



INPATIENT MEDICATIONS

TECHNICAL MANUAL/ SECURITY GUIDE

Version 5.0
December 1997

(Revised August 2008)

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 |
|---------|--|--------------|---|
| 08/08 | iv, 23, 51-53, 57-58, 60-61, 63, 65, 65a-65b | PSJ*5*134 | Parameters for escaping special characters added. New HL7 messages added. New routines added. HL7 order fields table contains an asterisk for each field that has special escaping characters. (S. Templeton, PM; G. O’Connor, Tech. Writer) |
| 02/07 | 74-76 | PSJ*5*178 | MED ROUTE now appears in larger font on IV labels from the Zebra bar code printer. Med ROUTE now prints on the IV labels for bar-code enabled printers, and it prints in larger font than surrounding text. (R. Singer, PM; E. Phelps, Tech. Writer) |
| 09/06 | 23, 94 | PSJ*5*172 | Encapsulation Cycle II project: Added PSJ53P1 to the Routine List in Section 5.1. Added DBIA 4537 to DBIA list. Changed the date on the Title Page to December 1997. (H. Whitley, PM; L. Woodson, TW) |
| 05/06 | v-viii 8a-8b 66-68b | PSJ*5*154 | In Section 2.2.2 Added “PRIORITIES FOR NOTIFICATION” field. In Section 9.5, made correction to include the priority of ASAP in notifications. Added information regarding the three notifications parameters. (C. Greening, PM; T. Dawson, Tech. Writer) |
| 12/2005 | 23 | PSJ*5*146 | Remote Data Interoperability (RDI) Project: Added PSJLMUT2 to the Routine List in Section 5.1. (E. Williamson, PM; M. Newman, Tech. Writer) |
| 11/2005 | All | PSJ*5*163 | Encapsulation Cycle II project: Added PSJ59P5 to the Routine List in Section 5.1. Added DBIA 4819 to DBIA list. Deleted DBIAs 172, 634, and 1882 from the DBIA list. Reissued entire document due to a page numbering issue. (H. Whitley, PM; L. Woodson, TW) |

(This page included for two-sided copying.)

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| | | | |
|----------|----------|----------|----------|
| PSIVSUS1 | PSIVUDL | PSIVUTL | PSIVUTL1 |
| PSIVUWL | PSIVVW1 | PSIVWCR | PSIVWCR1 |
| PSIVWL | PSIVWL1 | PSIVWRP | PSIVXREF |
| PSIVXU | PSJ53P1 | PSJ59P5 | PSJAC |
| PSJADT | PSJADT0 | PSJADT1 | PSJADT2 |
| PSJALG | PSJBCMA | PSJBCMA1 | PSJBCMA2 |
| PSJBCMA3 | PSJBCMA4 | PSJCOM | PSJCOM1 |
| PSJCOMR | PSJCOMV | PSJDCCHK | PSJDCU |
| PSJDDUT | PSJDDUT2 | PSJDDUT3 | PSJDEA |
| PSJDGAL | PSJDIN | PSJDOSE | PSJDPT |
| PSJEEU | PSJEEU0 | PSJENV | PSJEXP |
| PSJEXP0 | PSJFTR | PSJH1 | PSJHEAD |
| PSJHEH | PSJHIS | PSJHL10 | PSJHL11 |
| PSJHL2 | PSJHL3 | PSJHL4 | PSJHL4A |
| PSJHL5 | PSJHL6 | PSJHL7 | PSJHL9 |
| PSJHLERR | PSJHLU | PSJHLV | PSJHVAR5 |
| PSJLIACT | PSJLIFN | PSJLIFNI | PSJLIORD |
| PSJLIPRF | PSJLIUTL | PSJLIVFD | PSJLIVMD |
| PSJLMAL | PSJLMDA | PSJLMGUD | PSJLMHED |
| PSJLMPRI | PSJLMPRU | PSJLMUDE | PSJLMUT1 |
| PSJLMUT2 | PSJLMUTL | PSJLOAD | PSJLOI |
| PSJMAI | PSJMAI1 | PSJMDIR | PSJMDIR1 |
| PSJMDWS | PSJMEDS | PSJMIV | PSJMP |
| PSJMPEND | PSJMPRT | PSJMPRTU | PSJMUTL |
| PSJNTEG | PSJNTEG0 | PSJNTEG1 | PSJO |
| PSJO1 | PSJO2 | PSJO3 | PSJOE |
| PSJOE0 | PSJOE1 | PSJOEA | PSJOEA1 |
| PSJOEEW | PSJOERI | PSJORAPI | PSJORDA |
| PSJOREN | PSJORMA1 | PSJORMA2 | PSJORMAR |
| PSJORP2 | PSJORPOE | PSJORRE | PSJORRE1 |
| PSJORREN | PSJORRO | PSJORRN | PSJORRN1 |
| PSJORUT2 | PSJORUTL | PSJP | PSJPATMR |
| PSJPDIR | PSJPDV | PSJPDV0 | PSJPDV1 |
| PSJPL0 | PSJPR | PSJPR0 | PSJPST50 |
| PSJPXRM1 | PSJQPR | PSJRXI | PSJSPU |
| PSJSPU0 | PSJSV | PSJSV0 | PSJUNITD |
| PSJUTL | PSJUTL1 | PSJUTL2 | PSJUTL3 |
| PSJUTL5 | PSJUTL6 | | |

