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| Victoria State Government Department of Health and Human ServicesMedications Management Interface and Interface Workflow Digital Health StandardApril 2019 |

Department of Health

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| Medications Management Interface and Interface WorkflowDigital Health StandardApril 2019 |

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# Version control and reviews

### Version control

The following table defines some basic information about this document:

|  |  |  |  |
| --- | --- | --- | --- |
| Version | Issue Date | Author | Comments  |
| 1.1 | 30/08/2018 | Health Sector Standards & Advisory – HSSA. (Formerly Health Design Authority). | Re-design & redevelopment of contents into a new template, with new sections and general updates. |
| 1.0 | 05/11/2012 | Health Sector Standards & Advisory – HSSA. | FINAL (See version edits below) |
| 0.2 | 25/05/2012 | Health Sector Standards & Advisory – HSSA. | Generic Specification |
| 0.1 | 06/02/2012 | Integration Services | Final |

### Quality reviews

The following table defines the reviews conducted prior to the release of this document:

| Version | Date | Name | Action |
| --- | --- | --- | --- |
| 1.1 | August 2018 | Sector Design Standards Reference Groups (SDSRG) | Review and feedback. |
| 1.1 | August 2018 | Health Sector Standards and Advisory. | Review and update. |

### Referenced artefacts / publications

The following table identifies the various artefacts/publications referenced or considered in this

document:

| Document Name | Owner /Author | Comments |
| --- | --- | --- |
|  |  |  |

### Endorsements and approvals

This document has been endorsed and approved for publication by the Standards and Advisory, Digital Health, Department of Health and Human Services.

# Standards overview

This standard is for interfacing electronic prescribing system with pharmacy application. It includes Inpatient medications management, Outpatient medications management and Discharge medications management. The Inpatient medication management covers total parenteral nutrition (TPN) and Intravenous (IV) fluids (i.e. multi-component medication) while the Outpatient and Discharge medication management covers PBS prescribing.

The standard describes a conceptual pathway that represent the medication management process within a Clinical system and which include associated interfacing to the Pharmacy application. The associated interfacing is represented through an Interface model. The interface model depicts message flow from Clinical system, through the Integration engine of Digital Health and the Agency to the Pharmacy Application. The message flow varies depending on whether the Pharmacy application can receive an RDE message or an ORM Order message.

The standard covers detailed process of message flow for various scenarios which include Alerts and Allergies, Prescriptions for Outpatients and Discharge Medications, PBS/RPBS Prescriptions for Inpatient (Day Oncology), Inpatient Prescriptions, Combination Drugs, Compound/Complex (Multi-Ingredient) Medications, Cancels/Modifications, Authority Notification System(ANS), Catalogues, The Stock Control Process, Electronic Medication Dispensing Cabinets, Barcode Scanning for Medications Administration and Blood Bank Orders.

Also included in the standard is a Medication orders technical specification for the two message types of ADT (Update Person Information) and RDE (Pharmacy Encoded Order).

# Introduction

## Digital Health Branch

The Digital Health branch led by the Chief Digital Health Officer reports to the Deputy Secretary of Health and Wellbeing. As a branch in the Health and Wellbeing division, Digital Health collaborates closely with a wide range of stakeholders across the department, sector agencies and other jurisdictions to perform the following functions:

* Provides engagement, standards, policy advice, planning and assurance functions across the health sector in the areas of digital health
* Is responsible for the system management required to operationalise health sector reform
* Provides outward-facing whole of health sector leadership in digital health enablement as well as commissioning of digital health and ICT functions
* Maintain a close working relationship with other branches of the division which has the levers, relationships and responsibilities across the health system to ensure digital projects are properly governed, resourced, and ensure all risks are well managed
* Guides health ICT initiatives towards an interoperable future eHealth environment using well-established standards, best practice guides, methodologies and principles

Digital Health utilises the people, process and technology components, with a strong emphasis on transformational change elements when implanting new health systems and workflow processes.

Digital Health focus on four areas:

1. Digital Health strategy, policy and architecture standards for the Victorian health sector.
2. Commissioning of digital health functions within Victorian public health services.
3. Sponsoring digital health programs to implement sector-wide health information sharing platforms including those at a national level (to which Victoria contributes) as well as sector-enabling capabilities sponsored by DHHS.
4. Health service system management function including sector assurance (e.g. major program, operations and cybersecurity).

Digital health program areas include:

* Health Sector Standards and Advisory which provide information on emerging health technologies, feasibility, architecture, design and integration.
* Sector Assurance which provides assurance on all approved health service projects funded or co-funded by the government to ensure health services operate safely, securely and cost-effectively.
* Sector Governance and Reporting which provides governance and reporting on the system manager function and the overall digital health branch function.
* Health Sector Planning which provide planning and pipeline management for the health sector, managing concept proposals, business bases, funding bids and subsequently funding allocation and funding agreements.

Health Sector Standards and Advisory (HSSA) is committed to open, independent and best practice view of healthcare Information and Communication Technology (ICT), application solution principles. HSSA can provide recommendations to the overarching enterprise application design and associated services to integrate healthcare applications. For this guide, HSSA will:

* Deliver guides and advice around interoperability across healthcare applications
* Define messaging standards for Victorian health applications
* Facilitate a higher level of integration knowledge and associated quality processes in the Victorian health sector

Align innovation, efficiencies and effective use of ICT within health to encourage and drive standards-based approaches that encourage a high level of interoperability.

## Background

This document is a clinical system guide and standard for interfacing from an electronic prescribing system to a pharmacy application. Pharmacy Interfacing is a best practice guide that has been developed in collaboration with the VPHS, and aligns clinical system and EMR pharmacy vendors with a standards based approach for pharmacy interfacing. Current vendors have performed and implemented the necessary product modifications to meet these standards for the VPHS.

Variations to this standard should first be reviewed and discussed with the Health Sector Standards and Advisory (HSSA) before enabling the variation.

Readers/users of this document can also leave feedback through our form on the link below:

<http://www.health.vic.gov.au/feedback>

## Purpose

The purpose of this document is to illustrate the HL7 2.4 specific trigger events and related segments that a Clinical Information System (CIS) managing medications orders will produce. This document is based on:

1. Digital Health Architecture document with only the relevant trigger and segment information presented.
2. The Digital HealthHL7 2.4 standard which is a further clarification of the usage for Victoria of the AS4700.3 Australian standard.
3. Typical Order Entry Medications Management functional scope, which includes both functional and integration scope.

This document has been specifically designed for Third party providers/vendors to illustrate the proposed orders integration model for medication orders, electronic medication administration in relation to the Clinical System, as such the focus of this document will be to concentrate on medication orders, electronic medication administration only and is NOT a detailed specification of requirements for medication management.

## Assumptions

Below are the assumptions for this Standard document:

* Details for complex medications (manufactured drugs, titrations, etc) will be added to this document in the near future.
* That the agency has a medications management system that include CDS and Ordering functionality
* That the agency already complies with the department EMR/CIS interoperability standard

## Scope

### In Scope

Medications management functions including:

* Inpatient medication management including:
	+ TPN and IV fluids (ie multi-component medication)
	+ Day oncology (inpatient) medication management, including PBS prescribing
* Outpatient medication management, including PBS prescribing
* Discharge medications management, including PBS prescribing
* Applies only to hospital based prescribing (Not GP, community and primary care)

### Out of Scope

This document does not address:

* Any interfaces required outside of the functional scope defined; this includes alert information messaging to the pharmacy applications.
* Dietary Orders (outside of PBS) other than TPN products (eg low salt diet)
* PBS claiming from Medicare Australia (this remains in the Pharmacy Application)
* HL7 Messaging to Electronic Medication Dispensing Cabinets eg. Pyxis Medstations.

## Constraints

Not applicable.

## Audience/Stakeholders

This document was correct and accurate as at the time of distribution. All responses have been endorsed by representatives of the stakeholders listed below during a number of pharmacy integration workshops, however if any inaccuracies or changes are noticed please inform HSSA.

Stakeholders included:

* Directors of Pharmacy of VIC public health services (all Directors were invited to the workshops)
* Digital Health project team
* Clinical System Vendors
* Pharmacy System Vendors

## Notes on use of document

HL7 Version 2.4 messaging is shown throughout this document, except where otherwise indicated.

The following documents should be referenced in conjunction with this document:

* Digital HealthHL7 2.4 Implementation Guide (Standard)

# Medication Orders Analysis

## Functional Map across the Clinical and Pharmacy System

Figure 1 illustrates cross system functions that will be performed in each system given the introduction of the Clinical System to the hospital application environment.

Figure 1: Functional Solution Diagram



## Medication Management Process

Figure 2 illustrates a conceptual pathway to represent the medication management process within a Clinical System which includes associated interfacing to the Pharmacy application. The model applies to Inpatients as well as for PBS Claimable Outpatients, Discharge Medications and Day Oncology Patients.

Figure 2: Medications Managemenr Process



The Medications process (as shown in Figure 2 above) consists of:

* A prescriber orders medication for a patient in the Clinical System. This includes decision support based on patient allergies, interacting medications on the patient profile, duplicate therapies on the patient profile and dose range checking.
* If this order is for Inpatient Medication, then the pharmacist reviews and clarifies the order in Clinical System Inpatient module (including review of decision support presented to the prescriber) and then if the patient’s own medications are not to be used, the pharmacist assigns a generic Medicinal Product Pack (MPP) product.
* If the Inpatient Medication is available from impress, or is patient’s own medications, then no HL7 message is triggered, otherwise a Pharmacy/Treatment Encoded Order message (RDE) is triggered from the Inpatient clinical system functionality. The pharmacist should have the ability to override the default dispense location. This message will be triggered for both initial dispensing, and if required, additional dispenses (e.g. scheduled or requested re-supply).
* If this order is for Outpatient, PBS Claimable Day Oncology or Discharge Medications, then the Pharmacist reviews and clarifies the order in Clinical System (including review of decision support presented to the prescriber) and then if the medication is to be dispensed in-house at the patient’s request, the pharmacist assigns a brand and pack size Trade, Product, Pack (TPP) product in conformance with PBS guidelines (where required). For an in-house dispense (only) an RDE message is triggered from the Clinical System Pharmacy functionality. The prescription is always printed to enable PBS claiming which is done in the Pharmacy application, or where non-PBS items require dispensing from an external pharmacy.
* The assigned product sent via an RDE message is then dispensed in Pharmacy. This includes decision support provided by the pharmacy system, label generation, inventory control, and optionally, PBS claiming support. It may also include brand re assignment (TPP-level) if needed.
* If other changes are required then the order will need to be cancelled and re-ordered, or else modified, as major changes cannot be made to the order once placed. All changes, apart from brand substitution where permitted, must be performed within the clinical system.
* An RDS Dispense outbound message is triggered in the Pharmacy application and sent but is as it is not currently mandatory for the CS to process. This did not have a material impact on CS functionality as determined by hospital pharmacists attending design workshops.

## Interface Model

[Figure](#_THIRD_PARTY_PROVIDER) 3 illustrates the HL7 event message process that is required for medication orders. The standard HL7 clinical system message for medications is an RDE:O11. The pharmacy system may either process this message or receive a transformed RDE to ORM message. If this interface is adopted by a Health Service that is hosting their own clinical system, then messages are not passed through the HSIE.

Figure 3: Interface Messaging flow



The process flow for the medications interface model is different depending on whether the Agency Pharmacy application is able to receive either a HL7 v2.3.1 or v2.4 RDE Pharmacy Encoded Order message (preferred), or only a HL7 v2.3.1 ORM Prescription Order message.

