Open Dental Software

HL7 Interface Specification

Opendental

July 8, 2021

About this Specification

This is a technical guide for advanced users and programmers interested in designing or configuring an HL7 interface with Open Dental. This guide contains details about inbound and outbound message types supported by Open Dental and the specific segments and fields and how those fields are populated or processed by the Open Dental HL7 service.

Open Dental conforms to the Health Level Seven (HL7) International version 2.6 framework for exchanging electronic health information.

Turning on HL7 in Open Dental

For implementation of existing HL7 interfaces you should look here http://opendental.com/manual/hl7.html or contact Open Dental for support. Contact details found here http://opendental.com/contact.html.

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Application Roles

There are 2 roles that Open Dental can assume in the HL7 software interface environment, a filler application role and an auxiliary application role. The role chosen depends on how Open Dental is to be used in the specific implementation of the user.

The Filler Application Role

If Open Dental is going to be used to control and maintain the schedules of the providers and operatories of the practice, Open Dental would be considered the filler application. Because of this control, no other application has the ability to reserve or modify the schedules controlled by Open Dental. Other applications can, on the other hand, make requests to modify the schedules owned by Open Dental. These requests are received in the form of SRM – Schedule Request Messages. Open Dental will acknowledge the receipt of each message (if using the TCP/IP mode of transmission) and each SRM will trigger an outbound SRR – Schedule Request Response message that will specify whether the request was fulfilled or denied. In this model, Open Dental will also notify the other application of appointment bookings and modifications in the form of outbound SIU – Schedule Information Unsolicited messages. These messages will be automatically generated when an appointment is created or modified within Open Dental.

If this is the chosen role for Open Dental, the enabled HL7 definition must contain an inbound SRM message definition, and outbound SRR and SIU message definitions. In addition, the appointments module must be accessible, so within the Open Dental HL7 definition edit window, the "Show Appts Module" checkbox must be checked.

The Auxiliary Application Role

If Open Dental is not going to be used for appointment scheduling, Open Dental would assume the role of an auxiliary application. In this role, Open Dental neither exerts control over, nor requests changes to a schedule. Information about an externally maintained schedule can be gathered and recorded in Open Dental, but no changes to the schedule are made within Open Dental. The information is recorded from inbound SIU – Schedule Information Unsolicited messages. The appointments recorded within Open Dental will be displayed in the chart module progress notes grid, but since they are not assigned to an operatory schedule maintained by Open Dental, the appointments module should be disabled. This takes place when enabling the HL7 definition to be used by unchecking the "Show Appts Module" checkbox.

In this role, Open Dental will mainly be used for charting procedures and sending the completed procedure information to the other application in the form of outbound DFT – Detailed Financial Transaction messages. The procedures would be attached to the appointment created from the inbound SIU message and sent back to the external software with certain appointment information as well as the completed procedure information. If this model is selected, there will not be SRM or SRR messages in the definition, only inbound SIU messages for creating the appointment in Open Dental.

Inbound Messages

ACK – General Acknowledgment Message

ACK Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
MSA	Message Acknowledgment	Yes	No

Example ACK Message

The carriage return (*<cr>*) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^OtherSoftware.OIDroot^|OtherSoftware|^2.16.840.1.113883.3.4337.1486.####^HL7 |OpenDental|20141015103243||ACK^A04^ACK|f3247f821078038923d6b9834b0f168|P |2.6||||AL *<cr>*
MSA|AA|b72247f821034398923d6b9834b0f168*<cr>*

ADT – Patient Demographics Message

- Message structure: ADT_A01
- Events supported: A04 – Register a Patient and A08 – Update Patient Information

ADT Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
EVN	Event Type	Yes	No
PID	Patient Identification	Yes	No
PV1	Patient Visit	Yes	No
GT1	Guarantor	No	No
OBX	Observation/Result	No	Yes
AL1	Allergy Information	No	Yes
PR1	Procedures	No	Yes

Example ADT Message

The carriage return (*<cr>*) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^OtherSoftware.OIDroot^|OtherSoftware|^2.16.840.1.113883.3.4337.1486.####^HL7
|OpenDental|20141015103243||ADT^A04^ADT_A01|b72247f821034398923d6b9834b0f168|P
|2.6||||AL *<cr>*
EVN||20141015103243||01*<cr>*
PID|1|12345|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&^PI
~98765^1^M10^&OtherSoftware.PatientOID&^PI|98765|Smith^John^L^^Mr.||19941204|M
||2106-3^White^CDCREC~2186-5^^CDCREC|421 N Main St^Apt 7^Salem^OR^97302^^^^^^^^^
^^^^^^Emergency Contact: Jane Smith\.br\Relationship: Wife\.br\Phone: (503)555-1234
||^PRN^PH^^^503^5551234~^PRN^Internet^john@somewhere.com
~^PRN^CP^^^503^5556789|^WPN^PH^^^503^3635432||M|||123456789*<cr>*
PV1|1|O|Clinic 1^^^^^C||||2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^^DrAbbott||||Oregon State University
^^^^^S|||||||1*<cr>*
GT1|1|56789^2^M11^&2.16.840.1.113883.3.4337.1486.####.2&^PI
~54321^5^M10^&OtherSoftware.PatientOID&^PI|Smith^Jane^W^^Mrs.||421 N Main St
^Apt 7^Salem^OR^97302|^PRN^PH^^^503^5551234~^PRN^Internet^jane@somewhere.com
~^PRN^CP^^^503^5556788|^WPN^PH^^^503^3631234|19941221|F|||987654321*<cr>*
OBX|1||745678^Albuterol Metered Dose Inhaler^RXNORM|||||||||R*<cr>*
OBX|2||541349^^RXNORM|||||||||R*<cr>*
AL1|1|DA|1191^Aspirin^RXNORM*<cr>*
AL1|2|DA|70618^^RXNORM*<cr>*
PR1|1||D1351^Sealant per tooth^CD2^^^^2014^^Sealant||20141015103243|||||||||||||10
|||1234^^OtherSoftware.ProcedureOID*<cr>*
PR1|2||D0150^^CD2^^^^2014||20141015103243|||||||||||||*<cr>*
PR1|3||D2394^^CD2^^^^2014||20141015103243|||||||||||||3&MODL*<cr>*

PPR – Patient Problem Message

- Message structure: PPR_PC1
- Events supported: PC1 – Problem Add and PC2 – Problem Update

PPR Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
PID	Patient Identification	Yes	No
PV1	Patient Visit	No	No
PRB	Problem Detail	Yes	Yes

Example PPR Message

The carriage return (*<cr>*) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^OtherSoftware.OIDroot^|OtherSoftware|^2.16.840.1.113883.3.4337.1486.####^HL7
|OpenDental|20141015103243||PPR^PC1^PPR_PC1|9918b9971a97447c85c0220accef55fa|P
|2.6||||AL*<cr>*
PID|1|12345|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&^PI
~98765^1^M10^&OtherSoftware.PatientOID&^PI|98765|Smith^John^L^^Mr.||19941204|M
||2106-3^White^CDCREC~2186-5^^CDCREC|421 N Main St^Apt 7^Salem^OR^97302^^^^^^^
^^^^^^Emergency Contact: Jane Smith\.br\Relationship: Wife\.br\Phone: (503)555-1234
||^PRN^PH^^^503^5551234~^PRN^Internet^john@somewhere.com
~^PRN^CP^^^503^5556789|^WPN^PH^^^503^3635432||M|||123456789*<cr>*
PV1|1|O|Clinic 1^^^^^C||||2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^^DrAbbott||||Oregon State University
^^^^^S|||||||1*<cr>*
PRB|AD|20141015103243|15777000^Prediabetes (disorder)^SNM
|654321^^OtherSoftware.ProblemOID|||20120101||*<cr>*
PRB|AD|20141015103243|442231009^^SNM|654322^^OtherSoftware.ProblemOID
|||20141015103243||*<cr>*

SIU – Schedule Information Unsolicited Message

- Message structure: SIU_S12
- Events supported: S12 – Notification of New Appointment Booking and S14 – Notification of Appointment Modification

SIU Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
SCH	Patient Visit	Yes	No
PID	Patient Identification	Yes	No
PV1	Appointment Information – Location Resource	No	No
AIG	Appointment Information – General Resource	No	Yes

Example SIU Message

The carriage return (*<cr>*) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally

hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^OtherSoftware.OIDroot^|OtherSoftware|^2.16.840.1.113883.3.4337.1486.####^HL7
|OpenDental|20141015103243||SIU^S12^SIU_S12|b72247f821034398923d6b9834b0f168|P
|2.6||||AL *<cr>*
SCH|98989|10101|||||Patient is complaining of tooth pain.||||^^1800^20141108143000
^20141108150000*<cr>*
PID|1|12345|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&^PI
~98765^1^M10^&OtherSoftware.PatientOID&^PI|98765|Smith^John^L^^Mr.||19941204|M
||2106-3^White^CDCREC~2186-5^^CDCREC|421 N Main St^Apt 7^Salem^OR^97302^^^^^^^^^
^^^^^^Emergency Contact: Jane Smith\.br\Relationship: Wife\.br\Phone: (503)555-1234
||^PRN^PH^^^503^5551234~^PRN^Internet^john@somewhere.com
~^PRN^CP^^^503^5556789|^WPN^PH^^^503^3635432||M|||123456789*<cr>*
PV1|1|O|Clinic 1^^^^^C||||2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^^DrAbbott||||Oregon State University
^^^^^S|||||||1*<cr>*
AIG|1| A|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott, Sarah L^^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott, Sarah L^^DrAbbott|D|||||||||||
^Appointment Confirmed*<cr>*

SRM – Schedule Request Message

- Message structure: SRM_S01
- Events supported: S03 – Request Appointment Modification and S04 – Request Appointment Cancellation

SRM Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
ARQ	Appointment Request Information	Yes	No
NTE	Notes and Comments	No	Yes
PID	Patient Identification	Yes	No
PV1	Patient Visit	No	No
AIG	Appointment Information – General Resource	No	Yes
AIL	Appointment Information – Location Resource	No	No
AIP	Appointment Information – Personnel Resource	No	Yes

Example SRM Message

The carriage return (*<cr>*) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally

hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^OtherSoftware.OIDroot^|OtherSoftware|^2.16.840.1.113883.3.4337.1486.####^HL7
|OpenDental|20141015103243||SRM^S03^SRM_S01|9918b9971a97447c85c0220accef55fa|P
|2.6||||AL*<cr>*
ARQ|67890^^OtherSoftware.AppointmentOID|12345^^2.16.840.1.113883.3.4337.1486.####.6*<cr>*
NTE|1||Patient asked to arrive 10 minutes early.\.br\Patient complaining of pain.*<cr>*
PID|1|12345|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&^PI
~98765^1^M10^&OtherSoftware.PatientOID&^PI|98765|Smith^John^L^^Mr.||19941204|M
||2106-3^White^CDCREC~2186-5^^CDCREC|421 N Main St^Apt 7^Salem^OR^97302^^^^^^^^^
^^^^^^Emergency Contact: Jane Smith\.br\Relationship: Wife\.br\Phone: (503)555-1234
||^PRN^PH^^^503^5551234~^PRN^Internet^john@somewhere.com
~^PRN^CP^^^503^5556789|^WPN^PH^^^503^3635432||M|||123456789*<cr>*
PV1|1|O|Clinic 1^^^^^C||||2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^^DrAbbott||||Oregon State University
^^^^^S|||||||1*<cr>*
AIG|1| A|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott, Sarah L^^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott, Sarah L^^DrAbbott|D|||||||||||
^Appointment Confirmed*<cr>*
AIG|2|A|2.16.840.1.113883.3.4337.1486.####.3.456^Jones, Tina G^^HYG1
~OtherSoftware.ProviderOID.654^Jones, Tina G^^HYG1|H|||||||||||^Appointment Confirmed*<cr>*
AIL|1|A|Clinic 1^^^^^C|||||||||||^Appointment Confirmed*<cr>*
AIP|1|A|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^^DrAbbott|D|||||||||
^Appointment Confirmed*<cr>*
AIP|2|A|2.16.840.1.113883.3.4337.1486.####.3.456^Jones^Tina^G^^HYG1
~OtherSoftware.ProviderOID.654^Jones^Tina^G^^HYG1|H|||||||||^Appointment Confirmed*<cr>*

Inbound Message Segments

- All segments begin with the three letter abbreviation of the segment name. This is considered the first field and would be position 0 within each segment.
- All fields are delimited by pipes (|).
- Example: MSH|…
- Every segment must end with a line break, or new line character. This is usually a hidden character or set of characters and will indicate the end of one segment and beginning of the next.

AIG – Appointment Information – General Resource Segment

This segment is used to set the provider(s) and the confirmation status on an existing appointment in Open Dental. The segment is repeatable, so in order to set the dentist and the hygienist, two repetitions would be required.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
AIG-1	Set ID	SI	Yes	No		N/A
AIG-2	Segment Action Code	ID	No	No	0206	N/A
AIG-3	Resource ID	CWE	Yes	No		prov.provIdName or prov.provIdName_V2_3
AIG-4	Resource Type	CWE	No	No		prov.provType
AIG-5…13	Not used					N/A
AIG-14	Filler Status Code	CWE	No	No	0278	apt.confirmStatus

AIG-1 Set ID

This field contains a number that uniquely identifies the information represented by this segment in this transaction for the purposes of addition, change, or deletion. This number is not validated or used by Open Dental, but is required by the HL7 specifications.

AIG-2 Segment Action Code

This field is not required or used by Open Dental.

AIG-3 Resource ID

prov.provIdName

This field will be used to locate the provider in Open Dental and set the provider on the appointment identified in this message.

Components: *Identifier^Text^^Alternate Text*

The first component, *Identifier*, is a composite ID using the office's root OID for a provider object and the ProvNum for the provider. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. A provider object would then be identified by "2.16.840.1.113883.3.4337.1486.####.3", the ".3" identifies this object as a provider object. If the ProvNum for the provider (the primary key of the provider table for the specified provider) was 12, the unique identifier for the provider would be "2.16.840.1.113883.3.4337.1486.####.3.12". When processing this field, the repetitions will be parsed and the *Identifier* component with the office's provider root OID will located. The ProvNum extension of the provider ID, 12 in the example, will be used to locate the provider.

If a provider cannot be found using the *Identifier* component, an attempt will be made to locate the provider using the *Text* and the *Alternate Text* components. The *Text* component is the last name and first name of the provider in the format "LastName, FirstName". The *Alternate Text* component is the abbreviation in Open Dental for the provider.

If a provider cannot be found using either method, the referenced appointment provider(s) will not be changed.

Example:

If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott, Sarah L^^DrAbbott ~OtherSoftware.ProviderOID.987^Abbott, Sarah L^^DrAbbott|

prov.provIdName_V2_3

In version 2.3 the *Alternate Text* component is not required or processed. If a provider cannot be found using the *Identifier* component as described above, an attempt will be made to locate the provider using the *Text* component, which is the provider's name in the format "LastName, FirstName".

Example:

If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott, Sarah L^^ ~OtherSoftware.ProviderOID.987^Abbott, Sarah L^^|

AIG-4 Resource Type

This field contains an abbreviation indicating the type of provider we are setting for the appointment. Accepted values are "D" or "d" for dentist and "H" or "h" for hygienist. If this field is not populated in the segment, the provider referenced will be assumed to be the dentist.

AIG-5 through AIG-13

Not used.

AIG-14 Filler Status Code

This field is used to set the confirmation status of the appointment. It should contain the exact confirmation status name or abbreviation in Open Dental (not case sensitive). If there is not a confirmation status that matches exactly, the appointment's status will not be updated.

Example:

|^Appointment Confirmed|

AIL – Appointment Information – Location Resource Segment

This segment is used to set the clinic on an existing appointment in Open Dental.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
AIL-1	Set ID	SI	Yes	No		N/A
AIL-2	Segment Action Code	ID	No	No	0206	N/A
AIL-3	Location Resource ID	PL	Yes	No		apt.location
AIL-4...11	Not used					N/A
AIL-12	Filler Status Code	CWE	No	No	0278	apt.confirmStatus

AIL-1 Set ID

This field contains a number that uniquely identifies the information represented by this segment in this transaction for the purposes of addition, change, or deletion. This number is not validated or used by Open Dental, but is required by the HL7 specifications.

AIL-2 Segment Action Code

This field is not required or used by Open Dental.

AIL-3 Location Resource ID

This field is a PL (Person Location) data type.

Components: *Point of Care^Room^^Facility^^Person Location Type*

Subcomponents for *Facility*: *Namespace&Universal ID&Universal ID Type*

This field is used to set the clinic for the appointment referenced in this message. Only two of the components are required for the processing to be successful. The sixth element, *Person Location Type*, must contain "C" for clinic, and the first element, *Point of Care*, must contain the clinic description. Neither component value is case sensitive.

Example:

|Clinic 1^^^^^C|

AIL-4 through AIL-11

Not used.

AIL-12 Filler Status Code

This field is used to set the confirmation status of the appointment. It should contain the exact confirmation status name or abbreviation in Open Dental (not case sensitive). If there is not a confirmation status that matches exactly, the appointment's status will not be updated.

Example:

|^Appointment Confirmed|

AIP – Appointment Information – Personnel Resource Segment

This segment is used to set the provider(s) and the confirmation status on an existing appointment in Open Dental. The segment is repeatable, so in order to set the dentist and the hygienist, two repetitions would be required.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
AIP-1	Set ID	SI	Yes	No		N/A
AIP-2	Segment Action Code	ID	No	No	0206	N/A
AIP-3	Personnel Resource ID	XCN	Yes	No		prov.provIdNameLFM or prov.provIdNameLFM_V2_3
AIP-4	Resource Type	CWE	No	No	0182	prov.provType
AIP-5…11	Not used					N/A
AIP-12	Filler Status Code	CWE	No	No	0278	apt.confirmStatus

AIP-1 Set ID

This field contains a number that uniquely identifies the information represented by this segment in this transaction for the purposes of addition, change, or deletion. This number is not validated or used by Open Dental, but is required by the HL7 specifications.

AIP-2 Segment Action Code

This field is not required or used by Open Dental.

AIP-3 Personnel Resource ID

prov.provIdNameLFM

This field will be used to locate the provider in Open Dental and set the provider on the appointment identified in this message.

