# ISAAC HL7 Message Specification (v2.0 - FINAL)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **ORU** |  | MSH, PID, OBR, OBX | | | **HL7 Optionality CCO Optionality Content Value**  **R** = Required **M** = Mandatory **Static Value** = same for each message  **O** = Optional **O** = Optional **Dynamic Value** = changes from message to message  **C** = Conditional **NU** = Not Used | | |
|  |  |  | | |
|  |  | |  |  |
|  |  |
| HL7 Optionality | CCO Optionality |
|  |  | **Expected Content (from Site)** | **Expected Content (from CCO)** | **Comments** |
| **MSH** | 0 | Segment Name | R | M | **MSH** | **MSH** |  |
| 1 | Field Separator | R | M | **I** | **I** |  |
| 2 | Encoding Characters | R | M | **^~\&** | **^~\&** |  |
| 3 | Sending Application | O | M | **ISAAC\_HIS** | **ISAAC\_CCO** | HIS = Hospital Information System |
| 4 | Sending Facility | O | M | **SITE #** | **CCO** | Site # = 4-digit site master number from the ISAAC system |
| 5 | Receiving Application | O | NU | **{empty or any valid value}** | **ISAAC\_HIS** |  |
| 6 | Receiving Facility | O | NU | **{empty or any valid value}** | **SITE #^ISAAC SITE ID** | Receiving Site (CCO also includes internal ISAAC SITE ID) |
| 7 | Date/Time of Message | O | M | **{valid date/time value}** | **{valid date/time value}** |  |
| 8 | Security | O | M | **{valid security token}** | **{empty}** | Security token is assigned to Site by CCO (site gets assigned two security tokens, one for the test environment and one for the production environment) CCO sends an empty value |
| 9 | Message Type | R | M | **ORU^R01** | **ORU^R01** |  |
| 10 | Message Control ID | R | M | **{unique id}** | **{unique id}** | Unique identifier |
|  | 11 | Processing ID | R | NU | **P^T** | **P^T** |  |
| 12 | Version ID | R | M | **2.5** | **2.5** | Configurable based on the site's HL7 version |
| **PID** | 0 | Segment Name | R | M | **PID** | **PID** |  |
| 3 | Patient Identifier List | R | M | **MRN / HCN** | **MRN / HCN** | Component <Identifier Type Code>: PI (for MRN)  HC (for HCN)   * valid 10-digit OHIP number [exclude version code] * 0 for patients with OHIP coverage but HCN not available * 1 for patients without OHIP coverage (ie out of province, etc.) |
| 5 | Patient Name | R | M | **PATIENT NAME** | **PATIENT NAME** | Family Name + Given Name |
| 7 | Date/Time of Birth | O | M | **DOB** | **DOB** | Not future dated; after 18500101 |
| 8 | Sex | O | M | **M, F or O** | **M, F or O** | M, F or O are code accepted by ISAAC |
| 18 | Patient Account Number | O | NU | **{empty}** | **{empty}** OR  **Account Number** | Site should not send the account number to CCO. PID-8 (Sex) should be the last field in the PID segment of the message sent by the site.  CCO sends the acount number only to those sites that have configured QRY/ADR interface with CCO |
|  |  |  |  |  |  |  |  |
| **OBR** | 0 | Segment Name | R | M | **OBR** | **OBR** |  |
| 1 | Set ID - OBR | C | NU | **{empty or any valid value}** | **1** | CCO always sends 1  Site can leave it empty or send any valid value |
| 2 | Placer Order Number | C | NU | **{empty or any valid value}** | **ISAAC ESAS ID or PRFS ID or EPIC ID** | CCO sends internal ESAS ID or PRFS ID or EPIC ID from the ISAAC database |
| 4 | Universal Service Identifier | R | M | **ESAS or PPS or ECOG or PRFS or EPIC** | **ESAS or PRFS or EPIC** | CCO sends ESAS or PRFS or EPIC only |
| 7 | Observation Date/Time # | O | M | **ASSESSMENT DATE** | **ASSESSMENT DATE** | Date the score was captured |
|  | 0 | Segment Name | R | M | **OBX** | **OBX** |  |
| **OBX** | 1 | Set ID - OBX | O | NU | **{empty or any valid value}** | **ESAS = 1, 2, 3, 4, 5, 6, 7, 8, 9**  **PRFS = 1**  **EPIC = 1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17** | CCO sends a sequence number for every <Observation Identifier> (1, 2, 3, etc.) Site can leave it empty or use the sequence number as well |
| 2 | Value Type | C | NU | **NM** | **NM** | Score value type (Numeric) - from the HL7 Data Definition Table #125 |
| 3 | Observation Identifier | R | M | **ESAS = "Pain","Tired","Nausea","Depression","Anxious","Drowsy","Appetite","Wellbeing","ShortBreath"**  **PPS = "Score"**  **ECOG="Grade"**  **PRFS="Rating"**  **EPIC = "OverallUrinaryFunction","UrinaryControl","NumberOfPadsOrDiapersUsed","ProblemWithUrinaryLeakage","UrinaryPainOrBurning","WeakStreamOrBladderEmptying",**  **"UrinaryFrequency","RectalPainOrUrgency","RectalFrequency","OverallProblemWithBowelHabit","BloodyStool","AbilityToReachOrgasm","QualityOfErections","OverallProblemWithSexualFunction",**  **"HotFlashesOrBreastSymptoms","FeelingDepressed","LackOfEnergy"** | | |
| 4 | Observation Sub Identifier | C | NU | **{empty or any valid value}** | **1** | CCO always sends 1  Site can leave it empty or send any valid value |
| 5 | Observation Value | C | M | **ESAS Symptom Score or PPS score or ECOG grade or PRFS rating or EPIC Symptom Score** | **ESAS Symptom Score or PRFS Rating**  **or EPIC Symptom Score** | ESAS - If there is no value either do not include the OBX segment in the message or send an empty <Observation Value>  PPS - Cannot be empty  ECOG - Cannot be empty  PRFS - Cannot be empty  EPIC - If there is no value either do not include the OBX segment in the message or send an empty <Observation Value> |
| 11 | Observation Result Status | R | NU | **{any valid value}** | **R** | For valid values please refer to the HL7 Data Definition Table #85 Status currently not used by CCO |

