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# Diabetes Management System

## User Manual

(HL7 Interface Engine Supplement)

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## Introduction

The Diabetes Management System has a stand-alone HL7 Interface Engine. The application is located in the Diabetes Mgmt System program folder and is named DMSHL7.EXE.

The Engine uses the HL7 v2.x standard.

The Engine can import patient demographic and lab data using the PID, PV1, NK1, and OBX message segments.

The Engine can export Diabetes Mgmt System generated data into HL7 format for use in other systems. The following data can be exported into HL7 format...

Patient Demographics (using the PID, PV1, NK1, and OBX segments).

Clinical Values from Assessment Visits (using OBX segments).

Narrative and SOAP Notes (using NTE segments).

Educational Records (using NTE segments).

Educational Assessment Records (using NTE segments).

Goal Status Records (using NTE segments).

Medication Records (using NTE segments).

## Setting Up the HL7 Engine

Shortcuts to the Engine should only be set up on the workstations that need to run the Engine. Setting up the Engine just is a matter of mapping the drive and folder where the Diabetes Mgmt System resides (if it is not mapped already), and setting up a shortcut to the HL7Engine application, DMSHL7.EXE.

Starting the HL7 Engine.

The HL7 Engine is password protected. Only users with administrative access to the Diabetes Management System. Users can only be maintained with the main Diabetes Mgmt System.



**The HL7 Interface Engine Log In Window**



The HL7 Interface Engine Main Window.

## HL7 Importation



The HL7 Interface Engine Importation Window.

## Importation Window Options

**Path/File Name of the Importation File:** Enter the complete path and file name of the file containing the HL7 importation data. You can use the Browse button to navigate folder quickly.

**Patient Number to be Used:** The HL7 standard PID segment has three different fields that can contain a patient number and you can choose which one to use for the Medical Record Number during importation. The default (and normal) field is the first choice; the HL7 Internal ID.

**Default Status Code for New Assessment Records:** If new Assessment Records are imported into the System, this Status Code (Assessment Visit Type) will be used for these records.

**Update Type:** You can choose the update type of importation records...

- Add New and Update Existing Records.
- Add Only New Records (no updates).

**Lab Type Identifiers:** This section contains all the lab values that can be imported by the Engine. Enter the lab text your importation file contains for that particular lab type. The Engine uses these value labels to identify the various values.

**Program Entry Date:** This is the date the Engine will use to use for “Program Entry Date” for new imported demographic records.

**Import Button:** Starts the Importation Process.

**Update Defaults Button:** Saves your values on this window as the system default values.

**Cancel Button:** Cancels this procedure and closes the window.

## HL7 Exportation



The HL7 Interface Engine Exportation Window.

### Exportation Window Options

**Path/File Name of the Export File:** Enter the complete path and file name of the file where you wish to export your exported HL7 data to. You can use the Browse button to navigate folder quickly.

**Export Type Options:** The Export will automatically, at a minimum, the patient demographic data. This section allows you to select which record types, beyond the demographics, you wish to export. All the record types are set to export, by default. Uncheck the record types you wish to suppress exportation.

**Update Defaults Button:** Saves your Exportation Path/File Name as the system export default value.

**Export HL7 Data Button:** Begins the HL7 Process.

**Cancel Button:** Cancels the Exportation and Closes this window.

## Generated HL7 Export File Record Details

### MSH Segment (Message Header)

The MSH segment is required for all messages and will always be the first segment in the message

#### Sample Generated MSH Segment:

```
MSH|^~\&|HarborDMS||HarborDMS||20120327101102||ADT^A08|HSI4977077|P|2.3||||
```

All generated Export files will have a ADT^A08 message type, Patient Update.

### PID Segment (Patient Identification)

The PID segment contains information about the patient, and is used to export demographic data fields from the Diabetes Mgmt System.

#### Sample Generate d MSH Segment:

```
PID||00 J111|200705171051038||JOHNSON^JACK^BENJAMIN^||19461115|M||W|115  
WILLSTOM ST.^PETOSKEY^MI^32174||2313478866|2313479473|E|M||||||||||
```

### PV1 Segment (Patient Visit Information)

The PV1 segment is used to contain additional information about the patient. The HL7 Engine uses this record to export info about the patient's referring physician.

#### Sample Generate d MSH Segment:

```
PV1|0001|DMS|R||||1^HALLAH, MD KATHLEEN L|||||||200702050800  
|||||0000000.00|0000000.00
```

### NK1 Segment (Next of Kin Information)

The NK1 Segment is used to export the patient's Contact Person information. If the patient has two contacts in their demographic record, two NK1 segments are generated.

#### Sample Generate d NK1 Segment:

NK1|0001|CANDY JOHNSON||115 WILLSTOM ST.^PETOSKEY^MI^32174|(231)347-8866

### OBX Segment (Observation Information)

The OBX Segment is used to export one patient observation per record. The Engine generates OBX segments for Barriers to Learning and for Clinical Assessment Values.

