



SOAPware Interface

SOAPware Interface

1 SOAPwareXchange

| | | |
|-----|---|----|
| 1.1 | SOAPwareXchange User Guide | 4 |
| 1.2 | SOAPwareXchange Technical Specifications & Instructions | 16 |
| 1.3 | Auto-start for SOAPwareXchange via Command Line | 54 |
| 1.4 | SOAPwareXchange Patient Loader Utility | 55 |

2 SOAPwareXchange HL7

| | | |
|-----|--|-----|
| 2.1 | SOAPwareXchangeHL7 User Guide | 58 |
| 2.2 | SOAPwareXchangeHL7 Lab Interface Specifications | 70 |
| 2.3 | SOAPwareXchangeHL7 Radiology Interface Specifications | 83 |
| 2.4 | SOAPwareXchangeHL7 Pathology Interface Specifications | 97 |
| 2.5 | SOAPwareXchangeHL7 Demographics Interface Specifications | 110 |
| 2.6 | SOAPware compatible Labs and LIS software/services | 117 |
| 2.7 | Auto-start for SOAPwareXchangeHL7 via Command Line | 123 |
| 2.8 | SOAPwareXchangeHL7 Quick Reference | 124 |

3 Others

| | | |
|-----|--------------------------|-----|
| 3.1 | New Integration Requests | 130 |
| 3.2 | Welch Allyn Vitals | 132 |



SOAPwareXchange



SOAPwareXchange User Guide

In this lesson, a user will find a brief walk through for setting up and using SOAPwareXchange 2010+. For help installing, visit the [install guide](#).

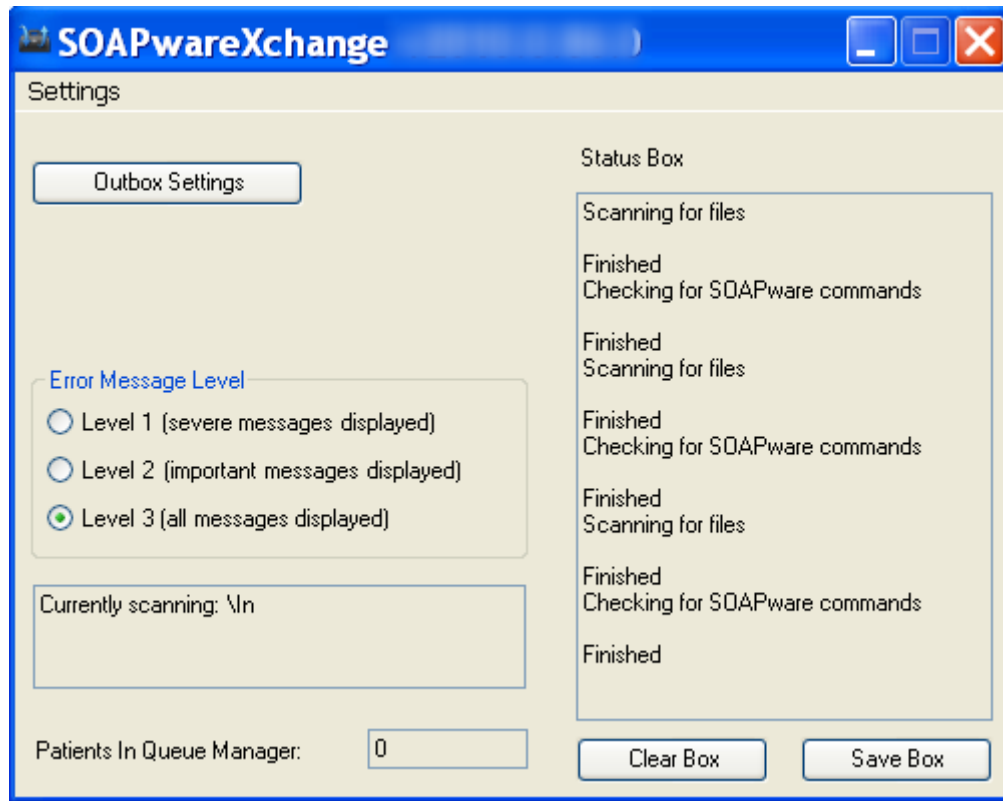
If you wish to learn more about SOAPwareXchange and its capabilities, visit the [SOAPwareXchange Technical Specifications & Instructions](#)

SOAPwareXchange Defined

SOAPwareXchange is an add-on module that allows communication between SOAPware and other systems. It is a bidirectional interface, meaning it will allow information to be imported from another system, such as a PMS or billing software, and allow information to be exported out of SOAPware to update other systems. Not all interfaces will utilize both sides of Xchange. Many will only be setup to allow information to import into SOAPware. The basic setup below shows how to get SOAPwareXchange ready to allow the import of information, but it will be necessary to read the entire article to setup Xchange to export information appropriately.



Basic Setup

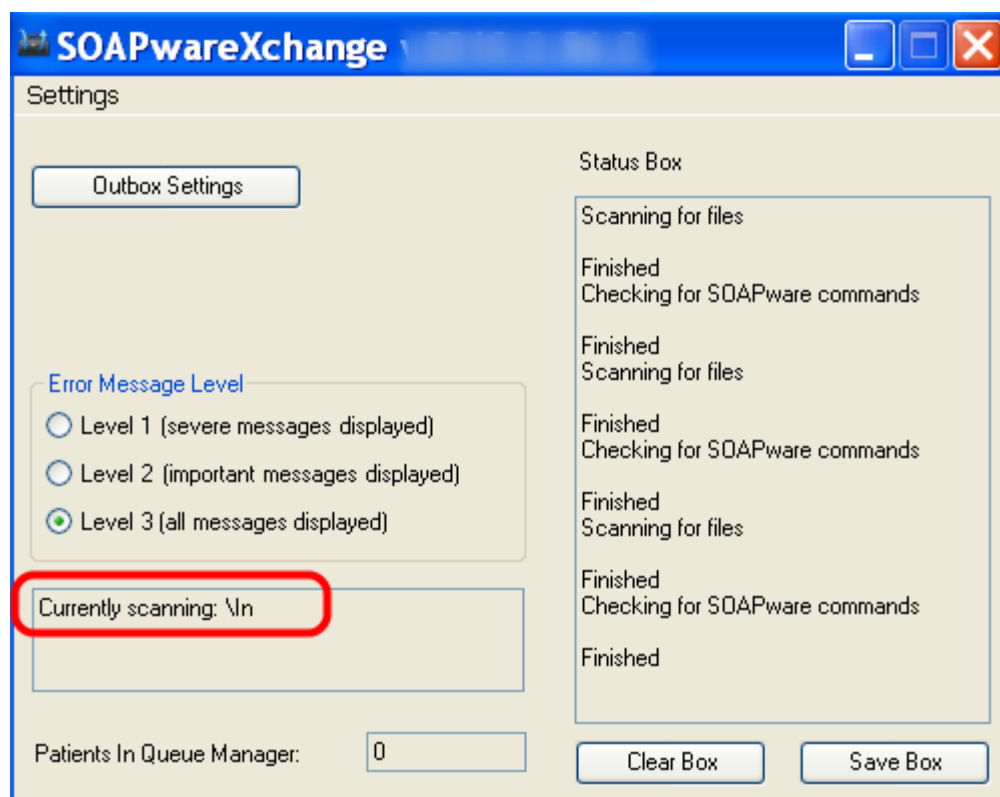


The SOAPwareXchange must be open in order to process files. This requires you log in, just as you would with SOAPware. If you turn off the computer where the Xchange is located, you must open it again once the computer has been restarted.

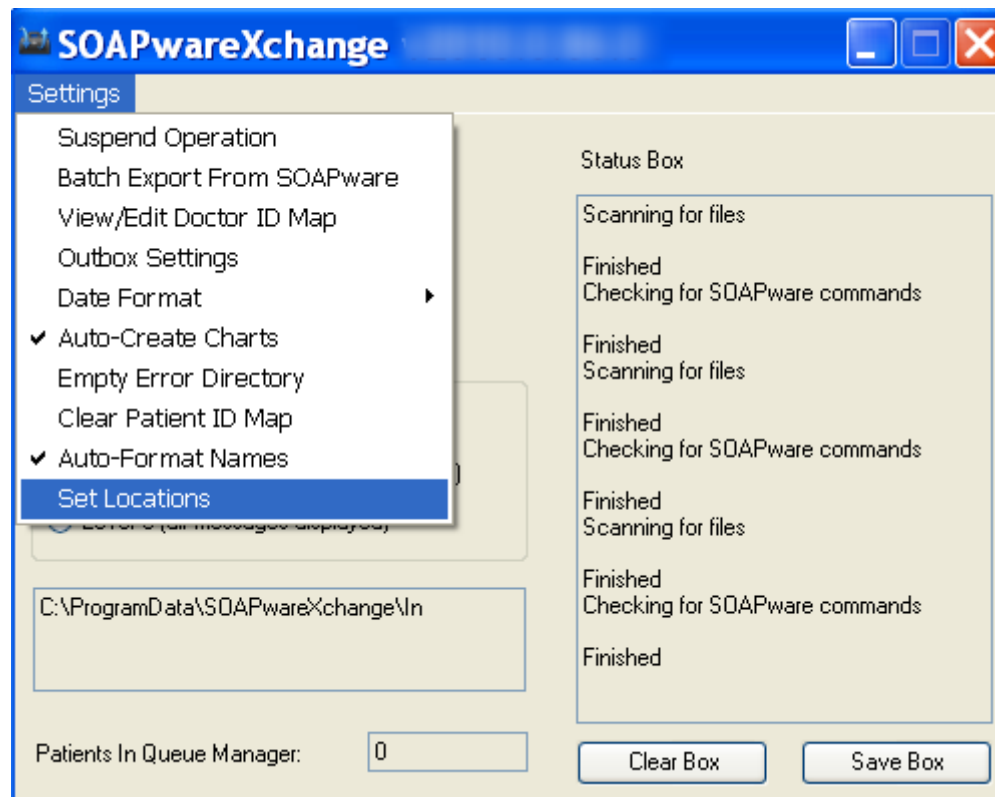
***Note:** SOAPwareXchange may be setup to auto-start by following the instructions [here](#).



Set the Xchange folders



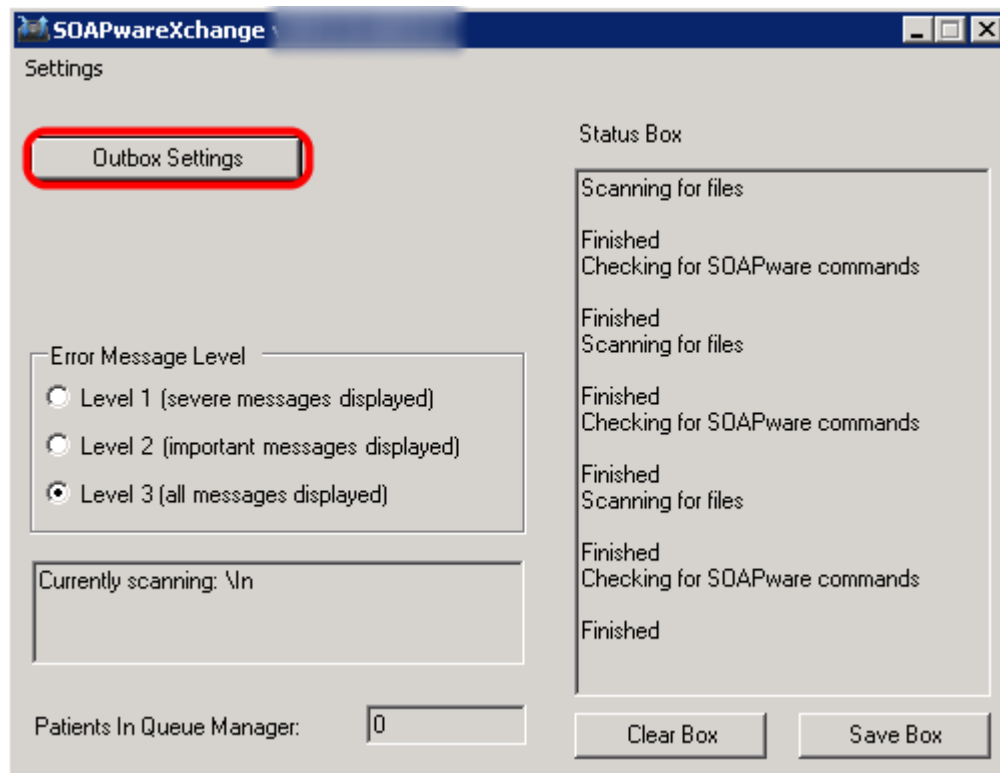
If this is the first time SOAPwareXchange has been installed, the default location will be set as it is above. The default location is **C:\ProgramData\SOAPwareXchange**. If you are updating the SOAPwareXchange and it has been installed previously, it will be set to the location used before.



You may also set the location where the Xchange folders are located manually by going to Settings > Set locations. There you can select the folder where it will build the directory for exchanging files.



Outbox Settings



The SOAPwareXchange Outbox Settings are for when you would like to send information from SOAPware to another system.



Outbox Settings

Interface 1

☐ Post Superbill

☒ Send General Demographic Changes

☒ Send Superbill in XML

System ID: X-Link

Output Path: C:\ProgramData\SOAPwareXchange\Out

Interface 2

☐ Post Superbill

☒ Send General Demographic Changes

☐ Send Superbill in XML

System ID: Phreesia

Output Path: C:\ProgramData\SOAPwareXchange\Out2

Interface 3

☐ Post Superbill

☒ Send General Demographic Changes

☐ Send Superbill in XML

System ID: Updax

Output Path: C:\ProgramData\SOAPwareXchange\Out3

OK Cancel

SOAPwareXchange can automatically send demographics and/or superbills to up to 3 different systems. If you will be exporting information out of SOAPware to another program, you will need to setup the Outbox Settings.

For each interface you may choose to:

- Post Superbills - This will send superbills in the legacy SOAPwareXchange format. For more information, see the [SOAPwareXchange Tech Specs](#).
- Send General Demographic Changes - Allows any demographic changes made in SOAPware to be sent to another system.
- Send Superbill in XML - This will send superbills in XML format. For more information, see the [SOAPwareXchange Tech Specs](#).

Note: You should only select to "Send Superbill in XML" if you have confirmed that your PMS or third party vendor will accept this format.

X-Link Demographic,20091214,161733,X-Link for SOAPware
P10,TEST01,,Patient,Test,F,19320921,123-45-6789,TEST01
GDEM,Patient,Test,T,,4220 N Crossover Rd,Apt 9,Fayetteville,Ar,72703,(800)455-
7627,,support@soapware.com,F,M,19320921,,TEST01,123-45-6789,MD
IPOL,Medicare,(800) 933-0614,58108,,19910101,,,,,,,,,00,,,573360014A,Primary

The System ID is required to send information. It relates to the Sender ID from an inbound file and will be the first field in an inbound file.



Output Path:
C:\ProgramData\SOAPware\Exchange\Out

The output path for each interface is displayed at the bottom of the outbox settings. This indicates where the files will be sent for the interfacing system to pick up.

Doctor ID Map

The screenshot shows the 'Doctor ID Map' dialog box with the 'Add Doctor Map' sub-dialog open. The 'Name' field contains 'Doctor Name' and 'Test T Tester'. The 'External ID' field contains 'ProviderID'. The 'System ID' field contains 'BILL01'. The 'OK' and 'Cancel' buttons are at the bottom.

The Doctor ID Map is used to map external Doctor ID's to the ID's used internally by SOAPware.

To add a new entry to the map-

- * Click on the "New Map" button.



- * Select the doctor's name from the first list box, then type in the external ID and the billing system ID.*
- * Click on OK to accept the changes, or Cancel to discard them.

To edit an existing map –

- * Click on the doctor's name in the entry you wish to modify, and click on "Edit". The Change ID box will appear. In this box are the current billing system and external ID.
- * Change either or both of them, and click OK to accept or Cancel to discard.

Sample General Demographics Segment

GDEM,LastName,FirstName,MiddleInitial,Title,Suffix,Street1,Street2,City,State,Zip,
HomePhone,WorkPhone,Email,Sex,MartialStatus,Birthdate,,ChartNumber,SocialSecurityNumber,ProviderID<CR><LF>

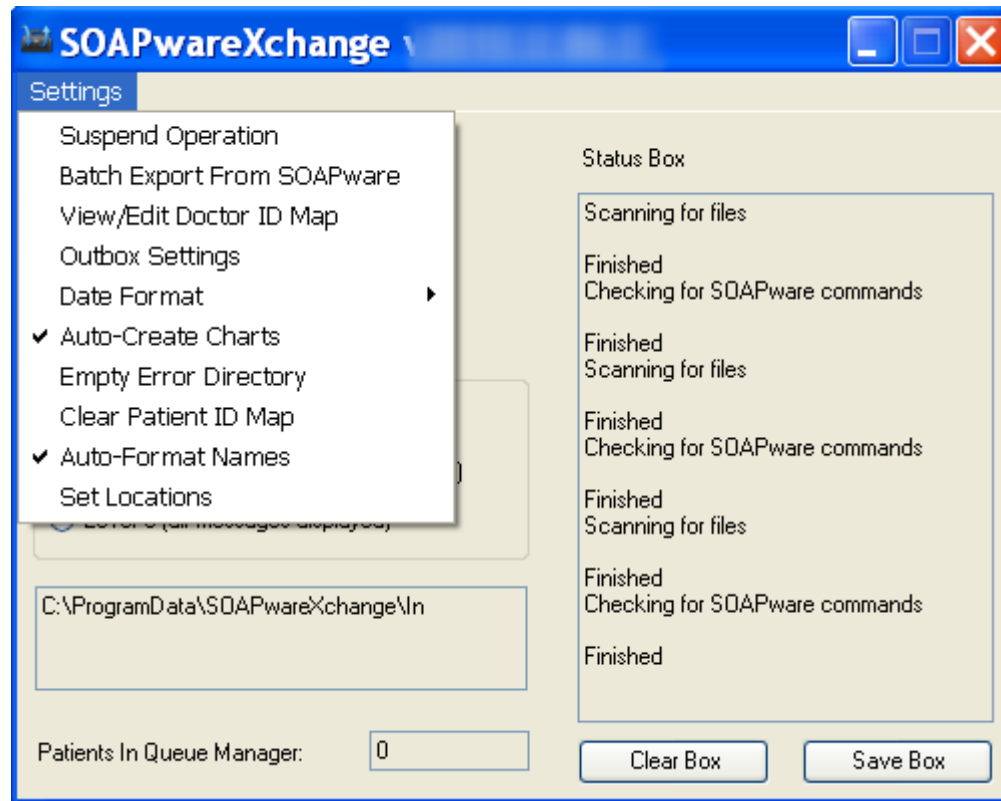
*The System ID again relates to the Sender ID from an inbound file, and the External ID relates to the Provider ID.

This concludes the basic setup of SOAPwareXchange. You will need to contact your Practice Management software support to complete the setup.

The following information relates to more technical setup of SOAPwareXchange and may not be necessary for all users. The majority of this information can also be found in the [SOAPwareXchange Technical Specifications & Instructions](#).



Other Settings



Here is a brief explanation of the settings menu.

Suspend Operation - Stops the Xchange from processing files.

Batch Export from SOAPware - Will perform a batch export of all patient demographics to a .csv file. *The Xchange will NOT currently export patient insurance via batch.

View/Edit Doctor ID Map - Allows you to add/modify doctor ID mappings. *Used for bidirectional interfaces.

Outbox Settings - Allows you to select what information will be exported from SOAPware. *Used for bidirectional interfaces.

Date Format - Allows you to select the expected format of dates sent from other systems. Typically this will remain YYYYMMDD.



Auto-Create Charts - When checked, allows the auto-creation of charts not already in SOAPware from other systems.

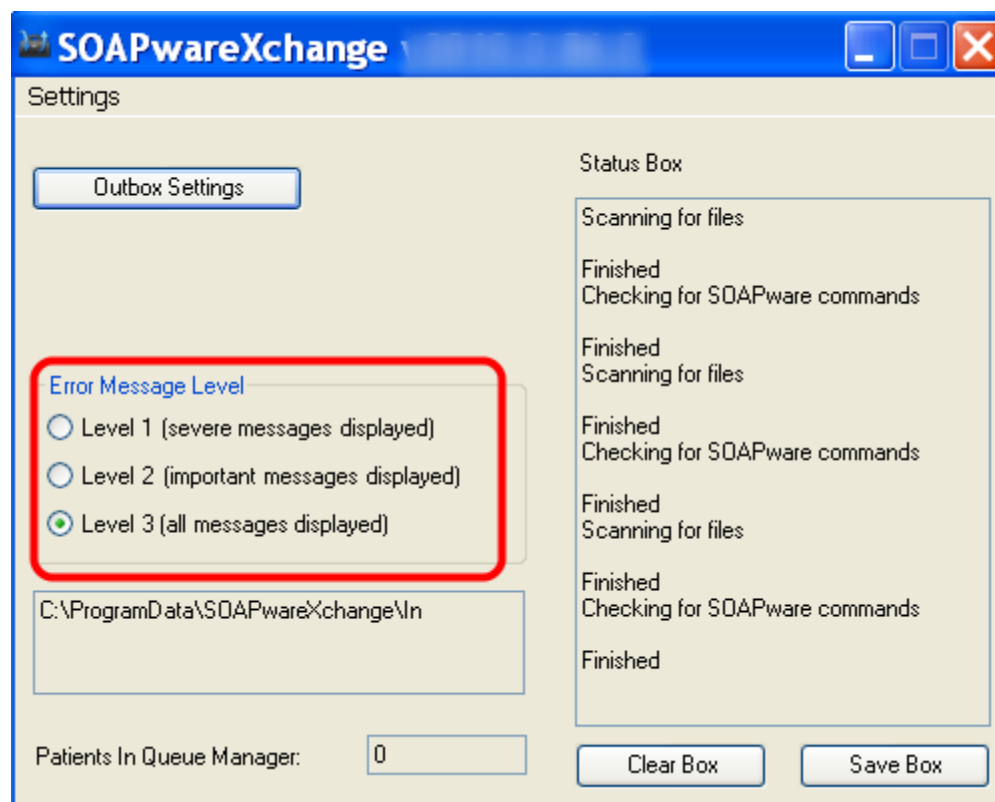
Empty Error Directory - Empties the Error directory, allowing you to identify recent errors easier.

