Integrating the Healthcare Enterprise

IHE Anatomic Pathology

Technical Framework Supplement

Anatomic Pathology Reporting to Public Health

(ARPH)

Draft for Trial Implementation

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Foreword

This is a supplement to the IHE Anatomic Pathology Technical Framework. It was first published for Trial Implementation on August 27, 2009 for year 2 of the development cycle of the Anatomic Pathology (PAT) domain. It is republished on July 23, 2010 as release 2.0. This new release incorporates a number of change proposals that were approved and integrated during the face to face meeting in Vilnius on June 29, 2010:

- CP19-PAT-ARPH (Wendy Scharber): typo on batch message structures: Missing '[' ']' around BHS and BTS.
- CP20-PAT-ARPH_APW (François Macary + Ted Klein): Missing segment group "PATIENT_RESULT" in ORU static definition
- CP21-PAT-ARPH (Wendy Scharber): update NAACCR implementation guide status
- CP22-PAT-ARPH (Wendy Scharber): Add Vol 5 with North-American extension

Details about IHE may be found at: www.ihe.net

Details about the IHE Anatomic Pathology may be found at: http://www.ihe.net/Domains/index.cfm

The good understanding of this supplement requires frequent accesses to the IHE Anatomic Pathology Technical Framework V1.2, which can be downloaded from http://www.ihe.net/Technical_Framework/index.cfm

The reader will also need to access some appendices of Volume 2 of the IHE IT Infrastructure Technical Framework, which can be downloaded from: http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_5-0_Vol2_FT_2008-12-12.pdf

The in-box italicized instructions hereafter are for the author to indicate to the Volume Editor how to integrate the relevant section(s) into the overall Technical Framework when this supplement will reach the status of final text.

Below the box instructions, text to be inserted in the Volume is underlined, text to be removed is striped, and other text is unchanged.

Example:

In Section X.X update last paragraph as follows:

In this sentence this part is added ~~this part is removed~~. This sentence is unchanged.

CONTENTS

Introduction

The Anatomic Pathology Reporting to Public Health repositories (ARPH) integration profile was proposed by the United States Centers for Disease Control and Prevention's (CDC) National Program of Cancer Registries in order to address the issue of transmitting anatomic pathology (AP) reports from AP laboratory to public health organizations (cancer registries, centers for diseases control, screening organizations, etc).

The cancer registries in the United States and Canada have already experienced an electronic reporting process for cancer registries using HL7 v2 messages. The North American Association of Central Cancer Registries provides two implementation guides - The Electronic Pathology (E-Path) Reporting Guidelines and the NAACCR Standards for Cancer Registries – Volume V: Pathology Laboratory Electronic Reporting. It includes specifications for transmitting an HL7 2.3.1 and a 2.5.1 message. The HL7 AP work group has monitored and reviewed this work to ensure consistency with the HL7 standards.

This new IHE ARPH Profile intended for international use, is using the same HL7 message profile as the NAACCR newest implementation guide, so that a system implementing the NAACCR implementation guide can be validated as an Actor of the ARPH Profile at the IHE North-American connectathon.

Profile Abstract

Public Health organizations collect data of diseases diagnosed in anatomic pathology laboratories such as cancers or premalignant conditions.

The ARPH profile defines the actors and transactions involved in anatomic pathology reporting to public health organizations.

This integration profile will make it easier for anatomic pathology laboratories, public health agencies, and software vendors to adopt a uniform method for report or data transmission and processing. It will facilitate international electronic reporting of anatomic pathology data in public health domain.

Open Issues and Questions

ARPH10 – Open issues related to specimen. How the specimen information should be uniquely identified in the case of multiple primaries (for example when a patient is diagnosed with more than one cancer in the same primary site (e.g. 2 breast cancers)? The information is generally mixed in the text report, such that the entire report refers to the multiple cancers. There should only be a single OBR for the entire report? The information specific to the different cancers is contained in the different OBX segments comprising the report?

ARPH11 - Open issues related to guidelines for reporting complex cases, related to templates/checklists. Such guidelines will be provided in a future cycle.

ARPH12 – Open issues related to report encoding. How will local/state-specific data items be handled? Will the SNOMED CT codes associated to the CAP electronic Cancer Checklists (CAP eCC) available? Whenever a SNOMED-CT code is used in an HL7 message field, should both the SNOMED CT concept code and alphanumeric code ('legacy code') be sent in the message, or just one or the other? How to use several different staging systems ((American Joint Committee on Cancer (AJCC) system, Collaborative Staging and Surveillance Epidemiology and End Results (SEER) Summary Staging)? Each staging element is incorporated into a separate OBX to accommodate submission individually?

ARPH13 – Open issues related to biobanking. Shall derived specimens dedicated to biobanking be reported in the message? If yes, derived specimens remain associated with their parent in HL7 messages (a block derived from a specimen would be identified with its own identifier but should also carry an identifier for the parent specimen).

Closed Issues

ARPH01: The supplement supports different types of reports from free text (narrative report) to structured report (e.g. CAP Cancer Checklist). For semi-structured reports the supplement recommends that implementers structure the AP reports at least in sections (using e.g. the NAACCR item names related to sections in OBX-3)

ARPH02: The supplement supports a mechanism for selecting AP reports (relevant for a given Public Health Organization according to eligibility criteria) and filtering from the AP reports only data relevant to the Public Health Organization.

ARPH04: The supplement will discuss patient confidentiality and security on a very general level and direct implementers to country-specific instructions/documents (e.g. HIPAA requirements for US)

ARPH05: The supplement doesn't address the issue of the registration of an AP laboratory in order to allow it to send data to the Public Health agency. This registration is a prerequisite to the use of the ARPH profile.

ARPH06: The supplement doesn't address the issue of Anatomic Pathology reporting for care coordination (multidisciplinary meeting, healthcare networks, personal electronic healthcare record, etc)

ARPH07: The supplement doesn't address the issue of updating coding systems among AP laboratories and public health organizations

ARPH08: The supplement does not contain any transaction allowing pathologists in lab to query/retrieve data from the Public Health repositories.

ARPH09: The supplement doesn't provide any transaction for querying AP information systems about events of interest to public health.

Volume 1 – Integration Profiles

1.7 History of Annual Changes

Append the following at the end of section 1.7

Scope of changes introduced in the current year:

- The Anatomic pathology Reporting to Public Health repositories (ARPH) Profile extends the scope of the Anatomic Pathology Technical Framework to reporting anatomic pathology results in the public health context. The ARPH Profile extends the reporting workflow of the AP TF and establishes the continuity and integrity of basic pathology examination data exchanged between the systems of the Anatomic Pathology laboratory and the systems of public health organizations such as cancer registries, centers for diseases control, screening organizations, etc.

1.12 Glossary

Add the following terms to the Glossary in section 1.12:

ARPH	Anatomic Pathology Reporting to Public Health Repositories

1.15 Scope of the Anatomic Pathology Technical Framework

Replace figure 1.15-1 by the updated figure below

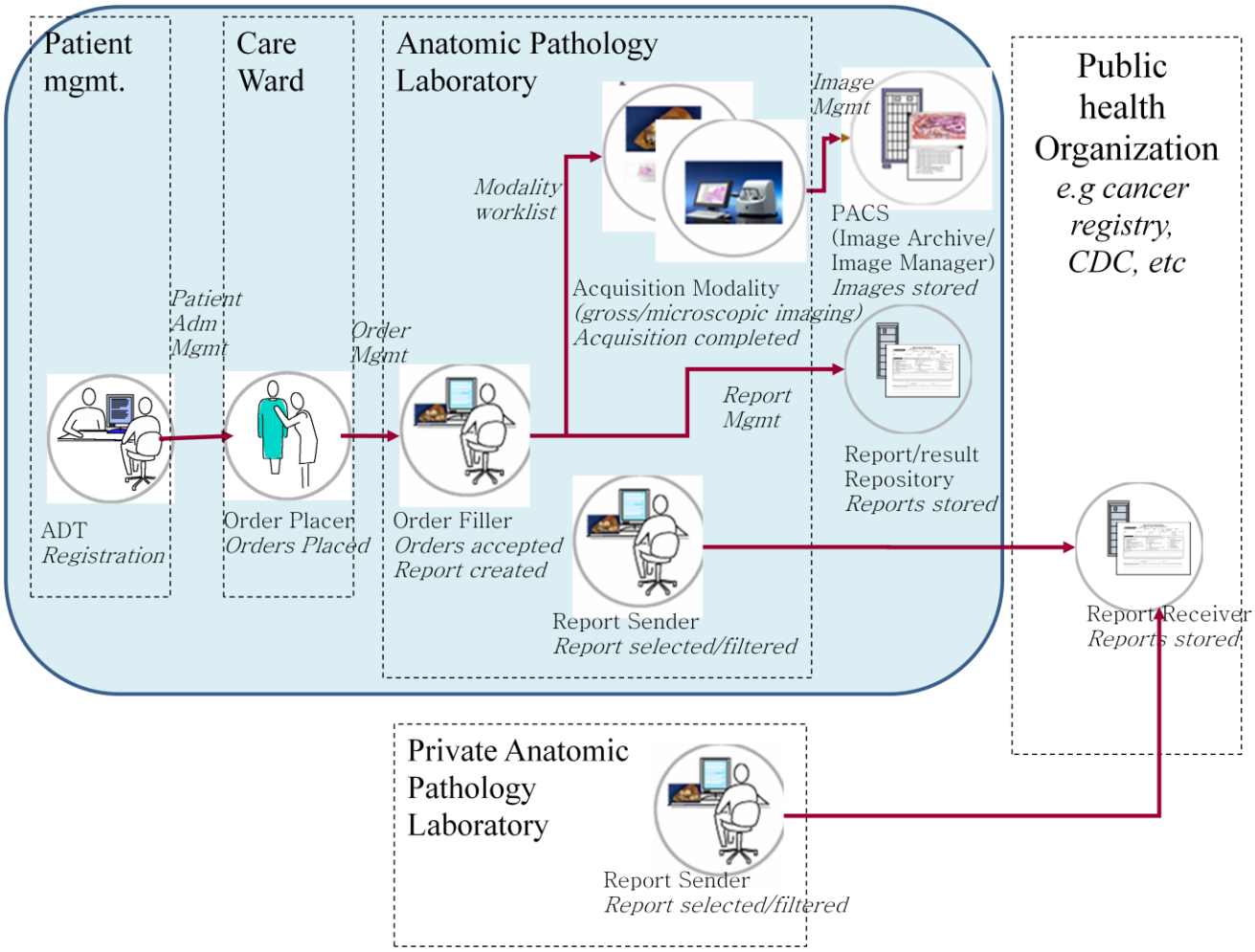


Figure 1.15-1

1.17 Dependencies among Integration Profiles

Add the following line to Table 1.17-1

Anatomic pathology Reporting to Public Health Repositories (ARPH)	CT in ITI TF	All actors of ARPH Integration Profile shall be grouped with the CT Time Client Actor.	

1.18 Profiles Overview

Append sub-section 1.18.2 (taken from the current profile abstract) at the end of section 1.18.

1.18.2 Anatomic Pathology Reporting to Public Health (ARPH)

Public Health organizations collect data of diseases diagnosed in anatomic pathology laboratories such as cancers or premalignant conditions.

The ARPH profile defines the actors and transactions involved in anatomic pathology reporting to public health organizations.

This integration profile will make it easier for anatomic pathology laboratories, public health agencies, and software vendors to adopt a uniform method for report or data transmission and processing. It will facilitate international electronic reporting of anatomic pathology data in public health domain.

1.19 Actors Description

Add the following actor descriptions

Report Sender – An information system that creates or has access to AP reports in final status and is able to send these reports and/or part of these reports to a Report Receiver. This actor is also able to send result corrections and cancellation to the Report Receiver.

Report Receiver – A system that receives and stores AP reports. This actor is able to receive result corrections and cancellation.

1.20 Transaction Description

Add the following transaction descriptions

PAT-10 Public Health Reporting: This transaction carries the report or part of the report provided in fulfillment of an Order from a Report Sender operated by an anatomic pathology laboratory to a Report Receiver operated by a public health organization.

Insert Section 3 "ARPH Integration Profile" before the current section 3 "Sub-specialties use cases", which will become appendix A (the current appendix A becoming appendix B)

3 ARPH Integration Profile

The purpose of this integration profile is to describe anatomic pathology reporting from an anatomic pathology laboratory to public health organizations (cancer registries, centers for diseases control, screening organizations, etc).

Public Health organizations collect data of diseases such as cancers, diagnosed in anatomic pathology laboratories. Cancer registries, for example, collect the type, extent, and location of the cancer. The cancer information gathered is critical for Public Health to have the ability to report Cancer Statistics. Cancer registry data is used to provide information on cancer trends, survival, treatment standards, access to healthcare and serves as a resource for research.

Historically, cancer registries have received paper reports from anatomic pathology laboratories (if received at all) and the registries are currently required to send cancer registrars into anatomic pathology laboratories to manually identify reportable cases and abstract pertinent information into an electronic form. This type of case ascertainment and data collection for the cancer registry is very resource intensive, time consuming, and prone to error in transcription and in missed cases. The process could benefit greatly from the implementation of standards reporting pathology information directly to the central cancer registry.

This integration profile will make it easier for anatomic pathology laboratories, public health agencies, and software vendors to adopt a uniform method for report transmission and processing. It will facilitate international reporting of anatomic pathology data in public health domain.

The ARPH profile defines the actors and transactions involved in reporting anatomic pathology results for public health organizations.

