Laboratory (LAB)

CHTMAD – SGI – Information Management Service (IMS)

N. Reference
SGI-2023-021

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Project Expanding Digital Health through a pan-European EHRxF-based Ecosystem

Vila Real, October 23rd, 2023

Version v2 - CHTMAD - 24-10-2023 14:21

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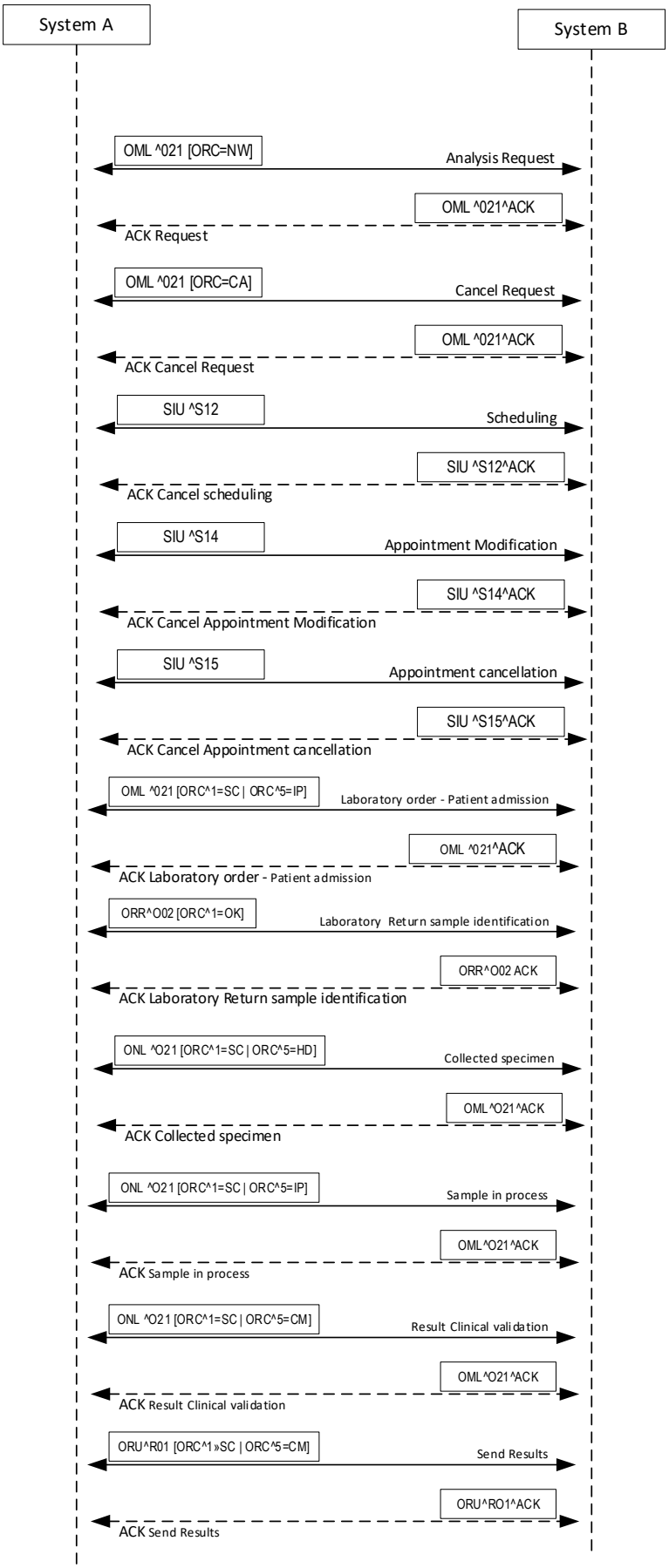
1 INTEGRATION DIAGRAMS



2 MESSAGES & EVENTS

Value	Description
OML	Laboratory Order Message
IUS	Schedule Information Unsolicited Message
ORU	Unsolicited Transmission of an Observation Message

Table 1 - Messages Used

2.1 EVENTS USED

Value	Description
OML^O21	OML Laboratory Order Trigger Event
SIU^S12	Notification of new appointment booking
SIU^S14	Notification of appointment rescheduling
SIU^S15	Notification of appointment cancellation
ORU^R01	ORU Subscription
ORR^O22	Application Acknowledgement to an OML message

Table 2 - Events Used

3 SEGMENTS

In each segment table, fields and attributes are defined that are specified by the following abbreviations:

SEQ – Sequence number in the segment

LEN – Field size

DT – Type data

OPT – obligations

- R - Mandatory
- O - Optional
- C - Conditional (depends on the type of event or another field)
- X - Not used in the event
- B- Maintained only for backward compatibility reasons with other versions HL7
- W - retired

RP/# - Multiplicity

- Y - Can be repeated
- Y/N - Can be repeated up to a maximum of N times

3.1 MSH – MESSAGE HEADER SEGMENT

The MSH segment defines the type, source, and destination of the message, as well as some specific details regarding the syntax.