Clear Patient ID Map - Clears all patient mappings from the SOAPware database.

Auto-Format Names - Allows the names in SOAPware to be formatted from your PMS/billing software.

Set Locations - Allows you to specify the location where files will be exchanged.

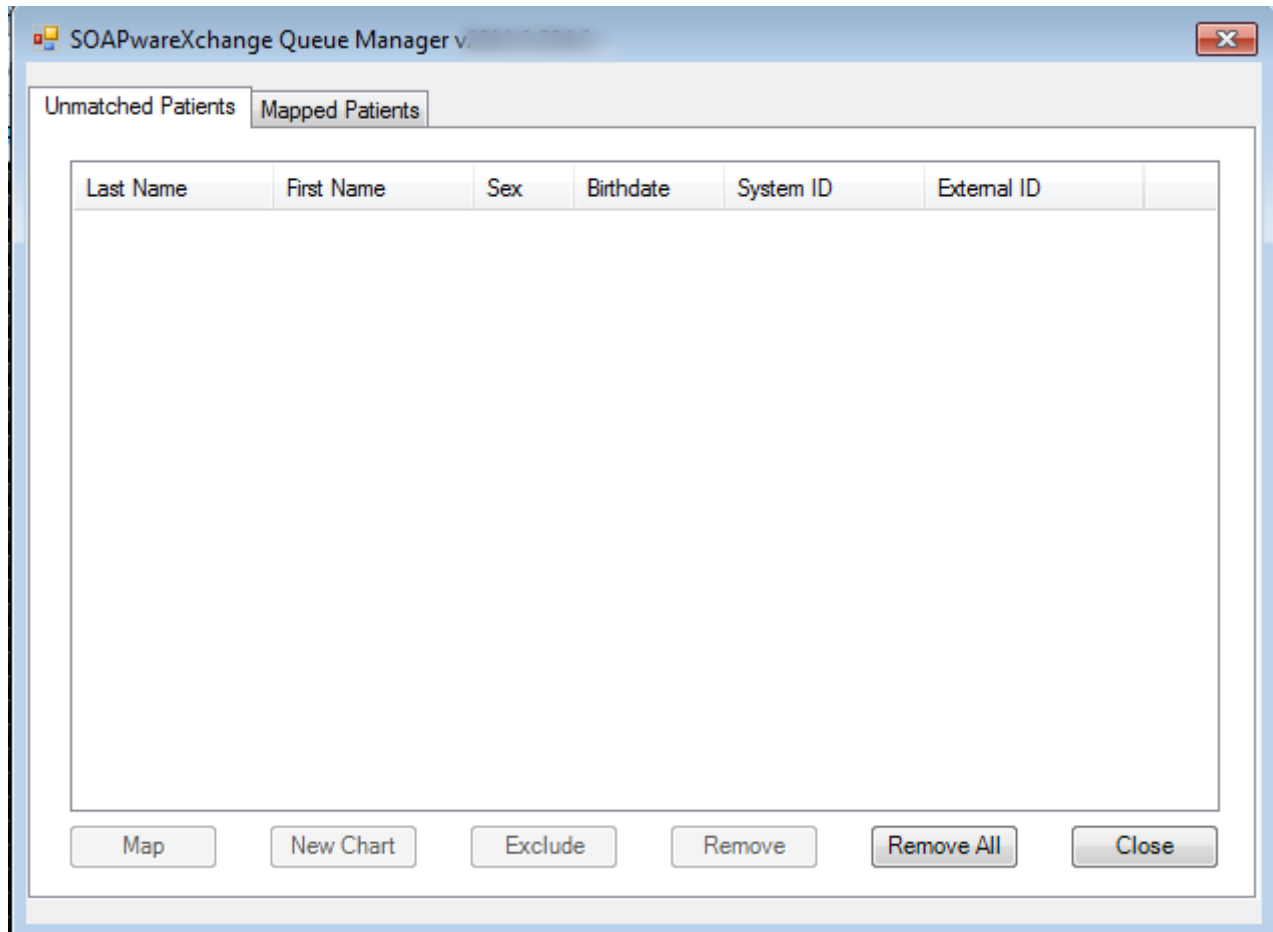
Error Message Level



Here you can indicate what type of messages SOAPwareXchange will display based on importance.



SOAPwareXchange Queue Manager



When you install the SOAPwareXchange, another utility called the SOAPwareXchange Queue Manager is also added. This utility allows you to modify unmatched patients and existing patient mappings.

- **Map** will allow you to match the selected name to an existing patient in SOAPware. This will create a Link between the patient in SOAPware & your PMS/Billing Integration.
- **New Chart** will create a new patient chart in SOAPware.
- **Exclude** will keep a patient chart from ever being created for the name you have selected and will not repopulate the queue.
- **Remove** will delete the selected name from the queue. The name may repopulate the queue if it is processed again by your PMS/Billing Integration.



- **Close** will close the Queue Manager program.

Message Logging

```
exchangelog-2012-03-09 - Notepad
File Edit Format View Help
2012-03-09 15:13:17.2565|INFO|SOAPwareXchange|Failed to serialize program settings.
2012-03-09 15:13:17.3033|INFO|SOAPwareXchange|Failed to serialize program settings.
2012-03-09 15:14:08.8815|INFO|SOAPwareXchange|Message Received
2012-03-09 15:14:08.8815|INFO|SOAPwareXchange|C:\ProgramData\SOAPwareXchange\working\DOCS1821c778-e813-4e35-8508-
eed35cc75211.txt
2012-03-09 15:14:08.8815|INFO|SOAPwareXchange|X-Link,demographic,20091214,161733,X-Link for SOAPware
PID,CRIN01,,Criner,Terry,M,19811103,123-45-6789,CRIN01
GDEM,Criner,Terry,,,4220 N Crossover Rd,Apt 9,Fayetteville,Ar,72703,(800)455-
7627,,integrations@soapware.com,M,M,19811103,,CRIN01,123-45-6789,MD
IPOL,Medicare,(800) 933-0614,58108-6707,,19910101,,,,,,,,,00,,,573360014A,Primary
IPOL,MEDICARE PART B,(123)123-1234,12345,,,,,,,,,00,,,123456789A,Secondary
2012-03-09 15:14:08.9127|FATAL|SOAPwareXchange|Patient mapped; but name in SOAPware does not match file. Patient
info from file: CRIN01 X-Link Terry Criner
2012-03-09 15:14:08.9440|INFO|SOAPwareXchange|Match not found; creating chart for Terry Criner
2012-03-09 15:14:08.9440|INFO|SOAPwareXchange|New chartID: 00000000-0000-0000-0000-000000000000
2012-03-09 15:14:10.5065|INFO|SOAPwareXchange|Updated general demographics for patient ab1b286e-2b0c-48a1-b246-
3a4eaabbcba8
2012-03-09 15:14:10.5533|INFO|SOAPwareXchange|Added map for external ID 'CRIN01' to Guid ab1b286e-2b0c-48a1-b246-
3a4eaabbcba8
2012-03-09 15:14:10.6002|INFO|SOAPwareXchange|Parsing copay failed; setting to zero
2012-03-09 15:14:10.6783|INFO|SOAPwareXchange|Updated insurance demographics for patient ab1b286e-2b0c-48a1-b246-
3a4eaabbcba8
2012-03-09 15:14:10.7252|INFO|SOAPwareXchange|Parsing copay failed; setting to zero
2012-03-09 15:14:10.7877|INFO|SOAPwareXchange|Updated insurance demographics for patient ab1b286e-2b0c-48a1-b246-
3a4eaabbcba8
```

The SOAPwareXchange will keep a log of all messages that are received from other programs. It will list the all actions taken with any message, errors received, and log the original message itself. The active log is stored in the same directory as the other SOAPwareXchange folders, by default is **C:\ProgramData\SOAPwareXchange**. Once a log reaches 1 mb in size, it will be moved to an archived folder and a new log created.



SOAPwareXchange Technical Specifications & Instructions

What is SOAPwareXchange?

SOAPwareXchange is an add-on module for SOAPware® that allows communication between SOAPware® and other systems. SOAPwareXchange was specifically designed for Patient Management System integrations, but can also accept other types of information, like lab reports and patient encounters*.

SOAPwareXchange allows other systems to automatically update SOAPware® when new demographic or insurance information is entered. It can import an entire chart, including the summary and Soap note portions. It can even update custom demographic fields.*

SOAPwareXchange can also automatically queue patients in SOAPware® when they check in, saving the medical professional the trouble of searching through Chart Rack to find them. If desired, it can automatically create a new encounter at this time.*

SOAPwareXchange can send back superbill information for patient encounters, significantly reducing paperwork.*

***Note**--Not all interfacing systems support all the features of SOAPwareXchange.

How does SOAPwareXchange work?

SOAPwareXchange uses a simple directory structure to communicate with other systems. SOAPwareXchange maintains five directories; an "In" directory, an "Out" directory, an "Error" directory, a "Working" directory, and a "Debug" directory. These directories are always located in the same directory as the SOAPwareXchange program.

SOAPwareXchange, at its simplest, operates in a two-step loop. It scans the "In" directory for new material to process, and then it checks the SOAPware® command queue for new material to process. After a file has been processed, SOAPwareXchange deletes it.

Whenever SOAPwareXchange encounters a file it cannot process, it places the entire file into the "Error" directory and displays the appropriate notification.



So all that is necessary to interface with SOAPware® is exporting a simple text file in the proper format, and depositing it in the specified "In" directory. When SOAPwareXchange has new information (such as a superbill) for the other system, it will build the appropriate file and place it in the "Out" directory.

It is important to remember that simply installing SOAPwareXchange is not enough to establish an interface. SOAPwareXchange is only the SOAPware® half of the interface. System vendors must supply software to enable their systems to export the proper text files and make use of the information SOAPwareXchange provides.

Getting Started

Installing SOAPwareXchange

SOAPwareXchange has the same hardware and operating system requirements as SOAPware®. SOAPware® must be installed on the machine before you install SOAPwareXchange.

When you start SOAPwareXchange, you will need to log in. Be sure to log in to SOAPwareXchange with a SOAPware® user whom has sufficient permissions to create and modify charts.



Program Operation - Settings Menu

| | |
|-----------------------------|---|
| Suspend Operation | Pauses SOAPwareXchange's scan of the In directory. No processing of incoming files will occur until this command is unchecked. |
| Batch Export From SOAPware® | Creates a SOAPwareXchange format file in the Out directory containing demographic information for all patients in SOAPware®. |
| View/Edit Doctor ID Map | Displays the Doctor ID Map |
| Outbox Settings | Displays the Outbox Settings dialog, where the various data items that can be sent from SOAPware® can be enabled or disabled. |
| Date Format | Enables the user to specify one of several date formats for incoming files. |
| Auto-Create Charts | Toggles the chart creation mode. When this item is checked, charts will automatically be created for any incoming records that can't be matched. When this item is not checked, unmatched records will be added to the patient queue for manual assignment. |
| Empty Error Directory | Removes all files from the Error directory. |
| Clear Patient ID Map | Clears the external to internal patient ID map. |
| Auto-Format Names | Toggles name formatting. When this command is checked, names will be standardized so that only the first letter is capitalized. When this command is unchecked, names are entered exactly as they are in the incoming file. |

The Doctor ID Map is used to map external Doctor ID's to the ID's used internally by SOAPware. The Doctor ID Map is an essential part of a smoothly operating integration.

The SOAPware® side of the Doctor ID Map is taken care of automatically when you select the



physician's name; the tricky part of setting up the map is determining the values to use for External ID and Billing System. When in doubt, you can look at the export files produced by the billing/scheduling system to determine these values according to the following table:

| Field in Doctor ID Map | Field in Export File |
|------------------------|---|
| External ID | Primary Physician (last element of GDEM line) |
| Billing System | Sender ID (first element of Record Header) |

To add a new entry to the map-

1. Click on the "New Map" button.
2. Select the doctor's name from the first list box, then type in the external ID and the billing system ID.
3. Click on OK to accept the changes, or Cancel to discard them.

To edit an existing map –

1. Click on the doctor's name in the entry you wish to modify, and click on "Edit". The Change ID box will appear. In this box are the current billing system and external ID.
2. Change either or both of them, and click OK to accept or Cancel to discard.

To delete a Doctor ID map –

1. Click on the doctor's name and click "Delete".



Patient Identifiers

SOAPware® uses a Globally Unique Identifier to internally identify patients. This ID is guaranteed unique in the world and, once assigned, will never change for a given data item and never be reused.

ASOAPware® ID looks like the following:

12158761-6ED3-11D0-89FD-00C0F00A2A2E

We realize that not every system will be able to accommodate such a large ID, and that most systems use a much simpler ID based on incrementing a number each time a record is added to the system. Auto-increment ID's work fine in stand-alone systems, but often fail when scaled to the multi-vendor/multi-site implementations SOAPware® is designed for.

For this reason SOAPwareXchange maintains patient ID maps. The map tracks the external system ID, the external ID for the patient, and our internal ID for the patient.

When importing data, SOAPwareXchange uses a sophisticated matching algorithm to match incoming records with SOAPware® patients. The algorithm is shown below and should be thoroughly understood before implementing an interface.

The Matching Algorithm

SOAPwareXchange uses the following algorithm to determine if a patient already exists in the SOAPware® databases or if one needs to be created. After an incoming record has been successfully matched to a SOAPware® patient, a record will be added to the patient ID map with the internal and external ID.

To ensure that patients match properly, always include the patient ID in the PID segment.

SOAPwareXchange attempts to match an external patient record to a SOAPware® patient via the following rules. The rules are considered in order. If a match is not found, the record will be queued or a new chart will be created in SOAPware® for the patient.

An incoming record will be considered to be a match to a SOAPware® patient if:

External ID is found in patient map, AND



Birthdate matches, OR

Last name matches

OR

Social Security numbers match, AND

Birthdate matches, AND

Last name matches, AND

First name matches

OR

Chart numbers match, AND

Birthdate matches, AND

Last name matches, AND

First name matches

OR

First name and Last name matches, AND

Birthdate matches, AND

Sex matches



So a match can be made on

First Name AND Last Name AND Birthdate

AND

Sex OR Chart Number OR Social Security Number

The SOAPwareXchange File Format

SOAPwareXchange uses standard ASCII files to transfer patient information. Each data item is delimited with a comma and each record is delimited with a Carriage Return-Line Feed combination.

To omit a data item, leave the corresponding field in the SOAPwareXchange file blank (it will appear as ,,) This will leave the data item as it is in the SOAPware® database. To empty a data item, put a single space in the corresponding field in the SOAPwareXchange file (it will appear as ,) This will empty the data item in the SOAPware® database.

Each file can contain multiple patients. A SOAPwareXchange file has the following elements:

Record Header--This tells SOAPwareXchange whom is sending the file and includes optional error reporting information. This must appear as the first line of every file and is only included once per file.

Patient ID (PID)--This segment uniquely identifies a patient. Every import section begins with this segment. All subsequent data exchanges or requests in the file will use this patient until the end of the file is reached, or another Patient ID segment is encountered.

Exchange Section--This always follows the Patient ID section and explains what data is to be moved, or what events are to be triggered. This section may contain GDEM, IDEM, CDEM, CONS, CONT, SOAP, SUM, REP, CMDQUEUE, or CMDQUEUENEW segments.



The general layout of a SOAPwareXchange file is:

```
Record Header <CR><LF>
Patient ID<CR><LF>
Exchange Section<CR><LF>
Patient ID<CR><LF>
Exchange Section<CR><LF>
...
...
...
Patient ID<CR><LF>
ExchangeSection<CR><LF>
<EOF>
```

The Record Header

The Record Header that begins each file tells SOAPwareXchange the source of the data and any optional error tracking information. The Sender ID that begins each import file is assigned by the interfacing system vendor and once assigned, cannot change. Each system that sends information to SOAPware® must use a unique Sender ID. SOAPwareXchange uses the Sender ID to match external doctor and patient ID's to SOAPware® internal ID's.

Record Header Format

Sender ID (TEXT 36) (This is site defined—it should never be changed after its first use or the External ID mapping files will be invalid. Each system sending information to SOAPwareXchange must have a unique Sender ID)

(The following are site defined and are used to provide feedback in the event of an error)

Send Station (Optional)

Send Date (Optional) (YYYYMMDD)

Send Time (Optional) (HHMMSS)

Optional Description

Sample Record Header

BILL01,Station 1,19970120,145322,Optional text describing who/what/when/where<CR><LF>



Patient ID Format

| Field | Type | Length | Description |
|-----------------|-------------|--------|---|
| PID | | | Tells SOAPwareXchange that this is a Patient ID segment |
| External ID | Text | 100 | |
| SOAPware® ID | | | This field is included for internal SOAPware® use only and must never be filled in by an interfacing system. If this field is filled with invalid data, the interface will not function properly. |
| Last Name | Text | 20 | |
| First Name | Text | 20 | |
| Sex | Text | 1 | |
| Birthdate | Text | 8 | YYYYMMDD |
| Social Security | Number/Text | 11 | XXX-XX-XXXX |
| Chart Number | Text | 20 | |

Sample Patient ID Segment:

PID,ExternalID,SOAPwareID,LastName,Firstname,Sex,Birthdate,SocialSecurityNumber,ChartNumber



PID,EXTERNALID,SOAPWAREID,Doe,John,M,19721029,999-88-0000,1234-56743<CR><LF>

General Demographics Format

| Field | Type | Length | Description |
|----------------------|--------|--------|--|
| GDEM | | | Tells SOAPwareXchange that this segment contains General Demographic Information |
| Last name | Text | 20 | |
| First name | Text | 20 | |
| Middle name | Text | 20 | |
| Title | Text | 5 | |
| Suffix | Text | 5 | |
| Street | Text | 20 | |
| Street 2 | Text | 20 | |
| City | Text | 20 | |
| State | Text | 5 | |
| Zip | Number | 5 | |
| Home Phone | Text | 20 | |
| Work Phone | Text | 20 | |
| Email | Text | 20 | |
| Sex | Text | 1 | |
| Marital Status | Text | 1 | |
| Birthdate | Number | 8 | YYYYMMDD |
| Fax Number | Text | 20 | |
| Chart Number | Text | 20 | |
| Social Security | Text | 11 | XXX-XX-XXXX |
| Primary Physician ID | Text | 100 | |
| Race | Text | 6 | |
| Ethnicity | Text | 6 | |
| Language | Text | 2 | |

Marital Status Values:

I Single

M Married



S Separated

W Widowed

D Divorced

Sample General Demographics Segment:

GDEM,LastName,FirstName,MiddleInitial,Title,Suffix,Street1,Street2,City,State,Zip,HomePhone,WorldPhone

GDEM,Doe,John,T,Mr,,111 South St.,Suite
1,Pittsburgh,PA,99999-0989,(999)999-...-88-7777,DrBob,2106-3,2186-3,en<CR><LF>



Custom Demographics Format

| Field | Type | Length | Description |
|----------|------|--------|--|
| CDEM | | | Tells SOAPwareXchange that this is a Custom Demographics Segment |
| Custom1 | Text | 25 | |
| Custom2 | Text | 25 | |
| Custom3 | Text | 25 | |
| Custom4 | Text | 25 | |
| Custom5 | Text | 25 | |
| Custom6 | Text | 25 | |
| Custom7 | Text | 25 | |
| Custom8 | Text | 25 | |
| Custom9 | Text | 25 | |
| Custom10 | Text | 25 | |
| Custom11 | Text | 25 | |
| Custom12 | Text | 25 | |
| Custom13 | Text | Memo | |



Insurance Policy Format

| Field | Type | Length | Description |
|------------------------------|------|--------|--|
| IPOL | | | Tells SOAPwareXchange that this is an Insurance Policy Segment |
| Company Name | Text | 25 | |
| Company Phone | Text | 25 | |
| Company Zip Code | Text | 10 | |
| Copay | Text | 25 | |
| Effective Date (YYYYMMDD) | Text | 8 | |
| Employer | Text | 25 | |
| Expiration Date (YYYYMMDD) | Text | 8 | |
| Group Name | Text | 25 | |
| Group Number | Text | 25 | |
| Insured Address | Text | 25 | |
| Insured Birthdate (YYYYMMDD) | Text | 8 | |
| Insured City | Text | 25 | |
| Insured First Name | Text | 25 | |
| Insured Gender | Text | 10 | |
| Insured Last Name | Text | 25 | |
| Insured Middle Name | Text | 25 | |
| Insured Phone | Text | 25 | |
| Insured Relation Code | Text | 2 | See Table, Next Page |
| Insured State | Text | 2 | |
| Insured Zip | Text | 9 | |
| Plan Name | Text | 25 | |
| Policy Number | Text | 25 | |
| Policy Status | Text | 25 | Possible Values: Primary Secondary Tertiary Inactive |
| | | | |

This segment creates an insurance policy for the patient identified in the PID segment. Multiple IPOL segments can appear in one file.