This ARPH Profile intended for international use, is using the same HL7 message profile as the NAACCR newest implementation guide "*NAACCR Standards for Cancer Registries – Volume V*", so that a system implementing the NAACCR implementation guide can be validated as an Actor of the ARPH Profile at the IHE North-American connectathon. Some examples and explanations appearing in Volume 2 of this profile are taken from the NAACCR implementation guide, with courtesy of NAACCR.

3.1 Use cases

Different use cases can be defined depending on the variation of some aspects of the workflow:

3.1.1 Intra/extra hospital specimen processing and reporting & inter laboratory workflow

3.1.1.1 Intra-hospital Specimen Processing and Reporting

Barbara Breast visits Sammy Surgeon for removal of a breast tumor in a surgical center. Sammy Surgeon orders the Requested Procedure "Breast surgical specimen with axillary lymph node - Frozen sections & pathological examination" and sends three specimens (left breast biopsy, apical axillary tissue, contents of left radical mastectomy). The requested procedure is electronically sent to the **Anatomic Pathology laboratory of the hospital** and accessionned DP07120. Terri Technician prints labels DP07120-Part1 for "left breast biopsy", DP07120-Part2 for "apical axillary tissue" and DP07120-Part3 for "contents of left radical mastectomy".

The day after, the Patricia Pathologist performs a macroscopic examination of the specimens and processes specimens for tissue banking and microscopic examination. Figure 3.1-1 depicts the sampling process of the specimens into derived specimens (blocks and tissue sections).

DP07120 : Breast biopsy and mastectomy
- 1: left breast biopsy
  - 1-FS: Tumor, frozen section
    - 1-FS-1: Toluidine blue
    - 1-FS-2: HE
    - 1-FS-3: Paraffin, HE
  - 1-TBB: Tumor, fresh sample for bio banking
  - 1-T: Tumor, mirror paraffin block
    - 1-T-1: HE
    - 1-T-2: HER2
  - 1-SU: Upper margin, red ink
    - 1-SU-1: HE
  - 1-INF: Lower margin, blue ink
    - 1-INF-1: HE
  - 1-LA: Lateral margin, blue ink
    - 1-LA-1: HE
  - 1-ME: Median margin, blue ink
    - 1-ME-1: HE
  - 1-DE: Deep surgical resection margin
    - 1-DE -1: HE
  - 1-NI: Nipple and subjacent tissue
    - 1-NI-1: HE
- 2: Apical axillary tissue
  - 2-LN: Axillary lymph node/Entire
    - 2-LN-1: Axillary lymph node/Entire/HE
- 3: Left radical mastectomy (level I, II, III)
  - 3-I1/4: Axillary lymph nodes Level I-LN1-4/Entire
    - 3-I1/4: Axillary lymph nodes Level I-LN1-4/Entire/HE
  - 3-I5/8: Axillary lymph nodes Level I-LN5-8/Entire
    - 3-I1/4: Axillary lymph nodes Level I-LN5-8/Entire/HE
  - 3-I8/12: Axillary lymph nodes Level I-LN8-12/Entire
    - 3-I1/4: Axillary lymph nodes Level I-LN8-12/Entire/HE
  - 3-II1/2: Axillary lymph nodes Level II-LN1-2/Entire

3-II1/2: Axillary lymph nodes Level II-LN1-2/Entire/HE
3-III1: Axillary lymph nodes Level III-LN1/Entire
3-III1: Axillary lymph nodes Level III-LN1/Entire /HE
3-III2/3: Axillary lymph nodes Level III-LN1/Entire
3-III2/3: Axillary lymph nodes Level III-LN2-3/Entire /HE

Figure 3.1-1

After micrcoscopic examination, Patricia Pathologist records the relevant findings in the AP report and a sends the final report electronically to the surgical center (see APW integration profile, PAT-3 in vol 2) .

Patricia Pathologist also sends the report to the Cancer Registry. The **Report Sender** sends the report to the **Report Receiver** and provides the **Report Receiver** with up-to-date information and statuses of the report (see PAT-10).

3.1.1.2 Specimen Processing and Reporting Using a Service Model

Barbara Breast visits Sammy Surgeon for removal of a breast tumor in a surgical center. Sammy Surgeon orders the Requested Procedure "Breast surgical specimen with axillary lymph node - Frozen sections & pathological examination" and sends three specimens (left breast biopsy, apical axillary tissue, contents of left radical mastectomy). The requested procedure is electronically sent to **a regional service which supplies Anatomic Pathology Laboratory analysis services** to many surgical centers on a contractual basis. The requested procedure is accessioned DP07120. Terri Technician prints labels DP07120-Part1 for "left breast biopsy", DP07120-Part2 for "apical axillary tissue" and DP07120-Part3 for "contents of left radical mastectomy". Patricia Pathologist performs a macroscopic examination of the specimens and processes specimens for tissue banking and microscopic examination. Figure 3.1-1 depicts the sampling process of the specimens into derived specimens (blocks and tissue sections). After microscopic examination, Patricia Pathologist records the relevant findings in the AP report and sends the final report electronically or by mail to the surgical center.

Patricia Pathologist also sends the report to the Cancer Registry. The **Report Sender** sends the report to the **Report Receiver** and provides the **Report Receiver** with up-to-date information and statuses of the report (see PAT-10).

3.1.1.3 Specimen Processing and Reporting with inter-laboratory workflow

Barbara Breast visits Sammy Surgeon for removal of a breast tumor in a surgical center. Sammy Surgeon orders the Requested Procedure "Breast surgical specimen with axillary lymph node - Frozen sections & pathological examination" and sends three specimens (left breast biopsy, apical axillary tissue, and contents of left radical mastectomy). The requested procedure is electronically sent to **a regional service which supplies Anatomic Pathology Laboratory analysis services**. The requested procedure is accessioned DP07120. Terri Technician prints labels DP07120-Part1 for "left breast biopsy", DP07120-Part2 for "apical axillary tissue" and DP07120-Part3 for "contents of left radical mastectomy". Patricia Pathologist performs a macroscopic examination of the specimens and processes specimens for tissue banking and

microscopic examination. Figure 3.1-1 depicts the sampling process of the specimens into derived specimens (blocks and tissue sections).

Derived specimens are forwarded to another Anatomic Pathology Laboratory with a Consultation Request, which asks the second laboratory to store fresh tissue in a tissue bank (DP07120-1: left breast biopsy from DP07120-1: left breast biopsy) and to perform additional analyses (HE and HER2) on the tumoral mirror paraffin block (DP07120-1-T).

After microscopic examination, Patricia Pathologist records the relevant findings in the AP report and sends the final report electronically or by mail to the surgical center. Patricia Pathologist also sends the report to the Cancer Registry. The **Report Sender** sends the report to the **Report Receiver** and provides the **Report Receiver** with up-to-date information and statuses of the report (see PAT-10).

The forwarded specimen(s) are accessioned again at the consulting laboratory (Figure 3.1-2). Additional analysis is performed and new/additional results are recorded. Paul Pathologist sends the additional report to the requesting laboratory, who may append them to the original report (or append or otherwise reference the new findings), and sends the combined result back to the requesting facility.

BREAST Barbara
AP1234 (DP07120 of the requesting laboratory): Breast biopsy and mastectomy
1 (1 of the requesting laboratory): left breast biopsy
1-1 (1-TBB of the requesting laboratory): Tumor, fresh sample
1-2 (1-T of the requesting laboratory): Tumor, mirror paraffin block
1-2-1: HE
1-2-2: HER2

Figure 3.1-2

The requesting laboratory sends the final merged AP report to the Cancer Registry. The **Report Sender** of the facility sends the report to the **Report Receiver** and provides the **Report Receiver** with up-to-date information and statuses of the report (see PAT-10).

3.1.2 Sending narrative or semi-structured or structured reports

In most anatomic pathology laboratories, reports are generally only available as free-text reports. There are many initiatives aiming at structuring AP reports. Structured data formats are a powerful mean for supporting uniformity in reporting for better understanding of pathology reports by clinicians as well as subsequent data viewing and extraction.

There are different degrees of structuring AP information corresponding to different ‘‘levels’’ of machine readability of the AP report.

3.1.2.1 Sending narrative reports

Within a free text or narrative report, sections may be identified by human beings but they are not identified by "Observation identifiers" in a coding system (not readable by computers). An ''unconstrained'' message format (level 1) allows for free text in order to facilitate the transfer of unstructured report. This approach ("old style") provides maximum compatibility with older systems and simplifies the implementation process from a technical standpoint.

3.1.2.2 Sending semi-structured reports

The semi-structured report consists in textual information structured in sections identified with "Observation identifiers". Possible coding systems include LOINC, SNOMED CT. Level 2 adds a specification for section constraints within the message in order to provide some structure while still allowing for unconstrained elements within the headings.

Examples of "Observation identifier" (NAACCR Pathology Laboratory Electronic Reporting version 3.0)

- Final Diagnosis (LOINC code: 22637-3 Path report final diagnosis): diagnosis fields including final diagnosis (histological diagnosis including grade and stage)
- Text Diagnosis (LOINC code: 33746-9 Pathologic findings)
- Clinical History (LOINC code: 22636-5 Path report relevant Hx)
- Nature of Specimen (LOINC code: 22633-2 Path report site of origin): body site, subsite, surgical procedure
- Gross Pathology (LOINC code: 22634-0 Path report gross description)
- Micro Pathology (LOINC code: 22635-7 Path report microscopic observation): microscopic description
- Comment Section (LOINC code: 22638-1 Path report comments)
- Suppl Reports (LOINC code: 22639-9 Path report supplemental reports)

3.1.2.3 Sending structured reports

The structured report consists in a list of structured observations (coded data or findings or items) based on templates (e.g. in the US CAP cancer check-lists and in France the SFP (French society of pathology) templates CRFS). Templates are identified by template identifiers and version. Not only the content structuring is important to facilitate the retrieval of APRs information, but also the coding (tagging with codes) of these contents with standard codes. The most frequent used coding systems in anatomic pathology domain are SNOMED Clinical Terms® (SNOMED CT®), ICD-O-3 and ADICAP in France.

Level 3 provides for fully structured ''entry level templates'' and is by far the most granular, allowing for maximum machine readability. In essence, each increasing level allows for additional machine readability, but the clinical content of the notes should be identical in all three levels.

Depending on the activity (patient care, research, training) the features that are reproducible and relevant could be slightly different. It is important to analyze the workflow of anatomic pathology reporting and to adapt the reporting IT solution to their specific use.

Cancer surveillance programs, for example, may utilize pathology reports to identify new cases and collect information on previously reported cases. As part of quality assurance initiatives, some items of the AP report are required for accreditation purposes by INCA (in France) or The American College of Surgeons' Commission on Cancer (in US).

3.1.3 Sending AP reports one by one or grouped into a batch

3.1.3.1 Sending AP report in real time one by one

After microscopic examination, Patricia Pathologist records the relevant findings in the AP report and a sends the final report electronically or by mail to the surgical center. Patricia Pathologist also sends in real time the report to the Cancer Registry.

3.1.3.2 Sending a batch grouping a number of AP reports over a period of time

Every month, Paul Pathologist, in charge of the communication between the Anatomic Pathology laboratory and the Cancer Registry, sends a batch grouping the AP reports over a period of time.

3.1.4 Sending all AP reports or only the relevant ones

3.1.4.1 Sending all AP reports to the Public Health Organization

After microscopic examination, Patricia Pathologist records the relevant findings in the AP report and a sends the final report electronically or by mail to the surgical center. Patricia Pathologist also sends in real time the final report to the Cancer Registry, regardless of whether there is a cancer diagnosis. The Cancer Registry receives all AP reports and selects the relevant ones during an internal process.

3.1.4.2 Selecting AP reports relevant for the Public Health Organization

After microscopic examination, Patricia Pathologist records the relevant findings in the AP report and a sends the final report electronically or by mail to the surgical center. Then, **if the case is relevant for the Cancer Registry**, Patricia Pathologist also sends the report to the Cancer Registry.

In case of automatic transfer of batch, the automatic AP selection process could be defined using selection criteria if available.

3.1.5 Sending the whole AP report or only a subset of relevant items

This alternative only occurs when pathologists are using level 2 or level 3 AP report templates to produce **structured or semi-structured reports.**

3.1.5.1 Sending the whole anatomic pathology report to the Public Health Organization

After microscopic examination, Patricia Pathologist records the relevant findings in the AP **structured or semi-structured report**. She sends the final **structured report** electronically or by mail to the surgical center. She also sends the **whole structured or semi-structured report** to the Cancer Registry.

3.1.5.2 Selecting within AP reports a subset of items relevant for the Public Health Organization in addition to the textual report

After microscopic examination, Patricia Pathologist records the relevant findings in the AP **structured or semi-structured report**. She sends the final **structured report** electronically or by mail to the surgical center. Then, she selects among the **whole structured or semi-structured report** the section and/or items that shall be sent to the Cancer Registry in addition to the textual report.

Some Public Health organizations may require a minimal list of structured observations (coded data or findings or items) in addition to the narrative report (possibly extracted from structured reports). These requirements should be defined in Public Health templates.

Example

- Section “Final Diagnosis”
  - Final diagnosis (histological diagnosis including grade and stage)
  - Diagnostic (topography and morphology) codes (specifying the code system e.g. SNOMED, ADICAP, ICD-O)
  - pT pN (pM if available) (for cancers)
- Section “Gross Pathology”
  - Tumor size (for cancers)
  - Distance between tumor and the closest margin (for cancers)
  - State of the clinically important surgical margins (for cancers)

In case of automatic transfer of batch, the automatic content filtering process could be defined using selection criteria defined in templates.

