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CACR Registry Patient File Upload (HL7)

Version 0.1 (draft) – June, 2008
Document Created

Version 0.2 (draft) – August 6, 2008
Added – Additional Intake Discharge Smoking Variables

Version 0.3 (draft) – September 22, 2008
Added – Intake Discharge Psycho Social
Added – Intake Discharge Medications Note

Version 12 – March 30, 2009
Changed Naming to coincide with Minimum Dataset Document
Modified – CRProgram data elements
Modified – Service Referrals data elements
Modified – Outcome Measurements data elements
Modified – PsychoSocial data elements
Modified – Stress Test Data
Modified – Removed N/A from IntakeDischarge Smoking

Version 13 – June 25 2009
Added - file naming instructions
Modified – Section 10, Changing Data, clarified “NoSpace” rule for different segments.

Version 14 – June 29 2009

Corrected – lInterimEventtype, should be lInterimEventID

Corrected – items in Psychosocial ending with Performed, added ID.

Corrected – some items in PsychoSocial were misspelled Perfomed, changed to Performed

Added – note about referral, interim, termination events.

Removed – Discharge Occupation from Example.

Modified – Description of Service Referral On/Offsite Exercise Training Three or More Times Per Week

CISSEC CACR HELPS 14

The primary form of entering data into the CACR Registry is electronic transfer of data from another electronic data management system. This document outlines the creation of an HL7 (health language 7) formatted batch file that is compatible with the registry.

Current upload mechanisms for HL7 batch files are secure FTP and manual upload in the program.

Please refer to the current version of the minimum dataset (MDS) for allowable values and further description of fields.

[xxxxx] – An item surrounded by square brackets indicates that the item including brackets must be replaced by a value.

Errors:
The system will automatically identify and report back any problems with the file. A report can be viewed in the main program window.

File Name

The formatting of the file name is very important for the system to recognize and validate the source of the information, as well as uniquely identifying the file. The date/time stamp should be unique to ease identification of the file if any problems occur.

File Type is of .hl7.

[SourceID]_[YYYY][MM][DD][HH][mm].hl7

Source ID

Identification of Data Source

All file interaction with the CACR website will be prefixed with this value to identify the source of information being provided. This integer value will be provided to the end user upon registration with the CACR.

YYYY

Year Date Stamp of File

This portion of data is formatted as YYYY and represents the year the data file was created.

MM

Month Date Stamp of File

This portion of data is formatted as MM and represents the month the data file was created.

DD

Day Date Stamp of File

This portion of data is formatted as DD and represents the month-date the data file was created.

HH

Hour Date Stamp of File

This portion of data is formatted as HH and represents the hour (24hr format) the data file was created.

mm

Minute Date Stamp of File

This portion of data is formatted as mm and represents the minute the data file was created.

Example: 5_200801221654.hl7

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1. Purpose

This document outlines the creation of an HL7 (health language 7) formatted file that is compatible with the CACR registry.

2. Background

The primary form of entering data into the CACR Registry is electronic transfer of data from another electronic data management system.

Please refer to the current version of the minimum dataset (MDS) for allowable values and further description of fields.

3. Health Language 7 Conformance

The CACR Registry has adopted HL7 version 2.3 as the standard for the message format. The standard can be viewed online from the following link.

http://www.hl7.org/Library/standards_non1.htm

4. Communication Protocol

Due to the large numbers of disparate clinical systems that feed the registry, real-time HL7 communication is not supported. Rather, batches of HL7 messages in ascii text can be sent via sFTP (secure file transfer protocol) or uploaded directly via the web application.

Acknowledgement messages will not be sent. Rather, the success or failure of a HL7 batch can be viewed on the web application.

5. Message Formats

The HL7 format that the registry accepts is based on unsolicited observation results.

MSH	Message Header
PID	Patient Identification

```

PV1
{OBR
  {OBX
  }
}

```

```

Patient Visit
Observation Request (repeats)
Observation Result (repeats)

```

6. HL7 Delimiters

Currently the delimiters support by the HL7 registry are as follows:

Delimiter	Suggested Value	Encoding Character Position	Usage
Segment Terminator	<cr> hex 0D	-	Terminates a segment record.
Field Separator		-	Separates two adjacent data fields within a segment. It also separates the segment ID from the first data field in each segment.
Component Separator	^	1	Separates adjacent components of data fields where allowed.
Sub-Component Separator	&	4	Separates adjacent subcomponents of data fields where allowed. If there are no subcomponents, this character may be omitted.
Repetition Separator	~	2	Separates multiple occurrences of a field where allowed.
Escape Character	\	3	Escape character for TX and FT fields. If no escape characters are used in a message, this character may be omitted. However, it must be present if subcomponents are used in the message.