The Insurance Company Name is not transferred directly into the Insurance Company field in SOAPware®. Insurance Companies are entities defined in SOAPware® through the user interface. SOAPware® will look at the company phone number and zip code to attempt to match the incoming company to an entity already defined in SOAPware®. If the match is successful, then the company name will appear in the Insurance Company field of the Policy view in SOAPware®.

If the match is not successful, the company name will be imported as plain text into the Notes field of the Policy view.

SOAPwareXchange will attempt to match an incoming policy to an existing policy in the patient chart. If SOAPwareXchange finds an insurance policy in this patient's chart with the same policy number, it will consider it a match and update the existing policy. If not, it will create a new one.

Insured Relation Codes:

| | |
|----|----------------------------|
| 00 | Self |
| 01 | Spouse |
| 04 | Grandfather or Grandmother |
| 05 | Grandson or Granddaughter |
| 07 | Nephew or Niece |
| 09 | Adopted Child |
| 10 | Foster Child |
| 15 | Ward |
| 17 | Stepson or Stepdaughter |
| 19 | Child |
| 20 | Employee |



| | |
|----|---|
| 21 | Unknown |
| 22 | Handicapped Dependent |
| 23 | Sponsored Dependent |
| 24 | Dependent of a Minor Dependent |
| 29 | Significant Other |
| 32 | Mother |
| 33 | Father |
| 34 | Other Adult |
| 36 | Emancipated Minor |
| 39 | Organ Donor |
| 40 | Cadaver Donor |
| 41 | Injured Plaintiff |
| 43 | Child Where Insured Has No Financial Responsibility |
| 53 | Life Partner |
| G8 | Other Relationship |



SOAPnote Format

| Field | Type | Length | Description |
|------------------------|--------|--------|--|
| SOAP | | | Tells SOAPwareXchange that this is a SOAP note segment |
| EncounterDate | Number | 8 | YYYYMMDD |
| EncounterTime | Number | 6 | HHMMSS |
| PhysicianID | Text | 41 | The same external doctor ID used in the demographic sections should be used here |
| <#StartSubjective#> | | | Tells SOAPwareXchange to place the coming text in the <u>Subjective</u> field |
| SubjectiveField Text | Text | 64k | |
| <#EndSubjective#> | | | • Marks the end of the <u>Subjective</u> field |
| <#StartObjective#> | | | Tells SOAPwareXchange to place the coming text in the <u>Objective</u> field |
| Objective Field Text | Text | 64k | |
| <#EndObjective#> | | | Marks the end of the <u>Objective</u> field |
| <#StartAssessment#> | | | Tells SOAPwareXchange to place the coming text in the <u>Assessment</u> field |
| Assessment Field Text | Text | 64k | |
| <#EndAssessment#> | | | Marks the end of the <u>Assessment</u> field |
| <#StartPlan#> | | | Tells SOAPwareXchange to place the coming text in the <u>Plan</u> field |
| Plan Field Text | Text | 64k | |
| <#EndPlan#> | | | Marks the end of the <u>Plan</u> field |
| <#StartRx#> | | | Tells SOAPwareXchange to place the coming text in the <u>Medications</u> field |
| Medications Field Text | Text | 64k | |
| <#EndRx#> | | | Marks the end of the <u>Medications</u> field |
| <#StartFollowUp#> | | | Tells SOAPwareXchange to place the coming text in the <u>Follow Up</u> field |
| Follow Up Field Text | Text | 64k | |
| <#EndFollowUp#> | | | Marks the end of the <u>Follow Up</u> field |
| END_SOAP | | | Marks the end of the SOAP note segment |

Sample SOAPnote Segment

SOAP,19970619,144400,SMITH01



<#StartSubjective#>

The patient describes being tense, on edge, tremulous, difficulty relaxing, tachycardia-palpitations, dyspnea.

<#EndSubjective#>

<#StartObjective#>

GEN: Tense appearing, hypervigilant

<#EndObjective#>

<#StartAssessment#>

Anxiety Syndrome (Tense or nervous) #300.00.

<#EndAssessment#>

<#StartPlan#>

Avoid caffeine and plan for regular physical activity. Practice a relaxation exercise regularly as well.

<#EndPlan#>

<#StartFollowUp#>

Return if problems develop or worsen.

<#EndFollowUp#>

END_SOAP



Chart Summary Format

| Field | Type | Length | Description |
|--------------------------|------|--------|--|
| SUM | | | Tells SOAPwareXchange that this is a Summary segment |
| <#StartActiveProblems> | | | Tells SOAPwareXchange to place the coming text in the <u>Active Problems</u> field |
| Active Problems Text | Text | 64k | |
| <#EndActiveProblems> | | | Marks the end of the <u>Active Problems</u> field |
| <#StartInactiveProblems> | | | Tells SOAPwareXchange to place the coming text in the <u>Inactive Problems</u> field |
| Inactive Problems Text | Text | 64k | |
| <#EndInactiveProblems> | | | Marks the end of the <u>Inactive Problems</u> field |
| <#StartSurguries> | | | Tells SOAPwareXchange to place the coming text in the <u>Surguries</u> field |
| Surguries Text | Text | 64k | |
| <#EndSurguries> | | | Marks the end of the <u>Surguries</u> field |
| <#StartMedications> | | | Tells SOAPwareXchange to place the coming text in the <u>Medications</u> field |
| Medications Text | Text | 64k | |
| <#EndMedications> | | | Marks the end of the <u>Medications</u> field |
| <#StartAllergies> | | | Tells SOAPwareXchange to place the coming text in the <u>Allergies</u> field |
| Allergies Text | Text | 64k | |
| <#EndAllergies> | | | Marks the end of the <u>Allergies</u> field |
| <#StartFamilyHistory> | | | Tells SOAPwareXchange to place the coming text in the <u>Family History</u> field |
| Family History Text | Text | 64k | |
| <#EndFamilyHistory> | | | Marks the end of the <u>Family History</u> field |
| <#StartTobacco> | | | Tells SOAPwareXchange to place the coming text in the <u>Tobacco</u> field |
| Tobacco Text | Text | 64k | |
| <#EndTobacco> | | | Marks the end of the <u>Tobacco</u> field |
| <#StartAlcohol> | | | Tells SOAPwareXchange to place the coming text in the <u>Alcohol</u> field |
| Alcohol Text | Text | 64k | |
| <#EndAlcohol> | | | Marks the end of the <u>Alcohol</u> field |
| <#StartInterventions> | | | Tells SOAPwareXchange to place the coming text in the <u>Interventions</u> field |
| Interventions Text | Text | 64k | |
| <#EndInterventions> | | | Marks the end of the <u>Interventions</u> field |
| <#StartSocialHistory> | | | Tells SOAPwareXchange to place the coming text in the <u>Social History</u> field |
| Social History Text | Text | 64k | |
| <#EndSocialHistory> | | | Marks the end of the <u>Social History</u> field |
| <#StartROS> | | | Tells SOAPwareXchange to place the coming text in the <u>ROS</u> field |
| Review Of Symptoms Text | Text | 64k | |
| <#EndROS> | | | Marks the end of the <u>ROS</u> field |
| <#StartPhysical> | | | Tells SOAPwareXchange to place the coming text in the <u>Physical</u> field |
| Physical Text | Text | 64k | |
| <#EndPhysical> | | | Marks the end of the <u>Physical</u> field |
| END_SUM | | | Mark the end of the Summary segment |

The Summary format is complex. The Summary is necessarily a multi-line format, and special tags are used to delineate the sections of the encounter. Each tag must be on its own line, separated by a carriage return-line feed pair.



The first line in the Summary section only command to trigger a new summary document. The following sections contain the actual summary data.

Sample Chart Summary Segment:

SUM
<#StartActiveProblems#>
Pain, neck #723.1.
Degenerative Disc Disease #722.6.
Hemorrhoids (piles) #455.6.
Weight loss #783.2.
Probable GERD, Gastro-Esophageal Reflux Disease (acid reflux) #530.81
Chronic Obstructive Pulmonary Disease #496.
Controlled Hypertension (high blood pressure) #401.9.
<#EndActiveProblems#>

<#StartInactiveProblems#>
Fatigue #780.7.
Hematochezia (rectal bleeding) #569.3.
Hypertension (high blood pressure) #401.9.
Hematoma (collection of blood) #924.9.
Hemorrhoids (piles) #455.6.
Hernia, hiatal #553.3.
Mild Benign Prostatic Hypertrophy (enlarged prostate) #600.
<#EndInactiveProblems#>

<#StartSurgeries#>
No history of any past major surgeries.
<#EndSurgeries#>

<#StartMedications#>
10/08/2000 - (Starter pack given) Cardura 4 mg. (Disp - #100) Take one daily or as directed (Refill - 3). (ID-d00726)
Monopril (Dose/Unit - 40 mg.) (Form - Tabs) (Disp - #100) (Frequency - One daily) (Route - By mouth) (Refills-1 year). (ID-d00242)
Combivent Inhaler (Generic - Albuterol/Ipratropium) (Disp - 1 Inhaler) (Frequency - 2 puffs every 6 hours) (Route - by mouth) (Refills-1 year). (ID-d04066)



Centrum Silver.
Theragran M (OTC) one daily.(ID-d03145T9697)
Vitamin C.(ID-12307)
Vitamin E.(ID-12301)
vitamin B
BabyAspirin 81 mg. (OTC) Take one daily with food. (ID-d00170)
Folic Acid.
Potassium.
<#EndMedications#>

<#StartAllergies#>
There is no known history of allergy to any medication. (ID-IGNORE)
<#EndAllergies#>

<#StartFamilyHistory#>
Mother deceased at age 65 with cancer.
Father deceased at age 85 with cerebrovascular accident.
No colo-rectal cancers.
<#EndFamilyHistory#>

<#StartTobacco#>
States that he quit smoking 5/97, had smoked for 55 years.
<#EndTobacco#>

<#StartAlcohol#>
Denies the use of alcohol.
<#EndAlcohol#>

<#StartInterventions#>
08/29/2000 cervical spine x-rays at the hospital with anterior subluxation of the C3-4 and C4-5 which appear degenerative in nature, degenerative disc disease at C5-6; hypertrophic osteophytes causing neuroforamenal narrowing bilaterally from C3-7.
08/29/2000 EKG within normal limits
12/08/1999: Sigmoidoscopy.
11/23/1999: PSA-1.4. GHP/Lipids- Chol-174, LDL-117, Otherwise, wnl. Mild variances- CO2-31.
Pneumovax, 03/13/1998.
1998: D-Tetanus.
1970s: upper gastrointestinal x-ray



<#EndInterventions#>

<#StartSocialHistory#>

Single, divorced, 3 children, retired.

<#EndSocialHistory#>

<#StartROS#>

<#EndROS#>

<#StartPhysical#>

GEN: Appear/General-Abn(-). VS: WT: 162#. T: 96.7. BP: 164/96.

HEENT: Dental plates in place. Oropharynx-Abn(-). EARS- Ooscopic-Abn(-).

Ear-Nose/Appear-Abn(-). NOSE- Nose/Internal-Abn(-). EYES: Conjunctiva/Lids-Abn(-).

Pupils/Irises-Abn(-).

NECK: Neck-Abn(-).

LUNGS: Lung/Auscultation-Abn(+) with slight, diffuse decreased breath sounds.

Respirations-Abn(-).

HEART: Heart/Auscultation-Abn(-).

ABD: Abdomen-Mass/Tenderness-Abn(-). Liver/Spleen-Abn(-). Hernia-Abn(-).

<place w:st="on">GENT</place>: Anus/Perineum/Rectum-Abn(+), external hemorrhoids.

Scrotal-Abn(-). Penis-Abn(-). Prostate-Abn(+) with-.- Prostate_Enlargement(+).-

Prostate_Edema(-).- Prostate_Symmetry-Abn(-).- Prostate_Nodularity(-).- Prostate_Tenderness(-).

BJE: 1 cm. hematoma on right forearm with some surrounding ecchymosis.

NEURO: PSYCH: Insight/Judgement-Abn(-).

SKIN: Skin/Subcutaneous-Inspection-Abn(-). Mild acne/folliculitis on chest.

STUDIES:

<#EndPhysical#>

END_SUM

CMDQUEUE

This command tells SOAPwareXchange to pull a patient's chart. This will place the patient's chart in the Pulled Charts list. The command must be followed by the attending physician's external ID, the same ID that would be sent in the GDEM segment.

CMDQUEUE,SMITH01



CMDQUEUENEW

This command tells SOAPwareXchange not only to pull the patient's chart, but also to create a new encounter for that patient. The created encounter will use the date and time at which the command was received. This command also requires the physician's external ID.

CMDQUEUENEW,SMITH01



Reports Format

| Field | Type | Length | Description |
|--------------------|--------|--------|--|
| REP | | | Tells SOAPwareXchange that this is a report segment |
| Category | | | The category the report should be placed in. Category codes are listed below |
| Report Title | Text | 50 | |
| Report Date | Date | 10 | MM/DD/YYYY |
| Report Time | Number | 6 | HHMMSS |
| Author | Text | 20 | |
| Recipient | Text | 20 | |
| Status | Text | 2 | |
| Condition | Text | 2 | |
| Acknowledged | Text | 2 | |
| Source | Text | 20 | |
| External Doctor ID | Text | 20 | |
| Signed Off | Text | 1 | Y/N |
| Signed By | Text | 20 | |
| Signed Date | Date | 10 | MM/DD/YYYY |
| Signed Time | Number | 6 | HHMMSS |
| Image Path | Text | | The complete path to the image file, if this is an image-based report. PDF files are also supported in versions 2010.1 and later. |

The following items must be separated by a carriage return-line feed pair, and will not be used for image-based reports.



The external doctor ID must match and exist in SOAPwareXchange.

| Field | Type | Length | Description |
|---------------|------|--------|-------------------------------------|
| Report Text | Text | 64k | The text of the report |
| <#EndReport#> | | | Marks the end of the report segment |

Category Codes:

SWDF01 - History and Physical

SWDF02 - Lab

SWDF03 - Misc Report

SWDF04 - Printed Encouters

SWDF05 - Flow Sheets

SWDF07 - SOAP Notes

SWDF08 - Correspondence In

SWDF09 - Correspondence Out

SWDF10 - Radiology

SWDF11 - Pathology



Contacts

| Field | Type | Length | Description |
|----------------|--------|--------|--|
| CONT | | | Tells SOAPwareXchange that this is a Contact segment |
| First name | Text | 20 | |
| Last name | Text | 20 | |
| Middle initial | Text | 5 | |
| Title | Text | 5 | |
| Suffix | Text | 5 | |
| Street | Text | 20 | |
| City | Text | 20 | |
| State | Text | 5 | |
| Zip | Number | 5 | |
| Office Phone | Text | 12 | |
| Fax | Text | 12 | |
| Pager | Text | 12 | |
| Home Phone | Text | 12 | |
| Cell Phone | Text | 12 | |
| Email | Text | 20 | |
| Web page | Text | 20 | |
| Greeting | Text | 20 | |
| UPIN | Text | 20 | |
| Specialty | Text | 20 | |
| Notes | Text | 20 | |
| NPI | Number | 10 | |

SOAPwareXchange can receive contact information from other systems. The CONT segment contains this information.



Insurance Companies

| Field | Type | Length | Description |
|---------------|------|--------|---|
| ICOM | | | Tells SOAPwareXchange that this is an insurance company segment |
| Company Name | Text | 50 | |
| Street | Text | 30 | |
| Street2 | Text | 30 | |
| City | Text | 20 | |
| State | Text | 2 | |
| Zip | Text | 10 | |
| Phone | Text | 10 | |
| Extension | Text | 10 | |
| Participating | Bool | 1 | T or F: is this clinic participating in this plan |
| ExternalID | Text | 5 | Your system's ID for this company |

SOAPwareXchange can create Insurance Company objects in SOAPware®. This segment is generally used to populate insurance company information in SOAPware® on initial deployment, before patient demographic information is sent.



Balance Forward (Version 2010.2 and later)

The BFOR segment can transfer the patient's Balance Forward from another system to SOAPware's billing system. The Balance Forward should be expressed in dollars, with no dollar sign.

Sample:

BFOR,162.84



Insurance Demographics Format (Outdated)

| Field | Type | Length | Description |
|---------------------------|--------|--------|--|
| IDEM | | | Tells SOAPwareXchange that this is an Insurance Demographics segment |
| Expiration Date1 | Number | 8 | YYYYMMDD |
| Insurance Contact Person1 | Text | 50 | |
| Policy Number1 | Text | 50 | |
| Name Insured Under 1 | Text | 50 | |
| Insurance Company Phone1 | Text | 50 | |
| Insurance Company Name 1 | Text | 50 | |
| Comment 1 | Text | Memo | |
| Expiration Date2 | Number | 8 | YYYYMMDD |
| Insurance Contact Person2 | Text | 50 | |
| Policy Number2 | Text | 50 | |
| Name Insured Under 2 | Text | 50 | |
| Insurance Company Phone2 | Text | 50 | |
| Insurance Company Name 2 | Text | 50 | |
| Comment 2 | Text | Memo | |

These segments were ported over directly from DOCSExchange version 4.0. They are provided in SOAPwareXchange version 5.0 for backward compatibility, but their use is **not recommended**.



Sending Information From SOAPware®

SOAPware® can be configured to send general demographics information, and to post an electronic superbill. SOAPwareXchange can also do a batch export containing demographic information on all patients in SOAPware®.

Enabling the Out Directory

- 1) Select Outbox Settings on the SOAPwareXchange window
- 2) Enable data out from SOAPware® by placing a check mark next to the corresponding items

If you intend to send demographic or billing information back from SOAPware®, be sure to place the Sender ID in the box "Use this System ID for posting superbills". SOAPwareXchange will use this ID to look external IDs in the maps. This will enable SOAPwareXchange to send the other system its own IDs for patients and providers.

This system ID is the same as the sender ID in incoming files.

Superbill Format

The superbill in SOAPwareXchange 5.0 is offered in two formats: the classic format, and the new XML format.



Superbill Classic

| | |
|----------------|---|
| Record Header | |
| PID segment | Standard Patient ID header |
| Billing codes | Format for the billing codes is Site Code CPT Code ... |
| Remarks | Terminated with |
| Assessment | Text of the Assessment area terminated with |
| Physician | The external system's ID for the posting physician |
| Encounter Date | The date and time of the SOAPware® encounter |

The doctor ID map and outbox settings are used to identify the proper external physician ID to return. If there is no doctor ID map or system ID specified, no physician ID will be returned.

The patient ID map and outbox settings are used to identify the proper external patient ID to return. If there is no patient ID map or system ID specified, no external patient ID will be returned.

Site codes are not used in SOAPware® 5.0, and the field is only retained to ensure backward compatibility.

Sample Classic Superbill:

SOAPware Export File,,,

PID,ExternalID,4210FBF0-C16C-11D0-9E16-00C0F00A2A2E,Jill,Jackin,F,19690919,999-88-7777,A



501|85031|557||
Remarks section|
Assessment area|
PHYSICIANID|SMITH01
ENCOUNTERDATE|01/01/2005 10:30 AM

XML Superbill

The XML Superbill format is new for SOAPware® 5.0. It contains more information than the classic format, including place of service codes and ICD codes related to the appropriate CPT codes.

```
<Superbill>
  <PatientInfo>
    <ExternalID />
    <PatientID>9de24f67-6bf2-420c-8986-29ac4610738b</PatientID>
    <LastName>Jim</LastName>
    <FirstName>Slim</FirstName>
    <Sex>M</Sex>
    <Birthdate>19320321</Birthdate>
    <SocialSecurity>999999999</SocialSecurity>
    <ChartNumber>68332</ChartNumber>
  </PatientInfo>
  <SuperbillInfo>
    <ProviderID>ddbd44c0-0630-4493-9c0f-6c27191a8e4d</ProviderID>
    <VisitDate>08/09/2007 7:58 AM</VisitDate>
    <PlaceOfService>11</PlaceOfService>
    <ICDList>
      <ICD>642.00</ICD>
      <ICD>307.81</ICD>
      <ICD>009.1</ICD>
    </ICDList>
    <CPTItems>
      <CPT>
        <Code>12356</Code>
        <Description>X-ray</Description>
        <RelatedICDs>
          <ICD>009.1</ICD>
```



```
</RelatedICDs>
<ModifierList>
  <Modifier>21</Modifier>
  <Modifier>23</Modifier>
</ModifierList>
<Units>1</Units>
</CPT>
<CPT>
  <Code>98765</Code>
  <Description>Blood Draw</Description>
  <RelatedICDs>
    <ICD>642.00</ICD>
    <ICD>307.81</ICD>
  </RelatedICDs>
  <ModifierList>
    <Modifier>24</Modifier>
    <Modifier>22</Modifier>
  </ModifierList>
  <Units>1</Units>
</CPT>
</CPTItems>
<PlanNotes>not able to find amputation of thumb </PlanNotes>
<Notes>follow up in 2 weeks to
check on your status</Notes>
</SuperbillInfo></Superbill>
```

Above is a sample XML superbill. The fields of an XML superbill are detailed below.

PatientInfo--this block contains demographic data on the current patient. This block is the new equivalent of the GDEM segment. Data includes:

External Patient ID

SOAPware®'s internal patient ID

Last Name



First Name

Sex

Birthdate

Social Security Number

Chart Number

SuperbillInfo - this block contains the actual data of the superbill.

