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Health Service Executive

Core Interoperability Specification for Sharing Patient Summary

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EHEALTH DIGITAL SERVICES INFRASTRUCTURE OPEN NATIONAL CONTACT POINT IMPLEMENTATION AND TEST PLATFORM SERVICES

Core Interoperability Specification for Sharing Patient Summary

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Reference documents

This section gathers the documents which are referenced in this document. In the body of this document, any reference to an external document is formatted using [KEYWORD] from the first column.

Keyword	Name and reference
[P&S]	Security and Privacy Interoperability Specification HSE9100-LOT2-IS-SECURITY_PRIVACY
[ITERM]	General Terminology Interoperability Specification HSE9100-LOT2-IS-TERMINOLOGY
[UC_ANALYSIS]	ePrescription and Patient Summary use cases analysis HSE9100-LOT2-UC-DELIVERABLE-1A
[IPIM]	Patient Identification Management Interoperability Specification HSE9100-LOT2-IS-PAT_ID_MGT
[IXDS]	Interoperability Specification for sharing documents HSE9100-LOT2-IS-DOC_SHARING
[IPS]	Patient Summary Content Interoperability Specification HSE9100-LOT2-IS-PATIENT_SUMMARY_CONTENT
[ISPD]	Core Interoperability Specification for Sharing ePrescription and eDispensation
	HSE9100-LOT2-IS-eP_eD_SHARING

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1 Preface

Ireland as a European country is becoming involved in the eHDSI (eHealth Digital Services Infrastructure) project led by the European Commission under the CEF (Connecting European Facilities) program and will participate to the deployment in the wave 3 (2020). To prepare the deployment of the NCPeH (National Contact Point for eHealth) in Ireland, the HSE (Health Service Executive) procured in 2017 the support services that will facilitate the implementation of the NCPeH and its connection to central Irish services. The first step of the project is to define the needed use cases to support and to design the architecture for connecting the Irish NCPeH. These tasks will be followed by the design of the architecture within Ireland, the corresponding Interoperability Specifications, the testing strategy including test plans and the implementation of Gazelle test platform that includes test cases, test tools and test data.

1.1 Context

Directive 2011/24/EU provides rules for facilitating access to safe and high quality cross border healthcare and promotes cooperation on healthcare between member states. The aims of implementing the Irish NCPeH exchange of Patient Summaries and ePrescription are in line with the principles of cross-border care. The NCPeH and cross border exchange implementations are all key building blocks that will interact with the national data dictionary (single source of trust for clinical data definitions across the enterprise) and the Patient Summary and ePrescribing documents and associated will be stored there as minimum data sets.

The main goals are to design the platform based on the needs that will be developed in the first steps of the project that includes

- Use Cases for ePrescription and Patient Summary
- Corresponding Interoperability specifications and architecture orchestration
- Validated version of IHE Gazelle. The test harness will provide to the authority the ability to test prospective vendors and products against the above interoperability specifications.

1.2 Glossary

IHE profile: provides a common language for purchasers and vendors to discuss the integration needs of healthcare sites and the integration capabilities of healthcare IT products. A Profile is a guideline for implementation of a specific process, by providing precise definitions of how standards can be implemented to meet specific clinical needs. [eHealth Interoperability Conformity Assessment Scheme for Europe (EURO-CAS)]

Patient Summary is an identifiable “dataset of essential and understandable health information” that is made available “at the point of care to deliver safe patient care during unscheduled care [and planned care] with its maximal impact in the unscheduled care” [PS/eP guidelines]

Interoperability use case: description of a specific use of HIT (Health Information Technology)that includes depiction of both humans (business actors) and systems (technical actors), scope, workflows of tasks performed by healthcare professionals and associated data flows. It should be written in natural language and may include several scenarios. One or more use cases are derived from one business case [IHE taskforce]

Realisation scenario: description of human activities (business actors), systems (technical actors) roles (i.e., IHE actors) and transactions related to a set of technical use cases that support the interoperability infrastructure for use cases (implementable infrastructure). [IHE taskforce]

1.3 Document purpose

An Interoperability Specification provides a detailed set of requirements (including references to specific profiles and standards) that enable health information exchange in an e-health deployment (national, regional, cross-border and/or intra institution) for a specific topic.

When covering the requirements related to the realisation of an interoperability use case, the corresponding interoperability specification is called a Core Interoperability Specification. A (Core) Interoperability Specification (IS) is targeted to be the sole entry point for the technology developers, the compliance assessment testing, and the purchaser of IT systems in term of technical requirements that will ensure interoperability.

When covering a subset of the interoperability requirements for one or more use cases, the corresponding interoperability specification is called a Supporting Interoperability Specification. Indeed, it is intended to be referenced by one of more Core Interoperability Specifications

The present document is a Core Interoperability Specification for the sharing of Patient Summaries in a Cross-Border context.