3.2 Actors/Transactions

Figure 3.2-1 shows the actors directly involved in the "Anatomic Pathology Reporting to Public Health" Integration Profile (ARPH) and the relevant transactions between them.

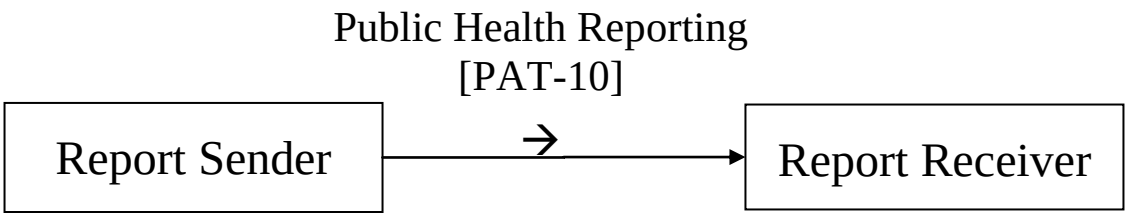


Figure 3.2-1. ARPH Actor Diagram

Table 3.2-1 lists the transactions for each actor directly involved in the ARPH Profile. In order to claim support of this Integration Profile, an implementation must perform the required transactions (labeled "R"). Transactions labeled "O" are optional. A complete list of options defined by this Integration Profile and that implementations may choose to support is listed in Volume I, Section 3.3.

Table 3.2-1. ARPH Integration Profile - Actors and Transactions

Actors	Transactions	Optionality	Section in Vol. 2
Report Sender	Public Health Reporting	R	Z.1
Report Receiver	Public Health Reporting	R	Z.1

3.3 ARPH Integration Profile Options

Options that may be selected for this Integration Profile are listed in the table 3.3-1 along with the Actors to which they apply. Dependencies between options when applicable are specified in notes.

Table 3.3-1 ARPH - Actors and Options

Actor	Options	Vol & Section
Report Sender	*Batch Option*	Vol 2, section Z
Report Receiver	*Batch Option*	Vol 2, section Z

Batch:

The *Batch* option enables the Report Sender to send a group of pathology reports in one single batch addressed to the Report Receiver, in order to support use case 3.1.3.2 described above.

3.4 ARPH Process Flow

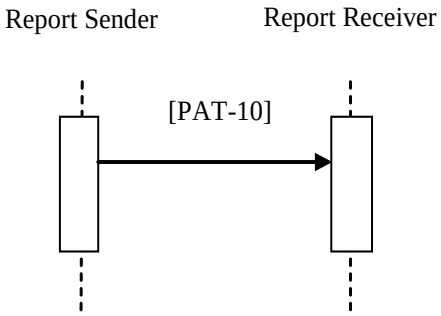


Figure 3.4-1. Basic Process Flow in ARPH Profile

3.5 ARPH Security considerations

3.5.1 Confidentiality

This integration profile exports Protected Health Information (PHI) outside of the anatomic pathology laboratory to a public health organization, over a network, which may be a public network. Such a workflow brings risks of disclosure of PHI to third parties. The dispositions that will cover the confidentiality requirements related to these risks are closely linked to country regulations. Some countries will require that these exported anatomic pathology reports be anonymized or pseudonymized by the sender; other countries will require to keep personal data in the report and will provide strict policies to protect this data against unintended disclosure.

Therefore these dispositions are left to national extensions of this profile.

Volume 2 – Transactions

Add copyright issues with NAACCR in section 1.8, as follows:

1.8 Copyright Permission

3 Common Message Segments

In section 3 – Common Message Segments, replace 1st paragraph as follows

This section describes the common message segments used by the transactions ~~PAT-1, PAT-2, PAT-3 and PAT-4~~ of the Anatomic Pathology Technical Framework.

3.1 MSH – Message Header segment

In section 3.1 – MSH Message Header Segment, replace the whole segment table 3.1-1 by the one below, which releases usage of fields MSH-3, MSH5 and MSH-6 from "R" to "RE", and adds the lines that were missing: MSH-13 (usage X) and MSH-20 (usage C), not changing any properties on the other lines

Table 3.1-1: MSH - Message Header segment.

SEQ	LEN	DT	Usage	Card.	TBL #	ITEM#	Element name
1	1	SI	R	[1..1]		00001	Field Separator
2	4	ST	R	[1..1]		00002	Encoding Characters
3	227	HD	RE	[0..1]		00003	Sending Application
4	227	HD	R	[1..1]		00004	Sending Facility
5	227	HD	RE	[0..1]		00005	Receiving Application
6	227	HD	RE	[0..1]		00006	Receiving Facility
7	26	TS	R	[1..1]		00007	Date/Time of Message
8	40	ST	X	[0..0]		00008	Security
9	15	MSG	R	[1..1]		00009	Message Type
10	20	ST	R	[1..1]		00010	Message Control Id
11	3	PT	R	[1..1]		00011	Processing Id
12	60	VID	R	[1..1]		00013	Version ID
13	15	NM	X	[0..0]		00014	Sequence Number
14	180	ST	X	[0..0]		00014	Continuation Pointer
15	2	ID	X	[0..0]	0155	00015	Accept Acknowledgement Type
16	2	ID	X	[0..0]	0155	00016	Application Acknowledgement Type
17	3	ID	RE	[1..1]	0399	00017	Country Code
18	16	ID	C	[0..1]	0211	00692	Character Set
19	250	CE	RE	[1..1]		00693	Principal Language of Message
20	20	ID	C	[0..1]		01317	Alternate Character Set Handling Scheme
21	427	EI	RE	[0..*]		01598	Message Profile Identifier

In section 3.1 – MSH Message Header Segment, insert the description of field MSH-3 as follows:

MSH-3 Sending Application (HD) 00003, required if known

Components: <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

HL7 Definition: This field uniquely identifies the sending application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. Entirely site-defined.

In section 3.1 – MSH Message Header Segment, insert the description of field MSH-5 as follows:

MSH-5 Receiving Application (HD) 00005, required if known

Components: <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>

HL7 Definition: This field uniquely identifies the receiving application among all other applications within the network enterprise. The network enterprise consists of all those applications that participate in the exchange of HL7 messages within the enterprise. Entirely site-defined

In section 3.1 – MSH Message Header Segment, update the top line of the detailed description of field MSH-6 as follows:

MSH-6 Receiving Facility (HD), required if known:

In section 3.1 – MSH Message Header Segment, insert the following field description for field MSH-20

MSH-20 Alternate Character Set Handling Scheme (ID), conditional:

HL7 definition: When any alternative character sets are used (as specified in the second or later iterations of MSH-18 character sets), and if any special handling scheme is needed, this component is to specify the scheme used, according to HL7 Table 0356- Alternate character set handling scheme as defined below:

HL7 Table 0356 - Alternate character set handling scheme

Value	Description	Comment
ISO 2022-1994	This standard is titled "Information Technology - Character Code Structure and Extension Technique". .	This standard specifies an escape sequence from basic one byte character set to specified other character set, and vice versa. The escape sequence explicitly specifies what alternate character set to be evoked. Note that in this mode, the actual ASCII escape character is used as defined in the referenced ISO document. As noted in 1.7.1, escape sequences to/from alternate character set should occur within HL7 delimiters. In other words, HL7 delimiters are basic one byte characters only, and just before and just after delimiters, character encoding status should be the basic one byte set.

Value	Description	Comment
2.3	The character set switching mode specified in HL7 2.5, section2.7.2, “Escape sequences supporting multiple character sets” and section 2.A.46, "XPN – extended person name".	Note that the escape sequences used in this mode do not use the ASCII "esc" character, as defined in ISO 2022-1994. They are "HL7 escape sequences" as first defined in HL7 2.3, sec. 2.9.2. (Also, note that sections 2.8.28.6.1and 2.9.2 in HL7 2.3 correspond to sections 2.16.93 and 2.7.2 in HL7 2. 5.)
<null>	This is the default, indicating that there is no character set switching occurring in this message.	This is the default.

Condition predicate: This field shall be valued for messages using more than one character set.

3.2 NTE - Notes and Comment segment

Replace completely section 3.2 – NTE Notes and Comment by the following. The only change is the usage of field NTE-1 from “R” to “RE”

HL7 v2.5.1: chapter 2 (2.15 Message control)

This segment is used for sending notes and comments.

The IHE Pathology Technical Framework limits the use of this segment to only one purpose: to comment the observations and the orders. Therefore, in the messages of this Integration Profile, NTE segments appear only below OBR or OBX segments.

Information that can be coded in OBX segments or OBR segments shall not be sent in a NTE segment.

Table 3.2-1: NTE - Notes and Comment segment.

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	Element name
1	4	SI	RE	[0..1]		00096	Set ID – NTE
2	8	ID	RE	[0..1]		00097	Source of Comment
3	65536	FT	RE	[0..1]		00098	Comment
4	250	CE	RE	[0..1]		01318	Comment Type

NTE-1 Set ID - NTE (SI), required if known.

NTE-2 Source of Comment (ID), required if known.

IHE Pathology Technical Framework populates this field with one of these values:

Table 3.2-3: Source of Comment.

Value	Meaning	Comment
L	Order Filler is the source of the comment	
P	Order Placer is the source of the comment	
O	Other System is the source of the comment	

NTE-3 Comment (FT), required but may be empty: This field contains the text of the comment. This text may be formatted. In order to delete an existing comment, the field shall contain empty quotation marks: "".

Comment text of identical type and source shall be included in the same occurrence of an NTE segment, and not be split over multiple segments.

NTE-4 Comment Type (CE), required if known.

The IHE Pathology Technical Framework populates this field with one of these values:

Table 3.2-4: Comment Type.

Value	Meaning	Comment
I	Internal remark, that shall not be sent outside of the Pathology	Shall not be sent to the Order Result Tracker

3.3 PID - Patient Identification segment

In section 3.3 – PID Patient Identification Segment, update segment table 3.3-1 with these changes:

Add the lines that were missing: PID-33 (usage O) and PID-34 (usage O)

Change usage of fields PID-13, PID-14, PID-16, PID-23 from O to RE

Change usage of field PID-19 from X to O

Change usage of fields PID-35, PID-36 from C to X

Table 3.3-1: PID - Patient Identification segment.

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	Element name
1	4	SI	O	[1..1]		00104	Set ID - PID
2	20	CX	X	[0..1]		00105	Patient ID
3	250	CX	R	[1..*]		00106	Patient Identifier List
4	20	CX	X	[0..1]		00107	Alternate Patient ID - PID
5	250	XPN	R	[1..*]		00108	Patient Name
6	250	XPN	O	[0..1]		00109	Mother's Maiden Name
7	26	TS	RE	[0..1]		00110	Date/Time of Birth
8	1	IS	R	[1..1]	0001	00111	Administrative Sex
9	250	XPN	X	[0..1]		00112	Patient Alias
10	250	CE	O	[0..1]	0005	00113	Race
11	250	XAD	RE	[0..*]		00114	Patient Address
12	4	IS	X	[0..1]	0289	00115	County Code
13	250	XTN	~~O~~ RE	[0..*]		00116	Phone Number - Home

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	Element name
14	250	XTN	~~O~~ RE	[0..*]		00117	Phone Number - Business
15	250	CE	O	[0..1]	0296	00118	Primary Language
16	250	CE	~~O~~ RE	[0..1]	0002	00119	Marital Status
17	250	CE	O	[0..1]	0006	00120	Religion
18	250	CX	O	[0..1]		00121	Patient Account Number
19	16	ST	~~X~~ O	[0..1]		00122	SSN Number - Patient
20	25	DLN	X	[0..1]		00123	Driver's License Number - Patient
21	250	CX	O	[0..*]		00124	Mother's Identifier
22	250	CE	O	[0..1]	0189	00125	Ethnic Group
23	250	ST	~~O~~ RE	[0..1]		00126	Birth Place
24	1	ID	O	[0..1]	0136	00127	Multiple Birth Indicator
25	2	NM	O	[0..1]		00128	Birth Order
26	250	CE	O	[0..1]	0171	00129	Citizenship
27	250	CE	O	[0..1]	0172	00130	Veterans Military Status
28	250	CE	X	[0..0]	0212	00739	Nationality
29	26	TS	RE	[0..1]		00740	Patient Death Date and Time
30	1	ID	RE	[0..1]	0136	00741	Patient Death Indicator
31	1	ID	RE	[0..1]	0136	01535	Identity Unknown Indicator
32	20	IS	RE	[0..1]	0445	01536	Identity Reliability Code
33	26	TS	O	[0..1]		01537	Last Update Date/Time
34	241	HD	O	[0..1]		01538	Last Update Facility
35	250	CE	~~C~~ X	[0..1]	0446	01539	Species Code
36	250	CE	~~C~~ X	[0..1]	0447	01540	Breed Code

In section 3.3 – PID Patient Identification Segment:

Insert field descriptions for PID-16

Change field description for PID-18

insert field descriptions for PID-19

Insert field descriptions for PID-23

change field descriptions of PID-35 and PID-36

PID-16, Marital Status (CE).

HL7 Definition: This field contains the patient's marital (civil) status.

This field is required if available in the IHE Anatomic Pathology Technical Framework. The possible values are defined in user-defined Table 0002 below:

User-defined Table 0002 - Marital Status

Value	Description	Comment
A	Separated	
D	Divorced	
M	Married	
S	Single	
W	Widowed	
C	Common law	
G	Living together	
P	Domestic partner	
R	Registered domestic partner	
E	Legally Separated	
N	Annulled	
I	Interlocutory	
B	Unmarried	
U	Unknown	
O	Other	
T	Unreported	

PID-18, Patient Account Number (CX).

