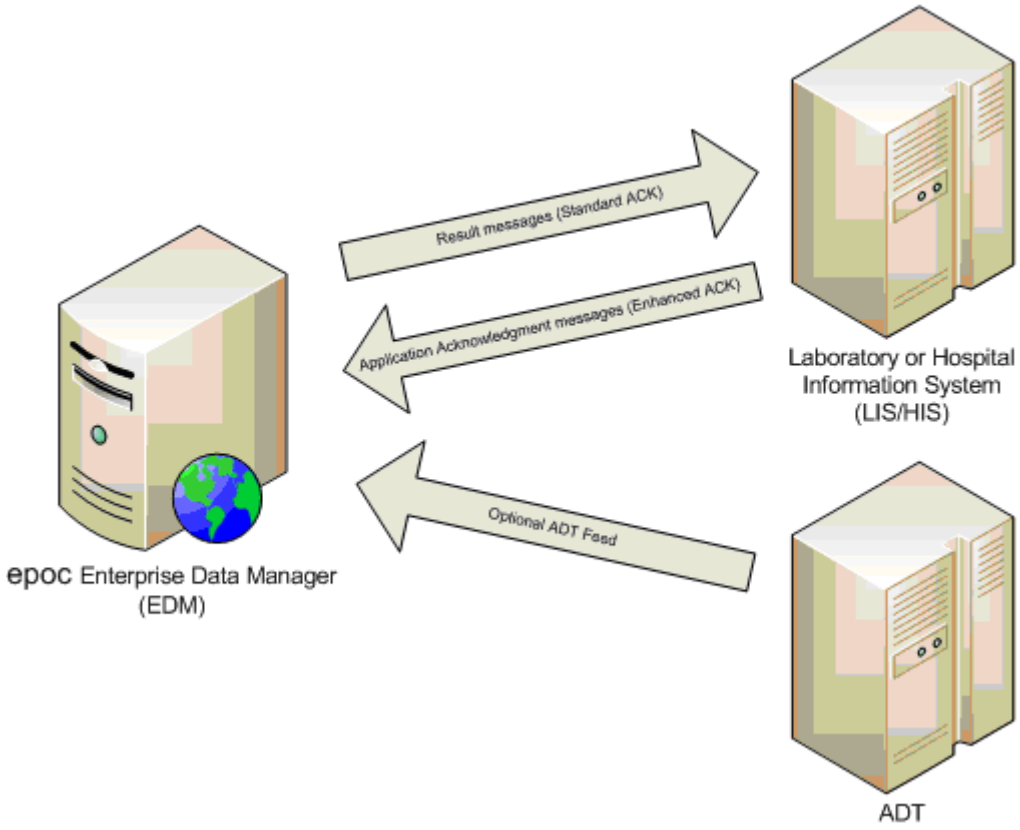
HL7 Interface

Overview

The epoc HL7 Interface is a customizable interface used to send patient test results from the epoc Enterprise Data Manager (EDM) to Laboratory or Hospital Information Systems. This document describes the standard HL7 messaging format that can support the following:

- Sending unsolicited test results to the LIS/HIS with standard acknowledgements.
- Optionally receive Enhanced Acknowledgements initiated by the LIS/HIS indicating success or failure to process a test result.
- Optionally receive ADT information containing patient demographic information.



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Low-Level Protocol

The epoc HL7 Interface uses the minimal lower layer protocol (LLP) as described in Appendix B, section B.4 of the HL7 version 2.6 specifications.

Result Messages – Unsolicited Observation Message Structure

Test results are sent using ORU messages based on the standard structure as defined in the HL7 Specification version 2.6. The basic ORU message structure is as follows:

MSH – Message Header Segment

PID – Patient Identification Segment

OBR – Observation Request Segment

[{OBX}] – Observation/Result Segments

MSH – Message Header Segment

Field	Description	Format	Value(s)
MSH.1	**Field Separator**	**[text]**	**|**
MSH.2	**Encoding Characters**	**[text]**	**^~\&**
MSH.3	**Sending Application**	**[text]**	**epoc**
MSH.4	**Sending Facility**	**[text]**	**Epocal**
MSH.5	**Receiving Application**	**[text]**	**LAB**
MSH.6	**Receiving Facility**	**[text]**	**LAB**
MSH.7	**Date/Time of Message**	**[yyyymmddhhmmss]**	**Message Date/Time**
MSH.8	Security	<not used>	<not used>
MSH.9	**Message Type^Trigger Enent**	**[text]**	**ORU^R01** (Unsolicited Observation Message)
MSH.10	**Message Control ID**	**[unique ID]**	**Unique message identifier**
MSH.11	**Processing ID**	**[text]**	**P**
MSH.12	**Version ID**	**[text]**	**2.6**
MSH.13	Sequence Number	<not used>	<not used>
MSH.14	Continuation pointer	<not used>	<not used>
MSH.15	**Accept acknowledgement type**	**[text]**	**AL**
MSH.16	**Application acknowledgement type**	**[text]**	**NE** – Enhanced Acknowledgement disabled **AL** – Enhanced Acknowledgement enabled
MSH.17 : MSH.25	Country Code : Receiving Network Address	<not used> : <not used>	<not used> : <not used>

PID - Patient Identification Segment

Field	Description	Format	Value(s)
PID.1	**Set ID – PID**	**[number]**	**1**
PID.2	Patient ID	<not used>	<not used>
PID.3	**Patient Identifier List**	**[text]**	**[patient ID]**
PID.4	**Alternate Patient ID – PID**	**[text]**	**[Id2]**
PID.5	Patient Name	<not used>	<not used>
PID.6	Mother's Maiden Name	<not used>	<not used>
PID.7	Date/Time of Birth	<not used>	<not used>
PID.8	Administrative Sex	<not used>	<not used>
PID.9 : PID.17	Patient Alias : Religion	<not used> : <not used>	<not used> : <not used>
PID.18	Patient Account Number	<not used>	<not used>
PID.19 : PID.39	SSN Number - Patient : Tribal Citizenship	<not used> : <not used>	<not used> : <not used>

OBR – Observation Request Segment

Field	Description	Format	Value(s)
OBR.1	Set ID – OBR	[number]	**1**
OBR.2	Placer Order Number	[text]	<not used>
OBR.3	Filler Order Number	[text]	<not used>
OBR.4.1	**Universal Service ID – Identifier**	**[text]**	**BGE** or **BGEM**
OBR.4.2	**Universal Service ID – Text**	**[text]**	**BGE Test Card** or **BGEM Test Card**
OBR.5	Priority	<not used>	<not used>
OBR.6	Requested Date/Time	<not used>	<not used>
OBR.7	**Observation Date/Time**	**[yyyymmddhhmmss]**	**[test date/time]**
OBR.8 : OBR.13	Observation End Date/Time : Relevant Clinical Information	<not used> : <not used>	<not used> : <not used>
OBR.14	**Specimen Received Date**	**[yyyymmddhhmmss]**	**[test date/time]**
OBR.15.1	**Specimen Source**	**[text]**	**Sample Type** – as selected on the epoc Host. **QA** – Quality control test
OBR.15.2	**Control lot** (QA tests only)	**[text]**	**<lot #>** for **QA** tests only
OBR.15.3	**Control level** (QA tests only)	**[text]**	**<level>** for **QA** tests only
OBR.16 : OBR.33	Ordering Provider : Assistant Result Interpreter	<not used> : <not used>	<not used> : <not used>
OBR.34	**Technician**	**[text]**	**[operator ID]**
OBR.35 : OBR.50	Transcriptionist : Parent Universal Service Identifier	<not used> : <not used>	<not used> : <not used>