7. Segment Contents

Segment	Seq	Map To DataField	Description
MSH	3	SourceID	Sending Facility
MSH	4		Receiving application, should be "CACR"
MSH	6		Date/Time Of Message
MSH	9		Message Control ID (Uniquely identify message)
PID	3	Hospital Code	Unique Patient identifier. i.e.: MRN
PID	4	MedicareNum	Alternative unique identifier. i.e.: OHIP number
PID	7	DOB	Date/Time of Birth
PID	8	Sex / luGenderID	One character to describe patient sex.
PID	11	PostalCode	Patient Address
PID	15	Primary Language / luLangSpokenID	Preferred Language. In the following format ID^Description. For example for English: en^English
PID	16	Marital Status	Marital status. One character based on lookup table
PID	22	Race / Ethnicity	Only ID from look up table. For example "4"
PV1	2		Required field. Patient Class. Only one char. For example "I"
PV1	19	Data Source Unique ID	Visit number. It is like case number for a patient. All observation information binds to that number. See the Minimum Dataset documentation for further description.
OBR	1		Order Number. For the first order transmitted, the sequence number shall be 1; for the second order, it shall be 2; and so on.
OBR	4		Universal Service ID. Identify subset of the data. In following format ID^Description. For example for Demographics data: DEMO^Demographics

OBX	1	Set ID. For the first value, the sequence number shall be 1; for the second order, it shall be 2; and so on.
OBX	2	Value Type.
OBX	3	Observation Identifier. This field contains a unique identifier for the observation. The format is that of the Coded Element (CE).
OBX	5	Observation Value
OBX	11	Observation Result Status. Currently support only "F" flag

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8. Universal Service ID

Lookup	id	Description	Note	Ordinal
DEMO		Demographics		
SOCIO		Socio Economic Data		
WAITTIME		Wait Time Data		
REFERRAL		Referral Events		
TERMINATION		Terminations		
INTERIM		InterimEvents		
RISKFACTORS		Risk Factors		
SERVICEREF		Service Referrals		
INTAKEMSMT		Intake Measurements		
DISCHARGEMSMT		Discharge Measurements		
INTAKESTRESSTEST		Intake Stress Test		
DISCHARGESTRESSTEST		Discharge Stress Test		
INTAKEOCCUPATION		Intake Occupation		
DISCHARGEOCCUPATION		Discharge Occupation	- Removed, not required	
INTAKESMOKING		Intake Smoking		
DISCHARGESMOKING		Discharge Smoking		
INTAKEMEDICATION		Intake Medications		
DISCHARGEMEDICATION		Discharge Medications		
INTAKEPSYCHOSOCIAL		Intake Psycho-Social Measurements		
DISCHARGEPSYCHOSOCIAL		Discharge Psycho-Social Measurements		

OBR	id	Description	Value Type
DEMO	luConsentID	Consent for Data Collection and Analysis	CF
SOCIO	luEducationID	Education Highest Level Achieved	CF
SOCIO	luResidenceID	Residence	CF
SOCIO	luFamilySupportID	Family Support	CF
SOCIO	luTravelTimeToRehabID	Travel Time To Rehab	CF
WAITTIME	ReferralDate	ReferralDate	DT
WAITTIME	ReferralReceiptDate	ReferralReceiptDate	DT
WAITTIME	luReferralLocationID	Location Referral	
WAITTIME	luAutomaticReferralID	Automatic Referral	
WAITTIME	IntakeVisitDate	Date of Intake Visit	DT
WAITTIME	ProgramAdmissionDate	Date of Program Admission	DT

WAITTIME	ClinicExitDate	Exit Clinic Date	DT
WAITTIME	NutritionalSessionsPrescribed	Nutritional Sessions Prescribed	
WAITTIME	NutritionalSessionsCompleted	Nutritional Sessions Completed	
WAITTIME	PsychologicalSessionsPrescribed	Psychological Sessions Prescribed	
WAITTIME	PsychologicalSessionsCompleted	Psychological Sessions Completed	
WAITTIME	SmokingCessationSessionsPrescribed	Smoking Cessation Sessions Prescribed	
WAITTIME	SmokingCessationSessionsCompleted	Smoking Cessation Sessions Completed	
WAITTIME	VocationalCounsellingSessionsPrescribed	Vocational Counselling Sessions Prescribed	
WAITTIME	VocationalCounsellingSessionsCompleted	Vocational Counselling Sessions Completed	
WAITTIME	ExerciseSessionsPrescribed	Exercise Sessions Prescribed	
WAITTIME	ExerciseSessionsCompleted	Exercise Sessions Completed	
WAITTIME	DischargeDate	Discharge Date	
WAITTIME	WorkReturnDate	Work Return Date	DT
REFERRAL	luReferralEventID	Referral Events(s)	CF
REFERRAL	ReferralEventDate	Referral Event(s) Date	DT
TERMINATION	TerminationDate	Termination(s) Date	DT
TERMINATION	luTerminationTypeID	Termination(s) Type	CF
INTERIM	InterimEventDate	Interim Event(s) Date	DT
INTERIM	luInterimEventID	Interim Event(s) Type	CF
RISKFACTORS	luSedentaryLifestyleID	Sedentary Lifestyle	CF
RISKFACTORS	luHyperlipidemiaID	Hyperlipidemia	CF
RISKFACTORS	luHypertensionID	Hypertension	CF
RISKFACTORS	luSmokingID	Smoking	CF
RISKFACTORS	luFamilyHistoryOfCADID	Family History of CAD	CF
RISKFACTORS	luDiabetesID	Diabetes	CF
RISKFACTORS	luDiabetesTypeID	Diabetes Type	CF
SERVICEREF	luOnSiteExerciseTrainingOncePerWeekID	On-site exercise training: once per week	CF
SERVICEREF	luOnSiteExerciseTrainingTwicePerWeekID	On-site exercise training: twice per week	CF
SERVICEREF	luOnSiteExerciseTrainingThreeTimesPerWeekID	On-site exercise training: three or more times per week	CF
SERVICEREF	luOffSiteExerciseTrainingOncePerWeekID	Off-site exercise training: once per week	CF
SERVICEREF	luOffSiteExerciseTrainingTwicePerWeekID	Off-site exercise training: twice per week	CF
SERVICEREF	luOffSiteExerciseTrainingThreeTimesPerWeekID	Off-site exercise training: three or more times per week	CF
SERVICEREF	luNutrition11CounselID	Nutrition 1:1 counsel	CF
SERVICEREF	luSmokingCessationID	Smoking Cessation	CF

