



RIAYATI Program **Interface Control Document (HL7 PPR Inbound)**

Document ID: **RYT-HIE-ICD-003**

Date: 17 Nov 2025 (v4.2)

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Version and Distribution History			
Version #	Date	Brief Comments on Change	Author
1.1	11-May-2020	Draft Specification	MOHAP
2.0	25-Oct-2020	Initial version for distribution	MOHAP
3.0	03-Nov-2020	Baselined version for Phase 1A	MOHAP
3.1	07-Apr-2021	Trivial changes for Phase 1B	MOHAP
3.2	20-Apr-2021	OMRN and Assigning Authority related updates	MOHAP
3.3	15-Sep-2021	Changes based on Integration Testing <ul style="list-style-type: none"> Updated PRB-1 as Required. Expanded PRB-14 with the Supported values. 	MOHAP
3.3	20-Sep-2021	Added comments to all HL7 Coded (CE) fields to provide both code and description based on the code table specified for the respective field.	MOHAP
4.0	21-Sep-2021	Reviewed and Approved changes and baselined Version	MOHAP
4.1	16-May-2022	PRB-3.1 changed code type	MOHAP
		ROL-3.1 changed code type	MOHAP
4.2	17-Nov-2025	Removed PV1 segment Updated PID-4 and PID-19 as Not required	MOHAP

Table 1 Version History

Document Acceptance and Sign-Off		
Name	Signature	Date
MOHAP		25-Dec-2025

Table 2: Document Acceptance and Sign-off

1 About this document

1.1 Purpose of this Document

The interfaces addressed in this document are designed to allow bi-directional communications using the health care industry's Health Level 7 (HL7) version 2.5.1 standards for the exchange of electronic health data between information systems. The interfaces are designed to:

- Process transcriptions communicated electronically from a sending system (such as an electronic medical record or practice management system) into the Riayati HIE receiving system.

This document describes the interface, addresses the data structure and available communication options, and provides other coordination information for implementing the interface. To assist the parties involved in planning, installing, and using the interface, applicable message segments are included.

We will commonly refer to the above as "providers", i.e. those who are participating in Riayati HIE program.

This document covers the following:

- a) The protocols and handshake supported for exchange of messages
- b) Message Segment descriptions of different event type supported by Riayati HIE

References to the HL7 standard are made throughout this document. The web site for HL7 specifications can be found at <http://www.hl7.org/>.

1.2 Audience

This document is intended for the Technical Team from the Provider Organizations from the Northern Emirates and EMR vendors.

1.3 Abbreviations and Terms

Abbreviation	Term
API	Application Programming Interface
ESB	Enterprise Service Bus
FHIR	Fast Healthcare Interoperability Resources
HIE	Health Information Exchange
HTTP	Hyper Text Transport Protocol
MOHAP	Ministry of Health and Prevention
SOAP	Simple Object Access Protocol
UAE	United Arab Emirates

Table 3: Abbreviations and Terms

2 Introduction

2.1 RIAYATI Program

His Highness Sheikh Mohammed bin Rashid Al Maktoum announced in 2015 the initiative to establish a Health Information Exchange system – “RIAYATI” for patients in the Northern Emirates, UAE. In order to facilitate the movement of patients across healthcare providers, as well as connect public and private hospitals and clinics to share and exchange Health Records.

The RIAYATI Service will be the primary force driving an integrated, sustainable modern healthcare system that improves the safety of the patients, healthcare quality and population health in general through the safe sharing of medical data and information of all healthcare system beneficiaries across the Northern Emirates.

2.2 Health Information Exchange

RIAYATI Health Information Exchange will make quality healthcare data available for improvement of the patient care and support the futuristic innovative services like Clinical Decision Support, UAE specific clinical pathways, advanced analytics and Artificial Intelligence.

The RIAYATI HIE has various components as mentioned below to support the above-mentioned objectives.

- Enterprise Service Bus
- Registries
 - Patient Registry
 - Provider Registry
 - Organization Registry
 - Document Registry
 - Terminology Registry
- Repositories
 - Clinical Data
 - Documents

2.3 HL7 Concepts

2.3.1 HL7 Definitions

- i. **Message:** A message is the atomic unit of data transferred between systems. It is comprised of a group of segments in a defined sequence. Each message has a message type that defines its purpose and a trigger event. For example, the ADT is a message type and A01 is a trigger event. Between text messages in a batch, two carriage returns/line feeds (hex characters 0D0A0D0A) represent the end of each message.
- ii. **Segment:** A segment is a logical grouping of data fields. Segments within a defined message may be required or optional, may occur only once, or may be allowed to repeat. Each segment is named and is identified by a segment ID, a unique 3-character code. The hex characters '0D0A' that act as a Segment Terminator (equivalent to a Carriage Return and Line Feed) denote the end of each segment.
- iii. **Field:** A field is a string of characters. The segment it is in and the position within the segment identify each field; e.g., PID-5 is the fifth field of the PID segment. Optional data fields need not be valued. Whether a field is required, optional, or conditional in a segment is specified in the segment attribute tables.