1.4 How to read this document

This document contains three normative sections (3), as well as informative appendices for the reader convenience. The document is structured as follows:

- Section 3: Establishes the conformance requirements for the Use Case actors in terms of services to be supported
- Section 4: Gives the requirements in terms of Use Case actor grouping
- Section 5: Gives further requirements in term of semantics.
- Appendix A: Illustrates the designed workflow with sequence diagrams.

1.5 References

A (Core) Interoperability Specification (IS) is targeted to be the sole entry point for the technology developers, the compliance assessment testing and possibly certification,

and the purchaser of IT systems in term of technical requirements that will ensure interoperability.

From this (Core) Interoperability Specification a number of supporting Interoperability Specifications are referenced:

- Irish Patient Summary Content Interoperability Specification [IPS]
- Irish Interoperability Specification for Sharing Documents [IXDS]
- Irish Patient Identification Management Interoperability Specification [IPIM]
- Irish Security and Privacy Interoperability Specification [S&P]
- Irish General Terminology Interoperability Specification [ITERM]

The above Interoperability Specifications include precise references to internationally adopted profiles and standards as well as Irish specific constraints.

Implementations are required to conform to the requirements within this (Core) Interoperability Specification; all referenced Interoperability Specifications, and the standards and profiles they specify.

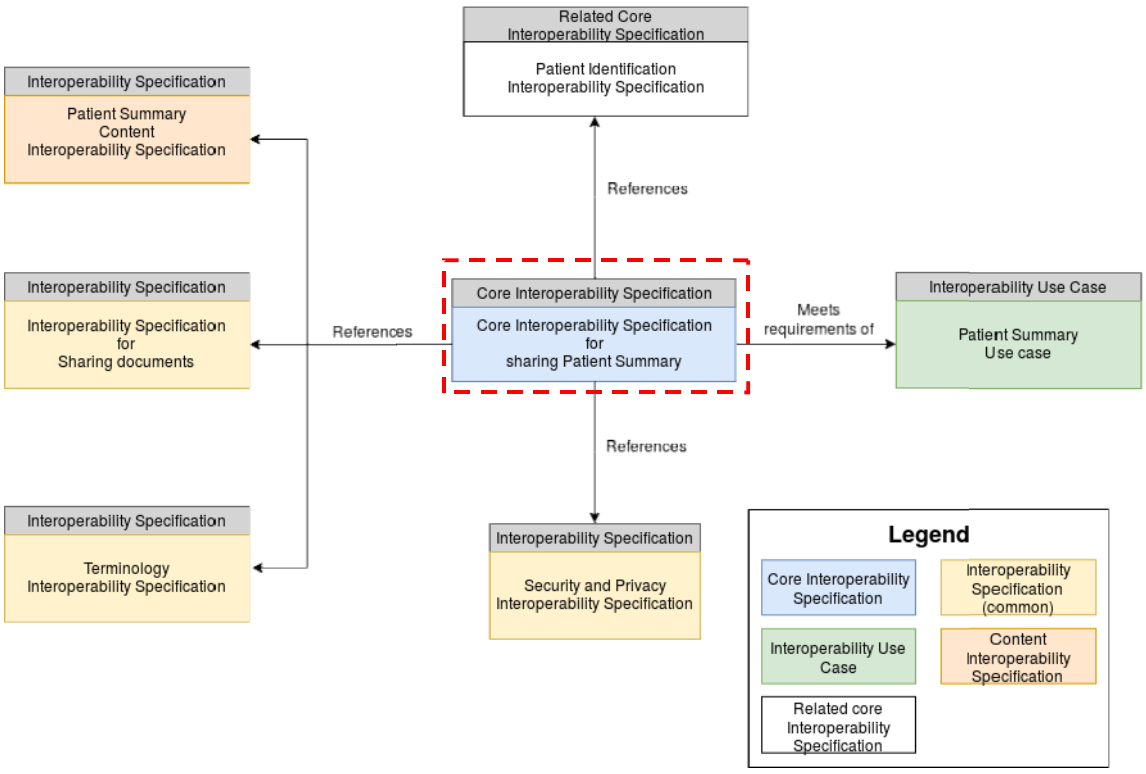


FIGURE 1-1 SHARING OF PATIENT SUMMARY DOCUMENTATION ORGANIZATION

1.6 Description

This Interoperability Specification describes the technical interface requirements between communicating systems collaborating to support the sharing of patient summaries. It is not intended to be a complete specification of each one of these interconnected systems.

1.7 Document convention

Interoperability Specifications contain numbered requirements that follow this format:

[ABCD-###] where ABCD is a three or four letter acronym unique to that Interoperability Specification for convenient purposes, and ### is the unique number for that requirement within the Interoperability Specification.