SERVICEREF	luReferralToSmokingCessationProgramID	Referral to Smoking Cessation Program	CF
SERVICEREF	luReferralToStressManagementProgramID	Referral to Stress Management Program	CF
SERVICEREF	luReferralToDepressionCounselingProgramID	Referral to Depression Counseling Program	CF
SERVICEREF	luReferralToAnxietyCounselingProgramID	Referral to Anxiety Counseling Program	CF
INTAKEMSMT	luCCSAnginalID	CCS Angina	CF
INTAKEMSMT	luNYHAClassId	NYHA class	CF
INTAKEMSMT	luLVFunctionID	LV Function	CF
INTAKEMSMT	LVFunctionExact	LV Function Exact	
INTAKEMSMT	FBS	FBS	
INTAKEMSMT	HBA1c	HbA1c	
INTAKEMSMT	TC	TC	
INTAKEMSMT	TG	TG	
INTAKEMSMT	HDLC	HDL-C	
INTAKEMSMT	LDLC	LDL-C	
INTAKEMSMT	TCHDL	TC/HDL	
INTAKEMSMT	SerumCreatinine	Serum creatinine	
INTAKEMSMT	Microalbuminuria	Microalbuminuria	
INTAKEMSMT	hsCRP	hs CRP	
INTAKEMSMT	Weight	Weight	
INTAKEMSMT	Height	Height	
INTAKEMSMT	Waist	Waist	
INTAKEMSMT	Hip	Hip	
INTAKEMSMT	SBP	SBP	
INTAKEMSMT	DBP	DBP	
INTAKEMSMT	PulseRate	Pulse Rate	
DISCHARGEMSMT	luCCSAnginalID	CCS Angina	
DISCHARGEMSMT	luNYHAClassId	NYHA class	
DISCHARGEMSMT	luLVFunctionID	LV Function	
DISCHARGEMSMT	LVFunctionExact	LV Function Exact	
DISCHARGEMSMT	FBS	FBS	
DISCHARGEMSMT	HBA1c	HbA1c	
DISCHARGEMSMT	TC	TC	
DISCHARGEMSMT	TG	TG	
DISCHARGEMSMT	HDLC	HDL-C	
DISCHARGEMSMT	LDLC	LDL-C	

DISCHARGEMSMT	TCHDL	TC/HDL
DISCHARGEMSMT	SerumCreatinine	Serum creatinine
DISCHARGEMSMT	Microalbuminuria	Microalbuminuria
DISCHARGEMSMT	hsCRP	hs CRP
DISCHARGEMSMT	Weight	Weight
DISCHARGEMSMT	Height	Height
DISCHARGEMSMT	Waist	Waist
DISCHARGEMSMT	Hip	Hip
DISCHARGEMSMT	SBP	SBP
DISCHARGEMSMT	DBP	DBP
DISCHARGEMSMT	PulseRate	Pulse Rate
INTAKESTRESSTEST	luStressTestLocationID	Location
INTAKESTRESSTEST	StressTestDate	Date
INTAKESTRESSTEST	RestingSBP	Resting SBP
INTAKESTRESSTEST	PeakSBP	Peak SBP
INTAKESTRESSTEST	RestingDBP	Resting DBP
INTAKESTRESSTEST	PeakDBP	Peak DBP
INTAKESTRESSTEST	RestingHR	Resting HR
INTAKESTRESSTEST	PeakHR	Peak HR
INTAKESTRESSTEST	luGXTProtocolID	GXT Protocol
INTAKESTRESSTEST	ExerciseTime	Exercise Time
INTAKESTRESSTEST	luReasonForTerminationID	Reason for Termination
INTAKESTRESSTEST	luAnginalID	Angina
INTAKESTRESSTEST	Borg10Scale	Borg 10 Scale
INTAKESTRESSTEST	Borg15Scale	Borg 15 Scale
INTAKESTRESSTEST	MaxSTDepression	Max ST Depression (None or write in)
INTAKESTRESSTEST	PeakMETs	Peak METs
INTAKESTRESSTEST	DukeTreadmillScore	Duke Treadmill Score
INTAKESTRESSTEST	luMetsDirectlyMeasuredID	Mets Directly Measured?
DISCHARGESTRESSTEST	luStressTestLocationID	Location
DISCHARGESTRESSTEST	StressTestDate	Date
DISCHARGESTRESSTEST	RestingSBP	Resting SBP
DISCHARGESTRESSTEST	PeakSBP	Peak SBP
DISCHARGESTRESSTEST	RestingDBP	Resting DBP
DISCHARGESTRESSTEST	PeakDBP	Peak DBP
DISCHARGESTRESSTEST	RestingHR	Resting HR

