CareRight HL7 Interface - API Specification

Patient Data Consumer

1 Contents

2 Document Summary

2.1 Document Purpose

This document specifies the interface needed to generate and process patient demographic information from an external patient management system into CareRight.

2.2 Scope

This document defines the HL7 interface that is used to process the following messages from the external patient management system:

- A08 messages will be sent for Patient Record Creation/Updates

- A28 and A31 message types will not be sent. Only A08 message types will be sent for patient updates.

- Merging will be completed using an A40 message type.

2.3 Terminology, Definitions and Acronyms

Term	Description
ADT	Admission Discharge Transfer
HL7	Health Level Seven is an all-volunteer, not-for-profit organization involved in development of international healthcare standards. "HL7" is also used to refer to some of the specific standards created by the organization (i.e. HL7 v2.x, v3.0, HL7 RIM etc.). HL7 and its members provide a framework (and related standards) for the exchange, integration, sharing and retrieval of electronic health information. The standards, which support clinical practice and the management, delivery, and evaluation of health services, are the most commonly used in the world.
Inbound messages	Messages that are initiated from an external third party system and received and processed by Health Director for updating information in Health Director

Interface testing	User acceptance testing is a process completed by the site that ensures that a software application, interface /network are fit for purpose (i.e. meets business requirements).
Outbound messages	Messages that are initiated from Health Director and sent to an external third party system.
PAS	Patient Administration System, an application used to manage patient demographics, admissions, discharges, transfers, referrals and billing for hospitals
CareRight	Patient Administration System (PAS), EMR system is planned to be used by Icon Cancer care for Billing
CRN	Client reference number in CareRight, to be renamed 'URN' to facilitate consistency across Icongroup systems. Health Director 'Hub ID' to populate the CRN/URN field

2.4   References

Ref	Document Reference	Description
1.	Health Director Reference Tables.xlsx	Reference code sets will be provided for use with this interface
2.	Sample A08 samples.txt	Sample A08 messages will be provided for interface development and testing
3.	Sample A40 message.txt	Sample A40 messaged will be provided for interface development and testing.

Functionality

2.4.1 Create Patient

The patient search in Health Director allows a user to search for a patient by name, Medicare Number or URN. If a user searches for patient by name or Medicare Number or URN, and there is no matching patient record, then the user will Create a New Patient in Health Director.

The action of creating or updating a patient in Health Director will result in the patient being created or updated in CareRight and will be managed via messaging. The user can then successfully search for this patient in CareRight.

2.4.2 Editing Patient Demographics

Updates to patient demographics and patient identifier merges will be managed via messaging. The ability to edit patient demographics will be restricted in CareRight and to only allow for updates in the event of interface downtime [ref 2 & 3].

2.4.3 Patient Identifiers

The nominated facilities where CareRight will be used will be configured in Health Director at the time of deployment. Health Director's unique 10-digit Patient ID (or Hub ID) padded with leading zeros will be used as the URN (CRN) for CareRight.

2.4.4 Reference Code Sets

Reference code sets have been provided - Table 1: Reference Code Sets to be used describes which reference codes from this document are to be used for this interface. The code sets will be used for all facilities regardless of their geographic location.

Table 1: Reference Code Sets to be used

Message Segment and Field	Tab	Reference Set
PID-5 Patient Name	Title	Title
PID-8 Administrative Sex		Gender
PID-10 Race	Indg Status	Indigenous Status
PID-15 Primary Language		Language
PID-16 Marital Status	Marital Status	Marital Status
PID-23 Birth Place	Country	Country of Birth
PID-28 Nationality	Country	Country of Birth

3 CareRight Patient Matching Process

Before updating a patient record in CareRight a confidence match is performed to ensure that the correct patient record is being updated.

The supplied MR identifier is used to obtain the CareRight patient record. If a record is found for the MR identifier, then a comparison on the following values is performed:

- First Name (Legal Name)
- Last Name (Legal Name)
- Date of Birth

- Medicare Number & IRN if available
- DVA Number if available

If at least two of the above fields match in both the HL7 record and CareRight, then the record in CareRight is updated. If a match is not available an error is returned. Matches to patient name fields will be performed case insensitive.

Each time a patient record is updated or created the EVN recorded date time is stored with the patient record. If an update message (A08) is received that is OLDER than the last recorded date time the message will be accepted and raise no error, but the update will not be applied to the patient record.

If the MR identifier is not found in CareRight then a new patient record is created.

PID messages associated with a merge message (A40) will not result in an update or change to the Major Patient record and is only used for identification purposes.

4 CareRight Data Management

It will be possible to change the Health Director synced values for a Patient only if the user has been granted specific permission to do so. Any changes will be overwritten when the Patient Record is next sent from Health Director.

5 Messaging Configuration

5.1 Sending Facility

Each of the Icon Cancer Care (ICC) sites will have a different HL7 facility code. Table 2: HL7 Facility codes for sending facilities lists the sending facility codes to be used in MSH-4 for the facilities which are configured in Health Director.

Messages can be sent from any facility configured in Health Director. Messages will need to be processed regardless of the sending facility, e.g. the sending facility does NOT need to match to a facility configured in CareRight.

Table 2: HL7 Facility codes for sending facilities

HD Facility Short Code	HD Facility Description	CareRight Facility Code	HL7 Facility code to be used
ADL	Adelaide	ADL	ADL
CAN	Canberra	CAN	CAN
HOB	Hobart	HOB	HOB
MID	Midlands Perth	MID	MID
REV	Revesby	REV	REV
RKH	Rockingham	RKH	RKH
VAL	The Valley Dandenong	VAL	VAL

5.2 IP & Port

Health Director will send messages to an IP Address and Port to be processed by CareRight. The IP Address/Port will be the same for all facilities.

CareRight will send system level acknowledgement messages. CareRight will send all replies as responses to the originating message using the HL7 MLLP specification.

6 Message Types

Health Director will process/send the message types listed in Table 3: Message types to be processed.

The message type in the Message Header is consistently sent with the HL7 message event and structure codes, e.g. 'ADT^A08'. CareRight should use this to determine the message type.

