XpanDH

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

D4.1 – (D4.1.1) XpanDH Adoption Domains

WP4 – Feasibility & Experimentation

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Authors:

Name	*Organisation*	*Name*	*Organisation*
Maria Marques; Fábio Januário	UNINOVA	Alexander Berler	Gnomon
Orsolya Becze; Gergely Héja	OKFŐ	Haralampos Karanikas; Konstantinos Chalkias	KETEKNY
Maria Salazar; Juliana Sá	CHUdSA	Eva Sabajová	NCZI

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What did this document aim to achieve?	Revise and define the XpanDH adoptions domains. Contextualize and define the X-Bubbles that will perform the experimentation.
Present the main methodological approaches in bullet point format	
What were the main findings or take-away messages? What implications does it have for the XpanDH project?	
Which project stakeholder group would benefit the most from the document and why?	

Healthcare Professional	X
International Adherence Network/Initiative	
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Technology & Service Provider	X
Other	

List any relevant organizations or social media accounts for wider visibility	

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List of abbreviations

Acronym	Description
AIDA	Agency for Integration, Diffusion and Archive of Medical Information
KETEKNY/Greek DRG Institute	Greek Centre for Documentation and Costing of Hospital Services
DRG	Diagnosis Related Groups
EKOK	Greek DRG Coding Guidelines
EOPYY	National Organization for the Provision of Health Services
EU	European Union
EEHRxF	European Electronic Health Record Exchange Format
EESZT	Hungary National eHealth infrastructure
EHDS	European Health Data Space
EHR	Electronic Health Record
ELOKIP	Greek Nomenclature and Codification of Medical Procedures
FHIR	Fast Healthcare Interoperability Resources
GMPC ETIP	Greek Medical Procedures Classification
GP	General Practitioner
GrDRG	Greek DRG System
HDL	High-density lipoprotein
HIS	Hospital Information System
HL7	Health Level 7
ICD	International Classification of Diseases
ICD-10	International Classification of Diseases - 10th Revision
ICNP	International Classification for Nursing Practice
ICPM	International Classification of Procedures in Medicine
ISO	International Organization for Standardization
IT	Information Technology
LDL	Low-density lipoproteins
LIS	Laboratory Information System
LOINC	Logical Observation Identifiers Names and Codes
MoH	Ministry of Health
NCPeH	National Contact Point for eHealth
ODIPY	Organization for Quality Assurance in Health
PHR	Personal Health Record
SNOMED-CT	Systemized Nomenclature of Medicine – Clinical Terms
SNS	Portuguese National Health Service
SOAP	Subjective, Objective, Assessment and Plan
SSI	Surgical Site Infections
XDS	Cross-enterprise Document Sharing
WP	Work Package

Executive summary

The project XpanDH aims at mobilizing and building capacity in individuals and organisations to create, adapt and explore purposeful use of interoperable digital health solutions based on a shared adoption of the European Electronic Health Records Exchange format (EEHRxF) across Europe.

The X-Bubbles are collections of organisations that agreed to experiment with using the EEHRxF, in a set adoption domain and under the X-Bundle defined conditions, mostly on their own budget, or using other projects budgets, or pro-bono, but in effective articulation with XpanDH. Each X-Bubble is responsible for adopting and demonstrating the use of digital solutions for a specific adoption domain.

These organisations represent a sample of EU landscape, in what regards the needs of EEHRxF, based on their organisation and technical settings and aims. They also represent, in concrete, the so-called “early adopters” that will serve the purpose of proving that guidance produced is useful. This aspect is especially critical as the level and kind of guidance depends on the readiness level of each organisation from both technical and organisational perspectives.

The experimentation scenarios foreseen in the X-Bubbles of the XpanDH project are described, including the identification of six bubbles associated with six adoption domains considered relevant to the broad adoption of the EEHRxF and taking into account the available resources and experimentation capacity.

1 Introduction

This deliverable is focused on the detailed description and contextualization of the x-bubbles that will be the base for the experimentation in XpanDH.

1.1 Background

The project XpanDH aims at mobilizing and building capacity in individuals and organisations to create, adapt and explore purposeful use of interoperable digital health solutions based on a shared adoption of the European Electronic Health Records Exchange format (EEHRxF) across Europe.

To achieve this main goal, the project is considering the outputs and outcomes of past projects to develop the specifications used on the adoption domains and in the experimentation scenarios envisioned in the X-Bubbles.

Following XpanDH Grant Agreement definition, "experimentation bubbles' are collections of organisations that agreed to experiment using the EEHRxF, in a set adoption domain and under the X-Bundle defined conditions".

From a practical point of view, these organisations represent a sample of EU landscape, in what regards the needs of EEHRxF, based on their organisation and technical settings and aims. They also represent, in concrete, the so-called "early adopters" that will serve the purpose of proving that guidance produced is useful. This aspect is especially critical as the level and kind of guidance depends on the readiness level of each organisation from both technical and organisational perspectives.

1.2 Scope and objectives

This document intends to:

1. Identify the XpanDH adoption domains to be dealt with by X-Bubbles.
2. Define and prioritize the X-Bubbles that are responsible for experimentation within the scope of XpanDH, assigning a responsible partner to each one.
3. Describe and contextualize each X-Bubble focusing on the motivation, objectives and scenario of the experimentation.

The X-Bubbles need to be compatible with the intention of XpanDH and related adoption domains and need to be agreed with WP2/WP3 for experimentation possibilities.

1.3 Structure of the deliverable

This deliverable is structured into the following parts:

a) XpanDH Adoption Domains: revision and confirmation of the XpanDH adoption domains that are considered in the X-Bubbles; definition of the associated X-Bubbles and the partners responsible for the experimentation.

b) X-Bubbles Specifications: detailed description and contextualization of the envisioned X-Bubbles including motivation, objectives and experimentation scenario.

2 XpanDH Adoption Domains

Below, there is a revision and confirmation of the XpanDH adoption domains that are considered in the X-Bubbles. Moreover, the associated X-Bubbles are defined and the partners responsible for the experimentation presented.

2.1 Adoption Domains Revised and Confirmed

In D1.5 *(D1.4) Definition of the EEHRxF adoption domains Report* was presented a revision and prioritisation of the 5 EEHRxF domains and selected the Hospital Discharge Reports and Laboratory Results as the main domains to be dealt with by XpanDH. Considering the level of existing maturity and implementation activity and the technical feasibility within the resources available, the following list of potential XpanDH adoptions domains was presented:

1. Laboratory results (focused on patients with diabetes)
   a) Organisation to Organisation (national level)
   b) Organisation to Patient (national level)
2. Hospital discharge reports
   a) Organisations (local level)
   b) Organisation to Organisation (national level)
   c) Organisation to Patient (national level)
   d) Organisation to Patient to Hospital (national & cross-border level)
   e) Organisation to National Authority (national level)
   f) National Authority to Organisation (national level)

Taking into account the partners committed to experimentation, available resources and experimentation capacity, the following revised list of adoption domains is considered for XpanDH X-Bubbles:

1. **Laboratory results (focused on patients with diabetes)**
   a) *Organisation to Organisation* (national level): Communicate a specific set of laboratory results of patients between different organisations so that each organisation can maintain a complete record of the results, in order to ensure continuity of care, and possibility to generate alerts to their General Practitioner (GP), nurse, etc.
   b) *Organisation to Patient* (national level): Communicate the latest set of laboratory results to the patient so they can follow up on any pre-agreed actions, track their progress and contact the treating clinician with any concerns or questions.
2. **Hospital discharge reports**
   a) *Organisation to Patient* (national level): Communicate discharge reports from a hospital to the patient (within the same country) so that they can

be informed, raise questions if needed, share this information with other caregivers and take any self-care actions indicated in the report.

b) *Organisation to National Authority* (national level): Communicate discharge reports from a hospital to a national authority to support reimbursement decisions or to contribute content to a national registry.

c) *National Authority to Organisation* (national level): The national authority communicates discharge reports to a hospital treating a patient, that it has previously received from other hospitals treating that patient, to enable a smooth transfer and continuity of care (e.g. if a patient moves home).

d) *National Authority to National Authority* (cross boarder): Communicate discharge reports between national authorities in different countries to support cross boarder continuity of care, second opinion consultation and telemedicine services.

It should be noted the removal of the adoption domain hospital discharge report - organization to organization and the inclusion of the adoption domain hospital discharge report – national authority to national authority. This was due to the partner's inability, within the time frame of the project, to accommodate the necessary changes to its internal information systems to proceed with the initially planned experimentation.

2.2 Associated X-Bubbles

The X-Bubbles are collections of organisations that agreed to experiment with using the EEHRxF, in a set adoption domain and under the X-Bundle defined conditions, mostly on their own budget, or using other projects budgets, or pro-bono, but in effective articulation with XpanDH. Each X-Bubble is responsible for adopting and demonstrating the use of digital solutions for a specific adoption domain.

Considering the defined XpanDH adoption domains, the six X-Bubbles shown in Figure 1 were established and fully contextualized and described in the next chapters of this document, according to the template provided in annex I. At this stage, the bubbles are spread across three countries: Hungary, Portugal, Greece and Slovakia.

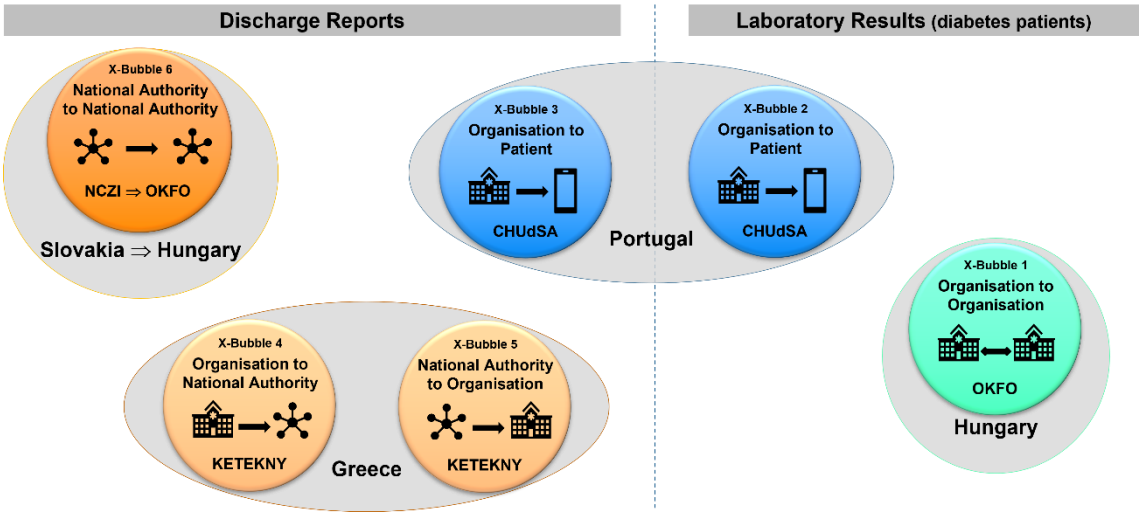


Figure 1 - XpanDH X-Bubbles

All X-Bubbles have been championed by a lead partner (Table 1) to conduct the deployment and evaluation for their domain. These partners are described in next section.

Table 1 -XpanDH X-Bubbles and Lead partners

X-Bubble	XpanDH Adoption Domain	Lead partner
X-Bubble 1	Laboratory Results (diabetes patients) Organisation to Organisation (national level)	OKFŐ
X-Bubble 2	Laboratory results (diabetes patients) Organisation to Patient (national level)	CHUdSA
X-Bubble 3	Hospital Discharge Report Organisation to Patient (national level)	CHUdSA
X-Bubble 4	Hospital Discharge Report Organisation to National Authority (national level)	KETEKNY
X-Bubble 5	Hospital Discharge Report National Authority to Organisation (national level)	KETEKNY
X-Bubble 6	Hospital Discharge Report National Authority to National Authority (cross boarder)	NCZI

It should be noted that the experimentation bubbles can be further extended to include other third-party organisations, and European or EU-funded initiatives and projects through the efforts of the X-Nets.