A maximum length of the field is stated as normative information. Exceeding the listed length should be considered an error.
- iv. In segments attribute table Required/Mandatory data is designated as “R”, Optional field data is designated as “O” and Required if available is designated as “RA”.

- v. **Component:** A component is one of a logical grouping of items that comprise the contents of a coded or composite field. Within a field having several components, not all components are required to be valued. Examples in this document demonstrate both fully valued and partially valued coded and composite fields.
Item number: Each field is assigned a unique item number. Fields that is used in more than one segment will retain their unique item number across segments.
- vi. **Null and empty fields:** The null value is transmitted as two double quote marks (""). A null-valued field differs from an empty field. An empty field should not overwrite previously entered data in the field. The null value means that any previous value in this field should be overwritten.
- vii. **Data Type:** A data type restricts the contents and format of the data field. Data types are given a 2- or 3-letter code. Some data types are coded or composite types with several components. The applicable data type is listed and defined in each field definition. Refer <http://www.hl7.org/> for complete listing of data types used in this document and their definitions.
- viii. **Delimiters:** The delimiter values are given in MSH-1 and MSH-2 and used throughout the message. Applications must use agreed upon delimiters to parse the message.

Following are the recommended delimiters for laboratory messages:

Delimiter	Suggested Value	Usage
Segment Terminator	<CR> ((hex 0D0A))	Terminates a segment record. This value cannot be changed by implementers.
Field Separator		Separates two adjacent data fields within a segment. It also separates the segment ID from the first data field in each segment.
Component Separator	^	Separates adjacent components of data fields where allowed.
Subcomponent Separator	&	Separates adjacent subcomponents of data fields where allowed. If there are no subcomponents, this character may be omitted.
Repetition Separator	~	Separates multiple occurrences of a field where allowed.
Escape Character	\	Escape character for use with any field represented by an ST, TX or FT data type, or for use with the data (fourth) component of the ED data type. If no escape characters are used in a message, this character may be omitted. However, it must be present if subcomponents are used in the message.

- ix. **Message Syntax:** Each abstract message is defined in special notation that lists the 3-letter segment identifiers in the order they will appear in the message. The general rule is as follows: No brackets around it - Required - **[]** - Optional - **{ }** - Repeating - **[*]** - Optional Repeating.
- x. **Trigger Events:** The HL7 Standard is written from the assumption that an event in the real world of healthcare creates the need for data to flow among systems. The real-world event is called the trigger event. For example, the trigger event, an observation (e.g., a CBC result) for a patient is available, may

cause the need for that observation to be sent to several other systems. When the transfer of information is initiated by the application system that deals with the triggering event, the transaction is termed an unsolicited update.

- xi. **Z segments:** All message types trigger event codes, and segment ID codes beginning with Z are reserved for locally defined messages. No Z segments codes have been defined in the HL7 v2.4 Standard for the OML^O21 message; this document does not contain customized Z segments for the OML^O21 message.

2.3.2 HL7 Standards – Exceptions

Some exceptions to the HL7 conventions are noted herein. Data is added, updated and removed at the segment level. Messages should contain ALL current data. It is recommended that all segments for demographic interfaces contain fully populated fields appropriate for the message type. It is also recommended that all messages contain all segments. This should be observed even if the data has not changed.

Message segment maps indicate fields not directly used by the Riayati HIE as shaded entries. Unused fields are shown up to the last segment field that is processed by the Riayati HIE.

2.3.3 Robust Port Connectivity

If the sending system communicates to the Riayati HIE via a TCP/IP port number, it must be able to dynamically determine the status of the port to which it sends. In the event the client interface server has been rebooted or restarted for any reason, the sending system must be able to detect that the port was offline and reopen the port without user support.

2.3.4 Communications Options

Riayati HIE can configure an interface to function using TCP/ IP over Secure site-to-site Virtual Private Network (VPN) or File transfer using SFTP.

VPN (Virtual Private Network)

A Secure site-to-site Virtual Private Network (VPN) between Riayati HIE Servers and participants (Sending Systems) shall be implemented.