OBX – Observation/Result Segment

Field	Description	Format	Value(s)
OBX.1	**Set ID – OBX**	**[number]**	**[incremental value starting at 1]**
OBX.2	**Value Type**	**[text]**	**ST** – String Data **NM** – Numeric
OBX.3	**Observation Identifier**	**[text]**	**See table OBX-1 and OBX-2**
OBX.4	Observation Sub-ID	<note used>	<not used>
OBX.5	**Observation Value**	**[number]** if **NM** Value Type **[text]** if **ST** Value Type	**Value associated with OBX.3** NOTE: The value can report as follows: **±#.#** Numeric result **< ±#.#** Result below instrument range. **> ±#.#** Result above instrument range. **Failed iQC** Sensor failed quality check. **cnc** Result could not be calculated.
OBX.6	**Units**	**[text]**	**See table OBX-1 and OBX-2**
OBX.7	**Reference Ranges**	**[text]**	**[reference low]-[reference high]**
OBX.8	**Abnormal Flags**	**[text]**	**L** Below low normal **H** Above high normal **LL** Below lower critical limit **HH** Above upper critical limit **<** Below absolute low-off instrument scale **>** Above absolute high-off instrument scale
OBX.9	Probability	<not used>	<not used>
OBX.10	Nature of Abnormal Test	<not used>	<not used>
OBX.11	**Observation Result Status**	**[text]**	**F**
OBX.12	Effective Date of Reference Range	<not used>	<not used>
OBX.13	User Defined Access Checks	<not used>	<not used>
OBX.14	**Observation Date/Time**	**[yyyymmddhhmmss]**	**[test date/time]**
OBX.15 : OBX.17	Producer's ID : Observation Method	<not used> : <not used>	<not used> : <not used>
OBX.18*	**Equipment Instance Identifier**	**^^[text]**	**^^<Host SerialNum>~<Reader Serial Num>**
OBX.19 : OBX.25	Date/Time of the Analysis : Performing Organization Medical Director	<not used> : <not used>	<not used> : <not used>

* OBX.15 and higher may be present only in the first OBX segment.

Table OBX-1: Test Codes for test results.

Test Code	Description	Units	Value format
pH	pH	<no units>	#.###
pCO2	pCO2	mmHg kPa	#.# #.##
pO2	pO2	mmHg kPa	#.# #.##
pH(T)	pH corrected for Patient Temperature	<no units>	#.###
pCO2(T)	pCO2 corrected for Patient Temperature	mmHg kPa	#.# #.##
pO2(T)	pO2 corrected for Patient Temperature	mmHg kPa	#.# #.##
HCO3-act	Bicarbonate ($cHCO_3$-)	mmol/L mEq/L	#.# #.#
BE(ecf)	Base Excess (extra-cellular fluid)	mmol/L mEq/L	±#.# ±#.#
BE(b)	Base Excess (blood)	mmol/L mEq/L	±#.# ±#.#
O2SAT	Oxygen Saturation (cSO_2)	%	#.#
cTCO2	Total Carbon Dioxide	mmol/L mEq/L	#.# #.#
Na+	Sodium	mmol/L mEq/L	# #
K+	Potassium	mmol/L mEq/L	#.# #.#
Ca++	Ionized Calcium	mmol/L mg/dL mEq/L	#.## #.# #.#
Glu	Glucose	mmol/L mg/dL g/L	#.# # #.##
Lact	Lactate	mmol/L mg/dL g/L	#.## #.# #.##
Hct	Hematocrit	%PCV L/L	# #.##
cHgb	Hemoglobin	mmol/L g/dL g/L	#.# #.# #

Table OBX-2: Test codes for optional user entered test attributes.

Test Code	Description	Units	Value(s)
Patient temperature	Patient temperature as entered by the operator	F, C	[number]
Hemodilution	Hemodilution correction factor applied.	<empty>	Yes No
Sample type	Sample type as chosen by the operator	<empty>	Unknown Arterial Venous Mixed-Venous Cord Cord Arterial Cord Venous Capillary Unspecified
Draw site	Draw site as chosen or entered by the operator.	<empty>	[text]
Allen's test	Allen's test as chosen by the operator.	<empty>	Positive Negative N/A Not Entered
Delivery system	Airway delivery system as chosen or entered by the operator.	<empty>	[text]
Mode	Ventilator mode as chosen or entered by the operator.	<empty>	[text]
FiO2	Fractional Inspired Oxygen as entered by the operator	LMP, %	[number]
Vt	Tidal Volume	<empty>	[number]
RR	Respiratory Rate	<empty>	[number]
TR	Total Rate	<empty>	[number]
PEEP	Positive End Expiratory Pressure	<empty>	[number]
PS	Pressure Support	<empty>	[number]
IT	Inspiratory Time	<empty>	[number]
ET	Expiratory Time	<empty>	[number]
PIP	Peak Inspiratory Pressure	<empty>	[number]
MAP	Mean Airway Pressure	<empty>	[number]
Comments	Free text comment	<empty>	[text]

Table OBX-2 continued on next page

Table OBX-2 (*continued*): Test codes for optional user entered test attributes.