2.2.1 Involved partners

Below, there is a description and contextualization of the X-Bubbles involved partners.

2.2.1.1 OKFŐ

The National Directorate General for Hospitals (OKFŐ) is a national authority for healthcare in Hungary, it acts as the operator of more than 100 state-owned hospitals and is responsible for coordination, development and quality assurance of healthcare provision and services. OKFŐ as a budgetary organisation monitors the operation of the health care system, facilitates strategic government decisions concerning the revision of the healthcare provision, and contributes to the development of a new, integrated and transparent national health care system. In addition, the OKFŐ is also responsible for the allocation of primary care praxis rights and for eHealth strategy.

The Hungarian national eHealth infrastructure is built around the EESZT, a centralised eHealth platform, which provides web services based on SOAP for healthcare providers to access documents and records pertaining to their patient. EESZT provides the following services:

- Authentication of healthcare professionals
- Master value sets: code tables and registries (healthcare professionals, healthcare providers and pharmaceutical drugs)
- Access control and audit log for patients: patients can govern the access to their documents.
- Patient portal: patients can access their documents, govern the access to them and check the audit log pertaining to their documents. It is provided as web application for computers and as mobile app too.
- ePrescription and eDispensation, including the registration of paper-based prescriptions upon dispensation.
- EHR vault: hospital discharge reports, outpatient records, laboratory and imaging reports etc. Document format is PDF.
- eReferral.
- Interface to PACS systems.
- Interface to reimbursement information stored at the Health Insurance Fund.
- PHR vault for collection of data through smart medical devices (e.g. blood pressure and blood glucose meter). Document format is FHIR.

2.2.1.2 CHUdSA

Institution

CHUdSA is a central and university hospital centre, located in Porto, the second largest city in Portugal, providing health care services to a population of 3,2M people. It is a tertiary public hospital part of the Portuguese National Health Service (SNS).

The hospital centre includes four institutions, namely, Hospital Geral Santo António (general hospital), Hospital Magalhães Lemos (mental health hospital), Centro Materno-Infantil do Norte Albino Aroso (women and children hospital) and Centro de Genética Médica Jacinto de Magalhães (genetics centre). This includes 1076 places for inpatients and 5276 working professionals. It is also part Clinical Academic

Centre with the Institute of Biomedical Sciences Abel Salazar of the University of Porto.

In 2022, CHUdSA had 33.156 patients admitted, performed 15.675 surgeries, 743.696 outpatient medical appointments and 3023 births.

The hospital centre aims to achieve excellence in all its activities in a global and integrated health perspective. Its mission is to provide humanized, competitive and reference health care, promoting the articulation with the other partners of the system, the valorisation of pre- and post-graduate education and professional training, the dynamization and encouragement of research and scientific development in healthcare.

Information Systems and Technologies

The hospital has adopted HL7 FHIR, SNOMED-CT, Open-EHR, LOINC, ICD, and other standards. The hospital's IT ecosystem includes SONHO[1], SCLINICO[2], and an EHR system[3]. The hospital has implemented an interoperability platform, AIDA, which uses HL7 language to communicate with systems, allows for information exchange with internal and external providers, and ensures syntactic and semantic understanding. The hospital's goal is to provide an interoperable, efficient, and secure EHR ecosystem to promote better healthcare to patients while complying with regulations and standards. The AIDA ecosystem includes:

- AIDA – Agency for Interoperation, Diffusion and Archive of Health / Clinical Information. This platform uses HL7 / FHIR standards to interoperate among the Information Systems of the Hospital (e.g. Hospital Information System, Laboratory Information System, Radiologic Information System, Clinical Information System, Nursing Information System). The interoperation is ensured at syntactic, semantic and people levels.
- AIDA-EHR - Is part of AIDA platform and enables the Hospital to implement a complete Open-EHR based environment, this tool helps to create and manage interfaces to represent clinical and health information in Open-EHR structures and allowing for coding information using Snomed-CT, ICD, LOINC and other standards. Contains tools for managing templates from archetypes, a form building, a value sets constructor, and a decision logic module.
- AIDA-services – Is a Service Oriented Architecture that provides services for orchestrating processes in the ecosystem of AIDA and can be consumed by other systems.

[1] National hospital information system for patient management and administrative service.
[2] National hospital information system for clinical records.
[3] In house system with additional functionalities that complement national systems.

- AIDA-EEHRxF – This component will be developed in the context of this project and aims to translate (map) Open-EHR structures into EEHRxF structures for information exchange.

CHUdSA launched an APP (Santo António) in June 2021 available for Android and iOS systems. To date, it has 61,199 users. This technological solution has allowed a significant reduction of notification letters sent, since for users with registered email the notifications are sent via APP. In addition to the aforementioned features of the Santo António APP, the following features are under development: Scheduling for picking up medications at the outpatient pharmacy; Implementation of support for the companions of patients in the SU; Planning and access to food by professionals; Improvement of the clinical information access form; Request for death certificate (in tests).

Number of ratings and degree of user satisfaction (to date): Play Store - 301 ratings, 118 with comments, currently leaving a rating of 4.37 / 5. Satisfaction Questionnaires: Total number of responses since the launch of the application – 50,698 responses; Total number of responses during the year 2022 – 17,332; (Monthly average of 1444 answers); Total number of responses during the year 2023 – 18,634; (Monthly average of 4659 answers).

2.2.1.3 KETEKNY

The "Centre of Documentation and Costing of Hospital Services", under the distinctive title, in Greek, "KE.TE.K.N.Y. A.E." and, in English, "GREEK DRG INSTITUTE S.A." has been established, in 2014, under Law number 4286/2014 (Gazette A'194/19-9-2014) and its subsequent amendments. The Greek DRG Institute, operates in the public interest, as a non-profit-making, "Société anonyme" subject to the provisions of relevant Laws.

The main purpose of the Institute is the introduction, design and development of a costing and reimbursement system of hospital services, based on an internationally recognized Diagnosis Related Groups (DRG) system.

Complementary purpose of the Greek DRG Institute is, under the Law number 4722/2020 (article 50), the formation and the proposal to the Minister of Health for the publication of all medical classifications/coding systems, used in the Greek Healthcare System to ensure the compatibility with the Greek DRG Systems.

The strategic goals of the organisation are defined as follows:

- Implementation, continuous update and review of the coding and grouping of inpatient cases, towards supporting the implementation of the Greek support of the Greek DRG System in Greek Hospitals.
- Continuous adaptation, update and review of cost weights within the Greek DRG System, as well as development of a standard costing mechanism.

- Development and continuous update, review and management of medical classifications, used in the Healthcare System, so as to ensure compatibility with DRG coding, and their incorporation in all currently available coding systems.
- Gradual reimbursement of Hospitals, based on DRGs.
- Expansion of the development and introduction of DRGs to new sectors of medical services provision.

2.2.1.4 NCZI

NCZI - the Slovak National Health Information Centre is the digital health authority responsible for operating the national health information system. As a digital health authority, NCZI plays a crucial role in the development, implementation, and governance of digital health initiatives in the country. NCZI engages in activities related to health information management, data exchange, interoperability, and digital health transformation and facilitates the adoption of standards and best practices in healthcare IT.

NCZI is connected with a wide range of entities within the healthcare ecosystem. This includes hospitals, healthcare providers, laboratories, pharmacies, and other national authorities involved in healthcare delivery and governance. NCZI defines the interface for data upload from hospital information systems using the ISO standard 13606. Hospitals and doctor's offices in Slovakia utilize their own information systems, with over 70 vendors in the market. These systems allow documents to be stored in the standard of their choosing.

NCZI works in collaboration with external development companies for the implementation of changes in the national health information system. NCZI collaborates with international organizations, standard development bodies, and other countries to align the strategies and practices in Slovakia with global healthcare IT standards. NCZI also plays a key role in shaping national health policies and regulations related to health information exchange, data privacy, and security.

2.3 X-Nets

XpanDH X-Nets are networks of stakeholders (EU or MS organisations) that, linked by similar interests, form the existing pan-European (Digital) Health space and can potentially use or benefit from the widest adoption of the EEHRxF. These networks cover and go beyond the adoption domains and respective bubbles, using the bubble exchange space to enable the dialogue on lessons learnt during the experimentation and elicit preliminary good practices and develop a concept to transfer it to other adopters.

3 X-Bubble 1 specification

Partner leading the experiment: OKFŐ

Adoption Domain: Laboratory results (diabetes patients) Organization to Organization

Motivation: In the current project we would like to focus on the standardisation of diabetes outpatient reports based on EEHRxF, to serve as a pilot for the standardisation of other medical documents for national purposes. Cross-border exchange of medical data (at first laboratory results) would also be interesting.

3.1 Scenario

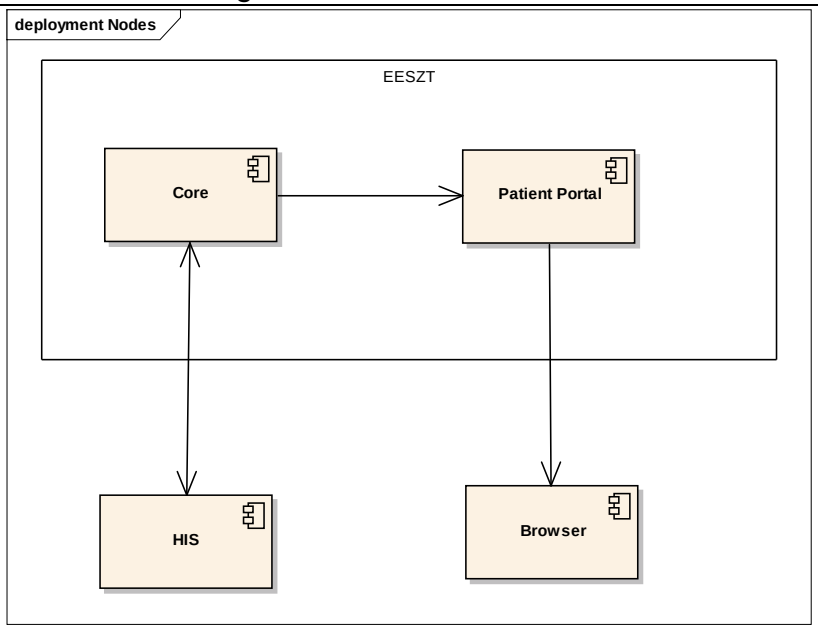
This X-Bubble is related to diabetes continuity of care use case. Diabetic patients are followed-up in order to assure that the value of a group of laboratory parameters are maintained in a safe range. Physician order laboratory exams regularly (e.g. whenever a patient goes to an outpatient consultation). The laboratory results are translated into a EEHRxF format by either the HIS or LIS. Structured laboratory results are stored in the EESZT and are available to all the physicians treating the patient and to the patient himself/herself.

3.2 Framework

Table 2 - X-Bubble 1 framework

X-Bubble ID	**X-Bubble 1**
Target Group	Diabetes patient
Stakeholders	Clinicians
Context of use	Continuity of care
AS-IS situation	Currently, it is obligatory by law to every state reimbursed healthcare provider and every private physician to use the EESZT to make patient data available to other healthcare providers treating the patient. The patient has access to his/her data through the patient portal of the EESZT.
	Technical specifications: EESZT provides web services based on SOAP for healthcare providers to access documents and records pertaining to their patient. Laboratory reports are stored as PDF documents in the EHR vault of EESZT.
	Semantic elements: Hungarian implementation of ICPM and ICD-10 for billing purposes, LOINC has partial usage.