#### Sample Generate d OBX Segment for a Barrier to Learning

OBX|001|ST|Learning Barrier||VISUALLY IMPAIRED|||||||20070102

#### Sample Generate d OBX Segments for Clinical Lab Value

OBX|002|NM|CHOLESTEROL (MG)|| 180|||||||20070102

OBX|003|NM|HDL (MG/DL)|| 55|||||||20070102

OBX|004|NM|LDL (MG/DL)|| 90|||||||20070102

OBX|055|NM|HbA1c (%)|| 7.0|||||||20070312

OBX|057|NM|BLOOD PRESSURE||118/ 70|||||||20070312

### NTE Segment (Notes and Comments)

The NTE Segment is used to export several types of patient records; Narrative Notes, SOAP Notes, Educational Records, Educational Assessment Records, Goals, and Medications.

#### Sample Generate d NTE Segments for Narrative Notes

NTE|1|Nar Note^(Note Date)20070205^(Signer)Susan Hemme, RN^(Record ID)3663473

NTE|2|Patient came with wife. Both very apprehensive and worried. Wife will be involved in care. Patient willing to "work hard" at controlling blood sugar for his wife. Right now patient refuses to do his own testing. Wife will do it and come to all classes with patient. SH

NTE Segments for Narratives contain two records for each narrative. Line #1 contains general note information with each field identified within parenthesis. Line #2 contains the body of the note.



### Sample Generate d NTE Segments for SOAP Notes

NTE|1|SOAP Note^(Note Date)20070305^(Signer)Debra King^(Record ID)4268540

NTE|2|SUBJECTIVE^I don't want to alter my life. I don't think I can do my own blood sugars

NTE|3|OBJECTIVE^Patient has reservations about new diagnosis. Seems embarrassed for his friends and family to know.

NTE|4|ASSESSMENT^Wife is supportive and willing to help while patient gets used to new diagnosis

NTE|5|PLAN^wife to come to all education. Pt willing to go through complete education

NTE Segments for SOAP Notes contain five records for each SOAP. Line #1 contains general note information with each field identified within parenthesis. Line #2 contains the Subjective data, Line #3 contains the Objective data, Line #4 Assessment data, and Line #5, the Plan.

### Sample Generate d NTE Segments for Educational Records

NTE|001|Ed Rcd^(Class Date)20070205^(Class)INITIAL INTERVIEW^(Minutes)60  
^(Instructor Initials)SH

NTE|002|Ed Rcd^(Class Date)20070319^(Class)SESSION 1^(Minutes)180^(Instructor Initials)DK

NTE Segments for Educational Records contain one record for each exported record, each field identified within the parenthesis.

### Sample Generate d NTE Segments for Educational Assessment Records

NTE|001|Ed Assess^(Content Area)PREVENTING, DETECTING, AND TREATING ACUTE COMPLICATIONS^(PrePgm Assess Date)20070205^(PrePgm Initials)SH^(PrePgm Knowledge)0^(Date Taught)20070409^(PostPgm Assess Date)20070518^(PostPgm Initials)SH^(PostPgm Knowledge)1^(Reinforcement Date)^(Signatures)

NTE|002|Ed Assess^(Content Area)PREVENTING, DETECTING, AND TREATING CHRONIC COMPLICATIONS^(PrePgm Assess Date)20070205^(PrePgm Initials)SH^(PrePgm Knowledge)0^(Date Taught)20070409^(PostPgm Assess Date)20070518^(PostPgm Initials)SH^(PostPgm Knowledge)1^(Reinforcement Date)^(Signatures)

NTE Segments for Educational Assessment Records contain one record for each exported Educational Assessment record, each field identified within the parenthesis.

### Sample Generate d NTE Segments for Goal Records

NTE|003|Goal Rcd^(Desc)I WILL EXAMINE MY FEET EVERY DAY.  
^(BehavGrp)REDUCING STRESS^(Set Dte)20070205^(Sch Dte)20070319^(Met  
Dte)20070628^(Acheive)100^(FU1)^(FU1%)90^(FU2)^(FU2%)0^(FU3)^(FU3%)0^(FU4)^(  
FU4%)0^REDUCE RISK OF FOOT-RELATED COMPLICATIONS^NOT A HARD GOAL  
TO MEET, I CHECK FEET AFTER SHOWER

NTE Segments for Goal Records contain one record for each  
exported Patient Goal, each field identified within the parenthesis.

### Sample Generate d NTE Segments for Medication Records

NTE|001|Meds^ WELLBUTRIN^(Dose)100MG BID^(Ord By) LOOM P.A.-C^(Start  
Dte)20060518^(DC Dte)20060518^(Cmts)STATES IT HAS HELPED HER "KEEP ON  
TASK"

NTE|002|Meds^ LANTUS^(Dose)44 UNITS PM DAILY^(Ord By) HALLAH, MD^(Start  
Dte)20061116^(DC Dte)20061116^(Cmts)SKIPS EVENING SLIDING SCALE

NTE Segments for Medication Records contain one record for  
each exported Patient Medication, each field identified within the  
parenthesis.

## Audit Activity File.

The Engine records activity with the interface to a text file named  
HAUDIT.TXT located in the HL7 folder beneath the DMS  
program folder.