Clinical Documentation (Results)
Interface Specification

1 Introduction

1.1 Document Scope and Purpose

The purpose of this document is to provide a specification for the implementation of Foreign System Results interface from the i-heal application utilizing Healogics integration engine capabilities. The major sections of this document will provide the trigger events and fields that are sent from i-heal application

1.2 Communications

This section provides an overall description of the connectivity protocol and the message envelope.

1.2.1 Lower Layer Protocol

i-heal supports the following lower layer protocol:

Minimal Lower Layer Protocol (MLLP): <SB>dddd<EB><CR>

The following table shows the protocol details:

Symbol	Name	Hex Code	Decimal Equivalent
<SB>	Start Block	<0x0B>	11
dddd	Application Data	(Variable number of bytes)	
<EB>	End Block	<0x1C>	28
<CR>	Carriage Return	<0x0D>	13

1.2.2 Acknowledgements

An HL7 Acknowledgment is sent by i-heal upon receipt of each message. The source application waits until receipt of the acknowledgment before sending the next message.

2 Message Definition and Processing

2.1 Trigger Events

The following tables list the HL7 Event types that are supported by i-heal.

2.1.1 R01 Details

Segment	Segment Name	R01
MSH	Message Header	
MSA	Message Acknowledgment	
[ERR]	Error Information	
EVN	Event Type	
PID	Patient Identification	
PV1	Patient Visit	
OBR	Observation Result	
{OBX}	Observation/Result	

3 HL7 SEGMENTS DEFINED

3.1 MSH – Message Header Segment

This section defines the intent, source, destination, and some message syntax specifics. The table shows the entire segment, and a sample message follows the table.

SEQ	LEN	DT	OPT	ELEMENT NAME	FORMAT	NOTES*
1	1	ST	R	Field Separator	|	
2	4	ST	R	Encoding Characters	^~\&	
3	180	EI	O	Sending Application	i-heal	
4	180	EI	O	Sending Facility		
5	180	EI	O	Receiving Application		
6	180	EI	O	Receiving Facility		
7	26	TS	O	Date/Time Of Message	CCYYMMDDHHMMSS	
8	40	ST	O	Security		Not Available
9	7	CM	R	Message Type	ORU^R01	
10	20	ST	R	Message Control ID		
11	3	PT	R	Processing ID	P or T	
12	60	VID	R	Version ID	2.4	
13	15	NM	O	Sequence Number		Not Available
14	180	ST	O	Continuation Pointer		Not Available
15	2	ID	O	Accept Ack Type		Not Available
16	2	ID	O	Application Ack Type		Not Available
17	2	ID	O	Country Code		Not Available
18	10	ID	O	Character Set		Not Available
19	60	CE	O	Principle Lang Of Msg		Not Available
20	20	ID	O	Alternate Char Set Handling Scheme		Not Available

For example:
```
MSH|^~\&|i-heal|ORGANIZATION|||20070101120000||ORU^R01|001|P|2.4|
```

3.2 EVN – Event Type Segment

This segment communicates necessary trigger event information to the receiving application. The table shows the entire segment, and a sample message follows the table.

SEQ	LEN	DT	OPT	ELEMENT NAME	FORMAT	NOTES*
1	3	ID	R	Event Type Code	R01	
2	26	TS	R	Recorded Date/Time	CCYYMMDDHHMMSS	
3	26	TS	O	Date/Time Planned Event		Not Available
4	3	IS	O	Event Reason Code		Not Available

| 5 | 60 | XCN | O | Operator ID | | Not Available |
| 6 | 26 | TS | O | Event Occurred | | Not Available |

For example:

EVN|R01|20070101120000|

3.3 PID – Patient Identification Segment

This segment is the primary means for communicating patient identification information. This is permanent patient identifying and demographic information that is not likely to change frequently. The table shows the entire segment, and a sample message follows the table.