DISCHARGESTRESSTEST	PeakHR	Peak HR
DISCHARGESTRESSTEST	luGXTProtocolID	GXT Protocol
DISCHARGESTRESSTEST	ExerciseTime	Exercise Time
DISCHARGESTRESSTEST	luReasonForTerminationID	Reason for Termination
DISCHARGESTRESSTEST	luAnginalID	Angina
DISCHARGESTRESSTEST	Borg10Scale	Borg 10 Scale
DISCHARGESTRESSTEST	Borg15Scale	Borg 15 Scale
DISCHARGESTRESSTEST	MaxSTDepression	Max ST Depression (None or write in)
DISCHARGESTRESSTEST	PeakMETs	Peak METs
DISCHARGESTRESSTEST	DukeTreadmillScore	Duke Treadmill Score
DISCHARGESTRESSTEST	luMetsDirectlyMeasuredID	Mets Directly Measured?
INTAKEPSYCHOSOCIAL	luAnxietyMeasurePerformedID	Anxiety Measure Performed
INTAKEPSYCHOSOCIAL	AnxietyMeasureScore	Anxiety Measure Score
INTAKEPSYCHOSOCIAL	luAnxietyCutoffID	Anxiety Cutoff
INTAKEPSYCHOSOCIAL	luAnxietyMeasureID	Anxiety Measure
INTAKEPSYCHOSOCIAL	OtherAnxietyMeasure	Other Anxiety Measure Specify
INTAKEPSYCHOSOCIAL	luDepressionMeasurePerformedID	Depression Measure Performed
INTAKEPSYCHOSOCIAL	DepressionMeasureScore	Depression Measure Score
INTAKEPSYCHOSOCIAL	luDepressionCutoffID	Depression Cutoff
INTAKEPSYCHOSOCIAL	luDepressionMeasureID	Depression Measure
INTAKEPSYCHOSOCIAL	OtherDepressionMeasure	Other Depression Measure Specify
INTAKEPSYCHOSOCIAL	luQOLPhysicalPerfromedID	QOL Physical Performed
INTAKEPSYCHOSOCIAL	QOLPhysicalScore	QOL Physical Score
INTAKEPSYCHOSOCIAL	luQOLPhysicalMeasureID	QOL Physical Measure
INTAKEPSYCHOSOCIAL	OtherQOLPhysicalMeasure	Other QOL Physical Measure Specify
INTAKEPSYCHOSOCIAL	luQOLMentalPerformedID	QOL Mental Performed
INTAKEPSYCHOSOCIAL	QOLMentalScore	QOL Mental Score
INTAKEPSYCHOSOCIAL	luQOLMentalMeasureID	QOL Mental Measure
INTAKEPSYCHOSOCIAL	OtherQOLMentalMeasure	Other QOL Mental Measure Specify
INTAKEPSYCHOSOCIAL	luQOLOtherPerformedID	QOL Other Performed
INTAKEPSYCHOSOCIAL	QOLOtherScore	QOL Other Score
INTAKEPSYCHOSOCIAL	luQOLOtherMeasureID	QOL Other Measure
INTAKEPSYCHOSOCIAL	OtherQOLOtherMeasure	Other QOL Other Measure Specify
DISCHARGEPSYCHOSOCIAL	luAnxietyMeasurePerformedID	Anxiety Measure Performed
DISCHARGEPSYCHOSOCIAL	AnxietyMeasureScore	Anxiety Measure Score

DISCHARGEPSYCHOSOCIAL	luAnxietyCutoffID	Anxiety Cutoff
DISCHARGEPSYCHOSOCIAL	luAnxietyMeasureID	Anxiety Measure
DISCHARGEPSYCHOSOCIAL	OtherAnxietyMeasure	Other Anxiety Measure Specify
DISCHARGEPSYCHOSOCIAL	luDepressionMeasurePerformedID	Depression Measure Performed
DISCHARGEPSYCHOSOCIAL	DepressionMeasureScore	Depression Measure Score
DISCHARGEPSYCHOSOCIAL	luDepressionCutoffID	Depression Cutoff
DISCHARGEPSYCHOSOCIAL	luDepressionMeasureID	Depression Measure
DISCHARGEPSYCHOSOCIAL	OtherDepressionMeasure	Other Depression Measure Specify
DISCHARGEPSYCHOSOCIAL	luQOLPhysicalPerformedID	QOL Physical Performed
DISCHARGEPSYCHOSOCIAL	QOLPhysicalScore	QOL Physical Score
DISCHARGEPSYCHOSOCIAL	luQOLPhysicalMeasureID	QOL Physical Measure
DISCHARGEPSYCHOSOCIAL	OtherQOLPhysicalMeasure	Other QOL Physical Measure Specify
DISCHARGEPSYCHOSOCIAL	luQOLMentalPerformedID	QOL Mental Performed
DISCHARGEPSYCHOSOCIAL	QOLMentalScore	QOL Mental Score
DISCHARGEPSYCHOSOCIAL	luQOLMentalMeasureID	QOL Mental Measure
DISCHARGEPSYCHOSOCIAL	OtherQOLMentalMeasure	Other QOL Mental Measure Specify
DISCHARGEPSYCHOSOCIAL	luQOLOtherPerformedID	QOL Other Performed
DISCHARGEPSYCHOSOCIAL	QOLOtherScore	QOL Other Score
DISCHARGEPSYCHOSOCIAL	luQOLOtherMeasureID	QOL Other Measure
DISCHARGEPSYCHOSOCIAL	OtherQOLOtherMeasure	Other QOL Other Measure Specify
INTAKEOCCUPATION	luOccupationID	Occupation
INTAKEOCCUPATION	luEmploymentStatusID	EmploymentStatus
INTAKEOCCUPATION	luDesiredOccupationStatusID	Desired Occupation Status
INTAKEOCCUPATION	luDesiredOccupationStatusAchievedID	Desired Occupation Status Achieved
DISCHARGEOCCUPATION	luOccupationID	Occupation -
DISCHARGEOCCUPATION	luEmploymentStatusID	EmploymentStatus -
DISCHARGEOCCUPATION	luDesiredOccupationStatusID	Desired Occupation Status -
DISCHARGEOCCUPATION	luDesiredOccupationStatusAchievedID	Desired Occupation Status Achieved -
INTAKESMOKING	luSmokingPresentStatusID	Smoking Present Status
INTAKESMOKING	LastSmokeDate	Last Smoke Date
INTAKESMOKING	luSmokeDailyID	SmokeDaily
INTAKESMOKING	SmokeStartAge	SmokeStartAge
INTAKESMOKING	SmokingAmount	Smoking Amount
INTAKESMOKING	COLevel	CO Level
INTAKESMOKING	COLevelDevice	CO Level Measure Device
DISCHARGESMOKING	luSmokingPresentStatusID	Smoking Present Status

