INPATIENT MEDICATIONS

TECHNICAL MANUAL/ SECURITY GUIDE

Version 5.0
December 1997

(Revised August 2008)

Department of Veterans Affairs
VistA Health Systems Design and 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
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. REDACTED
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. REDACTED
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. REDACTED
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. REDACTED
12/2005	23	PSJ*5*146	Remote Data Interoperability (RDI) Project: Added PSJLMUT2 to the Routine List in Section 5.1. REDACTED
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. REDACTED

(*This page included for two-sided copying*.)

Table of Contents

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	PSJDCHK	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	PSJHVARS
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	composite ID
	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^D14^199409151010^^R^^325MG^	dose^schedule^duration^start^^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^DIGOXIN 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^QD^^199409150600^199409250600^^^325MG^	dose^schedule^duration^start^stop^priority^^text^conjunction
	2	Give Code	576.4^^99NDF^21^^99PSD	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.

Action	*Request from OE/RR*	*Pharmacy accepts*	*Pharmacy rejects*
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.

Action	*Event from Pharmacy*	*OE/RR accepts*	*OE/RR rejects*
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.

Action	*Request from OE/RR*	*Pharmacy accepts*	*Pharmacy rejects*
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

Action	*Event from Pharmacy*	*OE/RR accepts*	*OE/RR rejects*
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||^&^^^^^||200803041719-060
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.