec;98(12):31.
     4.Personal communication. Merck & Co., Inc. 1991.
     5.Trenque T, Choisy H, Germain ML. Pravastatin: interaction with oral
     anticoagulant?. BMJ 1996 Apr 6;312(7035):886.
     6.Grau E, Perella M, Pastor E. Simvastatin-oral anticoagulant
     interaction. Lancet 1996 Feb 10;347(8998):405-6.
     7.Gaw A, Wosornu D. Simvastatin during warfarin therapy in
     hyperlipoproteinaemia. Lancet 1992 Oct 17;340(8825):979-80.
     8.Trilli LE, Kelley CL, Aspinall SL, Kroner BA. Potential interaction
     between warfarin and fluvastatin. Ann Pharmacother 1996 Dec;
     30(12):1399-402.


Professional Monograph
   Drug Interaction with SIMVASTATIN 40MG TAB and WARFARIN 1MG TAB
     9.Crestor (rosuvastatin calcium) US prescribing information.
     AstraZeneca Pharmaceuticals LP February, 2012.

     Copyright 2012 First DataBank, Inc.

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Display Professional Interaction monograph? N// O
```