The following routines are not used in this version of Inpatient Medications. They were exported in the initial Kernel Installation and Distribution System (KIDS) build as Delete at Site.

| | | | |
|----------|----------|----------|----------|
| PSGDCR | PSGDCT0 | PSGEXP | PSGEXP0 |
| PSGMMPST | PSGOROE0 | PSGORU | PSGQOS |
| PSIVNVO | PSIVOEDO | PSIVOENT | PSIVOEPT |
| PSIVRD0 | PSIVRD0 | PSJMAN | PSJOAC |
| PSJOAC0 | PSJOE8 | PSJOE81 | PSJOEE |
| PSJOER | PSJOER0 | PSJORA | PSJORIN |
| PSJUTL | PSJUTL1 | PSJUTL2 | PSJUTL3 |

Callable Routines

Entry points provided by the Inpatient Medications package to other packages can be found in the External Relationships section of this manual. No other routines are designated as callable from outside of this package.

5.3 Routine Mapping

Routines not listed here are used sparingly, and can be mapped if the site desires.

5.3.1 Do Not Map

PSGXR*

PSJIP*

PSJXR*

The PSGXR* and PSJXR* routines are created by VA FileMan when it compiles the cross-references of the NON-VERIFIED ORDERS (#53.1) and PHARMACY PATIENT (#55) files.

Example: How to Print the Exported Protocols Using VA FileMan

```

VA FileMan 22.0

Select OPTION: INQUIRE TO FILE ENTRIES

OUTPUT FROM WHAT FILE: PROTOCOL// PROTOCOL      (742 entries)
Select PROTOCOL NAME: PSJ LM 14D MAR          14 Day MAR
ANOTHER ONE: <Enter>
STANDARD CAPTIONED OUTPUT? Yes// <Enter> (Yes)
Include COMPUTED fields: (N/Y/R/B): NO// <Enter> - No record number (IEN), no Computed Fields

NAME: PSJ LM 14D MAR                      ITEM TEXT: 14 Day MAR
TYPE: action                               CREATOR: POSTMASTER
PACKAGE: INPATIENT MEDICATIONS
DESCRIPTION: This allows the user to print a selected patient's medication
orders on a Medication Administration Record (MAR) for the charting of the
administration of the orders over a 14 day period. It is designed to replace
the manual Continuing Medication Record (CMR). This protocol assumes that a
patient has already been selected.
EXIT ACTION: S VALMBCK="R"
ENTRY ACTION: N VADM,VAIN S PSGMARDF=14 D FULL^VALM1,ENLM^PSGMMAR
TIMESTAMP: 56693,43648

```

9.4 Health Level Seven (HL7) Messaging

9.4.1 HL7 Ordering Fields

The following is a list of HL7 data fields that will be used in transactions between Order Entry/Results Reporting (OE/RR) V. 3.0 and the Pharmacy packages. Not every data field will be used in every message.

| SEG | SEQ | FIELD NAME | EXAMPLE | HL7 TYPE |
|--------------|------------|-----------------------|-------------------|-----------------|
| MSH | 1 | Field Separator | | string |
| | 2 | Encoding Characters* | ^~\& | string |
| | 3 | Sending Application | ORDER ENTRY | string |
| | 4 | Sending Facility | 660 | string |
| | 5 | Receiving Application | PHARMACY | string |
| | 6 | Receiving Facility | 660 | string |
| | 7 | D/T of Message | 199409151010 | timestamp |
| | 9 | Message Type | ORM | ID |
| | PID | 3 | Patient ID | 5340747 |
| 5 | | Patient Name | PSJPATIENT1,ONE | patient name |
| PV1 | 2 | Patient Class | I | table 4 |
| | 3 | Patient Location* | 32^234-4 | user table |
| | 45 | Appointment Date/Time | 200308040800-0600 | timestamp |
| { ORC | 1 | Order Control | NW | table 119 |