Table 3: Message types to be processed

Message Type Code	Message Type Description	In or Outbound from Health Director
A08	Update Patient Information	Outbound
A40	Patient Identifier Merge – Patient ID Only	Outbound
I12	Patient Referral	Outbound
Acknowledgement	Acknowledgement	Inbound

6.1 Message Processing

Messages will be based on HL7 v2.3.1. The following protocol and encoding rules will be used for this interface.

Table 4: Protocol and encoding symbols

Description	Special Character
Field Separator	'|'
Component Delimiter	'^'
Sub Component	'&'
Repetition separator	'~'
Escape Character	'\'

If a field is not being sent, then there will be no characters between the field delimiters: '\| \|'. If a field is being sent but there is no data to be sent in this message, i.e. it is null, then two consecutive quotation marks will be sent in the field: '\|"" \|'.

Each message segment will end with a carriage return.

6.2 A08 Update Patient Information

The A08 message types will be processed in this interface. The following tables describe their message structure. Sample messages will be provided.

A08 message will be used to send updates to an existing patient or create a new patient. Prior to processing the message, CareRight must attempt to match the message to an existing patient record in CareRight using the 'MR' identifier in PID-3. If a match is identified, then the CareRight patient record should be updated. If no matching patient record is identified in CareRight, then CareRight will create a new patient record using the demographic details contained in the message.

6.2.1 A08 Message Structure

Table 5: A08 segments

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Segment	Name	R/O	Freq of Occurrence	To be Processed
MSH	Message Header	R	1	Yes
EVN	Event	R	1	Yes
PID	Patient Identification	R	1	Yes
PV1	Patient Visit	R	1	No
GT1	Guarantor	O	1/Guarantor	No
IN1	Insurance	O	1/Insurance	Yes
ACC	Accident Information	O	1	No

6.2.2 Segment Structure

This interface will process the Message Header (MSH), Event (EVN), Patient Identification (PID) and Insurance(IN1) segments of the specified message types. The expected segment structure of the MSH, EVN, PID and IN1 segments are described. The 'Comments' column includes any pertinent information for this interface.

It is expected that these segments will be the same in all A08 and A40 messages.

6.2.3 Message Header Segment

Table 7: MSH fields describes the fields of the Message Header Segment (MSH) that will be processed for this interface [ref 2]. The 'Comments' column includes business rules for processing the field, examples, etc.

Table 6: MSH fields

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
MSH-0			Segment ID	R	Will be sent as 'MSH'
MSH-1	ST	1	Field Separator	R	Will be sent as '|'
MSH-2	ST	4	Encoding Characters	R	Will be sent as '^~\&'
MSH-3	HD	180	Sending Application	O	Will be sent as 'EPIC_DIGITAL'
MSH-4	HD	180	Sending Facility, e.g. 'BPH'	O	The HL7 Facility Code for the sending Health Director facility See Table 2: HL7 Facility codes for sending facilities configured in the database. Messages are to be processed regardless of the sending facility code, e.g. they do not need to match a facility configured in the database.
MSH-5	HD	180	Receiving Application	O	Will be sent as 'CARERIGHT'
MSH-6	HD	180	Receiving Facility	O	Will be sent as 'CARERIGHT'
MSH-7	TS	26	Date/Time of Message	O	Format – CCYYMMDDhhmm
MSH-8	ST	40	Security	O	Not Sent
MSH-9	CM	13	Message Type 1. Message Type 2. Trigger Event	R	'ADT^Event', i.e. 'ADT^A08'
MSH-10	ST	20	Message Control ID	R	Unique ID for message
MSH-11	PT	3	Processing ID	R	Will be sent as 'P'

MSH-12	VID	60	Version ID	R	Will be sent as '2.3.1'
MSH-13	NM	15	Sequence Number	O	Not Processed
MSH-14	ST	180	Continuation Pointer	O	Not Processed
MSH-15	ID	2	Accept Acknowledgment Type	O	Sent as 'AL'
MSH-16	ID	2	Application Acknowledgment Type	O	MSH segment ends at MSH-15. MSH-16 onwards are not included
MSH-17	ID	3	Country Code	O	
MSH-18	ID	16	Character Set	O	
MSH-19	CE	60	Principal Language of Message	O	
MSH-20	ID	20	Alternate Character Set Handling Scheme	O	
MSH-21	ID	10	Conformance Statement ID	O	

6.2.4 Event Segment

Table 7: EVN Fields described the field of the Event Segment that will be checked for this interface. The 'Comments' column includes business rules for processing the field, examples, etc.

Table 7: EVN Fields

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
EVN-0			Segment ID	R	'EVN'
EVN-1			Set ID	R	e.g. 'A08'
EVN-2	TS	26	Recorded Date/Time	R	Date time as YYYYMMDDHHMMSS
EVN-3					EVN-3 to EVN-7 not sent

6.2.5 Patient Identification Segment

Table 8: PID fields describes the fields of the Patient Identification Segment (PID) that will be processed for this interface [ref 5]. The 'Comments' column includes business rules for processing the field, examples, etc.

Table 8: PID fields

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
PID-0			Segment ID	R	'PID'
PID-1	SI	4	Set ID	R	Sent as '1'
PID-2	CX	20	Patient ID	O	Not Sent
PID-3	CX	250	Internal Patient ID (repeating)	R	See Table 9: Business rules for processing
PID-4	CX	20	Alternate Patient ID – PID	O	Not Sent
PID-5	XPN	250	Patient Name as 'Surname^Given_Name^Middle Initial or Name^^Title^^L' e.g. '|Tabib^Eli^B^^Mr^^L|'	R	See Table 1: Reference Code Sets to be used for titles One name with a type of 'L' should be expected as this represents the Legal name for the Patient.
PID-6	XPN	250	Mother's Maiden Name	O	Not Sent