HL7 Definition: this field contains the patient account number assigned by accounting to which all charges, payments, etc., are recorded. It is used to identify the patient's account.

Relationship to encounter: A patient account can span more than one enterprise encounter. At least one of the fields PID-18 "Patient Account Number" or PV1-19 "Visit Number" shall be valued in the messages ~~of transaction ITI-31 that use the PV1 segment~~. Additional requirements for the presence of value in these fields may be documented in national extensions of this profile.

PID-19, SSN Number - Patient (ST). This field may be further constrained in national extensions.

PID-23, Birth Place (ST).
HL7 Definition: This field indicates the location of the patient's birth, for example "St. Francis Community Hospital of Lower South Side". The actual address is reported if needed in PID-11 with an identifier of "N".

This field is required if known.

PID-35, Species Code (CE).

~~Condition predicate: shall be used if the test subject is a non-~~ This field is not supported by the Anatomic Pathology Technology Framework, which is bound to human living subject.

PID-36, Breed Code (CE).

~~Condition predicate: shall be used if the test subject is a non-~~ This field is not supported by the Anatomic Pathology Technology Framework, which is bound to human living subject.

Insert section 3.4 - NK1 - Next of Kin/Associated Parties segment

3.4 NK1 - Next of Kin/Associated Parties segment

HL7 v2.5.1: chapter 3 (3.4.3)

The NK1 segment contains information about the patient's other related parties. Any associated parties may be identified. Utilizing NK1-1 - set ID, multiple NK1 segments can be sent.

In anatomic pathology, this segment may be useful to provide information on other members of the patient's family. The IHE Anatomic Pathology Technical Framework does not constrain the usage of this segment but may do so in future cycles.

Table 3.4-1: NK1 - Next of Kin/Associated Parties segment

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	ELEMENT NAME
1	4	SI	R	[1..1]		00190	Set ID - NK1
2	250	XPN	O	[0..*]		00191	Name
3	250	CE	O	[0..1]	0063	00192	Relationship
4	250	XAD	O	[0..*]		00193	Address
5	250	XTN	O	[0..*]		00194	Phone Number
6	250	XTN	O	[0..*]		00195	Business Phone Number
7	250	CE	O	[0..1]	0131	00196	Contact Role
8	8	DT	O	[0..1]		00197	Start Date
9	8	DT	O	[0..1]		00198	End Date
10	60	ST	O	[0..1]		00199	Next of Kin / Associated Parties Job Title
11	20	JCC	O	[0..1]	0327/ 0328	00200	Next of Kin / Associated Parties Job Code/Class
12	250	CX	O	[0..1]		00201	Next of Kin / Associated Parties Employee Number
13	250	XON	O	[0..*]		00202	Organization Name - NK1
14	250	CE	O	[0..1]	0002	00119	Marital Status
15	1	IS	O	[0..1]	0001	00111	Administrative Sex
16	26	TS	O	[0..1]		00110	Date/Time of Birth
17	2	IS	O	[0..*]	0223	00755	Living Dependency
18	2	IS	O	[0..*]	0009	00145	Ambulatory Status
19	250	CE	O	[0..*]	0171	00129	Citizenship
20	250	CE	O	[0..1]	0296	00118	Primary Language

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	ELEMENT NAME
21	2	IS	O	[0..1]	0220	00742	Living Arrangement
22	250	CE	O	[0..1]	0215	00743	Publicity Code
23	1	ID	O	[0..1]	0136	00744	Protection Indicator
24	2	IS	O	[0..1]	0231	00745	Student Indicator
25	25080	CE	O	[0..1]	0006	00120	Religion
26	250	XPN	O	[0..*]		00109	Mother's Maiden Name
27	250	CE	O	[0..1]	0212	00739	Nationality
28	250	CE	O	[0..*]	0189	00125	Ethnic Group
29	250	CE	O	[0..*]	0222	00747	Contact Reason
30	250	XPN	O	[0..*]		00748	Contact Person's Name
31	250	XTN	O	[0..*]		00749	Contact Person's Telephone Number
32	250	XAD	O	[0..*]		00750	Contact Person's Address
33	250	CX	O	[0..*]		00751	Next of Kin/Associated Party's Identifiers
34	2	IS	O	[0..1]	0311	00752	Job Status
35	250	CE	O	[0..*]	0005	00113	Race
36	2	IS	O	[0..1]	0295	00753	Handicap
37	16	ST	O	[0..1]		00754	Contact Person Social Security Number
38	250	ST	O	[0..1]		01905	Next of Kin Birth Place
39	2	IS	O	[0..1]	0099	00146	VIP Indicator

Replace the current full section 3.4 – PV1 - Patient Visit segment, with section 3.5 below:

Exhaustive listing of segment table + following usage changes:

PV1-3 - Assigned Patient Location: change from RE to C

PV1-7 – Attending Doctor: change from O to RE

PV1-8 – Referring Doctor: change from O to RE

PV1-17 – Admitting Doctor: change from O to RE

3.5 PV1 - Patient Visit segment

HL7 v2.5.1: chapter 3 (3.4.3)

The PV1 segment communicates information on the patient visit to the healthcare enterprise.

Table 0.4-1: PV1 - Patient Visit segment

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	ELEMENT NAME

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	ELEMENT NAME
1	4	SI	O	[0..1]		00131	Set ID - PV1
2	1	IS	R	[1..1]	0004	00132	Patient Class
3	80	PL	C	[0..1]		00133	Assigned Patient Location
4	2	IS	O	[0..1]	0007	00134	Admission Type
5	250	CX	O	[0..1]		00135	Preadmit Number
6	80	PL	O	[0..1]		00136	Prior Patient Location
7	250	XCN	RE	[0..2]	0010	00137	Attending Doctor
8	250	XCN	RE	[0..2]	0010	00138	Referring Doctor
9	250	XCN	X	[0..0]	0010	00139	Consulting Doctor
10	3	IS	O	[0..1]	0069	00140	Hospital Service
11	80	PL	O	[0..1]		00141	Temporary Location
12	2	IS	O	[0..1]	0087	00142	Preadmit Test Indicator
13	2	IS	O	[0..1]	0092	00143	Re-admission Indicator
14	6	IS	O	[0..1]	0023	00144	Admit Source
15	2	IS	O	[0..*]	0009	00145	Ambulatory Status
16	2	IS	O	[0..1]	0099	00146	VIP Indicator
17	250	XCN	RE	[0..2]	0010	00147	Admitting Doctor
18	2	IS	O	[0..1]	0018	00148	Patient Type
19	250	CX	O	[0..1]		00149	Visit Number
20	50	FC	O	[0..*]	0064	00150	Financial Class
21	2	IS	O	[0..1]	0032	00151	Charge Price Indicator
22	2	IS	O	[0..1]	0045	00152	Courtesy Code
23	2	IS	O	[0..1]	0046	00153	Credit Rating
24	2	IS	O	[0..*]	0044	00154	Contract Code
25	8	DT	O	[0..*]		00155	Contract Effective Date
26	12	NM	O	[0..*]		00156	Contract Amount
27	3	NM	O	[0..*]		00157	Contract Period
28	2	IS	O	[0..1]	0073	00158	Interest Code
29	4	IS	O	[0..1]	0110	00159	Transfer to Bad Debt Code
30	8	DT	O	[0..1]		00160	Transfer to Bad Debt Date
31	10	IS	O	[0..1]	0021	00161	Bad Debt Agency Code
32	12	NM	O	[0..1]		00162	Bad Debt Transfer Amount
33	12	NM	O	[0..1]		00163	Bad Debt Recovery Amount
34	1	IS	O	[0..1]	0111	00164	Delete Account Indicator
35	8	DT	O	[0..1]		00165	Delete Account Date
36	3	IS	O	[0..1]	0112	00166	Discharge Disposition
37	47	DLD	O	[0..1]	0113	00167	Discharged to Location

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	ELEMENT NAME
38	250	CE	O	[0..1]	0114	00168	Diet Type
39	2	IS	O	[0..1]	0115	00169	Servicing Facility
40	1	IS	X	[0..0]	0116	00170	Bed Status
41	2	IS	O	[0..1]	0117	00171	Account Status
42	80	PL	O	[0..1]		00172	Pending Location
43	80	PL	O	[0..1]		00173	Prior Temporary Location
44	26	TS	O	[0..1]		00174	Admit Date/Time
45	26	TS	O	[0..1]		00175	Discharge Date/Time
46	12	NM	O	[0..1]		00176	Current Patient Balance
47	12	NM	O	[0..1]		00177	Total Charges
48	12	NM	O	[0..1]		00178	Total Adjustments
49	12	NM	O	[0..1]		00179	Total Payments
50	250	CX	O	[0..1]	0203	00180	Alternate Visit ID
51	1	IS	O	[0..1]	0326	01226	Visit Indicator
52	250	XCN	X	[0..0]	0010	01274	Other Healthcare Provider

PV1-2, Patient Class (IS).

Patient Class is the only required field of PV1 segment in the HL7 2.5.1. standard. It is also required in the IHE Anatomic Pathology Technical Framework, though its definition and value set are left to national extensions of this TF.

PV1-3, Assigned Patient Location (PL).

This field is conditional (usage C) in the Anatomic Pathology Technical Framework

Condition predicate: In transaction PAT-10 this field is not supported (usage X). In all other transactions of the TF this field is required if known (usage RE).

PV1-7 Attending doctor (XCN)

This field if required if known (usage RE) with maximum 2 repetitions

Definition: This field contains the attending physician information. Multiple names and identifiers for the same physician may be sent. The field sequences are not used to indicate multiple attending doctors. The legal name must be sent in the first sequence. If the legal name is not sent, then a repeat delimiter must be sent in the first sequence. Depending on local agreements, either ID or the name may be absent in this field.

PV1-8 Referring doctor (XCN)

This field if required if known (usage RE) with maximum 2 repetitions

Definition: This field contains the referring physician information. Multiple names and identifiers for the same physician may be sent. The field sequences are not used to indicate multiple referring doctors. The legal name must be sent in the first sequence. If the legal name is not sent, then a repeat delimiter must be sent in the first sequence. Depending on local agreements, either the ID or the name may be absent from this field. Refer to

PV1-9, Consulting Doctor (XCN).

This field is not supported by the IHE Anatomic Pathology Technical Framework, because kept for backward compatibility in the HL7 2.5.1 standard. A consulting doctor is now represented in a ROL segment instead.

PV1-17, Admitting doctor (XCN)

This field if required if known (usage RE) with maximum 2 repetitions

Definition: This field contains the admitting physician information. Multiple names and identifiers for the same physician may be sent. The field sequences are not used to indicate multiple admitting doctors. The legal name must be sent in the first sequence. If the legal name is not sent, then a repeat delimiter must be sent in the first sequence. By local agreement, the name or ID may be absent in this field.

PV1-19, Visit Number (CX). This field contains the unique identifier assigned to the encounter. At least one of the fields PID-18 “Patient Account Number” or PV1-19 “Visit Number” shall be valued in the messages of transaction ITI-31 that use the PV1 segment. Additional requirements for the presence of values in these fields may be documented in national extensions of this profile.

PV1-51, Visit Indicator (IS). Shall be valued with value 'V' if the field PV1-19 is present. The field may be omitted otherwise.

In section 3.6 - ORC – Common Order segment, replace the currently incomplete ORC segment table by the following one, inserting the missing fields (6, 13, 15, 22, 23, 24, 28, 29, 31), and bringing the following usage changes: ORC-9 from R to C ; ORC-10 from RE to C ; ORC-11 from RE to C ; ORC-12 from RE to C ; ORC-14 from RE to C ; ORC-16 from RE to C ; ORC-17 from RE to C ;

3.6 ORC – Common Order segment

Table 0.6-1: ORC - Common Order segment.

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	Element name
1	2	ID	R	[1..1]	0119	00215	Order Control

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	Element name
2	22	EI	C	[0..1]		00216	Placer Order Number
3	22	EI	C	[0..1]		00217	Filler Order Number
4	22	EI	RE	[0..1]		00218	Placer Group Number
5	2	ID	C	[0..1]	0038	00219	Order Status
6	1	ID	O	[0..1]	0121	00220	Response Flag
7	200	TQ	X	[0..0]		00221	Quantity/Timing
8	200	EIP	X	[0..0]		00222	Parent
9	26	TS	~~R~~ C	[1..1]		00223	Date/Time of Transaction
10	250	XCN	~~RE~~ C	[0..*]		00224	Entered By
11	250	XCN	~~RE~~ C	[0..*]		00225	Verified By
12	250	XCN	~~RE~~ C	[0..*]		00226	Ordering Provider
13	80	PL	O	[0..1]		00227	Enterer's Location
14	250	XCN	~~RE~~ C	[0..*]		00228	Call Back Phone Number
15	26	TS	O	[0..1]		00229	Order Effective Date/Time
16	250	CE	~~RE~~ C	[0..1]		00230	Order Control Code Reason
17	250	CE	~~RE~~ C	[0..1]		00231	Entering Organization
18	250	CE	X	[0..0]		00232	Entering Device
19	250	XCN	X	[0..0]		00233	Action By
20	250	CE	X	[0..0]	0339	01310	Advanced Beneficiary Notice Code
21	250	XON	RE	[0..1]		01311	Ordering Facility Name
22	250	XAD	RE	[0..4]		01312	Ordering Facility Address
23	250	XTN	RE	[0..4]		01313	Ordering Facility Phone Number
24	250	XAD	RE	[0..4]		01314	Ordering Provider Address
25	250	CWE	X	[0..0]		01473	Order Status Modifier
26	60	CWE	X	[0..0]	0552	01641	Advanced Beneficiary Notice Override Reason
27	26	TS	C	[0..1]		01642	Filler's Expected Availability Date/Time
28	250	CWE	O	[0..1]		00615	Confidentiality Code
29	250	CWE	O	[0..1]		01643	Order Type
30	250	CNE	X	[0..0]	0483	01644	Enterer Authorization Mode
31	250	CWE	X	[0..1]		02286	Parent Universal Service Identifier

Complement ORC-2 Field description as follows:

680 **ORC-2 Placer Order Number (EI)**, conditional.

