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| Processing requirements for HL7 Referral file |
| Processing and mapping guidelines |
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1. **Requirement Description**

The goal is to load data from HL7 message file we are receiving from client to three database tables. HL7 message file which is being received from client contains ORM-O01 messages which function as a general order message that is used to transmit information about an order.

There are some special cases to be considered for the processing:

1. A record should be loaded only when a new patient recognised by provided PatientId. One Patient once loaded will never be updated through process
2. If there are multiple records for one patient in file, all new diagnosis for patient should be loaded to table **tblorderdiagnosis** and depending upon **SetID** , existing diagnosis will be updated if requires update. For example, if for a patient for same SetID new data is coming for diagnosis record, it should be updated.
3. Logging is required both at file level and database level. Database table **runlog** will be created as part of database logging (Schema for same is provided later in document).
4. All the paths e.g. path to source file folder, path to logs folder, path to archival folder should be parameterized so that they can be changed as per environment.
5. All the database parameters e.g. database server, database name etc. should be parameterized so that they can be changed as per environment.
6. **Source - HL7 ORM-001 messages**

Source is a HL7 message file with format as following:

MSH|^~\&|[*HIS*](http://www.corepointhealth.com/resource-center/healthcare-interoperability-glossary#HIS)|MedCenter|[*LIS*](http://www.corepointhealth.com/resource-center/healthcare-interoperability-glossary#LIS)|MedCenter|20060307110114||ORM^O01|MSGID20060307110114|P|2.3  
PID|||12001||Jones^John^^^Mr.||19670824|M|||123 West St.^^Denver^CO^80020^USA|||||||  
PV1||O|OP^PAREG^||||2342^Jones^Bob|||OP|||||||||2|||||||||||||||||||||||||20060307110111|  
ORC|NW|20060307110114  
OBR|1|20060307110114||003038^Urinalysis^L|||20060307110114

DG1|1|ICD-9-CM|356.1^Peroneal muscular atrophy^ICD-9-CM|Peroneal muscular atrophy|

**Note: We need to extract and load three segments PID(Patient Identification data),ORC(Common Order data) and DG1(Diagnosis data). It is discussed with client and seen in data that DG1 segment is repetitive and no other segment is repetitive for now.**

1. **Targets and Mappings**
2. PID segment loads data to table tblpatientmaster with following schema information:

|  |  |  |
| --- | --- | --- |
| **Field name in tblpatientmaster** | **Transformation** | **Field Index/Remarks** |
| PatientMasterId | Auto generated | Surrogate key for table |
| PatientId | Direct mapping | 3 |
| BarCodeId | Not to be populated | Not to be populated |
| DataExchangeId | Not to be populated | Not to be populated |
| SSN | Direct mapping | 19 |
| FirstName | Direct mapping | 5 |
| MiddleName | Direct mapping | 5 |
| LastName | Direct mapping | 5 |
| Sex | Direct mapping | 8 |
| DoB | Direct mapping | 7 |
| Age | Not to be populated | Not to be populated |
| Address | Not to be populated | Not to be populated |
| Address2 | Not to be populated | Not to be populated |
| City | Not to be populated | Not to be populated |
| StateId | Not to be populated | Not to be populated |
| Zip | Not to be populated | Not to be populated |
| Phone | Direct mapping | 13 |
| WorkPhone | Not to be populated | Not to be populated |
| Email | Not to be populated | Not to be populated |
| Notes | Not to be populated | Not to be populated |
| CreateDate | Date a new record is inserted on | today's date will be provided to it |
| LastUpdate | Auto generated | auto updated with today's date everytime job runs |
| LastUpdateToProvider | Not to be populated | Not to be populated |
| CreatedBy | Not to be populated | Not to be populated |
| UpdatedBy | Not to be populated | Not to be populated |

