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HL7 Medications Import

The purpose of this document is to show how CAREWare will import medications through the HL7 feed interface. Currently the design is for a results only interface. The document will focus on items that are required for medications import through HL7. These key items include the addition of new indexes to the CAREWare interface, a designated message type, CAREWare medication fields, the HL7 designated segment that holds the medication record, and CAREWare's processing of the incoming record.

Three new indexes will be added to the HL7 feed settings. These three will be labeled "MDC_Map_Provider", "MDC_Map_Client", and "MDC_Process_Records". The "MDC_Map_Provider" index will allow CAREWare to choose which CAREWare provider to look for the patient in which the data needs to go to. The "MDC_Map_Client" index will allow CAREWare to choose which CAREWare patient to link the data to. The "MDC_Process_Records" index will process all mappings to translate the incoming record to the patient record in CAREWare.

The message type designated as the medication import message is RAS (Pharmacy/Treatment administration). The message type will be located in the MSH segment at position 9.0. Any messages that are of this type, CAREWare will treat as a medication import message.

How CAREWare processes an HL7 message

Once the HL7 indexes are set to active, CAREWare will attempt to parse the incoming HL7 message into document stubs for processing. It is important to activate all three indexes for a particular import in order to get the data imported. CAREWare will look at the message type and trigger event to determine that the message is a valid import record by looking at the MSH 9 for the message type and MSH 9.1 for the trigger event. If the message type and trigger event matches a message type and trigger event pair from a predefined list of possible importable messages, CAREWare will parse the incoming file. The MSH specifications can be found on table 1.1. During parsing, CAREWare will set the primary provider and client values based on the settings the user as set. CAREWare will also split the messages into multiple document stubs if more than one PID segment exists in the message..The PID specifications can be found on table 1.2. CAREWare will split multiple RXE segments into individual document stubs as well. See Table 1.3 for RXE segment specifications. This is done so that it a single record for an individual client is processed independently. Once the document stubs are created, they will have a starting status of "Map Provider"

Map Provider Index

This index is used to match the provider ID (MSH 5) to a domain in CAREWare. CAREWare will create a mapping record if none exists. CAREWare will delete the messages if the mappings are incomplete or the activation code is not entered. If a mapping is complete and an activation code is entered for the domain, CAREWare will proceed to update the status to Map Client. The Lab Test Mapping Tool's Map Provider form will list out all provider mappings. The Lab Test Mapping Tool is can only be access in the Central Administration domain. It is located in the Administrative Options Menu on the upper right hand corner. The Map Provider records will indicate whether they are active or inactive. Active means that an activation code has already been registered by CAREWare. There are no field mappings for this index. The activation code will be generated by jProg and will be sent out when the site sends a request for one. The site must know the value in MSH 5 in order for jProg to create the activation code.

Map Client Index

This index will process client matching. It will use the matching criteria set in the provider mappings. If the patient matches the HL7 value and meets threshold then it will be updated to Process Records. If it doesn't match or does not meet threshold, the HL7 document stub will be deleted

Process Records Index

Once CAREWare extracts the data necessary for an import, it will then attempt to import this data as the patient record. For medications, the designated segment that holds the immunization record is the RXE segment. See Table 1.3 for specifications.

Before the incoming record can be imported as a patient record, CAREWare will have to do a look up and processes according the following logic:

- If the incoming medications are already the current active medications, it will just update the messages
- If the incoming medications are different to what the patient is currently using, it will stop the medications as of the medication start date; and start the new medications as of the start date

Table 1.1 MSH Specifications for HL7 socket interface

| SEQ | LEN | OPT | ELEMENT NAME | CAREWare Field | Required For Import | Comments |
|-----|-----|-----|-----------------|----------------|---------------------|---|
| 1 | 1 | R | Field Separator | | Yes | Use to know what delimiter to use to seperate |

| | | | | | | |
|---|-----|---|---------------------|--|-----|-----------------------------------|
| | | | | | | components when parsing. |
| 2 | 4 | R | Encoding Characters | | Yes | |
| 3 | 180 | O | Sending Application | | Yes | Used in conjunction with MSH 6 to |