Condition predicate: This field shall be valued in all OML/ORL messages sent by the Order Placer.

If the field is valued then its value shall match the value of the required field OBR-2.

This field is not valued in ORU messages.

Complement ORC-3 Field description as follows:

ORC-3 Filler Order Number (EI), conditional.

Condition predicate:

This field shall be valued in all OML/ORL messages sent by the Order Filler and in all ORL messages sent by the Order Placer

If the field is valued then its value shall match the value of the required field OBR-3.

This field is not valued in ORU messages.

In ORC-5 Field description, Change the condition predicate as follows:

ORC-5 Order Status (ID), conditional.

Condition predicate:

This field shall be valued in all OML messages sent by the Order Filler. It represents the status of the order.

This field shall not be valued in OML messages sent by the Order Placer.

This field is not valued in transaction PAT-10

The allowed values for this field within IHE Pathology Technical Framework are a subset of *HL7 table 0038 - Order Status:*

Table 0.5-3: IHE subset of Order Status for all transactions

Value	Description	Comment
A	Some, but not all, results available	
CA	Order was canceled	
CM	Order is completed	
IP	In process, unspecified	
DC	Order was discontinued	
RP	Order has been replaced	

Update ORC-9 Field description as follows:

ORC-9 Date/Time of Transaction (TS), conditional

HL7 Definition: This field contains the date and time of the event that initiated the current transaction as reflected in ORC-1 Order Control Code. This field is not equivalent to MSH-7 Date and Time of Message that reflects the date/time of the creation of the physical message.

Condition predicate:

In OML messages "Status changed" sent by the Order Filler, this field contains the date/time of the last status change of the order (ORC-5) or one of the requested procedure (identified in the following OBR).

In ORU messages this field is not valued.

Update ORC-10 Field description as follows:

ORC-10 Entered By (XCN), ~~optional~~ conditional.

This field contains the identity of the person who actually keyed the request into the application.

Condition predicate:

This field is valued if the information is available in OML messages.

This field is not valued in ORU messages.

Update ORC-11 Field description as follows:

ORC-11 Verified By (XCN), ~~optional~~ conditional.

This field contains the identity of the person who verified the accuracy of the entered request.

Condition predicate:

This field is valued if the information is available in OML messages.

This field is not valued in ORU messages.

Difference with ORC 10 Entered By and ORC 11 Verified By:

Field ORC10 identifies the person who enters the information in the information system, and ORC11 identify the person who verifies the accuracy of the information entered if the enterer is a technician, for example.

Update ORC-12 Field description as follows:

ORC-12 Ordering Provider (XCN), ~~optional~~ conditional.

HL7 definition: This field contains the person (physician) who prescribed this order. See the data model in volume 1.

Condition predicate:

In OML/ORL messages, the field may be valued. If the field is valued then its value has to match the value of the required field OBR-16.

In ORU messages the field is not valued. Only OBR-16 is.

Update ORC-14 Field description as follows:

ORC-14 Callback Phone Number (XTN), ~~Required if known to the sender~~ conditional.

HL7 definition: This field contains the telephone number to call for clarification of a request or other information regarding the order. ORC-14-call back phone number is the same as OBR-17-order callback phone number.

Condition predicate:

In OML/ORL messages, the field may be valued. If the field is valued then its value has to match the value of the required field OBR-17. Multiple phone numbers are allowed.

In ORU messages the field is not valued. Only OBR-17 is.

Update ORC-16 Field description as follows:

ORC-16 Order Control Code Reason (CE), ~~required if known to the sender~~ conditional.

HL7 Definition: This field contains the explanation (either in coded or text form) of the reason for the order event described by the order control code. The purpose of the order control code reason is only to expand on the reason for the order event.

Condition predicate:

In OLM/ORL messages this field may be valued. The IHE Anatomic Pathology Technical Framework does not constrain any predefined coded vocabulary, and recommends the sole usage of the text form (in sub-field ORC-16.2).

In ORU messages the field is not valued.

Update ORC-17 Field description as follows:

ORC-17 Entering Organization (CE) , conditional

HL7 definition: This field identifies the organization that the enterer belonged to at the time he/she enters/maintains the order, such as medical group or department. The person who entered the request is defined in ORC-10 -entered by.

Condition predicate:

In OLM/ORL messages this field is valued if the information is available.

In ORU messages the field is not valued.

Insert ORC-22 Field description as follows:

ORC-22 Ordering facility address (XAD), Required or empty, Repeating maximum 4

Definition: This field contains the address of the facility placing the order.

Insert ORC-23 Field description as follows:

ORC-23 Ordering facility phone number (XTN), Required or empty, Repeating maximum 4

Definition: This field contains the telephone number of the facility placing the order.

Insert ORC-24 Field description as follows:

ORC-24 Ordering provider address (XAD) , Required or empty, Repeating maximum 4

Definition: This field contains the address of the care provider requesting the order. This field contains relevant address information for the ordering provider described in OBR-16 (and ORC-12).

Replace current section 3.7 – Specimen segment, by the section 3.8 below

3.8 SPM – Specimen segment

HL7 v2.5.1: chapter 7 (7.4.3)

HL7 v2.7: chapter 7 (7.4.3)

For specimen definition, specimen types, relationship between specimen and container and examples of specimen identification, see Pathology TF-1, Appendix A.

In transactions PAT-1, PAT-2 and PAT-4, the specimen is a part (uniquely identified tissue or material collected from the patient and delivered to the pathology department for examination).

In transactions PAT-3, PAT-5 and PAT-10, the specimen can be a part or any child specimen derived from a part.

Table 0.8-1: SPM - Specimen segment.

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	Element name
1	4	SI	R	[1..1]		01754	Set ID – SPM
2	80	EIP	R	[1..1]		01755	Specimen ID
3	80	EIP	RE	[0..*]		01756	Specimen Parent IDs

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	Element name
4	250	CWE	R	[1..1]	0487	01900	Specimen Type
5	250	CWE	X	[0..0]	0541	01757	Specimen Type Modifier
6	250	CWE	O	[0..*]	0371	01758	Specimen Additives
7	250	CWE	X	[0..1]	0488	01759	Specimen Collection Method
8	250	CWE	C	[0..1]		01901	Specimen Source Site
9	250	CWE	C	[0..*]	0542	01760	Specimen Source Site Modifier
10	250	CWE	O	[0..1]	0543	01761	Specimen Collection Site
11	250	CWE	X	[0..0]	0369	01762	Specimen Role
12	20	CQ	X	[0..0]		01902	Specimen Collection Amount
13	6	NM	X	[0..0]		01763	Grouped Specimen Count
14	250	ST	O	[0..1]		01764	Specimen Description
15	250	CWE	O	[0..*]	0376	01908	Specimen Handling Code
16	250	CWE	O	[0..1]	0489	01903	Specimen Risk Code
17	26	DR	RE	[0..1]		01765	Specimen Collection Date/Time
18	26	TS	C	[0..1]		00248	Specimen Received Date/Time
19	26	TS	O	[0..1]		01904	Specimen Expiration Date/Time
20	1	ID	C	[0..1]	0136	01766	Specimen Availability
21	250	CWE	C	[0..*]	0490	01767	Specimen Reject Reason
22	250	CWE	X	[0..0]	0491	01768	Specimen Quality
23	250	CWE	X	[0..0]	0492	01769	Specimen Appropriateness
24	250	CWE	X	[0..0]	0493	01770	Specimen Condition
25	20	CQ	X	[0..0]		01771	Specimen Current Quantity
26	4	NM	RE	[0..1]		01772	Number of Specimen Containers
27	250	CWE	C	[0..1]		01773	Container Type
28	250	CWE	O	[0..1]	0544	01774	Container Condition
29	250	CWE	C	[0..1]	0494	01175	Specimen Child Role
30	20	CX	O	[0..25]		02314	Accession ID
31	20	CX	O	[0..*]		02315	Accession ID

SPM-1 Set ID – SPM (SI), required

This field is used to identify SPM segment instances in messages where the SPM segment repeats. For the first (or only) occurrence of the segment, the sequence number is |1|; for the second occurrence, the sequence number is |2|; etc.

SPM-2 Specimen ID (EIP), required.

This field contains a unique identifier or pair of unique identifiers for the specimen, enterprise-wide. For specimen identification, see Pathology TF-1, Appendix A.

In many laboratories where there is one specimen per container, the value of the specimen ID and container ID will be the same. However, there are use cases in which there is more than one specimen in a container. In those situations, the value of the container ID and the specimen IDs will be different.

SPM-3 Specimen Parent ID (EIP), required if available

In case the specimen is issued from multiple parets, this field repeats. The repetitions carry the specimen IDs of the parent specimens contributing to this child. See the particular use cases where this repetition happens in the discussion below.

Various use cases of production of child specimens:

Specimens are sampled and processed during a laboratory diagnostic workflow. Child specimens are created from existing specimens by sampling. The Specimen Parent ID field contains the identifiers of the specimen or specimens from which the child specimen is sampled.

If the Specimen is a Part, the Specimen Parent is the Patient. If the Specimen is a Tissue item in a block, the Specimen Parent is Patient/Part. If the Specimen is a Tissue item on a slide, the Specimen Parent is Patient/Part/Block Tissue Item.

In case of more than one specimen in or on a container:

If the Specimen is a collection of undistinguishable Tissue items in a block, the Specimen Parent is Patient/1…n Part. In this case there are multiple occurrences of SPM-3.

If the Specimen is an identified Tissue item in a block the Specimen Parent is Patient/Part.

If the Specimen is a collection of undistinguishable Tissue items on a slide, the Specimen Parent is Patient/1…n (Part/Block Tissue Item). In this case there are multiple occurrences of SPM-3.

If the Specimen is an identified Tissue item on a slide the Specimen Parent is Patient/Part/ Block Tissue Item.

If the Specimen is a Tissue core in a TMA block, the Specimen Parent is Patient/Part/DonorBlock Tissue Item.

If the Specimen is a Tissue spot on a TMA slide, the Specimen Parent is Patient/Part/DonorBlock Tissue Item/Tissue core in the TMA block.

SPM-4 Specimen Type (CWE), required.

This field describes the precise nature of the physical object (or collection of objects) that is the subject of one or more steps in the laboratory (diagnostic) workflow. The Specimen Type is a coded precise description of the specimen type (DICOM context ID ccc5), i.e “breast tumorectomy”. This coded description is consistent with the specimen “general” type (DICOM context ID ccc3) (part, tissue item, tissue section, tissue core, etc) and the general specimen collection procedure (DICOM context ID cc10) (aspiration, biopsy, excision, etc).

A nationally recognized coding system is to be used for this field. Valid coding sources for this field include:

- SNOMED CT
- DICOM
- HL7 table 0487 – Specimen Type (replaces HL7 table 0070 – Specimen source codes)
- national nomenclatures

As an example, the following table provides the DICOM values of the Context ID ccc5 (Specimen Description Codes).

Table 0.8-2: DICOM Specimen Description codes.

DICOM Value	Description
x05050a	Lung Lobe Resection
x05050b	Prostate Resection
x05050c	Skin Biopsy
x05050d	Colon Biopsy

SPM-5 Specimen Type Modifier (CWE), not supported

This field contains modifying or qualifying description(s) about the specimen type whenever the vocabulary used in SPM-4 lacks of precision.

The IHE Anatomic Pathology Framework precludes the use of SPM-5 and recommends to use field SPM-4 only, to characterize the type of material subject of investigation, using an appropriate vocabulary.

SPM-6 Specimen Additives (CWE), optional, repeatable.

HL7 definition: This field identifies any additives introduced to the specimen before or at the time of collection. These additives may be introduced in order to preserve, maintain or enhance the particular nature or component of the specimen.

The Anatomic Pathology Technical Framework does not constrain the usage of this field yet.

SPM-7 Specimen Collection Method (CWE), optional.

This field describes the procedure or process by which the specimen was collected.

The Anatomic Pathology Technical Framework does not constrain the usage of this field yet.

SPM-8 Specimen Source Site (CWE), optional.

This field specifies the source from which the specimen was obtained.

The Anatomic Pathology Technical Framework does not constrain the usage of this field yet.

SPM-9 Specimen Source Site Modifier (CWE), optional, repeatable.

This field contains modifying or qualifying description(s) about the specimen source site.

The Anatomic Pathology Technical Framework does not constrain the usage of this field yet.

SPM-10 Specimen Collection Site (CWE), optional.

HL7 definition: This field differs from SPM-8-Specimen Source Site in those cases where the source site must be approached via a particular site (e.g., anatomic location). For example, in the case where a liver biopsy is obtained via a percutaneous needle, the collection site would be the point of entry of the needle.

The Anatomic Pathology Technical Framework does not constrain the usage of this field yet.

SPM-11 Specimen Role (CWE), not supported.

SPM-12 Specimen Collection Amount (CQ), not supported.

SPM-13 Grouped Specimen Count (NM), not supported.