SEQ	LEN	DT	OPT	RP/ #	DESCRIPTION	EXPECTED VALUE
1	1	ST	R		Field Separator	View Delimiters and Separators (1.3.2)
2	4	ST	R		Encoding Characters	View Delimiters and Separators (1.3.2)
3	227	HD	R		Sending Application	Source Application
4	227	HD	R		Sending Facility	Source Installation Location
5	227	HD	R		Receiving Application	Target Application
6	227	HD	R		Receiving Facility	Target Installation Location
7	26	TS	R		Date/Time Of Message	Date/Time the message was sent <YYYYMMDDHHMMSS>
9	15	.MSG	R		Message Type	Message Type <>^<Event Type>. See table of Message Types and Event Types
10	20	ST	R		Message Control ID	A value that uniquely identifies the message. This value is returned in the MSA segment
11	3	EN	R		Processing ID	Processing Mode T: Testing, P: Production, ,
12	60	VID	R		Version ID	2.5

Table 3 – Segment MSH

3.2 PID – PATIENT IDENTIFICATION SEGMENT

The PID segment is used to define patient, personal, and demographic information.

SEQ	LEN	DT	OPT	RP/ #	DESCRIPTION	EXPECTED VALUE
1	4	ONESELF	R		Set ID - PID	1
3	250	CX	R	Y	Patient Identifier List	<Patient identifier in the requesting entity>^<Patient identifier in the destination entity>^<Patient card number>
5	250	XPN	R	Y	Patient Name	<Surname>^<First Name>^<Other Names>
7	26	TS	Or		Date/Time of Birth	Date/Time of Birth <YYYYMMDDHHMMSS>
8	1	IS	Or		Administrative Sex	Patient Gender M: Male F: Female O: Other
18	250	CX	R		Patient Account Number	<Patient Case Number>

Table 4 - PID Segment

3.3 PV1 – PATIENT VISIT SEGMENT

The PV1 segment is used to communicate information about the patient's visit.

SEQ	LEN	DT	OPT	RP/ #	DESCRIPTION	EXPECTED VALUE
1	4	ONESELF	R		Set ID - PV1	1
2	1	IS	R		Patient Class	Episode Type Identifies the source. It can always come U.
3	80	.PL	C		Assigned Patient Location	<Patient's origin>^<room>^<bed>^<Institution>
19	16	ST	C		Visit Number	Episode number

Table 5 - PV1 Segment

3.4 MSA – MESSAGE ACKNOWLEDGEMENT SEGMENT

The MSA segment is used as the response (success or error) to be sent to the issuer.

SEQ	LEN	DT	OPT	RP/ #	DESCRIPTION	EXPECTED VALUE
1	2	ID	R		Acknowledgment Code	*Original Mode:* AA: Accept AE: Error AR: Reject
2	20	ST	R		Message Control ID	The value obtained in MSH-10
3	80	ST	B		Text Message	Error message

Table 6 - MAS Segment

3.5 ORC – COMMON ORDER SEGMENT

The ORC segment is used to transmit information that is common to all orders.

SEQ	LEN	DT	OPT	RP/ #	DESCRIPTION	EXPECTED VALUE
1	2	ID	R		Order Control	NW Segment Role: New CA Request: Cancel RE Request: Report
2	22	HEY	C		Placer Order Number	Unique identifier of the requisition in the requesting entity <requisition id>^<requester>
3	22	HEY	C		Filler Order Number	Unique identifier of the request in the executing entity <id_requisição>^<destination>
4	22	HEY	R		Placer Group Number	Identifier of the service in the requesting entity
9	26	TS	R		Date/Time of Transaction	Current date
12	250	XCN	Or	Y	Ordering Provider	<referring physician ID>^<requesting physician name>

Table 7 - ORC Segment

3.6 OBR – OBSERVATION REQUEST SEGMENT

The OBR segment allows the sending of specific information for the performance of the exam (Type of Exam, Clinical Information, etc.).