Test Code	Description	Units	Value(s)
Criticals present	Indicates whether or not critical results are present in the record	<empty>	Yes No
Critical action	Critical action taken if critical results are present	<empty>	Notify physician Notify RN Repeated Test Sent to Lab Other
Critical notify	Information regarding who was notified of critical results	<empty>	[text]
Read back	Indicates whether or not critical results were read back	<empty>	Yes No
Notify date	Critical value notification date and time	<empty>	[yyyyMMddHHmmss]
Ordering physician	Ordering physician entered by user	<empty>	[text]
Order time	Order time entered by user	<empty>	[dd-MMM-yy HH:mm:ss]
Collected by	Sample collected by entered by the user	<empty>	[text]
Collection time	Collection time entered by user	<empty>	[dd-MMM-yy HH:mm:ss]
Reject test	Indicates whether or not the user intended to reject the test record	<empty>	Yes No
Patient location	Patient location field entered by user	<empty>	[text]

Table OBX-3: Test codes for non-user related test attributes.

Test Code	Description	Units	Value(s)
Ambient Temperature	Instrument measured ambient temperature.	C	[number]
Ambient Pressure	Instrument measured ambient pressure.	mmHg	[number]
EDM Test status	Test status field.	<empty>	Success Incomplete iQC
Card Lot	Card lot number	<empty>	[text]
Card Expiration Date	Card expiration date	<empty>	[yyyyMMdd]
ReaderSerNum	epoc Reader serial number	<empty>	[text]
HostSerNum	epoc Host serial number	<empty>	[text]
Error Text	Error information about incomplete tests	<empty>	[text]
Host Alias	epoc Host name	<empty>	[text]
Reader Alias	epoc Reader name	<empty>	[text]
Department name	Department name assigned to the epoc Host at the time of the test.	<empty	[text]
ReaderMaintenanceRequired	For internal use	<empty>	Yes No
Bubble width	For internal use	<empty>	[number]
EnforceCriticalHandling	For internal use	<empty>	Yes No
Host Mode	For internal use	<empty>	[number]

Commit/Accept Acknowledgement Messages

The receiving system will respond to Result Messages with a Commit Acknowledgement. The Commit Acknowledgement message structure is as follows:

MSH – Message Header Segment

MSA – Message Acknowledgement Segment

Example Message:

```
MSH|^~\&|||epoc|Epocal|20100422183846||ACK|20100422183846|P|2.6|||NE|NE
MSA|CA|20100422183846199
```

MSH – Message Header Segment

Field	Description	Format	Value
MSH.1	**Field Separator**	**[text]**	**|**
MSH.2	**Encoding Characters**	**[text]**	**^~\&**
MSH.3	**Sending Application**	**[text]**	<optional>
MSH.4	**Sending Facility**	**[text]**	<optional>
MSH.5	**Receiving Application**	**[text]**	**epoc**
MSH.6	**Receiving Facility**	**[text]**	**Epocal**
MSH.7	**Date/Time of Message**	**[yyyymmddhhmmss]**	**Message Date/Time**
MSH.8	Security	<not used>	<not used>
MSH.9	**Message Type**	**[text]**	**ACK**
MSH.10	**Message Control ID**	**[unique ID]**	**Unique message identifier**
MSH.11	**Processing ID**	**[text]**	**P**
MSH.12	**Version ID**	**[text]**	**2.6**
MSH.13	Sequence Number	<not used>	<not used>
MSH.14	Continuation pointer	<not used>	<not used>
MSH.15	**Accept acknowledgement type**	**[text]**	**NE**
MSH.16	**Application acknowledgement type**	**[text]**	**NE**