<table>
<tr><td></td><td colspan="2">Master datasets and values sets: registry of healthcare providers and healthcare professionals, Hungarian implementation of ICPM (separate for inpatient and outpatient care), Hungarian implementation of ICD10 and a partial national implementation of LOINC. The PDF is for human use only, no underlying structured document (e.g. EHR according to EN/ISO 13606) is available. The laboratory systems typically use LOINC for internal purposes and use the Hungarian implementation of ICPM for reporting to the health Insurance Fund.</td></tr>
<tr><td>TO-BE situation</td><td colspan="2">Continuity of care for diabetic patients is supported by structured data exchange, saving much time for the physician by providing an integrated view of the patient's condition through time, providing alerts based on the structured data etc.</td></tr>
<tr><td>Description</td><td colspan="2">Necessary steps to move from the AS-IS to the TO-BE:
1. The document structure and the value sets have to be defined.
2. The EESZT interface of the hospital information system has to be updated to allow sending and reception of such structured documents.
3. The EHR component of the EESZT has to be updated to validate such structured documents.
Note: step 1 is possible within the project. Steps 2 and 3 may not be possible.</td></tr>
<tr><td>Objectives and contributions to overall XpanDH objectives</td><td colspan="2">Pilot structured data exchange supporting continuity of care for diabetic patient.</td></tr>
<tr><td rowspan="5">Actors and their Roles</td><td>Actor</td><td>Role</td></tr>
<tr><td>Physician</td><td>Document creator and user</td></tr>
<tr><td>Patient</td><td>Subject of care</td></tr>
<tr><td>Laboratory and/or hospital information system</td><td>Client system of EESZT used by the physician</td></tr>
<tr><td>EESZT</td><td>Document repository</td></tr>
<tr><td>Preconditions</td><td colspan="2">• Document structure and master value sets defined.
• EESZT supports structured documents.
• Laboratory and/or hospital information system can send and retrieve structured documents from EESZT.</td></tr>
<tr><td>Trigger</td><td colspan="2">Every time a lab examination is performed in a hospital/outpatient clinic that can create structured lab results.</td></tr>
<tr><td>Flow</td><td colspan="2">1. Physician: uses hospital information system to retrieve already existing structured documents of the patient.</td></tr>
</table>

	2. Hospital information system: retrieves already existing structured documents of the patient from EESZT. 3. Laboratory and/or hospital information system: sends structured laboratory results to EESZT. 4. EESZT: validates and stores the structured laboratory results, provides access to stored structured documents. 5. Patient: may use the patient portal of EESZT to retrieve structured documents about him/her.
Post conditions	Continuity of care documents for diabetology are available in EESZT.
Requirements	**User requirements** Same as for EESZT which is already mandatory for physicians and can be already used by patients through the patient portal.
	Technical requirements Structured document specification (including LOINC and any other value set to be used) for diabetology.
	Operational requirements Only the already existing hospital information system and EESZT is needed.
	Ethics requirements Medical data has to be sent to EESZT for all state reimbursed healthcare encounters and for all non-state reimbursed healthcare provision provided by a physician.
X-Bubble Major Challenges	Developments in EESZT and HIS necessary for structured document handling.
Architecture	

3.3 Experimentation plan

1. Define the list of lab results: define the final list of lab results considered for diabetes patients.

2. Define EEHRxF structure: define the specific datasets and value sets required for diabetes lab results.
3. Development: adapt EESZT and the participating HIS/LIS to handle structured lab results.
4. Functional and technical tests: perform internal tests to ensure the feasibility of the solution.
5. Perform pilot / roll out to production system.

4 X-Bubble 2 specification

Partner leading the experiment: CHUdSA

Adoption Domain: Laboratory results (diabetes patients) Organisation to Patient

Motivation: CHUdSA is committed with the adoption of standards for syntactic and semantic interoperation of health information. This is in charge of the AIDA platform for interoperation, archiving and diffusion of health information. FHIR, Open-EHR and SNOMED-CT standards are being adopted to implement a complete EHR ecosystem making use of tools provided by AIDA platform. The opportunity for testing the use of EEHRxF modelling approach to exchange health information in the context of Laboratory Results of Diabetic Patients is the main motivation.

4.1 Scenario

This X-Bubble is related to diabetic patients follow-up use case. Diabetic patients are followed-up in order to assure that the value of a group of laboratory parameters are maintained in a secure range. Doctors order laboratory exams in a frequent way (e.g. whenever a patient goes to an outpatient consultation). This laboratory results are coded in LOINC and structured as an Open-EHR compositions, then translated into a EEHRxF format. Laboratory results are made available to those patients that allowed this information to be consulted through the APP.

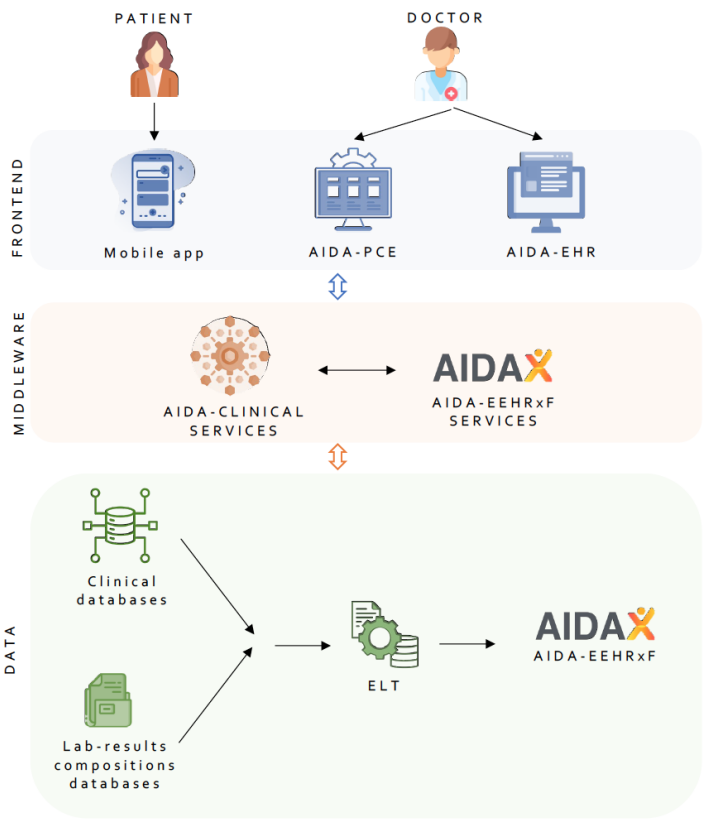
4.2 Framework

Table 3 - X-Bubble 2 framework

X-Bubble ID	X-Bubble 2
Target Group	Diabetic Patients
Stakeholders	Doctors Responsible Patients
Context of use	Access to laboratory results by patients
AS-IS situation	Currently, laboratory results are interoperated and archived by AIDA platform. Although a mobile app is available, the laboratory results are not communicated to the patients so that they could better manage their disease. In the current situation the list of laboratory results considered are: • Hemoglobin A1C. • Spot urinary albumin-to-creatinine ratio. • Serum creatinine and estimated glomerular filtration rate.

<table>
<tr><td></td><td colspan="2">• Lipid profile: including total, LDL, and HDL cholesterol and triglyceride.
• Liver function tests.</td></tr>
<tr><td></td><td colspan="2">Technical specifications: AIDA-EHR (modelling in Open-EHR), transportation layer HL7 FHIR and AIDA-Services</td></tr>
<tr><td></td><td colspan="2">Semantic elements: National Health System Codes / LOINC / ICD-10 / SNOMED-CT / ICNP</td></tr>
<tr><td></td><td colspan="2">Master datasets and values sets: Local datasets (AIDA-EHR) based on adopted terminologies/ontologies (Open-EHR) and available in annex II.</td></tr>
<tr><td>TO-BE situation</td><td colspan="2">Handle structured and coded information using EEHRxF. Allow laboratory results consultation through the mobile APP in an omnichannel approach, in order to assure the continuity of care and help patients to better manage their disease.</td></tr>
<tr><td>Description</td><td colspan="2">Laboratory results are coded in LOINC and structured as a set of Open-EHR compositions. The goal is to make possible the translation to EEHRxF format. Experiments will be carried out in order to achieve and share practical knowledge about the mapping into and from EEHRxF structures.</td></tr>
<tr><td>Objectives and contributions to overall XpanDH objectives</td><td colspan="2">The main objectives in terms of health information exchanging are:
• to deliver comprehensive information to patients,
• to handle lab results information adopting EEHRxF.</td></tr>
<tr><td rowspan="7">Actors and their Roles</td><td>Actor</td><td>Role</td></tr>
<tr><td>Responsible Doctor</td><td>Order laboratory exams.</td></tr>
<tr><td>Patient</td><td>Goes to outpatient consults, goes to laboratory for blood collecting, consults laboratory results information using the APP.</td></tr>
<tr><td>HIS</td><td>Administrative information is recorded into HIS.</td></tr>
<tr><td>LIS</td><td>Receives orders, collect blood from patients, proceed with the execution of lab exams, send the result to AIDA platform using HL7 standard.</td></tr>
<tr><td>AIDA Platform</td><td>Lab results are stored for consultation and analysis.</td></tr>
<tr><td>Mobile APP</td><td>Allows patients consult the lab results.</td></tr>
<tr><td>Preconditions</td><td colspan="2">The patient is included in the follow-up of diabetics.</td></tr>
<tr><td>Trigger</td><td colspan="2">• Every time an order of lab exams is made.
• Every time a patient requests the consult of lab results through the APP.</td></tr>
</table>

Flow	**1 - Lab Exam Order and Execution:** • Responsible doctor orders lab exams. • Patient perform exams. • Lab results are available and sent to AIDA platform. • A EEHRxF structure is created (mapped from compositions). **2 - Consumption of Lab Results:** • A patient requests a laboratory result through the APP. • The request is sent to AIDA-EEHRxF. • The laboratory result is sent from AIDA-EHR to AIDA-EEHRxF. • AIDA-EEHRxF maps the laboratory result to EEHRxF and allow patient to consult laboratory result in a PDF format.
Post conditions	Assure technical support to the doctors and patients during the X-Bubble.
Requirements	**User requirements** Have a mobile device and install Santo António APP.
	Technical requirements • Mapping from Open-EHR compositions to EEHRxF. • Establish AIDA-EEHRxF. • Update mobile APP to allow lab results visualization.
	Operational requirements • Access to the APP. • User authentication and authorization. • Laboratory results available.
	Ethics requirements Only those patients who accepted the conditions of use, namely the access to laboratory result information, are able to consult information.
X-Bubble Major Challenges	• Code laboratory results into EEHRxF structure. • Motivate patients using mobile APP.

Architecture	

4.3 Experimentation plan

1. Define the list of laboratory results: define the final list of laboratory results considered for diabetic patients.
2. Define EEHRxF structure: define the specific datasets and value sets required for laboratory results to be exchange between hospital and patient.
3. Analyse existing laboratory results structure: assess the current structed data and identify limitations or gaps that need to be addresses to enable the feasibility.
4. Data transformation: developed the processes to mapping the laboratory results from their existing format to the desired EEHRxF.
5. Interoperability: configure the interoperability between AIDA platform and mobile APP; configure and adapt the mobile APP.
6. Functional and technical tests: perform internal tests to ensure the feasibility of the solution.
7. Conduct experimentation.