TCP/IP

TCP/IP is the preferred communications protocol for exchanging HL7 messages. The following is a list of the major guidelines for the establishment of TCP/IP communications:

1. A Site to site Secure VPN Tunnel will need to be established between the Participant and the Riayati HIE host system vendor prior to establishing the TCP/IP port and socket connection.
2. Unique TCP/IP port addresses and socket numbers must be determined by the client, Riayati HIE, and the host system vendor prior to installation. Suggested ports are:
3. The sending system will act as a TCP/IP client and is responsible for opening the port prior to sending data. The receiving system will act as a TCP/IP server.

IMPORTANT NOTE: The sending system must be able to monitor the status of the port and must be able to reconnect to the port without user support if it has been disconnected.

4. The HL7 minimal lower layer protocol recommendations are observed.
5. The leading character for each transmission can be configured for each interface and is represented here as <VT> (ASCII 11).
6. Up to three ending characters for each transmission can be configured for each interface. They are represented here as <FS> (ASCII 28) and <CR> (ASCII 13).
7. Each segment is followed by a <CR> (ASCII 13).
8. The exchange of messages will be as follows:

At the execution of the trigger event in the host system, the host sends a message to Riayati HIE:

Host System		Riayati HIE
<VT> MSH segment<CR> followed by first segment<CR> followed by next segment<CR> ... last segment<CR> <FS><CR> <CR>	➔	Received by the product TCP/IP Receiver and placed in a directory on the file system. Predetermined identifiers in the message are validated by the Receiver script, if valid. The product takes the message and file to a SQL Message Queue, parser process it into the Data Store.

After receipt of each message, the product sends an ACK Message to Host on the same port number:

Host System		Riayati HIE
Received by Host	➔	<VT> MSH segment<CR> MSA segment<CR> ERR segment<CR> <FS><CR> <CR>

If the MSA indicates that the message was received, then the host is free to send the next message. This is repeated until all messages are sent. If the MSA indicates that the message contained an error, the host must resend the message until either the MSA indicates the message was received, or the interface times out.

The simple general acknowledgment (ACK) should be sent by the receiving system to respond to the receipt of the messages.

The product TCP/IP Receiver script processes the MSH segment and the Message Control ID (MSH-10) is used to construct the outbound HL7 ACK. The ACK message only indicates that the message was received. Errors in processing usually result in HIE Event log messages. If the MSH segment is not found or cannot be processed, a HL7 NAK is sent. In the case of a low-level error, a TCP/IP NAK is returned.

MSA Example with MSH Message Header:

```
MSH|^~\&|SENDING_APP|SENDING_APP|RECEIVING_APP|RECEIVING_APP|
dfx20030917141003||ACK^PC1|89899775||2.5.1
MSA|AE|20190801222928586
ERR||ERR^1^1|ValErrors Message
```


3 Basic Message Construction Rules

3.1 Encoding Rules for Sending

- a) Encode each segment in the order specified in the abstract message format.
- b) Place the Segment ID first in the segment.
- c) Precede each data field with the field separator.
- d) Encode the data fields in the order and data type specified in the segment definition table.
- e) End each segment with the segment terminator.
- f) Component separators need not be represented for components, subcomponents, or repetitions that come at the end of a field. The data fields below, for example, are equivalent:

`^XXX&YYY&&^` is equal to `^XXX&YYY^`

`|ABC^DEF^^|` is equal to `|ABC^DEF|`

3.2 Encoding Rules for Receiving

The following rules apply to receiving HL7 messages and converting their contents to data values:

- a) Ignore segments, fields, components, subcomponents, and extra repetitions of a field that are present but were not expected.
- b) Treat segments that were expected but are not present as consisting entirely of fields that are not present.
- c) Treat fields and components that are expected but were not included in a segment as not present.

4 HL7 PPR (Patient Problem)

The patient problem message is used to send problems from one application to another (e.g., a point of care system to a clinical repository). Many of the segments associated with this event are optional. This optionality allows systems in need of this information to set up transactions that fulfil their requirements.

Types of events supported by HL7 V2.X PPR is as follows:

- PPR_PC1 - Problem add
- PPR_PC2 - Problem update
- PPR_PC3 - Problem delete

IMPORTANT NOTE: The Riayati HIE is a visit base system; therefore PV1 19(Patient Visit Number) is required in all messages. Messages with a blank Patient Visit number will be flag as a bad message and ignored.

IMPORTANT NOTE: DSC segments, ADD segments, and any continuation pointer functionality derived from these segments are not supported.

IMPORTANT NOTE: All coded fields use standard HL7 field codes unless otherwise specified. Any deviations from the standard HL7 field code tables must be reported to the Riayati HIE.

All messages must be sent in Snapshot mode - Riayati HIE expects all data to present in all the messages, for example every message for the Result must have all active part of the report. If any corrected report is sent after original report Riayati HIE application expects all OBR and OBX segment is sent for the report, if partial report is sent in latest message, Riayati HIE application will not retain part of the report sent in earlier messages.

