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| SOLSTAS Electronic Data Interchange Vendor Requirements |
| **IT-686 Version 2.0 November 16, 2012** |
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| Solstas Lab Partners is committed to providing quality laboratory testing to all its clients. We work with EMR vendors to ensure that they are able to reproduce our laboratory results and parameters correctly on all laboratory reports. |
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SOLSTAS Electronic Data Interchange Vendor Requirements

IT-686 Version 2.0 November 16, 2012

# EDI Requirements to meet all CAP/ CLIA guidelines

• • •

An interface to a 3rd party EMR should emphasize physician choice and encourages physicians to order only those tests which the physician believes are medically reasonable and necessary for the diagnosis and/or treatment of the patient. In addition, the interface should be designed so that the ordering physician and Solstas clearly know what tests and/or procedures will be performed pursuant to the physician’s order.

# Preliminary Considerations

The primary considerations for the EDI Vendor in regards to their EDI Interface capability are:

* There is a procedure to verify that patient results are accurately transmitted from the point of data entry (interfaced instruments and manual input) to patient reports (whether paper or electronic).
* Interface features to insure accurate and reliable result delivery:
  + Can the interface accept results with discrete data elements such as laboratory results?
  + Can the interface accept text-based results and reports such as general dictation?
  + Can the interface accept “unsolicited” results from a reference lab and automatically match the result with the appropriate patient, and complete any outstanding orders?
  + Can the interface provide the sender with confirmation of receipt to ensure that transmissions are reliable and auditable?
  + Can the interface pass the required billing data?
  + If the EDI Vendor does not support these capabilities, can they accept results and reports in a document-image format?
* Cost:
  + What are the costs of the interface in terms of software, installation, support, and usage charges?
* Installation and configuration effort:
  + Who is responsible for installation and configuration of the interface software?
  + Is any other configuration required (such as creating a cross-reference file for the laboratory compendium, identifying test types, etc.) and if so, who is responsible for that configuration?
  + What format is needed for the Performing Location Compendium?

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# Required Billing Type Information

|  |  |  |  |
| --- | --- | --- | --- |
| Account: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| Client name | R | Deliver as provided |  |
| Client number | R | Deliver as provided |  |
| Indicate billing option | R | Client Bill = C  Patient Bill = P  3rd Party = T |  |
| Requisition/Control Number | R | Limited to 25 characters |  |
| Date of Collection | C | CCYYMMDD | **Required** if collected on-site. **Optional** if sent outside for collection. |
| Patient’s name | R | Last Name, First Name |  |
| Gender | R | M = Male  F = Female  U = Unknown |  |
| Date of Birth | R | CCYYMMDD |  |
| Ordering Physician’s ID | R | 20 characters | **NPI** preferred |

|  |  |  |  |
| --- | --- | --- | --- |
| *Patient*: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| Patient Name | R | Last name, First name, middle initial, suffix |  |
| Patient Address | R | Street, City, Zip |  |
| Guarantor Address | R | Street, City, Zip |  |
| Patient & Guarantor Phone number | R | (xxx)xxx-xxxx |  |

| Medicare: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| --- | --- | --- | --- |
| Patient Name | R | Last name, First name, middle initial, suffix |  |
| Patient or Guarantor Address | R | Street, City, Zip |  |
| Patient or Guarantor Phone | R | (Area Code) xxx-xxxx |  |
| Patient Relationship to Guarantor | R | Self = SE, Spouse = SP, Child = CH, Other = OT | Always SE for Medicare |
| Insurance Address | R | Street, City, Zip | **NPI** preferred |
| ICD-9 Diagnosis Code(s) | R |  |  |
| Ordering Physician’s Name | R | Last Name, First Name |  |
| Ordering Physician’s ID | R | 20 characters |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Medicaid: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| Patient Name | R | Last name, First name |  |
| Patient or Guarantor Address | R | Street, City, Zip |  |
| Patient Medicaid number and issuing state. | R | Medicaid # format? State Format = 2 character | See addendum |
| Insurance Address | R | Street, City, Zip |  |
| ICD-9 Diagnosis Code(s) & Descriptions | R | CD-9 Diagnosis Code and Description |  |
| Ordering Physician’s Name | R | Last Name, First Name |  |
| Ordering Physician’s ID | R | 20 characters |  |

| Third Party Insurance: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| --- | --- | --- | --- |
| Insurance Name & ID | R | Name and Code uniquely identifying the insurance company |  |
| Name of Insured | R | Last name, First name |  |
| Insured by or Guarantor Address | R | Street, City, Zip |  |
| Patient relationship to Guarantor | R | Self = SE, Spouse = SP, Child = CH, Other = OT |  |
| Patient Relationship to Insurance Subscriber | R | Last name, First name, mid initial; Self = SE, Spouse = SP, Child = CH, Other = OT |  |
| Member number (or Subscriber, Policy, Contract) | R | 60 characters |  |
| Primary Insurance Address | R | Street, City, Zip |  |
| Primary Group Number | R | *If available* |  |
| Secondary Insurance Address | R | Street, City, Zip |  |
| Secondary Group Number | R | *If available* |  |
| Secondary Member number | R | 60 characters |  |
| ICD-9 Diagnosis Code & Description | R | ICD-9 Diagnosis Code and Description |  |
| Ordering Physician’s Name | R | Last Name, First Name |  |
| Ordering Physician’s NPI, UPIN, Provider Number | R | 20 Characters | **NPI** preferred |

# Required Test Type Information

|  |  |  |  |
| --- | --- | --- | --- |
| Chemistry: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| Test Requested | R | SLN Test Code, SLN Test Name |  |
| ICD-9 Diagnosis Code | R |  |  |
| Any Comments | R | Such as “conditions of specimen that may limit adequate testing” |  |
| LMP on all PAP’s | R | CAP requirement – answered at Ask at Order |  |
| Date and Time of Specimen Collection | R | MM/DD/YYYY, Military Time |  |
| Source of Specimen | R | If requested at Ask at Order Entry |  |
| Clinical Information | R | If requested at Ask at Order Entry |  |
| Total Volume | R | If Test requires this information |  |
| Fasting | R | If Test requires this information |  |

| Cytology: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| --- | --- | --- | --- |
| Gynecological Source | R | If requested at Ask at Order Entry |  |
| Date LMP/Menopause | R | If requested at Ask at Order Entry |  |
| Patient History | R | If requested at Ask at Order Entry |  |
| Previous Cytology | R | If requested at Ask at Order Entry |  |
| Other Patient Information | R | If requested at Ask at Order Entry |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Microbiology: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| Specimen Source | R | If requested at Ask at Order Entry |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Virology: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| Specimen Source | R | If requested at Ask at Order Entry |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Histology: Field Type | Required/ Optional/  Conditional | Field Description | Condition |
| Specimen Source | R | Free Text |  |

# Inbound Lab Order Interface

**Communications Options**

Clients may exchange data with Solstas Laboratory via TCP/IP sockets using VPN/Internet, sFTP, FTP or Wahoo.

**Message Acknowledgment**

MSH Message Header

MSA Message Acknowledgement

[ERR] Error

**General Order Message (ORM^O01)**

{MSH Message Header

PID Patient Identification

PV1 Patient Visit

GT1 Guarantor\* (Required for Patient or 3rd Party Billing)

{[IN1]} Insurance (2 IN1s maximum)

{ORC Common Order

OBR Observation Request

[NTE] Notes and Comments (1 NTE only)

{DG1} Diagnosis

{[OBX]} Additional Test Information (“Ask at Order” only)

}

}

MSH|^~\&||441234|NCX||20030624152400||ORM^O01||P|2.2

PID|1|1234567|||LNAME^FNAME^M||19701015|M|||100 PENNY LN^APT 1^GREENSBORO^

NC^27410||(336)315-6325|||||S1234^^^T|123456789

PV1|1|O|||||90001^DOOLITTLE JR^JOHN^S

GT1|1||LNAME^FNAME^M||100 PENNY LN^APT 1^GREENSBORO^NC^27410||||||SE

IN1|1||1234|GOODHEALTH HEALTHCARE|PO BOX 1234^^GREENSBORO^NC^27410|||||||||||

LNAME^FNAME^M|SE|||||1||||||||||||||K251558863

ORC|NW|0000098765||||||||||444401^DOOLITTLE JR^JOHN^S

OBR|1|0000098765||22910^Basic Metabolic Panel|||20030624152400||||A|||||

444401^DOOLITTLE JR^JOHN^S|||||||||||^^^^^R^FASTING

NTE|1|TX|CC DR JOHN DOOLITTLE UNC CHAPEL HILL FAX 919-555-1212^CC DR JOHN

DOOLITTLE UNC CHAPEL HILL FAX 919-555-1212

DG1|1||V70.0|ROUTINE GENERAL MEDICAL EXAMINATION|200306240000|W||||||||

|1|90001^DOOLITTLE JR^JOHN^S|D

DG1|2||401.1|BENIGN HYPERTENSION|200306240000|W|||||||||1|90001^DOOLITTLE JR^JOHN^S|D

DG1|3||250.02|LONG-TERM USE MEDS NEC|200306240000|W|||||||||1|90001^DOOLITTLE JR^JOHN^S|D

OBX|1||600045^Enter the Total Volume||1300 (displayed for OBX example purposes)

OBX|2||600098^Enter the Collection Interval||24 (displayed for OBX example purposes)

## *Solstas Code Sets*

|  |  |
| --- | --- |
| **HL7 FIELD** | **CODE SET** |
| **Processing ID**  MSH-11 | P=Production  T=Test |
| **Sex**  PID-8 | M=Male  F=Female  U=Unknown |
| **Bill Type Code**  PID-18.4 (Maps to Solstas’ ORC.5) | C=Client  P=Patient  T=Third party insurance |
| **Patient Class**  PV1-2 | O=Outpatient |
| **Physician Code**  PV1-7 | Mapped between Solstas and Client. NPI Preferred. |
| **Guarantor Sex**  GT1-9 | M=Male  F=Female |
| **Patient Relationship to Guarantor**  GT1-11 | SE=Self  SP=Spouse  CH=Child  OT=Other |
| **Guarantor Employment Status**  GT1-20 | N=Not Employed  E or Y=Employed |
| **Insurance Company ID**  IN1-3 | Mapped between Solstas and Client |
| **Patient Relationship to Insured**  IN1-17 | SE=Self  SP=Spouse  CH=Child  OT=Other |
| **Coordination of Benefits Priority**  IN1-22 | 1=Primary  2=Secondary |
| **Specimen Action Code**  OBR-11 | A=Add  D=Delete |
| **Priority**  OBR-27.6 | S=Stat  R=Routine |
| **Diagnosis Type**  DG1-6 | W=Working |
| **Diagnosis Priority**  DG1-15 | 1=Primary |
| **Diagnosing Clinician**  DG1-16 | Mapped between Solstas and Client |
| **Diagnosis Classification**  DG1-17 | D=Diagnosis |

# Outbound Lab Result Interface

**Communications Options**

Clients may exchange data with Solstas Laboratory via TCP/IP sockets using VPN/Internet, sFTP or Wahoo.