DISCHARGESMOKING	LastSmokeDate	Last Smoke Date
DISCHARGESMOKING	luSmokeDailyID	SmokeDaily
DISCHARGESMOKING	SmokeStartAge	SmokeStartAge
DISCHARGESMOKING	SmokingAmount	Smoking Amount
DISCHARGESMOKING	COLevel	CO Level
DISCHARGESMOKING	COLevelDevice	CO Level Measure Device

9. Segment Lookups

Lookup	id	Description
<u>Sex</u>	F	Female
	M	Male
	O	Other
	U	Unknown
<u>Ethnicity</u>	0	Unknown
	1	Aboriginal
	2	Arab/West Asian
	3	Black
	4	Chinese
	5	Filipino
	6	Japanese
	7	Korean
	8	Latin American
	9	South Asian
	10	South East Asian
	11	White/caucasian
	12	not obtained

Marital Status	A	Separated
	D	Divorced
	M	Married
	S	Single
	W	Widowed
	C	Common-Law Union
Patient Class	E	Emergency
	I	Inpatient
	O	Outpatient
	P	Preadmit
	R	Recurring Patient
	B	Obstetrics
Value type	AD	Address
	CE	Coded Entry
	CF	Coded Element With Formatted Values
	CK	Composite ID With Check Digit
	CN	Composite ID And Name
	CP	Composite Price
	CX	Extended Composite ID With Check Digit
	DT	Date
	ED	Encapsulated Data
	FT	Formatted Text (Display)
	MO	Money

NM	Numeric
PN	Person Name
RP	Reference Pointer
SN	Structured Numeric
ST	String Data.
TM	Time
TN	Telephone Number
TS	Time Stamp (Date & Time)
TX	Text Data (Display)
XAD	Extended Address
XCN	Extended Composite Name And Number For Persons
XON	Extended Composite Name And Number For Organizations
XPN	Extended Person Number
XTN	Extended Telecommunications Number
Observ Result Status	C Record coming over is a correction and thus replaces a final result
	D Deletes the OBX record
	F Final results; Can only be changed with a corrected result.
	I Specimen in lab; results pending
	P Preliminary results
	R Results entered -- not verified
	S Partial results
	X Results cannot be obtained for this observation
	U Results status change to Final. without retransmitting results already sent as 'preliminary.' E.g., radiology changes status from preliminary to final
	W Post original as wrong, e.g., transmitted for wrong patient

Languages

ID	Description	ID	Description
aa	Afar	ab	Abkhazian
af	Afrikaans	am	Amharic
ar	Arabic	as	Assamese
ay	Aymara	az	Azerbaijani
ba	Bashkir	be	Byelorussian
bg	Bulgarian	bh	Bihari
bi	Bislama	bn	Bengali; Bangla
bo	Tibetan	br	Breton
ca	Catalan	co	Corsican
cs	Czech	cy	Welsh
da	Danish	de	German
dz	Bhutani	el	Greek
en	English	eo	Esperanto
es	Spanish	et	Estonian
eu	Basque	fa	Persian
fi	Finnish	fj	Fiji
fo	Faeroese	fr	French
fy	Frisian	ga	Irish
gd	Scots, Gaelic	gl	Galician
gn	Guarani	gu	Gujarati
he	Hebrew	ha	Hausa
hi	Hindi	hr	Croatian
hu	Hungarian	hy	Armenian
ia	Interlingua	id	Indonesian
ie	Interlingue	ik	Inupiak
in	Indonesian	is	Icelandic
it	Italian	iu	Inuktitut
iw	Hebrew (obsolete)	ja	Japanese
ji	Yiddish (obsolete)	jw	Javanese

ka	Georgian	kk	Kazakh
kl	Greenlandic	km	Cambodian
kn	Kannada	ko	Korean
ks	Kashmiri	ku	Kurdish
ky	Kirghiz	la	Latin
ln	Lingala	lo	Laothian
lt	Lithuanian	lv	Latvian, Lettish
mg	Malagasy	mi	Maori
mk	Macedonian	ml	Malayalam
mn	Mongolian	mo	Moldavian
mr	Marathi	ms	Malay
mt	Maltese	my	Burmese
na	Nauru	ne	Nepali
nl	Dutch	no	Norwegian
oc	Occitan	om	(Afan), Oromo
or	Oriya	pa	Punjabi
pl	Polish	ps	Pashto, Pushto
pt	Portuguese	qu	Quechua
rm	Rhaeto-Romance	rn	Kirundi
ro	Romanian	ru	Russian
rw	Kinyarwanda	sa	Sanskrit
sd	Sindhi	sg	Sangro
sh	Serbo-Croatian	si	Singhalese
sk	Slovak	sl	Slovenian
sm	Samoan	sn	Shona
so	Somali	sq	Albanian
sr	Serbian	ss	Siswati
st	Sesotho	su	Sundanese
sv	Swedish	sw	Swahili
ta	Tamil	te	Tegulu
tg	Tajik	th	Thai
ti	Tigrinya	tk	Turkmen
tl	Tagalog	tn	Setswana
to	Tonga	tr	Turkish