Segments in this block include:

Provider ID--The external physician ID for this doctor, or SOAPware®'s internal physician ID if the external is not available.

Visit Date--This is the date of service. It can be different from the date of file generation.

Place of Service--Acode representing the place of service. These codes are drawn from the official Centers for Medicare & Medicaid Services Place of Service Codes for Professional Claims:

01 Pharmacy

02 Unassigned

03 School

04 Homeless Shelter

05 Indian Health Service Free-standing Facility

06 Indian Health Service Provider-based Facility

07 Tribal 638 Free-standing Facility

08 Tribal 638 Provider-based Facility



09 Prison-Correctional Facility

10 Unassigned

11 Office

12 Home

13 Assisted Living

14 Group Home

15 `<place w:st="on">Mobile</place>` Unit

16 Temporary Lodging

17-19 Unassigned N/A

20 Urgent Care Facility

21 Inpatient Hospital

22 Outpatient Hospital

23 Emergency Room – Hospital

24 Ambulatory Surgical Center

25 Birthing Center

26 Military Treatment Facility

27-30 Unassigned

31 Skilled Nursing Facility

32 Nursing Facility



33 Custodial Care Facility

34 Hospice

35-40 Unassigned

41 Ambulance - Land

42 Ambulance – Air or Water

43-48 Unassigned

49 Independent Clinic

50 Federally Qualified <place w:st="on"><placename w:st="on">Health</placename> <placetype w:st="on">Center</placetype></place>

51 Inpatient Psychiatric Facility

52 Psychiatric Facility-Partial Hospitalization

53 Community Mental <place w:st="on"><placename w:st="on">Health</placename> <placetype w:st="on">Center</placetype></place>

54 Intermediate Care Facility/Mentally Retarded

55 Residential Substance Abuse Treatment Facility

56 Psychiatric Residential Treatment Center

57 Non-residential Substance Abuse Treatment Facility

58-59 Unassigned

60 Mass Immunization Center

61 Comprehensive Inpatient Rehabilitation Facility



62 Comprehensive Outpatient Rehabilitation Facility

63-64 Unassigned N/A

65 End-Stage Renal Disease Treatment Facility

66-70 Unassigned

71 Public Health Clinic

72 Rural Health Clinic

73-80 Unassigned

81 Independent Laboratory

82-98 Unassigned N/A

99 Other Place of Service

ICDList--This block has a separate ICD field for each ICD code in the superbill.

CPTItems--This block contains all the CPT codes present in the superbill, along with their modifiers and related ICD codes. ACPTItems block contains:

CPT code--the numeric CPT code

Description--a text description of the code

RelatedICDs--a list of all ICD codes linked to this CPT code

ModifierList--a list of all modifiers for this CPT code

Units--

Plan Notes--The text of the Plan field of the encounter note

Notes--any additional notes the SOAPware® user placed on this bill



Batch Export From SOAPware® (Demographics only)

| Field | Type | Length | Description |
|----------------------|--------|--------|--|
| GDEM | | | Tells SOAPwareXchange that this segment contains General Demographic information |
| Last Name | Text | 20 | |
| First Name | Text | 20 | |
| Middle Initial | Text | 20 | |
| Title | Text | 5 | |
| Suffix | Text | 5 | |
| Street | Text | 20 | |
| Street2 | Text | 20 | |
| City | Text | 20 | |
| State | Text | 5 | |
| Zip | Number | 5 | |
| Home Phone | Text | 20 | |
| Work Phone | Text | 20 | |
| Email | Text | 20 | |
| Unused Field | | | |
| Unused Field | | | |
| Sex | Text | 1 | |
| Unused Field | | | |
| Marital Status | Text | 1 | |
| Birthdate | Number | 8 | YYYYMMDD |
| Fax Number | Text | 20 | |
| Chart Number | Text | 20 | |
| Social Security | Text | 11 | XXX-XX-XXXX |
| Primary Physician ID | Text | 100 | |

You can export demographic information for all patients in SOAPware® using the Batch Export command available in the SOAPwareXchange File menu. This will export general demographic information in the format outlined above, and place the resulting file in the SOAPwareXchange Out



folder. This feature is useful for initial population of a new billing/scheduling system.

Unused Fields are blank, but included to preserve backward compatibility.

Marital Status Values:

I Single

M Married

S Separated

W Widowed

D Divorced



Auto-start for SOAPwareXchange via Command Line

The SOAPwareXchange can now be invoked from the command line. Place the script in a Batch file & setup a scheduled task to run at startup (etc), create a logon script, or place in the Start up Folder.

With this functionality, the Xchange can be scripted to start automatically after a reboot.

For SOAPwareXchange:

Command format:

SOAPwareXchange.exe -**ID** soapware -**PW** soapware -Server localhost -**Port** 5432 -Drive C -Path "Program Files\SOAPware\SOAPwareXchange\SOAPwareXchange.exe" -Interval 5 -Listen 0

NOTE: The quotes around the path are necessary due to the space in Program Files.

Terms

ID - user ID for logging into SOAPware

PW - password for logging into SOAPware

Server - db server

Port - db port number

Drive - the drive of the location to scan for incoming results

Path - the path to the location to scan for incoming results, minus the drive letter

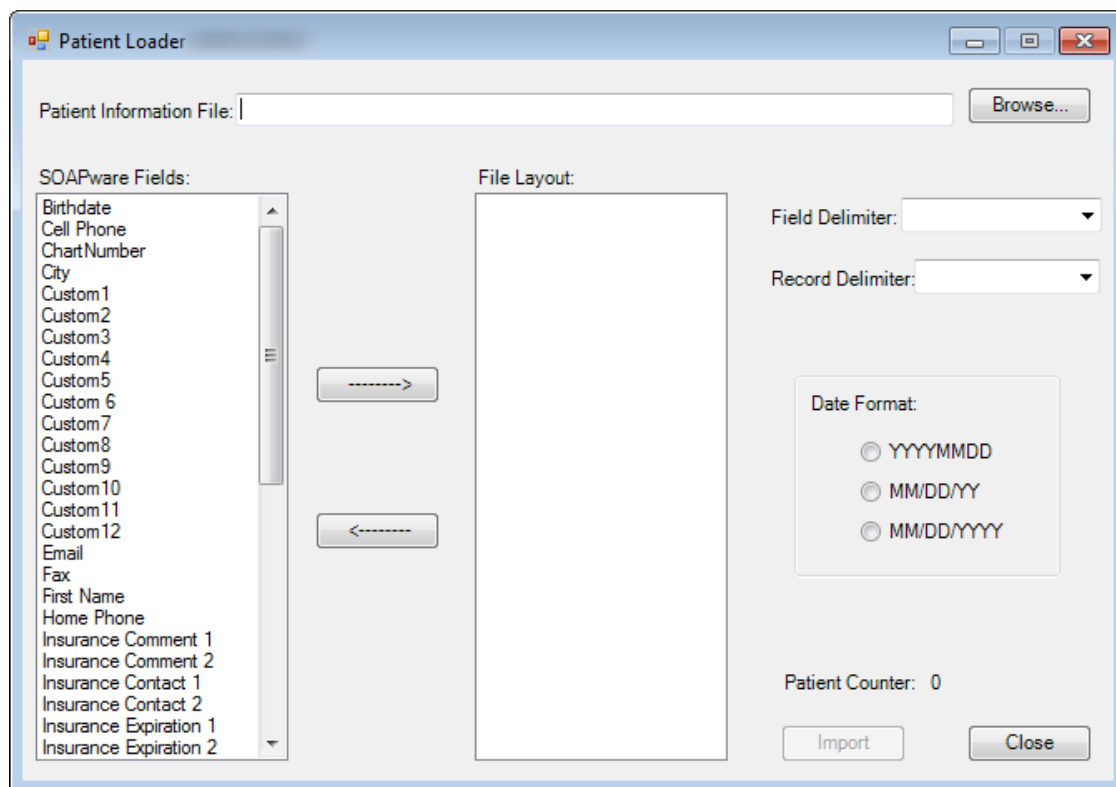


SOAPwareXchange Patient Loader Utility

The Patient Loader Utility is an application installed along with SOAPwareXchange, it allows you to import patient information from a comma delimited file (*.csv, *.txt, etc...). If you have an excel file it will need to be saved as the CSV file format to be able to be imported. The Patient Loader can be found under Start > All Programs > SOAPware.

WARNING: Backup your current database before running this application, if you select an incorrect File Layout, Field Delimiter, or Record Delimiter; it can cause the information to be loaded incorrectly, which in turn can damage\corrupt your database. If you damage\corrupt your database, you will need to restore the backup before the next import attempt can take place.

Patient Loader



Patient Information File is where you browse & select the Patient Information File you want to import into SOAPware. See the Image below for instructions on selecting a file: Click the ↓ button next to the "Look In" box, select the folder the file is contained in, select the file in that



folder, & click Open.

SOAPware Fields is the list of fields that can be imported into SOAPware, if the field you desire is not listed that information can not be imported and that column\field will need to be removed from the Patient Information File. Selected fields are transferred to File Layout with the →Button.

File Layout is the list of fields that will be imported into SOAPware from your Patient Information File, the fields must be selected in the order they are in the Patient Information File. If the fields are not selected\placed in the proper order errors can occur or patient info could be loaded incorrectly damaging the database. Selected fields can be removed from the list with the ← Button.

Field Delimiter is the punctuation used to separate fields\columns in your Patient Information File; commas, slashes, etc... Example: Mr,Richard,Smith,K,19550517,123387699,22 Gabrielle,Rochester Hills,MI,48307,5556500023,,10

Record Delimiter is the punctuation used to separate rows in your Patient Information File; line feeds, returns, new line, etc...

Date Format allows you to select what format your dates are stored in your Patient Information File so that they will be processed in the correct way.

Import will start the process of importing patients based on the settings you have entered.

Patient Counter will show the number of patients being loaded into SOAPware.

Close will exit out the Patient Loader application.

Patient Loader Logging

Patient Loader version 2012.0.2xx and later will also store a log of all files it imports. The default directory for these logs is at C:\ProgramData\patientloader.



SOAPwareXchange HL7

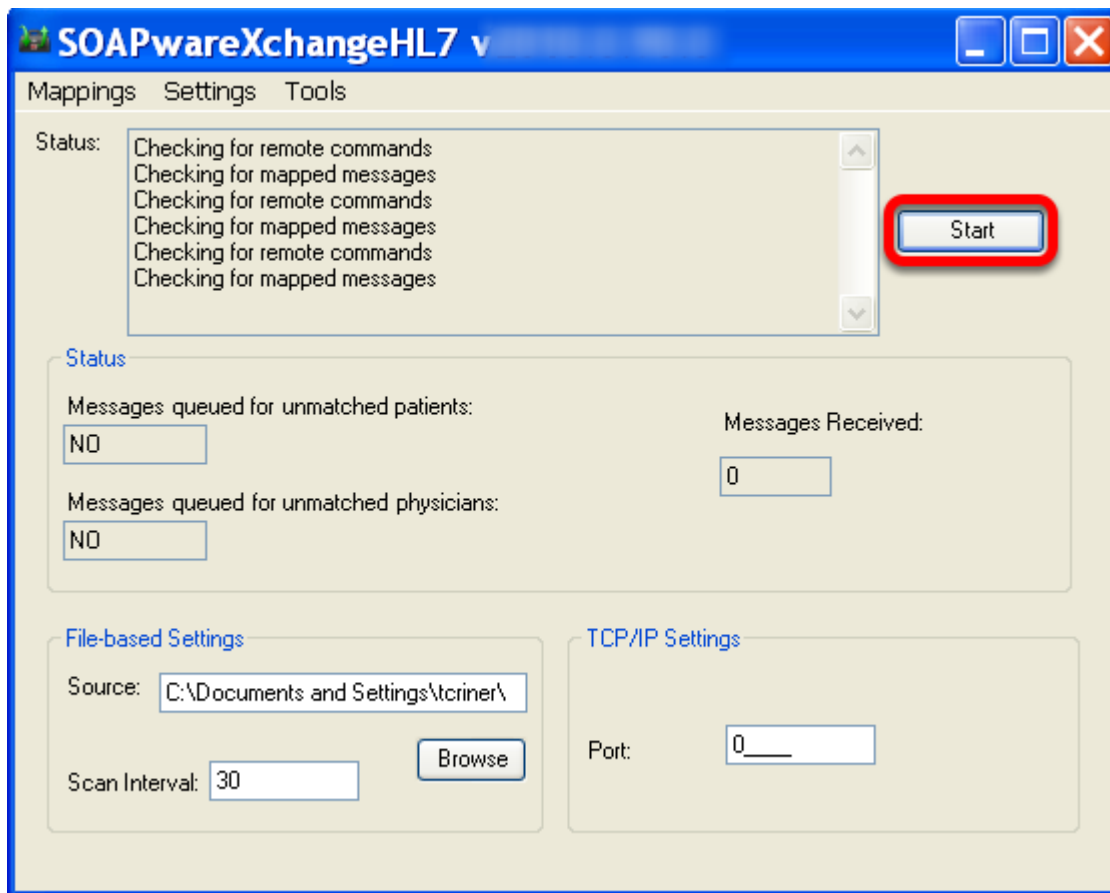


SOAPwareXchangeHL7 User Guide

The SOAPwareXchangeHL7 interface is used to process lab, pathology, radiology, even transcription reports, and have them automatically filed into the patient's chart in SOAPware from HL7 compliant messages. The module reads the demographic information in the report, finds the matching chart in SOAPware, transfers the report, and notifies the provider all automatically.

Here you will find a brief walk through for setting up and using the SOAPwareXchangeHL7. For help installing, visit the [Install/Update](#) lesson.

Ensure the SOAPwareXchangeHL7 is Open and Started



The SOAPwareXchangeHL7 must be open in order to process results. This requires you log in, just as you would with SOAPware. You will also have to click the Start button, in order to allow results to process into SOAPware. If you turn off the computer where the HL7 is located, you must open it again once the computer has been restarted.



***Note:** Both the SOAPwareXchangeHL7 and SOAPwareXchange may be setup to auto-start by following the instructions [here](#).

Ensure the Source Folder is set Correctly

SOAPwareXchangeHL7 v1.0.0.0

Mappings Settings Tools

Status: Checking for remote commands
Checking for mapped messages
Checking for remote commands
Checking for mapped messages
Checking for remote commands
Checking for mapped messages

Start

Status

Messages queued for unmatched patients:
NO

Messages queued for unmatched physicians:
NO

Messages Received:
0

File-based Settings

Source: C:\Documents and Settings\triner\

Scan Interval: 30

Browse

TCP/IP Settings

Port: 0

The majority of HL7 interfaces will be via a FTP connection, meaning that the participating lab(s) will be delivering results to a shared folder, and this is often the same machine that the SOAPwareXchangeHL7 is installed on. Make sure the Source is selected and the port is set as 0. If you are not sure where the results are being delivered, contact your lab's technical support.

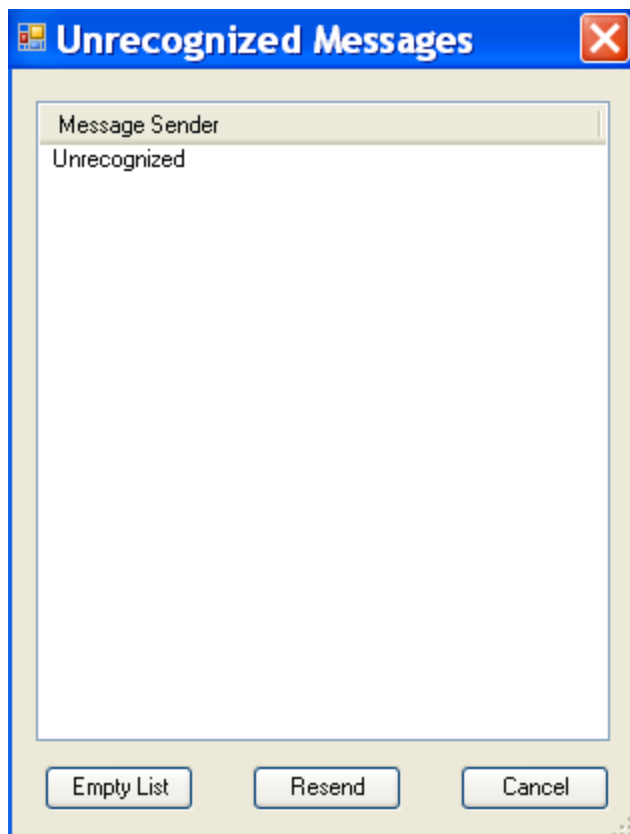


The image shows the SOAPwareXchangeHL7 v1.0.0.0 application window. It has a menu bar with 'Mappings', 'Settings', and 'Tools'. The main area is divided into several sections. At the top, there's a 'Status' section with a list box containing six entries: 'Checking for remote commands', 'Checking for mapped messages', 'Checking for remote commands', 'Checking for mapped messages', 'Checking for remote commands', and 'Checking for mapped messages'. To the right of this list is a 'Start' button. Below this is another 'Status' section with two labels: 'Messages queued for unmatched patients:' and 'Messages queued for unmatched physicians:'. Both have input fields with the value 'NO'. To the right of these is a label 'Messages Received:' with an input field containing '0'. At the bottom, there are two sections: 'File-based Settings' and 'TCP/IP Settings'. The 'File-based Settings' section has a 'Source:' label with an empty text box, a 'Scan Interval:' label with an input field containing '30', and a 'Browse' button. The 'TCP/IP Settings' section has a 'Port:' label with an input field containing '4252_'. This input field is highlighted with a red rectangle.

A few labs will be delivering results via TCP/IP rather than to a shared folder. In this case, the source will be left blank and a port # will be indicated. If you are not sure how the results are being delivered, contact your lab's technical support.



Check for Unrecognized Messages



If labs are not showing up in SOAPware, they could be located in Unrecognized Messages. In SOAPwareXchangeHL7, go to Mappings > Edit/View Unmapped Messages. If this is the case, it will be necessary to contact SOAPware Support to obtain a modified file that is necessary to allow reports to process.



Check for Unmatched Patients/Physicians

The screenshot shows the SOAPwareXchangeHL7 v7.0.0.0 application window. The 'Settings' tab is active. In the 'Status' section, there is a list of messages being checked: 'Checking for remote commands' and 'Checking for mapped messages'. A 'Start' button is present. Below this, a red box highlights the 'Messages queued for unmatched patients:' section, which contains a 'YES' button. The 'Messages queued for unmatched physicians:' section contains a 'NO' button. To the right, the 'Messages Received:' section shows a value of '4'. At the bottom, there are two sections: 'File-based Settings' with a 'Source' field set to 'C:\Documents and Settings\triner\' and a 'Scan Interval' of '30', and 'TCP/IP Settings' with a 'Port' field set to '0'. A 'Browse' button is next to the 'Source' field.

It is also important to watch for unmapped patients/physicians. If either say YES, you must match them under Mappings > Edit/View Unmatched Patients, as in this case.



A screenshot of the 'Unmatched Patients' dialog box. It has a blue title bar with the text 'Unmatched Patients' and a close button (X). The main area contains a table with the following data:

| Last Name | First Name | Sex | Birthdate | System ID | External ID |
|-----------|------------|-----|------------|-----------|-------------|
| PATIENT | TEST | F | 10/17/1946 | Default | 03717743 |

Below the table are five buttons: 'Map', 'Exclude', 'New Chart', 'Remove', and 'Close'.

Select the unmatched item, Click Map, and Select the patient from the chart rack.

A screenshot of the 'Unmatched Physicians' dialog box. It has a blue title bar with the text 'Unmatched Physicians' and a close button (X). The main area contains a table with the following data:

| ExternalID | Last Name | System ID |
|------------|-----------|------------|
| 1234 | LAST | DEFAULTRAD |









Below the table are four buttons: 'Map', 'Exclude', 'Remove', and 'Close'.

You can also use the SOAPwareXchangeHL7 Remote Management Utility to attend to unmatched items similarly to how you would from the XchangeHL7 interface. This Utility is automatically installed with SOAPwareXchangeHL7. See screen shot below.




Additional options





Tasks

User:        

Show Tasks: Show Tasks due in:

Layout: 

Drag a column header here to group by that column.

| Patient | Description | Notes | Priority | Action/Status | Due Date | Assigned To | Last Modified |
|---------------|---------------|---|----------|---------------|------------|----------------|------------------|
| Radish, Rosie | BNP TSH |  | Urgent | Needs Review | 06/27/2012 | Test T. Tester | 06/27/2012 17:35 |
| Radish, Rosie | BNP TSH |  | Urgent | Needs Review | 06/27/2012 | Test T. Tester | 06/27/2012 17:38 |
| Radish, Rosie | BNP TSH |  | Urgent | Needs Review | 04/26/2012 | Test T. Tester | 04/26/2012 15:55 |
| Labs, Test | ABN: UPDATED: |  | Urgent | Needs Review | 04/24/2012 | Test T. Tester | 04/24/2012 09:46 |

Each report that is generated by the SOAPwareXchangeHL7 is automatically assigned a task item in the SOAPware Task list and assigned to the ordering provider.