| SEG | SEQ | FIELD NAME | EXAMPLE | HL7 TYPE |
|----------------|------------|-----------------------------|--|---|
| | 2 | Placer Order Number* | 234123;1^OR | number^application |
| | 3 | Filler Order Number* | 870745^PS | number^application |
| | 5 | Order Status | CM | table 38 |
| | 7 | Quantity/Timing* | 325&MG&1&TABLET& 325MG&638^Q1D^D14^1 99409151010^^R^^325M G^ | dose^schedule^duration^star t^^priority^^text^ conjunction |
| | 9 | D/T of Transaction | 199409151010 | timestamp |
| | 10 | Entered by | 10 | composite ID |
| | 11 | Verified by | 23 | composite ID |
| | 12 | Ordering Provider | 97378 | composite ID |
| | 15 | Order Effective D/T | 199409151010 | timestamp |
| | 16 | Order Control Reason* | E^ELECTRONICALLY ENTERED^99ORN^12^ Requesting Physician Cancelled^99ORR | coded element: NoO Code^NoO Name^99ORN ^#^Reason for Action^ 99ORR |
| RXO | 1 | Requested Give Code* | ^^^8^DIGOXIN TAB^99PSP | coded element |
| | 2 | Requested Give Amt | 125 | numeric |
| | 10 | Requested Dispense Code* | 576.4^DIGOXIN 0.5MG TAB^99NDF^4213^DIGO XIN 0.5MG TAB^99PSD | coded element |
| | 11 | Requested Disp Amt | 30 | numeric |
| | 13 | Number of Refills | 5 | numeric |
| | 17 | Requested Give Per | D30 | string |
| RXE | 1 | Quantity/Timing* | 325&MG&1&TABLET^Q D^^ 199409150600^19940925 0600^^^325MG^ | dose^schedule^duration^ start^stop^priority^^ text^conjunction |
| | 2 | Give Code | 576.4^^99NDF^21^^99PS D | coded element |
| | 10 | Dispense Amount | 100 | numeric |
| | 12 | Number of Refills | 11 | numeric |
| | 22 | Give Per Time | D30 | string |
| | 23 | Give Rate Amount | 125 | string |
| | 24 | Give Rate Units* | ^^^ml/hr99PSU | coded element |
| | 25 | Give Strength | 325 | numeric |
| | 26 | Give Strength Units* | ^^^20^MG^99PSU | coded element |
| { NTE } | 1 | Set ID | 7 | set ID |
| | 2 | Source of Comment | P | table 105 |
| | 3 | Comment | take with food | formatted text |

| SEG | SEQ | FIELD NAME | EXAMPLE | HL7 TYPE |
|------------|------------|--------------------------|--|-----------------|
| { RXR } | 1 | Route* | ^^^23^ORAL^99PSR | coded element |
| { RXC } | 1 | RX Component Type | B | table 166 |
| | 2 | Component Code* | ^^^4132^D5 W NS^99PSD | coded element |
| | 3 | Component Amount | 1 | numeric |
| | 4 | Component Units* | ^^^PSIV-1^ML^99OTH | coded element |
| { OBX } | 1 | Set ID | 1 | set ID |
| | 2 | Value Type | TX | table 125 |
| | 3 | Observation ID* | ^^^38^Critical Drug-Drug interaction^99OCX | coded element |
| | 5 | Observation Value | Critical drug-drug interaction Aspirin- Warfarin | string |
| | 14 | Date/time of Observation | 199606130813 | timestamp |
| | 16 | Observer | 10 | composite ID |
| NTE | 1 | Set ID | 1 | set ID |
| | 2 | Source of Comment | P | table 105 |
| | 3 | Comment | Worth the risk | formatted text |
| ZRX | 1 | Previous Order # | 2355 | numeric |
| | 2 | Nature of Order | W | set of codes |
| | 3 | Reason Order Created | N | set of codes |
| | 4 | Routing | W | set of codes |
| | 5 | Current User* | DUZ^NAME^99NP | composite ID |
| | 6 | IV Identifier | IV | string |
| ZSC | 1 | Service Connected | SC | coded element |
| } | | | | |

*- Fields marked with an asterisk require special escaping characters in order to send and receive the correct data contained in an HL7 message. See **Special Escaping Characters** for details.



Note: The following are definitions of some of the data fields under the FIELD NAME column.