**If the Pharmacy application can receive an RDE message, then the process flow is as follows:**

* A v2.4 RDE Pharmacy Encoded Order message is generated by the Clinical System. The trigger event is the assignment of a pharmaceutical product by a pharmacist using the Clinical System Pharmacy functionality (either Retail or Inpatient) in response to a medication order generated within the CS.
* The RDE Pharmacy Encoded Order message is received by Agency Integration Engine and is optionally transformed into v2.3.1 RDE Pharmacy Encoded Order message or else allowed to pass through if v2.4. The RDE Order message is then sent to the Pharmacy application.
* The RDE Pharmacy Encoded Order message is received in the Pharmacy application and item added to dispense queue.
* Received Encoded Order triggers an RRE Pharmacy Encoded Order Acknowledgement message (either ACK or N/ACK) outbound from Pharmacy application.
* A v2.3.1 or v2.4 RRE Encoded Order Response message is received by the Agency Integration Engine.
* The ordered item (or brand substitute if the assigned product is out of stock) is dispensed in the Pharmacy application. The product has a barcode label printed and affixed.
* Dispense activity triggers an outbound RDS Dispense message from Pharmacy application.
* The Agency Integration Engine drops the inbound RDS message that is received from the Pharmacy application.

**If the Pharmacy application can only receive an ORM Order message, then the process flow is as follows:**

* A v2.4 RDE Pharmacy Encoded Order message is generated by the CS. The trigger event is the assignment of a pharmaceutical product by a pharmacist using Clinical System medication functions (either Retail or Inpatient) in response to a medication order generated within the Clinical System.
* The RDE Pharmacy Encoded Order message is received by Agency Integration Engine and transformed into a v2.3.1 ORM Prescription Order message (if the Agency Pharmacy application can only accept an ORM message and not an RDE). The ORM Prescription Order message is then sent to the Pharmacy application.
* Received Order triggers an v.2.3.1 ORR Order Response message (either ACK or N/ACK) outbound from Pharmacy application.
* v2.3.1 ORR Order Response message is received by the Agency Integration Engine.
* The ordered item (or brand substitute if the assigned product is out of stock) is dispensed in the Pharmacy application. The product has a barcode label printed and affixed.
* Dispense activity triggers an outbound RDS Dispense message from Pharmacy application.
* The Agency Integration Engine drops the inbound RDS message that is received from the Pharmacy application.

## Alerts and Allergies

* Allergy segments are present in the ADT^A31 patient detail update messages.
* Alert information will not be interfaced, as this is currently not a mandatory message from a Clinical System
* Coded allergies will be sent using the implemented allergy coding scheme. Decision support engine codes for drug allergies, Digital Health defined food and environmental allergy codes and SNOMED-CT allergy reaction codes will form the State-wide coding scheme[[1]](#footnote-2). All receiving systems that intend to use allergies will need to be able to interpret the coded allergies and associated coded information and will either need to map to the application codes or else have the same code-set installed. These would need regular maintenance to synchronise them with the clinical system codes. An alternative and simpler approach is for the receiving application to read the code and descriptor as free-text and display as such in the Pharmacy application.
* The clinical system should be the master record for all allergy information. This will be a work practice change for pharmacists. It is initially anticipated that coded allergy information will not be able to be processed by the Pharmacy applications. A workaround would be to send a flag indicating the presence of an allergy within the Clinical System prompting the user at the point of dispense to validate the patient’s allergies in the CS.
* Vendors have indicated that they are capable of receiving allergies via the A31 HL7 messaging either codified or free-text. However, product enhancements may be required to implement this solution.

## Prescriptions for Outpatients and Discharge Medications

Note that not all Outpatient or Discharge Medications will be dispensed by the hospital pharmacy and therefore not all outbound RDE messages will need to be triggered. This implies a manual flagging by the pharmacist within the CS Pharmacy function to whether the medication is going to be dispensed within the hospital or not. This flag will determine whether the outbound RDE triggers for Outpatient or Discharge Medications.

PBS prescriptions for both Outpatient and Discharge Medications are treated similarly. Where the medication is PBS, there are more stringent rules for prescriptions in that particular pack sizes and maximum numbers of repeats are mandated, therefore this information must be transmitted to the Pharmacy application at the TPP level for claims reimbursement. A prescriber must choose only from the PBS approved combinations (which have been allocated a PBS item number) if the prescription is to receive PBS reimbursement. These approved items change on a monthly basis, thus regular maintenance of PBS data will be required. PBS prescription information will be sent via HL7 RDE message generated via the Clinical System. **In addition to this a paper script should be generated for claiming purposes in the case of PBS items or in the case of external pharmacy dispensing for both PBS and non-PBS items.**

The Clinical System will be used to prescribe PBS orders, for outpatients and discharging inpatients. In this event the following fields will sent with the HL7 RDE encoded order message. PBS orders are determined by the presence of a value in Digital Health HL7 field: OBX-3.1, PBS Item Code. Non PBS orders will not send the PBS Item Code field. Repatriation RPBS items are determined by the presence of the DVA Card Number and a DVA card type of G. The following field also provide additional information on RPBS orders: PBS Status

PBS Product Assignment Will send MP (orderable) product ordered in RXO-1, note that RXO-1.3 – name of coding system = “AMT-MP”.

Will send MPP (generic) product ID assigned in RXE-2.4 and RXC-2.4 (for components), note that in RXE-2.6 (and RXC-2.6) the name of coding system = “AMT-MPP”.

e.g. “SNOMED!1234567890^Penicillin^AMT-MPP” for an MPP item.

Will send TPP (trade product pack) product ID assigned in RXE-2.1 and RXC-2.1 (for components), note that in RXE-2.3 (and RXC-2.3) the name of coding system = “AMT-TPP”.

Quantity Prescribed quantity. Sent in RXE-3 or RXC-3 (for each component).

Repeats Prescribed number of repeats. Sent in RXE-12.

Prescriber Number HIC prescriber number. Sent in ORC-12.1. The identifier type must be “PRES”, the assigning authority must be “AUSHIC”.

e.g. PRESCRIBER111^Test^MedicalOfficerSeniorR2^^^^^^AUSHIC^^^^PRES

Date of Prescription Date that the prescription order is authorised and signed. Sent in HL7 ORC-7.4 and RXE-1.4. ORC-15 will also be populated with this date. This is the “Order effective date time”.

Authority Number Prescription Number, this is the unique prescription number as per the Australian HL7 standard RXE-15.1. This information is only sent for outpatient, discharge medication or (inpatient) day oncology PBS orders.

Approval Number Sent in RXE-15.1. It is currently mandatory for the prescriber to enter in this information for a PBS order in the CS. This number is allocated by Medicare, the prescriber must ring Medicare to gain the approval number. Approval number is required for PBS claiming to Medicare. Approval number is only sent for PBS orders.

 Format will be <authority number>-<approval number>.

e.g. 12345671-ABC123

Brand Substitution Status Sent in RXE-9 as a Y/N flag.

Regulation 24 Send in RXE-21.1 (first repeat). This field will be valued with either ‘REG24’ or no value. This nominates that all repeats can be dispensed at once, e.g. for travel overseas.

e.g. REG24^Regulation 24^REG24.

PBS Status Send in RXE-21.1 (second repeat). One code set identifier value and description will be sent in this field from the following values:

 RPBS/PBS^PBS and RPBS Eligible

 RPBS^RPBS Eligible

 AUTH^Authority Required PBS/RPBS

 REST^Restricted PBS/RPBS

 AUTH RPBS^Authority Required RPBS

 REST RPBS^Restricted RPBS

 PRIV^Private

S100 Sent in RXE-21.1 (third repeat). Indicator to prescribe medication under the highly specialised S100 program. This will be valued with either ‘S100’ or no value. The Pharmacy system will still determine validity and continue to process the claim with Medicare. This is a required field in the Clinical System.

e.g. S100^Section 100 Highly Specialised Drugs^S100

Order Category Sent in RXE-21.1 (fourth repeat). Indicator of prescription triggered from Inpatient PharmNet module (IPDRX), or Retail PharmNet module (OPDRX) . **This is a required field in the Clinical System**. Allowed values are:

OPDRX^Outpatient Pharmacy

IPDRX^Inpatient Pharmacy

PBS Item Code Sent in OBX 3.1. The identifier type will be sent with this detail.

Restriction Text This will not be sent across the interface. This information cannot be accurately sent when modifications are made to this information.

PBS Restriction Code The PBS Restriction Code (number) will be sent in RXE-27

Repatriation Card Number Sent in PID-3.1

DVA Card Type Sent in PID-3 as the identifier type, e.g. DVG, DVO, DVW or DV (card colour unknown)

Eligibility PBS/RPBS This data will be sent from the Patient Administration System. DVA types of G, O or W will be sent across the interface. It is up to the local pharmacy system to determine rules for RPBS claiming.

## PBS/RPBS Prescriptions for Inpatient (Day Oncology)

Day Oncology patients are Inpatients and as such they are dispensed normally, but their medications are also reimbursed via PBS. Thus, PBS prescriptions will also be generated for day oncology patients who are inpatients. **The proposed method for achieving this is via an Outpatient medication order for an undischarged Inpatient, which allows both medication administration (via the eMAR) and PBS ordering**.

## Inpatient Prescriptions

Inpatient prescribing does not normally utilise PBS, except for Day Oncology prescribing above, and thus does not require that level of complexity. In particular, most medications ordered will be at the generic MPP level and Pharmacy will assign a brand based on stock availability, upon receipt of an RDE (or ORM) message. Whilst the Pharmacy applications can generate an RDS dispense message to indicate a brand substitution, analysis has determined that this will not be needed in the CS (i.e. it is not clinically significant/useful to be informed within CS of a brand change). Some brand specific (TPP) medications will be defined at the MPP level (e.g. Warfarin) as they must be ordered in this manner, not as a generic drug.

## Combination Drugs

These drugs can be ordered at the generic medicine/product/pack (MPP) level or at the TPP level as well, even though they contain multiple active components. This issue is also relevant for all generic MPP orders.

## Compound/Complex (Multi-Ingredient) Medications

When more than one unique product is required to fill the order, details are sent in the HL7 message in the following structure:

RDE

 ORC

 RXO

 RXE

RXC

 RXC …..

Where multiple RXC segments are sent under an RXE, this indicates compound medications being sent for an order. Each component of a compound medication is sent in a separate RXC segment. In some instances where it is not feasible to manage this information in the Pharmacy system, the receiving system, i.e. the Pharmacy may choose to translate this detail into text for processing in the Pharmacy system. **Note that there will always be at least one RXC in every RDE message.**

**Note that the RXC segment will also now contain both the AMT-TPP identifier and the AMT-MPP identifier and their associated descriptors (see example below). Segment(s) containing RXC-1 = B (Base) will always precede segment(s) containing RXC-1 = A (Additive).**

**Example of RXC segment usage within RDE message:**

**RXC|B|SNOMED!67165011000036106^LVP solution Sodium Chloride 0.9% SOL^AMT-TPP^SNOMED!71792011000036107^sodium chloride 0.9% 500 mL bag^AMT-MPP|250|mL^mL|0**

**RXC|A|SNOMED!12108011000036109^heparin 25,000 intl units/mL SOL^AMT-TPP^SNOMED!26918011000036105^heparin 25,000 units/mL amp^AMT-MPP|1|mL^mL|25000|units^unit(s)**

## Cancels/Modifications

The RDE message is triggered by the pharmacist assigning a product in response to a medication order. If upon clinical review of the medication order the Pharmacist contacts the ordering doctor to modify and/or cancel the original order, then they will not verify the existing order and hence not trigger the RDE message. If there is a modification to an existing order this will qualify for a clinical review by pharmacy and cancellations to orders can similarly trigger a review.