SOAPwareXchangeHL7

Mappings Settings

Status:

- Report Logging
- Debug Log
- Purge Unmatched Patients
- Empty Logs
- Advanced
 - Report ID Logging...
 - Auto-Create Charts...
 - Task Status Settings

Start


Status:

Messages queued for unmatched patients:

Messages queued for unmatched physicians:

Messages Received:

File-based Settings

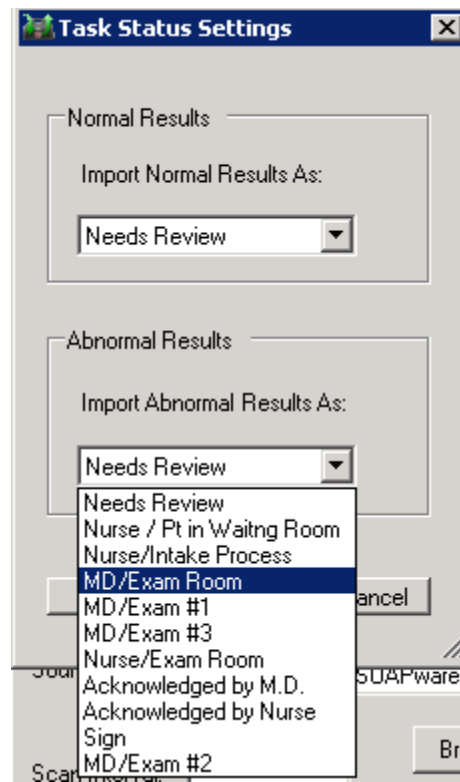
Source: 

Scan Interval:

TCP/IP Settings

Port:

Another option found in the SOAPwareXchangeHL7 are the Task Status Settings. This gives you the ability to select what type of action status each task item will be set as in the SOAPware Task list for normal and abnormal results. Go to Settings - Advanced - Task Status Settings.



Here you will be able to choose the action status for both normal and abnormal results. This includes and custom action status you have created in your SOAPware.



SOAPWareXchange HL7 Remote Management Utility

| Last Name | First Name | Sex | Birthdate | Social Security | ExternalID | SystemID | Message Received |
|-----------|------------|-----|-----------|-----------------|------------|----------|------------------|
| PATIENT | TEST | M | 3/9/1947 | 999-99-9999 | 123555588 | Default | 1/3/2011 |

The SOAPwareXchangeHL7 Remote Management Utility is also installed whenever you install the SOAPwareXchangeHL7 application. This utility can be useful if you wish to assign the task of maintaining patient mappings to a user/computer other than the one where actual messages are being delivered and processed. An example would be if you receive HL7 messages to your server, but wish to assign the patient mappings task to a client machine.



Review the Report in SOAPware

SOAPware - Patient: - User: Test T. Tester - Provider: Test T. Tester

SOAPware Chart Docucontainers Edit Tools View Help

Tasks

User: Test T. Tester

Show Tasks: Assigned Tasks Show Tasks due in: --Show All--

Layout:

Drag a column header here to group by that column.

| Patient | Description | Notes | Priority | Action/Status | Due Date | Assigned To | Last Modified | Completed |
|--------------|------------------|-------|----------|---------------|------------|----------------|------------------|--------------------------|
| Cerner, Test | UPDATED: Gyn | | High | Needs Review | 02/18/2010 | Test T. Tester | 02/18/2010 08:59 | <input type="checkbox"/> |
| Cerner, Test | UPDATED: Type | | High | Needs Review | 02/18/2010 | Test T. Tester | 02/18/2010 09:00 | <input type="checkbox"/> |
| Cerner, Test | UPDATED: RF Q | | High | Needs Review | 02/18/2010 | Test T. Tester | 02/18/2010 09:00 | <input type="checkbox"/> |
| Cerner, Test | UPDATED: HDL | | High | Needs Review | 02/18/2010 | Test T. Tester | 02/18/2010 09:00 | <input type="checkbox"/> |
| Cerner, Test | UPDATED: C Uri | | High | Needs Review | 02/18/2010 | Test T. Tester | 02/18/2010 09:01 | <input type="checkbox"/> |
| Lab, Athena | Non-Gyn Cytolog | | High | Needs Review | 03/24/2010 | Test T. Tester | 03/24/2010 12:31 | <input type="checkbox"/> |
| Lab, ProPath | Cytology | | Urgent | Needs Review | 02/23/2010 | Test T. Tester | 02/23/2010 17:27 | <input type="checkbox"/> |
| Labs, Test | 200605 HERRI/GI | | Urgent | Needs Review | 03/04/2010 | Test T. Tester | 03/04/2010 08:57 | <input type="checkbox"/> |
| TEST, FERRIS | 0323-0019 | | High | Needs Review | 03/31/2010 | Test T. Tester | 03/31/2010 10:41 | <input type="checkbox"/> |
| Test, Test | Flow Sheet Creat | | Low | Needs Review | 01/26/2010 | Test T. Tester | 01/26/2010 11:41 | <input type="checkbox"/> |
| Test, Test | ABN: CBC AUT | | Urgent | Needs Review | 02/05/2010 | Test T. Tester | 02/05/2010 11:25 | <input type="checkbox"/> |
| Test, Test | ABN: Type and S | | Urgent | Needs Review | 02/10/2010 | Test T. Tester | 02/10/2010 15:56 | <input type="checkbox"/> |
| Test, Test | Gyn Cytology Re | | High | Needs Review | 02/10/2010 | Test T. Tester | 02/10/2010 15:56 | <input type="checkbox"/> |
| Test, Test | ABN: HDL | | Urgent | Needs Review | 02/10/2010 | Test T. Tester | 02/10/2010 15:56 | <input type="checkbox"/> |
| Test, Test | ABN: RF Qnt | | Urgent | Needs Review | 02/10/2010 | Test T. Tester | 02/10/2010 15:56 | <input type="checkbox"/> |
| Test, Test | C Urine | | High | Needs Review | 02/10/2010 | Test T. Tester | 02/10/2010 15:56 | <input type="checkbox"/> |
| Test, Test | CHOLESTEROL | | High | Needs Review | 02/16/2010 | Test T. Tester | 02/16/2010 10:30 | <input type="checkbox"/> |
| Test, Test | CORTISOL | | High | Needs Review | 03/04/2010 | Test T. Tester | 03/04/2010 11:32 | <input type="checkbox"/> |
| Test, Test | EBV AB EVAL, S | | High | Needs Review | 03/16/2010 | Test T. Tester | 03/16/2010 09:44 | <input type="checkbox"/> |

Search Documentation Search

Chart Navigator Chart Rack Docuupdates Available Document Designs

Once processed, the provider will be assigned a task list item from where they can open the patients chart, and report.



Example of Generic Lab Report

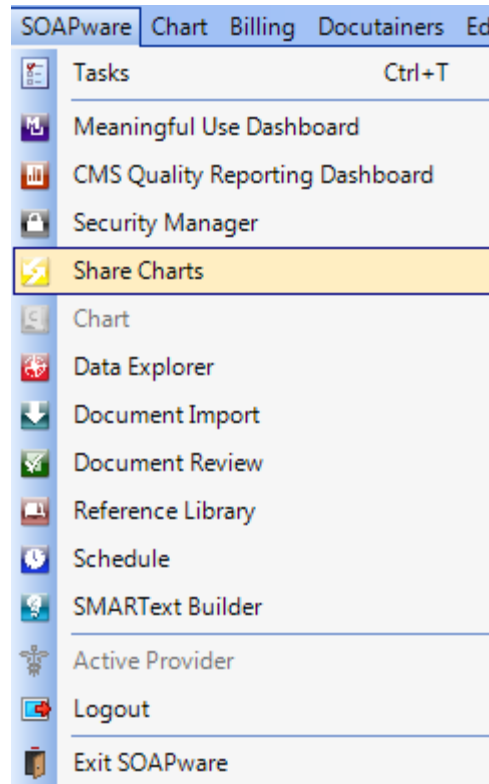
| Name | Flags | Value | Range | Units | Status | Code | Date | Range | Status | Lab |
|---------------------------------------|-------|-------|-----------|-------|--------|------|-----------|-------|--------|-----|
| REPORT GENERATED: 02/16/2010 10:30 AM | | | | | | | 2/11/2010 | | | |
| Patient Name: ELVIS PRESLEY | | | | | | | | | | |
| Birthdate: 01/08/1935 12:00 AM | | | | | | | | | | |
| Social Security: | | | | | | | | | | |
| Accession Number: Z00422645 | | | | | | | | | | |
| Order Status: F | | | | | | | | | | |
| Collection Date: 02/11/2010 5:27 PM | | | | | | | | | | |
| Ordering Physician: | | | | | | | | | | |
| | | | | | | | | | | |
| CHOLESTEROL | | | | | | | 2/11/2010 | | | |
| Result Status: Final | | | | | | | | | | |
| | | 154 | | F | | | 2/11/2010 | | | |
| * cholesterol risk levels * | | | | | | | | | | |
| * age * * moderate risk * | | | | | | | | | | |
| * high risk * | | | | | | | | | | |
| 20 - 29 yrs Greater than 200 | | | | | | | | | | |
| Greater than 220 | | | | | | | | | | |
| 30 - 39 yrs Greater than 220 | | | | | | | | | | |
| Greater than 240 | | | | | | | | | | |
| 40+ Yrs Greater than 240 | | | | | | | | | | |
| Greater than 260 | | | | | | | | | | |
| GLUCOSE | | | | | | | 2/11/2010 | | | |
| Result Status: Final | | | | | | | | | | |
| TIME OF LAST MEAL: FASTING | | | | | | | | | | |
| | | 99 | (67 - 99) | mg/dL | F | | 2/11/2010 | | | |
| Sending Application: EASTSIDELAB | | | | | | | | | | |
| Sending Facility: EASTSIDELAB | | | | | | | | | | |
| Parsed Through: Default | | | | | | | | | | |
| ---END OF GENERATED REPORT--- | | | | | | | 2/11/2010 | | | |

CHOLESTEROL, GLUCOSE

Above is an example of a generic lab report. While most results will be pulled into the Labs chart section, some may also pull results into the Radiology or Pathology sections, depending on the interface used.



Printing Reports



Often times, it is necessary to print out or send reports via PDF out of SOAPware. To easily accomplish this, you may use the [Share Charts](#) feature in SOAPware. This feature allows you to print multiple reports from a specific section of SOAPware, for a specific patient. Refer to the [Share Charts](#) article for more details.



SOAPwareXchangeHL7 Lab Interface Specifications

This lesson describes the specific manner in which HL7 is implemented in SOAPwareXchangeHL7, and how the various standard fields will be used.

SOAPwareXchangeHL7 is the interface module allowing HL7-compliant interfaces between the SOAPware® charting product and other HL7-compliant systems.

SOAPwareXchangeHL7 accepts HL7-compliant messages from other systems, and uses them to create formatted reports in a chart section of the appropriate SOAPware® chart. If the patient described in the PID (Patient Identifier) section of the HL7 message cannot be matched, it will be added to a queue for the SOAPware user to handle manually. SOAPwareXchangeHL7 uses the matching algorithm below to determine if a patient already exists in SOAPware®

Patient Matching Process

An incoming record will be considered to be a match to a SOAPware® patient if:

External ID is found in patient map, AND

Birth date matches, OR

Last name matches

OR

Social Security numbers match, AND

Birth date matches, AND

Last name matches, AND

First name matches

OR

First name and Last name matches, AND



Birth date matches, AND

Sex matches

So a match can be made on

First Name AND Last Name AND Birth date

AND

Sex OR Social Security Number

Results Only Interface

At this time, all HL7 interfaces implemented with SOAPwareXchangeHL7 will be results-only. Bi-directional interfaces are being evaluated for future implementation. Because of this, SOAPwareXchangeHL7 only processes results messages (ORU).

A standard ORU message would follow this format:

MSH

PID

{ORC

[NTE]}

{OBR

[NTE]}

{OBX

[NTE]}



Communications

Matters of communication are between the lab and the site. SOAPware®, Inc does not provide communications services for message delivery.

SOAPwareXchangeHL7 supports file-based or TCP-based interfaces. A file based interface will consist of the interfacing system, or system user, depositing HL7 messages in a specified location on the SOAPwareXchangeHL7 machine. SOAPwareXchangeHL7 will then retrieve and parse these messages. When the messages have been parsed, SOAPwareXchangeHL7 will remove them.

A TCP based interface will require a TCP connection between SOAPwareXchangeHL7 and the sending system. SOAPwareXchangeHL7 will listen for incoming messages, and parse them as they arrive. SOAPwareXchangeHL7 will always return an ACK messages for TCP messages received.

- **File-based**

File based communication is the preferred communication method and allows for easiest troubleshooting for SOAPware Support. All incoming lab messages should be deposited to the same directory. This directory must be reserved for the sole purpose of incoming messages; no other file types or information should be stored there. SOAPwareXchangeHL7 will remove each file after processing.

- **TCP**

Current versions of SOAPwareXchangeHL7 are only capable of monitoring a single port. If multiple labs are interfaces to the same site, one lab may use the TCP connection. The other labs must use a file-based method, depositing result files into the same directory.

The TCP connection should not be closed after each send, as this will require the SOAPwareXchangeHL7 user to reset the connection from their end.

While we realize the value of TCP connections and offer these, we do not have the resources to troubleshoot them, and will recommend a file-based solution if problems turn up with the



connection. If a sending facility/application has issues with connecting to a specific port on a clients local network, SOAPware staff will recommend contacting the clients IT personnel for further troubleshooting.

The XchangeHL7 will automatically send an ACK after each report is received. This cannot be controlled or altered via the XchangeHL7 GUI.

The acceptable port range is up to 32000.

If other communication methods are required, such as dial-up file transfers, the SOAPware®, Inc. programming team can evaluate the possibility of creating a transfer program for an additional fee.

Segment Descriptions and Legend

| Segment | Description |
|---------|------------------------|
| MSH | Message Header |
| PID | Patient Identification |
| ORC | Common Order |
| OBR | Observation Request |
| OBX | Observation |
| NTE | Notes and Comments |

BOLDED fields are required.



The MSH (Message Header) Segment

| | |
|--------------|--|
| MSH-1 | Segment Type ID ('MSH') |
| MSH-2 | Field Delimiter (' ') Component Delimiter (sub-subfield) ('^') Repeat Delimiter (subfield) ('~') Escape character ('\') Sub-component delimiter ('&') |
| MSH-3 | Sending Application |
| MSH-4 | Sending Facility |
| MSH-5 | Receiving Application |
| MSH-6 | Receiving Facility |
| MSH-7 | Date/Time of Message (YYYYMMDDHHMM) |
| MSH-8 | Security |
| MSH-9 | Message Type |
| MSH-10 | Message Control ID |
| MSH-11 | |
| MSH-12 | Version '2.1'=Release 2.1 '2.2'=Release 2.2 |
| MSH-13 | Sequence Number |
| MSH-14 | Continuation Pointer |
| MSH-15 | Accept Acknowledgment Type |
| MSH-16 | Application Acknowledgment Type |
| MSH-17 | Country Code |

SOAPwareXchangeHL7 requires the MSH segment to be the first in the file. We do not accept FHS, BHS, or any other information before the MSH segment.

A separate MSH segment is required for each PID (Patient Identifier) segment in the file.

The Sending Application value in MSH-3 is used by SOAPwareXchangeHL7 to determine the source of the message and the section in SOAPware the report will be translated. This value should remain consistent for any interfaces using the same delivery application/company.



Messages parsed through this interface will be filed in the "Labs" chart section of the patient chart. The value in MSH-4 will be displayed in the footer of the lab report as "Sending Facility."



The PID (Patient Identifier) Segment

| | Segment Type ID ('PID') |
|---------------|---|
| PID-1 | Patient ID |
| PID-2 | External Patient ID |
| PID-3 | Patient ID |
| PID-4 | Alternate Patient ID |
| PID-5 | Patient Name: <ul style="list-style-type: none">• Last Name• First Name• Middle Initial• Suffix (e.g., Jr., III.)• Prefix (e.g., DR)• Degree (e.g., MD) |
| PID-6 | Mother's Maiden Name |
| PID-7 | Patient Birth Date |
| PID-8 | Patient Sex |
| PID-9 | Patient Alias |
| PID-10 | Patient Race |
| PID-11 | Patient Address |
| PID-12 | Patient County Code |
| PID-13 | Patient Home Phone Number |
| PID-14 | Patient Work Phone Number |
| PID-15 | Language – Patient |
| PID-16 | Patient Marital Status 'S' = Separated 'D' = Divorced 'M' = Married 'I' = Single 'W' = Widowed |
| PID-17 | Patient Religion |
| PID-18 | Patient Account Number |
| PID-19 | Patient SSN Number |
| PID-20 | Patient Driver's License Number |
| PID-21 | Patient Mother's Identifier |
| PID-22 | Patient Ethnic Group |
| PID-23 | Patient Birth Place |
| PID-24 | Multiple Birth Indicator |
| PID-25 | Birth Order |
| PID-26 | Citizenship |
| PID-27 | Veterans Military Status |

The Patient ID in PID-3 will be entered into a matching table and is a required field. This ID can be anything, as long as it is unique and consistent per patient. First Name, Last Name, Birth date, Sex, and Social Security Number are all used for the patient matching algorithm. Omitting any of



this information may cause the record to be queued for manual assignment. Demographic information included in the PID segment will not be used to update the demographics in the patient chart.

The ORC (Common Order) Segment

| | |
|--------------|---|
| | Segment Type (ORC) |
| ORC-1 | Order Control "RE"= Results |
| ORC-2 | Placer Order Number |
| ORC-3 | Accession Number |
| ORC-4 | Placer Group Number <ul style="list-style-type: none">Unique Group ID |
| | <ul style="list-style-type: none">Placer application ID |
| ORC-5 | Order Status |
| ORC-6 | Response Flag |
| ORC-7 | Quantity Timing |
| ORC-8 | Parent |
| ORC-9 | Date/Time of Transaction (YYYYMMDDHHMMSS) |
| ORC-10 | Entered By |
| ORC-11 | Verified By |
| ORC-12 | Ordering Provider <ul style="list-style-type: none">ID/UPIN/NPILast Name |
| ORC-13 | Enterer's Location |
| ORC-14 | Call Back Phone Number |
| ORC-15 | Order Effective Date (YYYYMMDDHHMMSS) |
| ORC-16 | Order Control Code Reason |
| ORC-17 | Entering Organization |
| ORC-18 | Entering Device |
| ORC-19 | Action By |

The Accession Number in ORC-3 is used for report matching purposes. When a message comes in with an accession number that already exists in SOAPware®, the existing report will be updated or replaced, depending on the result status (ORC-5) of the existing report. Result status



from the ORC segment will be displayed as the report status. Report matching requires that an ORC segment be sent for all messages.

Accepted values for report matching include:

P = Partial/Pending

F = Final

CM = Complete

IP = In Progress

C = Corrected

| Existing Report | Incoming Message | Action Taken |
|-----------------|------------------|--|
| Partial/Pending | Final | Existing Report is Replaced |
| Final/Corrected | Partial/Pending | Incoming Report is Discarded |
| Final/Corrected | Final/Corrected | Incoming Report is Appended to Existing Report |

Ordering Provider information will be read from either ORC-12, or OBR-16. A physician ID of some sort is required in one of those fields. Last name will be used as well, and makes for easier physician matching.



The OBR (Observation Request) Segment*

| | Segment Type (OBR) |
|--------|---|
| OBR-1 | Sequence Number |
| OBR-2 | Placer Order Number |
| OBR-3 | Accession Number |
| OBR-4 | Universal Service ID |
| OBR-5 | Priority |
| OBR-6 | Requested Date/Time |
| OBR-7 | Observation Date/Time Format - (YYYYMMDDHHMMSS) |
| OBR-8 | Observation End Time |
| OBR-9 | Collection Volume |
| OBR-10 | Collector Identifier |
| OBR-11 | Action Code |
| OBR-12 | Danger Code |
| OBR-13 | Relevant Clinical Information |
| OBR-14 | Specimen Received Date/Time12() |
| OBR-15 | Specimen Source |
| OBR-16 | Ordering Provider <ul style="list-style-type: none">• Physician ID / Provider Number• Physician Last Name• Physician First Name |
| OBR-17 | Order Callback Number |

| | |
|--------|--|
| OBR-18 | Placer Field 1 |
| OBR-19 | Placer Field 2 |
| OBR-20 | Filler Field 1 |
| OBR-21 | Filler Field 2 |
| OBR-22 | Date/Time Observations Reported (YYYYMMDDHHMM) |
| OBR-23 | Filler's Charge to Practice |
| OBR-24 | Filler's Section ID |
| OBR-25 | Order Result Status |
| OBR-26 | Parent Result |
| OBR-27 | Quantity/Timing |
| OBR-28 | Result Copies To |
| OBR-29 | Parent |
| OBR-30 | Transportation Mode |
| OBR-31 | Reason For Study |
| OBR-32 | Principle Interpreter of Results |
| OBR-33 | Assisting Interpreter of Results |
| OBR-34 | Technician |
| OBR-35 | Transcriptionist |
| OBR-36 | Scheduled Date / Time |

*At least one OBR must be included under each ORC segment.

The Accession Number will be read from OBR-3 if it is not present in ORC-3.



Every OBR-4^2 under the same ORC will be combined to form the title of the report in SOAPware®. Each ORC segment will trigger a new report or be treated as an update if duplicate accession numbers are sent. If any OBR-4^2 is not populated, it will defer to OBR-3 to generate the report title.

OBR-7 will appear in the report as the Collection Date. An ordering physician ID will be expected in OBR-16 if it was not present in ORC-12.

Result status from OBR-25 will be displayed with each group of results.

The date in OBR-22 will be shown in the report header as the Date Reported.

The SOAPwareXchangeHL7 will currently only accept and process results for Ordering Providers, and will not process CC providers from OBR-28.