SEQ	LEN	DT	OPT	RP/ #	DESCRIPTION	EXPECTED VALUE
1	4	ONESELF	Or		Set ID – OBR	Sequence number
2	22	HEY	C		Placer Order Number	Accession Number of the requesting entity <accession number>^<requester>
3	22	HEY	C		Filler Order Number *	Destination entity Accession Number <accession number>^<destination>
4	250	EC	R		Universal Service Identifier	Required exam <exam id>^<description>
6	26	TS	Or		Requested Date/Time	Attendance creation date
16	250	XCN	C	Y	Ordering Provider	<referring physician ID>^<requesting physician name>

Table 8 - OBR Segment

3.7 SCH – SCHEDULE ACTIVITY INFORMATION SEGMENT

The SCH segment contains information about the exam appointment.

SEQ	LEN	DT	OPT	RP/ #	DESCRIPTION	EXPECTED VALUE
1	75	HEY	C		Placer Appointment ID	Unique identifier of the requisition in the requesting entity <requisition id>^<requester>
2	75	HEY	C		Filler Appointment ID	Unique identifier of the request in the executing entity <id_requisição>^<destination>
4	22	HEY	R		Placer Group Number	Request Identifier in bHealth - Analysis Grouping
6	250	EC	R		Event Reason	Reason for the event (for SIU^S15 only)
25	250	EC	Or	Y	Filler Status Code	<Unique Exam Code>^<Exam Description>
26	22	HEY	C	Y	Placer Order Number	Unique identifier of the requisition in the requesting entity <requisition id>^<requester>
27	22	HEY	C	Y	Filler Order Number	Unique identifier of the request in the executing entity <id_requisição>^<destination>

Table 9 - SCH Segment

3.8 OBX – OBSERVATION/RESULT SEGMENT

This segment is used to send details of the observation (Report).

SEQ	LEN	DT	OPT	RP/ #	DESCRIPTION	EXPECTED VALUE
1	4	ONESELF	Or		Set ID – OBX	Sequence number
2	2	ID	C		Value Type	Data type 'NM' if numeric, remaining 'FT'
3	250	EC	R		Observation Identifier	<Heading code>^<heading name>^<heading identifier>
5	65536	TX	C		Observation Value	Report (text). RTF or plain text
6	250	EC	Or		Units	Unit
7	60	ST	Or		References Range	Reference values
8	5	IS	Or	Y	Abnormal Flags	Limits of Results
11	1	ID	R		Observation Result Status	Observation Status P: Preliminary C: Correction F: Final
14	26	TS	Or		Date/Time of the Observation	Date of attendance
16	250	XCN	C	Y	Responsible Observer	<ID of the user who validated>^<name of the user who validated>

Table 10 - OBX Segment

3.9 AIL – APPOINTMENT INFORMATION – LOCATION SEGMENT

The AIL segment is used to send the description of the locations that were requested for the event.

SEQ	LEN	DT	OPT	RP/#	DESCRIPTION	EXPECTED VALUE
1	4	ONESELF	R		Set ID – AIL	Sequence number
2	3	ID	R		Segment Action Code	Fixed value 'D' – Delete/'U' – Update/'A' – Add
3	80	.PL	C		Location Resource ID	^^^^^^^^<Exam Location Description>^<Unique Location Code>&<Location Name>^
6	26	TS	R		Start Date/Time	Exam Appointment Date/Time <YYYYMMDDHHMMSS>
9	20	NM	Or		Duration	Exam duration in minutes
10	250	EC	Or		Duration Units	M

Table 11 - AIL Segment

3.10 NTE – NOTES AND COMMENTS

This segment is used to send notes and comments regarding the order taken.

SEQ	LEN	DT	OPT	RP/#	DESCRIPTION	EXPECTED VALUE
1	4	ONESELF	R		Set ID - NTE	Sequence number
3	65536	FT	C	Y	Comment	Comment
4	250	EC	C		Comment Type	<Question Name>^<Question Id>