RDE messages will have an order control code (ORC-1) of New (NW), Modified (XX) and Cancelled (OC) at a minimum. The Pharmacy vendors have confirmed the use of these three ORC-1 statuses although the actual aliases sent may need translation, which would be done within the Agency integration engine.

## Authority Notification System (ANS)

The ANS allows a pharmacist to turn a non-PBS nominated item into a PBS claimable item for an approved set of medications. An electronic message is sent to the ANS in Medicare by the Pharmacy application, the response from this system validates the drug and provides an authority number. The list of items is currently that can be nominated for ANS are currently loaded into pharmacy system to enable this function, a number of special conditions apply for this claim. This function can continue to be enacted from the pharmacy system. Therefore, it continues to be the responsibility of the Pharmacy system to utilise ANS to obtain approvals for PBS items that meet the criteria for claiming.

##  Catalogues

Pharmacy catalogues for the clinical system will be based on a national standard e.g. the NeHTA AMT and will include Agency localisation to encompass clinical trial, SAS and/or locally manufactured medications (see format for DH defined identifiers below). It is envisaged that wherever possible state standard additions to the codeset (for clinical trial, SAS and locally manufactured drugs) will be preferred over local agency additions, in order to avoid unnecessary duplication of catalogue content. This implies that a Clinical System governance process for all additions and naming conventions for non-AMT items will be required.

AMT codes should be sent from the clinical system in the following format “SNOMED!12114211212”. The SNOMED! Prefix can be removed from the code prior to sending the Agency Pharmacy system, by the Agency Integration Engine if required.

Note that Digital Health defined identifiers (not the AMT identifiers) will be sent for messaging locally manufactured and clinical trial items for example. The format for these identifiers will consist of:

 **DH!nnnnnnnnnn (where n = 0-11)**

There should be a manually entered NDC number upon creation of the local product.

For locally manufactured items the orderable will have an assigning authority of either AMT-MP (for known AMT items) or HS-MP for (for items that are Health Service specific, that don’t exist in AMT). In this case, where the AMT ID is not present, then the HS-TPP level ID would be used for the MPP and MP level messaging information. ID’s for locally manufactured items are always assigned by a governance group. Clinical Systems can have a freetext orderable and product available, which will always have an ID of DH ID of DH (or HEALTHSMART!00000000001) and an assigning authority of HS-TPP as well as HS-MP and HS-MPP. The free text details for the ordered drug will be in the order comments fields. e.g. HEALTHSMART!00000000001^Free Text Medication^HS-TPP.

Pharmacies will use the following terminology for prescription details for prescription orders. The various levels of detail that are used with examples are provided in Figure 4 below:

Drugs will be sent in the HL7 messages at the TPP, MPP and MP level. The MP is the orderable from the CS. MPP is the generic (normally inpatient) product assignment, and TPP is the actual product assigned in CS Pharmacy Functionality, i.e. for PBS, outpatient and discharge medications. The default TPP will be provided for MPP for state wide built codes. This is specific to inpatient orders, outpatient will always/already have TPP assigned.

In order to facilitate troubleshooting of AMT catalogue items appearing in HL7 messages, it is proposed

that where a catalogue item does not conform to the required AMT format an error code identifier type is

sent in the message instead in the format:

**BUILD\_ERROR-<product type>** where <product type> is MP, MPP or TPP.

An example of the AMT error code format:

**RXE**|^^D1^20110921000000^20120920235959^CD:7159890^^Panafcortelone 5 mg Tablet: uncoated, 60 Tablets T1 TAB PO AM \E\. Take with or after food. \E\ #1|**ITEM:2953555.000000^prednisolone 5 mg tab^BUILD\_ERROR-TPP**|1|||TAB182|

Figure 4: Australian Medicines Terminology



Table 1: Examples of Commonly Used Terminology

|  |  |  |
| --- | --- | --- |
| **Detail Level** | **Generic** | **Brand** |
| **Medicine** | <Generic Medicine>Amoxicillin | <Brand>Amoxil |
| **Unit of Dose** | <Generic Medicine><Strength><Form>Amoxicillin-250mg-Capsules | <Brand><Strength><Form>Amoxil-250mg-Capsules |
| **Pack** | <Generic Medicine><Strength><Form><Pack>Amoxicillin-250mg-Capsules-[20] | <Brand><Strength><Form><Pack>Amoxil-250mg-Capsules-x20 |

Table 2: Examples of NeHTA Terminology

|  |  |  |
| --- | --- | --- |
| **Detail Level** | **Medicinal Product** | **Trade Family** |
| **Product** | <Medicinal Product> (**MP**)AmoxicillinPredisone | <Trade Family> (**TF**)AmoxilPanafcortSone |
| **Unit of Use** | (**MPUU**)Amoxicillin-250mg-CapsulesPrednisone-5mg-Tablet | (**TPUU**)Amoxil 250mg CapsulesPanafcort-5mg-Tablet |
| **Product Pack** | **(MPP**)Amoxicillin-250mg-Capsules-[20]Prednisone-5mg-tablet-[60] | (**TPP)**Amoxil-250mg-Capsules-[20]Panafcort-5mg-Tablet-[60] |

Figure 5: Catalogue Content Sources



## The Stock Control Process

Stock control remains within the Pharmacy Application and not in the CS under the proposed integration model. An HL7 message with stock levels or availability will not be generated from the Pharmacy Application.

## Electronic Medication Dispensing Cabinets

HL7 messaging to electronic medication dispensing cabinets is not in the scope of this design. Sites may currently utilise these automated drug cupboards/dispensing machines and wish to integrate these with the Clinical System. No specific standard is defined for this process.

It is anticipated that a bi-directional interface between the electronic medication dispensing cabinet and a Clinical System is required to achieve relevant functionality. This would be used to guide nursing staff to only select valid medications for a specific patient based on their medication profile from the electronic medication dispensing cabinet. A uni-directional interface from the electronic medication dispensing cabinet to a CS is not perceived to have a benefit as stock management is not a function of the Clinical System.

If there is an existing uni-directional VEN message from the electronic medication dispensing cabinet to the Pharmacy application indicating stock decrement/stockout, then this would continue to function.

## Barcode Scanning for Medications Administration

Under the proposed model it is envisaged that medication will have barcodes on the package as available at the patient bedside. These product barcodes, as well as the patient’s wristband barcode (containing the patient’s URN) will be able to be scanned when the medication is administered to verify correct patient and correct medication as per the order.

There are 2 requirements for bar coding to occur; the product must be available at the patient bedside and the barcode must consist of either:

* The barcode from the original manufacturer packaging (ie GTIN), which will be stored within CS. This is the preferred model for imprest (non-interfaced) medications.
* An agreed barcode identifier (eg Dispense ID sent in ORC-3.1) configured per domain instance, which will be stored within CS but messaged to the Pharmacy application for printing during the Dispense function. This is the preferred model for interfaced medications dispensed from Pharmacy.

## Blood Bank Orders

Blood Bank products will always be ordered via a Pharmacy orderable and may optionally have a Pathology orderable as well (both could be combined in an order set for ease of ordering – see Pathology Orders specification). The Blood Bank items will either be for whole blood items (where blood group matching is required) which are NOT dispensed, or blood products (eg Albumin – which are not matched) where the product is dispensed from pharmacy.

# Medication Orders Technical Specification

## Message Types

|  |  |  |
| --- | --- | --- |
| **Message Trigger** | **Description** | **Comments** |
| ADT^A31 | Update Person Information | Outbound allergy information.  |
| RDE^O11 | Pharmacy Encoded Order | Outbound prescribed medications information |

##

## ADT^A31 Update Person Information

|  |  |  |
| --- | --- | --- |
| OCIO ADT^A31 | Segment Description | Comments |
| MSH | Message Header |  |
| EVN | Event Type |  |
| PID  | Patient Identification |  |
| PV1 | Patient Visit - Info. |  |
| [ PV2 ] | Patient Visit – Additional Patient Info | X |
| [{ ROL }] | Role | X |
| [{ DB1 }] | Disability Information | X |
| [{ OBX }] | Observation Result | Optional. |
| [{ |  | X |
| [{ AL1 }] | Allergy Information |  |
| ZAM | Additional Allergy Information |  |
| }] |  |  |

Note 1: Patient Class will equal “N”. All other fields in the PV1 segment will be blank

Note 2: An A31 should be sent from the clinical system for updates to Allergies and Alerts.

## RDE^O11 Pharmacy Encoded Order Message

|  |  |  |  |
| --- | --- | --- | --- |
| **CS RDE** | **OCIO Segments Used** | **RDE Segment Name** | **Notes** |
| MSH | MSH | Message Header | Always transmitted from the CS. |
| [{NTE}] |  | Notes and Comments (for Header) | X |
| [  | [  |  |  |
|  PID |  PID | Patient Identification | Always transmitted from the CS. |
|  [PD1] |  | Additional Demographics | X |
|  [{NTE}] |  | Notes and Comments (for Patient ID) | X |
|  [PV1 |  [PV1 | Patient Visit | Always transmitted from the CS. |
|  [PV2]] |  | Patient Visit - Additional Info | X  |
|  [{IN1 |  | Insurance | X |
|  [IN2] |  | Insurance Additional Info | X |
|  [IN3] |  | Insurance Add’l Info - Cert. | X |
|  }] |  |  |  |
|  [GT1] |  | Guarantor | X |
|  [{AL1}] |  | Allergy Information | X  |
| ] | ] |  |  |
| { | { |  |  |
|  [ORC](#ORC) |  [ORC](#ORC) | Common Order | **Always transmitted from the CS**.  |
|  [ |  [ |  |  |
|  [RXO](#RXO) |  [RXO](#RXO) | Pharmacy/Treatment Prescription Order | **Always transmitted from the CS.** CS RXO data may need to be appended to OBX in agency IE but not carried through, if Pharmacy application can only take ORM. CS RXE data would then populate this segment instead. |
|  [{NTE}] |  [{NTE}] | Notes and Comments (for RXO) | X |
|  {[RXR](#RXR)} |  {[RXR](#RXR)} | Pharmacy/Treatment Route (for RXO) | X |
|  [  |  [  |  |  |
|  {[RXC](#RXC)}  |  {[RXC](#RXC)}  | Pharmacy/Treatment Component (for RXO) | X |
|  [{NTE}] |  | Notes and Comments (for RXC) | X |
|  ] |  ] |  |  |
|  ]  |  ]  |  |  |
|  [RXE](#RXE) |  [RXE](#RXE) | Pharmacy/Treatment Encoded Order | **Always transmitted from the CS.** Data may need transformation into RXO segment in Agency IE if Pharmacy application can only take ORM |
|  OBX |  OBX |  | Optional from the CS. Contains PBS Item Code where available. |
|  {[RXR](#RXR)} |  {[RXR](#RXR)} | Pharmacy/Treatment Route (for RXE) | Optional from CS.  |
|  [{[RXC](#RXC)}] |  [{[RXC](#RXC)}] | Pharmacy/Treatment Component (for RXE) | **At least one RXC should always sent.** Used for both single and multi-component products (ie one component per RXC segment) |
|  [{ |  [{ |  |  |
|  OBX |  OBX | Results | Optional from CS.  |
|  [{NTE}] |  | Notes and Comments (for OBX) | Optional from CS.  |
|  }] |  }] |  |  |
|  {[CTI]} |  | Clinical Trial Identification | X |
| } | } |  |  |

## Message, Type, Event Codes And Order Control Code

Listed below are the event triggers, associated event codes and order control codes used in the RDE message. Note that the actual alias sent in the message may need translation in Agency IE.

| Message Type | Event Code | Order Control Code | Description | Supported | Response |
| --- | --- | --- | --- | --- | --- |
| *MSH-9\_1* | *MSH-9\_2* | *ORC-1* |  |  |  |
| **New Order** |
| RDE | O11 | NW | New Order | O | ACK |
| **Cancel Order Request** |
| RDE | O11 | OC | Order Cancelled | O | ACK |
| **Changed Order Request** |
| RDE | O11 | XX | Order changed, Unsolicited | O  | ACK |

##

Note that changes to a medication, such as add-on medication, will result in the ORC-1 value of XX being sent in a new message, that has the same dispense ID (ORC-3) as the original message.