The OBX (Observation) Segment*

| | Segment Type (OBX) |
|--------|---|
| OBX-1 | Sequence Number |
| OBX-2 | Value Type |
| OBX-3 | Observation Identifier |
| OBX-4 | Observation Sub ID |
| OBX-5 | Observation Value(result) |
| OBX-6 | Units of Measure |
| OBX-7 | Reference Ranges (low - high, ex: 1.5 - 10.2) |
| OBX-8 | Abnormal Flags |
| OBX-9 | Probability |
| OBX-10 | Nature of Abnormal Test |
| OBX-11 | Observation Result Status |
| OBX-12 | Date/Time of Last Change |
| OBX-13 | User-Defined Access Checks |
| OBX-14 | Date/Time of Observation (YYYYMMDDHHMMSS) |
| OBX-15 | Test Facility Code |
| OBX-16 | Responsible Observer |

*At least one OBX must be included under each OBR segment.

The value of OBX-2 will be used to determine how to display the results.



For all types except TX, OBX-3^2 will be used as the test name. OBX-5 will be displayed in the Value column. OBX-6 will display in the Units column, OBX-7 in the Reference Range column, and OBX-8 in the Abnormal Flags column. OBX-14 will be displayed as the individual test date/time.

If the abnormal flag is H or HH, the result line will be colored red. If the abnormal flag is L or LL, the result line will be colored blue. For all other abnormal values (positive, unknown, etc) the result line will be colored orange. If a result contains abnormal results the report title in the Tasks Manager will begin with "ABN:" and the task list item will have a higher priority.

When the OBX segment has a Type of TX, only OBX-5 will be displayed.

Escape Characters in the Default Lab Interface

| Escape Character | Replaced With |
|------------------|-----------------|
| \S\ | ^ |
| \T\ | & |
| \br\ | Carriage Return |

The NTE (Notes and Comments) Segment

| | |
|-------|-----------------------|
| NTE-1 | Sequence Number - NTE |
| NTE-2 | Comment Source |
| NTE-3 | Comment Text |

The XchangeHL7 has a limit on the length of any NTE segment of 35 characters or to the nearest word.

If longer notes are necessary, multiple NTE segments will be required.

The NTE segment can contain any additional information not encoded in the OBX segment. Usually the NTE segment will contain some combination of the following items: text results, canned messages, or result comments. The following section lists all of the segments potentially used in result messages. Fields in boldface are required, all others are optional. Segments not listed in this document may be sent to SOAPwareXchangeHL7, but will be ignored. Fields not listed in these tables may be included at the end of the segment, but will be ignored.



Sample HL7 Message and Screenshot of the Result in SOAPware

SOAPware 2011 - Patient: Labs, Test - User: Test T. Tester - Provider: Test T. Tester

SOAPware Chart Billing Docutainers Edit Tools View Help

SOAP Notes Labs Pathology Misc. Billing Statements

| Name | Flags | Value | Range | Units | Status | LOINC | Code | Date | Range | Status | Lab Tech |
|--------------------------------------|-------|-------|----------------|-----------|--------|-------|------|-----------|-------|--------|----------|
| REPORT GENERATED: 05/09/2011 4:11 PM | | | | | | | | 1/10/2003 | | | |
| Patient Name: PATIENT TEST | | | | | | | | | | | |
| Birthdate: 01/01/2000 12:00 AM | | | | | | | | | | | |
| Social Security: 123456789 | | | | | | | | | | | |
| Accession Number: 267731 | | | | | | | | | | | |
| Order Status: F | | | | | | | | | | | |
| Collection Date: 01/10/2003 3:22 PM | | | | | | | | | | | |
| Ordering Physician: TEST | | | | | | | | | | | |
| CBC | | | | | | | | 1/10/2003 | | | |
| Result Status: | | | | | | | | | | | |
| WHITE BLOOD CELL COUNT | L | 2.5 | (3.8 - 10.8) | THOUS/MCL | F | | 01 | 1/10/2003 | | | |
| RED BLOOD CELL COUNT | L | 2.53 | (4.20 - 5.80) | MILL/MCL | F | | 02 | 1/10/2003 | | | |
| HEMOGLOBIN | L | 12.0 | (13.2 - 17.1) | g/dL | F | | 03 | 1/10/2003 | | | |
| HEMATOCRIT | L | 37.5 | (38.5 - 50.0) | % | F | | 04 | 1/10/2003 | | | |
| MCV | H | 148.2 | (80.0 - 100.0) | fL | F | | 05 | 1/10/2003 | | | |
| MCH | H | 47.4 | (27.0 - 33.0) | pg | F | | 06 | 1/10/2003 | | | |
| MCHC | N | 32.0 | (32.0 - 36.0) | g/dL | F | | 07 | 1/10/2003 | | | |
| RDW | N | 13.2 | (11.0 - 15.0) | % | F | | 08 | 1/10/2003 | | | |
| PLATELET COUNT | N | 250 | (140 - 400) | THOUS/MCL | F | | 09 | 1/10/2003 | | | |
| Sending Application: LAB | | | | | | | | | | | |
| Sending Facility: Sending Lab | | | | | | | | | | | |
| Parsed Through: Default | | | | | | | | | | | |
| ---END OF GENERATED REPORT--- | | | | | | | | 1/10/2003 | | | |

```
MSH|^~&|LAB|Sending Lab|||20030417123605||ORU^R01|20030417597657260000|P|2.3|||||
PID|1||TEST01||TEST^PATIENT||20000101|M|||||||0000011|123456789|||||||
ORC|RE||267731||F|||||TESTDOC^TEST^DOC^|||||
OBR|1||267731|000^CBC|||20030110152200|||||||TESTDOC^TEST^DOC^|||||20030114082400||F||||
OBX|1|NM|01^WHITE BLOOD CELL COUNT||2.5|THOUS/MCL|3.8-10.8|L|||F|||20030114082400|||
OBX|2|NM|02^RED BLOOD CELL COUNT||2.53|MILL/MCL|4.20-5.80|L|||F|||20030114082400|||
OBX|3|NM|03^HEMOGLOBIN||12.0|G/DL|13.2-17.1|L|||F|||20030114082400|||
OBX|4|NM|04^HEMATOCRIT||37.5|%|38.5-50.0|L|||F|||20030114082400|||
OBX|5|NM|05^MCV||148.2|fL|80.0-100.0|H|||F|||20030114082400|||
OBX|6|NM|06^MCH||47.4|PG|27.0-33.0|H|||F|||20030114082400|||
OBX|7|NM|07^MCHC||32.0|G/DL|32.0-36.0|N|||F|||20030114082400|||
OBX|8|NM|08^RDW||13.2|%|11.0-15.0|N|||F|||20030114082400|||
OBX|9|NM|09^PLATELET COUNT||250|THOUS/MCL|140-400|N|||F|||20030114082400|||
```



SOAPwareXchangeHL7 Radiology Interface Specifications

SOAPwareXchangeHL7 is the interface module allowing HL7-compliant interfaces between the SOAPware® charting product and other HL7-compliant systems.

This lesson describes the specific manner in which HL7 is implemented in SOAPwareXchangeHL7, and how the various standard fields will be used.

SOAPwareXchangeHL7 accepts HL7-compliant messages from other systems, and uses them to create formatted reports in a chart section of the appropriate SOAPware® chart. If the patient described in the PID (patient identifier) section of the HL7 message cannot be matched, it will be added to a queue for the SOAPware user to handle manually. SOAPwareXchangeHL7 uses the matching algorithm below to determine if a patient already exists in SOAPware®

Patient Matching Process

An incoming record will be considered to be a match to a SOAPware® patient if:

External ID is found in patient map, AND

Birthdate matches, OR

Last name matches

OR

Social Security numbers match, AND

Birthdate matches, AND

Last name matches, AND

First name matches

OR

First name and Last name matches, AND



Birthdate matches, AND

Sex matches

So a match can be made on:

First Name AND Last Name AND Birthdate

AND

Sex OR Social Security Number

Results-Only Interface

At this time all HL7 interfaces implemented with SOAPwareXchangeHL7 will be results-only. Bi-directional interfaces are being evaluated for future implementation. Because of this, SOAPwareXchangeHL7 only processes results messages (ORU).

A standard ORU message would follow this format:

MSH

PID

{ORC

[NTE]}

{OBR

[NTE]}

{OBX

[NTE]}



Communications

Matters of communication are between the lab and the site. SOAPware®, Inc does not provide communication services.

SOAPwareXchangeHL7 supports file-based or TCP-based interfaces. A file based interface will consist of the interfacing system, or system user, depositing HL7 messages in a specified location on the SOAPwareXchangeHL7 machine. SOAPwareXchangeHL7 will then retrieve and parse these messages. When the messages have been parsed, SOAPwareXchangeHL7 will remove them.

A TCP based interface will require a TCP connection between SOAPwareXchangeHL7 and the sending system. SOAPwareXchangeHL7 will listen for incoming messages, and parse them as they arrive. SOAPwareXchangeHL7 will always return an ACK messages for TCP messages received.

File-based

File based communication is the preferred communication method and allows for easiest troubleshooting for SOAPware Support. All incoming lab messages should be deposited to the same directory. This directory must be reserved for the sole purpose of incoming messages; no other file types or information should be stored there. SOAPwareXchangeHL7 will remove each file after processing.

TCP

Current versions of SOAPwareXchangeHL7 are only capable of monitoring a single port. If multiple labs are interfaces to the same site, one lab may use the TCP connection. The other labs must use a file-based method, depositing result files into the same directory.

The TCP connection should not be closed after each send, as this will require the SOAPwareXchangeHL7 user to reset the connection from their end.

The XchangeHL7 will automatically send an ACK after each report is received. This cannot be controlled or altered via the XchangeHL7 GUI.



While we realize the value of TCP connections and offer these, we do not have the resources to troubleshoot them, and will recommend a file-based solution if problems turn up with the connection. If a sending facility/application has issues with connecting to a specific port on a clients local network, SOAPware staff will recommend contacting the clients IT personnel for further troubleshooting.

If other communication methods are required, such as dial-up file transfers, the SOAPware®, Inc. programming team can evaluate the possibility of creating a transfer program for an additional fee.

Segment Descriptions and Legend

| Segment | Description |
|---------|------------------------|
| MSH | Message Header |
| PID | Patient Identification |
| ORC | Common Order |
| OBR | Observation Request |
| OBX | Observation |
| NTE | Notes and Comments |

BOLDED fields are required.

Each PID segment requires a unique MSH segment.



The MSH (Message Header) Segment

| | |
|--------------|--|
| MSH-1 | Segment Type ID ('MSH') |
| MSH-2 | Field Delimiter (' ') Component Delimiter (sub-subfield) ('^') Repeat Delimiter (subfield) ('~') Escape character ('\') Sub-component delimiter ('&') |
| MSH-3 | Sending Application |
| MSH-4 | Sending Facility |
| MSH-5 | Receiving Application |
| MSH-6 | Receiving Facility |
| MSH-7 | Date/Time of Message (YYYYMMDDHHMM) |
| MSH-8 | Security |
| MSH-9 | Message Type |
| MSH-10 | Message Control ID |
| MSH-11 | |
| MSH-12 | Version '2.1'=Release 2.1 '2.2'=Release 2.2 |
| MSH-13 | Sequence Number |
| MSH-14 | Continuation Pointer |
| MSH-15 | Accept Acknowledgment Type |
| MSH-16 | Application Acknowledgment Type |
| MSH-17 | Country Code |

SOAPwareXchangeHL7 requires the MSH segment to be the first in the file. We do not accept FHS, BHS, or any other information before the MSH segment.

A separate MSH segment is required for each PID segment in the file.



The Sending Application value in MSH-3 is used by SOAPwareXchangeHL7 to determine the source of the message and the section in SOAPware the report will be translated. This value should remain consistent for any interfaces using the same delivery application/company. If a Lab/LIS will be sending multiple result types or multiple values in MSH-3, this must be indicated in the testing phase and samples sent for each.

This value will be displayed in the footer of the lab report, as "Sending Application". Messages parsed through this interface will be filed in the "Labs" section of the patient chart.

The value in MSH-4 will be displayed in the footer of the lab report as "Sending Facility."



The PID (Patient Identifier) Segment

| | Segment Type ID ('PID') |
|---------------|---|
| PID-1 | Patient ID |
| PID-2 | External Patient ID |
| PID-3 | Patient ID |
| PID-4 | Alternate Patient ID |
| PID-5 | Patient Name: |
| | <ul style="list-style-type: none"> •Last Name •First Name •Middle Initial •Suffix (e.g., Jr., III,) •Prefix (e.g., DR) •Degree (e.g., MD) |
| PID-6 | Mother's Maiden Name |
| PID-7 | Patient Birth Date |
| PID-8 | Patient Sex |
| PID-9 | Patient Alias |
| PID-10 | Patient Race |
| PID-11 | Patient Address |
| PID-12 | Patient County Code |
| PID-13 | Patient Home Phone Number |
| PID-14 | Patient Work Phone Number |
| PID-15 | Language – Patient |
| PID-16 | Patient Marital Status 'S' = Separated 'D' = Divorced 'M' = Married 'I' = Single 'W' = Widowed |
| PID-17 | Patient Religion |
| PID-18 | Patient Account Number |
| PID-19 | Patient SSN Number |
| PID-20 | Patient Driver's License Number |
| PID-21 | Patient Mother's Identifier |
| PID-22 | Patient Ethnic Group |
| PID-23 | Patient Birth Place |
| PID-24 | Multiple Birth Indicator |
| PID-25 | Birth Order |
| PID-26 | Citizenship |
| PID-27 | Veterans Military Status |

The Patient ID in PID-3 will be entered into a matching table. This ID can be anything, as long as it is unique and consistent per patient. First Name, Last Name, Birthdate, Sex, and Social Security Number are all used for the patient matching algorithm. Omitting any of this information may



cause the record to be queued for manual assignment. Demographic information included in the PID segment will not be used to update the demographics in the patient chart.

Certain elements from the PID segment and other segments will form a report header at the top of each radiology report. This includes; First and Last name, ordering date, ordering provider, and others general information.

The ORC (Common Order) Segment

| | Segment Type (ORC) |
|--------|---|
| ORC-1 | Order Control :“RE”= Results |
| ORC-2 | Placer Order Number |
| ORC-3 | Accession Number |
| ORC-4 | Placer Group Number |
| | •Unique Group ID |
| | •Placer application ID |
| ORC-5 | Order Status |
| ORC-6 | Response Flag |
| ORC-7 | Quantity Timing |
| ORC-8 | Parent |
| ORC-9 | Date/Time of Transaction (YYYYMMDDHHMMSS) |
| ORC-10 | Entered By |
| ORC-11 | Verified By |
| ORC-12 | Ordering Provider |
| | • ID/UPIN/NPI |
| | • Last Name |
| ORC-13 | Enterer's Location |
| ORC-14 | Call Back Phone Number |
| ORC-15 | Order Effective Date (YYYYMMDDHHMMSS) |
| ORC-16 | Order Control Code Reason |
| ORC-17 | Entering Organization |
| ORC-18 | Entering Device |
| ORC-19 | Action By |

The Accession Number in ORC-3 or OBR-3 is used for report matching purposes. When a message comes in with an accession number that already exists in SOAPware®, the existing report will be updated or replaced, depending on the result status of the existing report. Result



status from the ORC segment will be displayed as the report status.

| Existing Report | Incoming Message | Action Taken |
|-----------------|------------------|--|
| Partial/Pending | Final | Existing Report is Replaced |
| Final/Corrected | Partial/Pending | Incoming Report is Discarded |
| Final/Corrected | Final/Corrected | Incoming Report is Appended to Existing Report |

Ordering Provider information will be read from either ORC-12, or OBR-16. A physician ID of some sort is required in one of those fields. Last name will be used as well, if included.



The OBR (Observation Request) Segment*

| | Segment Type (OBR) |
|---------------|---|
| OBR-1 | Sequence Number |
| OBR-2 | Placer Order Number |
| OBR-3 | Accession Number |
| OBR-4 | Universal Service ID |
| OBR-5 | Priority |
| OBR-6 | Requested Date/Time |
| OBR-7 | Observation Date/Time |
| | Format - (YYYYMMDDHHMMSS) |
| OBR-8 | Observation End Time |
| OBR-9 | Collection Volume |
| OBR-10 | Collector Identifier |
| OBR-11 | Action Code |
| OBR-12 | Danger Code |
| OBR-13 | Relevant Clinical Information |
| OBR-14 | Specimen Received Date/Time12() |
| OBR-15 | Specimen Source |
| OBR-16 | Ordering Provider |
| | <ul style="list-style-type: none">• Physician ID / Provider Number• Physician Last Name• Physician First Name |
| OBR-17 | Order Callback Number |
| OBR-18 | Placer Field 1 |
| OBR-19 | Placer Field 2 |
| OBR-20 | Filler Field 1 |
| OBR-21 | Filler Field 2 |
| OBR-22 | Date/Time Observations Reported (YYYYMMDDHHMM) |
| OBR-23 | Filler's Charge to Practice |
| OBR-24 | Filler's Section ID |
| OBR-25 | Order Result Status |
| OBR-26 | Parent Result |
| OBR-27 | Quantity/Timing |
| OBR-28 | Result Copies To |
| OBR-29 | Parent |
| OBR-30 | Transportation Mode |
| OBR-31 | Reason For Study |
| OBR-32 | Principle Interpreter of Results |
| OBR-33 | Assisting Interpreter of Results |
| OBR-34 | Technician |
| OBR-35 | Transcriptionist |
| OBR-36 | Scheduled Date / Time |

***At least one OBR must be included under each ORC segment.**

The Accession Number will be read from OBR-3 if it is not present in ORC-3.



Every OBR-4^2 under the same ORC will be combined to form the title of the report in SOAPware®. Each ORC segment will trigger a new report. If any OBR-4^2 is not populated, it will defer to OBR-3 to generate the report title.

The date in OBR-22 will be shown in the report header as the Date Reported. An ordering physician ID will be expected in OBR-16 if it was not present in ORC-12.

The SOAPwareXchangeHL7 will currently only accept and process results for Ordering Providers, and will not process CC providers from OBR-28.

The OBX (Observation) Segment*

| | Segment Type (OBX) |
|--------|---|
| OBX-1 | Sequence Number |
| OBX-2 | Value Type |
| OBX-3 | Observation Identifier |
| OBX-4 | Observation Sub ID |
| OBX-5 | Observation Value(result) |
| OBX-6 | Units of Measure |
| OBX-7 | Reference Ranges (low - high, ex: 1.5 - 10.2) |
| OBX-8 | Abnormal Flags |
| OBX-9 | Probability |
| OBX-10 | Nature of Abnormal Test |
| OBX-11 | Observation Result Status |
| OBX-12 | Date/Time of Last Change |
| OBX-13 | User-Defined Access Checks |
| OBX-14 | Date/Time of Observation (YYYYMMDDHHMMSS) |
| OBX-15 | Producer ID |
| OBX-16 | Responsible Observer |

***At least one OBX must be included under each OBR segment.**

For any report type, only OBX-5 will be displayed.



Escape Characters in the Default Radiology Interface

| Escape Character | Replaced With |
|------------------|-----------------|
| \S\ | ^ |
| \T\ | & |
| \.br\ | Carriage Return |

The NTE (Notes and Comments) Segment

| | Segment Type (NTE) |
|-------|--------------------|
| NTE-1 | Sequence Number |
| NTE-2 | Comment Source |
| NTE-3 | Comment Text |

The XchangeHL7 has a limit on the length of any NTE segment of 35 characters or to the nearest word.

If longer notes are necessary, multiple NTE segments will be required.



Sample HL7 Message and Screenshot of the Result in SOAPware

SOAP Notes Labs Pathology Radiology Misc. History_Physicals Printed Encounters

- ABDOMEN 2V FLAT/UPRIGHT

Testing Facility Name: FAKE,FAKE
123 W.Crossover RD. Phys: Doctor,Test
Fayetteville, AR 99999 DOB: 99/99/9999 Age: 9 Sex: M
Acct: G999999999999999 Loc: G.ER
Phone #: 999-999-9999 Exam Date: 99/99/9999 Status: REG ER
Fax #: 999-999-9999 Radiology No:
Unit No: G999999999

Exams: 999999999 ABDOMEN 9V FLAT/UPRIGHT

Abdominal series

CLINICAL INDICATION: Pain, nausea

COMPARISON: None

FINDINGS:
Two abdominal views demonstrate normal bowel gas pattern without bowel
dilation or free air. Surgical clips in the left upper quadrant are
seen.