**Result/Observation Message (ORU^R01)**

{

MSH Message Header

PID Patient Identification

PV1 Patient Visit

{ORC Common Order

{

OBR Observation Request

{[NTE]} Notes & Comments

{

[OBX] Observation Results

{[NTE]} Notes & Comments

}

}

}

}

MSH|^~\&|SQ-PLANO|SPECTRUM|EMRNAME|449999|200307012102||ORU^R01|224|P|2.2

PID|1|11044|22055||LNAME^FNAME||19701015|M|||||(336)315-6325|||||33066|123-45-6789

PV1|1|O|||||A9876^DOOLITTLE^JOHN^S^MD

ORC|RE|1234|A212121212||||||||| A9876^DOOLITTLE^JOHN^S^MD|||||449999^S9999

OBR|1|1234|A212121212|22000^PT (Prothrombin Time)|||200204120736||||N|||200204120736|| A9876^DOOLITTLE^JOHN^S^MD ||CLNT|||SLN||||F

NTE|1|L|OBR-level comments

NTE|2|L|OBR-level comments

OBX|1|NM|220000^PT (Prothrombin Time)||15.6|seconds|11.0-13.5|h|||F|||200204120954

OBX|2|NM|220005^INR||2.0||0.0-1.5|h|||F|||200204120954

NTE|1|L|INR values are used to monitor coumadin therapy. In general, an INR

NTE|2|L|of 2.0 to 3.0 is recommended for most clinical situations.

NTE|3|L|

NTE|4|L|An exception is with some types of mechanical prosthetic heart valves,

NTE|5|L|where the targeted range would be 2.5 to 3.5.

Notice: Some of the maximum field lengths in the segment definitions are unknown.

## *Text Only Pathology message*

MSH|^~\&|COPATH|CRV||443001|20121113151900||ORU^R01|@443001\_1231808549|P|2.2

PID|1|AAG12161616|AAG12-112222||Testing^OtherCyto||19830914|F||||||||||443001|999-55-4433

PV1|1|O|||||443001^Testing^Report||||||||||||AAG12161616

ORC|RE|AAG12-112222||||||||||443001^Testing^Report|||||443001

OBR|1||AAG12-112222|97000^(97000) Thin Prep Imaging|||201211120000||||N|||201211131510||443001^Testing^Report||CLNT||||201211131519|||F||^^^^^ROUT||||||^Driggers^Dawn|HOWELLK^Howell^Kristen

OBX|1||97000^(97000) Thin Prep Imaging|||||N|||F|||201211131519|

NTE|1|TX||||||N|

NTE|2|TX|FINAL CYTOLOGIC INTERPRETATION:|||||N

NTE|3|TX|Negative for intraepithelial lesion or malignancy|||||N

NTE|4|TX|ADEQUACY OF SPECIMEN:|||||N

NTE|5|TX|Satisfactory for evaluation|||||N

NTE|6|TX| |||||N

NTE|7|TX|\*\*\*Electronically Signed By\*\*\*|||||N

NTE|8|TX||||||N|

NTE|9|TX|PREVIOUS HISTORY:|||||N

NTE|10|TX|Accession #    Date Taken    Interpretation|||||N

NTE|11|TX|AAG12-161616, 10/15/2012, Negative for Intraepithelial lesion or malignancy|||||N

NTE|12|TX||||||N|

NTE|13|TX|SOURCE OF SPECIMEN:|||||N

NTE|14|TX|Cervical/Endocervical|||||N

NTE|15|TX||||||N|

NTE|16|TX|Infection History:  HPV|||||N

NTE|17|TX|Treatment History:  Cryosurgery|||||N

NTE|18|TX||||||N|

NTE|19|TX|This PAP test is a screening mechanism with excellent but not perfect ability to prevent|||||N

NTE|20|TX|cervical carcinoma.  It has a low, but significant diagnostic error rate.  The PAP test is|||||N

NTE|21|TX|suboptimal for detection of glandular lesions.  It should be noted that a negative pap|||||N

NTE|22|TX|result does not definitively rule out the presence of disease.  Ref: DeMay, RM, The Art|||||N

NTE|23|TX|and Science of Cytopathology, ASCP Press, 1996.|||||N

NTE|24|TX||||||N|

## *Solstas Code Sets*

|  |  |  |
| --- | --- | --- |
| **HL7 FIELD** | | **CODE SET** |
| **Abnormal Flags**  OBX-8 | | N=Normal  l=Below low normal  LL=Below lower panic levels  h=Above high normal  HH=Above upper panic levels  ABN=Abnormal alpha (non-numeric)  CRT= Critical alpha (non-numeric)  \*=Abnormal |
| **AOE format** | | |
| OBX-3 INBOUND  Observation ID:  Identifier  Text  AOE Code^AOE Question Text | OBX-3 OUTBOUND  Observation Identifier:  ID  Text  Result/Test Code^Description | |

## *Duplication of Results*

Some receiver systems duplicate results that are sent more than once by the lab system (i.e. preliminary results followed by final results). Since Solstas frequently sends multiple test results per an accession, pending results are common because a new transaction message is generated as each test is released. In order to avoid duplication, Solstas can filter messages with pending results. In this event, the receiver system will only receive accessions after all the results are finalized.

Solstas will continue to transmit pending Microbiology results since finalized portions of the result may be needed for clinical purposes before the entire result is complete. Since multiple result messages will be sent (causing possible duplication), it is recommended that clients not order clinical results along with micro results within the same accession. Clients have the option to have FINAL ONLY for microbiology.

# Test Patient Examples

## *Unidirectional*

**Amended Report:**

MSH|^~\&|SQ-PLANO|SPECTRUM|TCPCLIENTS|111171|201207201505||ORU^R01|211679|T|2.2  
PID|1||N220150037||TEST^AMENDED||19801129|F  
PV1|1|O|||||88888888^CLIENT^TEST  
ORC|RE||N220150037|||||||||88888888^CLIENT^TEST|||||111171^WPA1171  
OBR|1||N220150037|23040^Glucose|||201207190830||||N|||201207191655||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207201504||^|F  
OBX|1|NM|230025^Glucose||88|mg/dL|70-99|N|||C|||201207201504  
NTE|1|L|   
NTE|2|L|Amended report.

**Reflex:**

MSH|^~\&|SQ-PLANO|SPECTRUM|TCPCLIENTS|111171|201207191706||ORU^R01|211639|T|2.2  
PID|1||N220150031||TEST^REFLEX||19801129|F  
PV1|1|O|||||88888888^CLIENT^TEST  
ORC|RE||N220150031|||||||||88888888^CLIENT^TEST|||||111171^WPA1171  
OBR|1||N220150031|23940^RPR Reflex to T.pallidum Ab, Total|||201207190830||||N|||201207191640||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207191706||^|F  
OBX|1|ST|230975^RPR||REACTIVE||NON REAC|A|||F|||201207191706  
NTE|1|L|\*\*\*CONFIRMATORY TESTING TO FOLLOW\*\*\*  
OBR|2||N220150031|23950^RPR Titer|||201207190830||||N|||201207191640||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207191706||^|F||||23940  
OBX|1|ST|230980^RPR Titer||1:64|||A|||F|||201207191706  
OBR|3||N220150031|81924^T.pallidum Ab, Total|||201207190830||||N|||201207191640||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207191704||^|F||||23940  
OBX|1|NM|802086^T.pallidum Ab, Total||2.33|S/CO|<0.90|H|||F|||201207191704  
NTE|1|L|   
NTE|2|L|<0.90 S/CO NON REACTIVE  
NTE|3|L|0.90-1.00 S/CO INDETERMINATE  
NTE|4|L|>1.00 S/CO REACTIVE  
NTE|5|L|   
NTE|6|L|The following results were obtained with the IMMULITE 2000 Syphilis  
NTE|7|L|Screen chemiluminescent EIA. Results obtained from other  
NTE|8|L|manufacturers' assay methods may not be used interchangeably.  
NTE|9|L|

**DNR/QNS/TNP**:

MSH|^~\&|SQ-PLANO|SPECTRUM|TCPCLIENTS|111171|201207191708||ORU^R01|211640|T|2.2  
PID|1||N220150032||TEST^QNS||19801129|F  
PV1|1|O|||||88888888^CLIENT^TEST  
ORC|RE||N220150032|||||||||88888888^CLIENT^TEST|||||111171^WPA1171  
OBR|1||N220150032|22930^Lipid Profile|||201207190830||||N|||201207191643||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207191707||^|P  
OBX|1|NM|230280^Cholesterol||252|mg/dL|0-200|H|||F|||201207191707  
NTE|1|L|ATP III Classification:  
NTE|2|L| < 200 mg/dL Desirable  
NTE|3|L| 200 - 239 mg/dL Borderline High  
NTE|4|L| >= 240 mg/dL High  
NTE|5|L|   
OBX|2|NM|230285^Triglyceride||123|mg/dL|<150|N|||F|||201207191707  
OBX|3|ST|230295^HDL Cholesterol||QNS|mg/dL|>39|N|||F|||201207191707  
OBX|4|ST|230310^Total Chol/HDL Ratio||TNP|Ratio||N|||F|||201207191707  
OBX|5|NM|230315^VLDL Cholesterol (Calc)||25|mg/dL|0-40|N|||F|||201207191707  
OBX|6|ST|230305^LDL Cholesterol (Calc)||TNP|mg/dL|0-99|N|||F|||201207191707  
NTE|1|L|   
NTE|2|L|Total Cholesterol/HDL Ratio:CHD Risk  
NTE|3|L| Coronary Heart Disease Risk Table  
NTE|4|L| Men Women  
NTE|5|L| 1/2 Average Risk 3.4 3.3  
NTE|6|L| Average Risk 5.0 4.4  
NTE|7|L| 2X Average Risk 9.6 7.1  
NTE|8|L| 3X Average Risk 23.4 11.0  
NTE|9|L|Use the calculated Patient Ratio above and the CHD Risk table   
NTE|10|L|to determine the patient's CHD Risk.  
NTE|11|L|ATP III Classification (LDL):  
NTE|12|L| < 100 mg/dL Optimal  
NTE|13|L| 100 - 129 mg/dL Near or Above Optimal  
NTE|14|L| 130 - 159 mg/dL Borderline High  
NTE|15|L| 160 - 189 mg/dL High  
NTE|16|L| > 190 mg/dL Very High  
NTE|17|L|   
OBR|2||N220150032|23210^Amylase|||201207190830||||N|||201207191643||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207191708||^|P  
OBX|1|ST|230135^Amylase|||U/L|0-105|N|||P

**Non-numeric Result /Abnormal flag:**

MSH|^~\&|SQ-PLANO|SPECTRUM|TCPCLIENTS|111171|201207191708||ORU^R01|211641|T|2.2  
PID|1||N220150035||TEST^ABNORMAL||19801129|F  
PV1|1|O|||||88888888^CLIENT^TEST  
ORC|RE||N220150035|||||||||88888888^CLIENT^TEST|||||111171^WPA1171  
OBR|1||N220150035|23610^Hepatitis A Antibody, IgM|||201207190830||||N|||201207191652||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207191707||^|F  
OBX|1|ST|230650^Hepatitis A Antibody, IgM||POS||NEGATIVE|A|||F|||201207191707