HL7 PPR messages uses the segments listed below:

Message Segments	Segment Name	Comments
MSH	Message Header	Required
PID	Patient Identification	Required
{PV1}	Patient Visit	Not Required
{PRB	Detail Problem	Required
[{ NTE }]	Notes & Comments (Problem Comments)	Optional
[{ROL}] }	Role (Problem)	Required

Note: Fields which are used in the integration, only those fields are mentioned in the segment specification.

Definitions

Term	Definition
R	Required
O	Optional
C	Conditional
RA	Required If applicable

Message Acknowledgement

Riayati HIE will respond with Acknowledgement (ACK) Message for each PPR Message with the MSA Segment along with ERR segment in case of any validation error in the HL7 message.

MSA Segment

Seg/Field	Req	HL7 Name	Data Type	Max Len	Comments
MSA-1	R	Acknowledgment Code	ID	2	HL7 Table 0008
MSA-2	R	Message Control ID	ST	20	

ERR Segment

Seg/Field	Req	HL7 Name	Data Type	Max Len	Comments
ERR-1	Backwards Compatible	Error Code and Location	ELD	493	Specifies the segment that contains an error and describes the nature of the error.
ERR-2	O	Error Location	ERL	18	This data type identifies the segment and its constituent where an error has occurred.
ERR-3	R	HL7 Error Code	CWE	705	Specifies a coded element and its associated detail.

4.1 MSH - Message Header

The following fields may be required from Attribute Table:

Seg/Field	Req	HL7 Name	Data Type	Max Len	Comments
MSH-1	R	Field Separator	ST	1	This field contains the HL7 field separator " " and is located between the segment ID "MSH" and the MSH 2 field. This dictates that " " will act as the field separator for the rest of the HL7 message. ' ' (ASCII 124)
MSH-2	R	Encoding Characters	ST	4	'^~\&' where '^' is the component delimiter (ASCII 94) '~' is the repeat delimiter (ASCII 126) '\' is the escape delimiter (ASCII 92) '&' is the subcomponent delimiter (ASCII 38)
MSH-3	O	Sending Application Namespace ID	HD	227	This field identifies the Sending Application as defined in the internal. This Application code will be assigned by Riayati. Table No: To be discussed during onboarding.
MSH-4	R	Sending Facility Namespace ID	HD	227	Facility License Number.
MSH-5	O	Receiving Application Namespace ID	HD	227	
MSH-6	O	Receiving Facility Namespace ID	HD	227	
MSH-7	R	Date/Time of Message	TS	26	Format: YYYYMMDDTTTT
MSH-8	O	Security	ST	40	
MSH-9	R	Message Type	MSG	15	
MSH-9.1	R	Message Code	ID	3	PPR
MSH-9.2	R	Trigger Event	ID	3	MSH 9.2 - Contains the Event Trigger Table No:0003
MSH-9.3	R	Message Structure	ID	7	PPR_PC1 or PPR_PC2 or PPR_PC3
MSH-10	R	Message Control ID	ST	20	Unique message number

					Note: If a message is received with the same Message Control ID as the immediately previous message, it will be treated as an error.
MSH-11	O	Processing ID	PT	3	P (Production) or T (Testing) or D (Development)
MSH-12	R	Version ID	VID	60	HL7 version 2.5.1
MSH-13	O	Sequence Number	NM	15	
MSH-14	O	Continuation Pointer	ST	180	
MSH-15	O	Accept Acknowledgment Type	ID	2	
MSH-16	O	Application Acknowledgment Type	ID	2	
MSH-17	O	Country Code	ID	3	
MSH-18	O	Character Set	ID	16	
MSH-19	O	Principal Language of Message	CE	250	
MSH-20	O	Alternate Character Set Handling Scheme	ID	20	
MSH-21	O	Message Profile Identifier	EI	427	

Sample MSH segment:

```
MSH|^~\&|SENDING_APP|SENDING_FACILITY|RECEIVING_APP|RECEIVING_FACILITY|198808181126|SECURITY|PPR
^PC1^PPR_PC1|MSG00001|P|2.5|||AL|NE|THA|UNICODE UTF-8|||
```

4.2 PID - Patient Identification

The following fields may be required from Attribute Table:

Seg/Field	Req	HL7 Name	Data Type	Max Len	Comments
PID-1	RA	Set ID	SI	4	There will only be one patient being sent at a time. Therefore, this will always be set to the value of "1".
PID-2	O	Patient ID – External	CX	20	
PID-3	R	Patient Identifier	CX	250	<p>Number types SSN/EID, DL, or MRN here will override any SSN/EID, DL, or MRN in PID-4, PID-19, and PID-20.</p> <p>Every instance of PID-3 will be parsed. Number is parsed from "subfield 1" and Number Type is parsed from "subfield 5". Number Type should have value "EID", "MRN", "OMRN", "PPN", "GCCID" only.</p> <p>Component 1: Medical Record Number, Organization level Medical Record Number, Emirates Id, GCC Id, Passport Number</p> <p>Component 5: ID Domain</p> <p>Component 6: Facility Mnemonic</p>
PID-3.1	R	Patient ID – Internal	ST	15	<p>Note 1: ID must be unique. Failure to ensure uniqueness can result in patient record mismatches.</p> <p>Note 2:</p> <ul style="list-style-type: none"> There can be only one primary patient identifier (MRN) and multiple secondary identifiers per patient and facility in PID_3_1. Secondary identifier can be Emirates Id (with no hyphens), GCC Id or Passport Number The PID_3_5 should have MRN for primary identifier. The PID_3_5 should have OMRN for Organisation level Medical Record Number. The PID_3_5 should have EID for Emirates Id identifier. The PID_3_5 should have GCCID for GCC Id identifier. The PID_3_5 should have PPN for Passport Number identifier. There can be only one combination of MRN with Facility number. Along with MRN either of three secondary valid identifiers is mandatory each message.

					<ul style="list-style-type: none"> Facility id in PID_3_6 for primary local identifier for the message sending facility, must Match with facility Id in MSH.4. <p>Note 3: For the Emirates ID, use the below when ID is not available.</p> <ul style="list-style-type: none"> All 0's – Visitors (Tourists), Non-Residents who have no Emirates ID. All 1's – New-borns and other Residents for whom the Emirates ID will be obtained later. All 2's – Special category where the Patient will not have Emirates ID forever. All 9's – Emergency / Unconscious Patients for whom the Emirates ID is not known. <p>Format:</p> <p>MR001^^F12345^MRN~OMR001^^^APPCODE^OMRN~789123412345671^^ICA^EID~1046403927^^GCC^GCCID~PASS001^^INTNL^PPN</p>
PID-3.4	R	Assigning Authority	HD	227	
PID-3.4.1	R	Assigning Authority: Namespace Identifier	IS	20	<p>Facility License Number for MRN.</p> <p>Application / Organisation code assigned by Riayati for OMRN.</p> <p>"ICA" for EID.</p> <p>"GCC" for GCC ID.</p> <p>"INTNL" for Passport Number.</p>
PID-3.4.2	O	Assigning Authority: Universal Identifier	ST	199	
PID-3.4.3	O	Assigning Authority: Universal Identifier Type	ID	6	
PID-3.5	R	Identifier Type Code	ID	5	Identifier Type should have the value either "EID", "MRN", "OMRN", "PPN" or "GCCID".
PID-3.6.1	O	Assigning Facility: Namespace Identifier	IS	20	
PID-3.6.2	O	Assigning Facility: Universal Identifier	ST	199	
PID-3.6.3	O	Assigning Facility: Universal Identifier Type	ID	6	
PID-3.7	O	Effective Date	DT	8	Format: YYYYMMDD[HHMM]
PID-3.8	O	Expiration Date	DT	8	Format: YYYYMMDD[HHMM]
PID-4	O	Alternate Patient ID	CX	20	Not required. Identifiers are to be sent only in PID-3.

PID-5	R	Patient Name	XPN	100	Only the first instance of this field is used. Component 1: Last Name Component 2: First Name Component 3: Middle Initial Component 4: Suffix Component 5: Title Component 6: Degree
PID-5.1	R	Patient Family name	FN	194	
PID-5.2	R	Patient Given name	ST	30	
PID-5.3	O	Patient Middle Initial or Name	ST	30	
PID-5.4	O	Patient Name Suffix	ST	20	
PID-5.5	O	Patient Name Prefix	ST	20	
PID-5.14	O	Patient Name Professional Suffix	ST	199	
PID-6	O	Mother's Maiden Name	XPN	250	This field contains the mother's maiden name.
PID-6.1	O	Mother's Maiden Name: Family Name	FN	194	
PID-6.2	O	Mother's Maiden Name: Given Name	ST	30	
PID-6.3	O	Mother's Maiden Name: Middle initial	ST	30	
PID-6.4	O	Mother's Maiden Name: Suffix	ST	20	
PID-6.5	O	Mother's Maiden Name: Prefix	ST	20	
PID-7	R	Date/time of Birth	TS	26	Only the date part of BirthTime is stored. Format: YYYYMMDD
PID-8	R	Sex	IS	1	HL7 Table 0001 If demographics contain no gender, the patient's gender will appear in the Clinical Viewer as "NS" for "Not Specified".
PID-9	O	Patient Alias	XPN	250	Component 1: Last Name Component 2: First Name Component 3: Middle Initial Component 4: Suffix Component 5: Title