## Message Segments

Fields shaded in grey will be ignored as they are out of scope for the CS design and implementation.

## MSH – Message Header

Refer to DH Unified Implementation Guide for details

http://www.health.vic.gov.au/designauthority/catalogues.htm

MSH EXAMPLE**:**

**MSH|^~\&|HSIE|1590|MERLIN|1590|20060501080015||RDE^O11|8201976|P|2.4**

MSH-1 Field\_Separator |

MSH-2 Encoding\_Characters ^~\&

MSH-3 Sending\_Application HSIE

MSH-4 Sending\_Facility 1590 (Box Hill)

MSH-5 Receiving\_Application MERLIN

MSH-6 Receiving\_Facility 1590

MSH-7 Date/Time\_Of\_Message 20060501080015

MSH-8 SECURITY

MSH-9.1 Message\_Type.message\_type RDE

MSH-9.2 Message\_Type.trigger\_event O11

MSH-10 Message\_Control\_ID 8201976

MSH-11 Processing\_ID P

MSH-12 Version\_ID 2.4

## EVN – Event Type

This segment will be used in the ADT^A31 message but not the RDE^O11.

Refer to DH Unified Implementation Guide for details

http://www.health.vic.gov.au/designauthority/catalogues.htm

EVN EXAMPLE:

**EVN|A31|20060101114821**

EVN-1 Event Type Code A31

EVN-2 Recorded Date/Time 20060101114821

## PID Patient Identification

This segment is used in both the ADT^A31 and RDE^O11 messages.

Refer to DH Unified Implementation Guide for details

http://www.health.vic.gov.au/designauthority/catalogues.htm

**PID EXAMPLE:**

**PID|||90001^^^^MRN~4556^^^G||King^Winifred^Mermaid^OBE ^Mrs^^|Sullivan|19450305|2|Sullivan^Lucy^ Dot^OBE^Mrs^^A|2|19 Tenth Road^COBURG^2^3058||03 93705010|03 92305010|19|5|CAT||12111989999||||^^^^^2205 ||||G|||N**

PID-1 Set\_ID\_PID

PID-2 Patient\_ID

PID-3 Patient\_Identifier\_List 90001^^^MRN~4556^^^DVG

PID-4 Alternate\_Patient\_ID\_PI

PID-5 Patient Name

PID-5.1 Patient\_Name.Family King

PID-5.2 Patient\_Name.Given Winifred

PID-5.3 Patient\_Name.Middle Mermaid

PID-5.4 Patient\_Name.Suffix OBE

PID-5.5 Patient\_Name.Prefix Mrs

PID-5.6 Patient\_Name.degree

PID-5.7 Patient\_Name.type

PID-6 Mothers\_Maiden\_Name

PID-7 Date/Time\_of\_Birth 19450305

PID-8 Administrative\_Sex 2 (Female)

PID-9 Patient\_Alias

PID-9\_1.1 Patient\_Alias.Family Sullivan

PID-9\_2.1 Patient\_Alias.Given Lucy

PID-9\_3.1 Patient\_Alias.Middle Dot

PID-9\_4.1 Patient\_Alias.Suffix OBE

PID-9\_5.1 Patient\_Alias.Prefix Mrs

PID-10 Race 2 (Not Indigenous)

PID-11 Patient Address

PID-11.1 Patient Address.Street 19 Tenth Road

PID-11.2 Patient Address.Other\_Designation COBURG

PID-11.3 Patient Address.City 2 (Victoria)

PID-11.4 Patient Address.State 3058

PID-12 County Code

PID-13 Phone Number Home 03 93705010

PID-14 Phone Number Business 03 92305010

PID-15 Primary Language 19 (English)

PID-16 Marital Status 5 (Married)

PID-17 Religion CAT (Catholic)

PID-18 Patient Account Number

PID-19 SSN Number Patient 12111989999

PID-20 Driver's License Number Patient

PID-21 Mother's Identifier

PID-22 Ethnic Group

PID-23 Birth Place

PID-24 Multiple Birth Indicator

PID-25 Birth Order

PID-26 Citizenship

PID-27 Veterans Military Status

PID-28 Nationality

PID-29 Patient Death Date and Time 19761103

PID-30 Patient Death Indicator N (Y/N)

## PV1 – PATIENT VISIT

Refer to DH Unified Implementation Guide for details

http://www.health.vic.gov.au/designauthority/catalogues.htm

**Usage in ADT^A31 (see below):** The clinical system does not need to transmit a PV1 segment for A31 messages, therefore for A31 messages only the HSIE will require a coded value of “N” in PV1-2 to indicate that the segment is not used.

Note: If the message type is an ADT^A31, only the PV1-2 patient class will be populated in the PV1 segment

**ADT^A31 PV1 EXAMPLE:**

**PV1||N||||||||||||||||||||||||||||||||||||||||||||||||||**

PV1-1 Set\_ID\_PV1

PV1-2 Patient\_Class N (Not Applicable)

**PV1 usage in RDE^O11 (see below):** The clinical system must transmit a PV1 segment for RDE messages.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Seq#****PV1** | **Item#** | **Name** | **OPT****2.4** | **DT****2.4** | **LEN****2.4** | **REP****2.4** | **FORMAT****2.4** | **Notes** |
| 1 | 00131 | Set Id – Patient Visit |  |  |  |  |  |  |
| 2 | 00132 | Patient Class | R | IS | 4 |  |  |  |
| 3 | 00133 | Assigned Patient - Location | R | PL | 80 |  | <Point of care>^<room>^<bed>^<facility> |  |
| 4 | 00134 | Admission Type | O | IS | 2 |  |  |  |
| 5 | 00135 | Pre-Admit Number | O | CX | 250 |  |  |  |
| 6 | 00136 | Prior Patient Location |  |  |  |  |  |  |
| 7 | 00137 | Attending Doctor | O | XCN | 250 | Y | <Id>^<Surname>^<Given>^^^<Prefix>^^^<Assigning Authority>^^^^<Id Type> | Only one per encounter |
| 8 | 00138 | Referring Doctor | O | XCN | 250 | Y | <Id>^<Surname>^<Given>^^^<Prefix>^^^<Assigning Authority>^^^^<Id Type> | Only one per encounter |
| 9 |  | Consulting Doctor |  |  |  |  | This is valued with the “copy-to Dr” in the CS |  |
| 10 | 00140 | Hospital Service | C | IS | 10 |  |  |  |
| 11 | 00141 | Temporary Location | O | PL | 80 |  |  |  |
| 12 | 00142 | Pre-Admit Test Indicator | O | IS | 2 |  |  |  |
| 13 | 00143 | Re-Admission Indicator | O | IS | 2 |  |  |  |
| 14 | 00144 | Admit Source | O | IS | 3 |  |  |  |
| 15 | 00145 | Ambulatory Status |  | IS | 2 |  |  |  |
| 16 | 00146 | VIP Indicators | O | IS | 2 |  |  |  |
| 17 | 00147 | Admitting Doctor | O | XCN | 250 |  | <Id>^<Surname>^<Given>^^^<Prefix>^^^<Assigning Authority>^^^^<Id Type> | Only one per encounter |
| 18 | 00148 | Patient Type | O | IS | 2 |  |  |  |
| 19 | 00149 | Visit Number | O | CX | 250 |  | <Visit Number> |  |
| 20 | 00150 | Financial Class | O | FC | 50 | Y | <Financial class>^<effective date> |  |
| 21 | 00151 | Charge Price Indicator |  |  |  |  |  |  |
| 22 | 00152 | Courtesy Code | O | IS | 2 |  |  |  |
| 23 | 00153 | Credit Rating |  |  |  |  |  |  |
| 24 | 00154 | Contract Code |  |  |  |  |  |  |
| 25 | 00155 | Contract Effective Date |  |  |  |  |  |  |
| 26 | 00156 | Contract Amount |  |  |  |  |  |  |
| 27 | 00157 | Contract Period |  |  |  |  |  |  |
| 28 | 00158 | Interest Code |  |  |  |  |  |  |
| 29 | 00159 | Transfer To Bad Debt Code |  |  |  |  |  |  |
| 30 | 00160 | Transfer To Bad Debt Date |  |  |  |  |  |  |
| 31 | 00161 | Bad Debt Agency Code |  |  |  |  |  |  |
| 32 | 00162 | Bad Debt Transfer Amount |  |  |  |  |  |  |
| 33 | 00163 | Bad Debt Recovery Amount |  |  |  |  |  |  |
| 34 | 00164 | Delete Account Indicator |  |  |  |  |  |  |
| 35 | 00165 | Delete Account Date |  |  |  |  |  |  |
| 36 | 00166 | Discharge Disposition | O | IS | 3 |  |  |  |
| 37 | 00167 | Discharged To Location | O | CM | 25 |  |  |  |
| 38 | 00168 | Diet Type |  |  |  |  |  |  |
| 39 | 00169 | Servicing Facility | O | IS | 2 |  |  |  |
| 40 | 00170 | Bed Status |  |  |  |  |  |  |
| 41 | 00171 | Account Status | O | IS | 2 |  | Available if sent from PAS |  |
| 42 | 00172 | Pending Location | O | PL | 80 |  | Available if sent from PAS |  |
| 43 | 00173 | Prior Temporary Location | O | PL | 80 |  | Available if sent from PAS |  |
| 44 | 00174 | Admit Date/Time | O | TS | 26 |  | YYYYMMDD |  |
| 45 | 00175 | Discharge Date/Time | O | TS | 26 | Y | YYYYMMDD |  |
| 46 | 00176 | Current Patient Balance |  |  |  |  |  |  |
| 47 | 00177 | Total Charges |  | NM | 12 |  |  |  |
| 48 | 00178 | Total Adjustments |  | NM | 12 |  |  |  |
| 49 | 00179 | Total Payments |  | NM | 12 |  |  |  |
| 50 | 00180 | Alternate Visit Id |  | CX | 250 |  |  |  |
| 51 | 01226 | Visit Indicator |  |  |  |  |  |  |
| 52 | 01224 | Other Healthcare Provider |  |  |  |  | PV1-52 is supported. However the GP could go out in several different PV1 fields depending on the encounter personnel relationship type used for GP Personnel. Currently this is undecided. For example if the relationship type is REFERDOC then the GP would go out in PV1-8. If the relationship type is CASEMNGR ASSIGNED, ASSIGNED\_PAT, OTHER, ORDERDOC, or PRIMARYNURSE then the GP will go out in PV1;52. |  |

Note: If the message type is an RDE^O11 then the PV1 segment contains more information

**RDE^O11 PV1 EXAMPLE:**

**PV1||I|IC1^01^01^DEMO|C|1234||ZZZPainm^TESTDavies^David^Sean^DR|ZZZPHILG^ZZZPHILG ^Jack^Tom^DR|ZZZSMITH^TestSIMON^Simon^Russell^DR|ICU||||S||N|ZZZPainm^TESTDavies^David^Ian ^DR^|I|110011|MP||||||||||||||||1|6A|||||||20060809111501|20060909111501|||||||ZZZPainm^TESTDavies^David^Tim^DR**