These numbered requirements are the elements of the Interoperability Specification that the system conforms to. In other words, in order to implement a system that fully supports the Use Case and Interoperability Specification, the system shall be able to demonstrate that it conforms to every numbered requirement for the system actors to which it is claiming conformance.

Please note that all numbered requirements are numbered uniquely, however numbered requirements are not always sequential.

1.7.1 Requirements language

Throughout this document the following conventions[1] are used to specify requirement levels:

- **SHALL**: the definition is an absolute requirement of the specification.
- **SHALL NOT**: the definition is an absolute prohibition of the specification.
- **SHOULD**: there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.
- **SHOULD NOT**: there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behaviour described with this label.
- **MAY** or **OPTIONAL**: means that an item is truly optional. One vendor may choose to include the item because a particular marketplace requires it or because the vendor feels that it enhances the product while another vendor may omit the same item.

1Definitions based upon IETF RFC 2119 2 Bourquard, Karima and Berler, Alexander. Use case driven approach for a pragmatic implementation of interoperability in eHealth. IGI Global Journal

1.8 Methodology

This Interoperability Specification has been developed with input from various Irish stakeholders collected during several months through workshops and teleconferences. Stakeholders included Physicians from many different disciplines and Irish IT specialists.

The development of a Core Interoperability Specification relies on the high-level requirements set by the associated Use Case. These high-level requirements are not restated in this specification and readers may consider reviewing the related Use Case document.

1.8.1 Introduction of the use case driven approach

This methodology[2] has the objective to:

- Define Use cases and their prioritization to answer the eHealth strategy objectives of nation/region;
- From use cases to design the interoperability specifications and infrastructure based on IHE profiles;
- To define the testing strategy and identify test plan and test methods (test cases, test tools and test data);
- To support Project teams to procure products or solutions for their eHealth Project (Telemedicine, national/regional EHR, replacement of product in hospitals, …);

The methodology is based on experiences and good practices in other countries or regions. It is further describes in [UC_ANALYSIS]

2 Patient Summary Sharing Use Case

2.1 Scope

The Patient Summary use case is further defined and analysed in [UC_ANALYSIS].

2.2 Not in scope

This core interoperability specification document does not specify how the Discharge Summaries and Encounter Reports documents are obtained by the Discharge Summary Source and the Encounter Reports Source respectively.

Note: These Source Actors could be supported by the Health Link broker (acting as a proxy for the care delivery sources) or could be the source systems used by Hospitals and Primary Care physicians. This will be decided at implementation time.

It does not describe either the mechanism at the Aggregated Patient Summaries Provider to aggregate the various documents into the final Patient Summary.

Note: This aggregation process should be decided based on clinical criteria such as the time span of the discharge summaries and encounter summaries used as input for the aggregation, the need to truncate some less relevant information, etc. Such rules may evolve over time, based on clinical users feedback.

2.3 Use case actors and services

The Use Case Actors and the Services that are used by this Core Interoperability Specification for Sharing Patient Summaries are described at a functional level in [UC_ANALYSIS].Readers who wish to understand the mapping of Use Case Actors to real world products are recommended to read [UC_ANALYSIS]. A summary is provided in the following tables:

TABLE 2-1USE CASE ACTORS

ACTOR NAME	DESCRIPTION
Discharge Summaries Source	Responsible for the creation of Discharge Summaries and publishing them to the Shared Document Repository.
Encounter Summaries Source	Responsible for the creation of Encounter Summaries and publishing them to the Shared Document Repository.
Shared Document Repository	Stores records (Prescription Records, Dispensation Records, Patient Summaries, Encounter Summaries, and so on).
National Document Registry	Stores references to the documents published in the Shared Document Repository.
Patient Summary Consumer	Queries and Retrieves Patient Summary documents.
Aggregated Patient Summaries Provider	Consumes discharge summaries, encounter summaries and the current medication list of a patient and aggregates all those pieces in the final Patient Summary document.

How actual implementations support Use Case Actors may vary. For example, some implementations may support a Use Case Actor entirely by a single system design. Other implementations may support a Use Case Actor using a gateway system integrated with the point of service system.

The typical implementation architecture aligns the Use Case Actor's capabilities as defined in this Core Interoperability Specification with a single system or integrated set of systems under the design and responsibility of one vendor and or operator.

In specific implementation situations the vendor boundary does not align with the Use Case Actor. For example, a point of service system is from one vendor, while a gateway system which converts the point of service system to the Use Case Actor is from a different vendor. The interface between the two systems is not specified by this Core Interoperability Specification and is the responsibility of the implementation project.