MSA – Message Acknowledgement Segment

Field	Description	Format	Value
MSA.1	**Acknowledgement Code**	**[text]**	**CA – Commit Accept** **CE – Commit Error**
MSA.2	**Message Control ID**	**[text]**	**Message Control ID of the corresponding ORU Message.**

Enhanced or Application Acknowledgement Messages (optional)

The receiving system can optionally send, over a second channel, an Application Acknowledgement message that indicates whether or not the test record was successfully processed. The Application Acknowledgement message structure is as follows:

MSH – Message Header Segment

MSA – Message Acknowledgement Segment

Example Application Acknowledgement Messages:

```
MSH|^~\&|||epoc|Epocal|20100616062433||ACK^R01|201006160624203234|P|2.6|||NE|NE
MSA|AA|201006160624203234|W13085|
```

Or…

```
MSH|^~\&|||epoc|Epocal|20100616062433||ACK^R01|201006160624203234|P|2.6|||NE|NE
MSA|AE|201006160624203234|Invalid Patient ID (12345)|
```

MSH – Message Header Segment

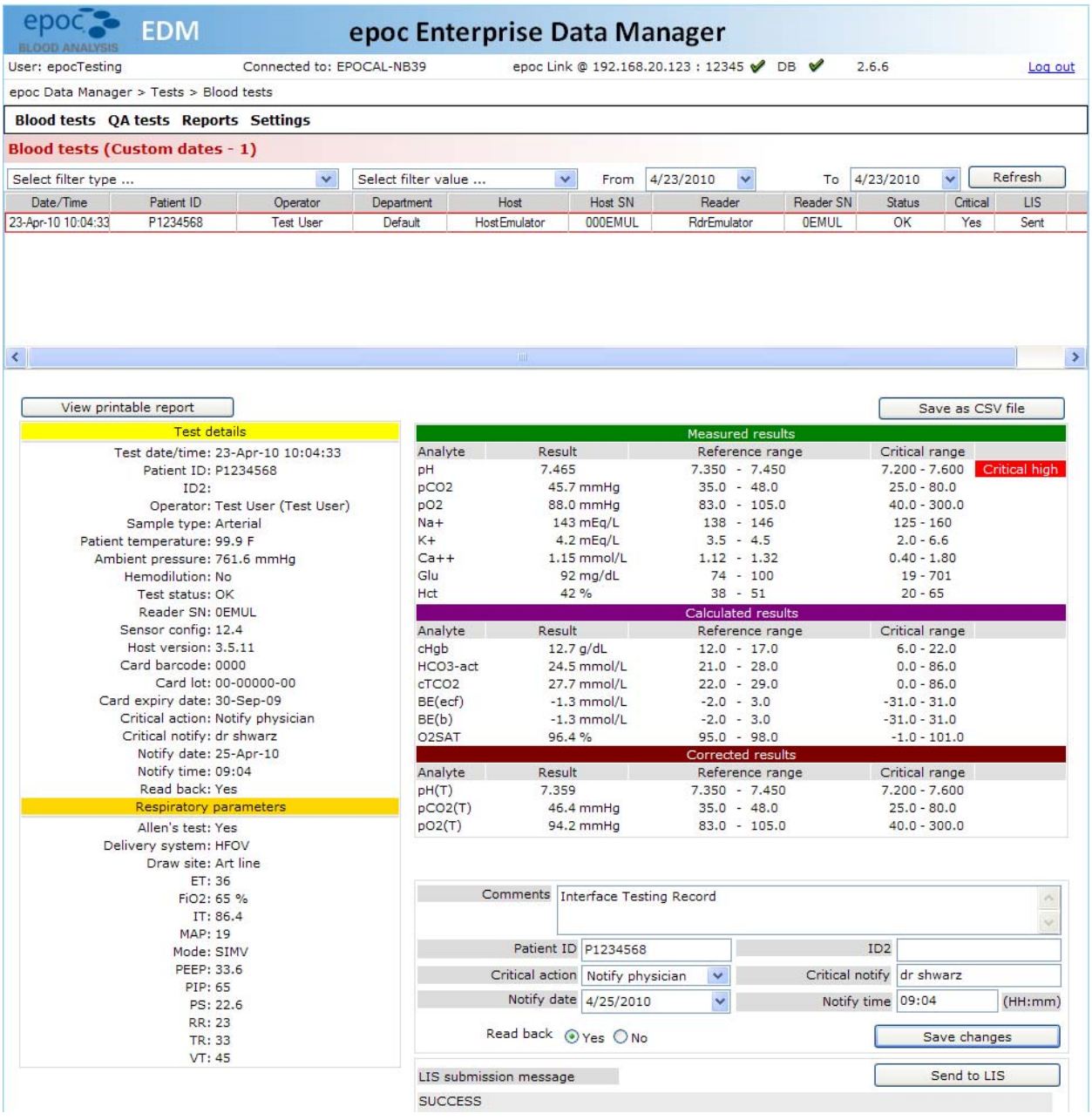
Field	Description	Format	Value
MSH.1	**Field Separator**	**[text]**	**|**
MSH.2	**Encoding Characters**	**[text]**	**^~\&**
MSH.3	**Sending Application**	**[text]**	<optional>
MSH.4	**Sending Facility**	**[text]**	<optional>
MSH.5	**Receiving Application**	**[text]**	**epoc**
MSH.6	**Receiving Facility**	**[text]**	**Epocal**
MSH.7	**Date/Time of Message**	**[yyyymmddhhmmss]**	**Message Date/Time**
MSH.8	Security	<not used>	<not used>
MSH.9	**Message Type**	**[text]**	**ACK^R01**
MSH.10	**Message Control ID**	**[unique ID]**	**Unique message identifier**
MSH.11	**Processing ID**	**[text]**	**P**
MSH.12	**Version ID**	**[text]**	**2.6**
MSH.13	Sequence Number	<not used>	<not used>
MSH.14	Continuation pointer	<not used>	<not used>
MSH.15	**Accept acknowledgement type**	**[text]**	**NE**
MSH.16	**Application acknowledgement type**	**[text]**	**NE**