PV1-1 Set\_ID\_PV1

PV1-2 Patient\_Class I (Inpatient)

PV1-3 Assigned\_Patient\_Location

PV1-3.1 Assigned\_Patient\_Location.Point\_of\_Care IC1 (Intensive care)

PV1-3.2 Assigned\_Patient\_Location.Room 01

PV1-3.3 Assigned\_Patient\_Location.Bed 01

PV1-3.4 Assigned\_Patient\_Location.Facility DEMO

PV1-4 Admission\_Type C (Emergency admit)

PV1-5 Preadmit\_Number 1234

PV1-6 Prior\_Patient\_Location

PV1-7 Attending\_Doctor

PV1-7.1 Attending\_Doctor.ID\_Number ZZZPainm

PV1-7.2 Attending\_Doctor.Family\_Name TESTDavies

PV1-7.3 Attending\_Doctor.Given\_Name David

PV1-7.4 Attending\_Doctor.Middle\_Name Sean

PV1-7.5 Attending\_Doctor.Prefix DR

PV1-8 Referring\_Doctor

PV1-8.1 Referring\_Doctor.ID\_Number ZZZPHILG

PV1-8.2 Referring\_Doctor.Family\_Name ZZZPHILG

PV1-8.3 Referring\_Doctor.Given\_Name Jack

PV1-8.4 Referring\_Doctor.Middle\_Name Tom

PV1-8.5 Referring\_Doctor.Prefix DR

PV1-9 Consulting\_Doctor

PV1-9.1 Referring\_Doctor.ID\_Number ZZZSMITH

PV1-9.2 Referring\_Doctor.Family\_Name TestSIMON

PV1-9.3 Referring\_Doctor.Given\_Name Simon

PV1-9.4 Referring\_Doctor.Middle\_Name Russell

PV1-9.5 Referring\_Doctor.Prefix DR

PV1-10 Hospital\_Service ICU

PV1-11 Temporary\_Location

PV1-12 Pre-admit\_Test\_Indicator

PV1-13 Re-admission\_Indicator

PV1-14 Admit\_Source S (statistical)

PV1-15 Ambulatory\_Status

PV1-16 VIP\_Indicator N

PV1-17 Admitting\_Doctor

PV1-17.1 Admitting\_Doctor.ID\_Number ZZZPainm

PV1-17.2 Admitting\_Doctor.Family\_Name TESTDavies

PV1-17.3 Admitting\_Doctor.Given\_Name David

PV1-17.4 Admitting\_Doctor.Middle\_Name Ian

PV1-17.5 Admitting\_Doctor.Prefix DR

PV1-18 Patient\_Type I (inpt/overnight)

PV1-19 Visit\_Number 110011

PV1-20 Financial\_Class MP (Pub.eligible)

PV1-21 CHARGE PRICE INDICATOR

PV1-22 COURTESY CODE

PV1-23 CREDIT RATING

PV1-24 CONTRACT CODE

PV1-25 CONTRACT EFFECTIVE DATE

PV1-26 CONTRACT AMOUNT

PV1-27 CONTRACT PERIOD

PV1-28 INTEREST CODE

PV1-29 TRANSFER TO BAD DEBT CODE

PV1-30 TRANSFER TO BAD DEBT DATE

PV1-31 BAD DEBT AGENCY CODE

PV1-32 BAD DEBT TRANSFER AMOUNT

PV1-33 BAD DEBT RECOVERY AMOUNT

PV1-34 DELETE ACCOUNT INDICATOR

PV1-35 DELETE ACCOUNT DATE

PV1-36 DISCHARGE DISPOSITION 1 (Home)

PV1-37 DISCHARGED TO LOCATION 6A

PV1-38 DIET TYPE

PV1-39 SERVICING FACILITY

PV1-40 BED STATUS

PV1-41 ACCOUNT STATUS

PV1-42 PENDING LOCATION

PV1-43 PRIOR TEMPORARY LOCATION

PV1-44 Admit Date/Time 20060809111501

PV1-45 Discharge Date/Time 20060909111501

PV1-46 CURRENT PATIENT BALANCE

PV1-47 TOTAL CHARGES

PV1-48 TOTAL ADJUSTMENTS

PV1-49 TOTAL PAYMENTS

PV1-50 ALTERNATE VISIT ID

PV1-51 VISIT INDICATOR

PV1-52 OTHER HEALTHCARE PROVIDER

PV1-52.1 OTHER HEALTHCARE PROVIDER.ID\_Number ZZZPainm

PV1-52.2 OTHER HEALTHCARE PROVIDER.Family\_Name TESTDavies

PV1-52.3 OTHER HEALTHCARE PROVIDER.Given\_Name David

PV1-52.4 OTHER HEALTHCARE PROVIDER.Middle\_Name Ian

PV1-52.5 OTHER HEALTHCARE PROVIDER.Prefix DR

## ORC – Common Order

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Seq#****ORC** | **Item#**  | **Name** | **OPT****2.4** | **DT****2.4** | **LEN****2.4** | **Reps****2.4** | **Format****2.4** | **Notes** |
| 01 |  | Order Control | R | ID | 2 | N | <Id> | Valid values: NW (New Order), OC (Cancelled) and XX (Modified) Determines the function of the order message.**Note that this refers to a dispense action not the original order.****NB:iSOFT use CA for cancelled order** |
| 02 |  | Placer Order Number | C | EI | 22 |  | <unique placer id>^<placer application id> | The Placer Id is assigned by the placer system.Placer application id: Unique within a group of intercommunicating systems. May not always match MSH sending or receiving application |
| 03 |  | Filler Order Number | C | EI | 22 |  | <Id>^<filler application id> | **This is the CS Dispense ID.** **This can be used to create a barcode (printed in the pharmacy application) that can be scanned during meds administration. Please refer to the Barcode specification for Meds Admin. Note that a modified medication will have the same dispense ID as the original.** |
| 04 |  | Placer Group Number | C | EI | 22 |  | <Id>^<placer group application id> | Used as a batch identifier. |
| 05 |  | Order Status | O | ID | 2 | N |  | **Note that this refers to a dispense action not the original order.** |
| 06 |  | Response Flag | O | ID | 1 |  |  | X Not Used |
| 07 |  | Quantity/Timing | O | TQ | 200 | Y | <quantity>^<interval>^<duration component>^<start date/time>^<end date/time> | The corresponding RXE Quantity/Timing will carry this information.ORC 7.4 is the prescription Date, date of legal signing.Dosing quantity and interval is specified here in the first repeat of this field.<quantity> = dosing quantity<interval> = dosing intervalSee HL7 v2.4 Clauses 4.3.1 and 4.3.2Minimum dispensing interval is encoded here as the second repeat of this field.<interval> = minimum dispensing interval (? Days)<condition> = “minimum dispensing interval” |
| 08 |  | Parent | O | CM | 200 |  |  | X |
| 09 |  | Dt Of Transaction | O | TS | 26 |  | YYYYMMDDHHMMSS | Actual date/time that the order wasentered into the ordering applicationNOTE: Refer also ORC-15-ordereffective date/time (date the prescription signed) |
| 10 |  | Entered By | O | XCN | 250 | Y | <ID Number>^<Family Name>^<Given Name>^<Middle Initial>^<Prefix>^<Identifier type code>^<Assigning Authority> | Transcriber e.g. nurse entering a phone order.<ID Number> = Prescriber number<Family Name>= Prescriber surname<Given Name>= Prescriber FirstName<Middle Initial>= Prescriber secondinitial<Prefix>=Prescriber Title<Identifier type code><Assigning Authority> |
| 11 |  | Verified By | O | XCN | 250 | Y | <ID Number>^<Family Name>^<Given Name>^<Middle Initial>^<Prefix>^<Identifier type code>^<Assigning Authority> | Pharmacist Providing the product Verification<ID Number> = Prescriber number<Family Name>= Prescriber surname<Given Name>= Prescriber FirstName |
| 12 |  | Ordering Provider | O | XCN | 250 | Y | <ID Number>^<Family Name>^<Given Name>^<Middle Initial>^<Prefix>^<Identifier type code>^<Assigning Authority>  | **The Prescriber Number in located in this field.****Use Medicare PBS prescriber number****for ID component if available for PBS****and RPBS scripts****<ID Number> = Prescriber number****<Family Name>= Prescriber surname****<Given Name>= Prescriber First****Name****<Middle Initial>= Prescriber second****initial****<Prefix>=Prescriber Title****<Identifier type code>= ‘PRES’****<Assigning Authority>=’AUSHIC’**For medications prescribed bypharmacist use ‘pharmacy boardregistration number’ for IDcomponent. <ID Number> = Pharmacy boardregistration number<Family Name>= Pharmacist surname<Given Name>= Pharmacist FirstName<Middle Initial>= Pharmacist secondinitial<Prefix>= Pharmacist Title<Identifier type code>= ‘PHARM’<Assigning Authority>= statepharmacy board (e.g. NSWPB)For self-prescribed medication, useconsumer details<ID Number> = ‘SELFPRESC’<Identifier type code>=‘SELFPRESC’<Assigning Authority>= ‘AS 4700.3’ |
| 13 |  | Enterer’s Location | O | PL | 80 |  |  | X |
| 14 |  | Call Back Phone Nbr | O | XTN | 250 |  |  | XTelephone number to call forclarification of a request or otherinformation regarding the orderThis can include extension numberand/or beeper number when applicable |
| 15 |  | Order Effective Dt | O | TS | 26 |  | YYYYMMDDHHMMSS  | **Actual date/time that the order was****signed or certified by the prescriber.****Prescription Date and Time of signing.** |
| 16 |  | Order Cntrl Cd Reason | O | CE | 2500 |  |  | Sent by CS. **Note that this refers to a dispense action not the original order.** |
| 17 |  | Entering Organisation | O | CE | 250 |  |  | X |
| 18 |  | Entering Device | O | CE | 250 |  |  | X |
| 19 |  | Action By | O | XCN | 250 | Y |  |  |
| 20 |  | Advanced beneficiary notice code | O | CE | 250 |  |  | X HL7 Table # 339 |
| 21 |  | Ordering facility name | O | XON | 250 | Y |  | X |
| 22 |  | Order facility address | O | XAD | 250 | Y |  | X |
| 23 |  | Order facility phone number | O | XTN | 250 | Y |  | X |
| 24 |  | Ordering provider address | O | XAD | 250 | Y |  | X |
| 25 |  | Order Status Modifier | O | CWE | 250 | N |  | X (New data element in v.2.4) |

**ORC EXAMPLE:**

**ORC|NW|5679692^HNAM\_ORDERID|1873744^DISPENSEID|1873746^HNAM\_RUNID|||^Q18H^D10^20030715020000^20030724200000||20030715013954|379625843^Mankowski^Michael^A^^^^^PRSNLID^Current^^^PRSNLID||123591^Smith Jr.^Donald^B^^^^^^AUSHIC^^^^PRES|||20030715013953|NW^Initial Doses**