5 X-Bubble 3 specification

Partner leading the experiment: CHUdSA

Adoption Domain: Hospital Discharge Reports Organisation to Patient

Motivation: CHUdSA is committed with the adoption of standards for syntactic and semantic interoperation of health information. This is in charge of the AIDA platform for interoperation, archiving and diffusion of health information. FHIR, Open-EHR and SNOMED-CT standards are being adopted to implement a complete EHR ecosystem making use of tools provided by AIDA platform. The opportunity for testing the use of EEHRxF modelling approach to exchange health information in the context of Discharge Reports is the main motivation.

5.1 Scenario

This X-Bubble is related to the discharge use case. Whenever a patient is discharged a report is completed by the medical and nursing professionals. Discharge Report summarizes clinical and administrative information on the patient condition at the moment of discharge. Also includes information about further procedures and medication. This information is coded in SNOMED-CT and structured as a set of Open-EHR compositions, then translated into a EEHRxF format. The discharge report is made available to those patients that allowed this information to be consulted through the APP.

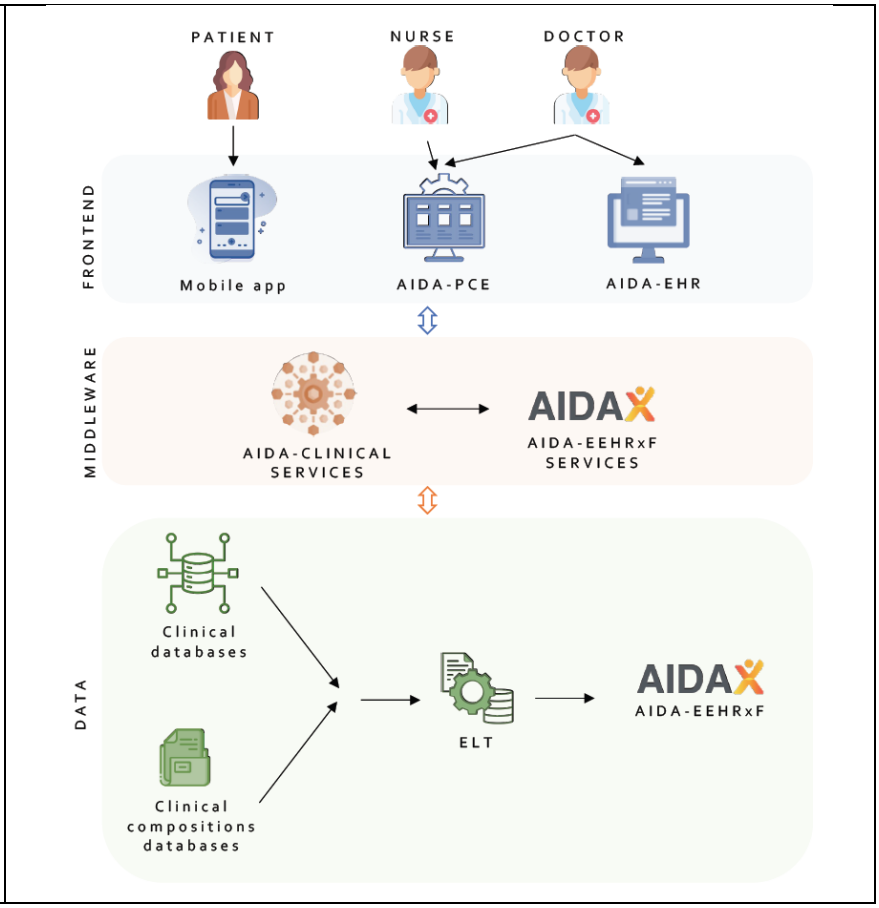
5.2 Framework

Table 4 - X-Bubble 3 framework

X-Bubble ID	X-Bubble 3
Target Group	Discharged Patients
Stakeholders	Doctors Responsible Nurses Responsible Patients Discharged
Context of use	Access to clinical and administrative information by patients (Discharge Report)
AS-IS situation	Currently, discharge information is recorded by the doctors in the clinical information system (AIDA-PCE). Although a mobile app is available, the information referred to discharge reports is not communicated to the patients so that they could better manage their disease.
	Technical specifications: AIDA-EHR (modelling in Open-EHR), transportation layer HL7 FHIR and AIDA-Services.

<table>
<tr><td></td><td colspan="2">Semantic elements: National Health System Codes / LOINC / ICD10 / SNOMED-CT / ICNP.</td></tr>
<tr><td></td><td colspan="2">Master datasets and values sets: Local datasets (AIDA-EHR) based on adopted terminologies/ontologies (Open-EHR) and available in annex III.</td></tr>
<tr><td>TO-BE situation</td><td colspan="2">Handle structured and coded information using EEHRxF. Allow discharge report consultation through the mobile APP in an omnichannel approach, in order to assure the continuity of care and help patients to better manage their disease.</td></tr>
<tr><td>Description</td><td colspan="2">Discharge Report summarizes clinical and administrative information on the patient condition at the moment of discharge. Also includes information about further procedures and medication. This information is coded in SNOMED-CT and structured as a set of Open-EHR compositions. The goal is to make possible the translation to EEHRxF format. Experiments will be carried out in order to achieve and share practical knowledge about the mapping into and from EEHRxF structures.</td></tr>
<tr><td>Objectives and contributions to overall XpanDH objectives</td><td colspan="2">The main objectives in terms of health information exchanging are:
to deliver comprehensive information to patients,
to handle discharge report information adopting EEHRxF.</td></tr>
<tr><td rowspan="6">Actors and their Roles</td><td>Actor</td><td>Role</td></tr>
<tr><td>Responsible Doctor</td><td>Fills and verifies the discharge report.</td></tr>
<tr><td>Patient</td><td>Consults discharge report information using the APP.</td></tr>
<tr><td>HIS</td><td>Administrative information is recorded into HIS.</td></tr>
<tr><td>AIDA Platform</td><td>Discharge report information is stored for consultation and analysis.</td></tr>
<tr><td>Mobile APP</td><td>Allows patients consult the information contained in discharge report.</td></tr>
<tr><td>Preconditions</td><td colspan="2">The patient meets the conditions to be discharged.</td></tr>
<tr><td>Trigger</td><td colspan="2">Every time a patient is discharged.
Every time a patient requests the consult of discharge report information through the APP.</td></tr>
<tr><td>Flow</td><td colspan="2">1 – DR Configuration:
Discharge Report is configured for a particular medical specialty using AIDA-HER.
A template and archetype are stored.
2 – Discharge:
A patient meets conditions to be discharged.</td></tr>
</table>

	• The responsible doctor and nurse complete the discharge report using AIDA-EHR and AIDA-PCE, and completed with information from SCLINICO. • The report information is coded and recorded using SNOMED-CT and ICNP into Open-EHR compositions. • A EEHRxF structure is created (mapped from compositions). **3 - Consumption of DR:** • A patient requests discharge report through APP. • The request is sent to AIDA-EEHRxF. • The discharge report is sent from AIDA-EHR to AIDA-EEHRxF. • AIDA-EEHRxF maps the discharge report to EEHRxF and allow patient to consult discharge report information in a PDF format.
Post conditions	Assure technical support to the doctors, nurses and patients during the X-Bubble.
Requirements	**User requirements** Have a mobile device and install Santo António APP.
	Technical requirements • Mapping from Open-EHR compositions to EEHRxF. • Establish AIDA-EEHRxF. • Update mobile APP to allow discharge report visualization.
	Operational requirements • Access to the APP. • User authentication and authorization. • Discharge report available.
	Ethics requirements Only those patients who accepted the conditions of use, namely the access to discharge report information, are able to consult information.
X-Bubble Major Challenges	• Code discharge report information into EEHRxF structure. • Motivate patients using APP.

Architecture	

5.3 Experimentation plan

1. Define EEHRxF structure: define the specific datasets and value sets required for discharge report to be exchange between hospital and patient.
2. Analyse existing discharge report structure: assess the current structed data and identify limitations or gaps that need to be addresses to enable the feasibility.
3. Data transformation: developed the processes to mapping the discharge report from their existing format to the desired EEHRxF.
4. Interoperability: configure the interoperability between AIDA platform and mobile APP; configure and adapt the mobile APP.
5. Functional and technical tests: perform internal tests to ensure the feasibility of the solution.
6. Conduct experimentation.

6 X-Bubble 4 specification

Partner leading the experiment: KETEKNY - Greek DRG Institute

Adoption Domain: Hospital Discharge Report Organisations to National Authority (for the purpose of the pilot to be implemented, hospitals are considered as Organisations and KETEKNY as the National Authority).

Motivation: KETEKNY/Greek DRG Institute's scope, incorporates among others:

- the Implementation, governance, costing & update of the Greek DRG System (GrDRG),
- the electronic collection of all financial, medical & administrative data of all hospital patients in Greece,
- the definition of standards for health data exchange, after consultation with other national competent authorities,
- the consolidation and management of data/information in the field of hospital expenditure, and
- the collection of all medical classifications and terminologies concerning the health sector.

Having said the above, the pilot of a National Discharge Report/Letter, with the use of EEHRxF specifications is vital for the incorporation of patient data in a single document, in a structured, regulated, coded, DRG relevant manner.

6.1 Scenario

This X-Bubble is related to the discharge report use case. Discharge Report summarizes clinical and administrative information on the patient condition at the time of discharge. Also includes information about further procedures and medication. The main objective, in terms of health information exchange, is to pilot the use of the National Discharge Report/Letter Format which will incorporate EEHRxF specifications:

- to contribute to the collection of structured and coded information on patient administrative data (as defined in the Greek DRG-Dataset),
- to contribute to the collection of relevant clinical data, using ICD-10 Greek Modification, and GMPC/ETIP (as foreseen in Greek DRG Coding Guidelines),
- to achieve fair Remuneration for given Hospital Services by EOPYY and other insurance organizations.

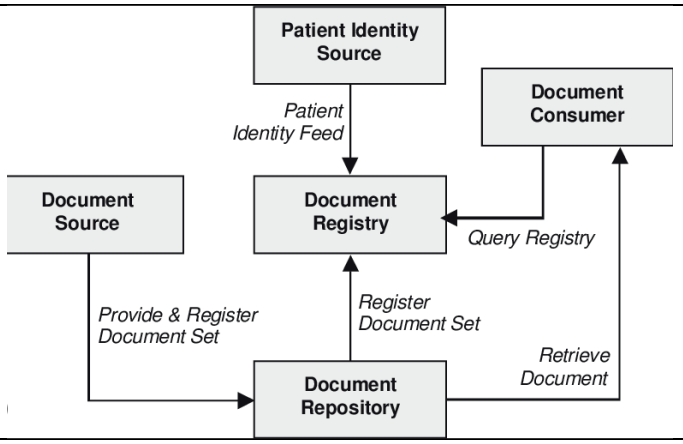
6.2 Framework

Table 5 - X-Bubble 4 framework

X-Bubble ID	X-Bubble 4
Target Group	Patients (mainly hospitalized ones)
Stakeholders	Key Stakeholders are Hospitals, Physicians and other personnel employed in hospital authorities, Greek Ministry of Health (MoH), National Organization for the Provision of Health Services (EOPYY), Organization for Quality Assurance in Health (ODIPY).
Context of use	Continuity of care, contributing to the implementation of administrative and clinical audit, assisting hospital management and benchmarking.
AS-IS situation	Currently, data relevant to DRG system implementation are collected via various methods (majority not in a coded or structured manner) in relation with Hospital EHRs, due to the transition phase to the new Greek DRG Grouper Platform, operated by KETEKNY. Additionally, hospitals produce and provide patients with two other official discharge forms: • the Administrative Discharge Report, • the Medical Discharge Reports/Letters.
	Technical specifications: Current official discharge forms: • the Administrative Discharge Report which currently contains patient diagnosis data, coded after an older ICD-10 version, on main interventional procedures, coded after an older classification-ELOKIP (Greek Nomenclature and Codification of Medical Procedures), and a manually selected KEN group (the previous Greek DRG classification), • the Medical Discharge Reports/Letters, which contain a significant amount of descriptive data relevant to current hospitalization, but not in a coded or structured manner.
	Semantic elements: ICD-10-GrM (International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Greek Modification), GMPC (ETIP): Greek Medical Procedures Classification.
	Master datasets and values sets: Greek DRG-Dataset, EKOK (Greek DRG Coding Guidelines), National Discharge Report/Letter Standards (datasets).
TO-BE situation	Formulation and adaptation of a unique collection of patient hospitalization data after their discharge, which will be registered, saved, exchanged and delivered for any appropriate use within the Health Care System (including communication of Hospital EHRs with the Greek DRG Grouper Platform, operated by KETEKNY). In a coded, structured and