ISAAC HL7 Message Specification (v2.0) Page 1 of 6

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | 0 | Segment Name | R | M | **OBX** | **OBX** | Only for ESAS (optional)  Site does not have to send the "CompletedBy" value to CCO |
| **OBX** | 1 | Set ID - OBX | O | NU | **{empty or any valid value}** | **ESAS = 10** | CCO sends a sequence number for every <Observation Identifier> (1, 2, 3, etc.) Site can leave it empty or use the sequence number as well |
| 2 | Value Type | C | NU | **ST** | **ST** | Value type (String Data) - from the HL7 Data Definition Table #125 |
| 3 | Observation Identifier | R | M | **CompletedBy** | **CompletedBy** |  |
| 4 | Observation Sub Identifier | C | NU | **{empty or any valid value}** | **1** | CCO always sends 1  Site can leave it empty or send any valid value |
| 5 | Observation Value | C | M | **{empty or any valid value - P, F or C}** | **P or F** |  |
| 11 | Observation Result Status | R | NU | **{any valid value}** | **R** | For valid values please refer to the HL7 Data Definition Table #85  Status sent by Site is not used by CCO  CCO always sends R |
|  | 0 | Segment Name | R | M | **OBX** | **OBX** | Only for ESAS / EPIC (optional)  Site does not have to send the "AssessmentLocation" value to CCO |
| **OBX** | 1 | Set ID - OBX | O | NU | **{empty or any valid value}** | **ESAS = 11**  **PRFS = 2**  **EPIC = 18** | CCO sends a sequence number for every <Observation Identifier> (1, 2, 3, etc.) Site can leave it empty or use the sequence number as well |
| 2 | Value Type | C | NU | **ST** | **ST** | Value type (String Data) - from the HL7 Data Definition Table #125 |
| 3 | Observation Identifier | R | M | **AssessmentLocation** | **AssessmentLocation** |  |
| 4 | Observation Sub Identifier | C | NU | **{empty or any valid value}** | **1** | CCO always sends 1  Site can leave it empty or send any valid value |
| 5 | Observation Value | C | M | **{see comments}** | **CE or HE or HT** | Site can leave it empty/blank or totally omit the whole OBX11 segment; Site can send updates for CE, HE, or HT; |
| 11 | Observation Result Status | R | NU | **{any valid value}** | **R** | For valid values please refer to the HL7 Data Definition Table #85  Status sent by Site is not used by CCO  CCO always sends R |