ORC-1 Order\_Control NW

ORC-2\_1 Placer\_Order\_Number.Entity\_Identifier 5679692

ORC-2\_2 Placer\_Order\_Number.Namespace\_ID HNAM\_ORDERID

ORC-3\_1 Filler\_Order\_Number 1873744

ORC-3\_2 Filler\_Order\_Number.Namespace\_ID DISPENSEID

ORC-4\_1 Placer\_Group\_Number 1873746

ORC-4\_2 Placer\_Group\_Number.Namespace\_ID HNAM\_RUNID

ORC-5 Order\_Status NW

ORC-6 Response\_Flag

ORC-7\_1 Quantity/Timing.Quantity

ORC-7\_2 Quantity/Timing.Interval Q18H

ORC-7\_3 Quantity/Timing.Duration D10

ORC-7\_4 Quantity/Timing.Start\_Date/Time 20030715020000

ORC-7\_5 Quantity/Timing.End\_Date/Time 20030724200000

ORC-8 Parent

ORC-9 Date/Time\_of\_Transaction 20030715013954

ORC-10\_1 Entered\_By.ID\_Number 379625843

ORC-10\_2 Entered\_By.Family\_Name Mankowski

ORC-10\_3 Entered\_By.Given\_Name Michael

ORC-10\_4 Entered\_By.Middle\_Name A

ORC-10\_5 Entered\_By.Suffix

ORC-10\_6 Entered\_By.Prefix

ORC-10\_7 Entered\_By.Degree

ORC-10\_8 Entered\_By.Source\_Table

ORC-10\_9 Entered\_By.Assigning\_Authority PRSNL ID

ORC-10\_10 Entered\_By.Name\_Type\_Code Current

ORC-10\_11 Entered\_By.ID\_Check\_Digit

ORC-10\_12 Entered\_By.Code\_for\_Chk\_Digit\_Scheme\_Employed\_ID

ORC-10\_13 Entered\_By.ID\_Type\_Code PRSNLID

ORC-11 Verified\_By

ORC-12\_1 Ordering\_Provider.ID\_Number 123591

ORC-12\_2 Ordering\_Provider.Family\_Name Smith Jr.

ORC-12\_3 Ordering\_Provider.Given\_Name Donald

ORC-12\_4 Ordering\_Provider.Middle\_Name B

ORC-12\_5

ORC-12\_6

ORC-12\_7

ORC-12\_8

ORC-12\_9

ORC-12\_10 Ordering\_Provider.Assigning\_Authority AUSHIC

ORC-12\_11

ORC-12\_12

ORC-12\_13

ORC-12\_14 Ordering\_Provider.Identifier Type PRES

ORC-13 Enterers\_Location

ORC-14 Call\_Back\_Phone\_Number

ORC-15 Order\_Effective\_Date/Time 20030715013953

ORC-16 Order\_Control\_Code\_Reason NW^Initial Doses

## RXO – Pharmacy Prescription Order

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Seq#****RXO** | **Item#**  | **Name** | **OPT****2.4** | **DT****2.4** | **LEN****2.4** | **Reps****2.4** | **Format****2.4** | **Notes****2.4** |
| 01 | 00292 | Requested Give Code | R | CE | 250 |  | <identifier>^<text>^<name of coding system>^<alternate identifier>^<alternate text>^<name of alternate coding system> | <identifier> = Code Number <text> = Generic Orderable Name, “MP”<Name of coding system> = “AMT-MP”<alternate identifier> = code number for Australian approved name (generic)<alternate text> = Australian approved name (generic)<name of alternate coding system> = recognised generic coding system**Order Catalog code – not product code (note AMT MP Level only)** |
| 02 | 00293 | Requested Give Amount – Minimum | C | NM | 20 |  |  | Fill RXO-4 if this field is used |
| 03 | 00294 | Requested Give Amount – Maximum | O | NM | 20 |  | Not used | X Not Used |
| 04 | 00295 | Requested Give Units | C | CE | 250 |  |  | Fill RXO-2 if this field is used.Use TGA AAN Chapter 7 TGA listof Units of Expression andProportionALERT: TGA does not permitabbreviation of microgram, mcg isnot supported.Where TGA list is incomplete useISOISO/ISO+ unitsSee HL7 V2.4 Clause 7.18.4, Figure7-9Compound unit dosing (eg mg perkg body weight) is not supported |
| 05 | 00296 | Requested Dosage Form | O | CE | 250 |  | <identifier>^<text>^<name of coding system>^<alternate identifier>^<alternate text>^<name of alternate coding system> | <identifier> = Trade name dose form (optional)<text> = Trade name dose form (optional)<name of coding system> = trade name<alternate identifier> = TGA approved dosage form name<alternate text> = TGA approved dosage form name<name of alternate coding system> = TGAAANSee section 5.2 approved TGA dosage form names in “TGA APPROVED TERMINOLOGY FOR MEDICINES” |
| 06 | 00297 | Provider’s Pharmacy Instructions | O | CE | 250 | Y | ^<text> | <text> = free text representation of medication directions |
| 07 | 00298 | Provider’s Administration Instructions | O | CE | 250 | Y | ^<text>  |  |
| 08 | 00299 | Deliver-To Location | O | CM | 200 |  |  |  |
| 09 | 00300 | Allow Substitutions | R | ID | 1 |  |  |  |
| 10 | 00301 | Requested Dispense Code | O | CE | 250 |  |  |  |
| 11 | 00302 | Requested Dispense Amount | O | NM | 20 |  |  |  |
| 12 | 00303 | Requested Dispense Units | O | CE | 250 |  |  |  |
| 13 | 00304 | Number of Refills | O | NM | 3 |  |  |  |
| 14 | 00305 | Ordering provider’s DEA Number | C | XCN | 250 | Y |  |  |
| 15 | 00306 | Pharmacist Verifier ID | C | XCN | 250 | Y |  |  |
| 16 | 00307 | Needs Human Review | O | ID | 1 |  |  |  |
| 17 | 00308 | Requested Give Per (Time Unit) | C | ST | 20 |  |  |  |
| 18 | 01121 | Requested Give Strength | O | NM | 20 |  |  |  |
| 19 | 01122 | Requested Give Strength Units | O | CE | 250 |  |  |  |
| 20 | 01123 | Indication | O | CE | 250 | Y |  |  |
| 21 | 01218 | Requested Give Rate Amount | O | ST | 6 |  |  |  |
| 22 | 01219 | Requested Give Rate Units | O | CE | 250 |  |  |  |
| 23 | 00329 | Total Daily Dose | O | CQ | 10 |  |  |  |
| 24 | 01476 | Supplementary Code | O | CE | 250 | Y |  |  |

**RXO EXAMPLE:**

**RXO|SNOMED!21433011000036107^paracetamol^AMT-MP|2||tab^tab(s)^^^1,000 mg / 2 tab(s)|TAB182^Table**

RXO-1\_1 Requested\_Give\_Code.Identifier **SNOMED!21433011000036107**

RXO-1\_2 Requested\_Give\_Code.Text **paracetamol**

RXO-1\_3 Requested\_Give\_Code.Coding\_System **AMT-MP**

RXO-1\_4 Requested\_Give\_Code.Alternate\_Id

RXO-1\_5 Requested\_Give\_Code.Alternate\_Text

RXO-2 Requested\_Give\_Amount\_Minimum **2**

RXO-3 Requested\_Give\_Amount\_Maximum

RXO-4 Requested\_Give\_Units **tab^tab(s)^^^1,000 mg / 2 tab(s)**

RXO-5\_1 Requested\_Dosage\_Form.Identifier **TAB182**

RXO-5\_2 Requested\_Dosage\_Form.Text **Table**

## RXE – Pharmacy Encoded Order

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Seq#****RXE** | **Item#**  | **Name** | **OPT****2.4** | **DT****2.4** | **LEN****2.4** | **Reps****2.4** | **Format****2.4** | **Notes** |
| 01 | 00221 | Quantity/Timing | R | TQ | 200 |  | <quantity>^<interval>^<duration component>^<start date/time>^<end date/time> | Dosing quantity and interval is specified here in the first repeat of this field.<quantity> = dosing quantity<interval> = dosing intervalSee HL7 v2.4 Clauses 4.3.1 and 4.3.2Minimum dispensing interval is encoded here as the second repeat of this field.<interval> = minimum dispensing interval (? Days)<condition> = “minimum dispensing interval”**This is the same information as ORC-7 and that RXE-1.4 is the prescription date ie the legal signing date** |
|  02 | 00317 | Give Code | R | CE | 250 |  | <identifier>^<text>^<name of coding system>^<alternate identifier>^<alternate text>^<name of alternate coding system> | <identifier> = **AMT-TPP** Code Number <text> = **Trade Product Pack** Name<Name of coding system> = **AMT-TPP**<alternate identifier> = **AMT-MPP** Code Number<alternate text> = **Medicinal Product Pack** Name<name of alternate coding system> = **AMT-MPP****Note that if this is a multi-component medication then the Base component will appear in RXE-2 as well as the first RXC segment.****NeHTA AMT-TPP and AMT-MPP product codes** |
| 03 | 00318 | Give Amount – Minimum | R | NM | 20 |  |  | Fill RXO-4 if this field is used |
| 04 | 00319 | Give Amount – Maximum | O | NM | 20 |  |  |  |
| 05 | 00320 | Give Units | R | CE | 250 |  |  | See RXO-4Fill RXO-2 if this field is used.Use TGA AAN Chapter 7 TGA listof Units of Expression andProportionALERT: TGA does not permitabbreviation of microgram, mcg isnot supported.Where TGA list is incomplete useISOISO/ISO+ unitsSee HL7 V2.4 Clause 7.18.4, Figure7-9Compound unit dosing (eg mg perkg body weight) is not supported**Also sent in RXC-4.**This will be medication dose/volume units (RXE-5.2) |
| 06 | 00321 | Give Dosage Form | O | CE | 250 |  | <identifier>^<text>^<name of coding system>^<alternate identifier>^<alternate text>^<name of alternate coding system> | See RXO-5<identifier> = Trade name dose form (optional)<text> = Trade name dose form (optional)<name of coding system> = trade name<alternate identifier> = TGA approved dosage form name<alternate text> = TGA approved dosage form name<name of alternate coding system> = TGAAANSee section 5.2 approved TGA dosage form names in “TGA APPROVED TERMINOLOGY FOR MEDICINES”Form |
| 07 | 00298 | Provider’s Administration Instructions | O | CE | 250 | Y | ^<text> | **Pharmnet “Product Notes” and “Fill Notes” if available.** **Used for the SIG and special instructions text. This would be printed on the label attached to a dispensed product.** |
| 08 | 00299 | Deliver-To Location | O | CM | 200 |  |  |  |
| 09 | 00322 | Substitution Status | R | ID | 1 |  |  | **This is the PBS Brand substitutions flag used for Outpatients and Discharge Meds.**Y or N Flag |
| 10 | 00323 | Dispense Amount | O | NM | 20 |  |  | **Note that the Dispense Amount may differ from Give Amount (RXE-3) if the Pharmacist modifies the amount prior to dispense.** |
| 11 | 00324 | Dispense Units | O | CE | 250 |  |  |  |
| 12 | 00304 | Number of Refills | O | NM | 3 |  |  | **This is used for PBS “No. of Repeats” for Outpatients and Discharge Meds.** |
| 13 | 00305 | Ordering provider’s DEA Number | C | XCN | 250 | Y |  | **The Ordering Provider’s PBS Prescriber number, if available, is sent here. Prescriber number is also sent in ORC-12 as a repeat** |
| 14 | 00306 | Pharmacist Verifier ID | C | XCN | 250 | Y |  | **Details of the Pharmacist who verifies the order and assigns a product.** |
| 15 | 00325 | Prescription No. |  |  |  |  |  | **This field will be sent as** **<PBS Authority Number-Approval Number> Will be generated for OP and Discharge Medication prescriptions only** |
| 16 | 00326 | Number of Refills Dispensed |  |  |  |  |  | **Used for OP, Disch Meds.** |
| 17 | 00327 | Number of Refills/Doses Remaining |  |  |  |  |  | **Used for OP, Disch Meds.** |
| 18 | 00328 | D/T of most recent refill or dose dispensed |  |  |  |  |  | **Used for OP, Disch Meds.** |
| 19 | 00329 | Total Daily Dose |  |  |  |  |  |  |
| 20 | 00307 | Needs Human Review |  |  |  |  |  |  |
| 21 | 00330 | Pharmacy Special Dispensing Instructions | O | CE | 250 | Y |  | **Contains 4 codes for Regulation 24 (first repeat), PBS Status(second repeat) , S100 (third repeat) and Order Category (fourth repeat) (see example below). See details in section 2.5 above.** |
| 22 | 0331 | Give Per (Time Unit) | C | ST | 20 |  |  |  |
| 23 | 00332 | Give Rate Amount | O | ST | 6 |  |  |  |
| 24 | 00333 | Give Rate Units | O | CE | 250 |  |  |  |
| 25 | 01126 | Give Strength | O | NM | 20 |  |  |  |
| 26 | 01127 | Give Strength Units | O | CE | 250 |  |  |  |
| 27 | 01128 | Give Indication | O | CE | 250 | Y |  | **Used for PBS Restriction Code** |
| 28 | 01220 | Dispense Package Size |  |  |  |  |  |  |
| 29 | 01221 | Dispense Package Size  | O | CE | 250 | Y |  |  |
| 30 | 01222 | Dispense PackageMethod |  |  |  |  |  |  |
| 31 |  | Supplementary Code | O | CE | 250 | Y |  | ATC Code can be sent here. This field is not present in HL7 v.2.3 |