ts	Tsonga	tt	Tatar
tw	Twi	ug	Uigur
uk	Ukrainian	ur	Urdu
uz	Uzbek	vi	Vietnamese
vo	Volapuk	wo	Wolof
xh	Xhosa	y	Yiddish
yo	Yoruba	za	Zuang
zh	Chinese	zu	Zulu

10. Changing Data:

The system supports incomplete patient data. Multiple uploads may be performed during the patients progress throughout the cardiac rehab program. Also, data elements may be updated/corrected/removed through later uploads.

- Updating Data
 - If a value is present in a field, it will be updated.
- Removing Data
 - If a single space is in the field, the value will be removed.
 - Regarding Referral, Termination, and Interim Events.
 - If a blank space is submitted for the eventID AND the Date, then all events will be removed.
 - If a blank space is submitted for the date, and a valid eventID is supplied, then all the events corresponding that that eventID will be removed.
- Leaving Data alone
 - The rules for leaving data alone depends on the segment being sent.
 - MSH,PID, PV1
 - If a blank value (no space) is in the field, the data will NOT be changed.
 - OBX
 - If the OBX is NOT included in the file, the data will NOT be changed.

11. Full Example

MSH|^~\&|SENDING_APP_JOE|8|CACR||20080922103142||ORU^R01|20080922103142|||||
PID|||bigNumsF11|bigNumsOhipV11|||197302171105|M|||K7N1T3|||en|M|||11|||||
PV1|E|||||||||||||visitbigNumsNumber11|
OBR|1||DEMO^Demographics|
OBX|1|CF|luConsentID^Consent for Data Collection and Analysis||1|||||F|

OBR|2||SOCIO^Socio Economic Data|
OBX|2|CF|luEducationID^Education Highest Level Achieved||1|||||F|
OBX|2|CF|luResidenceID^Residence||1|||||F|
OBX|2|CF|luFamilySupportID^Family Support||1|||||F|
OBX|2|CF|luTravelTimeToRehabID^Travel Time To Rehab||1|||||F|

OBR|3||WAITTIME^Wait Time Data|
OBX|3|DT|ReferralDate^ReferralDate||20080922103142|||||F|
OBX|3|DT|ReferralReceiptDate^ReferralReceiptDate||20080922103142|||||F|
OBX|3|CF|luReferralLocationID^Location Referral||1|||||F|
OBX|3|CF|luAutomaticReferralID^Automatic Referral||1|||||F|
OBX|3|DT|IntakeVisitDate^Date of Intake Visit||20080922103142|||||F|
OBX|3|DT|ProgramAdmissionDate^Date of Program Admission||20080922103142|||||F|
OBX|3|DT|ClinicExitDate^Exit Clinic Date||20080922103142|||||F|
OBX|3|CF|ScheduledExerciseNum^Number of Exercise classes scheduled||1|||||F|
OBX|3|CF|AttendedExerciseNum^Number of Exercise classes attended||1|||||F|
OBX|3|DT|DischargeDate^Discharge Date||20080922103142|||||F|
OBX|3|CF|luCRProgramCompletionID^CR Program Completion||1|||||F|
OBX|3|DT|WorkReturnDate^Work Return Date||20080922103142|||||F|

OBR|4||REFERRAL^Referral Events|
OBX|4|CF|luReferralEventID^Referral Events(s)||1|||||F|
OBX|4|DT|ReferralEventDate^Referral Events(s) Date||20080922103142|||||F|

OBR|5||TERMINATION^Terminations|
OBX|5|DT|TerminationDate^Termination(s) Date||20080922103142|||||F|
OBX|5|CF|luTerminationTypeID^Termination(s) Type||1|||||F|

OBR|6||INTERIM^InterimEvents|
OBX|6|DT|InterimEventDate^Interim Event(s) Date||20080922103142|||||F|
OBX|6|CF|luInterimEventID^Interim Event(s) Type||1|||||F|

OBR|7||RISKFACTORS^Risk Factors|
OBX|7|CF|luSedentaryLifestyleID^Sedentary Lifestyle||1|||||F|
OBX|7|CF|luHyperlipidemiaID^Hyperlipidemia||1|||||F|
OBX|7|CF|luHypertensionID^Hypertension||1|||||F|
OBX|7|CF|luSmokingID^Smoking||1|||||F|
OBX|7|CF|luFamilyHistoryOfCADID^Family History of CAD||1|||||F|
OBX|7|CF|luDiabetesID^Diabetes||1|||||F|
OBX|7|CF|luDiabetesTypeID^Diabetes Type||1|||||F|