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|---|-----|---|-----------------------|-----------------------|-----|--|
| | | | | | | ensure that unique provider mapping record. CAREWare uses this value to determine where the data originated from. |
| 4 | 180 | O | Sending Facility | | No | User can set to this value instead of MSH 3. |
| 5 | 180 | O | Receiving Application | Alternate Provider ID | Yes | User can set to this value instead of MSH 6. If user sets this as the default patient identifier, this value will override the value MSH 6. If this is set as the alternate value, it will override MSH 6 if MSH 6 is empty. |
| 6 | 180 | O | Receiving Facility | Primary Provider ID | No | Used in conjunction with MSH 3 to create a unique provider mapping record. CAREWare uses this value to link to a CAREWare provider. jProg |

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|----|-----|---|-------------------------------|--|-----|--|
| | | | | | | will need this value to create an activation code. |
| 7 | 26 | O | Date/Time Of Message | | No | |
| 8 | 40 | O | Security | | No | |
| 9 | 7 | R | Message Type | | Yes | CAREWare will use this field to determine the message type and trigger event. Message type will be in MSH 9.0 and trigger event will be in MSH 9.1 |
| 10 | 20 | R | Message Control ID | | No | |
| 11 | 3 | R | Processing ID | | No | |
| 12 | 8 | R | Version ID | | No | |
| 13 | 15 | O | Sequence Number | | No | |
| 14 | 180 | O | Continuation Pointer | | No | |
| 15 | 2 | O | Accept Acknowledgment Type | | No | |
| 16 | 2 | O | Application | | No | |
| | | | Acknowledgment Type | | | |
| 17 | 2 | O | Country Code | | No | |
| 18 | 6 | O | Character Set | | No | |
| 19 | 60 | O | Principal Language Of Message | | No | |

Table 1.2 PID Specifications for HL7 Socket Interface

| SEQ | LEN | OPT | ELEMENT NAME | CAREWare Field | Required For Import | Comments |
|-----|-----|-----|--------------|----------------|---------------------|----------|
|-----|-----|-----|--------------|----------------|---------------------|----------|

| | | | | | | |
|---|----|---|----------------------------|------------------------------------|-----|--|
| 1 | 4 | O | Set ID - Patient ID | | No | |
| 2 | 20 | O | Patient ID (External ID) | Primary Client ID | Yes | Default field where CAREWare looks for matching patient value. |
| 3 | 20 | R | Patient ID (Internal ID) | Primary/Alternate Client ID | No | Can be used as matching patient identifier. If user sets this as the default patient identifier, this value will override the value PID 2. If this is set as the alternate value, it will override PID 2 if PID 2 is empty. |
| 4 | 20 | O | Alternate Patient ID - PID | Primary/Alternate Client ID | No | Can be used as matching patient identifier. If user sets this as the default patient identifier, this value will override the value in PID 2. If this is set as the alternate value, it will override PID 2 if PID 2 is empty. |
| 5 | 48 | R | Patient Name | Last Name, First Name, Middle Name | No | If patient name is not set, CAREWare will match patient's by matching patient value only. Users must set CAREWare's threshold (secondary check) to 0, |
| 6 | 48 | O | Mother's Maiden Name | | No | Can be imported as a custom client field |
| 7 | 26 | O | Date/Time of Birth | | No | If patient's date of birth is not set, make sure CAREWare's threshold (secondary check) is low enough to account for this. |
| 8 | 1 | O | Sex | Gender | No | Only mandatory if new patient is added. |
| 9 | 48 | O | Patient Alias | | No | Can be imported as a custom client field |
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|----|-----|---|---------------------------------|--|----|--|
| 10 | 1 | O | Race | Patient Race | No | Single patient race |
| 11 | 106 | O | Patient Address | Address, Address Continued, City, State, Zip | No | Address^Address Continued^City^State^Zip |
| 12 | 4 | B | County Code | County | No | |
| 13 | 40 | O | Phone Number - Home | Phone | No | |
| 14 | 40 | O | Phone Number - Business | | No | Can be imported as a custom client field |
| 15 | 60 | O | Primary Language | | No | Can be imported as a custom client field |
| 16 | 1 | O | Marital Status | | No | Can be imported as a custom client field |
| 17 | 3 | O | Religion | | No | Can be imported as a custom client field |
| 18 | 20 | O | Patient Account Number | acct | No | |
| 19 | 16 | O | SSN Number - Patient | | No | Can be imported as a custom client field |
| 20 | 25 | O | Driver's License Number Patient | | No | Can be imported as a custom client field |
| 21 | 20 | O | Mother's Identifier | | No | Can be imported as a custom client field |
| 22 | 3 | O | Ethnic Group | Hispanic | No | |
| 23 | 60 | O | Birth Place | | No | Can be imported as a custom client field |
| 24 | 2 | O | Multiple Birth Indicator | | No | Can be imported as a custom client field |
| 25 | 2 | O | Birth Order | | No | Can be imported as a custom client field |
| 26 | 4 | O | Citizenship | | No | Can be imported as a custom client field |
| 27 | 60 | O | Veterans Military Status | | No | Can be imported as a custom client field |
| 28 | 80 | O | Nationality | | No | Can be imported as a custom client field |