SEQ	LEN	DT	OPT	ELEMENT NAME	FORMAT	NOTES*
1	4	SI	O	Set ID – PID		
2	20	CX	B	Patient ID		Used to Process CMRN
3	20	CX	R	Patient Identifier List		Used to Process MRN
4	20	CX	B	Alternate Patient ID – PID		Not Available
5	48	XPN	R	Patient Name		
6	48	XPN	O	Mother's Maiden Name		Not Available
7	26	TS	O	Date/Time of Birth	CCYYMMDD	
8	1	IS	O	Sex		
9	48	XPN	O	Patient Alias		Not Available
10	80	CE	O	Race		
11	106	XAD	O	Patient Address		
12	4	IS	B	County Code		
13	40	XTN	O	Phone Number - Home		
14	40	XTN	O	Phone Number - Bus		
15	60	CE	O	Primary Language		
16	80	CE	O	Marital Status		Not Available
17	80	CE	O	Religion		
18	20	CX	O	Patient Account Number		
19	16	ST	B	SSN Number - Patient	999999999	
20	25	DLN	O	Driver's License # - Patient		Not Available
21	20	CX	O	Mother's Identifier		Not Available
22	80	CE	O	Ethnic Group		
23	60	ST	O	Birth Place		Not Available
24	1	ID	O	Multiple Birth Indicator		Not Available
25	2	NM	O	Birth Order		Not Available
26	80	CE	O	Citizenship		Not Available
27	60	CE	O	Veterans Military Status		Not Available
28	80	CE	O	Nationality		Not Available
29	26	TS	O	Patient Death Date and Time		Not Available

| 30 | 1 | ID | O | Patient Death Indicator | | Not Available |

For example:

```
PID|||123456||WOUND^PATIENT^X^^^||19751116|F||4|40 24TH
STREET^^PITTSBURGH^PA^15222^|US|4125555555||0||0|123456|12345789|||1|
```

3.4   PV1 – Patient Visit Segment

Registration/Patient Administration applications use the PV1 segment to communicate information on a visit-specific basis.

The table shows the entire segment, and a sample message follows the table.

SEQ	LEN	DT	OPT	ELEMENT NAME	FORMAT	NOTES*
1	4	SI	O	Set ID - PV1		
2	1	IS	R	Patient Class		
3.0	80	PL	O	Assigned Patient Location		Process only Unit
3.1				Unit		
3.2				Room		Not Available
3.3				Bed		Not Available
4	2	IS	O	Admission Type		Not Available
5	20	CX	O	Preadmit Number		Not Available
6	80	PL	O	Prior Patient Location		Not Available
7	60	XCN	O	Attending Doctor		
8	60	XCN	O	Referring Doctor		
9	60	XCN	O	Consulting Doctor		Not Available
10	3	IS	O	Hospital Service		Not Available
11	80	PL	O	Temporary Location		Not Available
12	2	IS	O	Preadmit Test Indicator		Not Available
13	2	IS	O	Re-admission Indicator		Not Available
14	3	IS	O	Admit Source		
15	2	IS	O	Ambulatory Status		Not Available
16	2	IS	O	VIP Indicator		Not Available
17	60	XCN	O	Admitting Doctor		Not Available
18	2	IS	O	Patient Type		Not Available
19	20	CX	O	Visit Number		Not Available
20	50	FC	O	Financial Class		Not Available
21	2	IS	O	Charge Price Indicator		Not Available
22	2	IS	O	Courtesy Code		Not Available
23	2	IS	O	Credit Rating		Not Available
24	2	IS	O	Contract Code		Not Available
25	8	DT	O	Contract Effective Date		Not Available
26	12	NM	O	Contract Amount		Not Available

27	3	NM	O	Contract Period		Not Available
28	2	IS	O	Interest Code		Not Available
29	1	IS	O	Trans to Bad Debt Code		Not Available
30	8	DT	O	Trans to Bad Debt Date		Not Available
31	10	IS	O	Bad Debt Agency Code		Not Available
32	12	NM	O	Bad Debt Transfer Amount		Not Available
33	12	NM	O	Bad Debt Recovery Amt		Not Available
34	1	IS	O	Delete Account Indicator		Not Available
35	8	DT	O	Delete Account Date		Not Available
36	3	IS	O	Discharge Disposition		Not Available
37	25	CM	O	Discharged to Location		Not Available
38	80	CE	O	Diet Type		Not Available
39	2	IS	O	Servicing Facility		Not Available
40	1	IS	B	Bed Status		Not Available
41	2	IS	O	Account Status		Not Available
42	80	PL	O	Pending Location		Not Available
43	80	PL	O	Prior Temp Location		Not Available
44	26	TS	O	Admit Date/Time	CCYYMMDDHHMMSS	
45	26	TS	O	Discharge Date/Time	CCYYMMDDHHMMSS	
46	12	NM	O	Current Patient Balance		Not Available
47	12	NM	O	Total Charges		Not Available
48	12	NM	O	Total Adjustments		Not Available
49	12	NM	O	Total Payments		Not Available
50	20	CX	O	Alternate Visit ID		Not Available
51	1	IS	O	Visit Indicator		Not Available
52	60	XCN	O	Other Healthcare Provider		Not Available

For Example:

```
PV1|1|O|WOUNDUNIT|R|||99999^ATTENDING^PHYSICIAN^|99999^REFFERING^PHYSIC
IAN^|||||||AMB||||||||||||||||||||||||||||||||||20070101120000|2007010112000
0|
```

3.5 OBR- Obeservation Result Segment

The OBR Segment provides details related to a single results outcome from a test on a patient. The table shows the entire segment, and a sample message follows the table.