IMPRESSION:

9. No evidence for bowel obstruction.
9. No free air.
9. Postsurgical clips in the left upper quadrant.

** Electronically Signed by Test Doctor M.D. on 99/99/9999 at 9999 **
Reported and Signed by: Test Doctor, M.D.

CC:

Technologist: Tech, CRT
Transcribed Date/Time: 99/99/9999 (9999)
Transcriptionist: GRADVR
Printed Date/Time: 99/99/9999 (9999) Batch No: N/A

PAGE 9 Signed Report

MSH|^~\&|RAD|COCRX|SOAPWARE|TestingFacility|201101032200||ORU^R01|RXGTPACS.1.914318
PID|1||X9999999||Doe^John||20010125|M|||||||X999999
OBR|1|RX001232769| - ABDOMEN 2V FLAT/UPRIGHT|ABD2V^ - ABDOMEN 2V

FLAT/UPRIGHT^RAD|S||201101032157|||||||ARROYO123^TESTDOC^NOVO||||||F||||||OYO123
OBX|1|TX|001232769^- ABDOMEN 2V FLAT/UPRIGHT|1| \.br\ Testing Facility Name:
FAKE,FAKE\.br\ 123 W.Crossover RD. Phys: Doctor,Test\.br\ Fayetteville, AR 99999
DOB: 99/99/9999 Age: 9 Sex: M.br\ Acct: G999999999999 Loc: G.ER \.br\
Phone #: 999-999-9999 Exam Date: 99/99/9999 Status: REG ER\.br\ Fax#:
999-999-9999 Radiology No: \.br\ Unit No: G999999999999\.br\ \.br\ \.br\
\.br\ \.br\ \.br\ Exams: 9999999999 ABDOMEN 9V FLAT/UPRIGHT\.br\ \.br\ Abdominal
series\.br\ \.br\ CLINICAL INDICATION: Pain, nausea\.br\ \.br\ COMPARISON: None\.br\
\.br\ FINDINGS:\.br\ Two abdominal views demonstrate normal bowel gas pattern without
bowel\.br\ dilatation or free air. Surgical clips in the left upper quadrant are\.br\ seen.\.br\
\.br\ IMPRESSION:\.br\ \.br\ 9. No evidence for bowel obstruction.\.br\ 9. No free air. \.br\
9. Postsurgical clips in the left upper quadrant. \.br\ \.br\ \.br\ ** Electronically Signed by
Test Doctor M.D. on 99/99/9999 at 9999 ** \.br\ Reported and Signed by: Test Doctor,
M.D.\.br\ \.br\ \.br\ \.br\ \.br\ \.br\ \.br\ \.br\ \.br\ \.br\ \.br\ \.br\ \.br\ CC: \.br\ \.br\
Technologist: Tech, CRT \.br\ Transcribed Date/Time: 99/99/9999 (9999)\.br\
Transcriptionist: GRADVR\.br\ Printed Date/Time: 99/99/9999 (9999) Batch No: N/A \.br\ \.br\
PAGE 9 Signed Report



SOAPwareXchangeHL7 Pathology Interface Specifications

SOAPwareXchangeHL7 is the interface module allowing HL7-compliant interfaces between the SOAPware® charting product and other HL7-compliant systems.

This lesson describes the specific manner in which HL7 is implemented in SOAPwareXchangeHL7, and how the various standard fields will be used.

SOAPwareXchangeHL7 accepts HL7-compliant messages from other systems, and uses them to create formatted reports in a chart section of the appropriate SOAPware® chart. If the patient described in the PID (patient identifier) section of the HL7 message cannot be matched, it will be added to a queue for the SOAPware user to handle. SOAPwareXchangeHL7 uses the matching algorithm below to determine if a patient already exists in SOAPware®

Patient Matching Process

An incoming record will be considered to be a match to a SOAPware® patient if:

External ID is found in patient map, AND

Birthdate matches, OR

Last name matches

OR

Social Security numbers match, AND

Birthdate matches, AND

Last name matches, AND

First name matches

OR

First name and Last name matches, AND



Birthdate matches, AND

Sex matches

So a match can be made on:

First Name AND Last Name AND Birthdate

AND

Sex OR Social Security Number

Results-Only Interface

At this time all HL7 interfaces implemented with SOAPwareXchangeHL7 will be results-only. Bi-directional interfaces are being evaluated for future implementation. Because of this, SOAPwareXchangeHL7 only processes results messages (ORU).

A standard ORU message would follow this format:

MSH

PID

{ORC

[NTE]}

{OBR

[NTE]}

{OBX

[NTE]}



Communications

Matters of communication are between the lab and the site. SOAPware®, Inc does not provide communication services.

SOAPwareXchangeHL7 supports file-based or TCP-based interfaces. A file based interface will consist of the interfacing system, or system user, depositing HL7 messages in a specified location on the SOAPwareXchangeHL7 machine. SOAPwareXchangeHL7 will then retrieve and parse these messages. When the messages have been parsed, SOAPwareXchangeHL7 will remove them.

A TCP based interface will require a TCP connection between SOAPwareXchangeHL7 and the sending system. SOAPwareXchangeHL7 will listen for incoming messages, and parse them as they arrive. SOAPwareXchangeHL7 will always return an ACK messages for TCP messages received.

File-based

File based communication is the preferred communication method and allows for easiest troubleshooting for SOAPware Support. All incoming lab messages should be deposited to the same directory. This directory must be reserved for the sole purpose of incoming messages; no other file types or information should be stored there. SOAPwareXchangeHL7 will remove each file after processing.

TCP

Current versions of SOAPwareXchangeHL7 are only capable of monitoring a single port. If multiple labs are interfaces to the same site, one lab may use the TCP connection. The other labs must use a file-based method, depositing result files into the same directory.

The TCP connection should not be closed after each send, as this will require the SOAPwareXchangeHL7 user to reset the connection from their end.

The XchangeHL7 will automatically send an ACK after each report is received. This cannot be controlled or altered via the XchangeHL7 GUI.



While we realize the value of TCP connections and offer these, we do not have the resources to troubleshoot them, and will recommend a file-based solution if problems turn up with the connection. If a sending facility/application has issues with connecting to a specific port on a clients local network, SOAPware staff will recommend contacting the clients IT personnel for further troubleshooting.

If other communication methods are required, such as dial-up file transfers, the SOAPware®, Inc. programming team can evaluate the possibility of creating a transfer program for an additional fee.

Segment Descriptions and Legend

| Segment | Description |
|---------|------------------------|
| MSH | Message Header |
| PID | Patient Identification |
| ORC | Common Order |
| OBR | Observation Request |
| OBX | Observation |
| NTE | Notes and Comments |

BOLDED fields are required.

Each PID segment requires a unique MSH segment.



The MSH (Message Header) Segment

| | |
|--------------|--|
| MSH-1 | Segment Type ID ('MSH') |
| MSH-2 | Field Delimiter (' ') Component Delimiter (sub-subfield) ('^') Repeat Delimiter (subfield) ('~') Escape character ('\') Sub-component delimiter ('&') |
| MSH-3 | Sending Application |
| MSH-4 | Sending Facility |
| MSH-5 | Receiving Application |
| MSH-6 | Receiving Facility |
| MSH-7 | Date/Time of Message (YYYYMMDDHHMM) |
| MSH-8 | Security |
| MSH-9 | Message Type |
| MSH-10 | Message Control ID |
| MSH-11 | |
| MSH-12 | Version '2.1'=Release 2.1 '2.2'=Release 2.2 |
| MSH-13 | Sequence Number |
| MSH-14 | Continuation Pointer |
| MSH-15 | Accept Acknowledgment Type |
| MSH-16 | Application Acknowledgment Type |
| MSH-17 | Country Code |

SOAPwareXchangeHL7 requires the MSH segment to be the first in the file. We do not accept FHS, BHS, or any other information before the MSH segment.

A separate MSH segment is required for each PID segment in the file.



The Sending Application value in MSH-3 is used by SOAPwareXchangeHL7 to determine the source of the message and the section in SOAPware the report will be translated. This value should remain consistent for any interfaces using the same delivery application/company. If a Lab/LIS will be sending multiple result types or multiple values in MSH-3, this must be indicated in the testing phase and samples sent for each.

This value will be displayed in the footer of the lab report, as "Sending Application". Messages parsed through this interface will be filed in the "Labs" section of the patient chart.

The value in MSH-4 will be displayed in the footer of the lab report as "Sending Facility."



The PID (Patient Identifier) Segment

| | Segment Type ID ('PID') |
|---------------|---|
| PID-1 | Patient ID |
| PID-2 | External Patient ID |
| PID-3 | Patient ID |
| PID-4 | Alternate Patient ID |
| PID-5 | Patient Name: <ul style="list-style-type: none">•Last Name•First Name•Middle Initial•Suffix (e.g., Jr., III.)•Prefix (e.g., DR)•Degree (e.g., MD) |
| PID-6 | Mother's Maiden Name |
| PID-7 | Patient Birth Date |
| PID-8 | Patient Sex |
| PID-9 | Patient Alias |
| PID-10 | Patient Race |
| PID-11 | Patient Address |
| PID-12 | Patient County Code |
| PID-13 | Patient Home Phone Number |
| PID-14 | Patient Work Phone Number |
| PID-15 | Language – Patient |
| PID-16 | Patient Marital Status <ul style="list-style-type: none">'S' = Separated'D' = Divorced'M' = Married'I' = Single'W' = Widowed |
| PID-17 | Patient Religion |
| PID-18 | Patient Account Number |
| PID-19 | Patient SSN Number |
| PID-20 | Patient Driver's License Number |
| PID-21 | Patient Mother's Identifier |
| PID-22 | Patient Ethnic Group |
| PID-23 | Patient Birth Place |
| PID-24 | Multiple Birth Indicator |
| PID-25 | Birth Order |
| PID-26 | Citizenship |
| PID-27 | Veterans Military Status |

The PatientID in PID-3 will be entered into a matching table. This ID can be anything, as long as it is unique and consistent per patient. First Name, Last Name, Birthdate, Sex, and Social Security Number are all used for the patient matching algorithm. Omitting any of this information may



cause the record to be queued for manual assignment. Demographic information included in the PID segment will not be used to update the demographics in the patient chart.

Certain elements from the PID segment and other segments will form a report header at the top of each pathology report. This includes; First and Last name, ordering date, ordering provider, and others general information.



The ORC (Common Order) Segment

| | |
|--------|---|
| ORC-1 | Order Control :“RE”= Results |
| ORC-2 | Placer Order Number |
| ORC-3 | Accession Number |
| ORC-4 | Placer Group Number <ul style="list-style-type: none">•Unique Group ID•Placer application ID |
| ORC-5 | Order Status |
| ORC-6 | Response Flag |
| ORC-7 | Quantity Timing |
| ORC-8 | Parent |
| ORC-9 | Date/Time of Transaction (YYYYMMDDHHMMSS) |
| ORC-10 | Entered By |
| ORC-11 | Verified By |
| ORC-12 | Ordering Provider <ul style="list-style-type: none">•ID/UPIN/NPI•Last Name |
| ORC-13 | Enterer's Location |
| ORC-14 | Call Back Phone Number |
| ORC-15 | Order Effective Date (YYYYMMDDHHMMSS) |
| ORC-16 | Order Control Code Reason |
| ORC-17 | Entering Organization |
| ORC-18 | Entering Device |
| ORC-19 | Action By |

The Accession Number in ORC-3 or OBR-3 is used for report matching purposes. When a message comes in with an accession number that already exists in SOAPware®, the existing report will be updated or replaced, depending on the result status of the existing report. Result



status from the ORC segment will be displayed as the report status.

| Existing Report | Incoming Message | Action Taken |
|-----------------|------------------|--|
| Partial/Pending | Final | Existing Report is Replaced |
| Final/Corrected | Partial/Pending | Incoming Report is Discarded |
| Final/Corrected | Final/Corrected | Incoming Report is Appended to Existing Report |

Ordering Provider information will be read from either ORC-12, or OBR-16. A physician ID of some sort is required in one of those fields. Last Name will be used as well, if included.



The OBR (Observation Request) Segment*

| | |
|--------|---|
| OBR-1 | Sequence Number - OBR |
| OBR-2 | Placer Order Number |
| OBR-3 | Accession Number |
| OBR-4 | Universal Service ID |
| OBR-5 | Priority |
| OBR-6 | Requested Date/Time |
| OBR-7 | Observation Date/Time Format - (YYYYMMDDHHMMSS) |
| OBR-8 | Observation End Time |
| OBR-9 | Collection Volume |
| OBR-10 | Collector Identifier |
| OBR-11 | Action Code |
| OBR-12 | Danger Code |
| OBR-13 | Relevant Clinical Information |
| OBR-14 | Specimen Received Date/Time12() |
| OBR-15 | Specimen Source |
| OBR-16 | Ordering Provider <ul style="list-style-type: none">• Physician ID / Provider Number• Physician Last Name• Physician First Name |
| OBR-17 | Order Callback Number |
| OBR-18 | Placer Field 1 |
| OBR-19 | Placer Field 2 |
| OBR-20 | Filler Field 1 |
| OBR-21 | Filler Field 2 |
| OBR-22 | Date/Time Observations Reported (YYYYMMDDHHMM) |
| OBR-23 | Filler's Charge to Practice |
| OBR-24 | Filler's Section ID |
| OBR-25 | Order Result Status |
| OBR-26 | Parent Result |
| OBR-27 | Quantity/Timing |
| OBR-28 | Result Copies To |
| OBR-29 | Parent |
| OBR-30 | Transportation Mode |
| OBR-31 | Reason For Study |
| OBR-32 | Principle Interpreter of Results |
| OBR-33 | Assisting Interpreter of Results |
| OBR-34 | Technician |
| OBR-35 | Transcriptionist |
| OBR-36 | Scheduled Date / Time |

***At least one OBR must be included under each ORC segment.**

The Accession Number will be read from OBR-3 if it is not present in ORC-3.



Every OBR-4^2 under the same ORC will be combined to form the title of the report in SOAPware®. Each ORC segment will trigger a new report. If any OBR-4^2 is not populated, it will defer to OBR-3 to generate the report title.

OBR-7 will appear in the report as the Report Date. An ordering physician ID will be expected in OBR-16 if it was not present in ORC-12.

The SOAPwareXchangeHL7 will currently only accept and process results for Ordering Providers, and will not process CC providers from OBR-28.

The OBX (Observation) Segment*

| | |
|--------|---|
| OBX-1 | Sequence Number - OBX |
| OBX-2 | Value Type |
| OBX-3 | Observation Identifier |
| OBX-4 | Observation Sub ID |
| OBX-5 | Observation Value(result) |
| OBX-6 | Units of Measure |
| OBX-7 | Reference Ranges (low - high, ex: 1.5 - 10.2) |
| OBX-8 | Abnormal Flags |
| OBX-9 | Probability |
| OBX-10 | Nature of Abnormal Test |
| OBX-11 | Observation Result Status |
| OBX-12 | Date/Time of Last Change |
| OBX-13 | User-Defined Access Checks |
| OBX-14 | Date/Time of Observation (YYYYMMDDHHMMSS) |
| OBX-15 | Producer ID |
| OBX-16 | Responsible Observer |

***At least one OBX must be included under each OBR segment.**

For any report type, only OBX-5 will be displayed.



Escape Characters in the Default Pathology Interface

| Escape Character | Replaced With |
|------------------|-----------------|
| \S\ | ^ |
| \T\ | & |
| \.br\ | Carriage Return |

The NTE (Notes and Comments) Segment

| | |
|-------|-----------------------|
| NTE-1 | Sequence Number - NTE |
| NTE-2 | Comment Source |
| NTE-3 | Comment Text |

The XchangeHL7 has a limit on the length of any NTE segment of 35 characters or to the nearest word.

If longer notes are necessary, multiple NTE segments will be required.

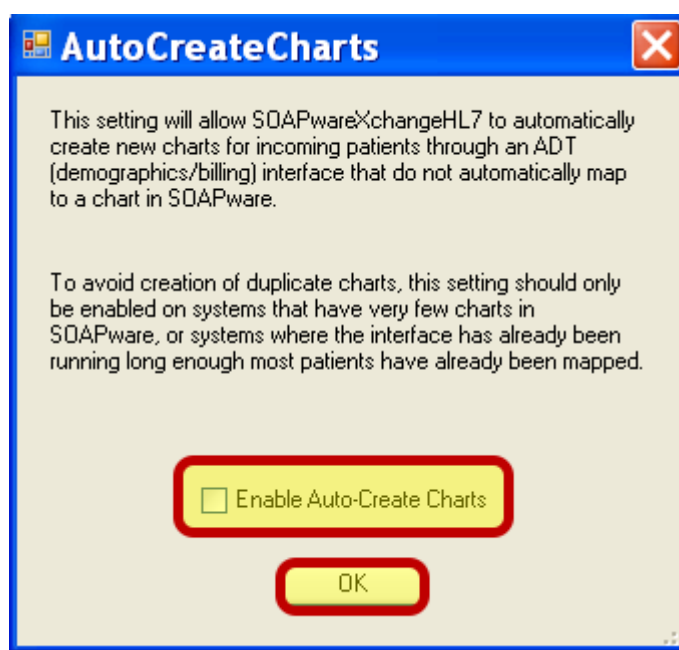


SOAPwareXchangeHL7 Demographics Interface Specifications

This lesson describes the specific manner in which HL7 is implemented in SOAPwareXchangeHL7, and how the various standard fields will be used.

SOAPwareXchangeHL7 accepts HL7-compliant messages from other systems, and uses them to create formatted reports in a chart section of the appropriate SOAPware® chart. In the case of ADT messages, it is assumed that the patient does not already exist in SOAPware. The XchangeHL7 will use the PID (Patient Identifier) segment to create a new chart in SOAPware.

You will first need to enable the Auto Create Charts function in the SOAPwareXchangeHL7. This is found under Settings > Advanced > Auto Create Charts.



Check the "Enable Auto-Creat Charts" box, then Click OK.

Communications

Matters of communication are between the lab and the site. SOAPware®, Inc does not provide communication services.

SOAPwareXchangeHL7 supports file-based or TCP-based interfaces. Afile based interface will consist of the interfacing system, or system user, depositing HL7 messages in a specified



location on the SOAPwareXchangeHL7 machine. SOAPwareXchangeHL7 will then retrieve and parse these messages. When the messages have been parsed, SOAPwareXchangeHL7 will remove them.

A TCP based interface will require a TCP connection between SOAPwareXchangeHL7 and the sending system. SOAPwareXchangeHL7 will listen for incoming messages, and parse them as they arrive. SOAPwareXchangeHL7 will always return an ACK messages for TCP messages received.

File-based

File based communication is the preferred communication method and allows for easiest troubleshooting for SOAPware Support. All incoming lab messages should be deposited to the same directory. This directory must be reserved for the sole purpose of incoming messages; no other file types or information should be stored there. SOAPwareXchangeHL7 will remove each file after processing.

TCP

Current versions of SOAPwareXchangeHL7 are only capable of monitoring a single port. If multiple labs are interfaces to the same site, one lab may use the TCP connection. The other labs must use a file-based method, depositing result files into the same directory.

The TCP connection should not be closed after each send, as this will require the SOAPwareXchangeHL7 user to reset the connection from their end.

While we realize the value of TCP connections and offer these, we do not have the resources to troubleshoot them, and will recommend a file-based solution if problems turn up with the connection. If a sending facility/application has issues with connecting to a specific port on a clients local network, SOAPware staff will recommend contacting the clients IT personnel for further troubleshooting.

The XchangeHL7 will automatically send an ACK after each report is received. This cannot be controlled or altered via the XchangeHL7 GUI.

If other communication methods are required, such as dial-up file transfers, the SOAPware®, Inc. programming team can evaluate the possibility of creating a transfer program for an additional fee.



The MSH (Message Header) Segment

| | |
|---------------|--|
| MSH-1 | Segment Type ID ('MSH') |
| MSH-2 | Field Delimiter (' ') Component Delimiter (sub-subfield) ('^') Repeat Delimiter (subfield) ('~') Escape character ('\') Sub-component delimiter ('&') |
| MSH-3 | Sending Application |
| MSH-4 | Sending Facility |
| MSH-5 | Receiving Application |
| MSH-6 | Receiving Facility |
| MSH-7 | Date/Time of Message (YYYYMMDDHHMM) |
| MSH-8 | Security |
| MSH-9 | Message Type |
| MSH-10 | Message Control ID |
| MSH-11 | |
| MSH-12 | Version '2.1' = Release 2.1 '2.2' = Release 2.2 |
| MSH-13 | Sequence Number |
| MSH-14 | Continuation Pointer |
| MSH-15 | Accept Acknowledgment Type |
| MSH-16 | Application Acknowledgment Type |
| MSH-17 | Country Code |

The Sending Application value in MSH-3 is used by SOAPwareXchangeHL7 to determine the source of the message and the proper parser to invoke. This value must be "ADT" unless a custom interface parser has been developed.

Receiving Application in MSH-5 must be "SOAPWARE."

The EVN (Event Type) Segment

| | |
|--------------|--------------------------------|
| EVN-1 | Event Type Code |
| EVN-2 | Recorded Date Time |
| EVN-3 | Date/Time Planned Event |
| EVN-4 | Event Reason Code |
| EVN-5 | Operator ID |
| EVN-6 | Event Occurred |
| EVN-7 | Event Facility |

Possible values for EVN-1 are:

A01 - admit a patient
A04 - register a patient



A05 - pre-admit a patient
A08 - update patient information
A10 - patient arriving
A31 - update patient information

All of these codes will result in an update of demographic information in SOAPware®, and the creation of a new chart if necessary.

The PID (Patient Identifier) Segment

| | Segment Type ID ('PID') |
|--------|--|
| PID-1 | Patient ID |
| PID-2 | External Patient ID |
| PID-3 | Patient ID |
| PID-4 | Alternate Patient ID |
| PID-5 | Patient Name: <ul style="list-style-type: none">• Last Name• First Name• Middle Initial• Suffix (e.g., Jr., III,)• Prefix (e.g., DR)• Degree (e.g., MD) |
| PID-6 | Mother's Maiden Name |
| PID-7 | Patient Birth Date |
| PID-8 | Patient Sex |
| PID-9 | Patient Alias |
| PID-10 | Patient Race |
| PID-11 | Patient Address |
| PID-12 | Patient County Code |
| PID-13 | Patient Home Phone Number |
| PID-14 | Patient Work Phone Number |
| PID-15 | Language – Patient |
| PID-16 | Patient Marital Status 'S' = Separated 'D' = Divorced 'M' = Married 'I' = Single 'W' = Widowed |
| PID-17 | Patient Religion |
| PID-18 | Patient Account Number |
| PID-19 | Patient SSN Number |
| PID-20 | Patient Driver's License Number |
| PID-21 | Patient Mother's Identifier |
| PID-22 | Patient Ethnic Group |
| PID-23 | Patient Birth Place |
| PID-24 | Multiple Birth Indicator |
| PID-25 | Birth Order |
| PID-26 | Citizenship |
| PID-27 | Veterans Military Status |

The Patient ID in PID-3 will be entered into a matching table. This ID is required to be unique for each patient. First Name, Last Name, Birthdate, Sex, and Social Security Number are all used for the patient matching algorithm. Omitting any of this information may cause the record to be



queued for manual assignment. Demographic information included in the PID (Patient Identifier) segment will be used to update the demographics in the patient chart.

