Update PCD-03 message definition and examples to clarify multistep programming

# IHE Change Proposal

### Tracking information:

| | |
|---|---|
| IHE Domain | Devices (DEV) |
| Change Proposal ID: | CP-DEV-0xx |
| Change Proposal Status: | Draft |
| Date of last update: | 2025-02-25 |
| Person assigned: | Kurt Elliason |

### Change Proposal Summary information:

| **Update PCD-03 message definition and examples to clarify multistep programming.** | |
|---|---|
| Submitter's Name(s) and e-mail address(es): | Kurt Elliason kurt.elliason@icumed.com |
| Submission Date: | 2025-03-25 |
| Integration Profile(s) affected: | N/A |
| Actor(s) affected: | N/A |
| IHE Technical Framework or Supplement modified: | IHE_PCDTF Vol 2, dated 2024-11-04 |
| Volume(s) and Section(s) affected: | Multiple sections in Vol 1 and 2 |
| Rationale for Change:<br>. | |

**Vol 2, page 23 section 3.3.4.4.5 RXG - Pharmacy/Treatment Give Segment**
Update description to reference HL7 2.8
Update to Table include RXG-32 and RXG-33
For each description of RXG fields update the reference to HL7 from 2.6 to 2.8

For other uses see HL7 V2.6 Section 4.14.6.1 for details. The DEV TF does not further constrain this field.

On line 704 change the range from

**RXG-27 to 30 to**
**RXG-27 to 31**

Starting after line 705 add descriptions for RXG 32 and RXG 33

**RXG-32 Dispense Amount**
Definition: This field contains the amount to be dispensed as encoded by the pharmacy or treatment supplier.

**RXG-33 Dispense Units**
Components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>
Definition: This field contains the units for the dispense amount as encoded by the pharmacy or treatment supplier. This field is required if the units are not implied by the actual dispense code. This must be in simple units that reflect the actual quantity of the substance dispensed.

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It does not include compound units  The preferred format is an MDC value; UCUM values are also acceptable.
The DEV TF requires that the first three components of RXG-33 contain one of the following sets of values:
• 263762^MDC_DIM_MILLI_L^MDC
• mL^mL^UCUM

See section 3.3.4.4.10.3 Multistep for more information on the use of RXG-32 and RXG-33.

**Vol 2, page 35  section 3.3.4.4.9 OBX - Observation/Result segment**
Add MDCX_INFUS_ORDER_STEP_START_CONDITION to Pump Programming Parameter list starting on line 883

**Vol 2, page 39 section 3.3.4.4.10.3 Multistep**
Add note about the use of RXG32/33 required only for multistep

**Vol 2, page 40 section 3.3.4.4.10.3 Multistep**

At line 1035 add a new heading for step 1 and move the last two bullet points starting at line 1041 up.

Step 1 specific OBX segments:
• An OBX segment to indicate the pump ID
o OBX-3 = MDC_DEV_PUMP_INFUS_VMD
• An OBX segment to indicate the total number of steps in the program
o OBX-3 = MDC_INFUS_TOTAL_NUM_STEPS
• Additional OBX segments containing the patient parameters (e.g., height, weight, BSA) as required

Add “delay” to enumeration list on line 1039
enumerations are "loading dose", "continuous" or “delay”

add a new bullet item after line 1042

- An OBX segment to indicate the step should automatically start or wait for confirmation
  - OBX-3 = MDCX_INFUS_ORDER_STEP_START_CONDITION
  - enumerations are  "immediate" or "pause-for-confirmation”

**Vol 2, page 41 section 3.3.4.4.10.3 Multistep**
Add row for step start condition after total number of steps

| | | | |
|---|---|---|---|
| Step start condition | MDCX_INFUS_ORDER_STEP_START_CONDITION | INFUSATE_SOURCE_* | Yes |

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### *Vol 1, Page 24, line 603* Example 1 – Cyclic TPN

Add example messages with OBX for MDCX_INFUS_ORDER_STEP_START_CONDITION and update numbering of all OBX segments.

```
MSH|^~\&|IOPVENDOR^1234560000000001^EUI-64|IOPVENDOR|IOCVENDOR^6543210000000001^EUI-64|IOCVENDOR|20080101123456-0600||RGV^O15^RGV_O15|1|P|2.8|||AL|AL||ASCII|EN^English^ISO659||IHE_PCD_RGV_O15^IHE PCD^1.3.6.1.4.1.19376.1.6.1.3.1^ISO

PID|||98765^^^IHE^PI||Doe^John^^^^L||19660101000000-0600|M

ORC|RE|12345|||||||||||||||N0001

RXG|1|||1234^TPN^Rx|25||263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM|||||||25|265624^mL/h^UCUM^MDC_DIM_MILLI_L_PER_HR^MDC|||||||||||||||1000|263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM

RXR|^IV^HL70162||^IVP^HL70164|^IV^HL70165

TQ1|1||||||||||||60^264352&MDC_DIM_MIN&MDC

OBX|1||69986^MDC_DEV_PUMP_INFUS_VMD^MDC|0.1.1.0|||||||F|||||||A0001^^6543210000000001^EUI-64

OBX|2|NM|68063^MDC_ATTR_PT_WEIGHT^MDC|0.1.1.1|70.5|263875^MDC_DIM_KILO_G^MDC|||||F

OBX|3||158033^MDC_INFUS_TOTAL_NUM_STEPS^MDC|0.1.1.2|6||||||F

OBX|4||158037^MDC_INFUS_ORDER_STEP_TYPE|0.1.1.3||continuous

OBX|5||0^MDCX_INFUS_ORDER_STEP_START_CONDITION|0.1.1.4||immediate||||

RXG|2|||1234^TPN^Rx|55||263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM|||||||50|265624^mL/h^UCUM^MDC_DIM_MILLI_L_PER_HR^MDC|||||||||||||||1000|263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM

RXR|^IV^HL70162||^IVP^HL70164|^IV^HL70165

TQ1|1||||||||||||60^264352&MDC_DIM_MIN&MDC

OBX|6||158037^MDC_INFUS_ORDER_STEP_TYPE|0.1.2.1||continuous||||

OBX|7||0^MDCX_INFUS_ORDER_STEP_START_CONDITION|0.1.2.2||immediate||||

RXG|3|||1234^TPN^Rx|100||263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM|||||||100|265624^mL/h^UCUM^MDC_DIM_MILLI_L_PER_HR^MDC|||||||||||||||1000|263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM

RXR|^IV^HL70162||^IVP^HL70164|^IV^HL70165

TQ1|1||||||||||||360^264352&MDC_DIM_MIN&MDC

OBX|8||158037^MDC_INFUS_ORDER_STEP_TYPE|0.1.3.1||continuous||||

OBX|9||0^MDCX_INFUS_ORDER_STEP_START_CONDITION|0.1.3.1||immediate||||

RXG|4|||1234^TPN^Rx|50||263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM|||||||50|265624^mL/h^UCUM^MDC_DIM_MILLI_L_PER_HR^MDC|||||||||||||||1000|263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM
```