SEQ	LEN	DT	OPT	ELEMENT NAME	FORMAT	NOTES*
1	4	SI	C	Set ID - OBR	"1"	
2	22	EI	C	Placer Order Number		Visit ID number
3	22	EI	C	Filler Order Number		Not Available
4	200	CE	R	Universal Service ID		Form Header Description
5	2	ID	X	Priority		Not Available
6	26	TS	X	Requested Date/time		Not Available
7	26	TS	C	Observation Date/Time #	CCYYMMDDHHMMSS	
8	26	TS	O	Observation End Date/Time #		Not Available
9	20	CQ	O	Collection Volume *		Not Available
10	60	XCN	O	Collector Identifier *		Not Available
11	1	ID	O	Specimen Action Code *		Not Available
12	60	CE	O	Danger Code		Not Available
13	300	ST	O	Relevant Clinical Info.		Not Available
14	26	TS	C	Specimen Received Date/Time *		Not Available
15	300	CM	O	Specimen Source *		Not Available
16	80	XCN	O	Ordering Provider		Not Available
17	40	XTN	O	Order Callback Phone Number		Not Available
18	60	ST	O	Placer field 1		Not Available
19	60	ST	O	Placer field 2		Not Available
20	60	ST	O	Filler Field 1 +		Not Available
21	60	ST	O	Filler Field 2 +		Not Available
22	26	TS	C	Results Rpt/Status Chng – Date/Time +		Not Available
23	40	CM	O	Charge to Practice +		Not Available
24	10	ID	O	Diagnostic Service Sect ID		Not Available
25	1	ID	C	Result Status +		F ≡ Final or Complete
26	400	CM	O	Parent Result +		Not Available
27	200	TQ	O	Quantity/Timing		Not Available
28	150	XCN	O	Result Copies To		Not Available
29	150	CM	O	Parent *		Not Available
30	20	ID	O	Transportation Mode		Not Available
31	300	CE	O	Reason for Study		Not Available
32	200	CM	O	Principal Result Interpreter +	Lastname^FirstName^MI	
33	200	CM	O	Assistant Result Interpreter +		Not Available
34	200	CM	O	Technician +		Not Available
35	200	CM	O	Transcriptionist +		Not Available

36	26	TS	O	Scheduled Date/Time +		Not Available
37	4	NM	O	Number of Sample Containers *		Not Available
38	60	CE	O	Transport Logistics of Collected Sample *		Not Available
39	200	CE	O	Collector's Comment *		Not Available
40	60	CE	O	Transport Arrangement Responsibility		Not Available
41	30	ID	O	Transport Arranged		Not Available
42	1	ID	O	Escort Required		Not Available
43	200	CE	O	Planned Patient Transport Comment		Not Available

For Example:

```
OBR|1|999999||i-heal Visit Report|||20070101120000|
|||||||||||||||||||F|||||||LastName^FirstName^MI|||||||||||||
```

3.6   OBX – Observation/Result Segment

The OBX segment is used to transmit a single observation or observation fragment. It represents the smallest indivisible unit of a report.

The table shows the entire segment, and a sample message follows the table.

Seq	LEN	DT	OPT	ELEMENT NAME	FORMAT	NOTES*
1	10	SI	O	Set ID - OBX		
2	3	ID	C	Value Type		
3	590	CE	R	Observation Identifier		
4	20	ST	C	Observation Sub-ID		Not Available
5	65536	*	C	Observation Value		
6	60	CE	O	Units		Not Available
7	60	ST	O	References Range		Not Available
8	5	ID	O	Abnormal Flags		Not Available
9	5	NM	O	Probability		Not Available
10	2	ID	O	Nature of Abnormal Test		Not Available
11	1	ID	R	Observ Result Status		
12	26	TS	O	Date Last Obs Normal Values		Not Available
13	20	ST	O	User Defined Access Checks		Not Available
14	26	TS	O	Date/Time of the Obs		Not Available
15	60	CE	O	Producer's ID		Not Available
16	80	XCN	O	Responsible Observer		Not Available
17	60	CE	O	Observation Method		Not Available

For Example:

```
OBX|1|FT|i-heal Visit Report
||http://www.iHeal.com/Content@username:password|||||F|
**Can send text of Documents as well with Multiple OBX statements
```