PID-7	TS	26	Date of Birth as CCYYMMDD, e.g. '|19901022|'	R	A date of birth must be included in the message for it to be processed.
PID-8	IS	1	Gender, e.g. '|F|'	R	Gender codes supported: - F = Female - M = Male - O = Indeterminate - T = Intersex - N = Other / Not Stated
PID-9	XPN	250	Patient Alias	O	Not Sent
PID-10	CE	250	Race as a description, e.g. '|Aboriginal And TorresStraitIslander|'	O	Indigenous Status – see Table 1: Reference Code Sets to be used
PID-11	XAD	250	Patient Address will have the following component fields: - Address Line 1 - Address Line 2 - Suburb - State - Postcode - Country - Type e.g. '|53 REUBEN STREET^^STAFFORD^Queensland^4053^^H|'	O	Home (One) address will be sent. If no address is sent, then the field will be sent as type 'H' and all other fields as null. The country field optional.. The state field must be the state code or description from CareRight's generic code list for states. The country value, if supplied should be a country code or description for the country list in CareRight. If no match is found then the country field will be left blank. The postcode field must be a number between 0 and 9999. If it is a different value then the postcode will be left blank.
PID-12	IS	4	Country Code	B	Not Sent
PID-13	XTN	250	Phone Number – Home, Mobile & Email, e.g. '|(07)33949246^^PH~0488412 395^^CP~me@example.com^ ^E |'	O	Home – '^^PH' Mobile – '^^CP' Email – '^^E'
PID-14	XTN	250	Phone Number – Business	O	Not sent
PID-15	CE	250	Primary Language, e.g. '|^English|'	O	Language – see Table 1: Reference Code Sets to be used
PID-16	CE	250	Marital Status, e.g. '|M|'	O	Refer to Table 1: Reference Code Sets to be used
PID-17	CE	250	Religion, e.g. '|Catholic^Catholic^L^^^^^^Catholic|'	O	Not sent.
PID-18	CX	250	Patient Account Number	O	Not Sent
PID-19	ST	16	SSN Number – Patient. '|^12345678900|'	O	the Medicare Number followed by the IRN to form an 11-digit number. All 11 digits will be supplied. The first 10 digits are the Medicare number and the last digit is the IRN.

					Only the current active Medicare Number for the patient will be sent. If the PID-3 segment contains a MC identifier then PID-19 is ignored
PID-20	DLN	25	Driver's License Number – Patient	O	Not Sent
PID-21	CX	250	Mother's Identifier	O	Not Sent
PID-22	CE	250	Ethnic Group	O	Not Sent
PID-23	ST	250	Birth Place, e.g. '|AUSTRALIA|'	O	Country of Birth See Table 1: Reference Code Sets to be used
PID-24	ID	1	Multiple Birth Indicator |Y|	O	Australian South Sea Islander With *Y* for *Yes*, *N* for *No*, and if it's not provided it'll be *Unknown*.
PID-25	NM	2	Birth Order	O	Not Sent
PID-26	CE	250	Citizenship	O	Not Sent
PID-27	CE	250	Veterans Military Status	O	Not Sent
PID-28	CE	250	Nationality	O	Reference Code Sets to be checked for Nationality
PID-29	TS	26	Patient Death Date/Time as ccyymmdd	O	Date of Death may be sent. Field is only populated if PID-30 is 'Deceased'.. If it is not sent, then this field will be blank.
PID-30	ID	1	Patient Death Indicator	O	If value is 'Deceased', will populate date of death if available.
PID-31	ID	1	Identity Unknown Indicator	O	Segments after PID-30. Fields PID 31-38 not included in the segment
PID-32	IS	20	Identity Reliability Code	O	
PID-33	TS	26	Last Update Date/Time	O	
PID-34	HD	40	Last Update Facility	O	
PID-35	CE	250	Species Code	O	
PID-36	CE	250	Breed Code	O	
PID-37	ST	80	Strain	O	
PID-38	CE	250	Production Class Code	O	

Table 9: Business rules for processing Internal Patient IDs

Table 9: Business rules for processing Internal Patient IDs describes the internal patient IDs which may be included in PID-3 and their related business rules for processing.

Field	Sent from Health Director as	Business Rules for processing
PID-3 Internal Patient ID	Identifier Type = MR MR = Medical Record Number, e.g. ' 0000123333^^^^MR' The MR is a 10-digit number global unique identifier for that patient in Health Director, i.e. 'User ID'. The Medical Record Number (MR) does not change over time.	Health Directors' unique ID – 10-digit number padded with leading zeros.

PID-3 Internal Patient ID	Identifier Type = AUSDVA AUSDVA = Australian Department of Veterans Affairs e.g. 'QXT1654316^^^^AUSDVA'	Only the current active DVA Number for the patient will be in these fields. The DVA Number Expiry date is not sent in the message. Historical or expired DVA numbers will not be stored in HD. Since HD validates Medicare, Concession and Repat, if a DVA Number is recorded for the patient from a previous message and is not included in the current message, then the DVA number will need to be set to null.
PID-3 Internal Patient ID	Identifier Type = RCT RCT = Repat Card Type The RCT is the DVA card colour e.g. 'Orange^^^^RCT'	Only the current active DVA card colour for the patient will be in these field Historical or expired DVA card colours will not be stored in HD. Since HD validates Medicare, Concession and Repat, if a DVA card colour is recorded for the patient from a previous message and is not included in the current message, then the DVA card colour will need to be set to null. The colour codes are: ● Gold ● White ● Orange ● None
PID-3 Internal Patient ID	Identifier Type = CON CON = Concession or Pension number, e.g. '7897546206^^^^CON^^^20181010'	Only the current active Pension Number for the patient will be in this field The Pension Number Expiry date will be included in the message. Historical or expired Pension numbers will not be stored in HD. Since HD validates Medicare, Concession and Repat, if a Pension Number is recorded for the patient from a previous message and is not included in the current message, then the Pension Number will need to be set to null. A Healthcare Card is considered a concession/pension number by Health Director. It will be sent as 'CON' and managed as described above.
PID-3 Internal Patient ID	Identifier Type = GOVSSN GOVSSN = Safety Net e.g. '456787892954^^^^GOVSSN'	Only the current active Safety Net Number for the patient will be in this field. The Safety Net Number Expiry Date will not be sent in the message. Historical or expired Safety Net numbers will not be stored in HD. Since HD validates Medicare, Concession and Repat, if a Safety Net Number is recorded for the patient from a previous message and is not included in the current message, then the Safety Net Number will need to be set to null.
PID-3 Internal Patient ID	Identifier Type = MC MC = Medicare number, e.g. ''22345678901^^^^MC^^^202107'	Only the current active Medicare Number for the patient will be in this field The Medicare Number followed by the IRN to form an 11-digit number. All 11 digits will be

					supplied. The first 10 digits are the Medicare number and the last digit is the IRN. The Medicare Card Expiry date can be included in the message. IF this segment is not included then the value of PID-19 will be used to determine the patient's medicare number
PID-3 Internal Patient ID			Identifier Type = X X = Custom identifier in CareRight, e.g. if you have a custom identifier configured with the code "TCID" the following segment would populate that 'A0067^^^^TCID^^^'		If a PID-3 identifier name matches a custom identifier field in CareRight then this value will be used to populate that identifier field