Components: *Identifier^Family Name^Given Name^^^Prefix*

The first component, *Identifier*, is a composite ID using the office's root OID for a provider object and the ProvNum for the provider. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. A provider object would then be identified by "2.16.840.1.113883.3.4337.1486.####.3", the ".3" identifies this object as a provider object. If the ProvNum for the provider (the primary key of the provider table for the specified provider) was 12, the unique identifier for the provider would be "2.16.840.1.113883.3.4337.1486.####.3.12". When processing this field, the repetitions will be parsed and the *Identifier* component with the office's provider root OID will located. The ProvNum extension of the provider ID, 12 in the example, will be used to locate the provider.

If a provider cannot be found using the *Identifier* component, an attempt will be made to locate the provider using the *Family Name*, *Given Name*, and *Prefix* components. The *Prefix* component is the abbreviation in Open Dental for the provider.

If a provider cannot be found using either method, the referenced appointment provider(s) will not be changed.

Example:

> If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

> |2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^^DrAbbott ~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^^DrAbbott|

prov.provIdNameLFM_V2_3

In version 2.3 the *Prefix* component is not required or processed. If a provider cannot be found using the *Identifier* component as described above, an attempt will be made to locate the provider using the *Family Name* and *Given Name* components.

Example:

> If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^^
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^^|

AIP-4 Resource Type

This field contains an abbreviation indicating the type of provider we are setting for the appointment. Accepted values are "D" or "d" for dentist and "H" or "h" for hygienist.   If this field is not populated in the segment, the provider referenced will be assumed to be the dentist.

AIP-5 through AIP-11

Not used.

AIP-12 Filler Status Code

This field is used to set the confirmation status of the appointment. It should contain the exact confirmation status name or abbreviation in Open Dental (not case sensitive). If there is not a confirmation status that matches exactly, the appointment's status will not be updated.

Example:

|^Appointment Confirmed|

AL1 – Allergy Information Segment

This segment is used to add a patient's drug allergies to the Open Dental medical history. This segment is repeatable, so multiple segments can be in one message to add multiple allergies to the patient's chart. The Set ID component numbers the segments, beginning with 1.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
AL1-1	Set ID	SI	Yes	No		N/A
AL1-2	Allergen Type Code	CWE	Yes	No	0127	allergenType
AL1-3	Allergen Code/Mnemonic/Description	CWE	Yes	No		allergenRxNorm

AL1-1 Set ID

This field contains the sequence number of this segment. The first occurrence shall contain 1, the second occurrence shall contain 2, etc. This field is not validated or processed by Open Dental.

AL1-2 Allergen Type Code

This field contains the allergen type code from Table 0127 – Allergen Type. The only type supported by Open Dental is "DA", drug allergy. This field must contain "DA" or the segment will be ignored.

AL1-3 Allergen Code/Mnemonic/Description

This field is a CWE data type.

Components: *Identifier^Text^Name of Coding System*

The only allergen codes supported are RxNorm codes. Therefore, the *Name of Coding System* component is required to contain "RXNORM" (not case sensitive). The *Text* component is a human readable description of the drug identified by the *Identifier*, but this is not validated or imported by Open Dental. The description displayed in Open Dental will come from the definition of the medication. The *Identifier* component must contain a RxNorm code for a medication that is attached to an allergy definition in Open Dental, and that allergy definition must be set to allergy type DrugAllergy or DrugIntolerance.

(See http://opendental.com/manual/allergiesmaster.html for information about setting up drug allergies and attaching to medications.)

If the patient already has an active allergy entered into Open Dental with the specified RxNorm code attached, a duplicate allergy with the same medication RxNorm will not be entered.

Examples:

A patient has a drug allergy to Aspirin, RxNorm code 1191. This example includes the optional *Text* component.

|1191^Aspirin^RXNORM|

A patient has a drug allergy to Penicillin, RxNorm code 70618. This example excludes the optional *Text* component.

|70618^^RXNORM|

ARQ – Appointment Request Information Segment

This segment defines a request for the modification of an existing appointment. It is used in transactions sent from an application acting in the role of a placer. The only inbound message type that currently supports the ARQ segment is the SRM message. SRM messages are requests to modify or cancel an existing appointment and must refer to an appointment by the Open Dental assigned AptNum. When the appointment is created in Open Dental, an outbound SIU message will be sent to the placer appointment notifying the other software of the new appointment and the filler application's (Open Dental's) AptNum for this appointment. This AptNum must be sent in the ARQ segment for the appointment to be modified or cancelled by the placer application.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
ARQ-1	Placer Appointment ID	EI	Yes	No		apt.externalAptID
ARQ-2	Filler Appointment ID	EI	No	No		apt.AptNum

ARQ-1 Placer Appointment ID

This field is an EI data type.

Components: *Entity Identifier^^Universal ID*

The *Entity Identifier* is a unique ID that the sending application has assigned to identify the appointment. This should be permanently assigned to identify the appointment, and any messages that refer to the same appointment should contain the same ID. This ID must remain unique over time and across all appointments. The *Universal ID* component is used to uniquely identify the assigning authority responsible for this unique identifier. Open Dental will link the internal appointment AptNum to the *Entity Identifier* and *Universal ID* pair.

Example:

If the placer application had a *Universal ID* of OtherSoftware.AppointmentOID and had assigned the appointment the *Entity Identifier* 67890, the field would be:

|67890^^OtherSoftware.AppointmentOID|

ARQ-2 Filler Appointment ID

This field is an EI data type.

Components: *Entity Identifier^^Universal ID*

The *Entity Identifier* should contain the Open Dental assigned AptNum. This is how the appointment the message is intended to modify is located. Without this ID, we will not modify an appointment in Open Dental. The *Universal ID* component should contain the Open Dental appointment OID, but it is not required or validated, we simply assume that component 1 is the AptNum and attempt to locate the appointment with this number.

Example:

The filler application is Open Dental with appointment object *Universal ID* of 2.16.840.1.113883.3.4337.1486.####.6, the AptNum is 12345, and the optional *Universal ID* is included in the field:

|12345^^2.16.840.1.113883.3.4337.1486.####.6|

EVN – Event Type Segment

Seq	Field Name	Data Type	Req	Rep	Table #
EVN-1	Event Type Code	ID	No	No	0003
EVN-2	Recorded Date/Time	DTM	Yes	No	
EVN-3	Not used				
EVN-4	Event Reason Code	IS	No	No	0062

EVN-1 Event Type Code

This field is retained for backward compatibility by HL7, but it is not used by Open Dental.

EVN-2 Recorded Date/Time

Usually this will be the system date/time when the transaction was entered, but it is not validated or processed from inbound messages.

EVN-3 Date/Time Planned Event

Not used.

EVN-4 Event Reason Code

This field contains the reason for this event. Suggested values are 01 – Patient request, 02 – Physician/health practitioner order, 03 – Census management, O – Other, and U – Unknown. Outbound ADT messages will contain the value 01, but this field is not validated or used by Open Dental from inbound ADT messages.

GT1 – Guarantor Segment

Fields GT1-13 through GT1-57 are not required and not used by Open Dental for inbound messages, so they are not defined here.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
GT1-1	Set ID	SI	Yes	No		N/A
GT1-2	Guarantor Number	CX	No	Yes		guarIdList
GT1-3	Guarantor Name	XPN	Yes	Yes		guar.nameLFM
GT1-4	Not used					N/A
GT1-5	Guarantor Address	XAD	No	Yes		guar.addressCityStateZip
GT1-6	Guarantor Phone # - Home	XTN	No	Yes		guar.HmPhone
GT1-7	Guarantor Phone # - Work	XTN	No	Yes		guar.WkPhone
GT1-8	Guarantor Date/Time of Birth	DTM	No	No		guar.birthdateTime
GT1-9	Guarantor Administrative Sex	IS	No	No	0001	guar.Gender
GT1-10	Not used					N/A

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
GT1-11	Not used					N/A
GT1-12	Guarantor SSN	ST	No	No		guar.SSN

GT1-1 Set ID

This field contains the number that identifies this transaction. Since Open Dental only allows one GT1 segment per message, this is always 1. The field is not validated or processed.

GT1-2 Guarantor Number

This field is a CX data type and is repeatable. It can contain one or a list of many patient identifiers for the guarantor. The CX data type has the following elements. (The HL7 specifications for a CX data type include additional components and subcomponents, but only the elements necessary for Open Dental are shown.)

Components: *ID Number^ID Check Digit^Check Digit Scheme^Assigning Authority^ID Type Code*

Subcomponents for *Assigning Authority*: *Namespace ID&Universal ID&Universal ID Type*

This field is processed in the same manner as *PID-3 Patient Identifier List*. An attempt is made to locate the guarantor by searching this field for the office's root OID for a patient object in the *Assigning Authority* component *Universal ID* subcomponent. If the office's root OID for a patient object is found and the *ID Type Code* is "PI" for Patient Identifier, the *ID Number* component is used as the guarantor's PatNum. All other repetitions of this field are considered external IDs and if there is both an *ID Number* component and an *Assigning Authority* component with *Universal ID* subcomponent and the *ID Type Code* is "PI", the external IDs will be stored and linked to the Open Dental PatNum. If any GT1 segment is received without a repetition containing the office's root OID for a patient object, the external IDs will be used to try to find the patient's PatNum.

Outbound GT1 segments will contain all known IDs for the patient as repetitions. See *PID-3 Patient Identifier List* for more details regarding the processing of the *ID Check Digit* and *Check Digit Scheme*.

Example:

The guarantor's patient ID (PatNum) in Open Dental is 56789, the office's root OID for a patient object is "2.16.840.1.113883.3.4337.1486.####.2", and the M11 check digit scheme is used. The guarantor has an externally assigned ID of 54321, the external root OID for a patient object is "OtherSoftware.PatientOID", and the M10 check digit scheme is used for this ID. The GT1-2 field would look like this:

|56789^2^M11^&2.16.840.1.113883.3.4337.1486.####.2&^PI~54321^5^M10^ &OtherSoftware.PatientOID&^PI|

GT1-3 Guarantor Name

This field is an XPN data type and all components are optional according to the HL7 version 2.6 standard. However, Open Dental requires a first and last name in order for the guarantor segment to be processed. (This data type has more optional components, but only those used by Open Dental are shown.)

Components: *Family Name^Given Name^Middle Name or Initial^^ Prefix*

The patient located by the guarantor ID(s) will have the name updated if it does not match the name in this field. The family name and given name are required, but if they are not the same as what is currently stored for the patient, the message will cause the name to be updated in Open Dental. The *Prefix* value will be stored in the Open Dental "Title" field.

Example:

The patient's first name is Jane, last name is Smith, and middle initial is W. The patient's title is Mrs.

|Smith^Jane^W^^Mrs.|

GT1-4 Guarantor Spouse Name

Not used.

GT1-5 Guarantor Address

See *PID-11 Patient Address*.

GT1-6 Guarantor Phone Number - Home

See *PID-13 Phone Number – Home*.

GT1-7 Guarantor Phone Number - Business

See *PID-14 Phone Number – Business*.

GT1-8 Guarantor Date/Time of Birth

See *PID-7 Date/Time of Birth*.

GT1-9 Guarantor Administrative Sex

See *PID-8 Administrative Sex*.

GT1-10 Guarantor Type

Not used.

GT1-11 Guarantor Relationship

Not used.

GT1-12 Guarantor SSN

See *PID-19 Patient SSN*.

MSA – Message Acknowledgment Segment

The MSA segment contains information regarding the acknowledgment of another message. Fields MSA-3 through MSA-8 are not required and not used by Open Dental for inbound messages, so they are not defined here. Message acknowledgments are expected for messages sent using the TCP/IP mode of transmission. Every outbound message Open Dental sends will be expected to be acknowledged by the receiving software.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
MSA-1	Acknowledgment Code	ID	Yes	No	0008	ackCode
MSA-2	Message Control ID	ST	Yes	No		messageControlId

MSA-1 Acknowledgment Code

This field contains an acknowledgment code from HL7 Table 0008. The code "AA" means the message being acknowledged was received and processed successfully. If Open Dental receives this code in reference to an outbound message, that message will be marked as OutSent. If any other code is received, e.g. "AE" for error or "AR" for reject, than additional attempts will be made to send the message.   If the message fails 5 times, the message will be marked OutFailed and no additional attempts to send the message will be made.

MSA-2 Message Control ID

This field contains the unique identifier that corresponds to the message control ID sent in the outbound message *MSH-9 Message Control ID* field. If the value in this field matches the value of the sent message, the message will be updated to either OutSent or OutFailed according to the value of the acknowledgment code in field *MSA-1 Acknowledgment Code*.

MSH – Message Header Segment

The MSH segment defines the intent, source, destination, and some specifics of the syntax of a message. The HL7 documentation refers to the first field separator ("|") as component 1. Since this is present in every segment, Open Dental does not count this as an actual field and the encoding characters are considered field 1. The field separator component of the MSH message is considered part of field 0.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
MSH-0	Field Separator	ST	Yes	No		N/A
MSH-1	Encoding Characters	ST	Yes	No		N/A
MSH-2	Sending Application	HD	No	No	0361	N/A
MSH-3	Sending Facility	HD	No	No	0362	N/A
MSH-4	Receiving Application	HD	No	No	0361	N/A
MSH-5	Receiving Facility	HD	No	No	0362	N/A
MSH-6	Date/Time of Message	DTM	Yes	No		N/A
MSH-7	Not used					N/A
MSH-8	Message Type	MSG	Yes	No		messageType
MSH-9	Message Control ID	ST	Yes	No		messageControlId
MSH-10	Processing ID	PT	Yes	No		N/A
MSH-11	Version ID	VID	Yes	No		N/A
MSH-12...13	Not used					N/A
MSH-14	Accept Acknowledgment Type	ID	No	No		N/A
MSH-15	Application Acknowledgment Type	ID	No	No		N/A

MSH-0 Field Separator

The pipe (|) after the message header abbreviation (MSH) is considered field 1 of the MSH segment. "This field contains the separator between the segment ID and the first real field, MSH-1 - Encoding Characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. Recommended value is |, (ASCII 124)." (Health Level Seven, Version 2.6, Section 2.14.9) The pipe (|) is the required character for the field separator in Open Dental HL7 messages.

MSH-1 Encoding Characters

This field contains the four characters used as delimiters in parsing the HL7 messages. The order of the characters is: the component separator, repetition separator, escape character, and subcomponent separator. Open Dental allows inbound messages to define the delimiters used to parse the message, but it is best practice to use the HL7 recommended values. The recommended values, in order, are ^~\& (ASCII 94, 126, 92, and 38, respectively).

MSH-2 Sending Application

This field uniquely identifies the sending application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. It is not a required field and table 0361 is a user-defined table with no recommended values. It is best practice to fill this field with an identifier for the sending application, but this field is not extracted or stored in Open Dental as structured data. The entire message is stored for a limited amount of time in the HL7 message history, so sending this information may be useful for troubleshooting if messages are received from multiple sending applications.

Components: *Namespace ID^Universal ID^Universal ID Type*

As an example, if Open Dental was the sending application, this field would be filled with the Open Dental HL7 registered object identifier (OID) root and specific office extension as the Universal ID component. The Universal ID Type component would be HL7 since we are sending an HL7 registered OID. The Namespace ID component would be blank. In the example below, the #'s represent the specific office number that is unique to the database instance. (See http://opendental.com/manual/ehroid.html for instructions regarding retrieval and storage of the root OID for the office.)

Example:

   |^2.16.840.1.113883.3.4337.1486.####^HL7|

MSH-3 Sending Facility

This field further describes the sending application identified in *MSH-2 Sending Application*. It is not a required field and table 0362 is a user-defined table with no recommended values. Open Dental does not extract or store the information in this field as structured data. The entire message is stored for a limited amount of time in the HL7 message history, so sending this information may be useful for troubleshooting if messages are received from multiple sending applications.

See *MSH-2 Sending Application* for details regarding the structure of an HD data type field.

MSH-4 Receiving Application

This field uniquely identifies the receiving application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. It is not a required field and table 0361 is a user-defined table with no recommended values. It is best practice to fill this field with an identifier for the receiving application, but this field is not extracted or stored in Open Dental as structured data. The entire message is stored for a limited amount of time in the HL7 message history, so sending this information may be useful for troubleshooting if messages are transmitted to multiple receiving applications.

See *MSH-2 Sending Application* for details regarding the structure of an HD data type field.

MSH-5 Receiving Facility

This field identifies the receiving application among multiple identical instances of the application running on behalf of different organizations. It is not a required field and table 0362 is a user-defined table with no recommended values. Open Dental does not extract or store the information in this field as structured data. The entire message is stored for a limited amount of time in the HL7 message history, so sending this information may be useful for troubleshooting if messages are transmitted to multiple receiving applications.

See *MSH-2 Sending Application* for details regarding the structure of an HD data type field.

MSH-6 Date/Time of Message

This field contains the date and time the sending system created the message. The field is a required element of an HL7 message, but the data is not validated or used by Open Dental. It is stored as part of the message in the HL7 message history and may be useful for troubleshooting, therefore sending this information is recommended.

MSH-7 Security

Not used.

MSH-8 Message Type

This field is a MSG data type.

Components: *Message Code^Trigger Event^Message Structure*

All three of these components come from HL7 defined tables. The *Message Code* component comes from HL7 Table 0076 – Message Type. For inbound messages, the currently supported *Message Code* values are ACK, ADT, PPR, and SRM.

The *Trigger Event* component comes from HL7 Table 0003 – Event Type. The supported event types are specific to each message type. For ADT messages, the supported event types are A04 – Register a Patient and A08 – Update Patient Information. For PPR messages the supported event types are PC1 – Problem Add and PC2 – Problem Update. For SRM messages the supported event types are S03 – Request Appointment Modification and S04 – Request Appointment Cancellation. The ACK event type will be equal to the event type of the message being acknowledged and can therefore contain any of the event types of supported outbound messages.

The *Message Structure* component comes from HL7 Table 0345 – Message Structure. The message structure used for all supported inbound ADT messages is ADT_A01. For inbound PPR messages, the structure is PPR_PC1. For inbound SRM messages, the structure is SRM_S01. For an ACK message, this component will simply contain ACK.