Table 12 - NTE Segment

4 EXEMPLES

Sample messages

4.1 REQUEST ANALYTICS (CLINIDATA RECEIVES)

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISE|CHTMAD|20231018121710||OML^O21^OML_O21|bd430b09-5247-4990-8d78-
1cf48042ee4c|P|2.5|||AL|PID|1||274797^^^CHTMAD^NS||ONE^TEST^THIRTY||19860404|M|||^^^^||^^^^^^^^Telephone~~222^^
^^^^^^Mobile||||||PV1|1|URG|||||||||20002|||||||||18051144|||||||||||||||||||||||||||||||||||||||||||||||||||
|||||||||||||||||||||||||||||||||||||||||||||||||||||ORC|NW|QA001000049-
05^BHEALTH|^CLINIDATA|QA001000049|||||20231018121710|||2500^BALONA|||||||||||||||||||||||||||||||||||||||||||
|||||||||||||||||||||||||||||SPM|1|||Serum^SeroOBR|1|QA001000049-04^BHEALTH|^CLINIDATA|118^IONOGRAM
(Serum)||18000101000000|||||||Ext
```

4.2 CREATE SAMPLES (CLINIDATA RECEIVES)

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISE|CHTMAD|20231018124850||OML^O21^OML_O21|68d40647-48eb-44f8-b0a9-
671deddd2a0e|P|2.5|||AL|PID|1||274797^^^CHTMAD^NS||ONE^TEST^THIRTY||19860404|M|||^^^^||^^^^^^^^Telephone~~222^^
^^^^^^Mobile||||||PV1|1|URG|||||||||20002|||||||||18051144|||||||||||||||||||||||||||||||||||||||||||||||||||
|||||||||||||||||||||||||||||||||||||||||||||||||||||ORC|SC|QA001000050-
02^BHEALTH|^CLINIDATA|QA001000050|IP||||20231018124850|||2500^BALONA|||||||||||||||||||||||||||||||||||||||||||
|||||||||||||||||||||||||||||SPM|1|||Serum^SeroOBR|1|QA001000050-01^BHEALTH|^CLINIDATA|803^***IgF -
BP3||18000101000000|||||||Ext
```

4.3 CANCEL SCANS (CLINIDATA RECEIVES)

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISE|CHTMAD|20231018121727||OML^O21^OML_O21|517b8293-9c00-47c9-9b0d-
74ca99a1090a|P|2.5|||AL|PID|1||274797^^^CHTMAD^NS||ONE^TEST^THIRTY||19860404|M|||^^^^||^^^^^^^^Telephone~~222^^
^^^^^^Mobile||||||PV1|1|URG|||||||||20002|||||||||18051144|||||||||||||||||||||||||||||||||||||||||||||||||||
|||||||||||||||||||||||||||||||||||||||||||||||||||||ORC|CA|QA001000046-
02^BHEALTH|^CLINIDATA|QA001000046|||||20231018121727|||2500^BALONA|||||||||||||||||||||||||||||||||||||||||||
|||||||||||||||||||||||||||||OBR|1|QA001000046-
02^BHEALTH|^CLINIDATA|94^CREATININA||18000101000000|||||||Test
S|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||S
PM|1|||Serum^Serum||||||||||
```

4.4 ADMISSION/EFFECTIVENESS (CLINIDATA RECEIVE)

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISE|CHTMAD|20220923113011||OML^O21^OML_O21|af079508-4ec2-4917-bf7c-
33cda049d979|P|2.5|||AL|
PID|1||187139^^^CHTMAD^NS||ONE^TEST^||19870612|M|||^^^^||^^^^^^^^Telephone~~222^^^^^^^^Mobile|||||13003304|
PV1|1|CON|||||||20092|||||||||15054818|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
|||||||||||||||||||||||||||||||||||||||||
```

```
ORC|SC|0478561-01^BHEALTH|^CLINIDATA|0478561|IP|||20220923113011|||27837^ASUNCION
WILLOW|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
OBR|1|0478561-01^BHEALTH|^CLINIDATA|90^Albumin||20220923112829||||||||Test
III|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
||||
SPM|1|||GEN^Product gen\XE9\rich||||||||||
```

4.5 COLLECTION DONE (CLINIDATA RECEIVES)

```
MSH|^~\&|BYME|CHTMAD|LABENTERPRISE|CHTMAD|20231018124911||OML^O21^OML_O21|bf227491-9ae9-4f71-bb31-
4c96d1c002f9|P|2.5||||AL|PID|1||274797^^^CHTMAD^NS||ONE^TEST^THIRTY||19860404|M|||^^^^||^^^^^^^^Telephone~~222^^
^^^^^^Mobile|||||PV1|1|URG||||||||20002|||||||||18051144||||||||||||||||||||||||||||||||||||||||||||||||||||||||
|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||ORC|SC|QA001000050-
02^BHEALTH|^CLINIDATA|QA001000050|HD||||20231018124911|BM20201^Sara
Silva||2500^BALONA||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||SPM|1|||Serum^Se
roOBR|1|QA001000050-01^BHEALTH|^CLINIDATA|803^***IgF -
BP3||18000101000000||||||||ext|||||||||||||||^^^20231018124908
```