MSA – Message Acknowledgement Segment

Field	Description	Format	Value
MSA.1	**Acknowledgement Code**	**[text]**	**AA** – Application Accept **AE** – Application Error
MSA.2	**Message Control ID**	**[text]**	**Message Control ID of the corresponding ORU Message.**
MSA.3	**Text Message**	**[text]**	**LIS Assigned Accession Number or Error message**

Appendix A: Sample Messages

Sample EDM Test Record



ORU Message Sample 1 – Patient Test

```
MSH|^~\&|epoc|Epocal|LAB|LAB|20100423111923||ORU^R01|20100423111923200|P|2.6|||AL|NE
PID|||Test Patient||||||||||||||||||||||
OBR|1|||BGEM^BGEM Test Card|||20100423100433|||||||20100423100433|Blood|||||||||||||||||Test
User||
OBX|1|NM|pH||7.465||7.350-7.450|HH|||F|||20100423100433||||^^000EMUL~0EMUL
OBX|2|NM|pCO2||45.7|mmHg|35.0-48.0||||F|||20100423100433
OBX|3|NM|pO2||88.0|mmHg|83.0-105.0||||F|||20100423100433
OBX|4|NM|pH(T)||7.359||7.350-7.450||||F|||20100423100433
OBX|5|NM|pCO2(T)||46.4|mmHg|35.0-48.0||||F|||20100423100433
OBX|6|NM|pO2(T)||94.2|mmHg|83.0-105.0||||F|||20100423100433
OBX|7|NM|Na+||143|mEq/L|138-146||||F|||20100423100433
OBX|8|NM|K+||4.2|mEq/L|3.5-4.5||||F|||20100423100433
OBX|9|NM|Ca++||1.15|mmol/L|1.12-1.32||||F|||20100423100433
OBX|10|NM|Hct||42|%|38-51||||F|||20100423100433
OBX|11|NM|Glu||92|mg/dL|74-100||||F|||20100423100433
OBX|12|NM|cHgb||12.7|g/dL|12.0-17.0||||F|||20100423100433
OBX|13|NM|HCO3-act||24.5|mmol/L|21.0-28.0||||F|||20100423100433
OBX|14|NM|cTCO2||27.7|mmol/L|22.0-29.0||||F|||20100423100433
OBX|15|NM|BE(ecf)||-1.3|mmol/L|-2.0-3.0||||F|||20100423100433
OBX|16|NM|BE(b)||-1.3|mmol/L|-2.0-3.0||||F|||20100423100433
OBX|17|NM|O2SAT||96.4|%|95.0-98.0||||F|||20100423100433
OBX|18|NM|Test duration||228.2||||||F|||20100423100433
OBX|19|NM|Patient temperature||99.9|F|||||F|||20100423100433
OBX|20|ST|Comments||Interface Testing Record||||||F|||20100423100433
OBX|21|ST|Sample type||Arterial||||||F|||20100423100433
OBX|22|ST|Hemodilution||No||||||F|||20100423100433
OBX|23|NM|Ambient Temperature||23.6|C|||||F|||20100423100433
OBX|24|NM|Ambient Pressure||761.6|mmHg|||||F|||20100423100433
OBX|25|ST|Draw site||Art Line||||||F|||20100423100433
OBX|26|ST|Allen's test||Yes||||||F|||20100423100433
OBX|27|ST|Delivery system||HFOV||||||F|||20100423100433
OBX|28|ST|Mode||SIMV||||||F|||20100423100433
OBX|29|NM|Vt||45||||||F|||20100423100433
OBX|30|NM|RR||23||||||F|||20100423100433
OBX|31|NM|TR||33||||||F|||20100423100433
OBX|32|NM|PEEP||33.6||||||F|||20100423100433
OBX|33|NM|PS||22.6||||||F|||20100423100433
OBX|34|NM|IT||86.4||||||F|||20100423100433
OBX|35|NM|ET||36||||||F|||20100423100433
OBX|36|NM|PIP||65||||||F|||20100423100433
OBX|37|NM|MAP||19||||||F|||20100423100433
OBX|38|NM|FiO2||65|%|||||F|||20100423100433
OBX|39|ST|EDM Test status||Success||||||F|||20100423100433
OBX|40|ST|Criticals present||Yes||||||F|||20100423100433
OBX|41|ST|Critical notify||dr shwarz||||||F|||20100423100433
OBX|42|ST|Critical action||Notify physician||||||F|||20100423100433
OBX|43|ST|Read back||Yes||||||F|||20100423100433
OBX|44|ST|Notify date||20090123090400||||||F|||20100423100433
OBX|45|ST|ReaderMaintenanceRequired||No||||||F|||20100423100433
OBX|46|NM|Bubble width||0.35||||||F|||20100423100433
OBX|47|ST|Card Lot||00-00000-00||||||F|||20100423100433
OBX|48|ST|Card Expiration Date||20090930||||||F|||20100423100433
OBX|49|ST|HostSerNum||000EMUL||||||F|||20100423100433
OBX|50|ST|Host Alias||HostEmulator||||||F|||20100423100433
OBX|51|ST|ReaderSerNum||0EMUL||||||F|||20100423100433
OBX|52|ST|Reader Alias||RdrEmulator||||||F|||20100423100433
```