TABLE 2-2 USE CASE SERVICES

SERVICE NAME	DESCRIPTION
Publish Document(s)	Used to create a Discharge Summary of Encounter Record and publish it to the National Shared Record as well as to submit changes to a record.
Retrieve Document Set	Used to retrieve a document knowing its reference. Shall be preceded by a Query for Documents transaction.
Query for Documents	Query for relevant Patient Summary records. The result will be a list of references to the actual documents
Provide Patient Summary	Retrieve discharge summaries, encounter summariesand the current medication list of a patient and aggregate them in a Patient Summary document

2.4 Design constraints and assumptions

2.4.1 Encounter Summaries Source / Discharge Summaries Source

The Encounter Summaries Source and Discharge Summary Source actors shall be aware of the patient's demographics and identifiers to fill correctly the CDA document section related to the patient identity. They might also be a source of identities for the National Document Registry.

> **[ISPS-001]** The Encounter Summaries Source and Discharge Summaries Source actors shall be grouped with the Patient Identity Source and Identifier Cross Reference Consumer Use Case actor from the Patient Identification Management Core Interoperability Specifications.

2.4.2 Aggregated Patient Summaries Provider

The Patient Summary shall contain the current medication list known for the patient. That is to say that it shall be able to access ePrescription documents.

> **[ISPS-002]** The Aggregated Patient Summaries Provider actor shall be grouped with the ePrescription Consumer from the Sharing of ePrescription/eDispensation Core Interoperability Specification.

3 Core Interoperability Specification Conformance Requirements

The Use Case Actors and the Services they support are described at a functional level in the Patient Summary Use Case analysis document [UC_ANALYSIS]. Services may be required, conditional or optional. The Use Case Actor, Service(s) and optionality are conveyed in the first three columns of Table 3-1 Interoperability Conformance Requirements.

The second part of the table (columns 4-7) provides the mapping for the Use Case Actor to the detailed specifications (such as IHE Profiles, Profile Actors, Optionality) that systems shall implement to exchange healthcare information in the context of this Use Case.

For a selected Use Case Actor (a single row in the table), the system shall implement all the requirements (some optionality when allowed) listed in the second part of the table (columns 4-7). This includes the referenced healthcare profiles, the standards specified and terminology standards. For each Profile Actor (whether required or optional), the last column references the detailed specification that constrains and extends the implementation of this profile for Irish specific requirements. These specifications may be found in Appendices to this (core) specification or in other referenced Interoperability Specifications.

Readers who wish to understand the mapping of Use Case Actors to real world products are recommended to read the ePrescription and Patient Summary Use Cases analysis document [UC_ANALYSIS].

TABLE 3-1INTEROPERABILITY CONFORMANCE REQUIREMENTS

PATIENT SUMMARY SHARING USE CASE			MAPPING TO SECTIONS FROM THIS AND REFERENCED INTEROPERABILITY SPECIFICATIONS			
USE CASE ACTOR	SERVICE SUPPORTED	OPT	TECHNICAL ACTOR	OPT	PROFILE/ STANDARD	REFERENCED SPECIFICATION AND COMMENTS
Discharge Summaries Source	Publish document(s)	R	Content Creator	R	HL7 CDA Rel. 2.0	Patient Summary Content Interoperability Specifications – Discharge Summaries – Section 5
			Document Source	R	IHE Cross-Enterprise Document Sharing (XDS.b)	Interoperability Specification for sharing documents – Section 3.2
			X-Service User	R	IHE Cross-Enterprise User Authorization (XUA)	Security and Privacy Interoperability Specification – Sections 11
			Secure Node	R	IHE Audit Trail and Node Authentication (ATNA)	Security and Privacy Interoperability Specification – Section 9
			Time Client	R	IHE Consistent Time (CT)	Security and Privacy Interoperability Specification- Secti 3.1.2
Encounter Summaries Source	Publish document(s)	R	Content Creator	R	HL7 CDA Rel. 2.0	Patient Summary Content Interoperability Specifications – Encounter Summaries - Section 6
			Document Source	R	IHE Cross-Enterprise Document Sharing	Interoperability Specification for sharing documents –

					(XDS.b)	Section 3.2
			X-Service User	R	IHE Cross-Enterprise User Authorization (XUA)	Security and Privacy Interoperability Specification – Sections 11
			Secure Node	R	IHE Audit Trail and Node Authentication (ATNA)	Security and Privacy Interoperability Specification – Section 9
			Time Client	R	IHE Consistent Time (CT)	Security and Privacy Interoperability Specification - Section 3.1.2