4.6 EXAM PROCESSING (CLINIDATA SENDS)

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20230915162915||OML^O21^OML_O21|4680|P|2.5|||ALPID|1||187139^^^SPMS^
NS||A^TEST^^^^^L||19870612000000|M||||||||||13003304^^^SPMSPV1|1|LAB||||||||10001||||5ORC|SC|^BYME|2469^CLINIDATA||IPT
Q1|1|1^Un|||||20230915162908OBR|1|^BYME|2469^CLINIDATA|93^UREA
NITROGEN^CLINIDATA|||20230915162908SPM|1|||SERUM^SORO||||||||||
```

4.7 CREATING ANALYSES

```
MSH|^~\&|LABENTERPRISEB|HCHTMAD|LABENTERPRISE|HCHTMAD|20220923112933||OML^O21^OML_O21|e19941cf-805d-4f80-abe9-
329fb86871d9|P|2.5||||AL|
PID|1||187139^^^HCHTMAD^NS||ONE^TEST^||19870612|M|||^^^^||^^^^^^^^Telephone~~222^^^^^^^^Mobile|||||13003304|
PV1|1|CON|||||||20092|||||||||15054818||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
|||||||||||||||||||||||||||||||||||||||
ORC|NW|0478561-01^BHEALTH|^LABENTERPRISE|0478561|||||20220923112933|||27837^ASUNCION
WILLOW|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
OBR|1|0478561-01^BHEALTH|^LABENTERPRISE|90^Albumin||20220923112829||||||||Test
III|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
||||
SPM|1|||GEN^Product gen\XE9\rich||||||||||
```

4.8 CANCELLATION OF ANALYSES

```
MSH|^~\&|LABENTERPRISEB|HCHTMAD|LABENTERPRISE|HCHTMAD|20220923112858||OML^O21^OML_O21|a04d4198-11c6-40e1-9e8c-
a258222a747f|P|2.5||||AL|
PID|1||274797^^^HCHTMAD^NS||ONE^TEST^THIRTY||19860404|M|||^^^^||^^^^^^^^Telephone~~222^^^^^^^^Mobile||||||
PV1|1|URG||||||||20092|||||||||18051144|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
||||||||||||||||||||||||||||||||||||||||
ORC|CA|0478535-02^BHEALTH|^LABENTERPRISE|0478535|||||20220923112858|||53886^AISSATO ABDU
CASSAMA||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
OBR|1|0478535-02^BHEALTH|^LABENTERPRISE|113^Calcio||20220923104201||||||||URG
Test||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
|||||||
SPM|1|||GEN^Product gen\XE9\rich||||||||||
```

4.9 SCHEDULING

```
MSH|^~\&|LABENTERPRISEB|HCHTMAD|LABENTERPRISE|HCHTMAD|20220923113010||SIU^S12^SIU_S12|645157c6-5d69-4e42-aad5-
54cf493cd4c4|P|2.5
SCH|0478561-
01^BHEALTH|^LABENTERPRISE||0478561|||A|E||||||||||||||||||||||||||||||||||||||||||||||||||||||||||BOOKED
PID|1||187139^^^HDFF^NS||ONE^TEST^||19870612|M||||||||||13003304
PV1|1|CON|||||||20092|||||||||15054818
RGS|1|The
AIS|1|A||||||||BOOKED
AIL|1|A|ANALYS^Test Room An\XE1\lises|||20220923112931||||||BOOKED
AIP|1|A||
```

4.10 RESCHEDULE

```
MSH|^~\&|LABENTERPRISEB|HCHTMAD|LABENTERPRISE|HCHTMAD|20220922160418||SIU^S14^SIU_S14|024c0037-dfbe-487e-b243-
33de443a70be|P|2.5
SCH|0478327-
01^BHEALTH|^LABENTERPRISE||0478327|||A|E||||||||||||||||||||||||||||||||||||||||||||||||||||||||||BOOKED
PID|1||187139^^^HDFF^NS||ONE^TEST^||19870612|M||||||||||13003304
PV1|1|CON|||||||20092|||||||||12345
RGS|1|S
AIS|1|S|||||||BOOKED
AIL|1|S|ANALYS^Test Room An\XE1\lises|||20220922173000|||||BOOKED
AIP|1|S||
```

4.11 APPOINTMENT CANCELLATION