ORU Message Sample 2 – QA Test

```
MSH|^~\&|epoc|Epocal|LAB|LAB|20090403163044||ORU^R01|200904031630448|P|2.6|||AL|NE
PID|||12345||||||||||||||||||||||||
OBR|1|||BGE^BGE Test Card|||20090317161346|||||||20090317161346|QA^12345^|||||||||||||||||||123||
OBX|1|NM|pH||7.493||7.350-7.450|H|||F|||20090317161346||||^^0059E47~00411
OBX|2|NM|pCO2||30.5|mmHg|35.0-48.0|L|||F|||20090317161346
OBX|3|NM|pO2||198.1|mmHg|83.0-105.0|H|||F|||20090317161346
OBX|4|NM|Na+||132|mmol/L|138-146|L|||F|||20090317161346
OBX|5|NM|K+||4.1|mmol/L|3.5-4.5|N|||F|||20090317161346
OBX|6|NM|Ca++||1.06|mmol/L|1.12-1.32|L|||F|||20090317161346
OBX|7|NM|Hct||-7|%|38-51|L|||F|||20090317161346
OBX|8|ST|cHgb||cnc|g/dL|12.0-17.0||||F|||20090317161346
OBX|9|NM|HCO3-act||23.4|mmol/L|21.0-28.0|N|||F|||20090317161346
OBX|10|NM|cTCO2||24.3|mmol/L|22.0-29.0|N|||F|||20090317161346
OBX|11|NM|BE(ecf)||0.1|mmol/L|-2.0-3.0|N|||F|||20090317161346
OBX|12|ST|BE(b)||cnc|mmol/L|-2.0-3.0||||F|||20090317161346
OBX|13|NM|O2SAT||99.8|%|95.0-98.0|H|||F|||20090317161346
OBX|14|NM|Test duration||223.6||||||F|||20090317161346
OBX|15|ST|Comments||test comments||||||F|||20090317161346
OBX|16|ST|Sample type||Unspecified||||||F|||20090317161346
OBX|17|ST|Hemodilution||No||||||F|||20090317161346
OBX|18|NM|Ambient Temperature||24.5|C|||||F|||20090317161346
OBX|19|NM|Ambient Pressure||763.1|mmHg|||||F|||20090317161346
OBX|20|ST|EDM Test status||Success||||||F|||20090317161346
OBX|21|ST|Criticals present||No||||||F|||20090317161346
OBX|22|ST|ReaderMaintenanceRequired||No||||||F|||20100422100433
OBX|23|NM|Bubble width||0.35||||||F|||20100422100433
OBX|24|ST|Card Lot||00354-0||||||F|||20090317161346
OBX|25|ST|Card Expiration Date||20090724||||||F|||20090317161346
OBX|26|ST|HostSerNum||0059E47||||||F|||20090317161346
OBX|27|ST|HostAlias||Host 0059E47||||||F|||20090123104404
OBX|28|ST|ReaderSerNum||00411||||||F|||20090317161346
OBX|29|ST|ReaderAlias||Rdr411||||||F|||20090317161346
```

ORU Message Sample 3 – Error Message

```
MSH|^~\&|epoc|Epocal|LAB|LAB|20090403162719||ORU^R01|20090403162719591|P|2.6|||AL|NE
PID|||12345678901||||||||||||||||||||||||
OBR|1|||BGE^BGE Test Card|||20090123104404|||||||20090123104404|Blood|||||||||||||||||1234||
OBX|1|NM|Test duration||220.6||||||F|||20090123104404||||^^0059F1B ~00471
OBX|2|NM|Comments|||||||F|||20090123104404
OBX|3|ST|Sample type||Unspecified||||||F|||20090123104404
OBX|4|ST|Hemodilution||No||||||F|||20090123104404
OBX|5|NM|Ambient Temperature||23.2|C|||||F|||20090123104404
OBX|6|NM|Ambient Pressure||751.4|mmHg|||||F|||20090123104404
OBX|7|ST|Draw site||L Brach||||||F|||20090123104404
OBX|8|ST|Allen's test||N/A||||||F|||20090123104404
OBX|9|ST|EDM Test status||Incomplete||||||F|||20090123104404
OBX|10|ST|Criticals present||No||||||F|||20090123104404
OBX|11|ST|Error Text||Missing data: Patient Id||||||F|||20090123104404
OBX|12|ST|Card Lot||00275-0||||||F|||20090123104404
OBX|13|ST|Card Expiration Date||20090406||||||F|||20090123104404
OBX|14|ST|HostSerNum||0059F1B||||||F|||20090123104404
OBX|15|ST|HostAlias||Host 0059F1B||||||F|||20090123104404
OBX|16|ST|ReaderSerNum||00471||||||F|||20090123104404
OBX|17|ST|ReaderAlias||Rdr471||||||F|||20090123104404
```

Appendix B: Epocal Interface Process Flow