1. ORC segment loads data to table tblorder with following schema information:

|  |  |  |
| --- | --- | --- |
| **Field name in tblorder** | **Transformation** | **Field Index/Remarks** |
| OrderId | Auto generated | Surrogate key for table |
| OrderPatientMasterId | Auto generated | Surrogate key from table tblpatientmaster |
| OrderPatientId |  | PatientId field from table tblpatientmaster |
| OrderPhysicianId | Direct Mapping | 12 |
| EpicID | Direct Mapping | 2 |
| EpicOrder | Not to be populated | Not to be populated |
| OrderCreateDate | Date to be formatted as yyyy-MM-dd | 7 |
| OrderExpiryDate | Date to be formatted as yyyy-MM-dd | 7 |
| OrderStatusId | Value should be set to 1 | Value needs to be paramterized |
| OrderPriorityId | Value is to be looked against table **tbllkporderpriority** to fetch OrderPriorityId | 7 |
| OrderClassId | Not to be populated | Not to be populated |
| PrescriptionSrcId | Not to be populated | Not to be populated |
| NumOfVisits | Not to be populated | Not to be populated |
| OrderComments | Not to be populated | Not to be populated |
| OrderDeptId | Not to be populated | Not to be populated |
| OrderDeptSpecialityId | Not to be populated | Not to be populated |
| OrderAuthorizedProvider | Provider name should be formatted as **"FirstName MiddleName LastName"** | 12 |
| OrderDiagnosis | Not to be populated | Not to be populated |
| OrderProcedure | Not to be populated | Not to be populated |
| OrderProcedureCategory | Not to be populated | Not to be populated |
| OrderOrderingUser | Not to be populated | Not to be populated |
| OrderEncProvider | Not to be populated | Not to be populated |
| OrderProviderSpeciality | Not to be populated | Not to be populated |
| OrderScheduleInstructions | Not to be populated | Not to be populated |
| OrderExtRefReason | Not to be populated | Not to be populated |
| OrderLocation | Not to be populated | Not to be populated |
| OrderFrom | Not to be populated | Not to be populated |
| OrderTo | Not to be populated | Not to be populated |
| OrderOverRideRestrictions | Not to be populated | Not to be populated |
| OrderRefferalType | Not to be populated | Not to be populated |
| OrderCenterId | value should be set to 15 | Value needs to be paramterized |
| OrderCreatedBy | Not to be populated | Not to be populated |
| OrderUpdatedBy | Not to be populated | Not to be populated |
| OrderUpdatedDate | Auto generated | auto updated with today's date everytime job runs |

1. DG1 segment loads data to table tbldiagnosis with following schema information:

|  |  |  |
| --- | --- | --- |
| **Field name in tbldiagnosis** | **Transformation** | **Field Index/Remarks** |
| OrderDiagnosisID | Auto generated | Surrogate key for table |
| OrderDiagnosis\_PatientMasterID | Auto generated | Surrogate key from table tblpatientmaster |
| OrderDiagnosis\_OrderID | Auto generated | Surrogate key from table tblorder |
| OrderDiagnosis\_Diagnosis | Direct Mapping | 4 |
| OrderDiagnosis\_SetId | Direct Mapping | 1 |
| OrderDiagnosis\_CodingMethod | Direct Mapping | 2 |
| OrderDiagnosis\_Code | Direct Mapping | 3 |
| OrderDiagnosis\_Type | Direct Mapping | 6 |
| OrderDiagnosis\_CreateDate | Date a new record is inserted on | today's date will be provided to it |
| OrderDiagnosis\_CreatedBy | Not to be populated | Not to be populated |
| OrderDiagnosis\_UpdateDate | Not to be populated | Not to be populated |
| OrderDiagnosis\_UpdatedBy | Not to be populated | Not to be populated |

1. **Logging**

Process should support both file logging and database logging.

**File Logging**

A log file will be generated which will contain process console output so that all exception details can be gathered. This will provide us a debug point as to why last run failed for process.

**Database Logging**

One table will be created which will store job execution start timestamp and job execution finish timestamp. Schema for same will be:

|  |  |
| --- | --- |
| **Field name in runlog** | **Field Description** |
| LogID | A unique identifier for each run of job |
| JobID | A unique identifier for each job. Same as surrogate key for table jobs |
| JobExecutionStartDateTime | Timestamp at which job execution started |
| JobExecutionEndDateTime | Timestamp at which job execution ended |

1. **Exception Handling**

Batch control table jobs have two fields JobSuccessEmailID and JobFailureEmailID.

* 1. If job fails with error, an email should be sent to email list fetched from **JobFailureEmailID** field in batch control table **jobs**.
  2. If job completes successfully, an email should be sent to email list fetched from **JobSuccessEmailID** field in batch control table **jobs**.

1. **Archival**

After successful run of job, input file will be moved to “Archive” folder which is on same hierarchical level as source file folder.

1. **Miscellaneous**

Schema for batch control table **jobs** is as follows:

|  |  |
| --- | --- |
| **Fields in jobs** | **Field Description** |
| JobID | Surrogate key for table |
| JobName | Name of Job |
| JobDescription | Description of job |
| JobSuccessEmailID | List of emails who should be notified if job completes successfully, with or with warnings |
| JobFailureEmailID | List of emails who should be notified if job fails |
| CreatedDate | Date this job was created |
| UpdatedDate | Date the job has been modified recently |
| IsActive | A boolean value which tells if job is to be run or not. Job is active if this field is set as 1. |