**Pending Results and Always Text:**

MSH|^~\&|SQ-PLANO|SPECTRUM|INTIVIA|448066|201206260913||ORU^R01|200869|T|2.2  
PID|1|99999|N209450095||PATIENT^TEST||19720101|M|||||||||||123-45-6789  
PV1|1|O|||||95122^ONYEAGHALA^NWAEHIHIE  
ORC|RE||123123120|||||||||95122^ONYEAGHALA^NWAEHIHIE|||||448066^448066  
OBR|1||123123120|2402^CMP with Estimated GFR|||201204031350||||N|||201204031600||95122^ONYEAGHALA^NWAEHIHIE||CLNT|||SLN|201204031643||^|P  
NTE|1|L|PENDING/PSA LOW RANGE  
OBX|1|NM|230005^Sodium||144|mEq/L|135-145|N|||P|||201204031643  
OBX|2|NM|230010^Potassium||4.5|mEq/L|3.5-5.3|N|||P|||201204031643  
OBX|3|NM|230015^Chloride||102|mEq/L|96-112|N|||P|||201204031643  
OBX|4|NM|230020^CO2||26|mEq/L|19-32|N|||P|||201204031643  
OBX|5|ST|230025^Glucose|||mg/dL|70-99|N|||P|||201204031643  
OBX|6|NM|230035^BUN||33|mg/dL|6-23|H|||P|||201204031643  
OBX|7|NM|230040^Creatinine||2.55|mg/dL|0.40-1.20|H|||P|||201204031643  
OBX|8|NM|230045^Bilirubin, Total||3.9|mg/dL|0.3-1.2|H|||P|||201204031643  
OBX|9|NM|230075^Alkaline Phosphatase||29|U/L|39-117|L|||P|||201204031643  
OBX|10|NM|230080^AST/SGOT||65|U/L|0-37|H|||P|||201204031643  
OBX|11|NM|230085^ALT/SGPT||14|U/L|0-35|N|||P|||201204031643  
OBX|12|NM|230095^Total Protein||3.6|g/dL|6.0-8.3|L|||P|||201204031643  
OBX|13|NM|230100^Albumin||8.7|g/dL|3.5-5.2|H|||P|||201204031643  
OBX|14|NM|230105^Calcium||10.3|mg/dL|8.4-10.5|N|||P|||201204031643  
OBX|15|NM|231685^Est GFR, African American||26|mL/min|>60|L|||F|||201204031643  
OBX|16|NM|231690^Est GFR, NonAfrican American||22|mL/min|>60|L|||F|||201204031643  
OBR|2||123123120|23210^Amylase|||201204031350||||N|||201204031600||95122^ONYEAGHALA^NWAEHIHIE||CLNT|||SLN|201204031643||^|P  
OBX|1|NM|230135^Amylase||125|U/L|0-105|H|||F|||201204031643  
OBR|3||123123120|23780^PSA|||201204031350||||N|||201204031600||95122^ONYEAGHALA^NWAEHIHIE||CLNT|||SLN|201204031644||^|P  
OBX|1|ST|230855^PSA||<4.00|ng/mL|<=4.00|N|||F|||201204031644  
NTE|1|L|Test Methodology: Hybritech PSA  
NTE|2|L|\*\*\* Please note change in reference range(s). \*\*\*

**Referral Lab:**

**Pap Smear:**

MSH|^~\&|SQ-PLANO|SPECTRUM|TCPCLIENTS|111171|201207191713||ORU^R01|211644|T|2.2  
PID|1||P11309125||TEST^CYTO||19801129|F  
PV1|1|O|||||88888888^CLIENT^TEST  
ORC|RE||P11309125|||||||||88888888^CLIENT^TEST|||||111171^WPA1171  
OBR|1||P11309125|6030^Pap,ThinPrep with CT/GC,ASCUS rflx HPV|||201207190830||||N|||201207191656||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207191712||^|F  
OBX|1|NM|899050^Number of Slides/Vials:||2|||N|||F|||201207191712  
OBX|2|ST|899054^Source:||CERVICAL|||N|||F|||201207191712  
OBX|3|ST|899056^Previous Diagnosis:||NOT GIVEN|||N|||F|||201207191712  
OBX|4|ST|899058^LMP:||06/01/2012|||N|||F|||201207191712  
OBX|5|ST|899060^Clinical Information:||NOT GIVEN|||N|||F|||201207191712  
OBX|6|ST|899062^SPECIMEN ADEQUACY:|||||N|||F|||201207191712  
NTE|1|L|SATISFACTORY. Endocervical/transformation zone component present.  
OBX|7|ST|899104^FINAL DIAGNOSIS:|||||A|||F|||201207191712  
NTE|1|L|-  
NTE|2|L|EPITHELIAL CELL ABNORMALITY: SQUAMOUS CELLS  
NTE|3|L|LOW-GRADE SQUAMOUS INTRAEPITHELIAL LESION  
NTE|4|L|(LSIL) ENCOMPASSING: HPV/MILD DYSPLASIA/CIN1.  
OBX|8|ST|899066^COMMENTS:|||||N|||F|||201207191712  
NTE|1|L|Atrophy is present.  
OBX|9|ST|899102^RECOMMENDATIONS:|||||N|||F|||201207191712  
NTE|1|L|COLPOSCOPY AND BIOPSY are suggested.  
NTE|2|L|For a more comprehensive discussion of these recommendations, please  
NTE|3|L|refer to the asccp.org website.  
OBX|10|ST|899068^Cytotechnologist:||SMP|||N|||F|||201207191712  
NTE|1|L|Reviewed by Valerie J. Fields, MD, FCAP (Electronic Signature on File)  
NTE|1|L|   
NTE|2|L| \*\*\*Normal Reference Range: Negative\*\*\*  
NTE|3|L|   
NTE|4|L|Testing performed using the BD ProbeTec Qx Chlamydia trachomatis and  
NTE|5|L|Neisseria gonorrhea amplified DNA assay.  
NTE|6|L|   
NTE|7|L|Performed at: Solstas Lab Partners  
NTE|8|L| Mendenhall Oaks Lab  
NTE|9|L| 4191 Mendenhall Oaks Pkwy-Ste. 140  
NTE|10|L| High Point, NC 27265  
NTE|11|L| 34D1080247  
NTE|12|L|   
NTE|13|L|\*  
NTE|14|L|The Pap smear is a screening test used to detect cervical cancer and  
NTE|15|L|its precursors. It should not be used as the sole means to detect  
NTE|16|L|cervical cancer. Test results should be correlated with clinical  
NTE|17|L|findings. The Pap test is unreliable for detecting endometrial  
NTE|18|L|lesions and should not be used to evaluate endometrial  
NTE|19|L|abnormalities. Data indicate the Pap test is subject to false  
NTE|20|L|negative and false positive results. Therefore, periodic repeat  
NTE|21|L|testing and follow-up of any unexplained clinical signs and symptoms  
NTE|22|L|are recommended.  
NTE|23|L|   
NTE|24|L|Test was performed at Solstas Lab Partners, 4191 Mendenhall  
NTE|25|L|Oaks Parkway, Suite 140, High Point NC 27265.  
NTE|26|L|Dr. Valerie Fields, Cytology Medical Director

**High, Low, Critical, Flags/ Result Level Comment**:

MSH|^~\&|SQ-PLANO|SPECTRUM|TCPCLIENTS|111171|201207191702||ORU^R01|211634|T|2.2  
PID|1||N220150036||TEST^MEDICAL||19801129|F  
PV1|1|O|||||88888888^CLIENT^TEST  
ORC|RE||N220150036|||||||||88888888^CLIENT^TEST|||||111171^WPA1171  
OBR|1||N220150036|2404^BMP with Estimated GFR|||201207190830||||N|||201207191654||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207191702||^|P  
OBX|1|NM|230005^Sodium||144|mEq/L|135-145|N|||F|||201207191702  
OBX|2|NM|230010^Potassium||6.5|mEq/L|3.5-5.3|HH|||F|||201207191702  
NTE|1|L|Specimen hemolyzed: test results may be affected  
OBX|3|NM|230015^Chloride||101|mEq/L|96-112|N|||F|||201207191702  
OBX|4|NM|230020^CO2||26|mEq/L|19-32|N|||F|||201207191702  
OBX|5|NM|230025^Glucose||32|mg/dL|70-99|LL|||F|||201207191702  
OBX|6|NM|230035^BUN||29|mg/dL|6-23|H|||F|||201207191702  
OBX|7|NM|230040^Creatinine||1.55|mg/dL|0.50-1.10|H|||F|||201207191702  
OBX|8|NM|230105^Calcium||7.9|mg/dL|8.4-10.5|L|||F|||201207191702  
OBX|9|NM|230101^Globulin||3.9|g/dL|2.1-3.9|N|||F|||201207191702  
OBX|10|NM|230102^AG Ratio||4.4|g/dL|1.1-2.5|H|||F|||201207191702  
OBX|11|NM|230042^BUN Creatinine Ratio||18.7|%||N|||F|||201207191702  
OBX|12|ST|231685^Est GFR, African American|||mL/min|>60|N|||P  
OBX|13|ST|231690^Est GFR, NonAfrican American|||mL/min|>60|N|||P  
OBR|2||N220150036|22000^PT (Prothrombin Time)|||201207190830||||N|||201207191654||88888888^CLIENT^TEST||CLNT|||Solstas Lab Partners^4380 Federal Drive, Suite 100^Greensboro, NC 27410|201207191700||^|P  
OBX|1|NM|220000^Prothrombin Time||15.3|seconds|11.6-15.2|H|||F|||201207191700  
OBX|2|NM|220005^INR||3.66||<1.50|H|||F|||201207191700  
NTE|1|L|The INR is of principal utility in following patients on stable doses  
NTE|2|L|of oral anticoagulants. The therapeutic range is generally 2.0 to  
NTE|3|L|3.0, but may be 3.0 to 4.0 in patients with mechanical cardiac valves,  
NTE|4|L|recurrent embolisms and antiphospholipid antibodies (including lupus  
NTE|5|L|inhibitors).