Example:

|ADT^A04^ADT_A01|

MSH-9 Message Control ID

This field contains a number or other identifier that uniquely identifies the message. Open Dental will echo this ID back to the sending system in the Message Acknowledgment segment (MSA) if using the TCP/IP HL7 mode.

MSH-10 Processing ID

This field is a PT data type.

Components: *Processing ID^Processing Mode*

Open Dental does not validate or use this information. However, the standard values for this field are P (Production), T (Training), or D (Debugging).

MSH-11 Version ID

Open Dental currently uses HL7 version 2.6. This field should identify the message as conforming to the 2.6 standards. The field is not validated or used, but for constructing the messages Open Dental will populate this field with "2.6".

MSH-12 through MSH-13

Not used.

MSH-14 Accept Acknowledgment Type

Not used by Open Dental. The values for this field and for *MSH-15 Accept Acknowledgment Type* are AL (Always), NE (Never), ER (Error/reject conditions only), and SU (Successful completion only). MSH-14 and MSH-15 are used for enhanced acknowledgment mode, which is not currently supported. This field should be either blank or contain the value NE, but the value is not validated or used.

MSH-15 Application Acknowledgment Type

Not used by Open Dental. See *MSH-14 Accept Acknowledgment Type* for allowed values. Enhanced acknowledgment mode is not currently supported. This field will contain AL for outbound messages, meaning Open Dental requires an acknowledgment for every message that is sent. The acknowledgment means the message was processed successfully by the receiving application. If using the TCP/IP HL7 mode, all inbound messages will trigger an outbound acknowledgment once the message is processed successfully.

NTE – Notes and Comments Segment

This segment is used to append comments to the "Appointment Note" field of an existing appointment and is only supported for inbound SRM messages. It is an optional segment and is repeatable. Multiple repetitions will be added to the "Appointment Note" field of the appointment separated by new line characters.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
NTE-1	Set ID	SI	No	No	0287	N/A
NTE-2	Not used					N/A
NTE-3	Comment	FT	No	Yes		apt.Note

NTE-1 Set ID

This field can be used if multiple NTE segments are sent to number the segments starting with 1 and incrementing by 1 for each repetition. The field is not used or validated by Open Dental.

NTE-2 Source of Comment

Not used.

NTE-3 Comment

This field is a FT data type. This field is used to set the "Appointment Note" field on the Open Dental appointment. This field accepts line breaks so the information can be set to specific lines of the Open Dental field. The sequence of characters to identify a line break are "\.br\". (The \ is the default escape character, but is defined by the third character in *MSH-1 Encoding Characters*. \ is the recommended value.) The "Appointment Note" field will not be modified if it already contains the exact text received in this segment to avoid duplicating information.

Example:

|Patient asked to arrive 10 minutes early.\.br\Patient complaining of pain.|

OBX – Observation/Result Segment

This segment is used to add a patient's current medications. This segment is repeatable, so multiple segments can be in one message to add multiple medications to the patient's chart. The Set ID component numbers the segments, beginning with 1. *OBX-11 Observation Result Status* is a required field according to the version 2.6 HL7 documentation. The value of that field for adding current medications would be an "R", for "Results entered, not verified", but Open Dental does not require or validate the information in that field. The field can be included, but the value of the field does not affect the parsing of the segment.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
OBX-1	Set ID	SI	No	No		N/A
OBX-2	Value Type	ID	No	No	0125	N/A
OBX-3	Observation Identifier	CWE	Yes	No	9999	medicationRxNorm
OBX-4…10	Not used					N/A
OBX-11	Observation Result Status	ID	Yes	No	0085	N/A

OBX-1 Set ID

This field contains the sequence number of this segment. The first occurrence shall contain 1, the second occurrence shall contain 2, etc. This field is not validated or processed by Open Dental.

OBX-2 Value Type

Not used.

OBX-3 Observation Identifier

This field is a CWE data type.

Components: *Identifier^Text^Name of Coding System*

The *Identifier* and the *Name of Coding System* are used to add the patient's current medications in Open Dental. The *Name of Coding System* supported is "RXNORM" (not case sensitive). The *Identifier* must be an RxNorm code assigned to a medication definition in Open Dental. If there is not a definition in Open Dental with the specified RxNorm code, the medication will not be added to the patient's chart. The *Text* field is the human-readable description of the medication, but the description is not imported into Open Dental. The description of the medication, when viewed in Open Dental, will come from the medication definition in the database. It can, therefore, be blank, but that makes it more difficult to visually inspect a message later for troubleshooting.

Examples:

A patient is currently prescribed an Albuterol Metered Dose Inhaler, RxNorm code 745678. This example includes the optional *Text* component.

|745678^Albuterol Metered Dose Inhaler^RXNORM|

A patient is currently prescribed Alprozolam for depression, RxNorm code 541349. This example excludes the optional *Text* component.

|541349^^RXNORM|

OBX-4 through OBX-10

Not used.

OBX-11 Observation Result Status

This field is an ID data type. This field is required according to the version 2.6 HL7 standards, but the field is not validated or used by Open Dental. The value should be from HL7 Table 0085 –

Observation result status codes interpretation. For current medications, the expected value is "R" for results entered – not verified.

PID – Patient Identification Segment

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
PID-1	Set ID	SI	No	No		N/A
PID-2	Patient ID	CX	No	No		pat.PatNum
PID-3	Patient Identifier List	CX	Yes	Yes		patientIds
PID-4	Alternate Patient ID	CX	No	Yes		pat.ChartNumber
PID-5	Patient Name	XPN	Yes	Yes		pat.nameLFM
PID-6	Not used					N/A
PID-7	Date/Time of Birth	DTM	No	No		pat.birthdateTime
PID-8	Administrative Sex	IS	No	No	0001	pat.Gender
PID-9	Not used					N/A
PID-10	Race	CWE	No	Yes	0005	pat.Race or pat.Race_V2_3
PID-11	Patient Address	XAD	No	Yes		pat.addressCityStateZip
PID-12	Not used					N/A
PID-13	Phone Number – Home	XTN	No	Yes		pat.HmPhone
PID-14	Phone Number – Business	XTN	No	Yes		pat.WkPhone
PID-15	Not used					N/A
PID-16	Marital Status	CWE	No	No	0002	pat.Position
PID-17…18	Not used					N/A
PID-19	Patient SSN	ST	No	No		pat.SSN

PID-1 Set ID

This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc. Open Dental only accepts one PID segment per message, so this field shall always contain the number 1. We do not validate the data in this field and it is optional, but every inbound message must exactly one PID segment.

PID-2 Patient ID

This field has been retained for backward compatibility. If included in this segment, it should contain the Open Dental patient number (PatNum). While the field is defined as a CX data type, it has previously been used as a ST (string) data type. It should therefore only contain the Open Dental PatNum with no additional components or separators. If this field is populated, the PatNum will be used as the first method for locating the patient in Open Dental to which the inbound message refers. The preferred method is to use *PID-3 Patient Identifier List* to transmit all of the patient identifiers available for the patient.

This field is the preferred method of communicating the patient identifiers via HL7. This field is repeatable, so a list of IDs used to uniquely identify a patient can be transmitted. The CX data type has the following components and subcomponents. (The HL7 specifications for a CX data type include additional components and subcomponents, but only the elements necessary for Open Dental are shown.)

> **Note:** The ^ (caret) and & (ampersand) characters are the component separator and subcomponent separator respectively. These are the default delimiters and are defined in the *MSH-1 - Encoding Characters* field. While they can be defined differently, the default values of ^ and & are recommended.

Components: *ID Number^ID Check Digit^Check Digit Scheme^Assigning Authority^ID Type Code*

Subcomponents for *Assigning Authority*: *Namespace ID&Universal ID&Universal ID Type*

The *ID Number* component is the patient identifier assigned by the entity identified by the *Assigning Authority* component that uniquely identifies a patient within that assigning authority database. The *ID Check Digit* component is used to test the validity of the *ID Number*. Open Dental supports the Mod 10 algorithm (M10) and the Mod 11 algorithm (M11) provided by the HL7 organization. The *Check Digit Scheme* component identifies the algorithm used. The check digit and scheme are not required elements, but if included the *ID Number* must evaluate to the *Check Digit* provided or the *ID Number* will be treated as invalid and will not be processed. The *Assigning* Authority component has three subcomponents, but the only subcomponent required for inbound messages is the *Universal ID*. This is used to identify the *ID Number* as belonging to the Open Dental database or another software database. All patient identifiers received and processed by Open Dental must have the *ID Type Code* of PI. HL7 Table 0203 – Identifier Type defines PI as "Patient internal identifier - A number that is unique to a patient within an Assigning Authority."

Every Open Dental database is assigned a root object identifier based on the registration key stored in the local database. Using the "Internal OID Registry" tool in Open Dental, every office must enter a root identifier and an identifier for every type of object defined. (See http://opendental.com/manual/ehroid.html for information on how to retrieve or manually enter these OID's.) The Open Dental PatNum is then identified by the *Assigning Authority – Universal ID* which should match the OID for a patient object in the database. As an example, Open Dental Software, Inc. has a root identifier which is part of the HL7 OID Registry. This root is "2.16.840.1.113883.3.4337". When an office retrieves their root by pressing the "Retrieve OIDs" button in Open Dental, they will receive a root that begins with this registered root value and appends numbers unique to that database. It will be based on the registration key, so every database will have a unique root. After assigning a unique root to the database, the

recommended value for a patient object is to append a ".2" to the root. This uniquely identifies the *ID Number* as a patient identifier belonging to that specific database. An office root would then look something like "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. A patient object would then be identified by "2.16.840.1.113883.3.4337.1486.####.2". If the patient OID is found in one of the repetitions of the *Patient Identifier List* in this field, the *ID Number* will be the Open Dental database PatNum.

The Mod 10 algorithm (M10) for calculating the check digit is as follows:

Assume you have an identifier - 12345. Take the odd digit positions, starting from the right, i.e. 531, and multiply this number by 2 to get 1062. Take the even digit positions, i.e. 4 and 2, and add these digits and all of the digits from the previous step together. 4+2+1+0+6+2 = 15. Subtract this number from the next highest multiple of 10, i.e. the next highest multiple of 10 from 15 is 20, to get 20-15 = 5. The Mod 10 check digit is 5. The Mod 10 check digit for 401 is 0; for 9999 it's 4; for 99999999 it's 8.

The Mod 11 algorithm (M11) for calculating the check digit is as follows:

Terms:
d = digit of number starting from 1's position, followed by 10's position, followed by 100's position, etc.
w = weight of digit position starting with the 1's position, followed by 10's position, followed by 100's position etc. Values for w = 2, 3, 4, 5, 6, 7, 2, 3, 4, 5, 6, 7, etc. (repeats for each group of 6 digits)
c = check digit

Calculation:
(Step 1) m = sum of (d * w) for positions 1, 2, etc. starting with 1's position, for d = digit value starting with 1's position to highest order, for w = weight value from 2 to 7 for every six positions starting with 1's position
(Step 2) c1 = m Mod 11
(Step 3) c1 = 1 if m Mod 11 = 0
(Step 4) c = (11 - c1) Mod 10

Example:
If the number is 1234567, then the Mod 11 check digit = 4.
The calculations are:
m = (7*2)+(6*3)+(5*4)+(4*5)+(3*6)+(2*7)+(1*2)
    = 14 + 18 + 20 + 20 + 18 + 14 + 2
    = 106
c1 = 106 Mod 11
    = 7
c = (11-7) Mod 10

= 4 Mod 10

= 4

Example:

If the patient ID (PatNum) in Open Dental was 12345, the M11 check digit scheme was used, and the patient OID in the explanation above was used for one repetition. And the transmitting software had an ID for the patient of 98765, the M10 check digit scheme was used, and the *Assigning Authority Universal ID* for that database was "OtherSoftware.PatientOID". (The repetition separator used is ~, which is the default delimiter. It is defined in position 2 of *MSH-1 Encoding Characters*, but ~ is the recommended value.) The field would look like this:

|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&^PI~98765^1^M10^ &OtherSoftware.PatientOID&^PI|

The patient in Open Dental with PatNum 12345 would be located and the message details would be used for updating/modifying that patient's information. The ID 98765 would be stored in the table oidexternals with the root OtherSoftware.PatientOID and would be linked to this PatNum. If a message is ever received by Open Dental with 98765 as the *ID Number* and OtherSoftware.PatientOID as the *Assigning Authority Universal ID*, it will be used to locate the patient in the absence of a patient ID with the Open Dental OID root. So if the sending software does not ever store or transmit the Open Dental PatNum, a patient would be created the first time the external ID and root were received and the new PatNum would be linked to the external ID and root. Open Dental would then transmit all IDs for the patient, including the new PatNum and Open Dental patient OID, in any outbound PID-3 fields. It is not required that the sending software store and send the Open Dental PatNum and patient OID, but it is best practice to send all known patient IDs in this field.

PID-4 Alternate Patient ID

This field has been retained for backward compatibility. If included in this segment, it should contain the Open Dental chart number (pat.ChartNumber). While the field is defined as a CX data type, it has previously been used as a ST (string) data type. It should therefore only contain the Open Dental ChartNumber with no additional components or separators. This has previously been used to transmit an external patient identifier from the sending application and is stored in the patient's ChartNumber field. It is then transmitted as an external ID in *PID-2 Patient ID* in any outbound messages with a PID segment and corresponding pat.ChartNumber field in the outbound definition.

If the field pat.ChartNumber is used in an Open Dental definition, it will be the second method used for locating the patient in Open Dental to which the inbound message refers. If the patient is not found using the ChartNumber, Open Dental will attempt to use the last name, first name, and birthdate included in the message to locate the patient as a third method. The name and

birthdate matching will only take place if pat.ChartNumber is included in the definition of the PID segment.

PID-5 Patient Name

This field is an XPN data type and all components are optional according to the HL7 version 2.6 standard. However, Open Dental requires a first and last name in order for the patient demographics to be updated/inserted. (This data type has more optional components, but only those used by Open Dental are shown.)

Components: *Family Name^Given Name^Middle Name or Initial^^Prefix*

The patient located by the patient ID(s) will have the name updated if it does not match the name in this field. The family name and given name are required, but if they are not the same as what is currently stored for the patient, the message will cause the name to be updated in Open Dental. The *Prefix* value will be stored in the Open Dental "Title" field.

Example:

The patient's first name is John, last name is Smith, and middle initial is L. The patient's title is Mr.

|Smith^John^L^^Mr.|

PID-6 Mother's Maiden Name

Not used.

PID-7 Date/Time of Birth

This field is a DTM data type. The format expected is yyyyMMddHHmmss, but Open Dental does not store a time of birth. So any precision beyond the day of birth is optional and if included is ignored.

Example:

If the patient's date of birth was December 4, 1994, the field with the required precision would be:

|19941204|

PID-8 Administrative Sex

This field will contain the gender of the patient. The value is not case-sensitive. Accepted values are "m" or "male" for male gender, "f" or "female" for female. Any other value, including an empty field, will result in the patient gender in Open Dental being set to "Unknown".

Not used.

pat.Race

This field is a CWE data type with 9 components. Only 2 of the components are used by Open Dental for identifying the race(s) of a patient.

Components: *Identifier^^Name of Coding System*

This field is repeatable, multiple races are supported by Open Dental, and the repetition character is used as the delimiter. The *Name of Coding System* must be "CDCREC" (not case-sensitive). The *Identifier* must be a CDCREC code for the race from the list of supported races in Open Dental (See *Table 0005 – Race*).

The second component (between the *Identifier* and *Name of Code System*) is the text description component. It can be included in inbound messages for a more human-readable field, but the value is not imported and is not required.

Example:

If a patient was White and Not Hispanic or Latino, the race field would look like this:

|2106-3^^CDCREC~2186-5^^CDCREC|

pat.Race_V2_3

In version 2.3 the *Name of Coding System* is not required.

Example:

If a patient was White and Not Hispanic or Latino, the race field would look like this:

|2106-3~2186-5|

Table 0005 - Race

CDCREC Code	Description
1002-5	American Indian or Alaskan Native
2028-9	Asian
2054-5	Black or African American
2076-8	Native Hawaiian or Other Pacific Islander
2106-3	White
2131-1	Other Race

CDCREC Code	Description
2135-2	Hispanic or Latino
2186-5	Not Hispanic or Latino

PID-11 Patient Address

This field is a XAD data type.

Components: *Street Address^Other Designation^City^State^Zip Code^^^^^^^^^^*
 ^^^^^Comment

Every component is optional and if an empty component is received, the corresponding field in Open Dental will be replaced with an empty string. The *Comment* field is used to set the "Address and Phone Notes" field in Open Dental. If this field is part of the definition, whatever is received in that component will overwrite the existing "Address and Phone Notes" field for the patient.

The *Comment* component accepts line breaks so the information can be set to specific lines in the Open Dental "Address and Phone Notes" field. The sequence of characters to identify a line break are "\.br\". (The \ is the default escape character, but is defined by the third character in *MSH-1 Encoding Characters*. \ is the recommended value.)

Example:

|421 N Main St^Apt 7^Salem^OR^97302^^^^^^^^^^^^^^Emergency Contact: Jane Smith \.br\Relationship: Wife\.br\Phone: (503)555-1234|

PID-12 County Code

Not used.

PID-13 Phone Number – Home

pat.HmPhone

This field is a XTN data type and is repeatable. The repetitions are used to receive the Home Phone, Wireless Phone, and E-mail address for the patient.

Components: *^Telecommunication Use Code^Telecommunication Equipment Type*
 ^Communication Address^^Area Code^Local Number

The *Telecommunication Use Code* should be PRN for Primary Residence Number but this component is optional and not validated. The *Telecommunication Equipment Type* is used to determine which field in Open Dental to update. Allowed values are PH for Home Phone, CP for Wireless Phone, or Internet for E-mail address. If Internet is in the third component, the fourth

component will be used for the patient's E-mail address. Otherwise, the sixth and seventh components are used together as the patient's Home or Wireless Phone number.