					Component 6: Degree
PID-9-1	O	Patient Alias Family Name	FN	194	
PID-9-2	O	Patient Alias Given Name	ST	30	
PID-9-3	O	Patient Alias Middle Name	ST	30	
PID-9-4	O	Patient Alias Suffix	ST	20	
PID-9-5	O	Patient Alias Prefix	ST	20	
PID-10	O	Race Code	CE	250	Race If this field is valued, both code and description to be sent in the first two components as per the code table. PID.10.1 and PID.10.2
PID-10.1	O	Race Identifier Code	ST	20	HL7 Table 0005
PID-10.2	O	Race Identifier Description Text	ST	199	
PID-10.3	O	Race Identifier Code System	ID	20	
PID-10.6	O	Race Identifier Code System Version	ID	20	
PID-11	R	Address	XAD	250	Every non-null instance of PID-11 will be parsed. Component 1: Street Component 2: Street (Secondary, i.e., APT) Component 3: City Component 4: State Component 5: Zip Code
PID-11.1	R	Street Address	SAD	184	
PID-11.2	O	Other Designation	ST	120	
PID-11.3	R	City	ST	50	
PID-11.4	R	State or Province	ST	50	HL7 table 0347: can be user defined
PID-11.5	O	Zip or Postal Code	ST	12	
PID-11.6	R	Country	ID	3	
PID-11.7	RA	Address Type	ID	3	HL7 table 0190
PID-11.8	O	Other Geographic Designation	ST	50	

PID-11.9	RA	County/Parish	IS	20	
PID-12	RA	County Code	IS	4	Three-digit ISO code
PID-13	R	Phone Number – Home	XTN	250	The TelecommunicationUseCode and TelecommunicationEquipmentTy are used to determine if the phone is a home phone or a mobile phone. Repeating field. Each instance can represent one of the Telecommunication information (Cell Phone, Phone Number and Email Address).
PID-13.1	O	Phone Number – Home Telephone Number	ID	199	Patient home phone number. Only parsed when the PID-13.3 is “CP” or “PH” Formatted as 009715xxxxxxx
PID-13.2	R	Phone Number – Home Telecommunication Use Code	ID	3	“EMR” – Emergency Number (for Cell Phone). “PRN” – Primary Residence Number (for Home Phone Number). “NET” – Network (email) Address (for Email Address).
PID-13.3	R	Phone Number – Home Telecommunication Equipment Type	ST	8	“CP” – Cell Phone. “PH” – Home Phone Number. “Internet” – Email Address.
PID-13.4	O	Phone Number – Home Email Address	ST	199	Patient E-mail address. Only parsed when the PID-13.3 is “Internet”
PID-14	O	Phone Number – Business	XTN	100	The TelecommunicationUseCode and TelecommunicationEquipmentTy are used to determine if the phone is a business phone or a mobile phone. Only one instance is expected with Work Phone Number.
PID-14.1	O	Phone Number – Business Telephone Number	ST	250	Formatted as 009714xxxxxxx
PID-14.2	O	Phone Number – Business Telecommunication Use Code	ID	3	“WPN” – Work Primary Number.
PID-14.3	O	Phone Number – Business Telecommunication Equipment Type	ST	8	“EMP” – Employer
PID-14.4	O	Phone Number – Business Email Address	ST	199	
PID-15	R	Primary Language	CE	250	Patient's primary language. If this field is valued, both code and description to be sent in the first two components as per the code table, PID.15.1 and PID.15.2

PID-15.1	RA	Primary Language Code	ST	20	HL7 table 0296.
PID-15.2	O	Primary Language Description Text	ST	199	
PID-15.3	O	Primary Language Code System	ID	20	
PID-15.6	O	Primary Language Code System Version	ID	20	
PID-16	RA	Marital Status	CE	250	If this field is valued, both code and description to be sent in the first two components as per the code table. PID.16.1 and PID.16.2
PID-16.1	RA	Marital Status Code	ST	20	HL7 table 0002
PID-16.2	O	Marital Status Description Text	ST	199	
PID-16.3	O	Marital Status Code System	ID	20	
PID-16.6	O	Marital Status Code System Version	ST	20	
PID-17	O	Religion	CE	250	If this field is valued, both code and description to be sent in the first two components as per the code table. PID.17.1 and PID.17.2
PID-17.1	R	Religion Code	ST	20	HL7 table 0006
PID-17.2	O	Religion Description Text	ST	199	
PID-17.3	O	Religion Code System	ID	20	
PID-17.6	O	Religion Code System Version	ID	20	
PID-18	O	Patient Account Number	CX	250	
PID-19	O	SSN/EID Number – Patient	ST	16	Not required. Identifiers are to be sent only in PID-3.
PID-20	O	Driver's License Number	DLN	25	Driving License Number. This is not expected to be part of PID-3 Identifier list. Used only if there is no DL in PID-3 or PID-4.
PID-20.1	O	Driver's License Number	ST	20	
PID-20.2	O	Driver's License Number State	IS	20	
PID-21	O	Mother's Identifier	CX	250	Required for newborn patient records Mother Patient's MRN ID for the newborn patient records.
PID-22	O	Ethnic Group	CE	250	Patients Ethnicity