SPM-14 Specimen Description (ST), optional.

HL7 definition: This is a text field that allows additional information specifically about the specimen to be sent in the message.

The Anatomic Pathology Technical Framework does not constrain the usage of this field yet.

SPM-15 Specimen Handling Code (CWE), optional, repeatable.

HL7 definition: This field describes how the specimen and/or container need to be handled from the time of collection through the initiation of testing.

The Anatomic Pathology Technical Framework does not constrain the usage of this field yet.

SPM-16 Specimen Risk Code (CWE), optional.

This field contains any known or suspected specimen hazards.

The Anatomic Pathology Technical Framework does not constrain the usage of this field yet.

SPM-17 Specimen Collection Date/Time (DR), required if available.

Definition: The date and time when the specimen was acquired from the source. The use of the Date Range data type allows for description of specimens collected over a period of time. Having not recognized such use cases in anatomic pathology the Anatomic Pathology Technical Framework recommends to populate this field with a point in time, using only the first component (start date/time) .

SPM-18 Specimen Received Date/Time (TS), required if available.

HL7 definition: The specimen received date/time is the time that the specimen is received at the diagnostic service. The actual time that is recorded is based on how specimen receipt is managed and may correspond to the time the sample is logged in. This is fundamentally different from *SPM-17 Specimen Collection date/time*.

SPM-19 Specimen Expiration Date/Time (TS), Not Supported

SPM-20 Specimen Availability (ID), conditional.

This field describes whether the specimen, as it exists, is currently available to use in an analysis. The two authorized values are "Y" (yes) or "N" (no).

Condition predicate:

This field SHALL be populated in OML messages sent by the Order Filler, within transactions PAT-1, PAT-2, PAT-3. The value 'N' indicates either that the anatomic pathology laboratory hasn't received the specimen yet, or that it has rejected the received specimen. The value of this field can be implicitly derived from ORC-5 (e.g. ORC-5 = 'IP' implicitly means that the specimen has arrived, otherwise the test could not be in progress).

This field is not used in other transactions than PAT-1, PAT-2 and PAT-3.

SPM-21 Specimen Reject Reason (CWE), conditional.

This field describes one or more reasons the specimen is rejected for the ordered batteries

Condition predicate:

This field SHALL be populated in OML messages sent by the Order Filler in transaction PAT-1, whenever the anatomic pathology laboratory rejects a specimen.

This field SHALL be populated in ORU messages of transactions delivering the laboratory results (e.g. PAT-3 and PAT-10) , whenever the anatomic pathology laboratory has rejected a specimen.

Refer to HL7 Table 0490 - Specimen Reject Reason for valid values.

Table 0.8-3: Values for Specimen Reject Reason.

Value	Description	Comment
EX	Expired	
QS	Quantity not sufficient	
RB	broken container	
RD	missing collection date	
R	missing patient ID number	
RE	missing patient name	
RI	Identification problem	
RL	Improper labeling	
RM	Labeling	
RR	improper storage	
RS	name misspelling	

SPM-22 Specimen Quality (CWE), Not Supported

SPM-23 Specimen Appropriateness (CWE), Not Supported

SPM-24 Specimen Condition (CWE), Not Supported

SPM-25 Specimen Current Quantity (CQ), Not Supported

SPM-26 Number of Specimen Containers (NM), required if available.

HL7 Definition: This field identifies the number of containers for a given specimen. For sample receipt verification purposes; may be different from the total number of specimens that accompany the order.

SPM-27 Container Type (CWE), Not Supported

SPM-28 Container Condition (CWE), Not Supported

SPM-29 Specimen Child Role (CWE), Conditional

HL7 Definition: For child specimens, this field identifies the relationship between this specimen and the parent specimen. If this field is populated, then *SPM-3-Specimen Parent ID* must be populated. This field differs from *SPM-15-Specimen Role* in that this field refers to the role of this specimen relative to a parent role rather than the role of this specimen to the ordered service.

Refer to *HL7 Table 0494 – Specimen Child Role* for valid values.

HL7 Table 0494 – Specimen Child Role

Value	Description	Comment
A	Aliquot	
C	Component	
M	Modified from original specimen	

Condition predicate:

This field SHALL be populated if *SPM-3 Specimen Parent Id* is populated.

The last part of this section is taken from NAACCR "*Standards for Cancer Registries Volume V*" implementation guide:

"*Complex flows of information tracking among multiple institutions, several of which may assign their own Specimen ID and/or Accession Number to the case, or portion thereof, must be handled. In order to properly address these requirements, the following two fields in the SPM segment are being pre-adopted from the HL7 Standard version 2.7; these fields were added to HL7 at that time specifically to address these types of scenarios involving multiple identifiers for specimens in a report sent to a central monitoring or surveillance agency. These scenarios are currently active in North America and must be addressed for reporting to registries.*"

SPM-30 Accession ID (CX), Required if available, Repeating maximum 25

HL7 V2.7 Definition: This field contains accession identifier(s) associated with the specimen. In many cases, applications involved in the collection, transportation or testing of the specimen

will assign their own accession identifiers. This field allows communication of these accession identifiers.

An accession id may or may not, depending up laboratory practice, identify a single specimen. In addition, accession ids are commonly re-used over time, so the accession id may not uniquely identify a specimen. On the other hand, there is a great demand for unambiguously communicating the accession identifier(s). If the sending system has additional accession identifiers for this specimen, they must be populated in this field.

Components: <ID (ST)>^<check digit (ST)>^<code identifying the check digit scheme employed (ID)>^<assigning authority (HD)>^<identifier type code (IS)>^<assigning facility (HD)>

Components are defined as follows:

(1) ID number (ST).

(2) Check digit (ST). Defined as in the CK data type except as a ST. The check digit used in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.

(3) Code identifying check digit scheme employed (ID). Refer to *HL7 Table 0061 - Check digit scheme* for valid values.

(4) Assigning authority (HD). Subcomponents of (4): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

(5) Identifier type code (IS). A code corresponding to the type of identifier. This code may be used as a qualifier to the "Assigning authority" component. Refer to *User-defined Table 0203 - Identifier type* for suggested values.

(6) Assigning facility (HD). The place or location identifier where the identifier was first assigned to the patient-part of the history of the identifier. Subcomponents of (6): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

Example showing the SPM-30 field illustrating multiple accession numbers reported to the Cancer Registry.

```
|57482739^^^Hospital 2 Path Lab~987204926^^^Hospital 3 Lab|
```

SPM-31 Other Specimen ID (CX-20, Required or Empty, Repeating maximum 300) 02315

HL7 V2.7 Definition: This field contains other identifier(s) for the specimen as referenced by an application. Normally this field is used to carry additional identifiers for the specimen in addition to those identified in SPM-2 Specimen ID. In many cases other applications involved in the collection, transportation or testing of the specimen will assign additional specimen identifiers. This field allows communication of those other specimen identifiers. If the sending system has additional specimen identifiers for this specimen, they must be populated in this field.

Components: <ID (ST)>^<check digit (ST)>^<code identifying the check digit scheme employed (ID)>^<assigning authority (HD)>^<identifier type code (IS)>^<assigning facility (HD)>

Components are defined as follows:

(1) ID number (ST).

(2) Check digit (ST). Defined as in the CK data type except as a ST. The check digit used in this data type is not an add-on produced by the message processor. It is the check digit that is part of the identifying number used in the sending application. If the sending application does not include a self-generated check digit in the identifying number, this component should be valued null.

(3) Code identifying check digit scheme employed (ID). Refer to *HL7 Table 0061 - Check digit scheme* for valid values.

(4) Assigning authority (HD). Subcomponents of (4): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

(5) Identifier type code (IS). A code corresponding to the type of identifier. This code may be used as a qualifier to the "Assigning authority" component. Refer to *User-defined Table 0203 - Identifier type* for suggested values.

(6) Assigning facility (HD). The place or location identifier where the identifier was first assigned to the patient-part of the history of the identifier. Subcomponents of (6): <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

3.10 OBX – Observation Segment

In section 3.10 - OBX – Observation Segment, replace OBX segment table by the following.

The changes are: OBX-5 is [0..12] ; OBX-8 is [0..5] ; OBX-17 is [0..6]

Table 3.10-1 : OBX Segment

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	Element name
1	4	SI	R	[1..1]		00569	Set ID – OBX
2	2	ID	C	[0..1]	0125	00570	Value Type
3	250	CE	R	[1..1]		00571	Observation Identifier
4	20	ST	C	[0..1]		00572	Observation Sub-ID
5	99999	Varies	C	[0..~~1~~12]		00573	Observation Value
6	250	CE	C	[0..1]		00574	Units
7	60	ST	RE	[0..1]		00575	References Range
8	5	IS	RE	[0..~~1~~5]	0078	00576	Abnormal Flags
9	5	NM	X	[0..0]		00577	Probability
10	2	ID	X	[0..0]	0080	00578	Nature of Abnormal Test
11	1	ID	R	[1..1]	0085	00579	Observation Result Status
12	26	TS	X	[0..0]		00580	Effective Date of Reference Range
13	20	ST	C	[0..1]		00581	User Defined Access Checks

SEQ	LEN	DT	Usage	Card.	TBL#	ITEM#	Element name
14	26	TS	RE	[0..1]		00582	Date/Time of the Observation
15	250	CE	RE	[0..1]		00583	Producer's ID
16	250	XCN	RE	[0..1]		00584	Responsible Observer
17	250	CE	C	[0..~~1~~6]		00936	Observation Method
18	22	EI	X	[0..0]		01479	Equipment Instance Identifier
19	26	TS	RE	[0..1]		01480	Date/Time of the Analysis
20							Reserved by HL7 for future use
21							Reserved by HL7 for future use
22							Reserved by HL7 for future use
23	567	XON	C	[0..1]		02283	Performing Organization Name
24	631	XAD	O	[0..1]		02284	Performing Organization Address
25	3002	XCN	O	[0..1]		02285	Performing Organization Director Name

In section 3.10 - OBX – Observation Segment, replace OBX-3 field description by the following:

OBX-3 Observation Identifier (CE), required

HL7 definition: This field contains a unique identifier for the observation. The format is that of the Coded Element (CE).

```
Components: <Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^
            <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate
            Coding System (ID)>
```

The usage of LOINC(r) test codes for the identification of tests is strongly recommended. National extensions of this Technical Framework may add national vocabularies (e.g. code ADICAP in France).

In all cases, the first three sub-fields "*Identifier*", "*Text*" and "*Name of Coding System*" are required. The value of the "Name of Coding System" in the case of LOINC is "LN".

The second sub-field "*Text*" provides the signification of the code.

The last three sub-fields may provide a translation in another coding system, and are optional.

Anatomical pathology reports, cytology reports and hematology are often in a narrative style format and the information is contained within different sections or headings. In that case, this field contains the LOINC codes identifying the headings.

LOINC Code	LOINC Code Name
22637-3	Path report.final diagnosis
33746-9	Pathologic findings

22636-5	Path report.relevant Hx
22633-2	Path report.site of origin
22634-0	Path report.gross description
22635-7	Path report.microscopic observation
22638-1	Path report.comments
22639-9	Path report.supplemental reports

In addition to the above elements, pathology, hematology, and cytology reports may contain additional test or report results such as Complete Blood Count, Flow Cytometry, Estrogen Receptor Assay (ERA), Progesterone Receptor Assay (PRA), and Fluorescence in situ Hybridization (FISH). If these additional test results are available as discrete data elements they should be include in the message with the appropriate LOINC test code and name in OBX-3. The associated value (or text-finding) and test reference ranges, if appropriate, should be included in OBX-5. The LOINC codes for additional related laboratory tests can be found in the LOINC database. This database and related browser is available at no cost at the LOINC web-site: http://loinc.org/.

In section 3.10 - OBX – Observation Segment, replace OBX-4 field description by the following:

OBX-4 Observation Sub-ID (ST), conditional.

HL7 Definition: This field is used to distinguish between multiple OBX segments with the same observation ID organized under one OBR.

Condition predicate:

This field is required in a message carrying observations, if under an OBR, there is more than one observation for the same Observation Identifier (OBX-3). Then these multiple observations must value OBX-4 so that each OBX segment have a unique combination of OBX-3 (Observation Identifier) and OBX-4 (Observation Sub-ID) values.

In section 3.10 - OBX – Observation Segment, replace OBX-5 field description by the following:

OBX-5 Observation Value (varies), conditional, repeatable, maximum 12 occurrences.

Definition: This field contains the value observed by the observation producer. OBX-2-value type contains the data type for this field according to which observation value is formatted.

Condition predicate:

This field is required unless the Observation Result Status field (OBX-11) is valued either with "D", or "I" or "X".

The field is repeatable for for multipart, single answer results with appropriate data types, e.g., CE, TX, and FT data types. The maximum number of repetitions is fixed to 12 by the Anatomic Pathology Technical Framework, as in the NAACCR *Standards for Cancer Registries Volume V* implementation guide.

SNOMED CT is one possible terminology usable for coded observation values (of type CE). This terminology is not enforced by the IHE Anatomic Pathology Technical Framework for two reasons:

A number of countries do not have a SNOMED CT license

Some countries have built a national terminology for anatomic pathology observations.

Other international coding systems are also usable, for instance "*ICD-O*" for topography, histology, laterality in a cancer report.

In section 3.10 - OBX – Observation Segment, replace OBX-6 field description by the following:

OBX-6 Units (CE), conditional.

Definition: This field contains the units for the observation value in OBX-5 (ISO, ANSI, or UCUM). The default value is ISO + abbreviation. The ISO+ and ANSI+ customary units are shown in Section 7.3.2.6.2 of the HL7 Version 2.5.1 standard.