**Two sensitivity Micro:**

MSH|^~\&|SQ-PLANO|SPECTRUM|TCPCLIENTS|111171|201207191716||ORU^R01|211645|T|2.2  
PID|1||N220150034||TEST^MICRO||19801129|F  
PV1|1|O|||||88888888^CLIENT^TEST  
ORC|RE||N220150034|||||||||88888888^CLIENT^TEST|||||111171^WPA1171  
OBR|1||N220150034|70190^Culture, Wound|||201207190830|||||||201207191649|Leg|88888888^CLIENT^TEST|||||Solstas Lab Mendenhall Oaks^4191 Mendenhall Oaks Pkwy-Ste. 140^High Point, NC 27265|201207191716||MB^MC|F  
OBX|4|TX|CCT^COLONY COUNT:||>=100,000 COLONIES/ML||||||F|||201207191716  
OBX|1|TX|GS^GRAM STAIN:||Few Gram Positive Cocci In Pairs||||||F  
OBX|2|ST|GS^GRAM STAIN:||RCL||||||F  
OBX|3|ST|GS^GRAM STAIN:||Few Yeast||||||F  
OBX|5|TX|FR^FINAL REPORT||STAPHYLOCOCCUS AUREUS||||||F|||201207191716  
NTE|1|L|Rifampin and Gentamicin should not be used as  
NTE|2|L|single drugs for treatment of Staph infections.  
OBX|6|TX|FR^FINAL REPORT||ENTEROCOCCUS SPECIES||||||F|||201207191716  
OBX|7|ST|FR^FINAL REPORT||Yeast||||||F|||201207191716  
NTE|1|L|Standardized susceptibility testing for this  
NTE|2|L|organism is not available.  
OBR|2||N220150034|SAUR^Sensitivity for: STAPHYLOCOCCUS AUREUS|||201207190830|||||||201207191649|Leg|88888888^CLIENT^TEST||||||201207191716||MB^MS|F|SAUR^STAPHYLOCOCCUS AUREUS^L|||N22015003470190  
OBX|8|ST|PEN^PENICILLIN||I, 4||||||F|||201207191716  
OBX|9|ST|OX^OXACILLIN||S, 2||||||F|||201207191716  
OBX|10|ST|GM^GENTAMICIN||I, 4||||||F|||201207191716  
OBX|11|ST|LVX^LEVOFLOXACIN||S, 2||||||F|||201207191716  
OBX|12|ST|MXF^MOXIFLOXACIN||R, 8||||||F|||201207191716  
OBX|13|ST|TS^TRIMETH/SULFA||S, 2||||||F|||201207191716  
OBX|14|ST|VA^VANCOMYCIN||R, 8||||||F|||201207191716  
OBX|15|ST|CC^CLINDAMYCIN||R, 8||||||F|||201207191716  
OBX|16|ST|E^ERYTHROMYCIN||I, 4||||||F|||201207191716  
OBX|17|ST|RIF^RIFAMPIN||I, 4||||||F|||201207191716  
OBX|18|ST|TET^TETRACYCLINE||R, 8||||||F|||201207191716  
OBR|3||N220150034|ENSPE^Sensitivity for: ENTEROCOCCUS SPECIES|||201207190830|||||||201207191649|Leg|88888888^CLIENT^TEST||||||201207191716||MB^MS|F|ENSPE^ENTEROCOCCUS SPECIES^L|||N22015003470190  
OBX|19|ST|AM^AMPICILLIN||S, 2||||||F|||201207191716  
OBX|20|ST|VA^VANCOMYCIN||R, 8||||||F|||201207191716  
OBX|21|ST|GM500^GENTAMICIN SYNERGY||I, 4||||||F|||201207191716

## *Bidirectional*

**Amended Report**

MSH|^~\&|SQ-PLANO|NCX|CLNT|CLNT|201207251114||ORU^R01|211868|T|2.2  
PID|1|9227|||TEST^JENNIE||19620102|F|||||(423)890-7734|||||448315|357-57-7137  
PV1|1|O|||||87146^SHAH^INDRAVADAN^K  
ORC|RE|448315X27963|N220550018|||||||||448315^S8315  
OBR|1|448315X27963|N220550018|23040^Glucose|||201207231445||||N|||201207251011||S8315||CLNT|||SLN|||^|F  
NTE|1|L|PERFORMED AT: SOLSTAS LAB PARTNERS  
NTE|2|L| 4380 FEDERAL DRIVE, SUITE 100  
NTE|3|L| GREENSBORO, NC 27410  
OBX|1|NM|230025^Glucose||88|mg/dL|70-99|N|||C|||201207251113  
NTE|1|L|   
NTE|2|L|Amended report.;

**GYN Cyto: Pap**

MSH|^~\&|SQ-PLANO|NCX|CLNT|CLNT|201207251115||ORU^R01|211870|T|2.2  
PID|1|9225|||TEST^JOHNNIE||19500505|F||||||||||448315|654-65-4654  
PV1|1|O|||||448315^SHAH^INDRA K^\*CLNT\*  
ORC|RE|448315X27976|P11309128|||||||||448315^S8315  
OBR|1|448315X27976|P11309128|6045^Pap,SurePath with CT/GC|||201207231503||||N|||201207251018||S8315||CLNT|||SLN|||^|F  
NTE|1|L|PERFORMED AT: SOLSTAS LAB PARTNERS  
NTE|2|L| 4380 FEDERAL DRIVE, SUITE 100  
NTE|3|L| GREENSBORO, NC 27410  
OBX|1|NM|899050^Number of Slides/Vials:||1|||N|||F|||201207251114  
OBX|2|ST|899054^Source:||VAGINAL|||N|||F|||201207251114  
OBX|3|ST|899056^Previous Diagnosis:||NORMAL|||N|||F|||201207251114  
OBX|4|ST|899058^LMP:||07-11-12|||N|||F|||201207251114  
OBX|5|TX|899060^Clinical Information:||NO PAP FOR 2 YEARS|||N|||F|||201207251114  
OBX|6|ST|899062^SPECIMEN ADEQUACY:|||||N|||F|||201207251114  
NTE|1|L|SATISFACTORY. Endocervical/transformation zone component present.  
OBX|7|ST|899104^FINAL DIAGNOSIS:|||||A|||F|||201207251114  
NTE|1|L|-  
NTE|2|L|EPITHELIAL CELL ABNORMALITY: SQUAMOUS CELLS  
NTE|3|L|LOW-GRADE SQUAMOUS INTRAEPITHELIAL LESION  
NTE|4|L|(LSIL) ENCOMPASSING: HPV/MILD DYSPLASIA/CIN1.  
OBX|8|ST|899066^COMMENTS:|||||N|||F|||201207251114  
NTE|1|L|Atrophy is present.  
OBX|9|ST|899102^RECOMMENDATIONS:|||||N|||F|||201207251114  
NTE|1|L|COLPOSCOPY AND BIOPSY are suggested.  
NTE|2|L|For a more comprehensive discussion of these recommendations, please  
NTE|3|L|refer to the asccp.org website.  
OBX|10|ST|899068^Cytotechnologist:||SMP|||N|||F|||201207251114  
NTE|1|L|Reviewed by Valerie J. Fields, MD, FCAP (Electronic Signature on File)  
NTE|1|L|   
NTE|2|L| \*\*\*Normal Reference Range: Negative\*\*\*  
NTE|3|L|   
NTE|4|L|Testing performed using the BD ProbeTec Qx Chlamydia trachomatis and  
NTE|5|L|Neisseria gonorrhea amplified DNA assay.  
NTE|6|L|   
NTE|7|L|Performed at: Solstas Lab Partners  
NTE|8|L| Mendenhall Oaks Lab  
NTE|9|L| 4191 Mendenhall Oaks Pkwy-Ste. 140  
NTE|10|L| High Point, NC 27265  
NTE|11|L| 34D1080247  
NTE|12|L|   
NTE|13|L|\*  
NTE|14|L|The Pap smear is a screening test used to detect cervical cancer and  
NTE|15|L|its precursors. It should not be used as the sole means to detect  
NTE|16|L|cervical cancer. Test results should be correlated with clinical  
NTE|17|L|findings. The Pap test is unreliable for detecting endometrial  
NTE|18|L|lesions and should not be used to evaluate endometrial  
NTE|19|L|abnormalities. Data indicate the Pap test is subject to false  
NTE|20|L|negative and false positive results. Therefore, periodic repeat  
NTE|21|L|testing and follow-up of any unexplained clinical signs and symptoms  
NTE|22|L|are recommended.  
NTE|23|L|   
NTE|24|L|Test was performed at Solstas Lab Partners, 4191 Mendenhall  
NTE|25|L|Oaks Parkway, Suite 140, High Point NC 27265.  
NTE|26|L|Dr. Valerie Fields, Cytology Medical Director;

**Non GYN Cyto**

MSH|^~\&|SQ-PLANO|NCX|CLNT|CLNT|201208171530||ORU^R01|213660|T|2.2  
PID|1|10528|||TEST^ANNE||19681202|F||||||||||448315  
PV1|1|O|||||448315^SHAH^INDRA K^\*CLNT\*  
ORC|RE|448315X28873|P11309143|||||||||448315^S8315  
OBR|1|448315X28873|P11309143|86551^Cytology,Fluid and Smear|||201208161245||||N|||201208171526||S8315||CLNT|||SLN2|||^|F  
NTE|1|L|PERFORMED AT: SOLSTAS LAB PARTNERS  
NTE|2|L| 4191 MENDENHALL OAKS PARKWAY, SUITE 140  
NTE|3|L| HIGH POINT, NC 27265  
OBX|1|NM|899082^Number of Slides:||1|||N|||F|||201208171530  
OBX|2|ST|899084^Source:||BRONCH|||N|||F|||201208171530  
OBX|3|ST|899086^Relevant History:||NONE|||N|||F|||201208171530  
OBX|4|ST|899090^FINAL DIAGNOSIS|||||N|||F|||201208171530  
NTE|1|L|-  
NTE|2|L|NO MALIGNANT CELLS IDENTIFIED.  
OBX|5|ST|899094^Cytotechnologist:||SMP|||N|||F|||201208171530  
OBX|6|ST|899100^Pathologist:|||||N|||F|||201208171530  
NTE|1|L|Reviewed by Valerie J. Fields, MD, FCAP (Electronic Signature on File);

**Micro**

MSH|^~\&|SQ-PLANO|NCX|CLNT|CLNT|201207251119||ORU^R01|211872|T|2.2  
PID|1|9295|||TEST^JANE||19880808|F|||||(588)577-7771|||||448315|647-74-6633  
PV1|1|O|||||87146^SHAH^INDRAVADAN^K  
ORC|RE|448315X27977|N220550020|||||||||448315^S8315  
OBR|1|448315X27977|N220550020|70190^Culture, Wound|||201207231507|||||||201207251023|LEG WOUND||||||MO|201207251118||MB^MC|F  
NTE|1|L|PERFORMED AT: SOLSTAS LAB MENDENHALL OAKS  
NTE|2|L| 4191 MENDENHALL OAKS PKWY-STE. 140  
NTE|3|L| HIGH POINT, NC 27265  
OBX|1|ST|70190^Culture, Wound||Culture, Wound||||||F|||201207251118  
NTE|1|L| ===== COLONY COUNT: =====  
NTE|2|L| >=100,000 COLONIES/ML  
NTE|3|L|  
NTE|4|L| ===== GRAM STAIN: =====  
NTE|5|L| Few Gram Positive Cocci In Pairs In Clusters  
NTE|6|L| Few Yeast  
NTE|7|L|  
NTE|8|L| FINAL REPORT: STAPHYLOCOCCUS AUREUS  
NTE|9|L|  
NTE|10|L|Rifampin and Gentamicin should not be used as  
NTE|11|L|single drugs for treatment of Staph infections.  
NTE|12|L|  
NTE|13|L| FINAL REPORT: ENTEROCOCCUS SPECIES  
NTE|14|L| Yeast  
NTE|15|L|  
NTE|16|L|Standardized susceptibility testing for this  
NTE|17|L|organism is not available.  
NTE|18|L|  
NTE|19|L| Sensitivity for: STAPHYLOCOCCUS AUREUS  
NTE|20|L|  
NTE|21|L| PENICILLIN Sensitive 2   
NTE|22|L| OXACILLIN Indeterminate 4   
NTE|23|L| GENTAMICIN Indeterminate 4   
NTE|24|L| LEVOFLOXACIN Indeterminate 4   
NTE|25|L| MOXIFLOXACIN Resistant 8   
NTE|26|L| TRIMETH/SULFA Sensitive 2   
NTE|27|L| VANCOMYCIN Resistant 8   
NTE|28|L| CLINDAMYCIN Resistant 8   
NTE|29|L| ERYTHROMYCIN Indeterminate 4   
NTE|30|L| RIFAMPIN Sensitive 2   
NTE|31|L| TETRACYCLINE Sensitive 2   
NTE|32|L|  
NTE|33|L| Sensitivity for: ENTEROCOCCUS SPECIES  
NTE|34|L|  
NTE|35|L| AMPICILLIN Indeterminate 4   
NTE|36|L| VANCOMYCIN Sensitive 2   
NTE|37|L| GENTAMICIN SYNERGY Resistant 8   
NTE|38|L|  
NTE|39|L| END OF REPORT;