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```
RXR|^IV^HL70162||^IVP^HL70164|^IV^HL70165

TQ1|1||||||||||||60^264352&MDC_DIM_MIN&MDC

OBX|10||158037^MDC_INFUS_ORDER_STEP_TYPE|0.1.4.1||continuous||||

OBX|11||0^MDCX_INFUS_ORDER_STEP_START_CONDITION|0.1.4.2||immediate||||

RXG|5|||1234^TPN^Rx|25||263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM|||||||25|26
5624^mL/h^UCUM^MDC_DIM_MILLI_L_PER_HR^MDC|||||||||||||||1000|263762^MDC_D
IM_MILLI_L^MDC^mL^mL^UCUM

RXR|^IV^HL70162||^IVP^HL70164|^IV^HL70165

TQ1|1||||||||||||60^264352&MDC_DIM_MIN&MDC

OBX|12||158037^MDC_INFUS_ORDER_STEP_TYPE|0.1.5.1||continuous||||

OBX|13||0^MDCX_INFUS_ORDER_STEP_START_CONDITION|0.1.5.2||immediate||||
```

***Vol 1, Page 25, line 613*** **Example 2 - Initial dose followed by continuous infusion**

Add example messages with OBX for MDCX_INFUS_ORDER_STEP_START_CONDITION and update numbering of all OBX segments.

```
MSH|^~\&|IOPVENDOR^1234560000000001^EUI-64|IOPVENDOR|IOCVENDOR^65432100000
00001^EUI-64|IOCVENDOR|20080101123456-0600||RGV^O15^RGV_O15|1|P|2.8|||AL|A
L||ASCII|EN^English^ISO659||IHE_PCD_RGV_O15^IHE
PCD^1.3.6.1.4.1.19376.1.6.1.3.1^ISO

PID|||98765^^^IHE^PI||Doe^John^^^^^L||19660101000000-0600|M

ORC|RE|12345|||||||||||||||N0001

RXG|1|||4321^Milrinone 100
mcg/mL^Rx|50||263762^MDC_DIM_MILLI_L^MDC|||||||50|263890^g^UCUM^MDC_DIM_M
ILLI_G^MDC|500|263890^g^UCUM^MDC_DIM_MILLI_G^MDC|||||500|263762^MDC_DIM_MI
LLI_L^MDC|||||||250|263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM

TQ1|1||||||||||||30^264352&MDC_DIM_MIN&MDC

RXR|^IV^HL70162||^IVP^HL70164|^IV^HL70165
OBX|1||69986^MDC_DEV_PUMP_INFUS_VMD^MDC|0.1.1.0|||||||F|||||||2011457^^001
A010000000001^EUI-64
OBX|2|NM|68063^MDC_ATTR_PT_WEIGHT^MDC|0.1.1.1|3|263875^MDC_DIM_KILO_G^MDC|
||||F
OBX|3|NM|68060^MDC_ATTR_PT_HEIGHT^MDC|0.1.1.2|48.00092|263441^MDC_DIM_CENT
I_M^MDC|||||F
OBX|4|NM|188744^MDC_AREA_BODY_SURF_ACTUAL^MDC|0.1.1.3|.21|263616^MDC_DIM_S
Q_X_M^MDC|||||F

OBX|5||158033^MDC_INFUS_TOTAL_NUM_STEPS^MDC|0.1.1.4|2||||||F

OBX|6||158037^MDC_INFUS_ORDER_STEP_TYPE|0.1.1.5||loading-dose||||

OBX|7||0^MDCX_INFUS_ORDER_STEP_START_CONDITION|0.1.1.4||immediate||||

RXG|2|||4321^Milrinone 100
mcg/mL^Rx|200||263762^MDC_DIM_MILLI_L^MDC|||||||10|265522^MDC_DIM_MILLI_G
```

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```
_PER_HR^MDC|500|263890^g^UCUM^MDC_DIM_MILLI_G^MDC|||||500|263762^MDC_DIM_M
ILLI_L^MDC|||||||250|263762^MDC_DIM_MILLI_L^MDC^mL^mL^UCUM

RXR|^IV^HL70162||^IVP^HL70164|^IV^HL70165

OBX|8||158037^MDC_INFUS_ORDER_STEP_TYPE|0.1.2.1||continuous||||

OBX|9||0^MDCX_INFUS_ORDER_STEP_START_CONDITION|0.1.2.2||immediate||||
```