<table>
<tr><td></td><td colspan="2">standardised manner, thus ultimately ensuring continuity of care through continuous availability of patient hospitalization information. The above objectives may facilitate the following:
i) to provide comprehensive reports for hospitals, concerning their activity (case mix index, average duration of hospitalization, main reasons for admission and hospitalization, number and type of medical procedures, etc.),
ii) to assist benchmarking between clinics and hospitals in terms of cost, quality and efficiency,
iii) to assist the implementation of administrative and clinical audit by EOPYY (Greek National Insurance Fund) and other insurance organizations,
iv) to suggest and assist the implementation of quality indicators per healthcare provider and per individual health service, in collaboration with the ODIPY,
v) to provide source data in order to verify national KPIs on clinical outcomes and effectiveness,
vi) to provide Discharge data in order to trace and monitor treatment outcomes and specific complications of treatment i.e. Surgical Site Infections (SSI).</td></tr>
<tr><td>Description</td><td colspan="2">Use National Discharge Report Standards by incorporating EEHRxF specifications so as to collect structured and coded information on patient administrative data (as defined in the Greek DRG-Dataset), as well as relevant clinical data (as foreseen in Greek DRG Coding Guidelines), using ICD-10 Greek Modification, and ETIP in order to achieve fair Remuneration for given Hospital Services, enhance mentality for benchmarking among hospital entities in terms of medical coding and assist resource allocation.
A national connector will be implemented to convert national discharge letters specifications to the EEHRxF specification.</td></tr>
<tr><td>Objectives and contributions to overall XpanDH objectives</td><td colspan="2">The main objective, in terms of health information exchange, is to pilot the use of the National Discharge Report/Letter Format which will incorporate EEHRxF specifications:
• to contribute to the collection of structured and coded information on patient administrative data (as defined in the Greek DRG-Dataset),
• to contribute to the collection of relevant clinical data, using ICD-10 Greek Modification, and GMPC/ETIP (as foreseen in Greek DRG Coding Guidelines),
• to achieve fair Remuneration for given Hospital Services by EOPYY and other insurance organizations.</td></tr>
<tr><td rowspan="2">Actors and their Roles</td><td>Actor</td><td>Role</td></tr>
<tr><td>Physicians</td><td>Fills and verifies the discharge report.</td></tr>
</table>

	Hospital EHRs, HIS	Administrative and clinical information is recorded into HIS.
	XDS Registry Creator	Create an entry for a document in the registry to be retrieved.
	EEHRxF Connector	An API that converts a custom discharge letter/report in the EEHRxF format.
	XDS Document Consumer Role	Request to view a document from the XDS Repository (can be a patient, a clinician, another IT system).
	XDS Document Creator Role	Create a new document and insert it in the XDS Repository.
Preconditions	• Creation of a discharge letter that can be converted into the EEHRxF model. • The domains applicable from the Discharge Report/Letter format need to be defined by WP2 proposing specific semantics reducing optionalities and cardinalities as much as possible. • Define the information/data needed to be analysed by KETEKNY.	
Trigger	Populate a registry/repository of discharge letters owned by KETEKNY	
Flow	**Step 1:** • Discharge Report is configured. **Step 2:** • An API converts a custom discharge letter/report in the EEHRxF format. • A EEHRxF structure is created. **Step 3:** • Create an entry for a document in the registry to be retrieved.	
Post conditions	The Registry Repository need to be established and accessible for data analysis.	
Requirements	**User requirements:** XDS Actors and Transactions will be used as defined in the IHE Integration profile.	
	Technical requirements: Components to be used will be Gnomon eHealthPass XDS, eHealthPass CDR FHIR API for data analysis and query.	
	Operational requirements: Discharge Letters created in the respective HIS and then published into the registry/repository.	
	Ethics requirements: -	
X-Bubble Major Challenges	• Cross Stakeholders Collaboration • Legal framework • IT specifications	

Architecture	

6.3 Experimentation plan

1. Analyse existing discharge report structure and identify limitations or gaps that need to be addresses to enable the feasibility of related uses.
2. Define the specific datasets and value sets required for discharge report to be exchange between hospital and national authority satisfying the DRG related and other objectives.
3. Develop the processes for mapping the discharge report from their existing format to the desired EEHRxF.
4. Perform internal tests to ensure the feasibility of the solution.
5. Conduct experimentation.

7 X-Bubble 5 specification

Partner leading the experiment: KETEKNY - Greek DRG Institute

Adoption Domain: Hospital Discharge Report National Authority to Organization (for the purpose of the pilot to be implemented, hospitals are considered as Organisations and KETEKNY as the National Authority).

Motivation: KETEKNY/Greek DRG Institute's scope, incorporates among others:

- the Implementation, governance, costing & update of the Greek DRG System (GrDRG),
- the electronic collection of all financial, medical & administrative data of all hospital patients in Greece,
- the definition of standards for health data exchange, after consultation with other national competent authorities,
- the consolidation and management of data/information in the field of hospital expenditure, and
- the collection of all medical classifications and terminologies concerning the health sector.

Having said the above, the pilot of data transmission of KETEKNY to Hospitals, is vital for ensuring data validation and cross-check, to eliminate mistakes in codes selection or in data entry and to enhance accuracy in the field of a fair Remuneration for given Hospital Services, promote mentality for benchmarking among hospital entities in terms of medical coding, and assist resource allocation.

7.1 Scenario

The scenario in terms of health information exchange, is to pilot the use of DRG data, contained in a National Discharge Report/Letter Format which will incorporate EEHRxF specifications in a structured and coded format:

- to contribute to the validation and cross-check of structured and coded information on patient administrative data (as defined in the Greek DRG-Dataset),
- to contribute to the validation and cross-check of relevant clinical data, using ICD-10 Greek Modification, and GMPC/ETIP (as foreseen in Greek DRG Coding Guidelines),
- to transmit DRG codes and names for each patient, computed by the algorithm of the Greek DRG Grouper Platform, according to the above validated and cross-checked patient data.

Additional objectives may include:

- to provide Discharge data in the case of care transition (patient transfer etc.) to ensure continuity of care,

- to provide Discharge data to support Patient Access.

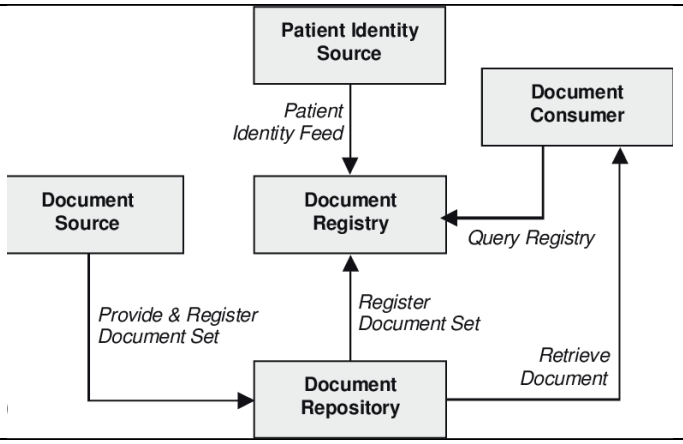
7.2 Framework

Table 6 - X-Bubble 5 framework

X-Bubble ID	X-Bubble 5
Target Group	Patients (mainly hospitalized ones)
Stakeholders	Key Stakeholders are Hospitals, Physicians and other personnel employed in hospital authorities, Greek MoH, EOPYY.
Context of use	Continuity of care, contributing to the implementation of administrative and clinical audit, assisting hospital management and benchmarking.
AS-IS situation	Currently, data relevant to DRG system implementation are transmitted to hospitals via various methods (majority not in a coded or structured manner) in relation with Hospital EHRs, due to the transition phase to the new Greek DRG Grouper Platform, operated by KETEKNY. These data are not directly interconnected with the two official discharge forms which hospitals procedure and provide the patients with (i.e. i) the Administrative Discharge Report which currently contains patient diagnosis data, coded after an older ICD-10 version, on main interventional procedures, coded after an older classification-ELOKIP (Greek Nomenclature and Codification of Medical Procedures), and a manually selected KEN group (the previous Greek DRG classification), ii) the Medical Discharge Reports/Letters, which contain significant amount of descriptive data relevant to current hospitalization, but not in a coded or structured manner).
	Technical specifications: Current official discharge forms: • the Administrative Discharge Report which currently contains patient diagnosis data, coded after an older ICD-10 version, on main interventional procedures, coded after an older classification-ELOKIP, and a manually selected KEN group, • the Medical Discharge Reports/Letters, which contain a significant amount of descriptive data relevant to current hospitalization, but not in a coded or structured manner.
	Semantic elements: ICD-10-GrM (International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Greek Modification), GMPC (ETIP): Greek Medical Procedures Classification.
	Master datasets and values sets: Greek DRG-Dataset, EKOK (Greek DRG Coding Guidelines), National Discharge Report/Letter Standards (datasets).

TO-BE situation	Formulation and adaptation of a unique collection of patient hospitalization data after their discharge, which will be registered, saved, exchanged and delivered for any appropriate use within the Health Care System (including communication of Hospital EHRs with the Greek DRG Grouper Platform, operated by KETEKNY) in a coded, structured and standardised manner, thus ultimately ensuring continuity of care through continuous availability of patient hospitalization information.	
Description	Use Hospital Discharge Report Standards by incorporating EEHRxF specifications so as to validate and cross-check structured and coded information on patient administrative data (as defined in the Greek DRG-Dataset), as well as relevant clinical data (as foreseen in Greek DRG Coding Guidelines), using ICD-10 Greek Modification, and ETIP, and use these data to compute and transmit DRG codes and names for each patient, via the algorithm of the Greek DRG Grouper Platform, in order to achieve fair Remuneration for given Hospital Services, enhance mentality for benchmarking among hospital entities in terms of medical coding and assist resource allocation.	
Objectives and contributions to overall XpanDH objectives	The main objective, in terms of health information exchange, is to pilot the use of DRG data, contained in a National Discharge Report/Letter Format which will incorporate EEHRxF specifications in a structured and coded format (selection of data to be determined): • to contribute to the validation and cross-check of structured and coded information on patient administrative data (as defined in the Greek DRG-Dataset), • to contribute to the validation and cross-check of relevant clinical data, using ICD-10 Greek Modification, and GMPC/ETIP (as foreseen in Greek DRG Coding Guidelines), • to transmit DRG codes and names for each patient, computed by the algorithm of the Greek DRG Grouper Platform, according to the above validated and cross-checked patient data. Additional objectives may include: • to provide Discharge data in the case of care transition (patient transfer etc.) to ensure continuity of care, • to provide Discharge data to support Patient Access.	
Actors and their Roles	**Actor**	**Role**
	Physicians	Fills and verifies the discharge report.