**Reflex**

MSH|^~\&|SQ-PLANO|NCX|CLNT|CLNT|201207251110||ORU^R01|211863|T|2.2  
PID|1|9118|||TEST^TESTY||19910624|M|||||(508)836-2700|||||448315  
PV1|1|O|||||87146^SHAH^INDRAVADAN^K  
ORC|RE|448315X27981|N220550021|||||||||448315^S8315  
OBR|1|448315X27981|N220550021|23905^Reflexed ANA titer and pattern|||201207231513||||N|||201207251021||S8315||CLNT|||SLN|||^|F  
NTE|1|L|PERFORMED AT: SOLSTAS LAB PARTNERS  
NTE|2|L| 4380 FEDERAL DRIVE, SUITE 100  
NTE|3|L| GREENSBORO, NC 27410  
OBX|1|ST|230945^ANA Titer||1:80| |<1:40|H|||F|||201207251109  
NTE|1|L|   
NTE|2|L|Reference Ranges:  
NTE|3|L|1:40 - 1:80 Weakly positive, usually not clinically significant.  
NTE|4|L|> or = to 1:160 Result may be clinically significant.  
OBX|2|ST|230950^ANA Pattern||SPECKLED|||A|||F|||201207251109;

**DNR/QNS/TNP**

MSH|^~\&|SQ-PLANO|SPECTRUM|GSORESULTS4|140002|201208231226||ORU^R01|214033@KEY:140002\_20|T|2.2  
PID|1|SEVENT|N223650010||TESTPATIENT^SEVEN||19771214|F  
PV1|1|O|||||1417951864^BYRD^JESSICA^P  
ORC|RE|00251|N223650010|||||||||1417951864^BYRD^JESSICA^P|||||140002^SIP0002  
OBR|1|00251|N223650010|2515^Client Hypothyroid Panel|||201208231211||||N|||201208231222||1417951864^BYRD^JESSICA^P||CLNT||||||^|F  
OBX|1|NM|230320^T4||11.2|ug/dL|5.0-12.5|N|||F|||201208231225  
OBX|2|ST|230325^T3 Uptake||QNS|%|22.5-37.0|N|||F|||201208231225  
OBX|3|ST|230328^Free Thyroxine Index||NOT CALC||1.0-3.9|N|||F|||201208231225  
OBX|4|ST|230330^TSH||TNP|uIU/mL|0.350-4.500|N|||F|||201208231225  
NTE|1|L|\*\*\*Test methodology is 3rd generation TSH\*\*\*  
NTE|1|L|Performed at: Solstas Lab Partners  
NTE|2|L| 4380 Federal Drive, Suite 100  
NTE|3|L| Greensboro, NC 27410  
OBR|2|00251|N223650010|23780^PSA|||201208231211||||N|||201208231222||1417951864^BYRD^JESSICA^P||CLNT||||||^|F  
OBX|1|ST|230855^PSA||<0.01|ng/mL|<=4.00|N|||F|||201208231225  
NTE|1|L|Test Methodology: ECLIA PSA (Electrochemiluminescence Immunoassay)  
NTE|1|L|Performed at: Solstas Lab Partners  
NTE|2|L| 4380 Federal Drive, Suite 100  
NTE|3|L| Greensboro, NC 27410

**Critical Alpha**

MSH|^~\&|SQ-PLANO|NCX|CLNT|CLNT|201207251111||ORU^R01|211864|T|2.2  
PID|1|10525|||TEST^MARGIE||19500201|F||||||||||448315  
PV1|1|O|||||87146^SHAH^INDRAVADAN^K  
ORC|RE|448315X27985|N220550023|||||||||448315^S8315  
OBR|1|448315X27985|N220550023|23610^Hepatitis A Antibody, IgM|||201207231524||||N|||201207251026||S8315||CLNT|||SLN|||^|F  
NTE|1|L|PERFORMED AT: SOLSTAS LAB PARTNERS  
NTE|2|L| 4380 FEDERAL DRIVE, SUITE 100  
NTE|3|L| GREENSBORO, NC 27410  
OBX|1|ST|230650^Hepatitis A Antibody, IgM||POS||NEGATIVE|A|||F|||201207251110;

**In-House Test**

MSH|^~\&|SQ-PLANO|SPECTRUM|GSORESULTS4|140002|201208231634||ORU^R01|214069@KEY:140002\_20|T|2.2  
PID|1|NINETEST|N223650030||TESTPATIENT^NINE||19861112|F  
PV1|1|O|||||1417951864^BYRD^JESSICA^P  
ORC|RE|00254|N223650030|||||||||1417951864^BYRD^JESSICA^P|||||140002^SIP0002  
OBR|1|00254|N223650030|77000^Drug Screen Urine, No Confirmation|||201208231615||||N|||201208231630||1417951864^BYRD^JESSICA^P||CLNT||||||^|F  
OBX|1|ST|230505^Benzodiazepines||NEG||Negative|N|||F|||201208231633  
OBX|2|ST|230507^Phencyclidine||NEG||Negative|N|||F|||201208231633  
OBX|3|ST|230510^Cocaine Metabolites||NEG||Negative|N|||F|||201208231633  
OBX|4|ST|230515^Amphetamines||NEG||Negative|N|||F|||201208231633  
OBX|5|ST|230520^Marijuana Metabolites||NEG||Negative|N|||F|||201208231633  
OBX|6|ST|230525^Opiates||POS||Negative|A|||F|||201208231633  
NTE|1|L|Positive results are confirmed upon request only. Specimen will be  
NTE|2|L|held for 7 days.  
OBX|7|ST|230530^Barbiturates||POS||Negative|A|||F|||201208231633  
NTE|1|L|Positive results are confirmed upon request only. Specimen will be  
NTE|2|L|held for 7 days.  
OBX|8|ST|230540^Methadone||POS||Negative|A|||F|||201208231633  
NTE|1|L|Positive results are confirmed upon request only. Specimen will be  
NTE|2|L|held for 7 days.  
OBX|9|ST|230545^Propoxyphene||POS||Negative|A|||F|||201208231633  
NTE|1|L|Positive results are confirmed upon request only. Specimen will be  
NTE|2|L|held for 7 days.  
OBX|10|NM|600146^Creatinine, Urine||2.0|mg/dL||N|||F|||201208231633  
NTE|1|L|   
NTE|2|L|Cutoff Values for Urine Drug Screen:  
NTE|3|L| Drug Class Cutoff (ng/mL)  
NTE|4|L| Amphetamines 1000  
NTE|5|L| Barbiturates 200  
NTE|6|L| Cocaine Metabolites 300  
NTE|7|L| Benzodiazepines 200  
NTE|8|L| Methadone 300  
NTE|9|L| Opiates 2000  
NTE|10|L| Phencyclidine 25  
NTE|11|L| Propoxyphene 300  
NTE|12|L| Marijuana Metabolites 50  
NTE|13|L|   
NTE|14|L|For medical purposes only.  
NTE|1|L|Performed at: Solstas Lab Partners  
NTE|2|L| 4380 Federal Drive, Suite 100  
NTE|3|L| Greensboro, NC 27410

**Pending Tests**

MSH|^~\&|SQ-PLANO|SPECTRUM|TCPCLIENTS|449726|201208090836||ORU^R01|213028|T|2.2  
PID|1|PFP-012|N221450048||BOND^TES||19700706|F|||||||||||324-34-3244  
PV1|1|O|||||1053621334^GLOWATZ^DAWN  
ORC|RE|2665|N221450048|||||||||1053621334^GLOWATZ^DAWN|||||449726^S9726  
OBR|1|2665|N221450048|2404^BMP with Estimated GFR|||201208011634||||N|||201208021122||1053621334^GLOWATZ^DAWN||CLNT|||SLN|||^|F  
NTE|1|L|Performed at: Solstas Lab Partners  
NTE|2|L| 4380 Federal Drive, Suite 100  
NTE|3|L| Greensboro, NC 27410  
OBX|1|NM|230005^Sodium||144|mEq/L|135-145|N|||F|||201208021206  
OBX|2|NM|230010^Potassium||4.5|mEq/L|3.5-5.3|N|||F|||201208021206  
OBX|3|NM|230015^Chloride||102|mEq/L|96-112|N|||F|||201208021206  
OBX|4|NM|230020^CO2||26|mEq/L|19-32|N|||F|||201208021206  
OBX|5|NM|230025^Glucose||75|mg/dL|70-99|N|||F|||201208021206  
OBX|6|NM|230035^BUN||21|mg/dL|6-23|N|||F|||201208021206  
OBX|7|NM|230040^Creatinine||1.10|mg/dL|0.50-1.10|N|||F|||201208021206  
OBX|8|NM|230105^Calcium||8.6|mg/dL|8.4-10.5|N|||F|||201208021206  
OBX|9|NM|230101^Globulin||2.6|g/dL|2.1-3.9|N|||F|||201208021206  
OBX|10|NM|230102^AG Ratio||2.3|g/dL|1.1-2.5|N|||F|||201208021206  
OBX|11|NM|230042^BUN Creatinine Ratio||19.1|%||N|||F|||201208021206  
OBX|12|NM|231685^Est GFR, African American||66|mL/min|>60|N|||F|||201208021206  
OBX|13|NM|231690^Est GFR, NonAfrican American||54|mL/min|>60|L|||F|||201208021206  
OBR|2|2665|N221450048|23210^Amylase|||201208011634||||N|||201208021122||1053621334^GLOWATZ^DAWN||CLNT|||SLN|||^|F  
NTE|1|L|Performed at: Solstas Lab Partners  
NTE|2|L| 4380 Federal Drive, Suite 100  
NTE|3|L| Greensboro, NC 27410  
OBX|1|NM|230135^Amylase||122|U/L|0-105|H|||F|||201208090835;

**Alternate Performing Lab**

MSH|^~\&|SQ-PLANO|SPECTRUM|GSORESULTS4|140002|201208241240||ORU^R01|214141@KEY:140002\_20|T|2.2  
PID|1|ELEVENTEST|N223750030||TESTPATIENT^ELEVEN||19800115|M  
PV1|1|O|||||10013^COSTELLO, DNP^J BRAIDWOOD  
ORC|RE|00258|N223750030|||||||||10013^COSTELLO, DNP^J BRAIDWOOD|||||140002^SIP0002  
OBR|1|00258|N223750030|85800^Vitamin D Dihydroxy 1,25 |||201208241223||||N|||201208241238||10013^COSTELLO, DNP^J BRAIDWOOD||CLNT||||||^|F  
OBX|1|NM|808115^Vitamin D,1,25 (OH)2, Total||25|||N|||F|||201208241239  
OBX|2|NM|808116^Vitamin D3,1,25 (OH)2||26|||N|||F|||201208241239  
OBX|3|NM|808117^Vitamin D2,1,25 (OH)2||27|||N|||F|||201208241239  
NTE|1|L|Performed at: Quest Diag, Nichols Inst  
NTE|2|L| 14225 Newbrook Dr.  
NTE|3|L| Chantilly, VA 20153  
OBR|2|00258|N223750030|87352^Zinc|||201208241223||||N|||201208241238||10013^COSTELLO, DNP^J BRAIDWOOD||CLNT||||||^|F  
OBX|1|NM|809402^Zinc||35|||N|||F|||201208241239  
NTE|1|L|Performed at: Quest Diag, Nichols Inst  
NTE|2|L| 14225 Newbrook Dr.  
NTE|3|L| Chantilly, VA 20153