**Site message example:**

MSH|^~\&|ISAAC\_HIS|3986|||201002171640|CFAEB581555C542012DD7EBA1FA3A3677C51F94A|ORU^R01|29125|P^T|2.5

PID|||1000000008^^^^HC~C10001^^^^PI||Santana^Carlos||194403150000|M

OBR|1|||ESAS|||201002051322

OBX|1|NM|Pain|1|2||||||R

OBX|2|NM|Tired|1|2||||||R

OBX|3|NM|Nausea|1|5||||||R

OBX|4|NM|Depression|1|3||||||R

OBX|5|NM|Anxious|1|5||||||R

OBX|6|NM|Drowsy|1|4||||||R

OBX|7|NM|Appetite|1|4||||||R

OBX|8|NM|Wellbeing|1|4||||||R

OBX|9|NM|ShortBreath|1|4||||||R OBX|10|ST|CompletedBy|1|C||||||R

OBX|11|ST|AssessmentLocation|1|CE||||||R Site can leave Observation Value empty/blank or totally omit the whole OBX11 segment; Site can send updates for CE, HE, or HT;

MSH|^~\&|ISAAC\_HIS|3986|||201002171640|CFAEB581555C542012DD7EBA1FA3A3677C51F94A|ORU^R01|29126|P^T|2.5

PID|||1000000008^^^^HC~C10001^^^^PI||Santana^Carlos||194403150000|M

OBR|1|||PPS|||201002051322

OBX|1|NM|Score|1|70||||||R

MSH|^~\&|ISAAC\_HIS|3986|||201002171640|CFAEB581555C542012DD7EBA1FA3A3677C51F94A|ORU^R01|29127|P^T|2.5

PID|||1000000008^^^^HC~C10001^^^^PI||Santana^Carlos||194403150000|M

OBR|1|||ECOG|||201002051322

OBX|1|NM|Grade|1|4||||||R

MSH|^~\&|ISAAC\_HIS|3986|||201002171640|CFAEB581555C542012DD7EBA1FA3A3677C51F94A|ORU^R01|29130|P^T|2.5

PID|||1000000008^^^^HC~C10001^^^^PI||Santana^Carlos||194403150000|M

OBR|1|||PRFS|||201002051322

OBX|1|NM|Rating|1|3||||||R

**CCO message example:** *without account number*

MSH|^~\&|ISAAC\_CCO|CCO|ISAAC\_HIS|3986^16|201002171640||ORU^R01|29128|P^T|2.5

PID|||1000000008^^^CANON^HC~C10001^^^16^PI||Santana^Carlos||194403150000|M||||||||||

OBR|1|29128||ESAS|||201001201126

OBX|1|NM|Pain|1|6||||||R

OBX|2|NM|Tired|1|3||||||R

OBX|3|NM|Nausea|1|5||||||R

OBX|4|NM|Depression|1|3||||||R

OBX|5|NM|Anxious|1|5||||||R

OBX|6|NM|Drowsy|1|4||||||R

OBX|7|NM|Appetite|1|4||||||R

OBX|8|NM|Wellbeing|1|4||||||R

OBX|9|NM|ShortBreath|1|4||||||R

OBX|10|ST|CompletedBy|1|P||||||R

OBX|11|ST|AssessmentLocation|1|CE||||||R

MSH|^~\&|ISAAC\_CCO|CCO|ISAAC\_HIS|3986^16|201002171640||ORU^R01|29131|P^T|2.5

PID|||1000000008^^^CANON^HC~C10001^^^16^PI||Santana^Carlos||194403150000|M||||||||||