```
MSH|^~\&|LABENTERPRISEB|HCHTMAD|LABENTERPRISE|HCHTMAD|20220922160743||SIU^S15^SIU_S15|fafc58c1-3cf3-43c5-9ebe-
2e12b9bd581d|P|2.5
SCH|0478327-
02^BHEALTH|^LABENTERPRISE||0478327|||A|E||||||||||||||||||||||||||||||||||||||||||||||||||||||||||CANCELLED
PID|1||187139^^^HDFF^NS||ONE^TEST^||19870612|M|||||||||||13003304
PV1|1|CON||||||||20092||||||||||12345
RGS|1|D
AIS|1|D|||||||||CANCELLED
AIL|1|D|ANALYS^Test Room An\XE1\lises|||20220922170000|||||||CANCELLED
AIP|1|D||
```

4.12 ADMISSION/EFFECTIVENESS

```
MSH|^~\&|LABENTERPRISEB|HCHTMAD|LABENTERPRISE|HCHTMAD|20220923113011||OML^O21^OML_O21|af079508-4ec2-4917-bf7c-
33cda049d979|P|2.5||||AL|
PID|1||187139^^^HCHTMAD^NS||ONE^TEST^||19870612|M|||^^^^||^^^^^^^^Telephone~~222^^^^^^^^Mobile|||||13003304|
PV1|1|CON||||||||20092||||||||||15054818||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
||||||||||||||||||||||||||||||||||||||||
ORC|SC|0478561-01^BHEALTH|^LABENTERPRISE|0478561|IP|||20220923113011|||27837^ASUNCION
WILLOW||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
OBR|1|0478561-01^BHEALTH|^LABENTERPRISE|90^Albumin||20220923112829||||||||Test
III|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
||||
SPM|1|||GEN^Product gen\XE9\rich||||||||||
```

4.13 SAMPLE

```
MSH|^~\&|LABENTERPRISEB|HCHTMAD|LABENTERPRISE|HCHTMAD|20220923113325||OML^O21^OML_O21|1a269bde-ba81-4490-be38-
6e9ce1bb8c24|P|2.5||||AL|
PID|1||187139^^^HCHTMAD^NS||ONE^TEST^||19870612|M|||^^^^||^^^^^^^^Telephone~~222^^^^^^^^Mobile|||||13003304|
PV1|1|CON||||||||20092||||||||||15054818||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
||||||||||||||||||||||||||||||||||||||||
ORC|SC|0478561-02^BHEALTH|^LABENTERPRISE|0478561|HD|||20220923113325|BM002^Francisco Zenha||27837^ASUNCION
WILLOW||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
OBR|1|0478561-02^BHEALTH|^LABENTERPRISE|113^Calcio||20220923112829||||||||Test
III|||||||||||||||||||||||||||||||||||||||||||||||||||||^^^20220923113230|||||||||||||||||||||||||||||||||||||||
||||||||||||||||||||||||||||||||||||||||||||
SPM|1|||GEN^Product gen\XE9\rich||||||||||
```

4.14 CANCELLATION OF ANALYSES

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923125325||OML^O21^OML_O21|3015|P|2.5|||AL
PID|1||274797^^^SPMS^NS||ONE^TEST^THIRTY^^^^L||19860404000000|M|||||||||||^^^SPMS
PV1|1|URG|||||||7429|10009||||||||||18051144
ORC|CA|0478536-02^LABENTERPRISEB|1980^LABENTERPRISE|0478536|CA|||||||||||||^.
TQ1|1|1^Un|||||
OBR|1|0478536-02^LABENTERPRISEB|1980^LABENTERPRISE|113^CALCIO^LABENTERPRISE||20220923125325|
SPM|1|||GEN^Gen\XE9\rich|||||||||
```

4.15 VALIDATED ANALYSIS REPORT

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923124420||OML^O21^OML_O21|3006|P|2.5|||AL
PID|1||187139^^^SPMS^NS||A^TEST^^^^^L||19870612000000|M|||||||||||13003304^^^SPMS
PV1|1|CON|||||||27837|20092||||||||||15054818
ORC|SC|0478561-02^LABENTERPRISEB|1982^LABENTERPRISE|0478561|CM|||||||
TQ1|1|1^Un|||||20220923114030
OBR|1|0478561-02^LABENTERPRISEB|1982^LABENTERPRISE|113^CALCIO^LABENTERPRISE|||20220923114030
SPM|1|||GEN^Gen\XE9\rich|||||||||
```

4.16 ANALYSIS IN PROCESSING

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923124045||OML^O21^OML_O21|3002|P|2.5|||AL
PID|1||187139^^^SPMS^NS||A^TEST^^^^^L||19870612000000|M|||||||||||13003304^^^SPMS
PV1|1|CON|||||||27837|20092||||||||||15054818
ORC|SC|^LABENTERPRISEB|1983^LABENTERPRISE|0478561|IP||||||||
TQ1|1|1^Un|||||20220923114030
OBR|1|^LABENTERPRISEB|1983^LABENTERPRISE|3^HEMOGRAMA^LABENTERPRISE|||20220923114030
SPM|1|||GEN^Gen\XE9\rich|||||||||
```