6.2.6 Insurance Segment

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
IN1-0			Segment ID	R	'IN1'
IN1-1	SI	4	Set ID - IN1	R	
IN1-2	CE	60	Insurance Plan ID	R	Health Fund cover level.
IN1-3	CX	59	Insurance Company ID e.g. '|BUP|'	R	Medicare Assigned Fund Code as returned by the Eclipse get participants request API.
IN1-4	XON	130	Insurance Company Name	O	Not sent
IN1-5	XAD	106	Insurance Company Address	O	Not sent
IN1-6	XPN	48	Insurance Co. Contact Person	O	Not sent
IN1-7	XTN	40	Insurance Co Phone Number	O	Not sent
IN1-8	ST	12	Group Number	O	Not sent
IN1-9	XON	130	Group Name	O	Not sent
IN1-10	CX	12	Insured's Group Emp ID	O	Not sent
IN1-11	XON	130	Insured's Group Emp Name	O	Not sent
IN1-12	DT	8	Plan Effective Date	O	Not sent
IN1-13	DT	8	Plan Expiration Date	O	Not sent
IN1-14	CM	55	Authorization Information	O	Not sent
IN1-15	IS	3	Plan Type	O	Not sent
IN1-16	XPN	48	Name Of Insured	O	Not sent
IN1-17	IS	2	Insured's Relationship To Patient	O	Not sent
IN1-18	TS	26	Insured's Date Of Birth	O	Not sent
IN1-19	XAD	106	Insured's Address	O	Not sent
IN1-20	IS	2	Assignment Of Benefits	O	Not sent
IN1-21	IS	2	Coordination Of Benefits	O	Not sent
IN1-22	ST	2	Coord Of Ben. Priority	O	Not sent
IN1-23	ID	2	Notice Of Admission Flag	O	Not sent
IN1-24	DT	8	Notice Of Admission Date	O	Not sent
IN1-25	ID	2	Report Of Eligibility Flag	O	Not sent
IN1-26	DT	8	Report Of Eligibility Date	O	Not sent
IN1-27	IS	2	Release Information Code	O	Not sent
IN1-28	ST	15	Pre-Admit Cert (PAC)	O	Not sent
IN1-29	TS	26	Verification Date/Time	O	Not sent
IN1-30	XCN	60	Verification By	O	Not sent

IN1-31	IS	2	Type Of Agreement Code	O	Not sent
IN1-32	IS	2	Billing Status	O	Not sent
IN1-33	NM	4	Lifetime Reserve Days	O	Not sent
IN1-34	NM	4	Delay Before L.R. Day	O	Not sent
IN1-35	IS	8	Company Plan Code	O	Not sent
IN1-36	ST	15	Policy Number	O	Health Fund membership number.
IN1-37	CP	12	Policy Deductible	O	Not sent
IN1-38	CP	12	Policy Limit - Amount	B	Not sent
IN1-39	NM	4	Policy Limit - Days	O	Not sent
IN1-40	CP	12	Room Rate - Semi-Private	B	Not sent
IN1-41	CP	12	Room Rate - Private	B	Not sent
IN1-42	CE	60	Insured's Employment Status ^Retired^^^^|	O	Value will be one of the following: 0 Not applicable 1 Child not at School 2 Student 3 Employed 4 Unemployed 5 Home Duties 6 Retired 7 Pensioner 8 Other 9 Unknown D Declined to respond
IN1-43	IS	1	Insured's Sex	O	Not sent
IN1-44	XAD	106	Insured's Employer Address	O	Not sent
IN1-45	ST	2	Verification Status	O	Not sent
IN1-46	IS	8	Prior Insurance Plan ID	O	Not sent
IN1-47	IS	3	Coverage Type	O	Not sent
IN1-48	IS	2	Handicap	O	Not sent
IN1-49	CX	12	Insured's ID Number	O	Not sent

6.3 A40 Patient Identifier Merge Message

The A40 message type will be processed in this interface. The following tables described their message structure and processing. Sample messages have been provided [ref 3].

The MSH EVN, and PID segments will be processed as described in 4.1.2.2.2 Segment Structure of MSH and PID with the following differences:

- The patient described in the PID segment is the major patient
- The patient described in the MRG segment is the minor patient

For the purposes of this document, the major is the patient MRN or record to be retained. The minor is the patient MRN or record to be inactivated.

Patient Merge will be rejected by CareRight if any of the following is true:

- The Minor Patient is currently admitted to any location.
- The Minor Patient is already merged to a different Major Patient.

6.3.1 Merge Segment

Table 10: A40 segments describes the message structure of an A40. The MSH, EVN and PID segments will be processed as described in Section 4.1.2.1.2 Segment Structure

Table 10: A40 segments

Segment	Name	R/O	Freq of Occurrence	To be Processed
MSH	Message Header	R	1	Yes
EVN	Event	R	1	Yes
PID	Patient Identification	R	1	Yes
MRG	Source Patient/Client	R	1	Yes

Table 11: MRG fields describes the fields of the Merge Segment (MRG) that will be processed for this interface. The 'Comments' column includes business rules for processing the field, examples, etc.