**Scenario 13 (STAT) \*\*Priority Flag is expected to be sent in OBR 27.6 per Specs (this vendor sends it in OBR 5)**

MSH|^~\&|SQ- PLANO|SPECTRUM|GSORESULTS4|140002|201208241242||ORU^R01|214143@KEY:140002\_20|T|2.2  
PID|1|TWELVETE|N223750031||TESTPATIENT^TWELVE||19761212|F  
PV1|1|O|||||1417951864^BYRD^JESSICA^P  
ORC|RE|00259|N223750031|||||||||1417951864^BYRD^JESSICA^P|||||140002^SIP0002  
OBR|1|00259|N223750031|22000^PT (Prothrombin Time)|||201208241229||||N|||201208241240||1417951864^BYRD^JESSICA^P||CLNT||||||^|F  
NTE|1|L|STAT  
OBX|1|NM|220000^Prothrombin Time||26.5|seconds|11.6-15.2|H|||F|||201208241241  
OBX|2|NM|220005^INR||2.65||<1.50|H|||F|||201208241241  
NTE|1|L|The INR is of principal utility in following patients on stable doses  
NTE|2|L|of oral anticoagulants. The therapeutic range is generally 2.0 to  
NTE|3|L|3.0, but may be 3.0 to 4.0 in patients with mechanical cardiac valves,  
NTE|4|L|recurrent embolisms and antiphospholipid antibodies (including lupus  
NTE|5|L|inhibitors).  
NTE|1|L|Performed at: Solstas Lab Partners  
NTE|2|L| 4380 Federal Drive, Suite 100  
NTE|3|L| Greensboro, NC 27410

# Vendor Requirements Questionnaire

Please respond to all questions on the Vendor Requirements Document. The information provided will assist Solstas Lab Partners to determine the feasibility for developing a standardized interface solution that will meet our shared Customer’s needs. Solstas Lab Partners currently support HL7 versions 2.2 and 2.3 for New Vendor Interface Requests. Management must approve any other format types requested.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Basic Company Information* | | | | | |
| Company Legal Name | Z&H Health Care Solutions LLC | | | | |
| Company Address | 2010 Corporate Ridge, Ste 700 McLean VA 22102 | | | | |
| Interface Product Name | ZHOpenEMR | | | | |
| Company Website | www.zhhealthcare.com | | | | |
| Market Presence | Years in Business: 6 | | Number of Clients: 300 | | |
| Document Completed By | Name: Shameem C Hameed | | Title: Chairman | | Date Completed: 12/02/2013 |
| *Contact Information* | | | | | |
| Management | Contact Name | Shameem C Hameed | |  | |
| Phone # | 5717668074 | |  | |
| Fax # | 7038908702 | |  | |
| Email Address | sam@zhservices.com | |  | |
| Legal Contact and Invoicing | Contact Name | Shameem C Hameed | |  | |
| Phone # | 5717668074 | |  | |
| Fax # | 7038908702 | |  | |
| Email Address | sam@zhservices.com | |  | |
| Technical | Contact Name | Ajil PM | |  | |
| Phone # | 7033408065 Ext 2000 | |  | |
| Fax # | 7038908702 | |  | |
| Email Address | ajilpm@zhservices.com | |  | |
| Support | Contact Name | Mohammed Shahzad | |  | |
| Phone # | 7033408065 Ext2000 | |  | |
| Fax # | 7038908702 | |  | |
| Email Address | shah@zhservices.com | |  | |

Please identify any specific Customers below that may be potential candidates for this interface solution.

|  |  |  |
| --- | --- | --- |
| *Customers* | | |
| Customer Name and Contact | | **J & L Healthcare Consultants** |
| Customer Name and Contact | |  |
| Customer Name and Contact | |  |
| Customer Name and Contact | |  |
| Customer Name and Contact | |  |
| *General Interface Information* | | | |
| **Product Type** | | EMR  PMS  Physician LIS Hospital LIS  ASP  Hub/Spoke HIE ACO/IPA Hospital Outreach | |
| **Product Version** | | 4.1.x | |
| **Interface Type Offered** | Unidirectional (results only)  Bi-Directional (orders & results)  Reference Lab Interface | | |
| **Pricing per Interface Type** | Unidirectional:       Maintenance fee:       Per (Year, Quarter, Month):  Bi-Directional:       Maintenance fee:       Per (Year, Quarter, Month):  Upgrade from Unidirectional to Bi-directional:       Maintenance fee:       Per (Year, Quarter, Month): | | |
| **Connectivity Type** | Wahoo  VPN  Other:  Note: Solstas Lab Partners’s preferred connectivity is TCP/IP using VPN.  For VPN, Solstas Lab Partners will assign the inbound port number(s) and Customer will assign the outbound port number(s). If the Customer’s Test and Production system reside on the same server, Solstas Lab Partners requires separate port numbers for each environment.  Solstas Lab Partners uses MLLP Protocol for VPN acknowledgement handling. | | |
| **Connectivity Model** | | Point to Point Model (Direct Connection, Customer to Solstas)  ASP Model/Hub-Spoke:  (Vendor to Solstas Lab Partners, accommodates multiple Customers under one connection)  HIE (data center model, one connection per client to HIE to Solstas for orders and/or results)  ACO/IPA Explain:  Reference LIS/HIS interface “reference & reverse reference ”  Explain:  Other: | |
| **System Capability** | | Do you have a test system for Vendor to Solstas Lab Partners certification? Yes No  If no, please describe your test environment or how you function without one. | |
| **Version Release Strategy** | | Describe your Version Release process for your Customers:  Implementation, Beta testing, Client training and then Go live. | |
| **Customer Workflows Supported** | | Electronic Orders to Patient Service Center Network Yes No  Can the application support routing electronic orders to support the PSC workflow and also client collected specimens at will?  STAT Lab Workflow  Split orders by laboratory discipline New Order Number for each split? Or the same Order Number?  Separate order numbers will generate separate final reports which can be seen as a negative.  Can application support “bundling” of the split lab orders? Yes No | |
| **Reporting Error Management** | | Does your application have an Error Queue for problem reporting issues for reconciliation? Yes No  Does your application have a method to manage duplicate test orders? Yes No | |
| **Label Printing Options** | | Label Printer Supported Yes No (Solstas Standard Label Printer Dymo Label size IPC82609 size 2.25 x 1.25)  Crack Peel Requisition paper 6 label Yes No | |

|  |  |
| --- | --- |
| *Interface Business Requirements* | |
| **Compendium** | Describe your test dictionary build process:  Initial Upload (entire file) Upload based on utilization Manual Build Process  After the interface is moved to production, will this process need to be repeated once the customer is ready to migrate from their test environment to Live? Yes No  Contact ajilpm@zhservices.com |
| **LOINC (Standard Result Codes)** | Do you support LOINC codes? Yes No  Note: Currently, Solstas Lab Partners can provide LOINC codes (limited test menu currently) |
| **Compendium Format and Update Parameters** | Who is responsible for updates to the Compendium EMR?  Client  Vendor  If the Vendor, what costs are associated with an update?  If the Vendor, what timeframe are associated with an update?  HL7 (via EDI)  Spreadsheet  Other  Electronic Updates Manual Client Updates based on lab notifications  Are there specific format requirements for Test Order and Result code changes? |
| **Manifest / Requisition** | Can you produce the Standard Solstas Lab Partners Manifest and Requisition? Yes No  Note: Solstas Lab Partners certifies Manifest and Requisition Documents for all new vendor interfaces and required fields noted in the documentation must be provided. |
| **2D Barcode** | Does your application support the 2D Barcode? Yes No  Please provide specifications for 2D Barcode. |
| **Interface Reporting Criteria** | Finals Only  Finals with Micro Partials |
| **Matching Requirements** | What fields do you require on the EDI Result to match back to the order in your system?  PID NPI FN/LN/DOB Physician Name Other Explain:  Note: This information must be provided on the Requisition for manually entered orders. |

|  |  |
| --- | --- |
| *Interface Billing Requirements* | |
| **Supported Billing Types** | Client  Patient  Third Party Insurance |
| **Insurance Cross Reference Build** | Note: Solstas Lab Partners will provide a spreadsheet listing the 3rd party insurance carrier codes per customer. These codes must be sent via EDI interface per Solstas Lab Partners HL7 specs to ensure proper billing.  Describe your 3rd party insurance cross reference table build process: |
| **Billing Segments** | Can you provide the Required Data to support Patient and 3rd Party Billing?  Patient:  GT1 Segment  3rd Party:  IN1Segment  GT1 Segment  DG1 Segment  What are the GT1.11 and IN1.17 relationship codes used by the EMR? |
| **Secondary Insurance** | For 3rd Party Billing, can you send multiple IN1 segments? Yes No  Note: Solstas Lab Partners can receive up to 2 occurrences of the IN1 segment via the Interface. The first occurrence for Primary Insurance and the second occurrence for Secondary Insurance. |
| **ABN Logic and Rules** | How often do you update the ABN rules? \_\_\_\_\_\_\_\_\_\_\_\_\_  Is the logic embedded in the application Yes No  Is the ABN process electronic? Yes No  Do you maintain LCD and NCD rules? LCD NCD |

|  |  |
| --- | --- |
| *Technical Interface Requirements* | |
| **AOE Prompt Questions** | Do you have any limitations on the # of AOE Prompt Questions asked? Yes No  If Yes, what is the Maximum # of AOE Prompt Questions? |
| **Accession # (Control #)** | Note: The Solstas Lab Partners Lab System requires one accession control number for all orders pertaining to the same patient specimen for accessioning. Can you support this requirement? Yes No  If no, describe how the Accession # is used during order entry and how it impacts the EDI data and Requisition: |
| **Physician ID / UPIN** | Solstas Lab Partners can provide either the Physician ID or UPIN on the EDI result (NPI preferred). Which do you require for your system processing? |
| **OBR Status Flags** | Can you support Order Level Status Flags noted in the Solstas Lab Partners EDI Specifications (OBR.27)?  Yes No  Describe your product workflow for handling these statuses? |
| **OBX Status Flags** | Can you support Result Level Status Flags noted in the Solstas Lab Partners EDI Specifications (OBX.11)?  Yes No  Describe your product workflow for handling these statuses? |
| **UoM Field Length** | What is the maximum field length your product will support for the Unit of Measure Value in the OBX Segment (OBX.6)? |
| **OBX Result Value** | Describe how you handle a Null result value in OBX.5: |
| **Results Only (Unidirectional)**  **Interfacing** | Can you support “Unsolicited” Results Only via your interface, without the order entered into your application?  Yes No  If Yes, do you require the Compendium Test Codes to be built into your system for order/result processing?  Yes No  Explain:  What effect do changes to the result codes have on the interface?    Are there specific format requirements for Test Order and Result code changes?  What costs are associated with these changes?  What timeframe is associated with these changes?  Contact |
| **Reflexing** | Describe your process for handling Reflex results in your interface product: |
| **Performed At Information** | Can you support the Solstas Lab Partners format for sending the Performing Facility Information in the OBX.15? Our standard is to place in OBR21 Yes No  Will this information be posted on electronic display and printed reports? Yes No  Note: This is a CLIA requirement to send the pertinent information.  Can you support multiple Performing Facilities? Yes No  Explain: |
| **Error Handling** | Describe your Error Handling process for Results that do not file automatically:  The user can attach the result to a particular patient. |
| **Add On Test Requests** | How does your application manage test add on’s?  Does the application allow for the end-user to open a previously transmitted order to update it with an additional test code and then resend? (Does this process keep the original order number or does it become a new order?)  Does the application require a brand new order?  Solstas requires all test add on’s to be created in the application and then followed up with a phone call to Solstas Customer Services to verify specimen requirements and ensuring a smooth process for the add on. |
| **Electronic Cancels** | Can your application support electronic cancel messages Yes No |
| **Amended Reports** | How does your application manage the amended report process? Explain: Will be updated. |
| **Diagnosis Code requirement** | Does the EMR require a diagnosis code to place an order? Yes No |
| **CMS** | Which MAC Jurisdictions do your EMR Support? (click all that apply)  **A/B** 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 |