SENDING APPLICATION is the name of the VistA package generating the message;
RECEIVING APPLICATION is the name of the VistA package that is the intended recipient of the message. SENDING FACILITY and RECEIVING FACILITY are the station numbers.

PATIENT ID is the patient IEN in the PATIENT file (#2).

PATIENT LOCATION, for an inpatient, is Hospital Location IEN^Room^Bed. For an outpatient, it is the Hospital Location IEN. In both cases, this is the location from which the order is being placed.

APPOINTMENT DATE/TIME is for Inpatient Medication orders for Outpatients. This is the appointment date/time that this order is associated with.

PLACER ORDER NUMBER is the OE/RR order number.

FILLER ORDER NUMBER is the Pharmacy order number.

ORDERING PROVIDER is the IEN in the NEW PERSON file (#200).

ORDER STATUS identifies the current status of the order. Codes from table 38, located in HL7 V. 2.3, that will be used, and those added, include:

- IP = pending
- CM = finished/verified by pharmacist (active)
- DC = discontinued
- RP = replaced
- HD = on hold
- ZE = expired
- ZS = suspended (active)
- ZU = un-suspended (active)
- ZX = unreleased
- ZZ = renewed

QUANTITY/TIMING contains the give amount, schedule, duration, start and stop times, and priority for the order, as well as the actual text of the dose ordered. The quantity field is delimited with '&' as:

Total Dose & Unit & Give Amount & Unit & Text & Dispense Drug

By using the quantity and conjunction fields, orders with multiple schedules may be sent. For outpatient orders, multiple schedules will be sent delimited by '~' and combined into a single signature (SIG); an inpatient order with multiple schedules will be sent as separate orders for each schedule. The conjunction will be S (then), A (and), or X (except).

REQUESTED GIVE CODE identifies a combination of the drug and dosage form in the format of a universal service ID. The last three pieces (alternate components) are used to identify an entry in the PHARMACY ORDERABLE ITEM file (#50.7).

PROVIDER'S PHARMACY INSTRUCTIONS are text instructions from the provider to the pharmacist; these are passed in an NTE segment following a RXO segment with an ID of 6.

PROVIDER'S ADMINISTRATION INSTRUCTIONS are Outpatient Pharmacy's "Patient Instructions" if the provider wishes to include them with the order; these are passed in an NTE segment following a RXO or RXE segment with an ID of 7.

| <i>Action</i> | <i>Request from OE/RR</i> | <i>Pharmacy accepts</i> | <i>Pharmacy rejects</i> |
|----------------------|--|---|---|
| Protocol | OR EVSEND PS | | |
| Order Control | ZV (verified) | | |
| HL7 Fields | MSH: 1,2,3,4,5,6,7,9 PID: 3,5 PV1: 2,3,19 ORC: 1,2,3,11,15 | There is no return event. | |
| Protocol | OR EVSEND PS | PS EVSEND OR | PS EVSEND OR |
| Order Control | CA (cancel) DC (discontinue) HD (hold) RL (release) SS (send status) | CR (cancelled) DR (discontinued) HR (held) OR (released) SC (status update) | UC (unable to cancel) UD (unable to dc) UH (unable to hold) UR (unable to release) DE (data errors) |
| HL7 Fields | MSH: 1,2,3,4,5,6,7,9 PID: 3,5 PV1: 2,3,19 ORC: 1,2,3,10,12,15,16 | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,5 RXE: 1 | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,16 |

OE/RR will use CA to cancel orders, which have not been finished by Pharmacy; DC will be used for orders that have been finished.

Example: Digoxin .125 mg QAM

New Order

```

MSH|^~\&|ORDER ENTRY|13000|PHARMACY|13000|20080304165
101-0600||ORM
PID|||750||PSJPATIENT,TESTPAT-FIVE
PV1||I|5|||||||||||||||||||||||||||||||||||||
ORC|NW|12613;1^OR|||||2&MG&1&TABLET&2 MG&58^BID&01-13
^^200803050100-0600^^R^C^2 MG^~||200803041650-
0600|11884||11884|||20080304165101
-0600|I^POLICY^99ORN^^^
RXO|^^^81^BIPERIDEN TAB ^99PSP|||||||785.4409^^99ND
F^58^^99PSD
RXR|^^^1^ORAL (BY MOUTH)^99PSR
ZRX||I|N