	XDS Registry Creator	Create an entry for a document in the registry to be retrieved.
	EEHRxF Connector	An API that converts a custom discharge letter/report in the EEHRxF format.
	XDS Document Consumer Role	Request to view a document from the XDS Repository (can be a patient, a clinician, another IT system).
	XDS Document Creator Role	Create a new document and insert it in the XDS Repository.
Preconditions	• Creation of a validated discharge letter that can be converted into the EEHRxF model. • The domains applicable from the Discharge Report/Letter format need to be defined by WP2 proposing specific semantics reducing optionalities and cardinalities as much as possible.	
Trigger	Discharge submitted in the registry/repository of discharge letters owned by KETEKNY.	
Flow	**Step 1:** • Discharge Report is validated. **Step 2:** • A EEHRxF structure of a validated discharge report is created. **Step 3:** • Create a process for a document in the registry to be sent.	
Post conditions	The Registry Repository need to be established and accessible for data analysis on the validated data.	
Requirements	**User requirements:** XDS Actors and Transactions will be used as defined in the IHE Integration profile.	
	Technical requirements: Components to be used will be Gnomon eHealthPass XDS, eHealthPass CDR FHIR API for data analysis and query.	
	Operational requirements: Discharge Letters created in the respective HIS and then published into the registry/repository.	
	Ethics requirements: -	
X-Bubble Major Challenges	• Cross Stakeholders Collaboration • Legal framework • IT specifications	

Architecture	

7.3 Experimentation plan

1. Analyse existing validation rules for discharge report structure and identify limitations or gaps that need to be addresses to enable the feasibility of related uses.
2. Define the specific datasets and value sets required for discharge report to be exchange between national authority and hospital satisfying the DRG related and other objectives.
3. Perform internal tests to ensure the feasibility of the solution.
4. Conduct experimentation.

8 X-Bubble 6 specification

Partner leading the experiment: NCZI

Adoption Domain: Hospital Discharge Report National authority to National authority.

Motivation: The EHDS regulation will make the use of FHIR standards mandatory for the exchange of Hospital Discharge Reports. It aims to achieve semantic interoperability, improve patient outcomes, and ensure efficient access to patient data. The pilot implementation of EEHRxF will showcase the seamless transmission of structured data from hospital discharge reports coded using international standards between national information systems, aligning with the future requirements set by the EHDS regulation. This demonstration will emphasize the importance and benefits of adopting FHIR standards for effective and standardized Hospital Discharge Report exchange across healthcare systems.

8.1 Scenario

Let´s consider Mr. Peter Novák, a Slovak citizen, underwent a knee operation in Slovakia before his trip to Hungary with his family. While in Hungary, he unfortunately experiences another injury to the same knee and requires medical attention. The specialist in Hungary, Dr. Anna Kovács, needs access to Mr. Novák's hospital discharge report from Slovakia to provide appropriate care.

In this scenario, the X-Bubble aims to demonstrate the feasibility of transmitting relevant data from the hospital discharge report from Slovakia (stored in the Slovak national health information system) to Hungary and displaying them in the Hungarian doctor's information system.

It is important to note that the existing legislation and technical infrastructure do not currently support such cross-border exchanges. The output of the current project will not involve the full implementation or deployment of the entire process described in the scenario. Instead, the focus will be on conducting a feasibility check of the technical and semantic transformation of the original hospital discharge report and exploitation of the potential solutions and challenges associated with cross-border document exchange of this kind.

The project's output may include a requirement analysis of the changes needed to be made to the MyHealth@EU infrastructure, as well as an analysis of the tools required to update the current Slovak national infrastructure. By assessing the feasibility and identifying the necessary modifications, the project aims to provide valuable insights for future developments and potential implementation of cross-border hospital discharge reports exchange initiatives.

By implementing the X-Bubble framework, the hospital discharge report is reformatted and transformed from ISO 13606 format to the FHIR standard.

In this scenario, the Slovak National Health Information Centre (NCZI) and the Hungarian Digital Health Authority (OKFÖ) explore the possibility of implementing a cross-border document exchange. Rather than upgrading their national information systems (in the actual phase), they consider the concept of National Contact Points for eHealth (NCPeH) for the exchange. The NCPeH serves as the platform for exchanging hospital discharge reports, allowing the national health information systems to continue using their current standards. However, the documents themselves would need to be reformatted to adhere to HL7 FHIR standards, and the data values would need to be mapped to a defined master value set catalogue. This approach would showcase the secure and seamless transmission of hospital discharge reports between the two countries. The decision to transition from nationally used standards to HL7 FHIR will be determined at a later stage, considering the feasibility and benefits of such a transition.

By piloting this X-Bubble, the project aims to showcase the benefits of standardized and interoperable exchange of hospital discharge reports. The successful implementation of this scenario will not only contribute to improved cross-border healthcare collaborations but also support the overall objectives of the XpanDH project.

8.2 Framework

Table 7 - X-Bubble 6 framework

X-Bubble ID	X-Bubble 6
Target Group	**Patients receiving health services in another EU country:** This includes individuals who travel or temporarily reside in another European Union country and require medical treatment or hospitalization. They may face the challenge of accessing their medical records and ensuring continuity of care when returning to their home country. **Health professionals involved in cross-border healthcare:** This includes doctors, nurses, specialists, and other healthcare professionals who provide medical services to patients seeking treatment in another EU country. They face the challenge of accessing complete and accurate medical information to make informed decisions about patient care. **Hospitals and healthcare institutions:** These institutions face challenges in exchanging patient information with hospitals in different countries and ensuring seamless continuity of care.
Stakeholders	**Slovak National Health Information Centre** (NCZI) and **Hungarian Digital Health Authority** (OKFÖ)
Context of use	• Cross-border Continuity care • Second opinion Cross-Border consultation • Telemedicine services

AS-IS situation	In the current situation, the exchange of Hospital Discharge Reports between countries faces challenges due to various factors, including the lack of standardized coding with commonly used international standards. While Medical Reports, ePrescriptions, and Laboratory results have been successfully uploaded to the national EHR system in Slovakia since 2018, the Hospital Discharge Reports, which are a specific type of Medical report, do not adhere to widely recognized international coding standards. Furthermore, Slovakia has not yet implemented a cross-border exchange of health documentation, which adds to the existing challenges in enabling seamless information sharing between healthcare systems.
	Technical specification: ISO 13606 is a technical standard that is mandated by legislation, making it a requirement for uploading documents to the national EHR system.
	Semantic elements: Slovak national code systems, ICD-10 German modification
	Master datasets and values sets: in annex IV.
TO-BE situation	In the envisioned TO-BE situation, the two national digital health authorities will establish a collaborative framework for the exchange of structured hospital discharge reports. To ensure seamless interoperability, the entries within these reports will be coded using preferred classifications and predefined value sets. The primary objective is to generate, transmit, and access hospital discharge reports in the FHIR standard. The focus of the XpanDH project is on showcasing the feasibility of the secure and standardized exchange of hospital discharge reports, rather than analysing the upgrade possibilities of the national information systems. The decision regarding the upgrade of national information systems will be evaluated separately and is beyond the scope of the current project. However, the project can provide valuable inputs to enable informed decision-making about the implementation of FHIR at the national level.
Description	To demonstrate the feasibility of the exchange of structured hospital discharge reports between the two countries within the XpanDH project, a proof-of-concept implementation will be undertaken. This implementation will focus on showcasing the technical and operational aspects of the exchange process, rather than initiating full-scale adoption or integration into the national information systems. The primary objective of the proof-of-concept implementation is to illustrate the successful mapping and reformatting of hospital discharge reports from the existing ISO 13606 format to the FHIR standard. This process will involve extracting the necessary information from the ISO

	13606 reports and transforming it into a FHIR-compliant format. While the proof-of-concept implementation will not directly impact the national information systems or require their upgrade, it will serve as a demonstration of how the exchange can be achieved without significant system modifications. The emphasis will be on the interoperability of the transformed reports and the secure transmission of data between the two countries. The implementation will involve collaborating with healthcare professionals, IT experts, and other relevant stakeholders to gather insights and feedback on the feasibility, usability, and effectiveness of the exchange process. Their inputs will help refine the technical specifications, identify any challenges, and inform potential future implementations at a larger scale. By focusing on the showcase of feasibility, the XpanDH project aims to provide valuable insights into the technical, operational, and organizational aspects of exchanging structured hospital discharge reports between the two countries.
Objectives and contributions to overall XpanDH objectives	**Objectives of the X-Bubble** Showcase Feasibility: The primary objective of the X-Bubble is to demonstrate the technical and operational feasibility of securely exchanging structured hospital discharge reports between Slovakia and Hungary. It aims to validate that the transformation and reformatting of reports from ISO 13606 to the FHIR standard can be successfully realized. Assess Interoperability: The X-Bubble seeks to evaluate the interoperability of hospital discharge reports encoded in FHIR format between the national information systems of both countries. It aims to identify any potential challenges or issues that may arise during the exchange process and gather insights to improve the interoperability of health data. Evaluate Usability: By engaging healthcare professionals and relevant stakeholders, the X-Bubble aims to collect feedback and assess the usability of the exchange process. It seeks to understand the user experience, identify areas of improvement, and gather insights for potential future implementations. **Contributions to Overall XpanDH Objectives** Improve Cross-border Collaboration: The successful implementation of the cross-border exchange of hospital discharge reports contributes to the overall objective of enhancing collaboration between healthcare systems in different countries. It facilitates the seamless transfer of critical patient information, enabling better continuity of care for individuals seeking healthcare services across borders.

<table>
<tr><td></td><td colspan="2">Enhance Semantic Interoperability: By utilizing international standards like FHIR, the X-Bubble aims to enhance semantic interoperability between the national information systems of Slovakia and Hungary. It promotes the use of common coding systems and predefined value sets, which facilitates the accurate interpretation and exchange of health data, leading to improved data quality and information sharing.
Support Data-driven Healthcare: The exchange of hospital discharge reports enables the availability of comprehensive and up-to-date health information, supporting data-driven healthcare practices. It contributes to the overall objective of the XpanDH project by enhancing the collection, aggregation, and analysis of health data, which can lead to better insights, research, and decision-making for healthcare providers and policymakers.
Foster Standardization Efforts: The X-Bubble's use of international standards and the demonstration of successful exchange contributes to standardization efforts within the healthcare domain. It showcases the feasibility of interoperability between different national information systems and encourages the adoption of standardized formats and coding systems for the exchange of health data.</td></tr>
<tr><td rowspan="3">Actors and their Roles</td><td>Actor</td><td>Role</td></tr>
<tr><td>NCZI – Slovak National Health Information Centre</td><td>NCZI plays a key role in coordinating and facilitating the showcase of the cross-border exchange of hospital discharge reports. NCZI ensures that the hospital discharge reports are transformed and reformatted to adhere to international standards, such as the FHIR standard. This includes transforming the data from the current ISO 13606 format to the FHIR format to enable interoperability and seamless exchange.</td></tr>
<tr><td>OKFÖ – Hungarian National Healthcare Service Centre</td><td>OKFÖ works in partnership with NCZI to facilitate the demonstration of the technical feasibility of securely exchanging hospital discharge reports between Slovakia and Hungary.</td></tr>
</table>

	Healthcare provider, medical doctor	Medical professional is responsible for diagnosing, treating, and caring for the patient. He/she relies on medical records and reports stored in patient's EHR, including hospital discharge reports, to make informed decisions about the patient's healthcare. The doctor requires access to the relevant information from other healthcare systems to provide appropriate care.
	Patient	The patient is an individual seeking healthcare services in an EU country outside of their country of affiliation. They play a central role in the process and are the recipient of medical treatment. The patient provides their medical history, undergoes examinations or procedures, and relies on the exchange of data from hospital discharge reports to ensure continuity of care between healthcare providers.
	National Contact Point for eHealth	The NCPeH, although not yet implemented in Slovakia, represents the concept of a platform that would facilitate the exchange of hospital discharge reports. It would receive the reports from the sending country, transform them into a standardized format (such as HL7 FHIR), and transmit them to the receiving country. While the current project does not involve the actual implementation of the NCPeH, its role is simulated to demonstrate the feasibility of cross-border document exchange.
	Slovak National Health Information System (NHIS)	NHIS acts as the national central hub for storing and managing hospital discharge reports in the ISO 13606 format. It ensures data security, interoperability, and collaboration with healthcare providers.
Preconditions	**Existence of Hospital Discharge Reports:** The Slovak national health information system already contains hospital discharge reports as a defined type of Medical reports. **Structured Hospital Discharge Reports:** The hospital discharge reports stored in the Slovak national health information system are structured, meaning they contain organized and categorized data elements.	