Table 11: MRG fields

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
MRG-0			Segment Id	R	Will be sent as 'MRG'
MRG-1	CX	250	Prior Patient Identifier List	R	The equivalent of the PID-3 field but to reference the minor Patient. This will contain a MR type identifier. See Table 9: Business rules for processing Internal Patient IDs
MRG-2	CX	250	Prior Alternate Patient ID	O	Fields from MRG-2 onwards are not sent
MRG-3	CX	250	Prior Patient Account Number	O	
MRG-4	CX	250	Prior Patient ID	O	
MRG-5	CX	250	Prior Visit ID	O	
MRG-6	CX	250	Prior Alternate ID	O	
MRG-7	XPN	250	Prior Patient Name as 'Surname^Given_Name^Middle Initial or Name^^Title^^L' e.g. '|Tabib^Eli^B^^Mr^^L|'	R	See Table 1: Reference Code Sets to be used for titles One name with a type of 'L' should be expected as this represents the Legal name for the Patient.

6.3.2 Identifier Merges

Prior to processing the message, CareRight needs to attempt to match the patients identified in the PID and MRG segments to existing active patient records in CareRight. The 'MR' identifier in PID-3 will be used to match the major patient. The 'MR' identifier in the MRG-1 will be used to match the minor patient.

Table 12: Identifier Merge Scenarios describes the possible matching scenarios and the resultant message processing.

Table 12: Identifier Merge Scenarios

Major Record Found in:	Minor Record Found in:	Processing Rule
CareRight	CareRight	The minor MRN(s) will inactivated. The minor patient record will be inactivated. The minor ICC MRN(s) will be added to the major patient record as an inactive MRN(s). The major patient record demographics will be updated as per the PID segment.
CareRight	No match found	The minor ICC MRN will be added to the major patient record as an inactive MRN. The major patient record demographics will be updated as per the PID segment.
No match found	CareRight	The major ICC MRN will be added to minor record as active MRN. The minor ICC MRN will be set to inactive. The demographics of the minor patient record in CareRight will be updated as appropriate based the content of the PID segment.
No match found	No match found	The message will not be processed.

The following is a sample A40 merge message from Health Director:

MSH|^~\&|EPIC_DIGITAL|0001|CARERIGHT| CARERIGHT |20170629064757||ADT^A40|20170629064757055eba|P|2.3.1|||AL

EVN|A40|20170629064757

PID|1|||0000123456^^^^MR~QXT123456^^^^AUSDVA~Gold^^^^RCT~45678954^^^^GOV SSN~7897546206^^^^CON^^^20181010||Ufnick^Moshe^Van^^Mr^^D||19821015|M||Ab original And TorresStraitIslander|55 TESTY STREET^^TESTYVILLE^Western Australia^6100^^H~200 MELBOURNE STREET^^TESTYVILLE^Western Australia^6100^^P||(07)33949261^^PH~0488412395^^CP|^^E^moshe123@gmail.com|^Eng lish (Australia)|M|||12345678901|||None|England|||||Israelis|20171010

MRG|0000008888^^^^MR^YERO~0000002222^^^^P^GRAN~0000003333^^^^P^0001

6.4 I12 Patient Referral Message

The I12 message type will be processed in this interface. The following tables described their message structure and processing. Sample messages have been provided.

The MSH and PID segments will be processed as described in 7.2.2 Segment Structure .

All referrals for a patient past and present must sent in the one I12 message. Any referral missing is considered a deleted referral and will be deactivated in CareRight (Referrals cannot be deleted)

Segments RF1 and PRD's are repeating segments. Each RF1 must be followed by a PRD which contains the referring provider details for the RF1 and an optional PRD for the referred to provider. If the referred to provider is supplied then the referral can only be used to bill for that provider. If the referred to provider is not supplied the referral can be used to bill for any provider.

To resolve the "Referring Provider" in CareRight a search of the existing Professional Contacts in performed and if a match is found on an existing professional contact (same name, address, provider number) it will be linked to the referral. If no match is found a new professional

contact is created in CareRight and linked to the referral. Professional Contacts will be assigned the category matched by the speciality in RF1-5. Each Speciality will be matched to the exact named category in CareRight. This is a user maintained list and will be setup to match the list in the specification as part of configuration.

Only Medical Referrals from a Medical Provider will be processed by CareRight as other types of referrals are not maintained as records in CareRight. If RFI-3 is not set to 'Med' then the record will be ignored, no error will be returned.

Table 13: I12 segments

Segment	Name	R/O	Freq of Occurrence	To be Processed
MSH	Message Header	R	1	Yes
PID	Patient Identification	R	1	Yes
RF1	Referral Information	R	*	Yes
PRD	Provider Data (Referring Provider)	R	*	Yes
PRD	Provider Data (Referred to Provider)	O	*	Yes

Table 14: RF1 fields

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
RF1-1	CE	1	Referral Status	R	The status of the referral. CareRight only accepts referral statuses of 'A' Accepted.
RF1-2			Referral Priority	O	Not Sent
RF1-3	CE	3	Referral Type	R	The type of referral. CareRight Supports 'Med' Medical Referrals only.
RF1-4			Referral Disposition		Not Sent
RF1-5			Referral Category	O	Specialisation
RF1-6			Originating Referral Identifier		Not Sent
RF1-7	TS	26	Effective Date as CCYYMMDD, e.g. '|20171012|'	R	The activation date of the referral. This is usually the date of first service.
RF1-8	TS	26	Expiration Date as CCYYMMDD, e.g. '|20181018|'	O	The Expiration date of the referral or blank for indefinite referrals. (Most referrals are 3 or 12 month referrals)
RF1-9	TS	26	Process Date as CCYYMMDD, e.g. '|20171002|'	R	The date on the referral letter/correspondence from the referring doctor

Table 15: PRD fields

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
PRD-1	CE	2	Provider Role	R	Designate the role this provider has in the associated

					message. CareRight supports. 'RP' Referring Provider & 'RT' Referred to Provider.
PRD-2	XPN	250	Provider Name as 'Surname^Given_Name^Middle Initial or Name^^Title^^L' e.g. '|Tabib^Eli^B^^Dr^^L|'	R	See Table 1: Reference Code Sets to be used for titles One name with a type of 'L' should be expected as this represents the Legal name for the Provider.
PRD-3	ZAD	250	Provider Address will have the following component fields: 1. Address Line 1 2. Address Line 2 3. Suburb 4. State 5. Postcode 6. Country (not sent) 7. Type e.g. '|54 REUBEN STREET^^STAFFORD^Queensland^4053^^O|'	O	Office (One) address will be sent. Type will be 'O'. Address details are required if the Provider Role is 'RP' Referring Provider.
PRD-4			Provider Location		Not Sent
PRD-5			Provider Communication Information		Not Sent
PRD-6			Preferred Method of Contact		Not Sent
PRD-7	PLN	250	Provider Identifiers will have the following component fields: 1. Identifier Number 2. Identifier Type e.g. '12345678X^MCR'		Only identifier type 'MCR' will be supported. MCR = Medicare Provider Number

6.5 Acknowledgments

Health Director expects an Acknowledgement Message for each message it sends. CareRight will send Acknowledgement Messages to the designated IP address/port to indicate the message has been successfully processed or not.