Example:

If a patient's home phone number is (503) 555-1234, wireless phone is (503)555-6789, and E-mail address is john@somewhere.com, the field would look like this:

|^PRN^PH^^^503^5551234~^PRN^Internet^john@somewhere.com
~^PRN^CP^^^503^5556789|

pat.HmPhone_V2_3

The version 2.3 structure for E-mail addresses is slightly different. The *Telecommunication Use Code* will be "NET" and the *Telecommunication Equipment Type* will be empty. Also, for version 2.3 if the *Telecommunication Use Code* is WPN the repetition will be skipped as it is the patient's Work Phone Number and should be included in PID-14. If the *Telecommunication Use Code* is anything other than NET or WPN, the repetition will be processed as usual.

Example:

If a patient's home phone number is (503) 555-1234, wireless phone is (503)555-6789, and E-mail address is john@somewhere.com, the field would look like this:

|^PRN^PH^^^503^5551234~^NET^^john@somewhere.com
~^PRN^CP^^^503^5556789|

PID-14 Phone Number – Business

This field is a XTN data type.

Components: *^Telecommunication Use Code^Telecommunication Equipment Type^^^Area Code ^Local Number*

This field is only for receiving the Work Phone, so the *Telecommunication Use Code* is WPN for Work Number but this component is optional and not validated. The *Telecommunication Equipment Type* must be PH. The *Area Code* and *Local Number* components are used together to set the patient's Work Phone in Open Dental.

Example:

If a patient's work phone number is (503)363-5432, the field would look like this:

|^WPN^PH^^^503^3635432|

PID-15 Primary Language

Not used.

PID-16 Marital Status

This field is a CWE data type. All components are optional according to the HL7 documentation. Open Dental will only use the first component, *Identifier*, for setting the pat.Position field. Supported values are in *Table 0002 – Marital Status*. Any value not in this table including a blank PID-16 will result in a status of Single in Open Dental.

Table 0002 – Marital Status

Value	Description	"Position" in Open Dental
A	Separated	Married
D or Divorced	Divorced	Divorced
M or Married	Married	Married
S or Single	Single	Single
W or Widowed	Widowed	Widowed
C	Common law	Married
G	Living together	Single
P or Partner	Domestic partner	Single
R	Registered domestic partner	Single
E or Legally Separated	Legally Separated	Married
N	Annulled	Single
I	Interlocutory	Married
B	Unmarried	Single
U or Unknown	Unknown	Single
O	Other	Single
T	Unreported	Single

PID-17 through PID-18

Not used.

PID-19 Patient SSN

This field is a ST data type. The value in this field is used to populate the Social Security Number field in Open Dental. The field can be sent with or without dashes and will be stored as received.

Example:

|123456789|

PRB – Problem Detail Segment

This segment is used to add or update conditions, problems, or diseases in a patient's medical information section of Open Dental. The segment is repeatable, so a single PPR message can contain multiple problems.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
PRB-1	Action Code	ID	Yes	No	0287	problemAction
PRB-2	Action Date/Time	DTM	Yes	No		dateTime.Now
PRB-3	Problem ID	CWE	Yes	No		problemCode
PRB-4	Problem Instance ID	EI	Yes	No		problemUniqueId
PRB-5...6	Not used					N/A
PRB-7	Problem Established Date/Time	DTM	No	No		problemStartDate
PRB-8	Not used	DTM	No	No		N/A
PRB-9	Actual Problem Resolution Date/Time	DTM	No	No		problemStopDate

PRB-1 Action Code

This field is an ID data type and contains the code that identifies the intent of the message. The currently supported values are "AD" for add or "UP" for update. If adding a new problem, it must have a unique value in PRB-4 Problem Instance ID that is not already assigned to a problem in the Open Dental database. If the *Problem Instance ID* is already used for a problem instance, and that problem is not attached to the patient identified in the PID segment of this message, the problem will not be changed. If the problem found is for this patient and already exists, this will be considered an update message even though the *Action Code* was received as "AD". Alternately, if the code is "UP" for an update to an existing problem, and there is no problem for this patient, one will be added as if this was an add segment.

PRB-2 Action Date/Time

This field contains the date/time that the add or update to the problem/condition/disease was performed. The data is not validated or stored in Open Dental, but it is good practice to include it in the segment in case there is a need to visually inspect the information for troubleshooting. It is also a required field in the HL7 version 2.6 documentation. The format is yyyyMMddHHmmss.

PRB-3 Problem ID

This field is a CWE data type.

Components: *Identifier^Description^Name of Coding System*

This field identifies the problem and must contain a code that exists in the Open Dental database. The code must be assigned to a problem in Open Dental as well as existing in the table of codes. The *Identifier* component must contain a SNOMEDCT code. The *Description* component is not required and is not imported into Open Dental, but including it may be useful for visual inspection of the message for troubleshooting or verification. The *Name of Coding System* must be the abbreviation for the SNOMEDCT coding system from HL7 Table 0396, "SNM".

Example:

The patient has Prediabetes, SNOMEDCT code 15777000, and the optional description is included:

|15777000^Prediabetes (disorder)^SNM|

PRB-4 Problem Instance ID

This field is an EI data type.

Components: *Entity Identifier^^Universal ID*

This field contains the identifier assigned by the initiating system to an instance of a problem. The *Entity Identifier* must be the unique identifier for this instance of the problem and must remain unique over time and across all patients. The *Universal ID* identifies the assigning authority responsible for assigning the ID to the problem.

Example:

Using the Open Dental assigning authority OID for a problem (2.16.840.1.113883.3.4337.1486.####.5) and 12345 as the problem instance ID, the field would look like:

|12345^^2.16.840.1.113883.3.4337.1486.####.5|

PRB-5 Episode of Care ID

Not used.

PRB-6 Problem List Priority

Not used.

PRB-7 Problem Established Date/Time

This field is used to set the problem start date. The format is yyyyMMddHHmmss, but the time portion is not stored in Open Dental. The date, year, month, and day, is required for the start date to be set on the problem.

PRB-8 Anticipated Problem Resolution Date/Time

Not used.

PRB-9 Actual Problem Resolution Date/Time

This field is used to set the problem stop date. The format is yyyyMMddHHmmss, but the time portion is not stored in Open Dental. The date, year, month, and day, is required for the stop date to be set on the problem.

PR1 – Procedures Segment

This segment is used to add a procedures with a treatment planned status to a patient's chart. This segment is repeatable, so multiple segments can be in one message to add multiple procedures. The Set ID component numbers the segments, beginning with 1.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
PR1-1	Set ID	SI	Yes	No		N/A
PR1-2	Not used					N/A
PR1-3	Procedure Code	CNE	Yes	No	0088	proccode.ProcCode
PR1-4	Not used					N/A
PR1-5	Procedure Date/Time	DTM	Yes	No		proc.ProcDateTime
PR1-6	Procedure Functional Type	IS	No	No	0230	proc.Status
PR1-7…15	Not used					N/A
PR1-16	Procedure Code Modifier	CNE	No	No	0340	proc.toothSurfRange
PR1-17…18	Not used					N/A
PR1-19	Procedure Identifier	EI	No	No		proc.uniqueId

PR1-1 Set ID

This field contains the sequence number of this segment. The first occurrence shall contain 1, the second occurrence shall contain 2, etc. This field is not validated or processed by Open Dental.

PR1-2 Procedure Coding Method

Not used.

PR1-3 Procedure Code

This field is a CNE data type.

Components: *Identifier^Text^Name of Coding System^^^^Coding System Version ID^^Original Text*

Only three of the components are used by Open Dental to identify and insert the correct procedure code. The *Identifier* component must contain a valid CDT code that exists in the Open Dental database procedure code list. The *Text* component may contain the description of the code, but this is not validated or imported into Open Dental. The description of the procedure code displayed in Open Dental is stored with the code in the database, the *Text* field is only used to visually inspect the segment. The *Name of Coding System* component must contain "CD2", the value from HL7 Table 0396 – Coding System, for identifying the code as a CDT-2 code. The *Coding System Version ID* must contain "2014", which is the current version of CDT codes being used by Open Dental. The *Original Text* component can contain the layman's term for the code, but like the *Text* component this is not validated or imported into Open Dental.

Examples:

The procedure code is D1351, the description is "Sealant – per tooth", and the layman's term is "Sealant". The description and layman's term are included in this example.

|D1351^Sealant – per tooth^CD2^^^^2014^^Sealant|

The procedure code is D0150, the description is "Comprehensive oral evaluation – new or established patient", and the layman's term is "Complete exam". This example excludes the description and layman's term.

|D0150^^CD2^^^^2014|

PR1-4 Procedure Description

Not used.

PR1-5 Procedure Date/Time

This field is a DTM data type. The format accepted is yyyyMMddHHmmss with HHmmss optional. The time is not stored by Open Dental, but the date precision is required. This field should contain the date the procedure was treatment planned for the patient.

PR1-6 Procedure Functional Type

This field will contain the status for the procedure being inserted. This field is optional and if omitted will default to the Open Dental status TP – Treatment Planned. Allowed values for this field are in Table 0230 – Procedure Functional Type. Any value not in this table, including blank, will result in a procedure with TP status. The values are not case sensitive. For example, the values C, c, Complete, or complete will all result in a completed procedure in Open Dental.

Table 0230 – Procedure Functional Type

Value	Description
TP or Treatment Planned	Treatment Planned
C or Complete	Complete
EC or Existing Current Provider	Existing Current Provider
EO or Existing Other Provider	Existing Other Provider
R or Referred Out	Referred Out
Cn or Condition	Condition

PR1-7 through PR1-15

Not used.

PR1-16 Procedure Code Modifier

This field is a CNE data type.

Components: *Identifier*

Subcomponents: *Tooth or Range*&*Surface, Quadrant, Sextant, or Arch*

This will hold the treatment area for the procedure, i.e. tooth, surface, quadrant, sextant, arch, or tooth range. If this field is blank or not included, the default treatment area will be mouth. The procedure code, identified by the code in field *PR1-3 Procedure Code*, must have the same treatment area set in Open Dental or the procedure will not be inserted. A tooth range must be in a comma delimited list in the first subcomponent. A tooth and surface will be the only treatment area that will have both subcomponents populated. The tooth and tooth range values will use the Tooth Nomenclature set in Open Dental and will accept both the United States (1-32) and the international FDI notation (11-48).

Examples:

For a procedure with a tooth treatment area, set to tooth 12:

|12|

For a procedure with a surface treatment area, also on tooth 12, with mesial, occlusal, distal, and lingual surfaces:

|12&MODL|

For a procedure with a quadrant treatment area, set to the upper left quadrant:

|&UL|

For a procedure with a sextant treatment area, set to sextant 1:

|&1|

For a procedure with an arch treatment area, set to the upper arch:

|&U|

For a procedure with a tooth range treatment area, set to teeth 3, 4, and 5:

|3,4,5|

PR1-17 through PR1-18

Not used.

PR1-19 Procedure Identifier

This field is an EI data type.

Components: *Entity Identifier^^Universal ID*

This field is used to uniquely identify a procedure to be inserted. The *Entity Identifier* component should be an identifier assigned to this specific instance of the procedure. The *Universal ID* component should identify the assigning authority responsible for the *Entity Identifiers* and assigning procedures with these IDs.

This field is optional, and if not included a procedure will be inserted for every valid PR1 segment processed. If it is included, only one procedure will be included for each unique ID processed. This will prevent duplicate procedures from being inserted if the segment for a procedure is received by Open Dental more than once. If included, the procedure will be linked to the unique ID and assigning authority pair and if another segment with the same ID and assigning authority is received, the procedure will not be inserted a second time. Without this unique ID, every valid segment will result in a new treatment planned procedure.

Example:

If the assigning authority was Open Dental with the root OID for a procedure "2.16.840.1.113883.3.4337.1486.####.8", and the procedure was assigned the unique identifier 12345, the field would look like this:

|12345^^2.16.840.1.113883.3.4337.1486.####.8|

PV1 – Patient Visit Segment

Fields PV1-19 through PV1-52 are not required and not used by Open Dental for inbound messages, so they are not defined here.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
PV1-1	Set ID	SI	No	No		N/A
PV1-2	Patient Class	IS	Yes	No	0004	pat.GradeLevel
PV1-3	Assigned Patient Location	PL	No	No		pat.location or pat.location_V2_3
PV1-4…6	Not used					N/A
PV1-7	Attending Doctor	XCN	No	Yes	0010	prov.provIdNameLFM or prov.provIdNameLFM_V2_3
PV1-8…10	Not used					N/A
PV1-11	Temporary Location	PL	No	No		pat.site
PV1-12…17	Not used					N/A
PV1-18	Patient Type	IS	No	No	0018	pat.Urgency

PV1-1 Set ID

This field contains the number that identifies this transaction. Since there is only one occurrence of the PV1 segment, this is always 1. The value is not validated or processed by Open Dental.

PV1-2 Patient Class

For inbound messages, this field is used to communicate the patient grade level. This is used primarily for public health screening for school age children. Allowed values are 0 through 16. 0 = Unknown, 1-12 = First-Twelfth, 13 = PrenatalWIC, 14 = PreK, 15 = Kindergarten, 16 = Other.

For outbound messages, or for institutions not recording public health screening data, this field is populated with O for Outpatient. This field is required according to the HL7 standards, but Open Dental does not require this element, so blank is allowed.

PV1-3 Assigned Patient Location

pat.location

This field is a PL (Person Location) data type.

Components: *Point of Care^Room^^Facility^^Person Location Type*

Subcomponents for *Facility*: *Namespace&Universal ID&Universal ID Type*

This field is used to set the patient's clinic. Only one component is required for the processing to be successful. The first component, *Point of Care*, must contain the clinic description and is not case sensitive.

Example:

    |Clinic 1|

pat.location_V2_3

In version 2.3 the *Point of Care* component is not populated, and the *Room* component must contain the clinic description.

Example:

    |^Clinic 1|

PV1-4 through PV1-6

Not used.

PV1-7 Attending Doctor

prov.provIdNameLFM

This field is a XCN data type.

Components: *ID Number^Family Name^Given Name^Middle Name or Initial^^Abbreviation*

This field is repeatable and can contain multiple identifiers for a provider. The identifier assigned to the provider by Open Dental is constructed using the office's OID for a provider object and the ProvNum for the provider. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. A provider object would then be identified by "2.16.840.1.113883.3.4337.1486.####.3", the ".3" identifies this object as a provider object. If the ProvNum for the provider (the primary key of the provider table for the specified provider) was 12, the unique identifier for the provider would be "2.16.840.1.113883.3.4337.1486.####.3.12". When processing this field, the repetitions will be parsed and the *ID Number* component with the office's provider root OID will located. The ProvNum extension of the provider ID, 12 in the example, will be used to locate the provider and set the patient's primary provider.

The other repetitions of this field will be used to store external identifiers for this provider. Any repetition that contains an *ID Number* component that does not begin with the office's provider root OID will be considered an external ID. In order for the external ID to be stored, there must be a universal ID root, followed by a ".", followed by an extension (ID). The universal ID root for

the external software is not required to be a HL7 registered OID, but it should uniquely identify the external software as the assigning authority for the provider ID. Any string is allowed, as long as it is followed by a "." and the provider ID. An example could be "OtherSoftware.ProviderOID.1234". If this external ID was included as a repetition with the Open Dental example "2.16.840.1.113883.3.4337.1486.####.3.12", the ProvNum 12 would be linked to the external root "OtherSoftware.ProviderOID" and external ID "1234" in the Open Dental database table oidexternals with a type of Provider. Any future inbound messages that contained this external ID, even if the Open Dental provider OID was missing, would locate the provider with the ProvNum of 12. Any future outbound messages would contain every provider ID known to Open Dental for this provider as repetitions of this field.

If a provider is not able to be located using the *ID Number* component from any repetition, then a provider will be located using the *Family Name*, *Given Name*, and *Abbreviation* components. These components will be pulled from all repetitions, beginning with the first instance, and used to try to locate the provider. If found, the external ID's will be linked to the provider ProvNum in the oidexternals table as described above.

Example:

If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^^DrAbbott|

prov.provIdNameLFM_V2_3

In version 2.3 the *Abbreviation* component is not required or processed. If a provider cannot be found using the *Identifier* component as described above, an attempt will be made to locate the provider using the *Family Name* and *Given Name* components.

Example:

If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^^
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^^|

PV1-8 through PV1-10

Not used.

PV1-11 Temporary Location

This field is a PL (Person Location) data type. It is used to set the "Site (or Grade School)" field in Open Dental and used primarily for public health.

Components: *Point of Care^^^^^Person Location Type*

The *Person Location Type* component must be "S" (not case sensitive) and the *Point of Care* component must match an existing site description in the Open Dental database (not case sensitive).

Example:

If a site already exists in the database with the description "Oregon State University", the field would look like this:

|Oregon State University^^^^^S|

PV1-12 through PV1-17

Not used.

PV1-18 Patient Type

This field is an IS data type. It is used to set the Treatment Urgency value in Open Dental. This is used primarily for public health screening. The allowed values are 0 = Unknown, 1 = No Problems, 2 = Needs Care, and 3 = Urgent.

SCH – Schedule Activity Information Segment

This segment contains information used to locate an existing appointment or to create one if not found.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
SCH-1	Placer Appointment ID	EI	No	No		N/A
SCH-2	Filler Appointment ID	EI	Yes	No		apt.AptNum
SCH-3…6	Not used					N/A
SCH-7	Appointment Reason	CWE	No	No	0276	apt.Note
SCH-8…10	Not used					N/A
SCH-11	Appointment Timing Quantity	TQ	No	No		apt.lengthStartEnd

SCH-1 Placer Appointment ID

This field contains the placer application's permanent identifier for the appointment. Since SIU messages are only used in situations where Open Dental is considered an auxiliary application, this field is not used or validated.

SCH-2 Filler Appointment ID

This field contains the filler application's permanent identifier for the appointment. This field is used to locate an existing appointment or to create one if one is not found. This field is one component, simply the filler application's identifier. The value must be a number, no other characters are allowed. The number is assigned to the appointment in Open Dental as the AptNum and is used to locate the appointment if additional inbound messages refer to this appointment.

Example:

|10101|

SCH-3 through SCH-6

Not used.

SCH-7 Appointment Reason

This field contains the reason for this appointment and is simply a string that is inserted into the note field of the appointment.

Example:

|Patient complaining of tooth pain.|

SCH-8 through SCH-10

Not used.

SCH-11 Appointment Timing Quantity

This field is used to set the date and duration of the appointment.