```

Verified by Nursing staff

```
MSH|^~\&|ORDER ENTRY|13000|PHARMACY|13000|20080304165  
253-0600||ORM  
PID|||750||PSJPATIENT,TESTPAT-FIVE  
PV1||I|5||||||||||||||||||||||||||||||||||||||  
ORC|ZV|12613^OR|2929P^PS|||||||11884|||200803041652  
53-0600
```

Discontinue Order

```
MSH|^~\&|ORDER ENTRY|13000|PHARMACY|13000|20080304165  
754-0600||ORM  
PID|||750||PSJPATIENT,TESTPAT-FIVE  
PV1||I|5||||||||||||||||||||||||||||||||||||||  
ORC|DC|12614;2^OR|54U^PS|||||||11884||11884|||2008030  
4165754-0600|I^POLICY^99ORN^14^Requesting Physician  
Cancelled^99ORR
```

Back Door - Inpatient Medications

Back door orders are handled by sending OE/RR the RDE message (pharmacy encoded order) with a 'send number' order control code. This allows OE/RR to store the order in its database and return the OE/RR order number to pharmacy with a 'number assigned' order control code. OE/RR cannot actually reject pharmacy events. The 'data errors' order control code is just used as some way to communicate to pharmacy that OE/RR could not interpret the RDE message. This should generally not happen.

| <i>Action</i> | <i>Event from Pharmacy</i> | <i>OE/RR accepts</i> | <i>OE/RR rejects</i> |
|----------------------|--|--|---|
| Protocol | PS EVSEND OR | OR EVSEND PS | OR EVSEND PS |
| Order Control | SN (send number) ZC (conversion) | NA (number assigned) | DE (data errors) |
| HL7 Fields | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,3,5,9,10,12,15,16 RXO: 1 RXE: 1,2,25,26 NTE: 1,2,3 RXR: 1 ZRX: 1,2,3,5 | MSH: 1,2,3,4,5,6,7,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3 | MSH: 1,2,3,4,5,6, 7,9 PID: 3,5 ORC: 1,2,3,16 |
| Protocol | PS EVSEND OR | | OR EVSEND PS |
| Order Control | SC (finished) RO (finished/replaced) XX (order changed) | ORC-5 = CM (active) | DE (data errors) |
| HL7 Fields | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,5,9,10,12,15, 16 RXO: 1 RXE: 1,2,25,26 NTE: 1,2,3 RXR: 1 ZRX: 1,2,3,5 | There is no return event. OE/RR must accept the instruction from Pharmacy. | MSH: 1,2,3,4,5,6, 7,9 PID: 3,5 ORC: 1,2,3,16 |
| Protocol | PS EVSEND OR | | OR EVSEND PS |
| Order Control | ZV (verified) | | DE (data errors) |
| HL7 Fields | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,11,15 | There is no return event. OE/RR must accept the instruction from Pharmacy. | MSH: 1,2,3,4,5,6, 7,9 PID: 3,5 ORC: 1,2,3,16 |

| Action | Event from Pharmacy | OE/RR accepts | OE/RR rejects |
|----------------------|---|--|---|
| Protocol | PS EVSEND OR | | OR EVSEND PS |
| Order Control | OC (cancel) OD (discontinue) OH (hold) OR (release) SC (status change) | | DE (data errors) |
| HL7 Fields | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,5,12,15,16 RXE: 1 ZRX: 2,5 | There is no return event. OE/RR must accept the instruction from Pharmacy. | MSH: 1,2,3,4,5,6, 7,9 PID: 3,5 ORC: 1,2,3,16 |



Note: The following are Order Control Codes:

- OC - order cancelled before pharmacist verification
- OD - order cancelled after pharmacist verification
- SC - sent by pharmacy when order is verified, expired, or suspended
- XX - sent by pharmacy when fields change that do not generate new order

Example: Digoxin .125 mg QAM

New Order from Pharmacy through backdoor

```

MSH|^~\&|PHARMACY|500|||ORM|||||
PID||750||PSJPATIENT,TESTPAT-FIVE|||||
PV1||I|5^|||||3351|||||
|||||
ORC|SN|^OR|2934P^PS||IP|^Q4H&01-05-09-13-17-21^^^^^C
||200803041715-
0600|11884^PROVIDER,INPATIENT||11884^PROVIDER,INPATIENT||20080304170
0-0600|W^W
ritten^99ORN^^^|
RXO|^81^BIPERIDEN TAB^99PSP|||||
RXE|2&MG&1&^Q4H&01-05-09-13-17-21^^200803041700-0600^
200803190000-0600^^C^2 MG|785.4409^BIPERIDEN HCL 2MG
TAB^99NDF^58^BIPERIDEN 2MG
TAB^99PSD||^20^MG^99PSU|^63^TAB^99PSF|||||11884^PROVIDER,INPATIE
NT
>>>^99NP|||||^01-05-09-13-17-21^99PSA^^^||2|
RXR|^30^ORAL^99PSR||
ZRX||W|N||11884^PROVIDER,INPATIENT^99NP|