6.5.1 Acknowledgement Message Structure

Table 13: ACK Message Segments

Segment	Name	R/O	Freq of Occurrence
MSH	Message Header	R	1
MSA	Message Acknowledgement	R	1
ERR	Error Segment	O	1

6.6 Acknowledgement Segment Structure

6.6.1 Message Header Segment of Acknowledgement Message

Table 14 describes the fields of the Message Header Segment (MSH) of Acknowledgement messages that will be sent by CareRight for this interface. The 'Comments' column includes business rules for processing the field, examples, etc.

Table 14: MSH field for ACK

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
MSH-0			Segment Id	R	Will be sent as 'MSH'
MSH-1	ST	1	Field Separator	R	Will be sent as '|'
MSH-2	ST	4	Encoding Characters	R	Will be sent as '^~\&'
MSH-3	HD	180	Sending Application	O	Will be sent as 'CARERIGHT'
MSH-4	HD	180	Sending Facility	O	Will be sent as 'CARERIGHT'
MSH-5	HD	180	Receiving Application	O	Will be sent as 'EPIC_DIGITAL'
MSH-6	HD	180	Receiving Facility	O	Will be sent as the sending facility of the initiating message, i.e. MSH-4
MSH-7	26	TS	Date/time of Message as CCYYMMDDhhmm	R	Date and time of the acknowledgment message
MSH-8	40	ST	Security	O	Not sent
MSH-9	CM	7	Message Type 1. Message Type 2. Trigger Event	R	'ACK^Event^Structure' (where Event will be the same as the message being acknowledged), i.e. • ADT^A08 • ADT^A40 e.g. 'ACK^A08'
MSH-10	ST	20	Message Control ID	R	Unique ID for message
MSH-11	PT	3	Processing ID	R	Will be sent as 'P'
MSH-12	VID	60	Version ID	R	Will be sent as '2.3.1'
MSH-13					MSH-13 onwards not sent

6.6.1.1 Message Acknowledgement Segment

Table 15 describes the fields of the Message Acknowledgment Segment (MSA) of Acknowledgement messages that will be sent by CareRight for this interface. The 'Comments' column includes business rules for processing the field, examples, etc.

Table 15: MSA fields

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
MSA-0			Segment ID	R	Will be sent as 'MSA'
MSA -1	ID	2	Acknowledgement Code	R	Will send one of the following: AA = Application Accept AE = Application Error AR = Application Reject
MSA -2	ST	20	Message Control ID	R	Control ID of the initiating message
MSA -3			Text message		Not sent
MSA -4			Expected sequence number		Not sent
MSA -5			Delayed Acknowledgement Type		Not sent
MSA -6	CE	100	Error Condition		Not sent

6.6.1.2 Error Segment

Table 16: ERR field

Table 17 describes the fields of the Error Segment (ERR) of Acknowledgement messages that will be sent by CareRight for this interface. This segment will only be sent if MSA-1 is either 'AE' or 'AR'. The 'Comments' column includes business rules for processing the field, examples, etc.

Segment and Field	Data Type	Max Length	Description	Mandatory (R/O)	Comments
ERR-0			Segment Id	R	Will be sent as 'ERR'
ERR -1	CM	80	Error Code and Location	R	Segment and field, and the error(s) encountered. See Table 17: Error Codes for the possible codes. This is a mandatory HL7 field when this segment is used. This field will include at least one error, and may include multiple errors. The number of reported errors is dependent on how far message processing progressed prior to 'erroring out'. If a message is modified as result of an error and re-sent, it possible for the message to error again once processing has passed the previous point of erroring out.

Table 17: Error Codes

Error Code	Error Code Description	Comments
0	Message accepted	Message successfully processed
100	Segment sequence error	The message segments were not in the proper order, or required segments are missing
101	Requested field missing	A required field is missing from a segment
102	Data type error	The field contained data of the wrong data type
200	Unsupported message type	The message type is not supported
201	Unsupported event code	The event code is not supported
203	Unsupported version ID	The Version ID is not supported
204	Unknown key identifier	A field references a record that does not exist.
205	Duplicate key identifier	A field references a record associated with a different record.
206	Application record locked	The transaction could not be performed at the application storage level
207	Application internal error	A catchall for internal errors not explicitly covered by other codes

Notes:

If a field uses a reference list then the supplied value must exist on the reference list or the request will be rejected with an error code 102.

If a Patient cannot be successfully matched for an A08 requests an error code 205 is returned.

7 Acceptance Criteria

Acceptance Criteria	Role	Organization
All the specified details from Health Director are in the CareRight record populated into the correct fields when a patient record is created	Project Manager	Clintel/Icon
Updating details in the Health Director patient record – for admitted and non-admitted patients - updates the same details accurately in CareRight automatically	Project Manager	Clintel/Icon
Patient records are created correctly from A08 messages for unmatched patients	Project Manager	Clintel/Icon
If the patient is marked deceased in Health Director, the patient is marked deceased in CareRight, and the patient record is set to inactive.	Project Manager	Clintel/Icon
ACKS and NACKs are being sent and received appropriately.	Project Manager	Clintel/Icon
New patient records may be manually created in CareRight only by system administrator	Project Manager	Clintel/Icon

Manually created patient records cannot duplicate a CRN/URN already in CareRight (active or inactive)	Project Manager	Clintel/Icon