Condiiton predicate:

This field in required if the Value Type field (OBX-2) is valued either with "NM", or "SN".

In section 3.10 - OBX – Observation Segment, replace OBX-8 field description by the following:

OBX-8 Abnormal Flags (IS), required if available, repeatable, maximum 5 occurrences

Definition: This field contains a table lookup indicating the normalcy status of the result.

Among the possible values listed for this field in HL7 table 0078, the actors of IHE Anatomic Pathology Technical Framework should support the following values:

Table 3.10-x: HL7 table 0078

Value	Description	Comment
L	Below low normal	
H	Above high normal	
LL	Below lower panic limits	
HH	Above upper panic limits	
N	Normal (applies to non-numeric results)	
A	Abnormal (applies to non-numeric results)	
AA	Very abnormal (applies to non-numeric units, analogous to panic limits for numeric units)	
Null	No range defined, or normal ranges don't apply	

In section 3.10 OBX – Observation Segment, replace OBX-13 field description by the following:

OBX-13 User Defined Access Checks (ST), conditional.

Definition: This field permits the producer to record results-dependent codes for classifying the observation at the receiving system. This field should be needed only rarely, because most classifications are fixed attributes of the observation ID and can be defined in the associated observation master file (see description in Chapter 8).

Condition predicate:

This field is only used in transaction PAT-3 in one case: When the Order Filler wants to inform of restricted access on some results to privileged users, it uses value "P".

In all other transactions this field is not supported.

In section 3.10 OBX – Observation Segment, replace OBX-15 field description by the following:

OBX-15 Producer's Reference (CE), required if available.

Definition: This field contains a unique identifier of the responsible producing service. It should be reported explicitly when the test results are produced at outside laboratories, for example. When this field is null, the receiving system assumes that the observations were produced by the sending organization.

In section 3.10 OBX – Observation Segment, replace OBX-16 field description by the following:

OBX-16 Responsible Observer (XCN), required if available.

Definition: When required, this field contains the identifier of the individual directly responsible for the observation (i.e., the person who either performed or verified it). In an anatomic pathology laboratory, the responsible observer is the pathologist reading the slides, or reviewing and signing a section of the pathology report. The code for the observer is recorded as a CE data type. If the code is sent as a local code, it should be unique and unambiguous when combined with OBX-15-producer's Reference.

In section 3.10 OBX – Observation Segment, replace OBX-17 field description by the following:

OBX-17 Observation Method (CE), conditional, repeatable, maximum 6 occurrences.

Definition: This field can be used to transmit the method or procedure by which an observation was obtained when the sending system wishes to distinguish among one measurement obtained by different methods and the distinction is not implicit in the observation identifier.

Condition predicate:

This field is required when the value of the result may be dependant of the Observation Method and the Observation Identifier does not permit to identify the Method. With some

Observation Identifiers such as LOINC(r) Codes, the identifier also identifies the Method, in which case this field does not need to be valued.

In section 3.10 OBX – Observation Segment, replace OBX-23 field description by the following:

OBX-23 Performing Organization Name (XON), conditional

This field has been added by release 2.5.1 of HL7. It specifies the laboratory that produced the test result described in this OBX segment. When this field is null, the receiving system assumes that the observations were produced by the sending organization.

Condition predicate:

This field shall be valued in an ORU message when the test result carried by this OBX is produced by an outside laboratory, subcontracting a part of the order. In that case, this field shall be populated with the name of the subcontractor laboratory.

In section 3.10 OBX – Observation Segment, replace OBX-24 field description by the following:

OBX-24 Performing Organization Address (XAD), optional

This field has been added by release 2.5.1 of HL7. It specifies the address of the laboratory that produced the test result described in this OBX segment.

This field may be valued in an ORU message when the test result carried by this OBX is produced by an outside laboratory, subcontracting a part of the order. If populated the field carries the address of the subcontractor laboratory.

The IHE Anatomic Pathology Technical Framework does not constrain the usage further than this. Some national extensions of this Technical Framework (for example the US extension to deal with a CLIA amendment) may enforce this field to be valued whenever OBX-23 is valued.

In section 3.10 OBX – Observation Segment, replace OBX-25 field description by the following:

OBX-25 Performing Organization Director Name (XCN), optional

This field has been added by release 2.5.1 of HL7. It specifies the director of the laboratory that produced the test result described in this OBX segment.

This field may be valued in an ORU message when the test result carried by this OBX is produced by an outside laboratory, subcontracting a part of the order. If populated the field carries the director's name of the subcontractor laboratory.

The IHE Anatomic Pathology Technical Framework does not constrain the usage further than this. Some national extensions of this Technical Framework (for example the US extension to deal with a CLIA amendment) may enforce this field to be valued whenever OBX-23 is valued.

Add section Z

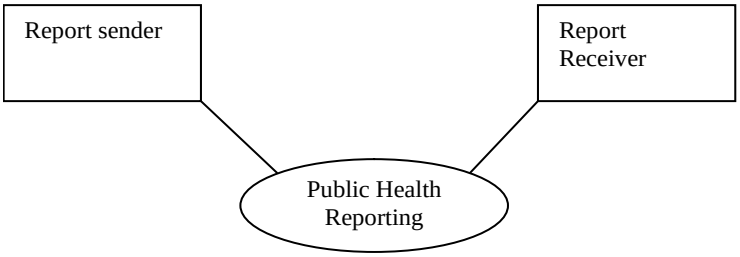
Z Transaction PAT-10 – Public Health Reporting

This section corresponds to Transaction PAT-10 of the IHE Anatomic Pathology Technical Framework. This transaction is used by the Report Sender and Report Receiver actors.

Z.1 Scope

The Report Sender actor uses this transaction to send an anatomic pathology report, produced by an anatomic pathology laboratory to the Report Receiver actor representing a system operated by a Public Health organization.

Z.2 Use Case Roles



Actor: Report Sender

Role: Sends a unique result message carrying an anatomic pathology report ; waits for the acknowledgement of this unique message.

With the Batch option, this actor can send a batch of result messages and wait for the acknowledgement of this batch.

Actor: Report Receiver

Role: Receives a unique result message carrying an anatomic pathology report; integrates the content of this message and sends back an acknowledgement message notifying either the successful integration of the content or any application error.

With the Batch option, this actor can receive and acknowledge a batch containing a number of result messages.

Z.3 Referenced Standard

HL7 2.5.1, Chapters 2, 2A, 7

Z.4 Interaction Diagram

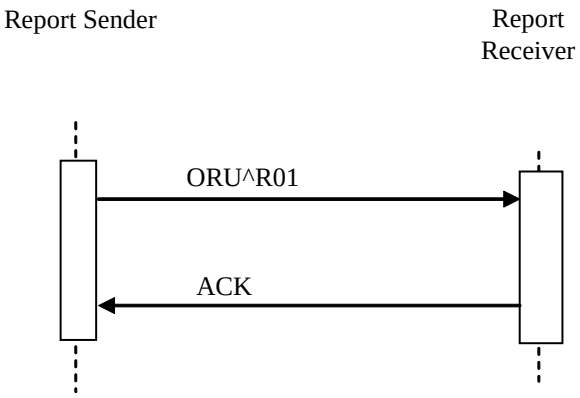


Figure Z.4-1: Interaction of a unique result message carrying one AP report

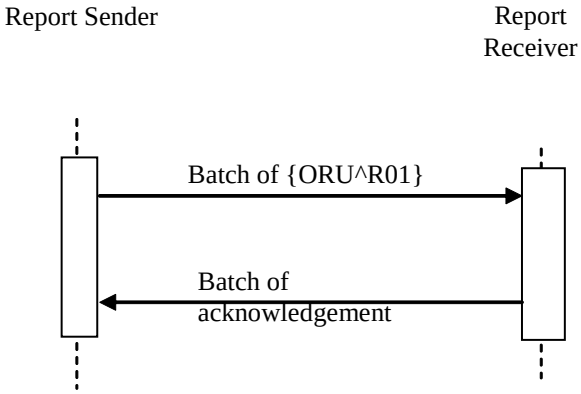


Figure Z.4-2: Interaction of a batch of result messages

Z.5 Message Static Definition

Z.5.1 ORU^R01

The ORU message carries an anatomic pathology report related to a patient, produced by an anatomic pathology laboratory.

Table Z.5-1: ORU^R01 message description for PAT-10

Segment	Meaning	Usage	Card.	HL7 chapter
MSH	Message Header	R	[1..1]	2
{	--- PATIENT_RESULT begin	R	[1..1]	
[	--- PATIENT begin	O	[0..1]	
PID	Patient Identification	R	[1..1]	3
[{NK1}]	Next of Kin	O	[0..*]	3
[PV1]	Patient Visit	RE	[0..1]	3
]	--- PATIENT end			
{	--- ORDER_OBSERVATION begin	R	[1..*]	
ORC	Common Order (for one battery)	R	[1..1]	4
OBR	Observation Request	R	[1..1]	7
[{NTE}]	Comments on the order	O	[0..*]	2
[{TQ1}]	Timing Quantity	RE	[0..1]	4
[{	--- OBSERVATION begin	O	[0..*]	
OBX	Observation Result	R	[1..1]	7
[{NTE}]	Comment of the result	C	[0..*]	2
}]	--- OBSERVATION end			
[{	--- SPECIMEN begin	O	[0..*]	
SPM	Specimen	R	[1..1]	7
[{OBX}]	Observation related to specimen	C	[0..*]	7
}]	--- SPECIMEN end			
}	--- ORDER_OBSERVATION end			
}	--- PATIENT_RESULT end			

Field MSH-9 – Message Type shall have its three components valued as follows: ORU^R01^ORU_R01.

For multi-specimen cases, each specimen is described in an SPM segment. The observations performed on that specimen shall be reported in OBX segments following the SPM segment.

All segments of this message are described in section 3 – *Common Message Segments* except the OBR segment described below.

Z.5.2 Specific Segments Descriptions

Z.5.2.1 OBR

Seq	Len	DT	Usage	Card.	Tbl#	Item#	Element Name
1	4	SI	R	[1..1]		00237	Set ID - OBR
2	22	EI	RE	[0..1]		00216	Placer Order Number
3	22	EI	R	[1..1]		00217	Filler Order Number
4	250	CE	R	[1..1]		00238	Universal Service ID
5	2	ID	X	[0..0]		00239	Priority
6	26	TS	X	[0..0]		00240	Requested Date/Time
7	26	TS	R	[1..1]		00241	Observation Date/Time
8	26	TS	X	[0..0]		00242	Observation End Date/Time
9	20	CQ	X	[0..0]		00243	Collection Volume
10	250	XCN	RE	[0..4]		00244	Collector Identifier
11	1	ID	X	[0..0]	0065	00245	Specimen Action Code
12	250	CE	X	[0..0]		00246	Danger Code
13	300	ST	X	[0..0]		00247	Relevant Clinical Info.
14	26	TS	X	[0..0]		00248	Specimen Received Date/Time
15	300	SPS	X	[0..0]	0070	00249	Specimen Source
16	250	XCN	C	[0..4]		00226	Ordering Provider
17	250	XTN	RE	[0..4]		00250	Order Callback Phone Number
18	60	ST	X	[0..0]		00251	Placer Field 1
19	60	ST	X	[0..0]		00252	Placer Field 2
20	60	ST	X	[0..0]		00253	Filler Field 1
21	60	ST	X	[0..0]		00254	Filler Field 2
22	26	TS	RE	[0..1]		00255	Results Rpt/Status Chng-Date/Time
23	40	MOC	X	[0..0]		00256	Charge to Practice
24	10	ID	X	[0..0]	0074	00257	Diagnostic Serv Sect ID
25	1	ID	R	[1..1]	0123	00258	Result Status
26	400	PRL	C	[0..1]		00259	Parent Result
27	200	TQ	X	[0..0]		00221	Quantity/Timing
28	250	XCN	X	[0..0]		00260	Result Copies To
29	200	EIP	C	[0..1]		00261	Parent
30	20	ID	X	[0..0]	0124	00262	Transportation Mode

Seq	Len	DT	Usage	Card.	Tbl#	Item#	Element Name
31	250	CE	RE	[0..20]		00263	Reason for Study
32	200	NDL	R	[1..1]		00264	Principal Result Interpreter
33	200	NDL	X	[0..0]		00265	Assistant Result Interpreter
34	200	NDL	X	[0..0]		00266	Technician
35	200	NDL	X	[0..0]		00267	Transcriptionist
36	26	TS	X	[0..0]		00268	Scheduled Date/ Time
37	4	NM	X	[0..0]		01028	Number of Sample Containers
38	250	CE	X	[0..0]		01029	Transport Logistics of Collected Sample
39	250	CE	X	[0..0]		01030	Collector's Comment
40	250	CE	X	[0..0]		01031	Transport Arrangement Responsibility
41	30	ID	X	[0..0]	0224	01032	Transport Arranged
42	1	ID	X	[0..0]	0225	01033	Escort Required
43	250	CE	X	[0..0]		01034	Planned Patient Transport Comment
44	250	CE	O	[0..1]	0088	00393	Procedure Code
45	250	CE	X	[0..0]	0340	01316	Procedure Code Modifier
46	250	CE	X	[0..0]	0411	01474	Placer Supplemental Service Information
47	250	CE	X	[0..0]	0411	01475	Filler Supplemental Service Information
48	250	CWE	X	[0..0]	0476	01646	Medically Necessary Duplicate Procedure Reason.
49	2	IS	RE	[0..1]	0507	01647	Result Handling
50	250	CWE	C	[0..1]		02286	Parent Universal Service Identifier

Field descriptions:

OBR-1 Set ID - OBR (SI), Required

Definition: This field identifies the sequence number of one of multiple OBRs under one PID. For the first order transmitted, the sequence number shall be 1; for the second order, it shall be 2; and so on.