PATIENT SUMMARY SHARING USE CASE			MAPPING TO SECTIONS FROM THIS AND REFERENCED INTEROPERABILITY SPECIFICATIONS			
USE CASE ACTOR	SERVICE SUPPORTED	OPT	TECHNICAL ACTOR	OPT	PROFILE/ STANDARD	REFERENCED SPECIFICATION AND COMMENTS
Shared Document Repository	Publish document(s)	R	Document Repository	R	IHE Cross-Enterprise Document Sharing (XDS.b)	Interoperability Specification for sharing documents – Section 3.4
			X-Service Provider	R	IHE Cross-Enterprise User Authorization (XUA)	Security and Privacy Interoperability Specification – Sections 11
			Authorization Decisions Verifier	R	IHE Secure Retrieve (SeR)	Security and Privacy Interoperability Specification – Section3.6.2 Systems are encouraged to implement the SeR profile rather

						than an adHoc interface.
	Retrieve Document Set	R	Secure Node	R	IHE Audit Trail and Node Authentication (ATNA)	Security and Privacy Interoperability Specification – Section 9
			Time Client	R	IHE Consistent Time (CT)	Security and Privacy Interoperability Specification- Section 3.1.2
National Document Registry	Query for documents	R	Document Registry	R	IHE Cross-Enterprise Document Sharing (IHE XDS.b)	Interoperability Specification for sharing documents – Section 3.4 System shall implement option On-Demand Documents.
			Authorization Decisions Manager	R	IHE Secure Retrieve (SeR)	Security and Privacy Interoperability Specification – Section3.6.2 Systems are encouraged to implement the SeR profile rather than an adHoc interface.
			X-Service Provider	R	IHE Cross-Enterprise User Authorization (XUA)	Security and Privacy Interoperability Specification – Sections 11
			Secure Node	R	IHE Audit Trail and Node Authentication (ATNA)	Security and Privacy Interoperability Specification –

						Section 9
			Time Client	R	IHE Consistent Time (CT)	Security and Privacy Interoperability Specification – Section 3.1.2

PATIENT SUMMARY SHARING USE CASE			MAPPING TO SECTIONS FROM THIS AND REFERENCED INTEROPERABILITY SPECIFICATIONS			
USE CASE ACTOR	SERVICE SUPPORTED	OPT	TECHNICAL ACTOR	OPT	PROFILE/ STANDARD	REFERENCED SPECIFICATION AND COMMENTS
Patient Summaries consumer	Query and retrieve documents	R	Content Consumer	R	HL7 CDA Rel. 2.0	Patient Summary Content Interoperability Specification– Section 3
			Content Consumer	R	Cross-Enterprise Sharing of Scanned Document (XDS-SD)	IHE ITI TF Volume 1 – Section 20
			X-Service User	R	IHE Cross-Enterprise User Authorization (XUA)	Security and Privacy Interoperability Specification – Sections 11
			Document consumer	R	IHE Cross-Enterprise Document Sharing (XDS.b)	Interoperability Specification for sharing documents – Section 3.3 System shall implement option On-Demand Documents.
			Secure Node	R	IHE Audit Trail and Node Authentication	Security and Privacy Interoperability Specification- Section 9

			Time Client	R	IHE Consistent Time (CT)	Security and Privacy Interoperability Specification – Section 3.1.2
Aggregate Patient Summaries Provider	Provide Patient Summary	R	Content Consumer	R	HL7 CDA Rel 2.0	Patient Summary Content Interoperability Specifications – EncounterReport - Section 6 Patient Summary Content Interoperability Specifications – Discharge Summary - Section 5
			Content Creator	R	HL7 CDA Rel 2.0	Patient Summary Content Interoperability Specification – Section 3
			Document Creator	R	Cross-Enterprise Sharing of Scanned Document (XDS-SD)	IHE ITI TF – Volume 1 – Section 20
PATIENT SUMMARY SHARING USE CASE			MAPPING TO SECTIONS FROM THIS AND REFERENCED INTEROPERABILITY SPECIFICATIONS			
USE CASE ACTOR	SERVICE SUPPORTED	OPT	TECHNICAL ACTOR	OPT	PROFILE/ STANDARD	REFERENCED SPECIFICATION AND COMMENTS
			Document Consumer	R	Cross-Enterprise Document Sharing (XDS.b)	Interoperability Specification for sharing documents – Section 3.3

			Document Source	R	Cross-Enterprise Document Sharing (XDS.b)	Interoperability Specification for sharing documents – Section 3.2 Systems shall implement options: - Document Replacement - Document Transformation
			On-Demand Document Source	R	Cross-Enterprise Document Sharing (XDS.b)	Interoperability Specification for sharing documents – Section 3.5 Systems shall implement option: Persistence of Retrieved Documents
			Authorization Decisions Verifier	R	IHE Secure Retrieve (SeR)	Security and Privacy Interoperability Specification – Section3.6.2 Systems are encouraged to implement the SeR profile rather than an adHoc interface.
			X-Service Provider	R	IHE Cross-Enterprise User Authorization (XUA)	Security and Privacy Interoperability Specification – Sections 11
			X-Service User	R	IHE Cross-Enterprise User Authorization (XUA)	Security and Privacy Interoperability Specification – Sections 11
			Secure Node	R	IHE Audit Trail and Node Authentication	Security and Privacy Interoperability Specification- Section 9