OBR|1|29131||PRFS|||201001201126 OBX|1|NM|Rating|1|3||||||R

*with account number*

MSH|^~\&|ISAAC\_CCO|CCO|ISAAC\_HIS|3986^16|201002171640||ORU^R01|29129|P^T|2.5

PID|||1000000008^^^CANON^HC~G50001^^^14^PI||Santana^Carlos||194403150000|M||||||||||AN1005

OBR|1|29129||ESAS|||201001201126

OBX|1|NM|Pain|1|6||||||R

OBX|2|NM|Tired|1|3||||||R

OBX|3|NM|Nausea|1|5||||||R

OBX|4|NM|Depression|1|3||||||R

OBX|5|NM|Anxious|1|5||||||R

OBX|6|NM|Drowsy|1|4||||||R

OBX|7|NM|Appetite|1|4||||||R

OBX|8|NM|Wellbeing|1|4||||||R

OBX|9|NM|ShortBreath|1|4||||||R

OBX|10|ST|CompletedBy|1|P||||||R

OBX|11|ST|AssessmentLocation|1|CE||||||R

MSH|^~\&|ISAAC\_CCO|CCO|ISAAC\_HIS|3986^16|201002171640||ORU^R01|29132|P^T|2.5

PID|||1000000008^^^CANON^HC~G50001^^^14^PI||Santana^Carlos||194403150000|M||||||||||AN1005