Compontents: ^^*Duration^Start Date/Time^End Date/Time*

The *Start Date/*Time and *End Date/Time* components are used to set the appointment date and length of the appointment. The *Start Date/Time* is used to set the appointment date and time. The difference between the start and end times determine the length of the appointment. Both date/time components should be in the format yyyyMMddHHmmss, with the last two digit, the seconds, optional. If the *End Date/Time* component is missing or not a valid date/time, the

Duration component will be used. This component should contain the length of the appointment in seconds.

Example:

An appointment is being scheduled for November 8, 2014 at 10:00 A.M. and is a 30 minute appointment.

|^^1800^20141108100000^20141108103000|

Outbound Messages

ACK – General Acknowledgment Message

ACK Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
MSA	Message Acknowledgment	Yes	No

Example ACK Message

The carriage return (*<cr>*) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^2.16.840.1.113883.3.4337.1486.####^HL7||^OtherSoftware.OIDroot^||20141122180827
||ACK^A04^ACK|b2905ecc79bd4d828c015895db558b61|P|2.6||||AL*<cr>*
MSA|AA|b72247f821034398923d6b9834b0f168*<cr>*

ADT – Patient Demographics Message

- Message structure: ADT_A01
- Events supported: A04 – Register a Patient and A08 – Update Patient Information

ADT Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
EVN	Event Type	Yes	No

Segment	Name	Req	Rep
PID	Patient Identification	Yes	No
PV1	Patient Visit	Yes	No
IN1	Insurance	No	Yes

Example ADT Message

The carriage return (*<cr>*) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^2.16.840.1.113883.3.4337.1486.####^HL7||^OtherSoftware.OIDroot^||20141122180827
||ADT^A08^ADT_A01|363d05d13b834613b5934bd005497581|P|2.6||||AL*<cr>*
EVN||20141122180827||01*<cr>*
PID|1|98765|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&HL7^PI
~98765^4^M11^&OtherSoftware.PatientOID&^PI|12345|Smith^John^L||19941204|M
||2106-3^White^CDCREC^^^^1~2186-5^NotHispanic^CDCREC^^^^1|421 N Main St^Apt 7^Salem
^OR^97302^^^^^^^^^^^^^Emergency Contact: Jane Smith\.br\Relationship: Wife
\.br\Phone: (503)555-1234||^PRN^PH^^^503^5551234~^PRN^CP^^^503^5556789
~^PRN^Internet^john@somewhere.com|^WPN^PH^^^503^3635432||M|||123456789*<cr>*
PV1|1|O|Clinic 1^^^&Dental Practice^^C||||2.16.840.1.113883.3.4337.1486.####.3.123^Abbott
^Sarah^L^DDS^DrAbbott~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott
||||Oregon State University^^^^^^S|||||||1*<cr>*
IN1|1|2.16.840.1.113883.3.4337.1486.####.7.14|CDOR1|ODS (Oregon Dental Service)
|601 SW 2nd Ave^^Portland^OR^97204||^WPN^PH^^^888^2172365|7567-15|ODSoftware
||Open Dental Software, Inc.|20140101|20141231||Category Percentage|Smith^John^L|SEL^Self
|19941204|421 N Main St^Apt 7^Salem^OR^97302|Y|CO|1|||||Y|||||||||123456789||||||
|||||D||123456789*<cr>*
IN1|2|2.16.840.1.113883.3.4337.1486.####.7.15|CB850|Blue Cross of Oregon – Regence
|PO Box 30805^^Salt Lake City^UT^84130||^WPN^PH^^^800^4527390|811657167|OrStHosp
||Oregon State Hospital||||PPO Percentage|Smith^Jane^W|SPO^Spouse|19941221
|421 N Main St^Apt 7^Salem^OR^97302|Y|CO|2|||||Y|||||||||987654321||||||||||||D
||987654321*<cr>*

DFT – Detailed Financial Transaction Message

- Message structure: DFT_P03
- Events supported: P03 – Post Detail Financial Transaction

DFT Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
EVN	Event Type	Yes	No
PID	Patient Identification	Yes	No
PV1	Patient Visit	Yes	No
FT1	Financial Transaction Information	No	Yes
IN1	Insurance (global across all FT1s)	No	Yes

Example DFT Message

The carriage return (*<cr>*) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^2.16.840.1.113883.3.4337.1486.####^HL7||^OtherSoftware.OIDroot^||20141122202350||DFT^P03^DFT_P03|5448104efb0c453f9620089b93b14a3e|P|2.6||||AL*<cr>*

EVN||20141122202350||01*<cr>*

PID|1|98765|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&HL7^PI~98765^4^M11^&OtherSoftware.PatientOID&^PI|12345|Smith^John^L||19941204|M||2106-3^White^CDCREC^^^^1~2186-5^NotHispanic^CDCREC^^^^1|421 N Main St^Apt 7^Salem^OR^97302^^^^^^^^^^^^^^Emergency Contact: Jane Smith\.br\Relationship: Wife\.br\Phone: (503)555-1234||^PRN^PH^^^503^5551234~^PRN^CP^^^503^5556789~^PRN^Internet^john@somewhere.com|^WPN^PH^^^503^3635432||M|||123456789*<cr>*

PV1|1|O|Clinic 1^Operatory 2^^&Dental Practice^^C||||2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott||||Oregon State University^^^^^^S|||||||||1|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.6&HL7^VN|||||||||||||||||||||||||20141122*<cr>*

FT1|1|46||20141122|20141122|CG|46|||1.0|64.00|64.00||||Clinic 1^Operatory 2^^&Dental Practice^^C|||524.5^DENTOFACIAL FUNCTIONAL ABNORMALITIES^I9C^^^^31~521.2^ABRASION OF TEETH^I9C^^^^31|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|64.00|||D0150^comprehensive oral evaluation - new or established patient^CD2^^^^2014^^Comprehensive Exam|&*<cr>*

FT1|2|48||20141122|20141122|CG|48|||1.0|150.00|150.00||||Clinic 1^Operatory 2^^&Dental Practice^^C||||2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|150.00|||D9972^external bleaching - per arch^CD2^^^^2014^^White U or L|&U*<cr>*

FT1|3|47||20141122|20141122|CG|47|||1.0|255.00|255.00|||||Clinic 1^Operatory 2^^
&Dental Practice^^C||||2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS
^DrAbbott~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott
|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|255.00|||D2394
^resin-based composite - four or more surfaces, posterior^CD2^^^^2014^
^Composite 4+ surf, Posterior|5&MODL***<cr>***
IN1|1|2.16.840.1.113883.3.4337.1486.####.7.14|CDOR1|ODS (Oregon Dental Service)
|601 SW 2nd Ave^^Portland^OR^97204||^WPN^PH^^^888^2172365|7567-15|ODSoftware
||Open Dental Software, Inc.|20140101|20141231||Category Percentage|Smith^John^L|SEL^Self
|19941204|421 N Main St^Apt 7^Salem^OR^97302|Y|CO|1|||||Y|||||||||123456789||||||
|||||D||123456789***<cr>***
IN1|2|2.16.840.1.113883.3.4337.1486.####.7.15|CB850|Blue Cross of Oregon – Regence
|PO Box 30805^^Salt Lake City^UT^84130||^WPN^PH^^^800^4527390|811657167|OrStHosp
||Oregon State Hospital||||PPO Percentage|Smith^Jane^W|SPO^Spouse|19941221
|421 N Main St^Apt 7^Salem^OR^97302|Y|CO|2|||||Y|||||||||987654321|||||||||||||D
||987654321***<cr>***

SIU – Schedule Information Unsolicited Message

- Message structure: SIU_S12
- Events supported: S12 – Notification of New Appointment Booking and S14 – Notification of Appointment Modification

SIU Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
SCH	Patient Visit	Yes	No
TQ1	Timing/Quantity	No	No
PID	Patient Identification	Yes	No
PV1	Appointment Information – Location Resource	No	No
RGS	Resource Group	Yes	No
AIL	Appointment Information – Location Resource	No	No
AIP	Appointment Information – Personnel Resource	No	Yes

Example SIU Message

The carriage return (***<cr>***) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^2.16.840.1.113883.3.4337.1486.####^HL7||^OtherSoftware.OIDroot^||20141122184557
||SIU^S14^SIU_S12|8876098635444fa299d6835a2c4f9bb5|P|2.6||||AL*<cr>*
SCH|67890^^OtherSoftware.AppointmentOID^|12345^^2.16.840.1.113883.3.4337.1486.####.6^HL7
|||Operatory 2||Patient asked to arrive 10 minutes early.\.br\Patient complaining of pain.|Normal
|||||||||Suzy FrontDesk||||Suzy FrontDesk|||||Booked*<cr>*
TQ1|1|1|||90^min&&ANS+|20141122103000|20141122120000*<cr>*
PID|1|98765|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&HL7^PI
~98765^4^M11^&OtherSoftware.PatientOID&^PI|12345|Smith^John^L||19941204|M
||2106-3^White^CDCREC^^^^1~2186-5^NotHispanic^CDCREC^^^^1|421 N Main St^Apt 7^Salem
^OR^97302^^^^^^^^^^^^^^Emergency Contact: Jane Smith\.br\Relationship: Wife
\.br\Phone: (503)555-1234||^PRN^PH^^^503^5551234~^PRN^CP^^^503^5556789
~^PRN^Internet^john@somewhere.com|^WPN^PH^^^503^3635432||M|||123456789*<cr>*
PV1|1|O|Clinic 1^Operatory 2^^&Dental Practice^^C||||2.16.840.1.113883.3.4337.1486.####.3.123
^Abbott^Sarah^L^DDS^DrAbbott~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS
^DrAbbott||||Oregon State University^^^^^^S|||||||1|12345^5^M11^&
2.16.840.1.113883.3.4337.1486.####.6&HL7^VN|||||||||||||||||||||||||20141122103000*<cr>*
RGS|1|U*<cr>*
AIL|1|U|Clinic 1^Operatory 2^^&Dental Practice^^C|||||||||^Appointment Confirmed*<cr>*
AIP|1|U|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|D|||||||||
^Appointment Confirmed*<cr>*
AIP|2|U|2.16.840.1.113883.3.4337.1486.####.3.456^Jones^Tina^G^^HYG1
~OtherSoftware.ProviderOID.654^Jones^Tina^G^^HYG1|H|||||||||^Appointment Confirmed*<cr>*

SRR – Schedule Request Response Message

- Message structure: SRR_S01
- Events supported: S03 – Request Appointment Modification and S04 – Request Appointment Cancellation

SRR Message Structure

Segment	Name	Req	Rep
MSH	Message Header	Yes	No
MSA	Message Acknowledgment	Yes	No
SCH	Schedule Activity Information	No	No
NTE	Notes and Comments	No	Yes
PID	Patient Identification	Yes	No
PV1	Patient Visit	No	No
RGS	Resource Group	Yes	No
AIL	Appointment Information – Location Resource	No	No
AIP	Appointment Information – Personnel Resource	No	Yes

Example SRR Message

The carriage return (*<cr>*) symbols are added for display purposes. New line characters are required to indicate the end of one segment and the beginning of the next. However, these are generally hidden characters, so they may not display when viewing the message text. The color highlighting has been added to key words and symbols for readability.

MSH|^~\&|^2.16.840.1.113883.3.4337.1486.####^HL7||^OtherSoftware.OIDroot^||20141122200048
||SRR^S03^SRR_S01|ca5ecf129e874d95b8ff97017a791d77|P|2.6||||AL*<cr>*
MSA|AA|9918b9971a97447c85c0220accef55fa*<cr>*
SCH|67890^^OtherSoftware.AppointmentOID^|12345^^2.16.840.1.113883.3.4337.1486.####.6^HL7
|||Operatory 2||Patient asked to arrive 10 minutes early.\.br\Patient complaining of pain.|Normal
|||||||||OpenDentalHL7||||OpenDentalHL7|||||Booked*<cr>*
NTE|1||Patient asked to arrive 10 minutes early.\.br\Patient complaining of pain.*<cr>*
PID|1|98765|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&HL7^PI
~98765^4^M11^&OtherSoftware.PatientOID&^PI|12345|Smith^John^L||19941204|M
||2106-3^White^CDCREC^^^^1~2186-5^NotHispanic^CDCREC^^^^1|421 N Main St^Apt 7^Salem
^OR^97302^^^^^^^^^^^^^Emergency Contact: Jane Smith\.br\Relationship: Wife
\.br\Phone: (503)555-1234||^PRN^PH^^^503^5551234~^PRN^CP^^^503^5556789
~^PRN^Internet^john@somewhere.com|^WPN^PH^^^503^3635432||M|||123456789*<cr>*
PV1|1|O|Clinic 1^Operatory 2^^&Dental Practice^^C||||2.16.840.1.113883.3.4337.1486.####.3.123
^Abbott^Sarah^L^DDS^DrAbbott~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS
^DrAbbott||||Oregon State University^^^^^^S|||||||1|12345^5^M11^&
2.16.840.1.113883.3.4337.1486.####.6&HL7^VN|||||||||||||||||||||||||||20141122103000*<cr>*
RGS|1|U*<cr>*
AIL|1|U|Clinic 1^Operatory 2^^&Dental Practice^^C|||||||||^Appointment Confirmed*<cr>*
AIP|1|U|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott
~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|D|||||||||
^Appointment Confirmed*<cr>*
AIP|2|U|2.16.840.1.113883.3.4337.1486.####.3.456^Jones^Tina^G^^HYG1
~OtherSoftware.ProviderOID.654^Jones^Tina^G^^HYG1|H|||||||||^Appointment Confirmed*<cr>*

Outbound Message Segments

AIL – Appointment Information – Location Resource Segment

This segment is used in outbound messages that refer to an appointment. The location resource is the clinic and operatory to which the appointment is assigned.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
AIL-1	Set ID	SI	Yes	No		static text "1"
AIL-2	Segment Action Code	ID	Yes	No	0206	segmentAction
AIL-3	Location Resource ID	PL	Yes	No		apt.location
AIL-4...11	Not used					N/A
AIL-12	Filler Status Code	CWE	No	No	0278	apt.confirmStatus

AIL-1 Set ID

This field contains a number that uniquely identifies the information represented by this segment in this transaction for the purposes of addition, change, or deletion. Since an appointment can only be assigned to one clinic and one operatory, there is always only 1 AIL segment and this field is always the number 1.

AIL-2 Segment Action Code

This field contains the action to be taken when updating or modifying information in this segment from a previously sent interface transaction. If this message is triggered by the creation of a new appointment, this field will contain an A for Add/Insert. If this message is triggered by an update to an existing appointment, the field will contain a U for Update. If this message is triggered by the deletion of an existing appointment, this field will contain a D for Delete, meaning this appointment is being removed from this clinic and operatory.

AIL-3 Location Resource ID

This field is a PL (Person Location) data type.

Components: *Point of Care^Room^^Facility^^Person Location Type*

Subcomponents for *Facility*: *Namespace*&*Universal ID*&*Universal ID Type*

This field is used to communicate the clinic, operatory, and practice names to which the appointment referenced by this message is assigned. The sixth component, *Person Location Type*, will always contain "C" for clinic. The *Point of Care* component will contain the clinic description for the appointment. If the clinic feature is not used or if the appointment is not assigned to a clinic, this component will be blank. The *Room* component will contain the operatory name to which the appointment is assigned. The *Facility* component will contain the practice title in the *Universal ID* subcomponent. The additional two subcomponents of the *Facility* component will be blank.

Example:

|Clinic 1^Operatory 2^^&Dental Practice^^C|

AIL-4 through AIL-11

Not used.

AIL-12 Filler Status Code

This field is used to communicate the confirmation status of the appointment. It will contain the exact confirmation status name set for this appointment.

Example:

     |^Appointment Confirmed|

AIP – Appointment Information – Personnel Resource Segment

This segment is used in outbound messages that refer to an appointment. The personnel resource is the dentist or hygienist assigned to the appointment. If there is both a dentist and a hygienist assigned to this appointment, this segment will repeat.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
AIP-1	Set ID	SI	Yes	No		sequenceNum
AIP-2	Segment Action Code	ID	No	No	0206	segmentAction
AIP-3	Personnel Resource ID	XCN	Yes	No		prov.provIdNameLFM or prov.provIdNameLFM_V2_3
AIP-4	Resource Type	CWE	No	No	0182	prov.provType
AIP-5…11	Not used					N/A
AIP-12	Filler Status Code	CWE	No	No	0278	apt.confirmStatus

AIP-1 Set ID

This field contains a number that uniquely identifies the information represented by this segment in this transaction for the purposes of addition, change, or deletion. Since an appointment can have both a dentist and a hygienist assigned, there can be two repetitions of this segment. Therefore, this field will contain a 1 for the dentist segment and a 2 for the hygienist segment.

AIP-2 Segment Action Code

This field contains the action to be taken when updating or modifying information in this segment from a previously sent interface transaction. If this message is triggered by the creation of a new appointment, this field will contain an A for Add/Insert. If this message is triggered by an update to an existing appointment, the field will contain a U for Update. If this message is triggered by the deletion of an existing appointment, this field will contain a D for Delete, meaning this appointment is being removed from this provider identified as the personnel resource in this segment.

AIP-3 Personnel Resource ID

prov.provIdNameLFM

This field will contain a unique identifier for the provider.

Components: *Identifier^Family Name^Given Name^Middle Name or Initial^Suffix^Prefix*

The first component, *Identifier*, is a composite ID using the office's root OID for a provider object and the ProvNum for the provider. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. A provider object would then be identified by "2.16.840.1.113883.3.4337.1486.####.3", the ".3" identifies this object as a provider object. If the ProvNum for the provider (the primary key of the provider table for the specified provider) was 12, the unique identifier for the provider would be "2.16.840.1.113883.3.4337.1486.####.3.12". This field is repeatable, and will also contain as repetitions any external identifiers stored for this provider. If an inbound message contained an identifier assigned by an external software for this provider, the external ID would be stored and linked to this provider. All identifiers stored for this provider will be sent as repetitions of this field.

The *Family Name*, *Given Name*, *Middle Name or Initial*, and *Suffix* components will contain the corresponding fields from the provider. If any of the values are not included, such as no middle name entered or no suffix for a hygienist, the component will be blank. The *Prefix* component is the abbreviation in Open Dental for the provider.