4.17 SIMPLE ANALYTICAL RESULTS

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923124421||ORU^R01^ORU_R01|3007|P|2.5|||AL
PID|1||187139^^^SPMS^NS||A^TEST^^^^^L||19870612000000|M|||||||||||13003304^^^SPMS
```

```
PV1|1|CON|||||||27837|20092|||||||||15054818
SPM|1|||GEN^Gen\XE9\rich|||||||||
OBR|1|0478561-02^LABENTERPRISEB|1982^LABENTERPRISE|113^CALCIO^LABENTERPRISE||20220923122400|20220923114030
ORC|SC|0478561-02^LABENTERPRISEB|1982^LABENTERPRISE|0478561|CM|||||||
TQ1|1|1^Un|||||20220923114030
OBX|1|NM|1473^C\XC1\LCIO^LAB||12.0|mg/dL|8.8-10.2|H|||F|||20220923114030||8844
```

4.18 ANALYTICAL RESULTS WITH MICROORGANISMS

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923124420||ORU^R01^ORU_R01|3005|P|2.5|||AL
PID|1||187139^^^SPMS^NS||A^TEST^^^^^L||19870612000000|M||||||||||13003304^^^SPMS
PV1|1|CON|||||||27837|20092|||||||||15054818
SPM|1|||GEN^Gen\XE9\rich|||||||||
OBR|1|^LABENTERPRISEB|1983^LABENTERPRISE|3^HEMOGRAMA^LABENTERPRISE||20220923122400|20220923114030
ORC|SC|^LABENTERPRISEB|1983^LABENTERPRISE|0478561|CM|||||||
TQ1|1|1^Un|||||20220923114030
OBX|1|NM|3211^LEUC\XD3\CITOS^LAB||1.00|x10\XB3\/ul|4.00-10.50|L|||F|||20220923114030||8844
OBX|2|NM|3212^Neutr\XF3\filos:^LAB||1.3|%|1.5-6.6|L|||F|||20220923114030||8844
OBX|3|NM|25032^Neutr\XF3\phyla:^LAB||0.01|x10\XB3\/\XB5\L|1.50-6.60|L|||F|||20220923114030||8844
OBX|4|NM|3213^Lymph\XF3\cytos:^LAB||1.0|%|1.5-3.5|L|||F|||20220923114030||8844
OBX|5|NM|25024^Lymph\XF3\cytos:^LAB||0.01|x10\XB3\/\XB5\L|1.50-3.50|L|||F|||20220923114030||8844
OBX|6|NM|3388^Mon\XF3\cytos:^LAB||2.0|%|<1|H|||F|||20220923114030||8844
OBX|7|NM|25016^Mon\XF3\cytos:^LAB||0.02|x10\XB3\/\XB5\L|<1|||||F|||20220923114030||8844
OBX|8|NM|3386^Eosin\XF3\phyla:^LAB||3.0|%|<0.7|H|||F|||20220923114030||8844
OBX|9|NM|25008^Eosin\XF3\phyla:^LAB||0.03|x10\XB3\/\XB5\L|<0.7||||F|||20220923114030||8844
OBX|10|NM|3387^Bas\XF3\filos:^LAB||4.0|%|<0.1 .|A|||F|||20220923114030||8844
OBX|11|NM|25034^Bas\XF3\phyla:^LAB||0.04|x10\XB3\/\XB5\L|<0.1 .||||F|||20220923114030||8844
OBX|12|FT|3395^Observe\XE7\\XF5\es:^LAB||5||||||F|||20220923114030||8844
OBX|13|NM|3203^ERYTHROCYTES^LAB||6.00|x10\X2076\/\XB5\L|4.70-6.00||||F|||20220923114030||8844
OBX|14|NM|3204^Hemoglobin:^LAB||78.0|g/dL|13.5-18.0|H|||F|||20220923114030||8844
OBX|15|NM|3206^VGM:^LAB||8.0|fL|78.0-100.0|L|||F|||20220923114030||8844
OBX|16|NM|3208^CHGM:^LAB||9.0|g/dL|32.0-36.0|L|||F|||20220923114030||8844
OBX|17|NM|3379^RDW:^LAB||0.0|%|11.5-14.0|L|||F|||20220923114030||8844
OBX|18|FT|16716^erythroblasts:^LAB||0.0|%||||||F|||20220923114030||8844
OBX|19|NM|3224^PLATELETS^LAB||1|x10\XB3\/\XB5\L|150-450|L|||F|||20220923114030||8844
OBX|20|FT|3390^Observe\XE7\\XF5\es:^LAB||Thrombocytosis and giant platelets ||||||F|||20220923114030||8844
OBX|21|FT|17707^OBSERVE\XC7\\XC3\THE GENERAL:^LAB||Thrombocytosis and giant platelets
||||||F|||20220923114030||8844
```