8 Reference Tables

The following is a list of the supported values for each reference table

8.1 Language

CareRight will accept either the code or description in the HL7 message

Code	Description
0000	Inadequately Described
0002	Not Stated
1101	Gaelic (Scotland)
1102	Irish
1103	Welsh
1199	Celtic, nec
1201	English
1301	German
1302	Letzeburgish
1303	Yiddish
1401	Dutch
1402	Frisian
1403	Afrikaans
1501	Danish
1502	Icelandic
1503	Norwegian
1504	Swedish
1599	Scandinavian, nec
1601	Estonian
1602	Finnish
1699	Finnish and Related Languages, nec
2101	French
2201	Greek
2301	Catalan
2302	Portuguese
2303	Spanish
2399	Iberian Romance, nec
2401	Italian
2501	Maltese
2901	Basque

2902	Latin
2999	Other Southern European Languages, nec
3101	Latvian
3102	Lithuanian
3301	Hungarian
3401	Belorussian
3402	Russian
3403	Ukrainian
3501	Bosnian
3502	Bulgarian
3503	Croatian
3504	Macedonian
3505	Serbian
3506	Slovene
3507	Serbo-Croatian/Yugoslavian, so described
3601	Czech
3602	Polish
3603	Slovak
3604	Czechoslovakian, so described
3901	Albanian
3903	Aromunian (Macedo-Romanian)
3904	Romanian
3905	Romany
3999	Other Eastern European Languages, nec
4101	Kurdish
4102	Pashto
4104	Balochi
4105	Dari
4106	Persian (excluding Dari)
4107	Hazaraghi
4199	Iranic, nec
4202	Arabic
4204	Hebrew
4206	Assyrian Neo-Aramaic
4207	Chaldean Neo-Aramaic
4208	Mandaean (Mandaic)
4299	Middle Eastern Semitic Languages, nec
4301	Turkish
4302	Azeri
4303	Tatar
4304	Turkmen
4305	Uygur
4306	Uzbek

4399	Turkic, nec
4901	Armenian
4902	Georgian
4999	Other Southwest and Central Asian Languages, nec
5101	Kannada
5102	Malayalam
5103	Tamil
5104	Telugu
5105	Tulu
5199	Dravidian, nec
5201	Bengali
5202	Gujarati
5203	Hindi
5204	Konkani
5205	Marathi
5206	Nepali
5207	Punjabi
5208	Sindhi
5211	Sinhalese
5212	Urdu
5213	Assamese
5214	Dhivehi
5215	Kashmiri
5216	Oriya
5217	Fijian Hindustani
5299	Indo-Aryan, nec
5999	Other Southern Asian Languages
6101	Burmese
6102	Chin Haka
6103	Karen
6104	Rohingya
6199	Burmese and Related Languages, nec
6201	Hmong
6299	Hmong-Mien, nec
6301	Khmer
6302	Vietnamese
6303	Mon
6399	Mon-Khmer, nec
6401	Lao
6402	Thai
6499	Tai, nec
6501	Bisaya
6502	Cebuano

6503	Ilokano
6504	Indonesian
6505	Malay
6507	Tetum
6508	Timorese
6511	Tagalog
6512	Filipino
6513	Acehnese
6514	Balinese
6515	Bikol
6516	Iban
6517	Ilonggo (Hiligaynon)
6518	Javanese
6521	Pampangan
6599	Southeast Asian Austronesian Languages, nec
6999	Other Southeast Asian Languages
7101	Cantonese
7102	Hakka
7104	Mandarin
7106	Wu
7107	Min Nan
7199	Chinese, nec
7201	Japanese
7301	Korean
7901	Tibetan
7902	Mongolian
7999	Other Eastern Asian Languages, nec
8000	Australian Indigenous Languages, nfd
8101	Anindilyakwa
8111	Maung
8113	"Ngan'gikurunggurr"
8114	Nunggubuyu
8115	Rembarrnga
8117	Tiwi
8121	Alawa
8122	Dalabon
8123	Gudanji
8127	Iwaidja
8128	Jaminjung
8131	Jawoyn
8132	Jingulu
8133	Kunbarlang
8136	Larrakiya

8137	Malak Malak
8138	Mangarrayi
8141	Maringarr
8142	Marra
8143	Marrithiyel
8144	Matngala
8146	Murrinh Patha
8147	Na-kara
8148	Ndjⓥbbana (Gunavidji)
8151	Ngalakgan
8152	Ngaliwurru
8153	Nungali
8154	Wambaya
8155	Wardaman
8156	Amurdak
8157	Garrwa
8158	Kuwema
8161	Marramaninyshi
8162	Ngandi
8163	Waanyi
8164	Wagiman
8165	Yanyuwa
8166	Marridan (Maridan)
8171	Gundjeihmi
8172	Kune
8173	Kuninjku
8174	Kunwinjku
8175	Mayali
8179	Kunwinjkuan, nec
8181	Burarra
8182	Gun-nartpa
8183	Gurr-goni
8189	Burarran, nec
8199	Arnhem Land and Daly River Region Languages, nec
8211	Galpu
8212	Golumala
8213	Wangurri
8219	Dhangu, nec
8221	Dhalwangu
8222	Djarrwark
8229	"Dhay'yi
8231	Djambarrpuyngu
8232	Djapu

8233	Daatiwuy
8234	Marrangu
8235	Liyagalawumirr
8236	Liyagawumirr
8239	Dhuwal, nec
8242	Gumatj
8243	Gupapuyngu
8244	Guyamirrilili
8246	Manggalili
8247	Wubulkarra
8249	Dhuwala, nec
8251	Wurlaki
8259	Djinang, nec
8261	Ganalbingu
8262	Djinba
8263	Manyjalpingu
8269	Djinba, nec
8271	Ritharrngu
8272	Wagilak
8279	Yakuy, nec
8281	Nhangu
8282	Yan-Nhangu
8289	Nhangu, nec
8291	Dhuwaya
8292	Djangu
8293	Madarrpa
8294	Warramiri
8295	Rirratjingu
8299	Other Yolngu Matha, nec
8301	Kuku Yalanji
8302	Guugu Yimidhirr
8303	"Kuuku-Ya'u"
8304	Wik Mungkan
8305	Djabugay
8306	Dyirbal
8307	Girramay
8308	Koko-Bera
8311	Kuuk Thayorre
8312	Lamalama
8313	Yidiny
8314	Wik Ngathan
8315	Alngith
8316	Kugu Muminh