**RXE EXAMPLE:**

**RXE|^Q18H^D10^20030715020000^20030724200000|SNOMED!2254567830^Amoxycillin^AMT-TPP^SNOMED!1234567890^Penicillin^AMT-MPP||||Inj^Inj|TOTAL VOLUME: 53.75 ml - NOTES: STABLE 48 HOURS|||||||SS|1813871-123456||||||REG24^Regulation 24^REG24~RPBS^RPBS Eligible~S100^Section 100 Highly Specialised Drugs^S100~OPDRX^Outpatient Pharmacy||||||1234**

RXE-1\_1 Quantity/Timing.Quantity

RXE-1\_2 Quantity/Timing.Interval Q18H

RXE-1\_3 Quantity/Timing.Duration D10

RXE-1\_4 Quantity/Timing.Start\_Date/Time 20030715020000

RXE-1\_5 Quantity/Timing.End\_Date/Time 20030724200000

RXE-2\_1 Give\_Code.Identifier SNOMED!1234567890

RXE-2\_2 Give\_Code.Text Amoxycillin

RXE-2\_3 Give\_Code.Coding\_System AMT-TPP

RXE-2\_4 Give\_Code.Alternate\_Id SNOMED!2254567830

RXE-2\_5 Give\_Code.Alternate\_Text Penicillin

RXE-2\_6 Give\_Code.Alternate\_Coding\_System AMT-MPP

RXE-3 Give\_Amount\_Minimum

RXE-4 Give\_Amount\_Maximum

RXE-5 Give\_Units

RXE-6\_1 Give\_Dosage\_Form.Identifier Inj

RXE-6\_2 Give\_Dosage\_Form.Text Inj

RXE-7 Providers\_Administration\_Instructions TOTAL VOLUME: 53.75 ml - NOTES: STABLE 48 HOURS

RXE-8 Deliver-to\_Location

RXE-9 Substitution\_Status

RXE-10 Dispense\_Amount

RXE-11 Dispense\_Units

RXE-12 Number\_of\_Refills

RXE-13 Ordering\_Providers\_DEA\_Number

RXE-14 Pharmacist/Treatment\_Suppliers\_Verifier\_ID SS

RXE-15 Prescription\_Number 1813871-123456

RXE-16 Number\_of\_Refills\_Remaining

RXE-17 Number\_of\_Refills/Doses\_Dispensed

RXE-18 D/T\_of\_Most\_Recent\_Refill\_or\_Dose\_Dispensed

RXE-19 Total\_Daily\_Dose

RXE-20 Needs\_Human\_Review

RXE-21 Pharmacy/Treatment\_Suppliers\_Special\_Dispensing\_Instructions REG24^Regulation 24^REG24~RPBS^RPBS Eligible~S100^Section 100Highly Specialised Drugs^S100~OPDRX^Outpatient Pharmacy

RXE-22 Give Per (Time Unit)

RXE-23 Give Rate Amount

RXE-24 Give Rate Units

RXE-25 Give Strength

RXE-26 Give Strength Units

RXE-27 Give Indication 1234

## RXR – Pharmacy Route

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Seq#****RXR** | **Item#**  | **Name** | **OPT****2.4** | **DT****2.4** | **LEN****2.4** | **Reps****2.4** | **Format****2.4** | **Mapping 2.4 to 2.3** | **Notes****2.4** |
| 01 | 00309 | Route | R | CE | 250 |  |  |  |  |
| 02 | 00310 | Administration Site | O | CE | 250 |  |  |  | X HL7 Table # 163 |
| 03 | 00311 | Administration Device | O | CE | 250 |  |  |  | XHL7 Table # 164 |
| 04 | 00312 | Administration Method | O | CE | 250 |  |  |  |  |
| 05 | 01315 | Routing Instruction | O | CE | 250 |  |  |  | XHL7 2.3.1 field |

**RXR EXAMPLE:**

**RXR|IVPB^IVPB|||Intermittent**

RXR-1\_1 Route.Identifier IVPB

RXR-1\_2 Route.Text IVPB

RXR-2 Administration\_Site

RXR-3 Administration\_Device

RXR-4 Administration\_Method INT (Intermittent)

RXR-5 Routing Instruction

## RXC – Pharmacy Component

**Note that the attached examples describe the messaging of an IV infusion (which has multiple ingredients) using RXC segments.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Seq#****RXC** | **Item#**  | **Name** | **OPT****2.4** | **DT****2.4** | **LEN****2.4** | **Reps****2.4** | **Format****2.4** | **Notes****2.4** |
| 01 | 00313 | Rx Component Type | R | ID | 1 |  |  | **Refer to HL7 Table # 166, values are A=Additive, B=Base. Segments containing Base should always precede those containing Additive** |
| 02 | 00314 | Component Code | R | CE | 250 |  |  | **<identifier> = AMT-TPP Code Number****<text> = AMT-TPP Name****<Name of coding system> = AMT-TPP****<alternate identifier> = AMT-MPP Code Number****<alternate text> = AMT-MPP Name****<name of alternate coding system> = AMT-MPP**  |
| 03 | 00315 | Component Amount | R | NM | 20 |  |  |  |
| 04 | 00316 | Component Units | R | CE | 250 |  |  | See RXO-4. **Also sent in RXE-5** |
| 05 | 01124 | Component Strength | O | NM | 20 |  |  |  |
| 06 | 01125 | Component Strength Units | O | CE | 250 |  |  |  |
| 07 | 01476 | Supplementary Code | O | CE | 250 | Y | HL7 2.4 field | X |

**RXC EXAMPLES:**

**RXC|B|SNOMED!67165011000036106^LVP solution Sodium Chloride 0.9% SOL^AMT-TPP^SNOMED!71792011000036107^sodium chloride 0.9% 500 mL bag^AMT-MPP|250|mL^mL|0**

**RXC|A|SNOMED!12108011000036109^heparin 25,000 intl units/mL SOL^AMT-TPP^SNOMED!26918011000036105^heparin 25,000 units/mL amp^AMT-MPP|1|mL^mL|25000|units^unit(s)**

[1] RXC-1 RX\_Component\_Type B

[1] RXC-2\_1 Component\_Code.Identifier SNOMED!67165011000036106

[1] RXC-2\_2 Component\_Code.Text LVP solution Sodium Chloride 0.9% SOL

[1] RXC-2\_3 Component\_Code.Coding\_System AMT-TPP

[1] RXC-2\_4 Component\_Code.Alternate\_Id SNOMED!71792011000036107

[1] RXC-2\_5 Component\_Code.Alternate\_Text sodium chloride 0.9% 500 mL bag

[1] RXC-2\_6 Component\_Code.Alternate\_Coding\_System AMT-MPP

[1] RXC-3 Component\_Amount 250

[1] RXC-4 Component\_Units mL^mL

[1] RXC-5 Component\_Strength 0

[1] RXC-6 Component\_Strength\_Units

[2] RXC-1 RX\_Component\_Type A

[2] RXC-2\_1 Component\_Code.Identifier SNOMED!12108011000036109

[2] RXC-2\_2 Component\_Code.Text heparin 25,000 intl units/mL SOL

[2] RXC-2\_3 Component\_Code.Coding\_System AMT-TPP

[2] RXC-2\_4 Component\_Code.Alternate\_Id SNOMED!26918011000036105

[2] RXC-2\_5 Component\_Code.Alternate\_Text heparin 25,000 units/mL amp

[2] RXC-2\_6 Component\_Code.Alternate\_Coding\_System AMT-MPP

[2] RXC-3 Component\_Amount 1

[2] RXC-4 Component\_Units mL^mL

[2] RXC-5 Component\_Strength 25000

[2] RXC-6 Component\_Strength\_Units units^unit(s)

## OBX – OBSERVATION

The OBX segment table (below) relates solely to the population of this segment within RDE^O11 message.

The OBX segment is also specifically used to send data for the PBS Item Code field. Examples for these fields are provided:

**OBX|1|CE|PBS-ITEM||7890^PBS Item Code^PBS ITEM CODE||||||F|**

| Seq # | Item # | OPT2.4 | DT2.4 | LEN2.4 | Reps2.4 | FORMAT2.4 | Notes 2.4 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Set ID | O | SI | 4 |  |  | Field number |
| 2 | Value Type | C | CE | 2 |  | Conditionally required on OBX-5 | **Default to CE type.** |
| 3 | Observation ID | R | CE | 250 |  | Can contain values:PBS-ITEM | **OBX-3 contains “PBS-ITEM”** |
| 4 |  | C | ST | 20 |  |  | Not used with RDE message |
| 5 |  | C | CE | 250 | Y | \* Must be the same type as specified in OBX 2 | **This field contains the value of the PBS Item code identifier** |
| 6 |  | O | CE | 250 |  | <ID> | Not used with RDE message |
| 7 |  | O | ST | 60 |  |  | Not used with RDE message |
| 8 |  | O | IS | 5 | Y/5 |  | Not used with RDE message |
| 9 |  |  |  |  |  |  | Not used with RDE message |
| 10 |  | O | ID | 2 | Y |  | Not used with RDE message |
| 11 |  | R | ID | 1 | “F” |  | Default to “F” for medications prescription interfacing. |
|  |  | O | TS | 26 |  |  | Not used with RDE message |
|  |  |  |  |  |  |  | Not used with RDE message |
|  |  | O | TS | 26 |  | YYYYMMDDHHMMSS | Not used with RDE message |
|  |  | O | CE | 250 |  |  | Not used with RDE message |
|  |  | O | XCN | 250 | Y |  | Not used with RDE message |
|  |  |  |  |  |  |  | Not used with RDE message |
|  |  |  |  |  |  |  |  |