| | | | | | | |
|----|----|---|-----------------------------|------------|----|---------------------------------------|
| 29 | 26 | O | Patient Death Date and Time | deathDate | No | Sets the date of death |
| 30 | 1 | O | Patient Death Indicator | Vtl Status | No | Sets the enrollment status to decease |

Table 1.3 RXE Specifications for HL7 Socket Interface

| SEQ | LEN | OPT | CAREWare Field | Required for Import | ELEMENT NAME | Comments |
|-----|-----|-----|--|---------------------|---|--|
| 1 | 200 | R | Med Quantity, Med frequency, Med start and end dates | Yes | Quantity/Timing | CW uses these fields: <quantity (CQ)> ^ <interval (CM)> ^ <duration> ^ <start date/time (TS)> ^ <end date/time (TS)> |
| 2 | 100 | R | Med Definition Code | Yes | Give Code | |
| 3 | 20 | R | | | Give Amount - Minimum | |
| 4 | 20 | O | | | Give Amount - Maximum | |
| 5 | 60 | R | Med Units | Yes | Give Units | |
| 6 | 60 | O | Med Form | No | Give Dosage Form | |
| 7 | 200 | O | Med Instructions | No | Provider's Administration Instructions | |
| 8 | 200 | C | | | Deliver-to Location | |
| 9 | 1 | O | | | Substitution Status | |
| 10 | 20 | C | | | Dispense Amount | |
| 11 | 60 | C | | | Dispense Units | |
| 12 | 3 | O | | | Number of Refills | |
| 13 | 60 | C | | | Ordering Provider's DEA Number | |
| 14 | 60 | O | | | Pharmacist/Treatment Supplier's Verifier ID | |

| | | | | | | |
|----|-----|---|--|-----|---|--|
| 15 | 20 | C | | | Prescription Number | |
| 16 | 20 | C | | | Number of Refills Remaining | |
| 17 | 20 | C | | | Number of Refills/Doses Dispensed | |
| 18 | 26 | C | | | D/T of Most Recent Refill or Dose Dispensed | |
| 19 | 10 | C | | | Total Daily Dose | |
| 20 | 1 | O | | | Needs Human Review | |
| 21 | 200 | O | | | Pharmacy/Treatment Supplier's Special Dispensing Instructions | |
| 22 | 20 | C | | | Give Per (Time Unit) | |
| 23 | 6 | O | | | Give Rate Amount | |
| 24 | 60 | O | | | Give Rate Units | |
| 25 | 20 | O | Med Strength | Yes | Give Strength | |
| 26 | 60 | O | | | Give Strength Units | |
| 27 | 200 | O | Med Indication, Medication Prophylaxis | Yes | Give Indication | CW uses the two fields for indication and prophylaxis: <identifier (ST)> ^ <text (ST)> |
| 28 | 20 | O | | | Dispense Package Size | |
| 29 | 60 | O | | | Dispense Package Size Unit | |
| 30 | 2 | O | | | Dispense Method | |