The purpose of this document is to specify additional demographic data import to CAREWare's existing HL7 Socket Interface. Currently CAREWare allows new clients to be added only into a surveillance provider. Updating CAREWare patients is only done with ADT message types with trigger events A34 and A35. Updating only consists of updating first name, last name, middle name, client account number, client ID value, gender, birth date, race, and the address fields.

In addition to A34 and A35, CAREWare would like to process trigger events A04 and A08. A04 will allow addition of new patients directly into the importing provider. A04, A08, A34, and A35 will be expanded to be able to update of any patient demographic data that are tied to CAREWare's demographic fields (Table 1.0).

When processing A04 records, CAREWare will add the patient during the Map Client index and update the patient record during the Process Records Index. During the Map Client index, CAREWare will do a lookup for an existing patient record based on the matching patient value and do a secondary check based on the first name, last name, and date of birth. If it finds an existing patient, it will bypass the add and will only do the update. The HL7 file for A04 records should have a minimum of the patient's first name, last name, date of birth, and gender. CAREWare needs these four fields in order to add a new patient record to CAREWare. During the Process Records index, CAREWare will update any field that is linked to a corresponding CAREWare field.

Table 1.0 CAREWare's demographic fields

CAREWare Field	Description	Comments
Enrl Status	Enrollment Status	
ADAP Enrl Status	ADAP Enrollment Status	
HIP Enrl Status	HIP Enrollment Status	
State	American State	
County	State's County	Parish in Louisiana
Hispanic	Ethnicity	
Vtl Status	Vital Status	
HIV Status		
Client ID		
STD Enrl Date	Enrollment Date for regular services	
APA Enrl Date	ADAP Enrollment Date	
HIP Enrl Date	HIP Enrollment Date	
STD Date Closed	Enrollment close date for regular services	
APA Date Close	ADAP Enrollment close date	

HIP Date Close	HIP Enrollment close date	
Notes	Patient Notes	
URN	Patient's unique identifier. Created by parsing first name, last name, date of birth and gender.	Updated when first name, last name, dob, or gender is changed
eURN	Encrypted URN	Updated when first name, last name, dob, or gender is changed
Last Name	Patient's last name	
First Name	Patient's first name	
Middle Name	Patient's middle name	
Address	Patient's street address	
City	Patient's city	
Zip	Patient's zip code	
Phone	Patient's home phone	
Dob	Patient's date of birth	
Gender	Patient's gender	
Patient Race	Patient's race	
HIV Risk Factor	Patient's HIV risk factor	
HIV Date	Patient's HIV date	
AIDS Date	Patient's AIDS date	
HIV Date Estimate		Sets whether the HIV date is estimated
AIDS Date Estimate		Sets whether the AIDS date is estimated
Household Income		
Household Size		
Insurance		

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 determine whether the message is an immunization 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 match a message type and trigger event pair from a pre-defined list of possible importable messages, CAREWare will parse the incoming file. For demographic imports/updates, CAREWare will only look for the message type ADT with the trigger

event of A04 (Register patient), A08 (Update patient information), A34 (merge patient info. Patient ID only), and A35 (Merge patient info – Account number only).

The MSH specifications can be found in table 1.1. During parsing, CAREWare will set the primary provider and client values based on the settings the user has 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 in table 1.2. 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 6) 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 can only be accessed in the Central Administration domain. It is located in the Administrative Options Menu in 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 6 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 record 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. If any diagnosis, test, or generic conditions are set and matched, the patient will be added to the surveillance domain if they haven't been added already.

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 demographic updates, CAREWare will update the existing record with any field(s) that is link through the field mappings.

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 separate components when parsing.
2	4	R	Encoding Characters		Yes	
3	180	O	Sending Application		Yes	Used in conjunction with MSH 6 to 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 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 Acknowledgment Type		No	
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 patients 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 date of birth is not set, make sure CAREWare's threshold (secondary check) is low enough to account for this. YYYY
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
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	deathDate	No	Sets the date of death
			Date and Time			
30	1	O	Patient Death Indicator	Vtl Status	No	Sets the enrollment status to decease

Any fields not defined here can be imported if set to other segments. If they are set to other segments, those segments must exist in the HL7 message in order to be imported. If the fields are set and the segments do not exist, CAREWare will error out stating that it is trying to grab data from a segment that does not exist in the message.

Sample Update Patient Info Message (Minimum)

MSH|^~\&|SENDAPP| | |PROVIDERID|||ADT^A08
PID|1|123456

Sample Register Patient Info Message (Minimum)

MSH|^~\&|SENDAPP| | |PROVIDERID|||ADT^A04
PID|1|123456|||LASTNAME^FIRSTNAME||20010101|F