			Time Client	R	IHE Consistent Time (CT)	Security and Privacy Interoperability Specification – Section 3.1.2

4 Patient Summary actor conformance

A system conforming to this Core Interoperability Specification shall claim conformance at the level of a Use Case Actor (first columns of Table 3-1 Interoperability Conformance Requirements). A system may claim conformance to one or more Use Case Actors among:

- Encounter Report Source
- Discharge Summary Source
- National Document Registry
- Shared Document Repository
- Patient Summary Consumer
- Aggregate Patient Summaries Provider

4.1 Creation of on-demand document entries in National Document Registry

For each Aggregate Patient Summary the Aggregate Patient Summaries Provider Use Case actor is able to create on-demand, an entry shall be registered in the National Document Registry to allow consumers to retrieve it. Details are given in [IXDS] section 3.5.

5 Constraints on Patient Summary Use Case actors

5.1 Discharge summaries

5.1.1 Metadata attributes

5.1.1.1 Document Class Code

[ISPS-003] When sharing Discharge Summary documents, the class Code metadata attribute shall be equal to “Summaries”.

5.1.1.2 Document type Code

[ISPS-004] When sharing Discharge Summary document, the type Code metadata attribute shall be equal to “to “34133-9” (Summarization of Episode Note).

5.1.1.3 Document format Code

[ISPS-005] When sharing Discharge Summary document (CDA), the format Code metadata attribute shall be equal to “urn:ihe:pcc:xds-ms:2007”.

5.1.1.4 Document mime Type

[ISPS-007] When sharing Discharge Summary document (CDA), the mime Type metadata attribute shall be equal to “text/xml”.

5.2 Encounter summaries

5.2.1 Metadata attributes

5.2.1.1 Document Class Code

[ISPS-010] When sharing Encounter Summary documents, the class Code metadata attribute shall be equal to “Summaries”.

5.2.1.2 Document type Code

[ISPS-011] When sharing Encounter Summary document, the type Code metadata attribute shall be equal to “57833-6”.

5.2.1.3 Document format Code

[ISPS-012] When sharing Encounter Summary document (CDA), the format Code metadata attribute shall be equal to “XXX”.

5.2.1.4 Document mime Type

[ISPS-013] When sharing Encounter Summary document (CDA), the format Code metadata attribute shall be equal to “text/xml”.

[ISPS-014] When sharing Patient Summary document (PDF), the format Code metadata attribute shall be equal to “XXX”.

5.2.1.5 Document event Code

5.3 Aggregate Patient Summaries

5.3.1 Metadata attributes

5.3.1.1 Document Class Code

[ISPS-020] When sharing Patient Summary documents, the class Code metadata attribute shall be equal to “Summaries”.

5.3.1.2 Document type Code

[ISPS-021] When sharing Patient Summary document, the type Code metadata attribute shall be equal to “60591-5” (Patient Summary).

5.3.1.3 Document format Code

[ISPS-022] When sharing Patient Summary document (CDA), the format Code metadata attribute shall be equal to “XXX”).

[ISPS-023] When sharing the PDF version of the Patient Summary, the format Code metadata attribute shall be equal to “urn:ihe:iti:xds-sd:pdf:2008” (PDF/A coded document).

5.3.1.4 Document mime Type

[ISPS-024] When sharing Patient Summary document (CDA), the format Code metadata attribute shall be equal to “text/xml”.

[ISPS-025] When sharing Patient Summary document (PDF), the format Code metadata attribute shall be equal to "XXX".

5.3.1.5 Document event Code

6 Appendices

The following sequence diagram provides an overview of the combined flow of transactions resulting from the above selected profiles and standards.

6.1 Appendix A: Patient Summary workflow

This first sequence diagram shows the complete workflow. To ease the reading, authentication steps have been hidden.