OBR|1|29132||PRFS|||201001201126

OBX|1|NM|Rating|1|3||||||R

MSH|^~\&|ISAAC\_HIS|9999|||20110208093939|84346CA686CCD193BC5B42199ED0CB305DDC5679|ORU^R01|Q687303770T920082293|P^T|2.5

PID|||1441111101^^^^HC~1401^^^34^PI||TestP2^PatientP2||196902010000|F||||||||||

OBR|1|70269||EPIC|||201301151101

OBX|1|NM|OverallUrinaryFunction|1|1||||||R

OBX|2|NM|UrinaryControl|1|2||||||R

OBX|3|NM|NumberOfPadsOrDiapersUsed|1|1||||||R

OBX|4|NM|ProblemWithUrinaryLeakage|1|2||||||R

OBX|5|NM|UrinaryPainOrBurning|1|1||||||R

OBX|6|NM|WeakStreamOrBladderEmptying|1|2||||||R

OBX|7|NM|UrinaryFrequency|1|1||||||R

OBX|8|NM|RectalPainOrUrgency|1|2||||||R

OBX|9|NM|RectalFrequency|1|1||||||R

OBX|10|NM|OverallProblemWithBowelHabit|1|2||||||R

OBX|11|NM|BloodyStool|1|1||||||R

OBX|12|NM|AbilityToReachOrgasm|1|1||||||R

OBX|13|NM|QualityOfErections|1|2||||||R

OBX|14|NM|OverallProblemWithSexualFunction|1|1||||||R

OBX|15|NM|HotFlashesOrBreastSymptoms|1|2||||||R

OBX|16|NM|FeelingDepressed|1|1||||||R

OBX|17|NM|LackOfEnergy|1|2||||||R

OBX|18|ST|AssessmentLocation|1|CO||||||R

# ISAAC HL7 Message Specification (v2.0 - FINAL)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **QRY** |  | MSH, QRD |  | | **HL7 Optionality**  **R** = Required  **O** = Optional  **C** = Conditional | **CCO Optionality**  **M** = Mandatory **O** = Optional  **NU** = Not Used | **Content Value**  **Static Value** = same for each message  **Dynamic Value** = changes from message to message |
| **ADR** |  | MSH, MSA, QRD, PID |  | |
|  |  | |  |  |
|  |  |
| HL7 Optionality | CCO Optionality |
|  |  | **Expected Content (from Site)** | **Expected Content (from CCO)** | **Comments** |
| **MSH** | 0 | Segment Name | R | M | **MSH** | **MSH** |  |
| 1 | Field Separator | R | M | **I** | **I** |  |
| 2 | Encoding Characters | R | M | **^~\&** | **^~\&** |  |
| 3 | Sending Application | O | NU | **{empty or any valid value}** | **ISAAC\_CCO** |  |
| 4 | Sending Facility | O | NU | **{empty or any valid value}** | **CCO** |  |
| 5 | Receiving Application | O | NU | **{empty or any valid value}** | **ISAAC\_HIS** |  |
| 6 | Receiving Facility | O | NU | **{empty or any valid value}** | **SITE #^ISAAC SITE ID** | Receiving Site (CCO also includes internal ISAAC SITE ID) |
| 7 | Date/Time of Message | O | M | **{valid date/time value}** | **{valid date/time value}** |  |
| 8 | Security | O | M | **{empty}** | **{empty}** |  |
| 9 | Message Type | R | M | **ADR^A19** | **QRY^A19** |  |
| 10 | Message Control ID | R | M | **{unique id}** | **{unique id}** | Unique identifier |
|  | 11 | Processing ID | R | NU | **P^T** | **P^T** |  |
| 12 | Version ID | R | M | **2.5** | **2.5** | Configurable based on the site's HL7 version |
| **MSA** | 0 | Segment Name | R | M | **MSA** | **N/A** |  |
| 1 | Acknowledgment Code | R | M | **AA** OR **AE** | AA (record found); AE (record not found) |
| 2 | Message Control ID | R | NU | **{unique id}** |  |
|  | 3 | Text Message | O | O | **{empty or valid value}** | Describes an error condition (e.g. Patient not found) |
| **QRD** | 0 | Segment Name | R | M | **QRD** | **QRD** |  |
| 1 | Query Date/Time | R | M | **{valid date/time value}** | **{valid date/time value}** |  |
| 2 | Query Format Code | R | M | **R** | **R** | R (Response in record-oriented format) |
| 3 | Query Priority | R | M | **I** | **I** | I (Immediate) |
| 4 | Query ID | R | M | **{valid value}** | **{valid value}** | This field contains a unique identifier for the query. Assigned by the querying application. Returned intact by the responding application. |
| 5 | Deferred Response Type | O | NU | **{empty}** | **{empty}** |  |
| 6 | Deferred Response Date/Time | O | NU | **{empty}** | **{empty}** |  |
| 7 | Quantity Limited Request | R | NU | **1^RD** | **1^RD** |  |
| 8 | Who Subject Filter | R | M | **{valid value}** | **{valid value}** | Patient identifiers and demographics |
| 9 | What Subject Filter | R | NU | **DEM** | **DEM** |  |
| 10 | What Department Data Code | R | NU | **1** | **1** |  |
| 11 | What Data Code Value Qual. | O | NU | **{empty}** | **{empty}** |  |
|  | 12 | Query Results Level | O | NU | **{empty}** | **{empty}** |  |
| **PID** | 0 | Segment Name | R | M | **PID** | **N/A** |  |
| 3 | Patient Identifier List | R | M | **PI** |  |
| 5 | Patient Name | R | M | **PATIENT NAME** | Family Name + Given Name |
| 18 | Patient Account Number | O | M | **Account Number** |  |

**CCO message example:**

MSH|^~\&|ISAAC\_CCO|CCO|ISAAC\_HIS|4107^14|201002171640||QRY^A19|29125|P^T|2.5

QRD|201002240928|R|I|70064|||1^RD|1000000008^Santana^Carlos^^^^^^CANON^^^^HC~C10001^Santana^Carlos^^^^^^14^^^^PI|DEM|1

**Site message example:** *patient found*

MSH|^~\&|ISAAC\_HIS|4107|ISAAC\_CCO|CCO|201002171640||ADR^A19|29125|P^T|2.5

MSA|AA|29125

QRD|201002240928|R|I|70064|||1^RD|1000000008^Santana^Carlos^^^^^^CANON^^^^HC~C10001^Santana^Carlos^^^^^^14^^^^PI|DEM|1 PID|||^^^^PI||Santana^Carlos|||||||||||||AN1005

*patient not found*

MSH|^~\&|ISAAC\_HIS|4107|ISAAC\_CCO|CCO|201002171640||ADR^A19|29125|P^T|2.5

MSA|AE|1|Patient not found

QRD|201002240928|R|I|70064|||1^RD|1000000008^Santana^Carlos^^^^^^CANON^^^^HC~C10001^Santana^Carlos^^^^^^14^^^^PI|DEM|1