```


Order has expired

```
MSH|^~\&|PHARMACY|500|||ORM|||  
PID||750||PSJPATIENT,TESTPAT-FIVE|||  
PV1|I|5^|||3351|||  
ORC|SC|12617;1^OR|55U^PS||ZE||^NOW&^^^^^O||2008030417  
07-  
0600|11884^PROVIDER,INPATIENT||11884^PROVIDER,INPATIENT||20  
0803041700-0600|^99ORN^BCMA E  
XPIRED^||  
RXO|^^81^BIPERIDEN TAB^99PSP|||  
RXE|2&MG&1&^NOW&^^200803041700-0600^20080304170847-06  
00^R^O^2 MG|785.4409^BIPERIDEN HCL 2MG  
TAB^99NDF^58^BIPERIDEN 2MG TAB^99PSD||^  
^20^MG^99PSU|^63^TAB^99PSF|||11884^PROVIDER,INPATIENT  
^99NP|||  
>>>99PSA^^^||2|^20^MG^99PSU  
RXR|^^1^ORAL (BY MOUTH)^99PSR|||  
ZRX||N||11884^PROVIDER,INPATIENT^99NP|
```

Front door order has been finished and verified by Pharmacy

```
MSH|^~\&|PHARMACY|500|||ORM|||  
PID||750||PSJPATIENT,TESTPAT-FIVE|||  
PV1|I|5^|||3351|||  
ORC|SC|12618^OR|56U^PS||CM||^Q4H&01-05-09-13-17-21^^  
^^C||200803041715-  
0600|11884^PROVIDER,INPATIENT||11884^PROVIDER,INPATIENT||20  
0803041700-0600|  
^^99ORN^^^||  
RXO|^^81^BIPERIDEN TAB^99PSP|||  
RXE|2&MG&1&^Q4H&01-05-09-13-17-21^^200803041700-0600^  
200803190000-0600^^C^2 MG|785.4409^BIPERIDEN HCL 2MG  
TAB^99NDF^58^BIPERIDEN 2MG  
TAB^99PSD|||^20^MG^99PSU|^63^TAB^99PSF|||11884^PROV  
IDER,INPATIENT  
>>>^99NP|||^01-05-09-13-17-21^99PSA^^^||2|  
RXR|^^30^ORAL^99PSR|||  
ZRX|||11884^PROVIDER,INPATIENT^99NP|
```

Front Door - IV Fluids

IV fluid orders use a RXC segment to contain information about solutions and additives. Therefore, a special code is sent in a RXO segment;1 to identify the order as an IV order (PS-1^IV Order^99OTH). Since RXC segments are used, the give fields in a RXO segment are unnecessary.

| <i>Action</i> | <i>Request from OE/RR</i> | <i>Pharmacy accepts</i> | <i>Pharmacy rejects</i> |
|----------------------|--|--|---|
| Protocol | OR EVSEND PS | PS EVSEND OR | PS EVSEND OR |
| Order Control | NW (new order) XO (changed order) | OK (accepted) XR (new order) | UA (unable to accept) UX (unable to change) |
| HL7 Fields | MSH: 1,2,3,4,5,6,7,9 PID: 3,5 PV1: 2,3 ORC: 1,2,7,9,10,12,15,16 RXO: 1,2 NTE: 1,2,3 RXC: 1,2,3,4 OBX: 1,2,3,5,14,16 ZRX: 1,2,3 | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,5 | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,12,15,16 |
| Protocol | OR EVSEND PS | | |
| Order Control | ZV (verified) | | |
| HL7 Fields | MSH: 1,2,3,4,5,6,7,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,11,15 | There is no return event. | |
| Protocol | OR EVSEND PS | PS EVSEND OR | PS EVSEND OR |
| Order Control | CA (cancel) DC (discontinue) HD (hold) RL (release) SS (send status) | CR (canceled) DR (discontinued) HR (held) OR (released) SC (status update) | UC (unable to cancel) UD (unable to dc) UH (unable to hold) UR (unable to release) DE (data errors) |
| HL7 Fields | MSH: 1,2,3,4,5,6,7,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,10,12,15,16 | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,5 | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,16 |