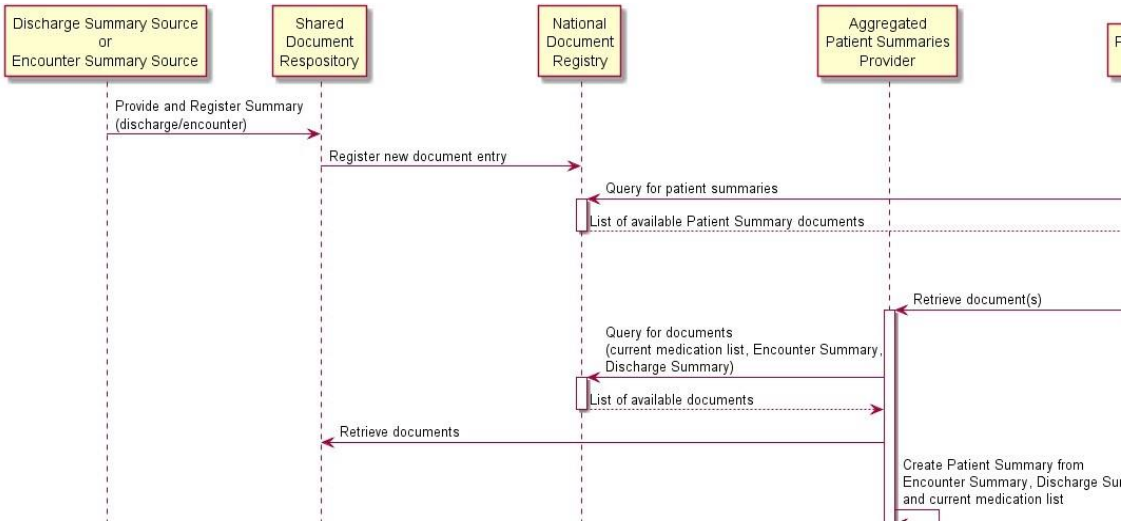


FIGURE 6-1 PATIENT SUMMARY WORKFLOW

6.1.1 Publication of Encounter Reports and Discharge Summaries

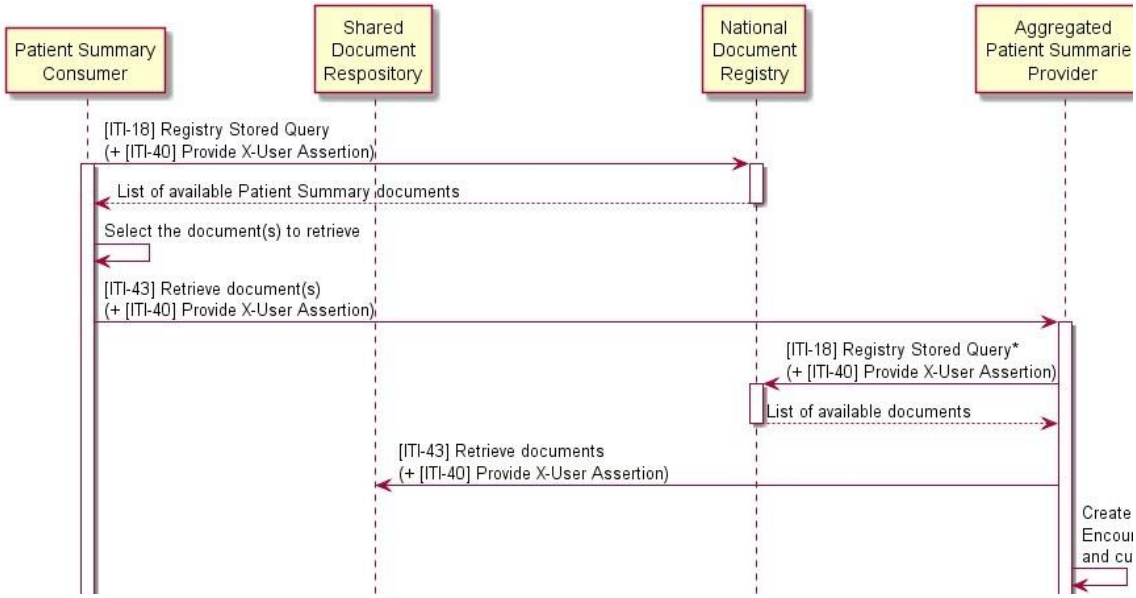
As a first step, the Encounter Reports Source and Discharge Summaries Source Use Case actors publish documents to the Shared Document Repository. Those two operations might not occur in a timely manner. The figure below shows the workflow in terms of IHE transactions. Note that the responses are not shown on the diagram to ease the reading.

FIGURE 6-2 SUBMISSION OF DISCHARGE SUMMARIES AND ENCOUNTER SUMMARIES

6.1.2 Query and Retrieve of a Patient Summary

In a second step, a Patient Summary Consumer Use Case actor queries the National Document Registry for Patient Summaries. The National Document Registry answers with a pointer to a document held by the Aggregated Patient Summaries Provider. The latter queries the National Document Registry and retrieves the available documents to build the final Patient Summary.

The sequence diagram below shows the case where the National Document Registry has been provided with a pointer to an entry owned by the Aggregate Patient Summaries Provider.



* To build the Patient Summary, the Aggregated Patient Summaries Provider Use Case actor is required to retrieve the existing documents related to the patient to then arrange them as a Patient Summary document.