# HL7 DATA MAP

**Notes:**

* *The “LEN” column represents the length allowable by the Solstas Commercial Laboratory System.*
* *Unused fields are not listed.*
* *The REQ column refers to the systems requirements. Billing Requirements are not included.*

## *MSH Inbound – Message Header Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Field Separator | 1 | R | "|" ASCII(124) |  |
| 2 | Encoding Characters | 4 | R | ^~\& |  |
| 3 | Sending Application |  | R | Originating system | \* |
| 4 | **CLIENT #**  (HL7:Sending Facility) |  | R\* | **The** Solstas **client number is sent in place of the Facility Name.** 1 | 1 |
| 5 | Receiving Application | 3 | R | NCX |  |
| 6 | Receiving Facility |  | O |  | \* |
| 7 | Date/Time of Message | 14 | R | CCYYMMDDHHMMSS |  |
| 9 | Message Type | 7 | R | ORM^O01 |  |
| 10 | Message Control ID |  | O | Message Control ID |  |
| 11 | Processing ID | 1 | R | P=Production T=Test |  |
| 12 | Version ID | 8 | R | 2.2 or 2.3 |  |

## *MSH Outbound - Message Header Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Field Separator | 1 | R | "|" ASCII(124) |  |
| 2 | Encoding Characters | 4 | R | ^~\& |  |
| 3 | Sending Application | 8 | R | SQ-PLANO |  |
| 4 | Sending Facility | 3 | R | SOLSTAS |  |
| 5 | Receiving Application | 4 | R | {RECEIVING APP NAME} |  |
| 6 | Receiving Facility | 4 | R | {Solstas’ CLIENT#} | Ie. 449999 |
| 7 | Date/Time of Message | 12 | R | CCYYMMDDHHMM |  |
| 9 | Message Type | 7 | R | ORU^R01 (Results) ORM^O01 (Reflex orders) |  |
| 10 | Message Control ID |  | R | Message Control ID |  |
| 11 | Processing ID | 1 | R | P=Production T=Test |  |
| 12 | Version ID | 3 | R | 2.2 |  |

## *MSA Inbound – Message Acknowledgement Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Acknowledgement Code |  | R | AA=Positive AR=Negative Acknowledgement |  |
| 2 | Message Control ID |  | R | Message Control ID |  |

## *MSA Outbound – Message Acknowledgement Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Acknowledgement Code | 2 | R | AA=Positive AR=Negative Acknowledgement |  |
| 2 | Message Control ID |  | R | Message Control ID |  |

## *PID Inbound – Patient ID Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - PID | 3 | R | Sequence Number |  |
| 2 | Patient ID (External ID) | 20 | R | Medical Record Number |  |
| 5 | Patient Name:  Family Name  Given Name  Middle Initial  Suffix | 25 | R  R  R  O  O | Last Name^First Name^Middle Initial^Suffix |  |
| 7 | Date of Birth | 10 | R | CCYYMMDD |  |
| 8 | Sex | 10 | R | M=Male F=Female or U=Unknown |  |
| 11 | Patient Address:  Street Address  Other Address  City  State  Zip |  | R  R  O  R  R  R | Addr1^Addr2^City^State^Zip | Not required for client bill type. |
| 13 | Phone Number - Home | 13 | R | (999)999-9999 | No spaces  Not req. for client bill type |
| 18 | Patient Account Number:  Account ID  Check Digit  Check Digit Code  Billing Type | 10 | R\*  O  R\* | Visit, Account or Chart Number  Billing Type 1 | Billing Type Codes (PID 18.4)1:  C=Client  P=Patient  T=Third party ins. |
| 19 | SSN Number - Patient | 15 | R | 999999999 |  |

## *PID Outbound - Patient ID Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - PID | 3 | R | Sequence Number |  |
| 2 | Patient ID (External ID) | 20 | R | Requestor’s Patient ID |  |
| 5 | Patient Name:  Last name  First name  Middle Initial | 25 | R  R  R  O | Last Name^First Name^MI |  |
| 7 | Date/Time of Birth | 8 | R | CCYYMMDD |  |
| 8 | Sex | 1 | R | M=Male F=Female or U=Unknown |  |
| 13 | Phone Number - Home | 13 | R | (999)999-9999 |  |
| 18 | Patient Account Number |  | O |  | Returned if sent to Solstas |
| 19 | SSN Number - Patient | 11 | O | 999-99-9999 |  |

## *PV1 Inbound - Patient Visit Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - PV1 | 3 | O |  |  |
| 2 | Patient Class | 1 | R | O=Outpatient |  |
| 7 | **Requesting Physician:**  (HL7:Attending Doctor)  ID  Last name  First name  Middle initial  Suffix | 60 | R  R  R  R  O  O | Phys ID^Last Name^First Name^MI^Suffix | Phys ID typically requires conversion.  NPI Preferred |

## *PV1 Outbound - Patient Visit Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - PV1 | 3 | R | Sequence Number |  |
| 2 | Patient Class | 1 | R | O=Outpatient |  |
| 7 | **REQUESTING/Ordering Physician:**  (HL7: Attending Physician)  ID  Last name  First name  Middle initial  Suffix | 25 | R  R  R  R  O  O | Phys ID^Last Name^First Name^MI^Suffix | Phys ID typically requires conversion.  NPI Preferred |

## *GT1 – Guarantor Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - GT1 | 4 | R | Sequence Number |  |
| 2 | Guarantor Number | 59 | O | Unique # assigned to Guarantor |  |
| 3 | Guarantor Name:  Last name  First name  Middle Initial | 48 | R  R  O | Last Name^First Name^Middle Initial |  |
| 5 | Guarantor Address:  Address line 1  Address line 2  City  State  Zip | 106 | R  R  O  R  R  R | Addr1^Addr2^City^State^Zip |  |
| 6 | Guarantor Ph Num-Home | 40 | O | (999)999-9999 | No spaces |
| 7 | Guarantor Ph Num-Business | 40 | O | (999)999-9999 | No spaces |
| 8 | Guarantor Date/Time Of Birth | 26 | O | CCYYMMDDHHMM |  |
| 9 | Guarantor Sex | 1 | O | M=Male F=Female |  |
| 11 | Guarantor Relationship | 80 | R | Code to identify relation: SE=Self SP=Spouse CH=Child OT=Other | Conversion typically required. |
| 12 | Guarantor SSN | 11 | O | 999999999 |  |
| 16 | Guarantor Employer Name | 130 | O |  |  |
| 20 | Guarantor Employment Status | 2 | O | Employment status code:  N=Not Employed  E or Y=Employed | Conversion typically required. |

## *IN1 – Insurance Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - IN1 | 4 | R | Sequence Number |  |
| 2 | Insurance Plan ID | 60 | O | Code uniquely identifying the insurance plan |  |
| 3 | Insurance Company ID | 59 | R | Code uniquely identifying the insurance company | Conversion typically required. |
| 4 | Insurance Company Name | 130 | R | Name of insurance company |  |
| 5 | Insurance Company Address:  Address line 1  Address line 2  City  State  Zip | 106 | R | Addr1^Addr2^City^State^Zip |  |
| 6 | Insurance Co Contact Person:  Last name  First name  Middle initial | 48 | O  O  O  O | Last Name^First Name^Middle Initial |  |
| 7 | Insurance Co Phone Number | 40 | O | (999)999-9999 | No spaces |
| 8 | Group Number | 12 | O |  | Required if available |
| 12 | Plan Effective Date | 8 | O | CCYYMMDD |  |
| 13 | Plan Expiration Date | 8 | O | CCYYMMDD |  |
| 15 | Plan Type | 3 | O | Coded Value |  |
| 16 | Name Of Insured | 48 | R | Last Name^First Name^Middle Initial |  |
| 17 | Patient Relationship To Insured’ | 80 | R | Code to identify relation: SE=Self SP=Spouse CH=Child OT=Other | Conversion typically required |
| 18 | Insured’s Date Of Birth | 26 | O | CCYYMMDD |  |
| 19 | Insured’s Address:  Street Address  Other Address  City  State  Zip | 106 | O | Addr1^Addr2^City^State^Zip |  |
| 20 | Assignment Of Benefits | 2 | O |  |  |
| 22 | Coord Of Ben. Priority | 2 | O | 1=primary 2=secondary |  |
| 35 | Company Plan Code | 8 | O | Code used to uniquely identify an insurance plan |  |
| 36 | Policy Number | 15 | R | Individual policy number of insured |  |

## *ORC Inbound – Common Order Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Order Control | 2 | R | NW=New Order CA=Cancel |  |
| 2 | Placer Order Number | 11 | R | Ordering Site Order/Req # |  |
| 12 | Ordering Provider:  Phys ID  Last name  First name  Middle initial  Suffix | 20 | R  R  R  R  O  O | Phys ID^Last Name^First Name^MI^Suffix | Phys ID typically requires conversion. |

## *ORC Outbound – Common Order Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Order Control | 2 | R | RE=Result |  |
| 2 | Placer Order Number | 14 | C | Ordering Site/Requestor Accession # | This field may be blank for manually entered requisitions. |
| 3 | Filler Order Number | 11 | R | Performing Site Accession # |  |
| 12 | **Ordering Provider:**  ID  Last name  First name  Middle initial  Suffix |  | R  R  R  R  O  O | Phys ID^Last Name^First Name^MI^Suffix | Phys ID typically requires conversion. |
| 17 | Entering Organization | 20 |  | Client ID^Mnemonic (Solstas-assigned) | Ie. 449999^S9999 |

## *DG1 Inbound – Diagnosis Segment (4 per test maximum)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - DG1 | 4 | R | Sequence Number |  |
| 3 | Diagnosis Code | 60 | R | Diagnosis ICD-9 Code (DG1 3.1 only) |  |
| 4 | Diagnosis Description | 40 | O | Diagnosis Text/Description |  |
| 5 | Diagnosis Date/Time | 26 | O | Date of service CCYYMMDDHHMM |  |
| 6 | Diagnosis Type | 2 | R | W=Working | Hard-coded by Solstas. |
| 15 | Diagnosis Priority | 2 | R | 1=Primary | Hard-coded by Solstas. |
| 16 | Diagnosing Clinician:  ID  Last name  First name  Middle initial  Suffix | 60 | O  O  O  O  O  O | Phys ID^Last Name^First Name^MI^Suffix | Phys code (ID) typically requires conversion.  Note: If this field is left blank, it will be populated with the Ordering Provider (OBR.16) |
| 17 | Diagnosis Classification | 3 | R | D=Diagnosis | Hard-coded by Solstas. |