Example: POTASSIUM CHLORIDE INJ,SOLN FOR IV ORDERS 125 MEQ in
SODIUM INJ,SOLN FOR IV ORDERS 1000 ml 100 ml/hr

New Order CPRS Continuous

```
MSH|^~\&|ORDER ENTRY|13000|PHARMACY|13000|20080304170  
224-0600||ORM  
PID||750||PSJPATIENT,TESTPAT-FIVE  
PV1|I|5||||||||||||||||||||||||||||||||||||||  
ORC|NW|12615;1^OR|||||^R||200803041702-0600|11884  
||11884|||20080304170224-0600|I^POLICY^99ORN^^  
RXO|^PS-1^IV^99OTH|333 ml/hr  
RXR|^14^INTRAVENOUS^99PSR  
RXC|B|^196^DEXTROSE INJ,SOLN ^99PSP|50|^PSIV-1^ML  
^99OTH  
RXC|A|^435^MORPHINE INJ ^99PSP|33|^PSIV-1^ML^99OT  
H  
ZRX||I|N|||C
```

New Order CPRS Intermittent

```
MSH|^~\&|ORDER ENTRY|13000|PHARMACY|13000|20080304170  
224-0600||ORM  
PID||750||PSJPATIENT,TESTPAT-FIVE  
PV1|I|5||||||||||||||||||||||||||||||||||||||  
ORC|NW|12616;1^OR|||||^BID&01-13^^R||200803041702-0  
600|11884||11884|||20080304170224-0600|I^POLICY^99ORN^^  
RXO|^PS-1^IV^99OTH|  
RXR|^15^INTRAMUSCULAR^99PSR  
RXC|B|^196^DEXTROSE INJ,SOLN ^99PSP|500|^PSIV-1^M  
L^99OTH  
RXC|A|^281^FUROSEMIDE INJ,SOLN ^99PSP|33|^PSIV-4^  
MG^99OTH  
ZRX||I|N|||I
```

Back Door - IV Fluids

| <i>Action</i> | <i>Event from Pharmacy</i> | <i>OE/RR accepts</i> | <i>OE/RR rejects</i> |
|----------------------|--|--|---|
| Protocol | PS EVSEND OR | OR EVSEND PS | OR EVSEND PS |
| Order Control | SN (send number) ZC (conversion) | NA (number assigned) | DE (data errors) |
| HL7 Fields | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,3,5,9,10,12,15,16 RXE: 1,23,24 RXC: 1,2,3,4 ZRX: 1,2,3,5,6 | MSH: 1,2,3,4,5,6,7,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3 | MSH: 1,2,3,4,5, 6,7,9 PID: 3,5 ORC: 1,2,3,16 |
| Protocol | PS EVSEND OR | | OR EVSEND PS |
| Order Control | SC (finished) XX (order changed) | | DE (data errors) |
| HL7 Fields | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,5,9,10,12,15,16 RXE: 1,23,24 NTE: 1,2,3 RXC: 1,2,3,4 ZRX: 1,2,3,5,6 | There is no return event. OE/RR must accept the instruction from Pharmacy. | MSH: 1,2,3,4,5, 6,7,9 PID: 3,5 ORC: 1,2,3,16 |
| Protocol | PS EVSEND OR | | OR EVSEND PS |
| Order Control | OC (cancel) OD (discontinue) OH (hold) OR (release) SC (status change) | | DE (data errors) |
| HL7 Fields | MSH: 1,2,3,4,9 PID: 3,5 PV1: 2,3 ORC: 1,2,3,5,9,10,12,15,16 RXE: 1 ZRX: 2,5 | There is no return event. OE/RR must accept the instruction from Pharmacy. | MSH: 1,2,3,4,5, 6,7,9 PID: 3,5 ORC: 1,2,3,16 |

**Example: POTASSIUM CHLORIDE INJ,SOLN FOR IV ORDERS 125 MEQ in
SODIUM INJ,SOLN FOR IV ORDERS 1000 ml 100 ml/hr**

New Order Continuous

```
MSH|^~\&|PHARMACY|500|||ORM|||
PID||750||PSJPATIENT,TESTPAT-FIVE|
PV1|I|5^|3351|
ORC|SC|12619^OR|46V^PS|CM|^&^^^^|200803041719-0600|
0|11884^PROVIDER,INPATIENT||11884^PROVIDER,INPATIENT||20080
3041900-0600|W^Written^99ORN^^|
RXO|^^^435^MORPHINE INJ^99PSP|
RXE|^&^^200803041900-0600^200803100000-0600^|
||11884^PROVIDER,INPATIENT^99NP|||^99PSA^^|300|^^^^
ml/hr^PSU|
RXC|A|^435^MORPHINE^99PSP|20|^PSIV-1^ML^99OTH|
RXC|B|^196^DEXTROSE^99PSP|1000|^PSIV-1^ML^99OTH|
RXR|^14^INTRAVENOUS^99PSR|
ZRX|W|N||11884^PROVIDER,INPATIENT^99NP|C
```