OBR|8||SERVICEREF^Service Referrals|
OBX|8|CF|luOnSiteExerciseTrainingOncePerWeekID^On-site exercise training: once per week||1|||||F|
OBX|8|CF|luOnSiteExerciseTrainingTwicePerWeekID^On-site exercise training: twice per week||1|||||F|
OBX|8|CF|luOnSiteExerciseTrainingThreeTimesPerWeekID^On-site exercise training: three or more times per week||1|||||F|
OBX|8|CF|luExerciseTrainingOffSiteID^Exercise training: off-site||1|||||F|
OBX|8|CF|luNutrition11CounselID^Nutrition 1:1 counsel||1|||||F|
OBX|8|CF|luSmokingCessationID^Smoking Cessation||1|||||F|
OBX|8|CF|luReferralToSmokingCessationProgramID^Referral to Smoking Cessation Program||1|||||F|
OBX|8|CF|luStressManagementID^Stress Management||1|||||F|

OBR|9||INTAKEMSMT^Intake Measurements|
OBX|9|CF|luCCSAnginalID^CCS Anginal||1|||||F|
OBX|9|CF|luNYHAClassId^NYHA class||1|||||F|
OBX|9|CF|luLVFunctionID^LV Function||1|||||F|
OBX|9|CF|FBS^FBS||1|||||F|
OBX|9|CF|HBA1c^HbA1c||1|||||F|
OBX|9|CF|TC^TC||1|||||F|
OBX|9|CF|TG^TG||1|||||F|
OBX|9|CF|HDL^HDL-C||1|||||F|
OBX|9|CF|LDL^LDL-C||1|||||F|
OBX|9|CF|TCHDL^TC/HDL||1|||||F|
OBX|9|CF|SerumCreatinine^Serum creatinine||1|||||F|
OBX|9|CF|Microalbuminuria^Microalbuminuria||1|||||F|
OBX|9|CF|Weight^Weight||1|||||F|
OBX|9|CF|Height^Height||1|||||F|
OBX|9|CF|Waist^Waist||1|||||F|
OBX|9|CF|Hip^Hip||1|||||F|
OBX|9|CF|SBP^SBP||1|||||F|
OBX|9|CF|DBP^DBP||1|||||F|
OBX|9|CF|PulseRate^Pulse Rate||1|||||F|

OBR|10||DISCHARGEMSMT^Discharge Measurements|
OBX|10|CF|luCCSAnginalID^CCS Anginal||1|||||F|
OBX|10|CF|luNYHAClassId^NYHA class||1|||||F|
OBX|10|CF|luLVFunctionID^LV Function||1|||||F|
OBX|10|CF|FBS^FBS||1|||||F|
OBX|10|CF|HBA1c^HbA1c||1|||||F|
OBX|10|CF|TC^TC||1|||||F|
OBX|10|CF|TG^TG||1|||||F|
OBX|10|CF|HDL^HDL-C||1|||||F|
OBX|10|CF|LDL^LDL-C||1|||||F|
OBX|10|CF|TCHDL^TC/HDL||1|||||F|
OBX|10|CF|SerumCreatinine^Serum creatinine||1|||||F|
OBX|10|CF|Microalbuminuria^Microalbuminuria||1|||||F|
OBX|10|CF|Weight^Weight||1|||||F|
OBX|10|CF|Height^Height||1|||||F|
OBX|10|CF|Waist^Waist||1|||||F|
OBX|10|CF|Hip^Hip||1|||||F|
OBX|10|CF|SBP^SBP||1|||||F|
OBX|10|CF|DBP^DBP||1|||||F|

OBX|10|CF|PulseRate^Pulse Rate||1|||||F|

OBR|11|||INTAKESTRESSTEST^Intake Stress Test|
OBX|11|CF||uStressTestLocationID^Location||1|||||F|
OBX|11|DT|StressTestDate^Date||20080922103142|||||F|
OBX|11|CF|RestingSBP^Resting SBP||1|||||F|
OBX|11|CF|PeakSBP^Peak SBP||1|||||F|
OBX|11|CF|RestingDBP^Resting DBP||1|||||F|
OBX|11|CF|PeakDBP^Peak DBP||1|||||F|
OBX|11|CF|RestingHR^Resting HR||1|||||F|
OBX|11|CF|PeakHR^Peak HR||1|||||F|
OBX|11|CF||uGXTProtocolID^GXT Protocol||1|||||F|
OBX|11|CF|ExerciseTime^Exercise Time||1|||||F|
OBX|11|CF||uReasonForTerminationID^Reason for Termination||1|||||F|
OBX|11|CF||uMaxCardioRespEffortID^Maximal Cardio-Respiratory Effort||1|||||F|
OBX|11|CF||uIschemialID^Ischemi||1|||||F|
OBX|11|CF||uAnginalID^Angina||1|||||F|
OBX|11|CF|Borg10Scale^Borg 10 Scale||1|||||F|
OBX|11|CF|Borg15Scale^Borg 15 Scale||1|||||F|
OBX|11|CF|MaxSTDepression^Max ST Depression (None or write in)||1|||||F|
OBX|11|CF|PeakMETs^Peak METs||1|||||F|
OBX|11|CF|DukeTreadmillScore^Duke Treadmill Score||1|||||F|
OBX|11|CF||uMetsDirectlyMeasuredID^Mets Directly Measured?||1|||||F|
OBX|11|CF|RepMax^Rep Max||1|||||F|