Example:

If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider with first name Sarah, last name Abbott, middle initial L, and suffix DDS was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott ~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|

prov.provIdNameLFM_V2_3

In version 2.3 the *Prefix* component is not populated with the provider's abbreviation. The remaining components are populated as described above.

Example:

If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider with first name Sarah, last name Abbott, middle initial L, and suffix DDS was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^

~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^|

AIP-4 Resource Type

This field contains an abbreviation indicating the type of provider referenced by this segment. This will be populated with "D" for dentist or "H" for hygienist.

AIP-5 through AIP-11

Not used.

AIP-12 Filler Status Code

This field is used to communicate the confirmation status of the appointment. It will contain the exact confirmation status name set for this appointment.

Example:

|^Appointment Confirmed|

EVN – Event Type Segment

This segment is only used in outbound ADT and ACK messages.

Seq	Field Name	Data Type	Req	Rep	Table #
EVN-1	Event Type Code	ID	No	No	0003
EVN-2	Recorded Date/Time	DTM	Yes	No	
EVN-3	Not used				
EVN-4	Event Reason Code	IS	No	No	0062

EVN-1 Event Type Code

This field is retained for backward compatibility by HL7, but it is not populated by Open Dental.

EVN-2 Recorded Date/Time

This will contain the date and time the action that caused the message to be created took place. The date and time will be in the format "yyyyMMddHHmmss".

Example:

For the date October 15, 2014 at 4:30:00 PM, the field would look like this:

|20141015163000|

EVN-3 Date/Time Planned Event

Not used.

EVN-4 Event Reason Code

This field contains the reason for this event. Suggested values are 01 – Patient request, 02 – Physician/health practitioner order, 03 – Census management, O – Other, and U – Unknown. Outbound ADT messages will contain the value 01.

FT1 – Financial Transaction Information Segment

This segment is used in outbound DFT messages to communicate the procedures which have been completed within Open Dental. The segment is repeatable, so there will be one segment for each procedure completed and sent in the message for the patient identified in the message.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
FT1-1	Set ID	SI	No	No		sequenceNum
FT1-2	Transaction ID	ST	No	No		proc.ProcNum
FT1-3	Not used					N/A
FT1-4	Transaction Date	DR	Yes	No		proc.procDateTime
FT1-5	Transaction Posting Date	DTM	No	No		proc.procDateTime
FT1-6	Transaction Type	IS	Yes	No	0017	static text "CG" (charge)
FT1-7	Transaction Code	CWE	Yes	No	0132	proc.ProcNum
FT1-8…9	Not used					N/A
FT1-10	Transaction Quantity	NM	No	No		static text "1.0"
FT1-11	Transaction Amount – Extended	CP	No	No		proc.ProcFee
FT1-12	Transaction Amount – Unit	CP	No	No		proc.ProcFee
FT1-13…15	Not used					N/A
FT1-16	Assigned Patient Location	PL	No	No		proc.location
FT1-17…18	Not used					N/A
FT1-19	Diagnosis Code – FT1	CWE	No	Yes	0051	proc.DiagnosticCode
FT1-20	Performed By Code	XCN	No	Yes	0084	prov.provIdNameLFM
FT1-21	Ordered By Code	XCN	No	Yes		prov.provIdNameLFM
FT1-22	Unit Cost	CP	No	No		proc.ProcFee
FT1-23…24	Not used					N/A
FT1-25	Procedure Code	CNE	No	No	0088	proccode.ProcCode
FT1-26	Procedure Code Modifier	CNE	No	Yes	0340	proc.toothSurfRange

FT1-1 Set ID

This field contains the number that identifies this transaction. For the first occurrence of the segment the *Set ID* will be 1. Each repetition will increment this value by one, so the second occurrence will be 2, etc.

FT1-2 Transaction ID

This field is a ST data type. It will contain a unique identifier for this procedure that can be used to uniquely identify this procedure among all procedures in this Open Dental database instance. This field corresponds to the primary key of the procedurelog table, ProcNum, and is therefore guaranteed to be unique to this procedure instance.

FT1-3 Transaction Batch ID

Not used.

FT1-4 Transaction Date

This field contains the date the procedure was completed and always matches *FT1-5 – Transaction Posting Date*. The date will be in the format "yyyyMMdd".

Example:

|20141015|

FT1-5 Transaction Posting Date

This field contains the date the procedure was completed and always matches *FT1-4 – Transaction Date*. The date will be in the format "yyyyMMdd".

Example:

|20141015|

FT1-6 Transaction Type

This field is an IS data type and contains the code that identifies the type of transaction for this segment. Open Dental will only include procedures in outbound FT1 segments, so this field will always contain the value "CG" for Charge.

FT1-7 Transaction Code

This field is a CWE data type and will contain the unique identifier for this procedure. This field will be populated with the same value as *FT1-2 – Transaction ID*. This field can be used to uniquely identify this procedure among all procedures in the Open Dental database instance. This field corresponds to the primary key of the procedurelog table, ProcNum, and is therefore guaranteed to be unique to this procedure instance.

FT1-8 through FT1-9

Not used.

FT1-10 Transaction Quantity

This field contains the quantity of items associated with this transaction. Since every FT1 segment will refer to exactly one procedure, this field will always contain the value "1.0".

FT1-11 Transaction Amount – Extended

This field is a CP data type and contains the amount of the transaction, independent of *FT1-10 – Transaction Quantity*. The format of this field is "##.##", with 2 digits following the decimal.

Example:

|64.00|

FT1-12 Transaction Amount – Unit

This field is a CP data type and contains the unit price (price of a single item) of the transaction. Since Open Dental always sends "1.0" for *FT1-10 – Transaction Quantity*, this value always matches the value in *FT1-11 – Transaction Amount – Extended*.

Example:

|64.00|

FT1-13 through FT1-15

Not used.

FT1-16 Assigned Patient Location

This field is a PL data type.

Components: *Point of Care^Room^^Facility^^Person Location Type*

Subcomponents for *Facility*: *Namespace&Universal ID&Universal ID Type*

This field contains the clinic, operatory, and practice title for the location at which this procedure was performed. The *Point of Care* component will contain the clinic description. If the clinic assigned to a procedure is invalid or is not set at the procedure level, than the patient's assigned clinic will be used. If both the procedure level clinic and the patient level clinic are not set, this field will not be populated for this segment.

If the clinic was set for either the procedure or the patient, and therefore this field is being populated, the *Person Location Type* component will contain the value "C" for clinic. If this procedure is attached to an appointment, the *Room* component will contain the operatory name stored in Open Dental. The *Facility* component will contain the practice title from Open Dental.

Example:

> |Clinic 1^Operatory 2^^Dental Practice^^C|

FT1-17 through FT1-18

Not used.

FT1-19 Diagnosis Code – FT1

This field is a CWE data type and is repeatable. A procedure in Open Dental can have up to 4 diagnostic codes. Each repetition of this field will hold one of the diagnostic codes set for the procedure. If no diagnostic codes are set, this field will not be populated.

Components: *Identifier^Text^Name of Coding System^^^^Coding System Version ID*

The diagnostic code is currently limited to ICD9-CM codes within Open Dental, so the *Name of Coding System* is always "I9C", the HL7 abbreviation for the ICD9-CM coding system. The *Coding System Version ID* is always "31", the version of the ICD9-CM codes within Open Dental. The *Identifier* is the ICD9-CM code and the *Text* component is the description for the code as specified in the ICD9 table in Open Dental.

Example:

> |524.5^DENTOFACIAL FUNCTIONAL ABNORMALITIES^I9C^^^^31
> ~521.2^ABRASION OF TEETH^I9C^^^^31|

FT1-20 Performed By Code

This field is a XCN data type and will contain a unique identifier for the provider on the procedure.

Components: *Identifier^Family Name^Given Name^Middle Name or Initial^Suffix^Prefix*

The first component, *Identifier*, is a composite ID using the office's root OID for a provider object and the ProvNum for the provider. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. A provider object would then be identified by "2.16.840.1.113883.3.4337.1486.####.3", the ".3" identifies this object as a provider object. If the ProvNum for the provider (the primary key of the provider table for the specified provider) was 12, the unique identifier for the provider would be "2.16.840.1.113883.3.4337.1486.####.3.12". This field is repeatable, and will also contain as repetitions any external identifiers stored for this provider. If an inbound message contained an identifier assigned by an external software for this provider, the external ID would be stored and linked to this provider. All identifiers stored for this provider will be sent as repetitions of this field.

The *Family Name*, *Given Name*, *Middle Name or Initial*, and *Suffix* components will contain the corresponding fields from the provider. If any of the values are not included, such as no middle name entered or no suffix for a hygienist, the component will be blank. The *Prefix* component is the abbreviation in Open Dental for the provider.

Example:

If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider with first name Sarah, last name Abbott, middle initial L, and suffix DDS was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott ~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|

FT1-21 Ordered By Code

Open Dental does not have a separate ordering provider. Therefore, the ordered by code will be the same as the performed by code. See *FT1-20 – Performed By Code*.

FT1-22 Unit Cost

This is a CP data type and contains the unit cost of the transaction (the cost of a single item).

Example:

|64.00|

FT1-23 through FT1-24

Not used.

FT1-25 Procedure Code

This field is a CNE data type.

Components: *Identifier^Text^Name of Coding System^^^^Coding System Version ID ^^Original Text*

The *Identifier* is the ProcCode stored in Open Dental. This is usually a CDT code, but Open Dental allows users to create custom codes, so this component will hold whatever code is set in Open Dental for the procedure. The *Text* component is the description set in Open Dental for this procedure code. The *Name of Coding System* is the HL7 abbreviation for the CDT code system, "CD2". The *Coding System Version ID* component is the version year of the coding

system being used, currently "2014". The *Original Text* component is the layman term set in Open Dental for this procedure.

Example:

>|D0150^comprehensive oral evaluation - new or established patient^CD2^^^^2014 ^^Comprehensive Exam|

FT1-26 Procedure Code Modifier

This field is used to send the treatment area of the procedure. This field is 1 component, but it will be composed of 2 subcomponents. Depending on the treatment area set in Open Dental, 0, 1, or both subcomponents may be populated. If the treatment area is set to "mouth" in Open Dental, both subcomponents will be blank (i.e. the field will just contain the subcomponent separator, typically &). If the treatment area is "tooth" or "tooth range", the first subcomponent will be the tooth number or tooth number range in a comma delimited list respectively with nothing after the subcomponent separator. If the treatment area is "surface", the field will consist of two subcomponents, the first subcomponent will hold the tooth number and the second subcomponent will hold the surface(s). If the treatment area is "quadrant", "sextant", or "arch", the first subcomponent will be blank and the second will hold the quadrant, sextant, or arch identifier.

All tooth numbers or other treatment area identifiers will use the tooth numbering system in use by the office and will populate using international tooth numbers if applicable.

Example:

>If the treatment area is "surface" and tooth number 5 is chosen with surfaces MODL, the field would look like this:

>|5&MODL|

>If the treatment area is "tooth range" and tooth numbers 4,5,6, and 7 are selected, the field would look like this:

>|4,5,6,7|

>If the treatment area is "sextant" and sextant 3 is selected, the field would look like this:

>|&3|

>If the treatment area is "mouth", the field would look like this:

>|&|

IN1 – Insurance Segment

This segment will contain the patient's currently attached insurance plan information which applies to all financial transactions contained in this message. The segment will repeat for each plan under which the patient is currently covered.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
IN1-1	Set ID	SI	Yes	No		sequenceNum
IN1-2	Insurance Plan ID	CWE	Yes	No	0072	insplan.planNum
IN1-3	Insurance Company ID	CX	Yes	Yes		carrier.ElectID
IN1-4	Insurance Company Name	XON	No	Yes		carrier.CarrierName
IN1-5	Insurance Company Address	XAD	No	Yes		carrier.addressCityStateZip
IN1-6	Not used					N/A
IN1-7	Insurance Company Phone Number	XTN	No	Yes		carrier.Phone
IN1-8	Group Number	ST	No	No		insplan.GroupNum
IN1-9	Group Name	XON	No	Yes		insplan.GroupName
IN1-10	Not used					N/A
IN1-11	Insured's Group Employer Name	XON	No	Yes		insplan.empName
IN1-12	Plan Effective Date	DT	No	No		inssub.DateEffective
IN1-13	Plan Expiration Date	DT	No	No		inssub.DateTerm
IN1-14	Not used					N/A
IN1-15	Plan Type	IS	No	No	0086	insplan.PlanType
IN1-16	Name Of Insured	XPN	No	Yes		inssub.subscriberName
IN1-17	Insured's Relationship To Patient	CWE	No	No	0063	patplan.subRelationToPat
IN1-18	Insured's Date Of Birth	DTM	No	No		inssub.subBirthdate
IN1-19	Insured's Address	XAD	No	Yes		inssub.subAddrCityStateZip
IN1-20	Assignment Of Benefits	IS	No	No	0135	inssub.AssignBen
IN1-21	Coordination Of Benefits	IS	No	No	0173	insplan.cob
IN1-22	Coordination Of Benefits Priority	ST	No	No		patplan.Ordinal
IN1-23…26	Not used					N/A
IN1-27	Release Information Code	IS	No	No	0093	inssub.ReleaseInfo
IN1-28…35	Not used					N/A
IN1-36	Policy Number	ST	No	No		patplan.policyNum
IN1-37…46	Not used					N/A
IN1-47	Coverage Type	IS	No	No	0309	insplan.coverageType
IN1-48	Not used					N/A
IN1-49	Insured's ID Number	CX	No	Yes		inssub.SubscriberID

IN1-1 Set ID

This field contains the number that identifies this transaction. For the patient's primary insurance, the sequence number will be 1. If the patient has multiple plans, e.g. secondary or tertiary insurance or medical insurance, this number will increment for each plan.

IN1-2 Insurance Plan ID

This field contains a value which uniquely identifies this insurance plan in this database instance. Open Dental will use a composite ID using the office's root OID (Object Identifier) for an insurance plan object and the PlanNum from the insplan table in the database. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. An insurance plan object would then be identified by "2.16.840.1.113883.3.4337.1486.####.7", the ".7" identifies this object as an insurance plan object. If the PlanNum for the insurance plan (the primary key of the insplan table for the specified insurance plan) was 14, the unique identifier for the insurance plan would be "2.16.840.1.113883.3.4337.1486.####.7.14".

IN1-3 Insurance Company ID

This field contains a unique identifier for the insurance company. Open Dental will send the carrier's electronic payer ID as stored in the database for the carrier attached to the insurance plan. The electronic payer ID for ODS (Oregon Dental Service), for example, is "CDOR1".

IN1-4 Insurance Company Name

This field contains the insurance carrier name as stored in Open Dental. For example "ODS (Oregon Dental Service)".

IN1-5 Insurance Company Address

This field is a XAD data type and contains the address stored in the database for this insurance carrier.

Components: *Street Address^Other Designation^City^State^Zip Code*

These fields come directly from the database. *Street Address* is the "Address" value in the carrier table. *Other Designation* is "Address2" in the carrier table. *City*, *State*, and *Zip Code* are filled from the corresponding columns in the carrier table.

Example:

   |601 SW 2nd Ave^^Portland^OR^97204|

IN1-6 Insurance Company Contacted Person

Not used.

IN1-7 Insurance Company Phone Number

This field is a XTN data type which contains the phone number of the insurance company.

Components: *^Telecommunication Use Code^Telecommunication Equipment Type^^^Area Code*

^Local Number

The *Telecommunication Use Code* will be WPN for Work Number. The *Telecommunication Equipment Type* will be PH for telephone. The *Area Code* and *Local Number* components will contain those portions of the insurance company phone number.

Example:

|^WPN^PH^^^888^2172365|

IN1-8 Group Number

This field will contain the group number for the patient's insurance plan as set in the insplan table GroupNum column.

IN1-9 Group Name

This field will contain the group name for the patient's insurance plan as set in the insplan table GroupName column.

IN1-10 Insured's Group Employer ID

Not used.

IN1-11 Insured's Group Employer Name

This field will contain the name of the insurance plan subscriber's employer as set in Open Dental. If there is no employer set for the plan, this field will be blank.

IN1-12 Plan Effective Date

This field will contain the effective start date of the insurance plan. The date will be in the format "yyyyMMdd". If the effective start date is not set, this field will be blank.

Example:

If the effective start date for the plan is January 1, 2014, then the field will look like this:

|20140101|

IN1-13 Plan Expiration Date

This field will contain the effective end date of the insurance plan. The date will be in the format "yyyyMMdd". If the effective end date is not set, this field will be blank.

Example:

> If the effective end date for the plan is June 30, 2014, then the field will look like this:

> |20140630|

IN1-14 Authorization Information

Not used.

IN1-15 Plan Type

This field will contain the plan type as stored in Open Dental. The possible values are "Category Percentage", "PPO Percentage", "Medicaid or Flat Copay", or "Capitation".

IN1-16 Name Of Insured

This field is a XPN data type and will contain the name of the subscriber to the insurance plan.

Components: *Family Name^Given Name^Middle Initial*

Example:

> |Smith^John^L|

IN1-17 Insured's Relationship To Patient

This field is a CWE data type.

Components: *Identifier^Text*

This field will contain the insurance plan subscriber's relationship to the patient identified in the PID segment for this message. In Open Dental, the patient's relationship to the subscriber is stored. Therefore, this has to be changed, in some cases, to the subscriber's relationship to the patient. For example, a child in Open Dental will have a relationship to subscriber value of child. But this field will need the subscriber's relationship to the patient and will be set to parent. The *Identifier* component will hold the abbreviation for the relationship as defined by the HL7 standards. The *Text* component will hold the description of the relationship. The HL7 suggested values with descriptions are in *Table 0036 - Relationship* with corresponding Open Dental database values.

Table 0036 – Relationship

Value	Description	Open Dental Relationship
SEL	Self	Self
SPO	Spouse	Spouse
DOM	Life partner	LifePartner
PAR	Parent	Child
EMR	Employer	Employee
GRD	Guardian	Dependent or HandicapDep
OTH	Other	SignifOther or InjuredPlaintiff

Example:

|SEL^Self|

IN1-18 Insured's Date Of Birth

This field is a DTM data type and will contain the subscriber's 8 digit birthdate in the format "yyyyMMdd".