New Order Intermittent

```
MSH|^~\&|PHARMACY|500|||ORM|||
PID||750||PSJPATIENT,TESTPAT-FIVE|
PV1|I|5^|3351|
ORC|SC|12620^OR|47V^PS|CM|^Q4H&01-05-09-13-17-21^^^
^^|200803041721-
0600|11884^PROVIDER,INPATIENT||11884^PROVIDER,INPATIENT||20
0803041700-0600|W
^Written^99ORN^^|
RXO|^^^281^FUROSEMIDE INJ,SOLN^99PSP|
RXE|^Q4H&01-05-09-13-17-21^^200803041700-0600^2008030
60000-
0600^||11884^PROVIDER,INPATIENT^99NP|||^01-
05-09-13-17-21^99PSA^^
||INFUSE OVER 300 MINUTES||
RXC|A|^281^FUROSEMIDE^99PSP|250|^PSIV-4^MG^99OTH|
RXC|B|^196^DEXTROSE^99PSP|1000|^PSIV-1^ML^99OTH|
RXR|^160^IV PIGGYBACK^99PSR|
ZRX|W|N||11884^PROVIDER,INPATIENT^99NP|I
```

9.4.3 Special Escaping Characters

Standard HL7 field delimiters represented by the “~ , & , | ” (tilde, ampersand, pipe) characters as well as the commonly used VistA “^” (caret) are sometimes needed by users of Inpatient Medications in various fields to provide complete information about a patient or order. The use of these characters can cause sending and receiving software to format HL7 messages incorrectly, and/or construct/deconstruct the information incorrectly. Data loss can also occur if data is truncated at one of the special delimiter characters.

The following fields require special escaping characters.

- Patient ID - PID segment / piece 3
- Patient Name - PID segment / piece 5
- Schedule - ORC segment / piece 7 / subpiece 2
- Text - ORC segment / piece 7 / subpiece 8
- Requested Give Code - RXO segment / piece 1 / subpiece 5
- Requested Dispense Code - RXO segment / piece 10 / subpieces 2 and 4
- Schedule - RXE segment / piece 1 / subpiece 2
- Text - RXE segment / piece 2 / subpiece 8
- Comment - NTE segment / piece 3
- Route - RXR segment / piece 1 / subpiece 5
- Component Code - RXC segment / piece 2 / subpiece 5
- Component Units - RXC segment / piece 4 / subpiece 4
- Observation Value - OBX segment / piece 5
- Current User - ZRX segment / piece 5 / subpieces 1 and 2

See **External Relationships** for the components used to escape and unescape characters.

(This page added for two-sided copying.)

9.5 STAT, ASAP, and NOW Order Notification

A STAT, ASAP, and NOW Order Notification has been added in Inpatient Medications to notify pharmacy and nursing staff when orders are received with a priority of STAT and ASAP or a schedule of STAT and NOW. The Notification sends a text message when a pending STAT, ASAP, or NOW order has either been received from CPRS or has been verified and made active. To receive these messages, the user must subscribe to the mail group(s) listed in this section.

There are three parameters that can be defined to control which priorities / schedules are used to produce these notifications.

The SYSTEMS PARAMETERS EDIT [PSJ SYS EDIT] option, PRIORITIES FOR PENDING NOTIFY parameter will control what priority or schedule of an order will cause a notification when the order is PENDING.

The SYSTEMS PARAMETERS EDIT [PSJ SYS EDIT] option, PRIORITIES FOR ACTIVE NOTIFY parameter will control what priority or schedule of an order will cause a notification when the order is ACTIVE.

The INPATIENT WARD PARAMETERS EDIT [PSJ IWP EDIT] option, PRIORITIES FOR NOTIFICATION parameter will control what priority or schedule of an order will cause a notification when the order is PENDING or ACTIVE for each individual WARD.



Note: If all three parameters are left blank, then STAT, ASAP, and NOW orders will cause notifications. If the PRIORITIES FOR PENDING NOTIFY parameter is set and the other parameters left blank, then the PRIORITIES FOR PENDING NOTIFY parameter will control what priorities are sent.