8317	Morrobalama
8318	Thaynakwith
8321	Yupangathi
8322	Tjungundji
8399	Cape York Peninsula Languages, nec
8401	Kalaw Kawaw Ya/Kalaw Lagaw Ya
8402	Meriam Mir
8403	Yumplatok (Torres Strait Creole)
8504	Bilinarra
8505	Gurindji
8506	Gurindji Kriol
8507	Jaru
8508	Light Warlpiri
8511	Malngin
8512	Mudburra
8514	Ngardi
8515	Ngarinyman
8516	Walmajarri
8517	Wanyjirra
8518	Warlmanpa
8521	Warlpiri
8522	Warumungu
8599	Northern Desert Fringe Area Languages, nec
8603	Alyawarr
8606	Kaytetye
8607	Antekerrepenh
8611	Central Anmatyerr
8612	Eastern Anmatyerr
8619	Anmatyerr, nec
8621	Eastern Arrernte
8622	Western Arrarnta
8629	Arrernte, nec
8699	Arandic, nec
8703	Antikarinya
8704	Kartujarra
8705	Kukatha
8706	Kukatja
8707	Luritja
8708	Manyjilyjarra
8711	Martu Wangka
8712	Ngaanyatjarra
8713	Pintupi
8714	Pitjantjatjara

8715	Wangkajunga
8716	Wangkatha
8717	Warnman
8718	Yankunytjatjara
8721	Yulparija
8722	Tjupany
8799	Western Desert Language, nec
8801	Bardi
8802	Bunuba
8803	Gooniyandi
8804	Miriwoong
8805	Ngarinyin
8806	Nyikina
8807	Worla
8808	Worrorra
8811	Wunambal
8812	Yawuru
8813	Gambera
8814	Jawi
8815	Kija
8899	Kimberley Area Languages, nec
8901	Adnymathanha
8902	Arabana
8903	Bandjalang
8904	Banyjima
8905	Batjala
8906	Bidjara
8907	Dhanggatti
8908	Diyari
8911	Gamilaraay
8913	Garuwali
8914	Githabul
8915	Gumbaynggir
8916	Kanai
8917	Karajarri
8918	Kariyarra
8921	Kaurna
8922	Kayardild
8924	Kriol
8925	Lardil
8926	Mangala
8927	Muruwari
8928	Narungga

8931	Ngarluma
8932	Ngarrindjeri
8933	Nyamal
8934	Nyangumarta
8935	Nyungar
8936	Paakantyi
8937	Palyku/Nyiyaparli
8938	Wajarri
8941	Wiradjuri
8943	Yindjibarndi
8944	Yinhawangka
8945	Yorta Yorta
8946	Baanbay
8947	Badimaya
8948	Barababaraba
8951	Dadi Dadi
8952	Dharawal
8953	Djabwurrung
8954	Gudjal
8955	Keerray-Woorroong
8956	Ladji Ladji
8957	Mirning
8958	Ngatjumaya
8961	Waluwarra
8962	Wangkangurru
8963	Wargamay
8964	Wergaia
8998	Aboriginal English, so described
8999	Other Australian Indigenous Languages, nec
9000	Other Languages, nfd
9101	American Languages
9201	Acholi
9203	Akan
9205	Mauritian Creole
9206	Oromo
9207	Shona
9208	Somali
9211	Swahili
9212	Yoruba
9213	Zulu
9214	Amharic
9215	Bemba
9216	Dinka

9217	Ewe
9218	Ga
9221	Harari
9222	Hausa
9223	Igbo
9224	Kikuyu
9225	Krio
9226	Luganda
9227	Luo
9228	Ndebele
9231	Nuer
9232	Nyanja (Chichewa)
9233	Shilluk
9234	Tigr√©
9235	Tigrinya
9236	Tswana
9237	Xhosa
9238	Seychelles Creole
9241	Anuak
9242	Bari
9243	Bassa
9244	Dan (Gio-Dan)
9245	Fulfulde
9246	Kinyarwanda (Rwanda)
9247	Kirundi (Rundi)
9248	Kpelle
9251	Krahn
9252	Liberian (Liberian English)
9253	Loma (Lorma)
9254	Lumun (Kuku Lumun)
9255	Madi
9256	Mandinka
9257	Mann
9258	Moro (Nuba Moro)
9261	Themne
9299	African Languages, nec
9301	Fijian
9302	Gilbertese
9303	Maori (Cook Island)
9304	Maori (New Zealand)
9306	Nauruan
9307	Niue
9308	Samoan

9311	Tongan
9312	Rotuman
9313	Tokelauan
9314	Tuvaluan
9315	Yapese
9399	Pacific Austronesian Languages, nec
9402	Bislama
9403	Hawaiian English
9404	Pitcairnese
9405	Solomon Islands Pijin
9499	Oceanian Pidgins and Creoles, nec
9502	Kiwai
9503	Motu (HiriMotu)
9504	Tok Pisin (Neomelanesian)
9599	Papua New Guinea Languages, nec
9601	Invented Languages
9701	Auslan
9702	Makaton
9799	Sign Languages, nec

9 Specialisation

Description
Cardiologist
Dentist
Dermatologist
Endocrinologist
ENT (Otolaryngologist)
Gastroenterologist
General Practitioner
Geriatrician
GP - Skin Cancer
Gynaecological Oncologist
Gynaecologist/Obstetrician
Haematologist
Immunologist
Medical Oncologist
Nephrologist
Neurologist/Surgeon
Opthalmologist
Other Specialist

Paediatrician
Palliative Care/Pain Physician
Radiation Oncologist
Rehab Physician
Respiratory Physician
Rheumatologist
Surgeon - Abdominal
Surgeon - Bariatric
Surgeon - Breast/Endocrine
Surgeon - Cardiothoracic
Surgeon - Colorectal
Surgeon - General
Surgeon - Head & Neck
Surgeon - Oncology
Surgeon - Orthopaedic
Surgeon - Other
Surgeon - Plastic
Surgeon - Upper GI
Urologist