Example:

If the insurance plan subscriber's birthdate is November 16, 1970, the field will look like this:

|19941204|

IN1-19 Insured's Address

This field is a XAD data type and will contain the insurance plan subscriber's address.

Components: *Street Address^Other Designation^City^State^Zip Code*

These fields come directly from the database. *Street Address* is the "Address" value in the patient table. *Other Designation* is "Address2" in the patient table. *City*, *State*, and *Zip Code* are filled from the corresponding columns in the patient table.

Example:

|421 N Main St^Apt 7^Salem^OR^97302|

IN1-20 Assignment Of Benefits

This field is an IS data type and is used to indicate whether the insurance benefits are to be paid to the provider directly or to the patient. A value of "Y" indicates that the insurance benefits are to be paid to the provider directly from the insurance carrier. A value of "N" indicates that the

insurance benefits will be paid to the patient and the patient will be responsible for paying the provider.

IN1-21 Coordination Of Benefits

This field is an IS data type and is used to indicate whether this insurance carrier is independently responsible for covering the procedures identified for this patient in this message, or if the insurance carrier is coordinating coverage with the patient's additional insurance carrier(s). A value of "CO" means the carrier is coordinating coverage, "IN" means the carrier is independently covering the procedures.

IN1-22 Coordination Of Benefits Priority

This field is a ST data type and indicates what priority this insurance carrier is considered when coordinating coverage with other carriers for the patient. Values are: 1, 2, 3, etc.

IN1-23 through IN1-26

Not used.

IN1-27 Release Information Code

This field is an IS data type indicating whether the provider can release information about the patient. Values are: Y or N.

IN1-28 through IN1-35

Not used.

IN1-36 Policy Number

This field is a ST data type and contains the individual policy number of the insured to uniquely identify this patient's plan. This field is filled with the Open Dental field "Optional Patient ID" in the edit insurance plan window. If that field is not populated in Open Dental, then this field will contain the Open Dental field "Subscriber ID".

IN1-37 through IN1-46

Not used.

IN1-47 Coverage Type

This field is an IS data type and will contain a "M" if the insurance plan is a medical plan, otherwise it will contain a "D" for dental.

IN1-48 Handicap

Not used.

IN1-49 Insured's ID Number

This field is a CX data type and will contain the Open Dental value for "Subscriber ID" entered in the edit insurance plan window.

MSA – Message Acknowledgment Segment

The MSA segment contains information regarding the acknowledgment of another message. Fields MSA-3 through MSA-8 are not required and not populated by Open Dental for outbound messages, so they are not defined here. Message acknowledgments are created for messages sent using the TCP/IP mode of transmission. Every message received and processed by Open Dental will trigger the creation and transmission of an outbound acknowledgment message if the interface is set to TCP/IP transmission mode.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
MSA-1	Acknowledgment Code	ID	Yes	No	0008	ackCode
MSA-2	Message Control ID	ST	Yes	No		messageControlId

MSA-1 Acknowledgment Code

This field contains an acknowledgment code from HL7 Table 0008. The code "AA" (Application Accept) means the message being acknowledged was received and processed successfully. If there is any issue with the message, either with the structure or contents of the message, Open Dental will populate this field with "AE" (Application Error). If "AE" is sent in this field, the message was not processed and appropriate action must be taken by the sending application to re-transmit or otherwise notify the user of the sending application. The failed message will be stored in the Open Dental database with a failed status, but old message text is deleted to prevent database bloating, so appropriate action should be taken in a timely fashion.

MSA-2 Message Control ID

This field contains the unique identifier that corresponds to the message control ID of the inbound message *MSH-9 Message Control ID* field that this message is acknowledging. This identifies the message Open Dental has either accepted, and therefore processed, or is rejecting, and therefore will need to be corrected and re-sent.

MSH – Message Header Segment

The MSH segment defines the intent, source, destination, and some specifics of the syntax of a message. The HL7 documentation refers to the first field separator ("|") as component 1. Since this is present in every segment, Open Dental does not count this as an actual field and the encoding characters are considered field 1. The field separator component of the MSH message is considered part of field 0.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
MSH-0	Field Separator	ST	Yes	No		N/A
MSH-1	Encoding Characters	ST	Yes	No		separators^~\\&
MSH-2	Sending Application	HD	No	No	0361	sendingApp
MSH-3	Not used	HD	No	No	0362	N/A
MSH-4	Receiving Application	HD	No	No	0361	static text set in definition
MSH-5	Not used	HD	No	No	0362	N/A
MSH-6	Date/Time of Message	DTM	Yes	No		dateTime.Now
MSH-7	Not used					N/A
MSH-8	Message Type	MSG	Yes	No		messageType
MSH-9	Message Control ID	ST	Yes	No		messageControlId
MSH-10	Processing ID	PT	Yes	No		static text "P"
MSH-11	Version ID	VID	Yes	No		static text "2.6"
MSH-12…14	Not used					N/A
MSH-15	Application Acknowledgment Type	ID	No	No		N/A

MSH-0 Field Separator

The pipe (|) after the message header abbreviation (MSH) is considered field 1 of the MSH segment. "This field contains the separator between the segment ID and the first real field, MSH-1 - Encoding Characters. As such it serves as the separator and defines the character to be used as a separator for the rest of the message. Recommended value is |, (ASCII 124)." (Health Level Seven, Version 2.6, Section 2.14.9) The pipe (|) is the required character for the field separator in Open Dental HL7 messages.

MSH-1 Encoding Characters

This field contains the four characters used as delimiters in constructing the HL7 message. The order of the characters is: the component separator, repetition separator, escape character, and subcomponent separator. These characters can be customized in the HL7 definition in Open Dental, but it is best practice to use the HL7 recommended values, which are the default values for the definition. The recommended values, in order, are ^~\& (ASCII 94, 126, 92, and 38, respectively).

MSH-2 Sending Application

This field uniquely identifies the sending application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise.

Components: *Namespace ID^Universal ID^Universal ID Type*

Open Dental will leave the *Namespace ID* component blank and fill the *Universal ID* component with the office's root OID (Object Identifier). An example root OID for an office would be

"2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. The *Universal ID Type* for this OID is "HL7" since Open Dental uses the HL7 registered root to assign unique identifiers to our users. If the root OID is not set in the Open Dental database, this field will simply be "OD".

Example:

|^2.16.840.1.113883.3.4337.1486.####^HL7|

MSH-3 Sending Facility

Not used.

MSH-4 Receiving Application

This field uniquely identifies the receiving application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise.

Components: *Namespace ID^Universal ID^Universal ID Type*

This field is a static text field and is left to the user to set when enabling and configuring the HL7 definition. It is recommended that the user conforms to the structure of an HD data type, but whatever is entered into the definition for this field will be placed in any outbound message MSH-4 field.

MSH-5 Receiving Facility

Not used.

MSH-6 Date/Time of Message

This field contains the date and time Open Dental created this message. Open Dental will populate this field with the current date and time of the HL7 server in the format "yyyyMMddHHmmss".

Example:

If the message was created on November 19, 2014 at 4:28:32 PM, the field would look like this:

|20141119162832|

MSH-7 Security

Not used.

MSH-8 Message Type

This field is a MSG data type.

Components: *Message Code^Trigger Event^Message Structure*

All three of these components come from HL7 defined tables. The *Message Code* component comes from HL7 Table 0076 – Message Type. For outbound messages, the currently supported *Message Code* values are ACK, ADT, DFT, SIU, and SRR.

The *Trigger Event* component comes from HL7 Table 0003 – Event Type. The supported event types are specific to each message type. For ADT messages, the supported event types are A04 – Register a Patient and A08 – Update Patient Information. For DFT messages the supported event type is P03 – Post Detail Financial Transaction. For SIU messages the supported event types are S12 – Notification of New Appointment Booking, S13 – Notification of Appointment Rescheduling, S14 – Notification of Appointment Modification, S15 – Notification of Appointment Cancellation, and S17 – Notification of Appointment Deletion. For SRR messages the supported event types are S03 – Request Appointment Modification and S04 – Request Appointment Cancellation. The ACK event type will be equal to the event type of the message being acknowledged and can therefore contain any of the event types of supported outbound messages.

The *Message Structure* component comes from HL7 Table 0345 – Message Structure. The message structure used for all outbound ADT messages is ADT_A01. For outbound DFT messages, the structure is DFT_P03. For outbound SIU messages, the structure is SIU_S12. For outbound SRR messages, the structure is SRR_S01. For an ACK message, this component will simply contain ACK.

Examples:

|ADT^A04^ADT_A01|

|SIU^S14^SIU_S12|

|ACK^A04^ACK|

Alternate Field Definition

An alternate field definition for component MSH-8 was implemented beginning with versions 16.3.42.0 and 16.4.11.0 of Open Dental. This alternate field excludes the *Message Structure* component. With this field definition selected for MSH-8, the field will be simplified to the following.

Components: *Message Code^Trigger Event*

The two components above will be populated as in the original field definition. The Open Dental Field Name for this component is *messageTypeNoStruct* which must be set manually within the MSH segment definition to enable.

Example:

|ADT^A04|

|SIU^S14|

MSH-9 Message Control ID

This field contains a number or other identifier that uniquely identifies the message. Open Dental will assign outbound messages globally unique identifiers and if using TCP/IP mode, this value is what Open Dental will expect an acknowledgment to contain in *MSA-2 – Message Control ID*.

MSH-10 Processing ID

This field is a PT data type.

Components: *Processing ID^Processing Mode*

This is a static value set in the HL7 definition in Open Dental. The standard values for this field are P (Production), T (Training), or D (Debugging).

MSH-11 Version ID

Open Dental currently uses HL7 version 2.6. This field identifies the message as conforming to the 2.6 standards. This value is static text and is stored in the HL7 definition in Open Dental, but the recommended value is "2.6".

MSH-12 through MSH-14

Not used.

MSH-15 Application Acknowledgment Type

This field will contain AL for outbound messages, meaning Open Dental requires an acknowledgment for every message that is sent. The acknowledgment means the message was processed successfully by the receiving application. If using the TCP/IP HL7 mode, all outbound messages will require an inbound acknowledgment notifying Open Dental that the message was processed correctly. If an acknowledgment is not received, Open Dental will assume the message was not received/processed and attempt to resend the message.

NTE – Notes and Comments Segment

This segment is only used in outbound SRR messages and will contain the information from the Open Dental "Appointment Note" field.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
NTE-1	Set ID	SI	No	No	0287	N/A
NTE-2	Not used					N/A
NTE-3	Comment	FT	No	Yes		apt.Note

NTE-1 Set ID

This field will always contain "1" since Open Dental will always send only one NTE segment in any outbound message.

NTE-2 Source of Comment

Not used.

NTE-3 Comment

This field is a FT data type. The field will contain the "Appointment Note" field data in the Open Dental database for the appointment referenced by this SRR message. If there are line breaks in the "Appointment Note" field, these will be represented by the sequence of characters "\.br\". The "\" is the escape character set in the definition. The default value for the escape character is "\", but, while it's not recommended, this can be customized.

Example:

|Patient asked to arrive 10 minutes early.\.br\Patient complaining of pain.|

PID – Patient Identification Segment

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
PID-1	Set ID	SI	No	No		N/A
PID-2	Patient ID	CX	No	No		pat.ChartNumber
PID-3	Patient Identifier List	CX	Yes	Yes		patientIds
PID-4	Alternate Patient ID	CX	No	Yes		pat.PatNum
PID-5	Patient Name	XPN	Yes	Yes		pat.nameLFM
PID-6	Not used					N/A
PID-7	Date/Time of Birth	DTM	No	No		pat.birthdateTime
PID-8	Administrative Sex	IS	No	No	0001	pat.Gender
PID-9	Not used					N/A

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
PID-10	Race	CWE	No	Yes	0005	pat.Race or pat.Race_V2_3
PID-11	Patient Address	XAD	No	Yes		pat.addressCityStateZip
PID-12	Not used					N/A
PID-13	Phone Number – Home	XTN	No	Yes		pat.HmPhone or pat.HmPhone_V2_3
PID-14	Phone Number – Business	XTN	No	Yes		pat.WkPhone
PID-15	Not used					N/A
PID-16	Marital Status	CWE	No	No	0002	pat.Position
PID-17…18	Not used					N/A
PID-19	Patient SSN	ST	No	No		pat.SSN

PID-1 Set ID

This field contains the number that identifies this transaction. For the first occurrence of the segment, the sequence number shall be one, for the second occurrence, the sequence number shall be two, etc. Open Dental only sends one PID segment per message, so this field shall always contain the number 1.

PID-2 Patient ID

This field has been retained for backward compatibility. If included in the definition, it will contain the Open Dental Chart Number. While the field is defined as a CX data type, it has previously been used as a ST (string) data type. It will therefore contain the chart number as the only component with no separators. The preferred method for identifying the patient to which this message refers is to use *PID-3 Patient Identifier List* which will contain all identifiers for the patient that are stored in Open Dental.

PID-3 Patient Identifier List

This field is the preferred method of communicating the patient identifiers via HL7. This field is repeatable, so a list of IDs used to uniquely identify a patient can be transmitted. The CX data type has the following components and subcomponents. (The HL7 specifications for a CX data type include additional components and subcomponents, but only the elements necessary for Open Dental are shown.)

Note: The ^ (caret) and & (ampersand) characters are the component separator and subcomponent separator respectively. These are the default delimiters and are defined in the *MSH-1 - Encoding Characters* field. While they can be defined differently, the default values of ^ and & are recommended.

Components: *ID Number^ID Check Digit^Check Digit Scheme^Assigning Authority^ID Type Code*

Subcomponents for *Assigning Authority*: *Namespace ID&Universal ID&Universal ID Type*

The *ID Number* component is the patient identifier assigned by the entity identified by the *Assigning Authority* component that uniquely identifies a patient within that assigning authority database. The *ID Check Digit* component is used to test the validity of the *ID Number*. For outbound messages, Open Dental will use the Mod 11 algorithm (M11) provided by the HL7 organization. The *Check Digit Scheme* component identifies the algorithm used. The *ID Check Digit* will contain the value calculated using the Mod 11 algorithm and the *ID Number* for this repetition of the patient ID.

The *Assigning* Authority component has three subcomponents, but the *Namespace ID* subcomponent is not populated for outbound messages. The *Universal ID* subcomponent will be the OID (Object Identifier) set in Open Dental for a patient object. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. A patient object would then be identified by "2.16.840.1.113883.3.4337.1486.####.2", the ".2" identifies this object as a patient object. This is used to identify the *ID Number* as belonging to the Open Dental database or another software database. If this is an Open Dental patient identifier, the *Universal ID Type* subcomponent will be "HL7", since Open Dental assigns office root OID's based on the HL7 registered ID.

All patient identifiers sent from Open Dental will have the *ID Type Code* of PI. HL7 Table 0203 – Identifier Type defines PI as "Patient internal identifier - A number that is unique to a patient within an Assigning Authority."

This field will be repeated by Open Dental for every patient identifier that has been received and linked to this patient from inbound messages. For external ID's, the *Universal ID Type* subcomponent of the *Assigning Authority* will be blank. The *ID Check Digit* and the *Check Digit Scheme* may not be populated for external ID's if, for example, the external *ID Number* is alphanumeric and contains alphabet characters. The M11 check digit scheme requires the characters to be numbers only.

See the inbound *PID-3 – Patient Identifier List* section for more information about how to retrieve the OID's for your office and how Open Dental calculates the M11 check digit.

Example:

If the patient ID (PatNum) in Open Dental was 12345, the M11 check digit scheme was used, and the patient OID in the explanation above was used for one repetition. And an external software had sent an ID of 98765 for this patient, the M11 check digit scheme was used again, and the *Assigning Authority - Universal ID* received was "OtherSoftware.PatientOID". (The repetition separator used is ~, which is the default delimiter. It is set in the HL7 definition in Open Dental, but ~ is the recommended value.) The field would look like this:

|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.2&^PI~98765^4^M11^ &OtherSoftware.PatientOID&^PI|

PID-4 Alternate Patient ID

This field has been retained for backward compatibility. If included in the HL7 definition, it will contain the Open Dental patient number (pat.PatNum). While the field is defined as a CX data type, it has previously been used as a ST (string) data type. It will therefore only contain the Open Dental PatNum with no additional components or separators. *PID-3 – Patient Identifier List* is the preferred method of sending all patient identifiers.

PID-5 Patient Name

This field is an XPN data type and will contain the first name, last name, and middle initial of the patient.

Components: *Family Name^Given Name^Middle Name or Initial*

Example:

The patient's first name is John, last name is Smith, and middle initial is L.

|Smith^John^L|

PID-6 Mother's Maiden Name

Not used.

PID-7 Date/Time of Birth

This field is a DTM data type. The format is "yyyyMMdd".

Example:

If the patient's date of birth was December 4, 1994, the field with the required precision would be:

|19941204|

This field will contain the gender of the patient. The value will be "F" for female, "M" for male, or "U" for unknown.

Not used.

pat.Race

This field is a CWE data type and will contain the code and code system for identifying the patient's race.

Components: *Identifier^Text^Name of Coding System^^^^Coding System Version ID*

This field is repeatable, multiple races are supported by Open Dental, and the repetition character is used as the delimiter. The *Name of Coding System* will be "CDCREC" and the *Coding System Version ID* is "1". The *Identifier* will be a CDCREC code for the race from the list of supported races in Open Dental (See *Table 0005 – Race*). The *Text* component is the text description of the race.

Example:

If a patient was White and Not Hispanic or Latino, the race field would look like this:

|2106-3^White^CDCREC^^^^1~2186-5^Not Hispanic or Latino^CDCREC^^^^1|

pat.Race_V2_3

In version 2.3 the *Name of Coding System* and *Coding System Version ID* are not sent.

Example:

If a patient was White and Not Hispanic or Latino, the race field would look like this:

|2106-3^White~2186-5^Not Hispanic or Latino|

Table 0005 - Race

CDCREC Code	Description
1002-5	American Indian or Alaskan Native
2028-9	Asian
2054-5	Black or African American
2076-8	Native Hawaiian or Other Pacific Islander
2106-3	White
2131-1	Other Race
2135-2	Hispanic or Latino
2186-5	Not Hispanic or Latino

PID-11 Patient Address

This field is a XAD data type.