					If this field is valued, both code and description to be sent in the first two components as per the code table. PID.22.1 and PID.22.2
PID-22.1	O	Ethnic Group Code	ST	20	Riayati table RYT1028
PID-22.2	O	Ethnic Group Descriptive Text	ST	199	
PID-22.3	O	Ethnic Group Code System	ID	20	
PID-22.6	O	Ethnic Group Code System Version	ID	20	
PID-23	O	Birthplace	ST	250	
PID-24	O	Multiple Birth Indicator	ID	1	Required only for newborn patient records. HL7 table 0136
PID-25	O	Birth Order	NM	2	Integer value. Required only for newborn patient record and is part of multiple birth.
PID-28	RA	Nationality	CE	250	HL7 table 0212 If this field is valued, both code and description to be sent in the first two components as per the code table. PID.28.1 and PID.28.2 Mandatory if Emirates Id and Passport Number is not captured for the Patient.
PID-28.1	O	Nationality Code	ST		HL7 table 0212
PID-28.2	O	Nationality Description	ST		
PID-29	O	Patient Death Date/time	TS	26	Time of death Format: YYYYMMDD[HHMM]
PID-30	O	Patient Death Indicator	ID	1	HL7 table 0136 A value of "Y" in the HL7 will be parsed as 1, "N" will be parsed as 0, the delete instruction (two double quotes) will be parsed as-is, and any other value in the HL7 will not be parsed.

Sample PID segment:

```
PID|||MR001^^^F12345^MRN~OMR001^^^APPCODE^OMRN~789123412345671^^^ICA^EID~1046403927^^^GCC^GCCID~PASS001^^^INTNL^PPN||Family Name^Given Name^Second Name^Mr.||19610615|M|||STREET^^SHAIK KHALIA^DXB^145445|GL|09715512346548^EMR^CP^^^NET^Internet^reach@email.com|00971027654321^WPN^EMP||S||ACC128563||
```


4.3 PRB - Problem Details

The following fields may be required from Attribute Table:

Note: Based on the Message Trigger Event the Problems will be added, updated and deleted.

Seg/Field	Req	HL7 Name	Data Type	Max Len	Comments
PRB-1	R	Action Code	ID	2	Supported values: D = Delete C = Clear/Delete All A = Add U = Update The Add, Update and Delete action code must be aligned with the Message trigger event (MSH: 9.2). For a PPR_PC3 message (Problem Delete), Action Code is always parsed as "D". Otherwise PRB-1 is used if not null.
PRB-2	R	Action Date/Time	TS	26	Format: YYYYMMDD[HHMM]
PRB-3	R	Problem ID	CE	250	PRB-3 will only be parsed if subfield 1 (Identifier) or 2 (Text) is not null.
PRB-3.1	R	Problem ID Identifier	ST	20	Must be the SNOMED CT Code.
PRB-3.2	R	Problem ID Text	ST	199	Description
PRB-3.3	R	Problem ID Name of Coding System	ID	20	Must be "SCT" for SNOMED CT
PRB-4	R	Problem Instance ID	EI	60	This field contains the unique identifier assigned by an initiating system to an instance of a problem.
PRB-5	O	Episode of Care ID	EI	60	
PRB-6	O	Problem List Priority	NM	60	
PRB-7	O	Problem Established Date Time	TS	26	Format: YYYYMMDD[HHMM]
PRB-8	O	Anticipated Problem Resolution Date/Time	TS	26	Format: YYYYMMDD[HHMM]
PRB-9	O	Actual Problem Resolution Date/Time	TS	26	This field contains the date/time that the problem was resolved. PRB-9 is used if present, else PRB-8 is used if present. Format: YYYYMMDD[HHMM]
PRB-10	R	Problem Classification	CE	250	PRB-10 will only be parsed if subfield 1 or 2 is not null.