	Coded Data Elements: The data elements within the hospital discharge reports are currently coded, primarily using national coding systems. **Existing Legislation:** The legislation governing the national health information system in Slovakia remains unchanged, with ISO 13606 as the mandated standard for document storage and exchange. **ISO 13606 Usage:** The current practice in Slovakia involves utilizing ISO 13606 for storing medical documents, including hospital discharge reports, in the national health information system. **Limited Infrastructure Modifications:** The focus of the feasibility showcase is not on extensive technical infrastructure upgrades. Instead, the emphasis is on demonstrating the transformation and reformatting of hospital discharge reports without major modifications to the existing infrastructure.
Trigger	The trigger for the X-Bubble feasibility showcase is based on a simulated scenario involving a Slovak citizen who has previously undergone a knee operation in Slovakia. During their stay in Hungary, the citizen experiences another injury to the same knee and requires medical attention. In order to provide comprehensive care, the healthcare professionals in Hungary need access to the hospital discharge report from the initial operation in Slovakia. The showcase aims to explore the technical and operational feasibility of securely exchanging the structured hospital discharge report between the two countries, demonstrating the effectiveness of cross-border data exchange for improved healthcare management in such situations.
Flow	1. **Hospital Discharge Report Creation**: A simulated scenario is created where a Slovak citizen hypothetically receives medical treatment in a hospital in Slovakia. As part of the feasibility showcase, a simulated hospital discharge report is generated for this hypothetical patient. This report contains representative information that mimics a real hospital discharge report. 2. **Simulated Storage in the Slovak National Health Information System**: The simulated hospital discharge report is stored temporarily within the simulated Slovak national health information system. Although it does not affect the real national health information system, this step represents the concept of storing the report in a digital repository for demonstration purposes. 3. **Cross-Border Data Exchange Trigger**: The simulated scenario progresses, and the need for cross-border data exchange is triggered when the simulated patient

	hypothetically seeks further medical care in Hungary. In this showcase, the objective is to demonstrate the technical and operational feasibility of securely exchanging the hospital discharge report with a doctor in Hungary. 4. **Data Retrieval and Transformation**: The Hungarian health professional´s initiates the retrieval of the simulated hospital discharge report from the simulated Slovak national health information system. The report is extracted and transformed according to the predefined mapping rules and reformatted to adhere to the FHIR standard. This transformation process demonstrates the feasibility of converting the report from its original format (e.g., ISO 13606) to the desired FHIR format. 5. **Secure Data Transmission**: The transformed hospital discharge report, now in the FHIR format, is securely transmitted from the simulated Slovak national health information system to the simulated Hungarian healthcare system. In this feasibility showcase, secure communication channels or protocols are used to emulate the secure transmission of the report between the systems. 6. **Access by the Doctor in Hungary**: The simulated doctor in Hungary receives the hospital discharge report and can access the simulated patient's medical information. The focus is on demonstrating the successful receipt, interpretation, and utilization of the hospital discharge report in the simulated cross-border healthcare context.
Post conditions	**Accessibility and Utilization of Data**: The simulated doctor in Hungary can access and utilize the received hospital discharge report effectively. This showcases the successful integration of the report into the Hungarian healthcare system and demonstrates its usefulness in supporting cross-border healthcare. **Demonstration of Feasibility**: The execution of the X-Bubble showcases the technical and operational feasibility of securely exchanging hospital discharge reports between Slovakia and Hungary. The successful completion of the showcase provides evidence that the necessary processes, technologies, and collaborations are viable for future implementation of cross-border document exchange. **Lessons Learned and Recommendations**: The X-Bubble generates valuable insights and lessons learned regarding the technical, operational, and organizational aspects of cross-border document exchange. Based on the experience gained, the project can provide recommendations for further improvements, identify potential challenges, and suggest best practices for future implementations.

Requirements	**User requirements** • Demonstration of Document Exchange • Simulated Workflow and Interactions • Showcase-Specific Functionality
	Technical requirements • Standardized Data Formatting • Data Mapping and Value Sets • Simulated connectivity • Mock Data Generation • Data Privacy and Anonymization • Showcase Monitoring and Reporting
	Operational requirements • Access to Simulated Environments • User Authentication and Authorization • Simulated Patient Data • Compliance with Data Protection Regulations • Interoperability with National Systems • Stakeholder Cooperation
	Ethics requirements • Privacy and Confidentiality • Data Minimization • Data Security and Protection • Consent Management • Compliance with Ethical Guidelines • Transparent Data Governance
X-Bubble Major Challenges	While the X-Bubble aims to showcase the feasibility of cross-border document exchange, there are several challenges that may arise during its execution. Some of the major challenges include: **Legal and Regulatory Hurdles**: Cross-border document exchange involves compliance with different legal and regulatory frameworks in each country. Harmonizing these frameworks and ensuring adherence to data protection and privacy regulations can be complex and time-consuming. **Semantic Interoperability**: Hospital discharge reports may be structured and coded differently in different countries or health information systems. Achieving semantic interoperability, where the meaning of the data is preserved during exchange, can be a challenge. Mapping and aligning the data elements and codes between systems require careful coordination and agreement on common standards. **Data Quality and Consistency**: Ensuring the quality and consistency of the data exchanged is crucial for meaningful use and clinical decision-making. Addressing data inconsistencies, inaccuracies, or missing information in the hospital discharge reports may require data validation and verification processes.

	Stakeholder Engagement and Collaboration: Cross-border document exchange involves multiple stakeholders. Coordinating and aligning the efforts of these stakeholders can be a significant challenge.
Architecture	To be defined according to the secure communication channels or protocols that will be used to emulate the secure transmission of the report between the systems.

8.3 Experimentation plan

1. Define the Scope and Objectives:
   - Clearly define the scope of the experimentation as showcasing the feasibility of hospital discharge report exchange between Slovakia and Hungary.
   - Establish the objective of the showcase, which is to validate the feasibility of cross-border document exchange specifically for hospital discharge reports.

2. Identify Participating Actors:
   - Identify the key actors involved in the showcase, including the national digital health authorities (e.g., NCZI, OKFÖ), healthcare institutions, and healthcare professionals responsible for cross-border healthcare.

3. Define Information Requirements:
   - Determine the specific information elements and data fields required for hospital discharge reports to be exchanged between Slovakia and Hungary.
   - Ensure that the necessary information is included in the reports to meet the needs of healthcare professionals in both countries.

4. Analyse Existing Information Systems:
   - Assess the current capabilities of the Slovak national health information system and the Hungarian healthcare system in relation to hospital discharge report exchange.
   - Identify any limitations or gaps that need to be addressed to enable the showcase of feasibility.

5. Data Transformation and Formatting:
   - Develop the necessary processes and procedures to transform the hospital discharge reports from their existing format (e.g., ISO 13606) to the desired format for cross-border exchange (e.g., FHIR).
   - Ensure that the transformed reports conform to international standards and can be effectively interpreted by the receiving system.

6. Secure Data Exchange Mechanism:
   - Establish a secure and reliable data exchange mechanism between the Slovak and Hungarian systems to facilitate the transfer of hospital discharge reports.
   - Implement appropriate data protection measures to ensure the confidentiality and integrity of the exchanged documents.

7. Conduct Feasibility Showcase:
   - Simulate a scenario in which a Slovak citizen requires the display of their hospital discharge report to a doctor in Hungary while seeking healthcare services.
   - Execute the data transformation and exchange process, closely monitoring the accuracy, timeliness, and successful delivery of the document.

8. Evaluate Feasibility and Effectiveness:
   - Assess the feasibility of the showcase based on predefined criteria, such as the successful transformation of reports and secure exchange process.
   - Gather feedback from healthcare professionals involved in the showcase to evaluate the effectiveness and usability of the exchanged reports.

9. Document Lessons Learned:
   - Document the lessons learned from the feasibility showcase, including identified challenges, best practices, and recommendations for future implementations.
   - Capture any insights or improvements that can contribute to enhancing the efficiency and effectiveness of cross-border document exchange.

10. Disseminate Results and Recommendations:
    - Share the findings, outcomes, and recommendations from the feasibility showcase with relevant stakeholders, such as national health authorities and policymakers.
    - Utilize the obtained results to provide valuable input for future initiatives and decision-making processes, particularly regarding the potential upgrade of the Slovak National Health Information System to the FHIR standard. The showcase's findings will shed light on the feasibility and potential benefits of implementing cross-border document exchange solutions based on FHIR, influencing the decision-making regarding the adoption of standardized international coding systems and the integration of FHIR standards into the national health information system.

9 Final remarks

In this document it is possible to identify and understand the experimentation scenarios foreseen in the X-Bubbles of the XpanDH project. Six bubbles were identified associated with six adoption domains considered relevant to the broad adoption of the EEHRxF and taking into account the available resources and experimentation capacity of the lead partners.

The document clearly describes the current situation in which information is exchanged under the considered scenarios, including the systems used and the datasets, which serve as a starting point for the work to be carried out in each bubble. Furthermore, the desired EEHRxF experimentation scenarios are described, including actors and their roles in a common template.

This document also intends to be a support document for the description of the bubbles to be used by the project partners, namely in the work to be developed by WP2 and WP3 in collaboration with WP4.