4.19 SAMPLE RETURN WITH LABEL

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923125311||ORR^O02^ORR_O02|3014|P|2.5|||AL
PID|1||274797^^^SPMS^NS||ONE^TEST^THIRTY^^^^L||19860404000000|M||||||||||^^^SPMS
PV1|1|URG|||||||7429|10009|||||||||18051144
ORC|OK|0478536-02^LABENTERPRISEB|1980^LABENTERPRISE|0478536|||||||||||||||
OBR|1|0478536-
02^LABENTERPRISEB|1980^LABENTERPRISE|113^CALCIO^LABENTERPRISE||||||||||||||||||||||||||||||||||||||||||||||||||
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||960#U-14491#SERUM
Z01|1|1|CgpOCkE3MiwxMzY...
```

4.20 SENDING THE PDF WITH THE RESULTS

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923141053||ORU^R01^ORU_R01|3008|P|2.5|||AL
PID|1||187139^^^SPMS^NS||A^TEST^^^^^L||19870612000000|M||||||||||13003304^^^SPMS
PV1|1|CON|||||||||20092|||||||||15054818
OBR|1|^LABENTERPRISEB|1983^LABENTERPRISE|3^HEMOGRAMA^LABENTERPRISE||20220923122400|20220923114030
ORC|SC|^LABENTERPRISEB|1983^LABENTERPRISE|0478561|CM|||||||||||||||||||||||||||||||||||||||||||||||||||||||
||||||||||||||||||||
OBR|2|0478561-01^LABENTERPRISEB|1981^LABENTERPRISE|90^ALBUMIN^LABENTERPRISE||20220923122400|20220923114030
ORC|SC|0478561-
01^LABENTERPRISEB|1981^LABENTERPRISE|0478561|CM|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
||||||||||||||||
OBR|3|0478561-02^LABENTERPRISEB|1982^LABENTERPRISE|113^CALCIO^LABENTERPRISE||20220923122400|20220923114030
ORC|SC|0478561-
02^LABENTERPRISEB|1982^LABENTERPRISE|0478561|CM|||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
||||||||||||||||
OBX|1|||^^PDF^Base64^JVBER...
```

4.21 DISABLING SCANS

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923142750||MFN^Z01^MFN_Z01|3016|P|2.5||||AL
MFI|LAB|UPD
MFE|DCM|||138B
```

4.22 ENABLING ANALYTICS

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923142915||MFN^Z01^MFN_Z01|3017|P|2.5||||AL
MFI|LAB|UPD
```

```
MFE|MAC|||138B
```

4.23 INSERTION OF ANALYSES

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923143205||MFN^Z01^MFN_Z01|3018|P|2.5|||AL
MFI|LAB|UPD
MFE|MAD|||56B
Z01|ANALYSIS|56B^UREA IN URINE 12H|5^CLINICAL CHEMISTRY|22^Urine Chemistry|7200|20
```

4.24 ANALYTICS UPDATE

```
MSH|^~\&|LABENTERPRISE|CHTMAD|LABENTERPRISEB|CHTMAD|20220923150705||MFN^Z01^MFN_Z01|3025|P|2.5|||AL
MFI|LAB|UPD
MFE|MUP|||56A
Z01|ANALYSIS|56A^UREA UREA 12H|5^CLINICAL CHEMISTRY|22^Urine Chemistry|7200|20
Z02|INSTCOLH|5^^\X0D\\X0A\Collect blood without preparation\XE7\\XE3\o for creatinine assay.Z02|INFADIC|3^^Urine
Volume 24h
```

5 REFERENCES AND ACTIONS

In the document we should standardize the designations based on "The Healthcare Simulation Dictionary" of the Society for Simulation in Healthcare (SSH) and Agency for Healthcare Research and Quality (AHRQ)