					This field indicates the kind of problem. This field can be used to categorize problems so that they may be managed and viewed independently within different applications
PRB-10.1	O	Problem Classification Identifier	ST	20	Code for the Classification
PRB-10.2	R	Problem Classification Text	ST	199	Classification Description (e.g., admission, final, post-operative, pre-operative, outpatient, discharge, etc.).
PRB-11	O	Problem Management Discipline	CE	250	
PRB-12	O	Problem Persistence	CE	250	
PRB-13	O	Problem Confirmation Status	CE	250	If this field is valued, both code and description to be sent in the first two components as per the code table. PRB.13.1 and PRB.13.2
PRB-13.1	O	Problem Confirmation Status Code	ST	20	Riayati Table: RYT1138
PRB-13.2	O	Problem Confirmation Status Description	ST	199	
PRB-14	R	Problem Life Cycle Status	CE	250	This field contains the current status of the problem at this date/time. Supported values: 55561003 - Active 73425007 - Inactive 90734009 - Chronic 7087005 - Intermittent 255227004 - Recurrent 415684004 - Suspected 410516002 - Ruled out 413322009 - Resolved
PRB-14.1	R	Identifier	ST	20	Must be the SNOMED CT Code.
PRB-14.2	R	Text	ST	199	Description
PRB-14.3	R	Name of Coding System	ID	20	Must be "SNOMED".
PRB-15	O	Problem Life Cycle Status Date/Time	TS	26	PRB-15 is used if present, else PRB-2 is used if present. Format: YYYYMMDD[HHMM]
PRB-16	R	Problem Date of Onset	TS	26	This field contains the date/time when the problem began. Format: YYYYMMDD[HHMM]
PRB-17	O	Problem Onset Text	ST	80	

PRB-18	O	Problem Ranking	CE	250	
PRB-19	O	Certainty of Problem	CE	250	If this field is valued, both code and description to be sent in the first two components as per the code table. PRB.19.1 and PRB.19.2
PRB-19.1	O	Certainty of Problem code	ST	20	Riayati Table: RYT1139
PRB-19.2	O	Certainty of Problem Description	ST	199	
PRB-20	O	Probability of Problem	NM	5	
PRB-21	O	Individual Awareness of Problem	CE	250	
PRB-22	O	Problem Prognosis	CE	250	
PRB-23	O	Individual Awareness of Prognosis	CE	250	
PRB-24	O	Family/Significant Other Awareness of Problem/Prognosis	ST	250	
PRB-25	O	Security/Sensitivity	CE	250	If this field is valued, both code and description to be sent in the first two components as per the code table. PRB.25.1 and PRB.25.2
PRB-25.1	O	Security/Sensitivity Code	ST	20	HL7 Table 0177
PRB-25.2	O	Security/Sensitivity Description	ST	199	

Sample PRB segment:

```
PRB|A|20200401012507|E55.9^Vitamin D deficiency,
unspecified^ICD10|174639^^CODING_SYS|||||E55.9^Vitamin D deficiency,
unspecified^ICD10||||Active^Active^CODING_SYS||20200401012507
```

4.4 NTE – Notes and Comments Segment

The following fields may be required from Attribute Table:

Seg/Field	Req	HL7 Name	Data Type	Max Len	Comments
NTE-1	R	Set ID	SI	4	
NTE-2	O	Source of Comment	ID	8	This field is used when source of comment must be identified HL7 Table 0105 - Source of comment
NTE-3	O	Comment	FT	65536	This field contains the comment contained in the segment.
NTE-4	O	Comment Type	CE	250	If this field is valued, both code and description to be sent in the first two components as per the code table. NTE.4.1 and NTE.4.2
NTE-4.1	O	Comment Type Code	ST	20	HL7 Table 0364 - Comment type
NTE-4.2	O	Comment Type Description	ST	199	

Sample NTE segment:

NTE|P|The patient is having the muscle ache|

4.5 ROL - Role

The following fields may be required from Attribute Table:

Seg/Field	Req	HL7 Name	Data Type	Max Len	Comments
ROL-1	O	Role Instance ID	EI	60	
ROL-2	R	Action Code	ID	2	HL7 Table 0287 - Problem/goal action code
ROL -3	R	Role-ROL	CE	250	If this field is valued, both code and description to be sent in the first two components as per the code table ROL-3.1 and ROL-3.2
ROL-3.1	R	Role Code	ST	20	Riayati TableNo: RYT1146
ROL-3.2	R	Role Description	ST	199	
ROL-4	R	Role Person	XCN	250	Identity of the person who is assuming the role that is being transmitted.

Sample ROL segment:

```
ROL|1|AD|EP^Entering Provider^CODING_SYS|GDXXXXX^LastName^FirstName^^^^^&ASSIGNING_AUTH
```