The PV1 (patient visit) Segment

The doctor ID and name from PV1-7 (attending doctor) will be used to create the physician mapping. Once established, XchangeHL7 will assign that primary provider to newly created charts.

The IN1 (Insurance) Segment

| | |
|--------|---|
| IN1-1 | Set ID IN1 |
| IN1-2 | |
| IN1-4 | Insurance Company Name |
| IN1-5 | Insurance Company Address <ul style="list-style-type: none">• Address 1• Address 2• City• State• Zip Code |
| IN1-6 | Insurance Company Contact Name <ul style="list-style-type: none">• First Name• Last Name |
| IN1-7 | Insurance Company Contact Phone Number |
| IN1-8 | Group Number |
| IN1-9 | Group Name |
| IN1-11 | Group Employer Name |
| IN1-12 | Plan Effective Date |
| IN1-13 | Plan Expiration Date |
| IN1-16 | Name of Insured <ul style="list-style-type: none">• First Name• Last Name• Middle |
| IN1-17 | Insured's Relationship to Patient |
| IN1-18 | Insured's Date of Birth |
| IN1-19 | Insured's Address |
| IN1-36 | Policy Number |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

Accepted Insured Relation Codes:

00 Self



- 01 Spouse
- 04 Grandfather or Grandmother
- 05 Grandson or Granddaughter
- 07 Nephew or Niece
- 09 Adopted Child
- 10 Foster Child
- 15 Ward
- 17 Stepson or Stepdaughter
- 19 Child
- 20 Employee
- 21 Unknown
- 22 Handicapped Dependent
- 23 Sponsored Dependent
- 24 Dependent of a Minor Dependent
- 29 Significant Other
- 32 Mother
- 33 Father
- 34 Other Adult
- 36 Emancipated Minor



39 Organ Donor

40 Cadaver Donor

41 Injured Plaintiff

43 Child Where Insured Has No Financial Responsibility

53 Life Partner

G8 Other Relationship



SOAPware compatible Labs and LIS software/services

Here you will find a list of lab companies and Lab Information Systems (LIS) that currently have interfaces and are compatible with SOAPware?

- 4Medica/CPL
- Accenx
- ACL Laboratory*
- ACM Medical Laboratory
- AEGIS Lab
- AEL Laboratory*
- AIM Laboratories*
- Ameripath
- Ameritox Medication Monitoring Solutions
- Anrtim Labs*
- Atlas Medical Software**
- Aurora Diagnostics
- Avisena Practice Management
- Axolotl-OptumInsight**
- Bon Secours Lab*
- BioReference
- CareEvolve**



- CBLPath
- CDI Radiology*
- Centrex Clinical Laboratories
- Cerner Corporation (Millennium, CoPath)**
- Certify Data Systems**
- Central Coast Pathology*
- Circa Design**
- Comtron**
- Corepoint Health**
- CPSI ChartLinc EMR Portal**
- Cognoscenti Health Institute/CPL*
- CriticalKey**
- Dianon/Labcorp
- Dynacare Laboratories*
- DVALabs - Division of Total Renal Laboratories*
- Ellkay**
- Emdeon**
- Enzo Clinical Labs*
- Foundation Laboratories*



- Halfpenny Technology**
- HCAHealthcare
- McKesson's Horizon Lab LIS
- Healthlab/Central Dupage*
- HEALTHeLINK*
- Healthland
- Health Diagnostic Laboratories
- Health Network Laboratories
- Interbit Data**
- Intermountain Healthcare*
- Labcorp
- LabDAQ**
- LIGOLAB**
- Fletcher Flora Labpak**
- LabTrak LIS**
- Labpak LIS (Merge Healthcare)**
- Legacy Health*
- Lifepoint Informatics**
- Medcom Lab Manager



- Meditech**
- Medical Diagnostics Laboratories
- Medicity**
- MedLink
- Medstar Laboratory Inc.*
- Mesa Lab Equipment (Interpath)
- MobileMD**
- Munson Healthcare Systems*
- North Shore LIJHS*
- Northern Plains Lab*
- Novo Innovations**
- Orchard Software**
- OURLab
- Pacific Physicians Lab*
- Paragon**
- Pathologists Regional Laboratory*
- PathologyAssociates Medical Laboratories
- Pathology Inc.*
- PeaceHealth Laboratories* (formerly Oregon Medical Labs)



- Physicians Medical Laboratories*
- Providence Laboratory Services*
- PROLIS**
- PeaceHealth Laboratories/Oregon Medical Labs*
- Quest Diagnostics
- RADNET Inc.
- Relay Health**
- Rhode Island Medical Imaging*
- SchuyLab LIS**
- Sheil Medical Labortory*
- Solstas Lab Partners (formerly Spectrum/Carilion Labs)
- Steinberg Diagnostic Medical Imaging*
- S.T.A.R. Radiology*
- Steinberg Diagnostics Imaging Centers*
- Sunrise Medical Laboratories*
- United Laboratories Inc.
- UniPath*
- Westcliff Medical Labs*
- West Pacific Medical Laboratories*



**Indicates regional/local lab*

*** Indicates regional/local lab via LIS listed*

Note:

The SOAPwareXchangeHL7 also interfaces with many other local hospital/regional labs. If you do not see your lab listed, contact SOAPware at 800-455-7627.



Auto-start for SOAPwareXchangeHL7 via Command Line

The SOAPwareXchangeHL7 can now be invoked from the command line. Place the script in a Batch file & setup a scheduled task to run at startup (etc), create a logon script, or place in the Start up Folder.

With this functionality, the XchangeHL7 can be scripted to start automatically after a reboot.

For SOAPwareXchangeHL7:

Command format:

SOAPwareXchangeHL7.exe -**ID** soapware -**PW** soapware -Server localhost -**Port** 5432 -Drive C
-Path "Program Files\SOAPware\SOAPwareXchangeHL7\Inbox" -Interval 5 -Listen 0

NOTE: The quotes around the path are necessary due to the space in Program Files.

Terms

ID - user ID for logging into SOAPware

PW - password for logging into SOAPware

Server - db server

Port - db port number

Drive - the drive of the location to scan for incoming results

Path - the path to the location to scan for incoming results, minus the drive letter

Interval - the scan interval

Listen - the port to listen on



SOAPwareXchangeHL7 Quick Reference

This lesson is intended for HL7 interface project managers, technical development and others assisting with the implementation of a HL7 interface. It will highlight some of the the rules that the SOAPwareXchangeHL7 interfaces will follow in regard to segment structure , and will save you and your developers time in implementing an interface with SOAPwareXchangeHL7. While this applies to all interfaces, there are some rules listed that will apply to only some.

This lesson also describes the preferred implementation process for all HL7 interfaces with SOAPware and outlines some key points that may differ from other vendors. By following this implementation process, we find we are able to finalize an interface in the most timely manner.

SOAPwareXchangeHL7 Segment Requirements and Constraints

MSH Segment

- SOAPwareXchangeHL7 requires the MSH segment to be the first in the file. We do not accept FHS, BHS, or any other information before the MSH segment.
- Aseparate MSH segment is required for each PID segment in the file.
- MSH-3 may not be blank. We require an ID in this field to identify the sending lab so we can invoke the correct parser within SOAPwareXchangeHL7. The ID can be anything*, as long as it is consistent for all messages. Examples include the name of your lab, or acronym, or even the word LAB.

*For all new interfaces where SOAPware has not implemented an interface with the sending facility and LIS software before, it is best to use a send a generic tag if at all possible. These ID's correspond to what parser you want to invoke in the SOAPwareXchangeHL7. They are: Lab interface = LAB, Pathology interface = PATH, Radiology interface = RAD, Transcription interface = TRANS.

PID Segment

- Apatient identifier is absolutely required in PID-3, to allow us to create patient mappings.



This ID can be anything, as long as it is unique and consistent per patient.

- First and Last name are also required in the PID segment. If either is not contained in the PID the message will be rejected.

ORC Segment

- While an ORC segment is not required for every interface, when it is not sent the accession number and ordering provider will be read from the OBR segment.
- At least one OBR must be included with each ORC sent.
- Our lab interface is capable of combining received reports by accession or order number. If an accession or order number is provided in ORC-3, it will be used for this purpose.
- For report matching to work correctly in the Lab interface, at least one ORC segment must be sent with each message.

OBR Segment

- An ordering physician identifier is required in OBR-16, component 1. This ID allows us to construct our physician maps which cross-reference SOAPware® users to lab-identified physicians.
- The title of the report created in SOAPware® will consist of the OBR-4 text for each OBR associated with the ORC, appended.
- Some interfaces will read a single "Copy to" provider in OBR-28.1. Anything beyond OBR-28.1 will not currently be read.

OBX Segment

- For textual based interfaces, (Radiology, Pathology, Transcription) only OBX-5 will be displayed.

NTE Segment

- NTE segments are sometimes used to help control formatting. When used for the purpose of



inserting a blank line into the final report, be sure to include a blank NTE-3 in the segment.

- NTE||| will produce a blank line.
NTE|| will not.
- **SOAPwareXchangeHL7 cannot currently process messages with embedded PDF's.**
- **At this time, the SOAPwareXchangeHL7 cannot process messages with CC providers in OBR-28. Only ordering providers that belong to the SOAPware clinic should be sent in OBR-16. Any providers found in OBR-28 will not be processed.**

Implementation Process for SOAPwareXchangeHL7

Here you will find the typical implementation process that SOAPware advocates, description of responsibilities, and constraints that our team requires in order to most effectively implement a new HL7 interface.

Step 1 - Establish the Appropriate License

- Every laboratory, sending facility, and/or LIS software/service that SOAPware has previously built interfaces with is listed on our [approved HL7 interface page](#). If the sending facility and/or LIS is listed on the approved interface page, you may request a quote directly from our Sales Team by emailing **orders@soapware.com**. If the sending facility and/or LIS software/service is NOT listed on the page, please contact **integrations@soapware.com**.
- Our Sales Team will provide a quote for the interface, depending on what result types will be sent. **In order to provide an invoice, our Sales Team must first receive a Purchase Order for those opting to purchase the interface on the clients behalf.**
- Once payment has been received, our Sales Team will issue the client the appropriate license for the SOAPwareXchangeHL7 module. An email is automatically generated to inform the client of its availability and instructs them how to schedule an install appointment with our Support Team.

Step 2 - Connectivity

- The next step is to establish connectivity for message delivery. The majority of SOAPware clients are locally hosted on their own private networks. SOAPware, Inc. does not maintain a



constant connection with their network. As such, **the responsibility of establishing connectivity for message delivery is that of the client and sending facility.** SOAPware, Inc. does not provide connectivity services*.

- The SOAPwareXchangeHL7 can process messages via file-based delivery and/or TCP/IP connection. While it can scan messages from multiple sending facilities through file-based delivery, but can only scan a single port for TCP/IP and therefore may not be available to all sending facilities.

*Some SOAPware users are hosted by the SOAPware Cloud Services (SCS). In this case, the SCS Team will assist in establishing connectivity the clients VPS. If the client is hosted by SCS, you may [submit a ticket](#) to begin the process of establishing connectivity.

Step 3 - Implementation and Testing

- Once connectivity has been established, we may proceed with implementation of the SOAPwareXchangeHL7 interface. We recommend coordinating a single conference call to involve all parties, that is; the client and/or their IT person, the sending facility, the LIS service provider (when applicable) and the SOAPware Support Team. To schedule a resource from the SOAPware Support Team, you may call directly to **800-455-7627 option 2** or email **Support@soapware.com**.
- During the conference call, the SOAPware Support tech will install and configure the SOAPwareXchangeHL7 to process messages into the SOAPware EHR. They will also issue training to the client on the use of the interface.
- Its beneficial to have sample messages from the sending facility at this time to use while training for demonstrative purposes. The SOAPware tech will assist in processing up to 10 sample messages into the SOAPware EHR for validation by the sending facility. They will also instruct the client in how they can produce reports and/or screen shots out of SOAPware for continued validation by the sending facility. **It is the responsibility of the client and sending facility to conduct all future validation/QA testing once the conference call has concluded.** SOAPware, Inc. does not participate in ongoing validation testing, unless specific issues arise.
- If there are issues during validation testing between the client and sending facility, our Support Team is available to assist by [submitting a ticket](#) or calling 800-455-7627 option 2.



Additional implementation considerations

- The SOAPware Support Team is primarily responsible for all HL7 interface implementations. **SOAPware, Inc. does not assign a specific resource an interface project.**, rather the entire Support Team is able to assist through the implementation process.
- Rather than attend **kick-off calls** for interface projects, we advocate a single conference call to be coordinated AFTER connectivity has been established during which the interface will be installed/configured, training offered to the client, and the validation process started.



Others



New Integration Requests

New Integration Requests

SOAPware recognizes the value of building integrations with other software, hardware, and services. We also understand that by forming partnerships with other HIT companies, together we can provide a wider range of solutions for varying practice environments.

To that end, we are working toward providing the ability to build such integrations with SOAPware product offerings through a central SOAPware API, or Application Programming Interface. This will allow outside entities and developers to potentially create integrations between their products/services and the SOAPware Clinical Suite. If you have interest in obtaining access to the SOAPware API once it is made public, please email integrations@soapware.com.

Direct Database Access

We also understand that sometimes outside entities wish to access a clients database directly, either to query for information or to write to the database. And while SOAPware's policy is to not restrict our users to the data that they own completely, we do not support or recommend this scenerio. Below is SOAPware Inc.'s official stance on allowing any outside entity to access the SOAPware database.

SOAPware, Inc. does not recommend, promote, or support direct database access for client personnel or third-party entities contracted with the client. SOAPware, Inc. bears no liability for any issues that may arise from direct database access by a client or third-party entities contracted by the client, nor will SOAPware, Inc. be obligated to provide validation services or backwards compatibility support unless contracted to do so at an additional charge. It is the responsibility of the client's database administrator to issue the credentials required to query the database. Accessing the SOAPware database for any reason not perscribed by SOAPware, Inc. may result in an SOAPware Support's inability to offer assistance and void any existing support contract per the agreed upon terms.

For instances where SOAPware cannot generate the data elements required for an integration with another software/service, we recommend using a third-party interface



partner, which is contracted with SOAPware, Inc. to provide such services. If interested in these services, please contact integrations@soapware.com.



Welch Allyn Vitals

Welch Allyn Vitals device integration

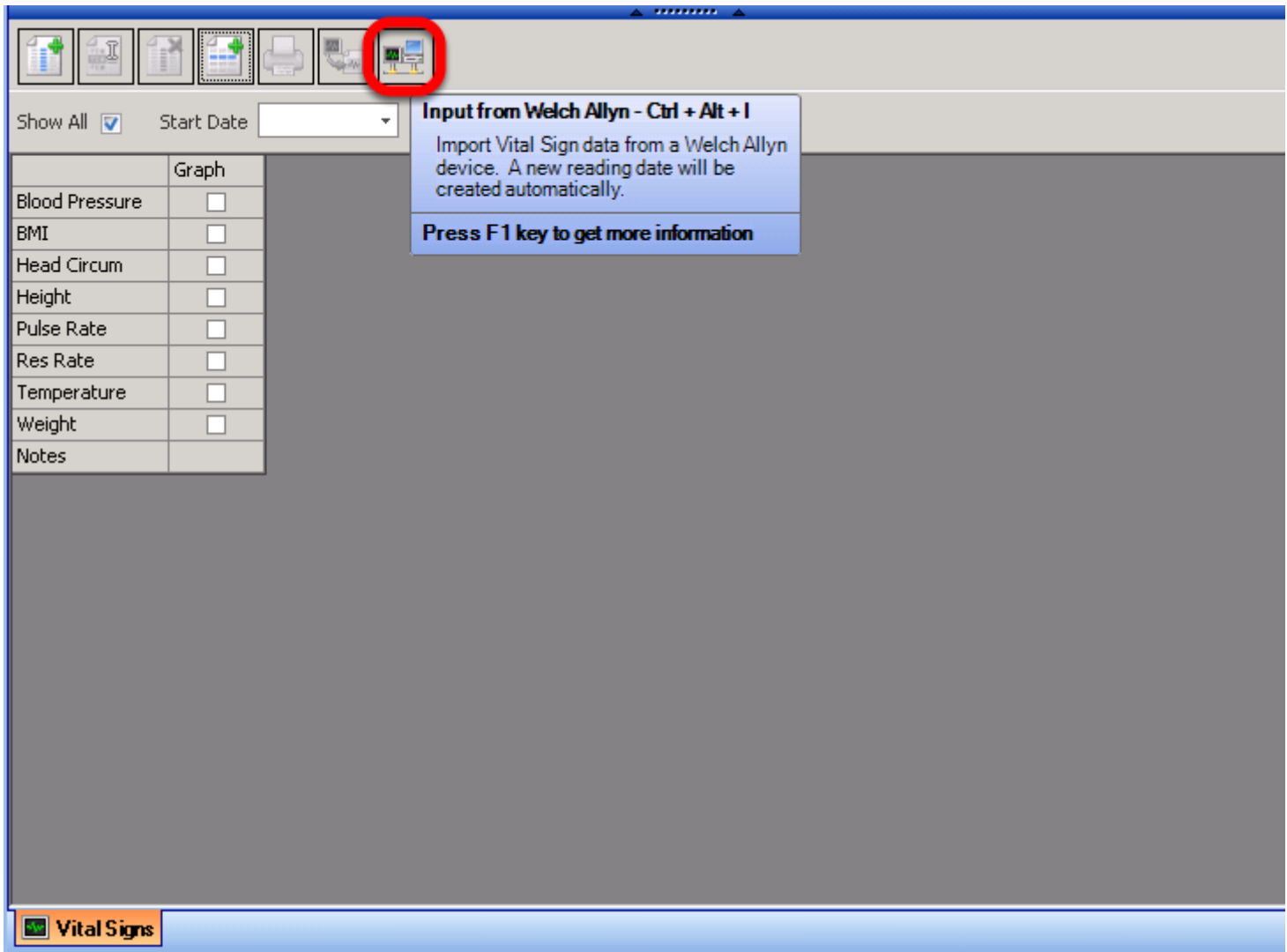


SOAPware 2012.0.3061* supports integration with several Welch Allyn Vitals devices that will allow you to import certain vitals directly into SOAPware. The compatible devices are:

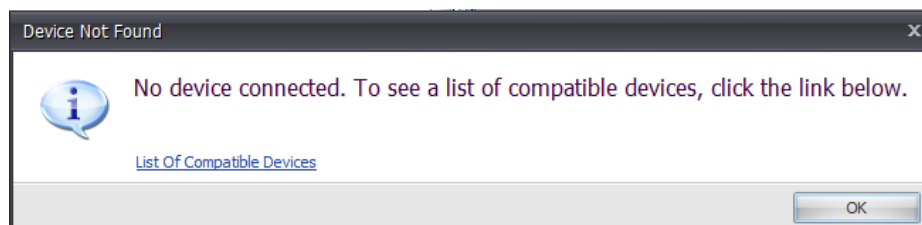
- Spot LXi
- Spot 420 Series**
- VSM 300 Series**

*The integration currently does not work in a hosted environment. SCS clients will have to manually input the vitals.

**Additional connectors/parts may be required to interface with your local PC. Contact your local distributor for more information.



You will notice in the Vital Signs section of SOAPware there is a button that will allow you to input from a Welch Allyn device.



If you click the button and do not have a compatible Welch Allyn vitals device or do not have it plugged in, you will see the message above. There is also a link to the Welch Allyn website that lists the compatible devices with SOAPware.



The screenshot shows the SOAPware Vital Signs interface. At the top, there is a toolbar with icons for adding, editing, deleting, and printing records. Below the toolbar, there are filters for 'Show All' (checked), 'Start Date', and 'End Date'. The main area contains a table of vital signs with checkboxes for each. The 'Graph' column shows a timestamp of 4/19/2013 3:49:06 PM. The 'Weight' field has input boxes for pounds and ounces. A 'Vital Signs' button is located at the bottom left of the interface.

| | Graph | 4/19/2013 3:49:06 PM |
|----------------|--------------------------|--|
| Blood Pressure | <input type="checkbox"/> | 102/69 |
| BMI | <input type="checkbox"/> | |
| Height | <input type="checkbox"/> | |
| O2 Saturation | <input type="checkbox"/> | 99 % |
| Pulse Rate | <input type="checkbox"/> | 74 /min |
| Res Rate | <input type="checkbox"/> | |
| Temperature | <input type="checkbox"/> | 98.4 F |
| Weight | <input type="checkbox"/> | <input type="text" value="0"/> lbs <input type="text" value="0"/> oz |
| Notes | | |

After you have taken the patients vitals with a compatible device, ensured it is connected to the PC where SOAPware is running, and clicked the button to "Input from Welch Allyn", the vitals are populated in the correct fields in SOAPware.