## *OBR Inbound – Observation Request Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - OBR | 3 | R | Sequence Number |  |
| 2 | Placer Order Number | 11 | R | Ordering Site Order/Req # |  |
| 4 | Universal Service Identifier |  | R | Order/Unit Code^Description/Text |  |
| 7 | Observation Date/Time | 26 | R | Collected Date/Time: CCYYMMDDHHMMSS |  |
| 11 | Specimen Action Code | 1 | R | A=Add | Hard-coded by Solstas. |
| 13 | Relevant Clinical Info. |  | O |  | \* |
| 14 | Specimen Received Date/Time |  | O | CCYYMMDDHHMMSS |  |
| 15 | Specimen Source |  | C |  | \*1 |
| 16 | Ordering Provider:  Phys ID  Last name  First name  Middle initial  Suffix | 20 | R  R  R  R  O  O | Phys ID^Last Name^First Name^MI^Suffix | Phys ID typically requires conversion.  NPI Preferred |
| 19 | Placer Field 2 |  | O |  | STORAGE FIELD |
| 24 | Diagnostic Serv Sect ID |  | O |  |  |
| 27 | Quantity/Timing:  Quantity  Interval  Duration  Start date/time  End date/time  **Priority**  **Condition**  Test  Conjunction  Order sequencing |  | R  R  R | Only the 6th & 7th components (Priority/Condition) are used. \*  (ie. ^^^^^R or ^^^^^S) S=Stat; R=Routine \*  (ie. ^^^^^S^FASTING) \* | 27.6 is required for STAT (S) priority.  Blank/null status defaults to Routine (R) |

## *OBR Outbound – Observation Request Segment*

| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| --- | --- | --- | --- | --- | --- |
| 1 | Set ID - OBR | 3 | R | Sequence Number |  |
| 2 | Placer Order Number | 14 | C | Ordering Site/Requestor Accession # | This field may be blank for manually entered requisitions. |
| 3 | Filler Order Number | 11 | R | Performing Site Accession # |  |
| 4 | Universal Service Identifier:  ID  Text |  | R  R  O | Order/Unit Code^Description |  |
| 7 | Observation Date/Time | 14 | R |  | Collection dt/tm |
| 11 | Specimen Action Code |  |  | N=Not Applicable (Clinical Results Only) |  |
| 14 | Specimen Received Date/Time | 14 | R | CCYYMMDDHHMMSS |  |
| 15 | Specimen Source |  | C | Micro Results only |  |
| 16 | **Ordering Provider:**  ID  Last name  First name  Middle initial  Suffix |  | R  R  R  R  O  O | Phys ID^Last Name^First Name^MI^Suffix | Phys ID typically requires conversion. |
| 18 | Placer Field 1 | 4 | C | “CLNT” | Clinical results only. |
| 19 | Placer Field 2 |  | O |  | STORAGE FIELD |
| 21 | Filler Field 2 | 80 | R | Performing Location Mnemonic (ie. “SLN”) | Alternatives:  1) Location Name; Address; City ST Zip  2) Mnemonic^Location Name^Addr^City^ST^Zip  3) The mnemonic can be mapped to OBX.15  4) The name/address information can be sent in OBR-level NTE segments. |
| 22 | Results Rpt/Status Chg - D/T | 3 | R | CCYYMMDDHHMM | Populated only if result(s) are valued for most interfaces. If you need to have the message dt/tm stamp mapped here for unvalued results, notify Solstas. |
| 24 | Diagnostic Serv Sect ID | 5 | C | MB^MC = Code  MB^MS = Sensitivity | Micro results only. |
| 25 | Result Status | 1 | R | P=Preliminary F=Final C=Corrected |  |
| 26 | Parent Result | 15 | C | Micro Organism Mnemonic ^ Name | Commercial Paperless Micro Accession # |
| 29 | Parent Number | 15 | C | -Micro Sensitivities: Accession#/Unit code of Micro -Reflex tests: Unit code of parent test. |  |

## *OBX Inbound – Additional Test Information Segment (Ask at Order only)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - OBX |  | R | Sequence Number |  |
| 3 | Observation ID:  Identifier  Text |  | R  R  R | AOE Code^AOE Question Text |  |
| 5 | Observation Value |  | O |  |  |
| 6 | Units |  | O |  |  |

## *OBX Outbound – Observation Results Result Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - OBX | 3 | R | Sequence Number |  |
| 2 | Value Type | 2 | R | NM=Numeric  ST=String (<15 chars)  TX=Text (>15 chars) |  |
| 3 | Observation Identifier:  ID  Text |  | R  R  R | Result/Test Code^Description |  |
| 5 | Observation Value |  | R | Result |  |
| 6 | Units |  | O |  |  |
| 7 | References Range |  | O |  |  |
| 8 | Abnormal Flags | 2 | C\* | Solstas' ABN Flags (Clinical Results only):  N=Normal  L=Below low normal LL=Below lower panic levels H=Above high normal HH=Above upper panic levels A=Abnormal alpha (non-numeric) result AA=Critical alpha (non-numeric) result | \*Some clinical results will not have an Abnormal Flag because they do not have an established normal range. This field is always blank for Micro results.  This field may require conversion. |
| 11 | Observation Results Status | 1 | R | P=Preliminary F=Final or C=Corrected |  |
| 14 | Date/Time of the Observation | 12 | R | CCYYMMDDHHMM | Clinical results only. |
| 15 | Producer's ID | 80 | C |  | This data is normally found in the OBR.21, but it can be mapped here or the entire location address can be mapped in OBR-level NTE segments. |

## *NTE Inbound – Notes and Comments Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - NTE | 4 | R | Sequence Number |  |
| 2 | Source of Comment |  | O | Normal HL7 Standard |  |
| 3 | Comment | 141 (70^70) | R | Free Text or Code^Free Text or Code | Internal Comments^External comments |

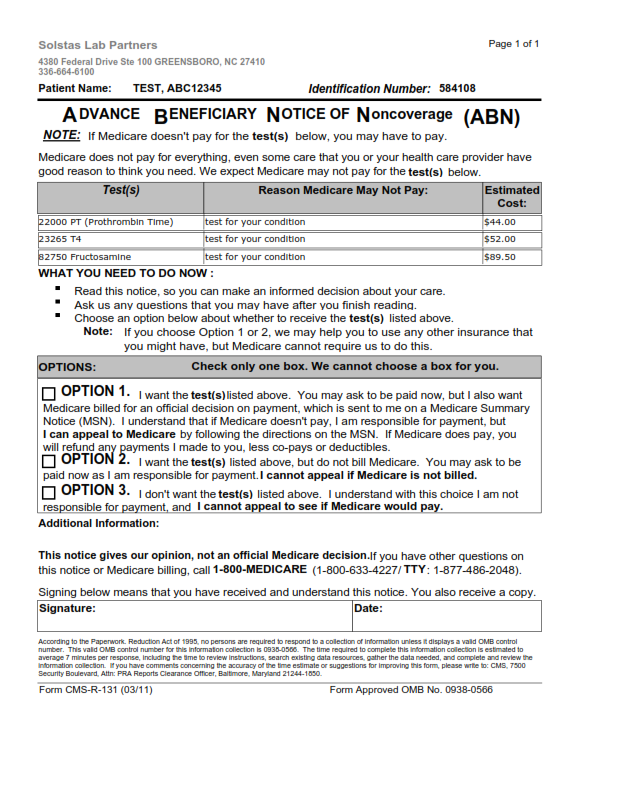
## *NTE Outbound – Notes and Comments Segment*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SEQ** | **DESCRIPTION / ELEMENT** | **LEN** | **REQ** | **COMMENT** | **ADDL NOTES** |
| 1 | Set ID - NTE | 3 | R | Sequence Number |  |
| 2 | Source of Comment | 1 | R | L=Lab |  |
| 3 | Comment |  | R | Free text |  |

# Solstas Requisition with HL7 field assignments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Client** | **Order** | | **4380 Federal Drive, Ste 100**  **Greensboro, NC 27410**  **1-888-664-7601**  **Drawn At PSC** | |
| Account: [MSH6]  Name: internal  Address: internal | Billing Type: [PID 18.4]  Collected:  Lab Order #: [OBR2] | |
| **Patient** | **Primary Insurance** | | **Secondary Insurance** |
| Patient ID: [PID1]  [OBR 27.6] *if STAT*  Name: [PID5]  SS#: [PID19]  Lab MRN: [PID2]  Sex/DOB/Age: [PID8], [PID7], Calc  Address: [PID11.1-5]  Phone: [PID13] | Name: [IN1.4]  Address: [IN1.5]  Policy #: [IN1.36]  Group #: [IN1.8]  Subscriber: [IN1.16 - 17] | | Name: [IN1.4]  Address: [IN1.5]  Policy #: [IN1.36]  Group #: [IN1.8]  Subscriber: [IN1.16 - 17] |
| **Guarantor** | **Physician** | | **Miscellaneous** |
| Guarantor: [GT1.3]  Address: [GT1.5]  Phone: [GT1.6] | Physician: [OBR16.1-5]  Code: [PV7.1]  NPI/UPIN#: [PV7.1]  Provider#: [PV7.1] | | Fasting: [OBR17.7]  Collector: [OBR]  Req #: [OBR17.10] |
| Loc: internal  Phone: internal |
| ICD-9 Codes: [DG1.1,3] | | | |
| **Test** | | **Tube** | |
| [OBR4.1-2] | | internal | |
|  | |  | |
|  | |  | |
|  | |  | |

**Special Instructions:**



# Solstas Report with HL7 field assignments



Care-Evolve Test Client [445001]

4380 Federal Drive

GREENSBORO, NC 27410

4380 Federal Drive Suite 100

Greensboro, NC 27410

1-888-664-7601

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| PATIENT NAME | OFFICE ID | LAB MRN | PHONE | DOB | AGE | SEX |
| [PID-5.1, 5.2, 5.3, 5.4] | [ORC-17] | [PID-2] | [PID-13] | [PID-7] |  | [PID -8] |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| REQUISITION # | BILLING ACCOUNT # | ORDER # | COLLECTION DATE | RECEIVED DATE | ORDERING MD |
| [OBR.2] | [PID-18.1] | [PV-1] | [OBR-7] | [OBR -14] | [ORC-16.2, 16.3, 16.3, 16.4] |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test Description |  | Results | Abnormal | Reference Range | Units | Lab |
| [OBR-4.2] |  |  |  | Result: [OBX-14] | Status:[OBX-11] | |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| [OBX-3.1, 3.2] |  | [OBX-5] | [OBX-5] CALC, [OBX-8] | [OBX-7] | [OBX-6] | [OBR-21] |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

|  |
| --- |
|  |

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|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Result Flags | H: High | HH: Critical H | L: Low | LL: Critical Low | A: Abnormal | AA: Very Abnormal |