Components: *Street Address^Address 2^City^State^Zip^^^^^^^^^^^^^^Comment*

Every component is optional and if a field in the Open Dental database is not filled, the corresponding component in the message will be blank. The *Comment* field is used to send the "Address and Phone Notes" field in Open Dental. If this field is part of the definition, whatever is in that Open Dental field will be present in the message.

The *Comment* component will contain any line breaks that the Open Dental field contains. The sequence of characters to identify a line break are "\.br\". (The \ is the default escape character, but can be customized in the HL7 definition. \ is the recommended value.)

Example:

> |421 N Main St^Apt 7^Salem^OR^97302^^^^^^^^^^^^^^Emergency Contact: Jane Smith \.br\Relationship: Wife\.br\Phone: (503)555-1234|

PID-12 County Code

Not used.

PID-13 Phone Number – Home

pat.HmPhone

This field is a XTN data type and is repeatable. The repetitions are used to send the Home Phone, Wireless Phone, and E-mail address for the patient.

Components: *^Telecommunication Use Code^Telecommunication Equipment Type ^Communication Address^^Area Code^Local Number*

The *Telecommunication Use Code* will be PRN for Primary Residence Number. The *Telecommunication Equipment Type* is used to identify which field in Open Dental the number or address corresponds to. Allowed values are "PH" for Home Phone, "CP" for Wireless Phone, or "Internet" for E-mail address. If "Internet" is in the *Telecommunication Equipment* component, the *Communication Address* component will be the patient's E-mail address. Otherwise, the *Area Code* and *Local Number* components are used together as the patient's Home or Wireless Phone number.

Example:

If a patient's home phone number is (503) 555-1234, wireless phone is (503) 555-6789, and E-mail address is john@somewhere.com, the field would look like this:

|^PRN^PH^^^503^5551234~^PRN^Internet^john@somewhere.com ~^PRN^CP^^^503^5556789|

pat.HmPhone_V2_3

The version 2.3 structure for E-mail addresses is slightly different. The *Telecommunication Use Code* will be "NET" and the *Telecommunication Equipment Type* will be empty.

Example:

If a patient's home phone number is (503) 555-1234, wireless phone is (503) 555-6789, and E-mail address is john@somewhere.com, the field would look like this:

|^PRN^PH^^^503^5551234~^NET^^john@somewhere.com~^PRN^CP^^^503^5556789|

PID-14 Phone Number – Business

This field is a XTN data type.

Components: *^Telecommunication Use Code^Telecommunication Equipment Type^^^Area Code ^Local Number*

This field is used to send the Work Phone, so the *Telecommunication Use Code* is WPN for Work Number. The *Telecommunication Equipment Type* will be PH. The *Area Code* and *Local Number* components are used together as the patient's Work Phone stored within the Open Dental database.

Example:

If a patient's work phone number is (503)363-5432, the field would look like this:

|^WPN^PH^^^503^3635432|

PID-15 Primary Language

Not used.

PID-16 Marital Status

This field is a CWE data type. All components are optional according to the HL7 documentation. Open Dental will only use the first component, *Identifier*, for sending the Open Dental "Position" value. Values are mapped in *Table 0002 – Marital Status*.

Table 0002 – Marital Status

"Position" in Open Dental	Value
Single	S
Married	M
Divorced	D
Widowed	W

PID-17 through PID-18

Not used.

PID-19 Patient SSN

This field is a ST data type. The value in this field will be the Social Security Number field in Open Dental. The field can be sent with or without dashes, exactly as it is entered and stored in Open Dental.

Examples:

|123456789|

|987-65-4321|

PV1 – Patient Visit Segment

Fields PV1-20 through PV1-52 are not used by Open Dental for outbound messages, so they are not defined here.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
PV1-1	Set ID	SI	No	No		N/A
PV1-2	Patient Class	IS	Yes	No	0004	static text "O"
PV1-3	Assigned Patient Location	PL	No	No		pat.location or pat.location_V2_3 or apt.location

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
PV1-4…6	Not used					N/A
PV1-7	Attending Doctor	XCN	No	Yes	0010	prov.provIdNameLFM or prov.provIdNameLFM_V2_3
PV1-8…10	Not used					N/A
PV1-11	Temporary Location	PL	No	No		pat.site
PV1-12…17	Not used					N/A
PV1-18	Patient Type	IS	No	No	0018	pat.Urgency
PV1-19	Visit Number	CX	No	No		apt.AptNum
PV1-20…43	Not used					N/A
PV1-44	Admit Date/Time	DTM	No	No		apt.AptDateTime or proc.ProcDateTime

PV1-1 Set ID

This field contains the number that identifies this transaction. Since there is only one occurrence of the PV1 segment, this is always 1.

PV1-2 Patient Class

For outbound messages this field is populated with "O" for Outpatient.

PV1-3 Assigned Patient Location

pat.location or apt.location

This field is a PL (Person Location) data type. If this message is an outbound ADT message, this will be the Open Dental field name pat.Location. If this message is an outbound DFT, SIU, or SRR message, this will be the Open Dental field name apt.Location and will reference a specific appointment.

Components: *Point of Care^Room^^Facility^^Person Location Type*

Subcomponents for *Facility*: *Namespace&Universal ID&Universal ID Type*

The *Point of Care* component will contain the patient's assigned clinic description. If this is a message that references a specific appointment (i.e. a DFT, SIU, or SRR message), the *Room* component will contain the operatory name, otherwise it will not be populated. The *Facility* component will contain the practice title in the *Universal ID* subcomponent. The *Person Location Type* will be "C" for clinic.

Example:

|Clinic 1^Operatory 2^^&Dental Practice^^C|

pat.location_V2_3

In version 2.3 the *Point of Care* component will not be populated, and the *Room* component will be populated with the clinic description.

Example:

|^Clinic 1^^&Dental Practice^^C|

PV1-4 through PV1-6

Not used.

PV1-7 Attending Doctor

prov.provIdNameLFM

This field is a XCN data type and will contain a unique identifier for the provider.

Components: *Identifier^Family Name^Given Name^Middle Name or Initial^Suffix^Prefix*

The first component, *Identifier*, is a composite ID using the office's root OID for a provider object and the ProvNum for the provider. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. A provider object would then be identified by "2.16.840.1.113883.3.4337.1486.####.3", the ".3" identifies this object as a provider object. If the ProvNum for the provider (the primary key of the provider table for the specified provider) was 12, the unique identifier for the provider would be "2.16.840.1.113883.3.4337.1486.####.3.12". This field is repeatable, and will also contain as repetitions any external identifiers stored for this provider. If an inbound message contained an identifier assigned by an external software for this provider, the external ID would be stored and linked to this provider. All identifiers stored for this provider will be sent as repetitions of this field.

The *Family Name*, *Given Name*, *Middle Name or Initial*, and *Suffix* components will contain the corresponding fields from the provider. If any of the values are not included, such as no middle name entered or no suffix for a hygienist, the component will be blank. The *Prefix* component is the abbreviation in Open Dental for the provider.

Example:

If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider with first name Sarah, last name Abbott, middle initial L, and suffix DDS was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object

of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^DrAbbott ~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^DrAbbott|

prov.provIdNameLFM_V2_3

In version 2.3 the *Prefix* component is not populated with the provider's abbreviation. The remaining components are populated as described above.

Example:

If the Open Dental OID root for a provider object was "2.16.840.1.113883.3.4337.1486.####.3" and the provider with first name Sarah, last name Abbott, middle initial L, and suffix DDS was assigned the ProvNum 123 and given the abbreviation DrAbbott, and an external software had a unique OID root for a provider object of "OtherSoftware.ProviderOID" and had assigned the provider the ID of 987, the field would look like this:

|2.16.840.1.113883.3.4337.1486.####.3.123^Abbott^Sarah^L^DDS^ ~OtherSoftware.ProviderOID.987^Abbott^Sarah^L^DDS^|

PV1-8 through PV1-10

Not used.

PV1-11 Temporary Location

This field is a PL (Person Location) data type. It is used to send the "Site (or Grade School)" field in Open Dental.

Components: *Point of Care^^^^^Person Location Type*

The *Person Location Type* component will be "S" for site and the *Point of Care* component will be the site description in the Open Dental database.

Example:

If a site has the description "Oregon State University", the field would look like this:

|Oregon State University^^^^^S|

PV1-12 through PV1-17

Not used.

PV1-18 Patient Type

This field is an IS data type. It is used to send the "Treatment Urgency" value in Open Dental. This is used primarily for public health screening. The values sent are "0" for Unknown, "1" for No Problems, "2" for Needs Care, or "3" for Urgent.

PV1-19 Visit Number

This field is a CX data type and will uniquely identify the appointment referenced by this message. For outbound ADT messages, this field will not be used.

Components: *ID Number^Identifier Check Digit^Check Digit Scheme^Assigning Authority
             ^Identifier Type Code*

Subcomponents for *Assigning Authority*: *Namespace ID&Universal ID^Universal ID Type*

The *ID Number* is the Open Dental assigned AptNum for the appointment. The *Identifier Check Digit* component is a number calculated by applying an algorithm to the *ID Number* component which may be used to test the validity of the number. Open Dental uses the Mod 11 (M11) check digit scheme for outbound messages, therefore the *Check Digit Scheme* component will contain "M11". (See *PID-3 – Patient Identifier List* in the inbound message segments section for more details about the Mod 11 check digit scheme.)

The *Assigning* Authority component has three subcomponents, but the *Namespace ID* subcomponent is not populated for outbound messages. The *Universal ID* subcomponent will be the OID (Object Identifier) set in Open Dental for an appointment object. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. An appointment object would then be identified by "2.16.840.1.113883.3.4337.1486.####.6", the ".6" identifies this object as an appointment object. This is used to identify the *ID Number* as belonging to the specific Open Dental database instance appointment table. The *Universal ID Type* subcomponent will be "HL7", since Open Dental assigns office root OID's based on the HL7 registered ID.

All appointment identifiers sent from Open Dental will have the *ID Type Code* of VN for Visit Number.

Example:

if an appointment has the AptNum of 12345, the M11 check digit scheme is used, and the assigning authority universal ID described above is used, the field will look like this:

|12345^5^M11^&2.16.840.1.113883.3.4337.1486.####.6&HL7^VN|

PV1-20 through PV1-43

Not used.

PV1-44 Admit Date/Time

This field is a DTM data type and will be in the format "yyyyMMddHHmmss". For outbound ADT messages, this field will not be used. For outbound DFT messages, this will be the Open Dental field name proc.procDateTime and will be the procedure date on the procedures referenced in the FT1 segment(s). For outbound SIU and SRR messages, this will be the Open Dental field apt.AptDateTime and will be the start date and time of the appointment referenced.

RGS – Resource Group Segment

This segment contains information about an appointment referenced in an outbound SIU or SRR message.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
RGS-1	Set ID	SI	Yes	No		static text "1"
RGS-2	Segment Action Code	ID	No	No	0206	segmentAction

RGS-1 Set ID

This field contains a number that uniquely identifies the information represented by this segment in this transaction for the purpose of addition, change, or deletion. Open Dental will only ever send one resource group in any outbound SIU or SRR message, therefore this will always be "1".

RGS-2 Segment Action Code

This field contains the action to be taken when updating or modifying information in this segment from previously sent interface transactions. For an SIU message triggered by the creation of a new appointment, an S12 – Create Appointment event type message will be generated and this will be "A" for add/insert. For an SIU message triggered by an update to an existing appointment, an S13 – Appointment Rescheduling, an S14 – Appointment Modification, or an S15 – Appointment Cancellation event type message will be generated and this field will be "U" for update. For an SIU message triggered by the deletion of an appointment, an S17 – Appointment Deletion event type message will be generated and this will be "D" for delete.

All outbound SRR messages generated by Open Dental are in response to inbound SRM messages and are for updating existing appointments. Therefore, this field will always contain a "U" for outbound SRR messages.

SCH – Schedule Activity Information Segment

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
SCH-1	Placer Appointment ID	EI	No	No		apt.externalAptID
SCH-2	Filler Appointment ID	EI	Yes	No		apt.AptNum
SCH-3…4	Not used					N/A
SCH-5	Schedule ID	CWE	No	No		apt.operatory
SCH-6	Not used					N/A
SCH-7	Appointment Reason	CWE	No	No	0276	apt.Note
SCH-8	Appointment Type	CWE	No	No	0277	apt.type
SCH-9…15	Not used					N/A
SCH-16	Filler Contact Person	XCN	Yes	Yes		apt.userOD
SCH-17…19	Not used					N/A
SCH-20	Entered by Person	XCN	Yes	Yes		apt.userOD
SCH-21…24	Not used					N/A
SCH-25	Filler Status Code	CWE	No	NO	0278	apt.aptStatus

SCH-1 Placer Appointment ID

This field contains the placer application's permanent identifier for the appointment. This field will contain the external software identifier if this was previously received in an inbound message. Inbound SRM messages will have an ID that is stored in the Open Dental database and linked to the Open Dental AptNum for the created appointment. This identifier is the external software ID for this appointment and shall be unique over time and across all patients. (See *ARQ-1 – Placer Appointment ID* for inbound SRM messages.)

Components: *Entity Identifier^^Universal ID^*

Only two of the components for this EI data type are populated for outbound messages and come from the inbound SRM message ARQ segment. The *Entity Identifier* component will hold the unique appointment ID. The *Universal ID* component identifies the *Entity Identifier* as referring to an appointment object.

Example:

If the placer application had a *Universal ID* of OtherSoftware.AppointmentOID and had assigned the appointment the *Entity Identifier* 67890, the field would be:

|67890^^OtherSoftware.AppointmentOID^|

SCH-2 Filler Appointment ID

This field contains the filler application's permanent identifier for the appointment.

Components: *Entity Identifier^^Universal ID^Universal ID Type*

The *Entity Identifier* will contain the Open Dental AptNum for the appointment referenced. The *Universal ID* component will hold the OID (Object Identifier) set in Open Dental for an appointment object. An example root OID for an office would be "2.16.840.1.113883.3.4337.1486.####", where "####" is a unique number assigned by Open Dental for that database. An appointment object would then be identified by "2.16.840.1.113883.3.4337.1486.####.6", the ".6" identifies this object as an appointment object. This is used to identify the *ID Number* as belonging to the specific Open Dental database instance appointment table. The *Universal ID Type* subcomponent will be "HL7", since Open Dental assigns office root OID's based on the HL7 registered ID.

Example:

If an appointment had the AptNum of 12345 and the office had been assigned the OID for an appointment object as described above, the field would look like this:

|12345^^2.16.840.1.113883.3.4337.1486.####.6^HL7|

SCH-3 through SCH-4

Not used.

SCH-5 Schedule ID

This field will contain the operatory name for the appointment as stored in Open Dental.

SCH-6 Event Reason

Not used.

SCH-7 Appointment Reason

This field contains the information stored in the "Appointment Note" field in Open Dental for this appointment. If there are line breaks in the "Appointment Note" field, these will be represented by the sequence of characters "\.br\". The "\" is the escape character set in the definition. The default value for the escape character is "\", but, while it's not recommended, this can be customized.

Example:

|Patient asked to arrive 10 minutes early.\.br\Patient complaining of pain.|

SCH-8 Appointment Type

This field contains an identifier for the type of appointment referenced by this message. Open Dental will send "Complete" if this message refers to a completed appointment. Otherwise this field will contain "Normal".

SCH-9 through SCH-15

Not used.

SCH-16 Filler Contact Person

This field will contain the username for the Open Dental user logged in when the appointment was created. If this SCH segment is in an SRR message, it is a response to an inbound SRM message is created by the Open Dental HL7 service. Since the service is creating the message instead of an action taken by the user, this field will contain "OpenDentalHL7" for all outbound SRR messages. If the message is an SIU message and created due to an action taken by a user logged into Open Dental, this field will contain the user's username as entered in Open Dental.

SCH-17 through SCH-19

Not used.

SCH-20 Entered by Person

This field will contain the same information as *SCH-16 – Filler Contact Person*. The person responsible for creating/updating the appointment will become the contact person for the appointment.

SCH-21 through SCH-24

Not used.

SCH-25 Filler Status Code

This field will contain the status of the appointment referenced. If the appointment status in Open Dental is "Complete", this field will contain "Complete". If the Open Dental status is "UnschedList" or "Broken", this field will contain "Cancelled". If the outbound message is created due to the deletion of an appointment, this field will contain "Deleted". For all other statuses, i.e. "Scheduled" or "ASAP", this field will default to "Booked".

TQ1 – Timing/Quantity Segment

This segment contains the date and time as well as the duration of the appointment referenced and is only part of outbound SIU messages.

Seq	Field Name	Data Type	Req	Rep	Table #	OD Field Name
TQ1-1	Set ID	SI	No	No		static text "1"
TQ1-2	Quantity	CQ	No	No		static text "1"
TQ1-3…5	Not used					N/A
TQ1-6	Service Duration	CQ	No	No		apt.length
TQ1-7	Start Date/Time	DTM	No	No		apt.AptDateTime
TQ1-8	End Date/Time	DTM	No	No		apt.endAptDateTime

TQ1-1 Set ID

For the first timing specification transmitted, the sequence number shall be 1; for the second timing specification, it shall be 2; etc. Open Dental will always only send one timing specification per outbound message, therefore this field will always contain "1".

TQ1-2 Quantity

This field contains the numeric quantity of the service that should be provided at each service interval. The default value for this field is "1", and that is what Open Dental will always send.

TQ1-3 through TQ1-5

Not used.

TQ1-6 Service Duration

This field contains the length of the appointment.

Components: *Quantity^Units*

Subcomponents for *Units*: *Identifier^Text*&&*Name of Coding System*

The *Quantity* component will hold the appointment length in minutes. The *Units* component will contain "min" for minutes in the subcomponent *Identifier* and "ANS+" in the *Name of Coding System* subcomponent.

Example:

If an appointment is 30 minutes long, the field will look like this:

|30^min&&ANS+|

TQ1-7 Start Date/Time

This field is the start date and time of the appointment in the format "yyyyMMddHHmmss".

TQ1-8 End Date/Time

This field is the end date and time of the appointment in the format "yyyyMMddHHmmss".