**OBX EXAMPLE:**

**OBX|1|CE|PBS-ITEM||7890^PBS Item Code^PBS ITEM CODE||||||F|**

OBX-1 Set\_ID\_OBX 1

OBX-2 Value\_Type CE

OBX-3\_1 Observation\_Identifier.Identifier PBS-ITEM

OBX-3\_2 Observation\_Identifier.Text

OBX-4 Observation\_Sub-ID

OBX-5\_1 Observation\_ID 7890

OBX-5\_2 Observation\_Descriptor PBS Item Code

OBX-5\_3 Observation\_Identifier\_Type PBS ITEM CODE

OBX-6 Units

OBX-7 References\_Range

OBX-8 Abnormal\_Flags

OBX-9 Probability

OBX-10 Nature\_of\_Abnormal\_Test

OBX-11 Observation\_Result\_Status F

OBX-12 Date\_Last\_Observation\_Normal\_Value

OBX-13 User\_Defined\_Access\_Checks

OBX-14 Date/Time\_of\_the\_Observation

OBX-15 Producer's\_ID

OBX-16\_1 Responsible\_Observer.ID\_Number

OBX-16\_2 Responsible\_Observer.Family\_Name

OBX-16\_3 Responsible\_Observer.Given\_Name

OBX-16\_4 Responsible\_Observer.Middle\_Name

OBX-16\_5 Responsible\_Observer.Suffix

OBX-16\_6 Responsible\_Observer.Prefix

## NTE – NOTES

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Seq#NTE | Name | ELEMENT NAME | OPT2.4 | DT2.4 | LEN2.4 | REP2.4 | FORMAT2.4 | Notes2.3 |
| 01 | Set ID Notes | Set ID Notes |  |  |  |  |  |  |
| 02 | Source of Comment | Source of Comment |  |  |  |  |  |  |
| 03 | Comment | Comment  | O | FT | 64k | Y |  |  |

**NTE EXAMPLE:**

**NTE|1|Order Comment|Take 1 tab after every loose stool. Maximum 4 tabs every 24 hours**

NTE-1 Set ID Notes 1

NTE-2 Source of Comment Order Comment

NTE-3 Comment Take 1 tab after every loose stool. Maximum 4 tabs every 24 hours

## AL1 – PATIENT ALLERGY INFORMATION

| Seq#AL1 | Item#  | Name | OPT2.4 | DT2.4 | LEN2.4 | REP2.4 | FORMAT2.4 | Notes2.3 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 00203 | Set Id – Al1 | R | SI | 4 |  |  | Sequential number |
| 2 | 00204 | Allergy Type | O | CE | 250 |  | <Identifier>^<description> | Table – Substance TypeFA – FoodDA – DrugEA – EnvironmentOA –Other (Not currently used) |
| 3 | 00205 | Allergy/Alert | R | CE | 250 |  | <Identifier>^<description>^<Coding System> | The Drug Allergy codes are SNOMED CT codes. Drug Classes are Decision Support. Food and Environmental Allergies are OCIO defined. These are accessed via the Clinical system’s CMT tool.Eg: 3^penicillins^MAC (Drug Class)SNOMED!21415011000036100^amoxycillin^MULDRUG (Drug)Peanuts^Peanuts^ALRGY (Food and Enviromental) |
| 4 | 00206 | Allergy Severity | O | CE | 250 |  | <Identifier>^<description> | Table– SeverityMI – MildMO – ModerateSV – Severe |
| 5 | 00207 | Allergy Reaction | O | ST | 15 | Y |  | This field will contain the SNOMED-CT code value of Allergy Reaction.This a repeating field and there may be multiple reactions for a single allergyEg: 492136012 |
| 6 | 00208 | Identification Date | B | DT | 8 |  | YYYYMMDDHHSS |  |

**AL1 EXAMPLES:**

**Specific Drug (either generic or proprietary) Allergy:**

**(Note that the SNOMED-CT drug alias has been sourced from the Australian Medicines Terminology (AMT) which is available from NeHTA)**

**AL1|3|DA|SNOMED!21415011000036100^amoxycillin^MULDRUG|MI|2643930014|19920101000000**

AL1-1 Set\_ID\_AL1 1

AL1-2 Allergen\_Type\_Code DA (Drug allergy)

AL1-3.1 Allergen\_Code/Mnemonic/Description.Identifier SNOMED!21415011000036100

AL1-3.2 Allergen\_Code/Mnemonic/Description.Text amoxycillin

AL1-3.3 Allergen\_Code/Mnemonic/Description.Coding\_System MULDRUG

AL1-4 Allergy\_Severity\_Code MI (Mild)

AL1-5 Allergy\_Reaction\_Code 2643930014

AL1-6 Identification\_Date 19920101000000

**Drug Allergy to a Class of Drugs:**

**(AMT does not have ‘drug class’.)**

**AL1|2|DA|3^penicillins^MAC|SV**

**Food Allergy:**

**(Note that Food and Environmental Allergies are OCIO defined codesets and as such can be used with permission from OCIO)**

**AL1|1|FA|Peanuts^Peanuts^ALRGY|MO|4428015|19920101000000**

## ZAM – ADDITIONAL ALLERGY INFORMATION

| Seq#ZAM | Name | ELEMENT NAME | OPT2.4 | DT2.4 | LEN2.4 | REP2.4 | FORMAT2.4 | Notes |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 01 | Action Code |  |  |  |  |  |  | This field will always be populated with the value of “S” indicating snapshot mode |
| 02 | Activate Date and Time |  |  |  |  |  |  |  |
| 03 | Allergy instance |  |  |  |  |  |  |  |
| 04 | Allergy ID |  |  |  |  |  |  |  |
| 05 | Reaction Class | Sensitivity to Caustic Agent | O | CE | 250 |  |  | Reaction ClassThis field contains the Reaction Class value that is contained against the allergy entry in the Clinical system.AE = Adverse EffectAR = Allergic ReactionA = AllergyIS = IdiosyncraticINT = IntoleranceNE = Not EnteredO = OtherSEC = Secondary EffectS = SensitivitySE = Side EffectT = ToxicityU = Unknown |
| 06 | Reaction Status | Allergy Action Code | R | CE | 250 |  | Table 0323<Identifier>^ <Description>^ <Coding Scheme> | A = Active C = Cancelled. D = DesensitisedP = Possible /Proposed. |
| 07 | Reaction Code | Allergy Reaction Code | O | ST | 15 | Y | This field will contain the description of Allergy Reaction Code. The code value is located in the AL1-5 Allergy Reaction Code fieldEg:492136012 |  |
| 08 | Source of Information | Relationship to Patient Code | O | CE | 250 |  | <Identifier>^ <Description>^ <Coding Scheme> | This field contains the source that provided the allergy information to Clinical systemEXTDOC = External DoctorMEDALRT = MedicAlert or IDMEDREC = Medical RecordNOTENT = Not EnteredOTH = OtherPARTNER = PartnerPAT = PatientREL = Relative |
| 09 | Cancel reason code | Action Reason | O | ST | 60 |  |  |  |
| 10 | Cancel Reason Personnel |  |  |  |  |  |  | This will be the same value as the ZAL-12 Reviewed Personnel when a allergy cancellation (delete) occurs |
| 11 | Reviewed date/time | Statused at Date/Time | O | TS | 8 |  |  | This value will be populated every time an update to an allergy occurs |
| 12 | Reviewed Personnel | Statused by Person |  | XCN | 250 |  | <Id>^<Surname>^<Given>^^^<Prefix>^^^<Assigning Authority>^^^^<Id Type> | These values will be populated every time an update to an allergy occurs |
| 13 | Verified Status Flag |  |  |  |  |  |  |  |
| 21 |  | Allergen Note | O | FT | 64K | N |  |  |

**v2.4 ZAM Example:**

ZAM|2||||2643930014^Nausea^673967|S|||A||||||PAT|||11PROVNUM^Test^MedicalOfficerSeniorR2^^^^^^DEMO^^^^Provider Num||20100727103948

## NTE– ALLERGEN NOTE

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Seq#NTE | Name | ELEMENT NAME | OPT2.4 | DT2.4 | LEN2.4 | REP2.4 | FORMAT2.4 | Notes2.3 |
| 01 | Set ID Notes |  |  |  |  |  |  |  |
| 02 | Source of Comment |  |  |  |  |  |  |  |
| 03 | Comment | Allergen Note | O | FT | 64k | N |  | When the NTE segment repeats the ZAM-21 field must concatenate the repeats, separated by the escape sequence **\.br\** |

**NTE EXAMPLE:**

NTE|1||This is a very long comment that needs to be added to the system for the purposes of testing.

NTE|2||This is another comment

NTE|3||This is yet another comment

NTE|4||More comments

NTE|5||last comment

NTE-1 Set ID Notes 1

NTE-2 Source of Comment -

NTE-3 Comment This is a very long comment that needs to be added to the system for the purposes of testing

## Other Related Standard

Other related standards to this standard include:

* SNOMED-CT
* Pharmaceutical Benefit Scheme (PBS)
* Australian Medicines Terminology (AMT)
* Human Service Directory
* HL7 2.4

## Benefits

Some of the benefits of this Standard include:

* Prevention of medication errors and discrepancies: Manual/paper handling of medications management has potential to cause duplications of prescriptions which can lead to harm for patients.
* This standard will also improve system and process efficiencies across the organisation, by following the developed process in this Standard e.g. Orders Entry Medications Management Pathway v2.0
* Reduction in compliance risks: Manual/paper handling of medications management cannot always factor in all the compliance requirements (e.g. appropriate required signature); but these can be incorporated into the interface specifications and validated before the next step in the process.

# Appendix A – Glossary

|  |  |
| --- | --- |
| **Term** | **Description** |
| AMT | Australian Medicines Terminology |
| ACHI | Australian Classification of Heath Interventions |
| ADHA | Australian Digital Health Agency |
| BTIM | Business Technology and Information Management System |
| CDA | Clinical Document Architecture |
| CIS | Clinical Information System |
| CS | Clinical System |
| CMBS | Commonwealth Medicare benefit Scheme |
| DHHS | Victorian Department of Health & Human Services |
| DH | Digital Health |
| Dose Range Checking | Functional medications administration capability that:* assists pharmacists to validate a patient’s dose based on age, weight and surface area, frequency and route of administration, and other patient criteria
* takes into consideration, dosing interval and duration of therapy
* enables decision support rules across atomic pathology and medication doses to be formed
 |
| EHR | Electronic Healthcare Record |
| ELS | Endpoint Locator Service |
| EMR | Electronic Medical Record |
| eTP | Electronic Transfer of Prescriptions |
| GP | General Practitioner |
| HSD | Human Services Directory |
| HSSA | Health Sector Standards and Advisory |
| HI | Healthcare Identifier |
| ICT | Information & Communication Technology |
| IHI | Individual Healthcare Identifier, national ADHA patient identifier |
| IV | Intravenous nutrition |
| NASH | National Authentication Service for Health |
| PAS | Patient Administration System – a system used for the recording of patient and provider information to support management and coordination of service provision.  |
| MHR | My Health Record |
| MPP | Medicinal Product Pack |
| PBS | Pharmaceutical Benefit Scheme |
| P & CM | Patient and Community System |
| RDE | Pharmacy Encoded Order Message |
| SHS | Shared Health Summary |
| SNOMED CT | Systematised Nomenclature of Medicine Clinical Terms |
| TPN | Total Parenteral Nutrition |
| TPP | Trade, Product, Pack |
| VPHS or Health Service Agency | Victorian Public Health SectorOne of the 85 Victorian Public Health Services offering healthcare across the state |
| VEMD | Victorian Emergency Minimum Dataset |
| VAED | Victorian Admitted Episodes Data |

|  |
| --- |
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1. https://www.snomed.org/snomed-ct [↑](#footnote-ref-2)