OBR-2 Placer order number (EI), Required if known

Definition: This field identifies an order number uniquely among all orders from a particular ordering application. The first component is a string that identifies an individual order. A limit of fifteen (15) characters is suggested but not required. It is assigned by the placer (ordering application). The second through fourth components contain the application ID.

EI data type components: <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>

OBR-3 Filler order number (EI), Required

Definition: This field is the order number associated with the filling application. It is assigned by the performing laboratory application. This string must uniquely identify the order (as specified in the order detail segment) from other orders in a particular fulfilling application (i.e., pathology laboratory). This uniqueness must persist over time.

EI data type components: <entity identifier (ST)> ^ <namespace ID (IS)> ^ <universal ID (ST)> ^ <universal ID type (ID)>

OBR-4 Universal service ID (CE-200, Required) 00238

Definition: This field is the identifier code for the ordered observation/test/battery.

Example for a surgical pathology report: `|11529-5^SURGICAL PATH REPORT^LN|`

Typical values used in Cancer Reporting for this are shown in the following table:

LOINC	
Codes	**Description**
11529-5	Surgical Pathology Study Report
33716-2	Study Report: Cytology.non-gyn
33717-0	Study Report: Cytology.Cvx/Vag
48807-2	Bone marrow aspiration report
18743-5	Autopsy note
55228-1	Study Report; Cytogenetics
55229-9	Study Report; Immune Stains
26435-8	Molecular pathology studies
33719-6	Study Report FC, Immunophenotype

OBR-5 Priority - OBR (ID), Not supported

OBR-6 Requested date/time (TS), Not supported

OBR-7 Observation date/time (TS), Required

Definition: This field is the clinically relevant date/time of the observation. In the case of observations taken directly from a subject, it is the actual date and time the observation was obtained. In the case of a specimen-associated study, this field shall represent the date and time the specimen was collected or obtained.

OBR-8 Observation end date/time (TS), Not supported

OBR-9 Collection volume (CQ), Not supported

OBR-10 Collector identifier (XCN), Required if known, Repeating maximum 4

Definition: When a specimen is required for the study, this field will identify the person that collected the specimen. Either name or ID code, or both, may be present.

OBR-11 Specimen action code (ID), Not supported

OBR-12 Danger code (CE), Not supported

OBR-13 Relevant clinical information (ST), Not supported

OBR-14 Specimen received date/time (TS), Not supported

OBR-15 Specimen source (CM), Not supported

OBR-16 Ordering provider (XCN), Conditional, Repeating maximum 4

Definition: This field identifies the provider who ordered the pathology report (e.g., surgeon/physician who ordered the pathology report). The ID code and the name must be present. The Ordering facility name (ORC-21) or the Ordering provider (OBR-16) must be provided, both fields cannot be blank.

XCN data type components: <ID number (ST)> ^ <family name (ST)> & <last name prefix (ST)> ^ <given name (ST)> ^ <middle initial or name (ST)> ^ <suffix (e.g., JR or III) (ST)> ^ <prefix (e.g., DR) (ST)> ^ <degree (e.g., MD) (IS)> ^ <source table (IS)> ^ <assigning authority (HD)> ^ <name type code (ID)> ^ <identifier check digit (ST)> ^ <code identifying the check digit scheme employed (ID)> ^ <identifier type code (IS)> ^ <assigning facility (HD)> ^ <name representation code (ID)>

Subcomponents of assigning authority: <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

Subcomponents of assigning facility ID: <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

For example: `|1234567^Welby^M^J^Jr^Dr^MD|`

OBR-17 Order callback phone number (XTN), Required if known, Repeating maximum 4

Definition: This field is the telephone number for reporting a status or a result using the standard format with extension and/or beeper number when applicable.

XTN data type components: [**N**NN] [(999)]999-9999 [X99999] [B99999] [C any text] ^ <telecommunication use code (ID)> ^ <telecommunication equipment type (ID)> ^ <email address (ST)> ^ <country code (NM)> ^ <area/city code (NM)> ^ <phone number (NM)> ^ <extension (NM)> ^ <any text (ST)>

For example: `|^WPN^PH^^^206^2770908^^before 5:00 pm~^ASN^PH^^^206^5620767|`

OBR-18 Placer field 1 (ST), Not supported

OBR-19 Placer field 2 (ST), Not supported

OBR-20 Filler field 1 (ST), Not supported

OBR-21 Filler field 2 (ST), Not supported

OBR-22 Results rpt/status change - date/time (TS), Required if known

Definition: This field specifies the date/time results reported or status changed. This field is used to indicate the date and time that the results are composed into a report and released, or that a status, as defined in *ORC-5-order status*, is entered or changed.

OBR-23 Charge to practice (CM), Not supported

OBR-24 Diagnostic service sect ID (ID), Not supported

OBR-25 Result status (ID), Required

Definition: This field is the status of results for this order. Refer to *HL7 Table 0123 - Result status* for valid entries.

Codes C (corrected) and F (final) are used for reporting to public health agencies or registries.

OBR-26 Parent result (PRL), Conditional

Definition: This field provides linkages to messages describing previously performed tests. This important information, together with the information in *OBR-29-parent* (the identifiers associated with the parent placer and filler), uniquely identifies the OBX segment from the previously performed test that is related to this order.

PRL data type components: <Parent Observation Identifier(CE)> ^ <Parent Observation Sub-identifier(ST)> ^ <Parent Observations Value Descriptor(TX)>

Condition predicate: This field may be valued for cases where there are multiple primary cancers, or inclusion of multiple reports on the same cancer of different types (such as Coded Synotic and Text).

OBR-27 Quantity/timing (TQ), Not supported

OBR-28 Result copies to (XCN), Not Supported

OBR-29 Parent (EIP), Conditional

Definition: This field relates a child to its parent when a parent/child relationship exists.

Condition predicate: When the report message contains multiple OBR segments for multiple cancers, this field should be populated to link the different reports to the correct cancer.

EIP data type components: <parent's placer order number (EI)> ^ <parent's filler order number (EI)>

Subcomponents of parent's placer order number: <entity identifier (ST)> & <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (IS)>

Subcomponents of parent's filler order number: <entity identifier (ST)> & < <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (IS)>

OBR-30 Transportation mode (ID), Not supported

OBR-31 Reason for study (CE), Required if known, Repeating maximum 20

Definition: For public health reporting, ICD-9-CM codes used to support testing and reimbursement should be used here. This field can repeat to accommodate multiple diagnoses. Refer to the website http://www.cdc.gov/nchs/icd9.htm for information on ICD-9-CM codes.

OBR-32 Principal result interpreter (CM), Required

Definition: This field identifies the physician or other clinician who interpreted the observation and is responsible for the report content.

Subcomponents of name: <ID number (ST)> & <family name (ST)> & <given name (ST)> & <middle initial or name (ST)> & <suffix (e.g., JR. III) (ST)> & <prefix (e.g., DR)> & <degree (e.g., MD) (ST)> & <source table (IS)> & <assigning authority (HD)>
Subcomponents of facility: <namespace ID (IS)> & <universal ID (ST)> & <universal ID type (ID)>

OBR-33 Assistant result interpreter (CM), Not Supported

OBR-34 Technician (CM), Not Supported

OBR-35 Transcriptionist (CM), Not supported

OBR-36 Scheduled - date/time (TS), Not supported

OBR-37 Number of sample containers (NM), Not supported

OBR-38 Transport logistics of collected sample (CE), Not supported

OBR-39 Collector's comment (CE), Not supported

OBR-40 Transport arrangement responsibility (CE), Not supported

OBR-41 Transport arranged (ID), Not supported

OBR-42 Escort required (ID), Not supported

OBR-43 Planned patient transport comment (CE), Not supported

OBR-44 Procedure code (CE), Optional

Definition: This field contains a unique identifier assigned to the procedure, if any, associated with the charge.

OBR-45 Procedure code modifier (CE), Not supported

OBR-46 Placer Supplemental Service Information (CE), Not Supported

OBR-47 Filler Supplemental Service Information (CE), Not Supported

OBR-48 Medically Necessary Duplicate Procedure Reason (CWE), Not Supported

OBR-49 Result Handling (IS), Optional

Definition: Transmits information regarding the handling of the result. For example, an order may specify that the result (e.g., an x-ray film) should be given to the patient for return to the requestor. Refer to *User-defined Table 0507 Observation Result Handling* for suggested values. If this field is not populated then routine handling is implied.

OBR-50 Parent Universal Service Identifier (CWE), Conditional

Definition: This field contains the universal service identifier code for the parent order, as identified in ORC-8 Parent and/or OBR-29 Parent (if present), which caused this observation/test/battery to be performed. This can be based on local and/or "universal" codes. HL7 recommends the "universal" service identifier."

Z.5.3 ACK

Having received the ORU^R01 message from the Report Sender, the Report Receiver SHALL parse this message and integrate its content, and then generate an applicative acknowledgement message sent back to the Report Sender. This General Acknowledgement Message ACK SHALL

be built according to the HL7 V2.5.1 standard, following the acknowledgement rules described in IHE ITI TF-2:C.2.3 (IHE IT Infrastructure Technical Framework, Volume 2, Appendix C.2.3).

Z.6 Usage of the Batch option

The **Batch** option enables a laboratory to group any number of AP reports into as many ORU messages grouped into a single batch sent to the public health registry.

A batch of HL7 messages may be sent online using a common file transfer protocol or offline via tape or diskette. If needed, a group of batches may be sent using the file header and trailer segments. The FHS and FTS are optional and need not be sent if the transaction is one batch of records.

The HL7 file/batch syntax is as follows:

[FHS] { [BHS] { [MSH PID ….] } [BTS] } [FTS]

This IHE profile supports a single batch, exclusively over an online protocol, and therefore uses this simplified syntax:

[BHS] {MSH PID …} [BTS]

A batch for reporting to public health institutions and registries will consist of a single type of message (ORU^R01).

Z.6.1 Acknowledging a Batch

In general, the utility of sending batches of data is that the data is accepted all at once, with errors processed on an exception basis. However, it is a permissible application of HL7 to acknowledge all messages. Several options for acknowledgment are given in the HL7 2.5.1 standard document and are not addressed further here.

Z.6.1 Batch Segments

Z.6.1.1 Batch Header (BHS) Segment

This is the initial segment of the batch.

Seq	Len	DT	Usage	Card.	Tbl#	Item#	Element Name
1	1	ST	R	[1..1]		00081	Batch field separator
2	3	ST	R	[1..1]		00082	Batch encoding characters
3	227	HD	RE	[0..1]		00083	Batch sending application
4	227	HD	R	[1..1]		00084	Batch sending facility
5	227	HD	RE	[0..1]		00085	Batch receiving application
6	227	HD	RE	[0..1]		00086	Batch receiving facility
7	26	TS	R	[1..1]		00087	Batch creation date/time
8	40	ST	RE	[0..1]		00088	Batch security
9	20	ST	O	[0..1]		00089	Batch name/ID/type
10	80	ST	O	[0..1]		00090	Batch comment
11	20	ST	RE	[0..1]		00091	Batch control ID
12	20	ST	RE	[0..1]		00092	Reference batch control ID

Usage notes: BHS fields 1-8 have the same definitions as the corresponding fields in the MSH segment, see the Common Message Segments section in this supplement and in the Anatomic Pathology Technical Framework Volume 2. These field definitions are not provided again in this section.

BHS-9 Batch name/ID/type (ST), Optional

Definition: This field can be used by the application processing the batch. It can have extra components if needed.

BHS-10 Batch comment (ST), Optional

Definition: This field is a comment field that is not further defined.

BHS-11 Batch control ID (ST), Required or Empty

Definition: This field is used to uniquely identify a particular batch. Use Timestamp and a counter similar to MSH-10 to uniquely identify the batch. It can be echoed back in BHS-12-reference batch control ID if an answering batch is needed.

BHS-12 Batch reference batch control ID (ST), Required or Empty

Definition: This field contains the value of BHS-11-batch control ID when this batch was originally transmitted. This field is not valued if this batch is being sent for the first time.

Z.6.1.1 Batch Trailer (BTS) Segment

Used to define the end of a batch. This segment is required for batch submissions only.

Seq	Len	DT	Usage	Card.	Tbl#	Item#	Element Name
1	10	ST	R	[1..1]		00093	Batch message count
2	80	ST	O	[0..1]		00094	Batch comment
3	100	NM	O	[0..*]		00095	Batch totals

BTS-1 Batch message count (ST), Required

Definition: This field contains the count of the individual ORU^R01 messages contained within the batch.

BTS-2 Batch comment (ST), Optional

Definition: This field is a comment field that is not further defined in the HL7 protocol.

BTS-3 Batch totals (NM-100, Required or Empty, Repeating maximum 4) 00095

Definition: This field contains the batch total. The numbers of messages should be counted and represented here to allow recipients to have simple batch level auditing.

Volume 5 – National/Continental Extensions

1 North American Extensions

1.1 Anatomic Pathology Reporting to Public Health (ARPH)

Implementations of the ARPH profile in North America SHALL conform to the North American Association of Central Cancer Registries Standards for Cancer Registries, Volume V: Pathology Laboratory Electronic Reporting, Version 3.0 available at
http://www.naaccr.org/StandardsandRegistryOperations/VolumeV.aspx