FIGURE 6-3 QUERY AND RETRIEVE PATIENT SUMMARY (ENTRY EXISTS)

The sequence diagram below illustrates the case when the National Document Registry Use Case actor does not know about an on-demand entry for the requested patient and thus sends a notification to the Aggregated Patient Summaries Provider Use Case actor.

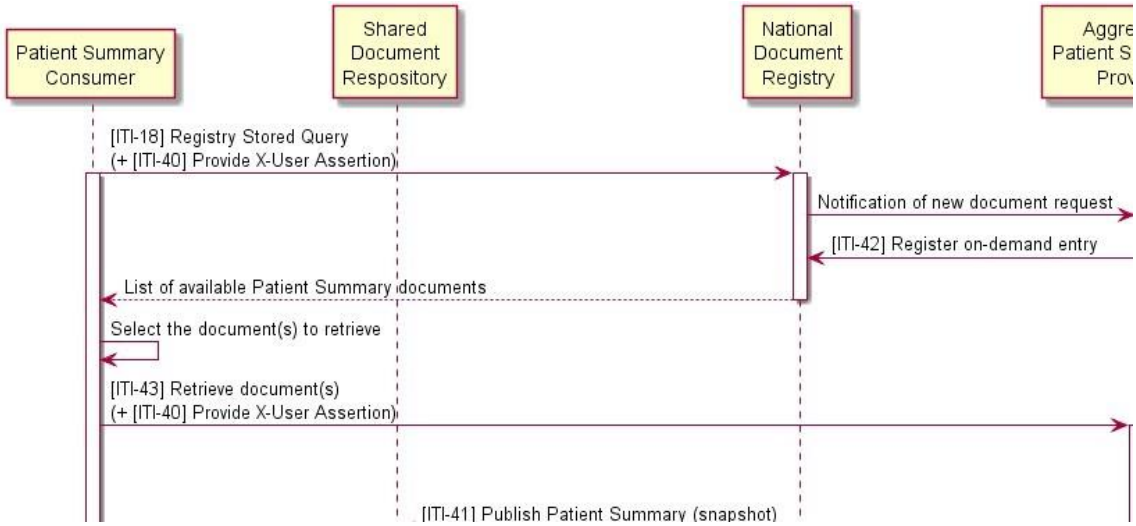


FIGURE 6-4 QUERY AND RETRIEVE PATIENT SUMMARY (NO ENTRY EXISTS)

6.1.3 Security and Privacy pre-requisites

The sequence diagram below illustrates the pre-requisites in terms of security in privacy in the two following cases:

1. The Aggregate Patient Summaries Provider registers a new on-demand document entry
2. The Patient Summary Consumer queries and retrieves a Patient Summary

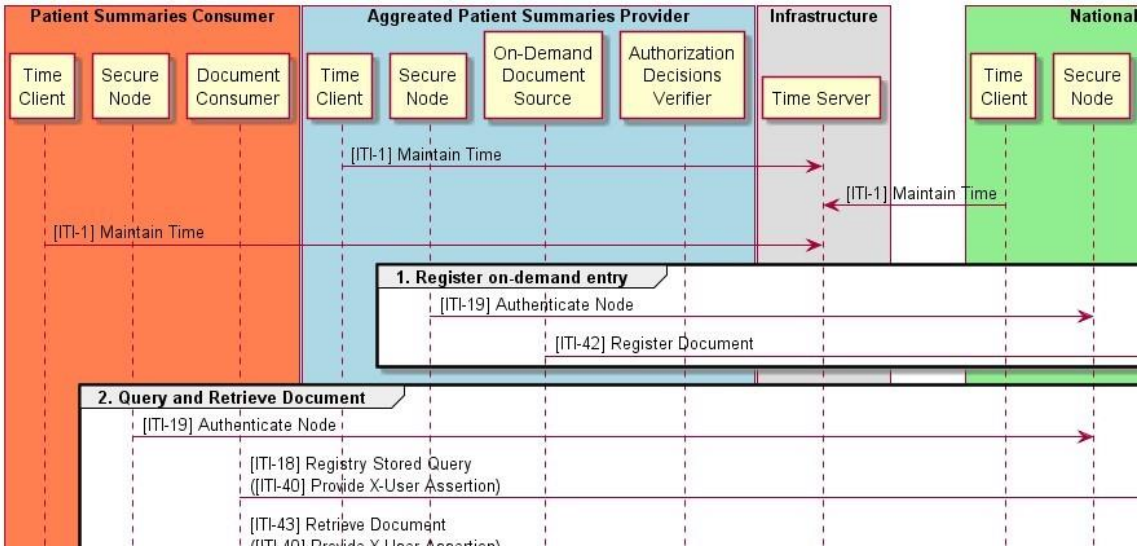


FIGURE 6-5 SECURITY AND PRIVACY REQUIREMENTS