OBR|12|||DISCHARGESTRESSTEST^Discharge Stress Test|
OBX|12|CF||uStressTestLocationID^Location||1|||||F|
OBX|12|DT|StressTestDate^Date||20080922103142|||||F|
OBX|12|CF|RestingSBP^Resting SBP||1|||||F|
OBX|12|CF|PeakSBP^Peak SBP||1|||||F|
OBX|12|CF|RestingDBP^Resting DBP||1|||||F|
OBX|12|CF|PeakDBP^Peak DBP||1|||||F|
OBX|12|CF|RestingHR^Resting HR||1|||||F|
OBX|12|CF|PeakHR^Peak HR||1|||||F|
OBX|12|CF||uGXTProtocolID^GXT Protocol||1|||||F|
OBX|12|CF|ExerciseTime^Exercise Time||1|||||F|
OBX|12|CF||uReasonForTerminationID^Reason for Termination||1|||||F|
OBX|12|CF||uMaxCardioRespEffortID^Maximal Cardio-Respiratory Effort||1|||||F|
OBX|12|CF||uIschemialID^Ischemi||1|||||F|
OBX|12|CF||uAnginalID^Angina||1|||||F|
OBX|12|CF|Borg10Scale^Borg 10 Scale||1|||||F|
OBX|12|CF|Borg15Scale^Borg 15 Scale||1|||||F|
OBX|12|CF|MaxSTDepression^Max ST Depression (None or write in)||1|||||F|
OBX|12|CF|PeakMETs^Peak METs||1|||||F|
OBX|12|CF|DukeTreadmillScore^Duke Treadmill Score||1|||||F|
OBX|12|CF||uMetsDirectlyMeasuredID^Mets Directly Measured?||1|||||F|
OBX|12|CF|RepMax^Rep Max||1|||||F|

OBR|13|||INTAKEPSYCHOSOCIAL^Intake PsychoSocial|
OBX|13|CF||uAnxietyMeasurePerformedID^Anxiety Measure Performed||1|||||F|

OBX|13|CF|AnxietyMeasureScore^Anxiety Measure Score||1|||||F|
OBX|13|CF|luAnxietyCutoffID^Anxiety Cutoff||1|||||F|
OBX|13|CF|luAnxietyMeasureID^Anxiety Measure||1|||||F|
OBX|13|CF|luDepressionMeasurePerformedID^Depression Measure Performed||1|||||F|
OBX|13|CF|DepressionMeasureScore^Depression Measure Score||1|||||F|
OBX|13|CF|luDepressionCutoffID^Depression Cutoff||1|||||F|
OBX|13|CF|luDepressionMeasureID^Depression Measure||1|||||F|
OBX|13|CF|luQOLPhysicalPerformedID^QOL Physical Performed||1|||||F|
OBX|13|CF|QOLPhysicalScore^QOL Physical Score||1|||||F|
OBX|13|CF|luQOLPhysicalMeasureID^QOL Physical Measure||1|||||F|
OBX|13|CF|luQOLMentalPerformedID^QOL Mental Performed||1|||||F|
OBX|13|CF|QOLMentalScore^QOL Mental Score||1|||||F|
OBX|13|CF|luQOLMentalMeasureID^QOL Mental Measure||1|||||F|
OBX|13|CF|luQOLOtherPerformedID^ QOL Other Performed||1|||||F|
OBX|13|CF|QOLOtherScore^QOL Other Score||1|||||F|
OBX|13|CF|luQOLOtherMeasureID^QOL Other Measure||1|||||F|

OBR|14||DISCHARGEPSYCHOSOCIAL^Discharge PsychoSocial|
OBX|14|CF|luAnxietyMeasurePerformedID^Anxiety Measure Performed||1|||||F|
OBX|14|CF|AnxietyMeasureScore^Anxiety Measure Score||1|||||F|
OBX|14|CF|luAnxietyCutoffID^Anxiety Cutoff||1|||||F|
OBX|14|CF|luAnxietyMeasureID^Anxiety Measure||1|||||F|
OBX|14|CF|luDepressionMeasurePerformedID^Depression Measure Performed||1|||||F|
OBX|14|CF|DepressionMeasureScore^Depression Measure Score||1|||||F|
OBX|14|CF|luDepressionCutoffID^Depression Cutoff||1|||||F|
OBX|14|CF|luDepressionMeasureID^Depression Measure||1|||||F|
OBX|14|CF|luQOLPhysicalPerformedID^QOL Physical Performed||1|||||F|
OBX|14|CF|QOLPhysicalScore^QOL Physical Score||1|||||F|
OBX|14|CF|luQOLPhysicalMeasureID^QOL Physical Measure||1|||||F|
OBX|14|CF|luQOLMentalPerformedID^QOL Mental Performed||1|||||F|
OBX|14|CF|QOLMentalScore^QOL Mental Score||1|||||F|
OBX|14|CF|luQOLMentalMeasureID^QOL Mental Measure||1|||||F|
OBX|14|CF|luQOLOtherPerformedID^ QOL Other Performed||1|||||F|
OBX|14|CF|QOLOtherScore^QOL Other Score||1|||||F|
OBX|14|CF|luQOLOtherMeasureID^QOL Other Measure||1|||||F|

OBR|15||INTAKEOCCUPATION^Intake Occupation|
OBX|15|CF|luOccupationID^Occupation||1|||||F|
OBX|15|CF|luEmploymentStatusID^EmploymentStatus||1|||||F|
OBX|15|CF|luDesiredOccupationStatusID^Desired Occupation Status||1|||||F|
OBX|15|CF|luDesiredOccupationStatusAchievedID^Desired Occupation Status Achieved||1|||||F|