Annex I – X-Bubble template

Contextualize the x-bubble

Partner willing to experiment: <partner name>

Adoption Domain: <Discharge report / Lab results (check-up diabetes patient)>

Scenario: <hospital-to-hospital / hospital-to-patient / patient-to-hospital / hospital-to-national authority / national authority-to-hospital>

Motivation: <why are you interested in EEHRxF>

Scenario

<A textual description of the X-Bubble scenario>

Framework

X-Bubble ID	**X-Bubble ID**	
Target Group	<The main beneficiary of the x-bubble (e.g. patients with a specific condition)>	
Stakeholders	<Other Entities with interest in the x-bubble, that may affect it and/or interact with it (e.g. clinicians)>	
Context of use	<online consultation / emergency care / continuity care /…>	
AS-IS situation	<AS-IS description>	
	Technical specifications: <Information system, transportation layer, standards>	
	Semantic elements (coding system): <national / international / specify the coding system>	
	Master values sets (datasets): <specify the datasets>	
TO-BE situation	<how do you envisage to do it in the future>	
Description	<A description of what will do to move from the AS-IS to the TO-BE (e.g. what kind of technology will be used, what kind of interventions, etc.)	
Objectives and contributions to overall XpanDH objectives	<The objectives of the x-bubble (e.g. collect data on a specific condition)> <The overall project objectives linked to the x-bubble objectives (e.g. improve overall health data collection)>	
Actors and their Roles	**Actor** < user or system (e.g. patient, platform, device)>	**Role** <Role played>
Preconditions	<conditions and factors that need to be present for the x-bubble to be applied (they could be of diverse nature)>	

Trigger	<The criteria for the execution of the x-bubble>
Flow	<A step-by-step description that indicates the actions that are executed by each Actor to cover the full storyline. May be supported by illustrations, links, schemas, etc. >
Post conditions	< conditions that need to be present when the x-bubble is executed (i.e. the outcome of the x-bubble)>
Requirements	**User requirements** <Main functionalities that need to be available for users)>
	Technical requirements < Basic information such as coding languages, APIs, standards >
	Operational requirements < What users need to use the solutions? >
	Ethics requirements < What is needed to comply with EU ethics requirements>
X-Bubble Major Challenges	<Challenges>
Architecture	<A graphical high level technical architecture, focusing on data flow between system actors>
Alternative flows (optional)	<If there are any other flows that may be followed to execute the Use case>
Exceptions (optional)	<Any conditions that may compromise the result of the x-bubble>
Comments and open issues (optional)	<What is missing? Is there still some open points?>

Experimentation plan

<Steps and plan to the experimentation (definition of information to exchange, changes in information systems, etc) >

Annex II – X-Bubble 2 available datasets in current situation

Archetypes included (Container archetype)	Archetype depth	Text	Description	Data Type	Included (Yes/No)	Occurrences
openEHR-EHR-COMPOSITION.report-result.v1	1	Integração resultados analíticos	Document to communicate information to others about the result of a test or assessment.	ARCHETYPE / COMPOSITION	Yes	Mandatory
		Report ID	Identification information about the report.	TEXT	Yes	Optional
		Status	The status of the entire report. Note: This is not the status of any of the report components.	TEXT	Yes	Optional
		Extension	Additional information required to capture local context or to align with other reference models/formalisms.	SLOT / CLUSTER	Yes	Optional, repeating
openEHR-EHR-CLUSTER.demografico_sonho.v0 (openEHR-EHR-COMPOSITION.report-result.v1)	1.1	Demografico_Sonho	Demografico_Sonho	ARCHETYPE / CLUSTER	Yes	Optional
		Episode of care		IDENTIFIER	Yes	Optional
		Process number		IDENTIFIER	Yes	Optional
		Module		CODED TEXT	Yes	Optional
openEHR-EHR-OBSERVATION.laboratory_test_result.v1 (openEHR-EHR-COMPOSITION.report-result.v1)	1.2	Laboratory test result	The result, including findings and the laboratory's interpretation, of an investigation performed on specimens collected from an individual or related to that individual.	ARCHETYPE / OBSERVATION	Yes	Mandatory, repeating
		Test name	Name of the laboratory investigation performed on the specimen(s).	CODED TEXT LOINC	Yes	Mandatory
		Specimen detail	Details about the physical substance that has been analysed.	SLOT / CLUSTER	No	Optional, repeating
		Overall test status	The status of the laboratory test result as a whole.	CODED TEXT: local::at0107::Registered local::at0037::Partial local::at0120::Preliminary local::at0038::Final local::at0040::Amended local::at0115::Corrected local::at0119::Appended local::at0074::Cancelled local::at0116::Entered in error TEXT	Yes	Optional, repeating

		Overall test status timestamp	The date and/or time that 'Overall test status' was issued.	DATE TIME	Yes	Optional
		Diagnostic service category	The diagnostic service or discipline that is responsible for the laboratory test result.	TEXT	Yes	Optional
		Clinical information provided	Description of clinical information available at the time of interpretation of results.	TEXT	Yes	Optional
		Test result	Results of the test performed on the specimen(s).	SLOT / CLUSTER	Yes	Optional, repeating
		Conclusion	Narrative description of the key findings.	TEXT	Yes	Optional
		Test diagnosis	Single word, phrase or brief description that represents the clinical meaning and significance of the laboratory test result.	TEXT	Yes	Optional, repeating
		Structured test diagnosis	A structured or complex diagnosis for the laboratory test.	SLOT / CLUSTER	No	Optional, repeating
		Multimedia representation	Digital image, video or diagram representing the test result.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the test result not captured in other fields.	TEXT	Yes	Optional, repeating
		Confounding factors	Issues or circumstances that impact on the accurate interpretation of the measurement or test result.	TEXT	Yes	Optional, repeating
		Structured confounding factors	Details of issues or circumstances that impact on the accurate interpretation of the measurement or test result.	SLOT / CLUSTER	No	Optional, repeating
		Receiving laboratory	Details of the laboratory which received the request and has overall responsibility to manage reporting of the test, even if other labs perform specific aspects.	SLOT / CLUSTER	Yes	Optional, repeating
		Laboratory internal identifier	A local identifier assigned by the receiving Laboratory Information System (LIS) to track the test process.	IDENTIFIER or TEXT	Yes	Optional
		Test request details	Details about the test request.	CLUSTER	Yes	Optional, repeating
		Original test requested name	Name of the original laboratory test requested.	CODED TEXT E-REQ	Yes	Optional, repeating
		Requester order identifier	The local identifier assigned by the requesting clinical system.	IDENTIFIER	Yes	Optional
		Receiver order identifier	The local identifier assigned to the test order by the order filler, usually by the Laboratory Information System (LIS).	IDENTIFIER	Yes	Optional
		Requester	Details of the clinician or organisation requesting the laboratory test result.	SLOT / CLUSTER	Yes	Optional

		Distribution list	Details of additional clinicians or organisations who require a copy of the test result.	SLOT / CLUSTER	No	Optional, repeating
		Point-of-care test	This indicates whether the test was performed directly at Point-of-Care (POCT) as opposed to a formal result from a laboratory or other service delivery organisation.	BOOLEAN	Yes	Optional
		Test method	Description about the method used to perform the test.	ELEMENT	Yes	Optional
		Testing details	Structured details about the method of analysis, device or interpretation used.	SLOT / CLUSTER	Yes	Optional, repeating
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-CLUSTER.laboratory_test_panel.v0 (openEHR-EHR-OBSERVATION.laboratory_test_result.v1)	1.2.1	Laboratory test panel	Laboratory test result as a panel/battery/profile structure common to clinical pathology testing.	ARCHETYPE / CLUSTER	Yes	Optional
		Panel detail	Further details including the individual analytes, specimen for the panel or a further nested panel.	SLOT / CLUSTER	Yes	Optional, repeating
openEHR-EHR-CLUSTER.laboratory_test_analyte.v1 (openEHR-EHR-CLUSTER.laboratory_test_panel.v0)	1.2.1.1	Laboratory analyte result	The result of a laboratory test for a single analyte value.	ARCHETYPE / CLUSTER	Yes	Mandatory, repeating
		Analyte result sequence	The intended position of this analyte result within the overall sequence of analyte results.	COUNT	Yes	Optional
		Analyte name	The name of the analyte result.	TEXT	Yes	Optional
		Analyte result	The value of the analyte result.	ELEMENT	Yes	Optional, repeating
		Analyte result detail	Further detail regarding an individual result.	SLOT / CLUSTER	No	Optional, repeating
		Reference range guidance	Additional advice on the applicability of the reference range to this result or may carry text or coded textual guidance as to whether the result is within the normal range.	TEXT	Yes	Optional
		Test method	Description about the method used to perform the test on this analyte only.	ELEMENT	Yes	Optional
		Validation time	The date and time that the analyte result was validated in the laboratory by a healthcare practitioner.	DATE TIME	Yes	Optional
		Result status	The status of the analyte result value.	CODED TEXT: local::at0015::Registered local::at0016::Partial local::at0017::Preliminary local::at0018::Final local::at0020::Amended	Yes	Optional, repeating

				local::at0019::Corrected local::at0021::Appended local::at0023::Cancelled local::at0022::Entered in error TEXT		
		Result status time	The date and time that the analyte result was issued for the recorded 'Result status'.	DATE TIME	Yes	Optional
		Specimen	Identification of the specimen used for the analyte result.	IDENTIFIER or URI	Yes	Optional
		Comment	Additional narrative about the analyte result, not captured in other fields.	TEXT	Yes	Optional, repeating
openEHR-EHR-CLUSTER.healthcare_provider_parent-S.v1 (openEHR-EHR-OBSERVATION.laboratory_test_result.v1)	1.2.2	Healthcare provider (PARENT)	Details of a healthcare provider organisation.	ARCHETYPE / CLUSTER	Yes	Optional
		Organisation name	The name of the organisation.	TEXT	No	Prohibited
		Organisation identifier	The unique identifier of the organisation.	IDENTIFIER	No	Prohibited
		Organisation Address	The address of the organisation.	SLOT / CLUSTER	No	Optional
		Department name	The name of a specific department within the organisation.	TEXT	No	Prohibited
		Department identifier	The identifier of a specific department.	IDENTIFIER	No	Prohibited
		Contact details	Contact details for the organisation.	TEXT	No	Prohibited
		Service Identifier	The identifier of a specific ward	IDENTIFIER	Yes	Optional
		Service name	The service name	TEXT	Yes	Optional
		Responsable		CODED TEXT	No	Prohibited
openEHR-EHR-CLUSTER.healthcare_professional_parent.v1 (openEHR-EHR-OBSERVATION.laboratory_test_result.v1)	1.2.3	Healthcare professional (PARENT)	Details of a healthcare professional.	ARCHETYPE / CLUSTER	Yes	Optional
		Nome do Professional	The healthcare worker's professional name.	SLOT / CLUSTER	No	Optional
		Identificação Professional	The healthcare worker's profesional identifier.	IDENTIFIER	Yes	Optional, repeating
		Provider Organisation	The healthcare worker's provider organisation.	SLOT / CLUSTER	No	Optional, repeating
		Contacto	Contact details for the heathcare worker.	TEXT	No	Prohibited
		Estado		CODED TEXT: local::at0006::Proposta local::at0007::Ativa	No	Prohibited

				local::at0008::Suspensa local::at0009::Inativa local::at0010::Registada por erro		
		Data de início válida		DATE TIME	No	Prohibited
		Data de fim válida		DATE TIME	No	Prohibited
		Função		CODED TEXT	No	Prohibited
		Papel		CODED TEXT	No	Prohibited
openEHR-EHR-CLUSTER.device.v1 (openEHR-EHR-OBSERVATION.laboratory_test_result.v1)	1.2.4	Medical device	An instrument, apparatus, implant, material or similar, used in the provision of healthcare. In this context, a medical device includes a broad range of devices which act through a variety of physical, mechanical, thermal or similar means but specifically excludes devices which act through medicinal means such as pharmacological, metabolic or immunological methods. The scope is inclusive of disposable devices as well as durable or persisting devices that require tracking, maintenance activities or regular calibration, recognising that each type of device has specific data recording requirements.	ARCHETYPE / CLUSTER	Yes	Optional
		Device name	Identification of the medical device, preferably by a common name, a formal fully descriptive name or, if required, by class or category of device.	TEXT	Yes	Mandatory
		Type	The category or kind of device.	TEXT	Yes	Optional
		Description	Narrative description of the medical device.	TEXT	Yes	Optional
		Properties	Further details about specific properties about the medical device.	SLOT / CLUSTER	No	Optional, repeating
		Unique device identifier (UDI)	A numeric or alphanumeric string that is associated with this device within a given system.	IDENTIFIER	Yes	Optional
		Manufacturer	Name of manufacturer.	TEXT	Yes	Optional
		Date of manufacture	Date the device was manufactured.	DATE TIME	Yes	Optional
		Serial number	Number assigned by the manufacturer which can be found on the device, and should be specific to each device., its label, or accompanying packaging.	TEXT	Yes	Optional

		Catalogue number	The exact number assigned by the manufacturer, as it appears in the manufacturer's catalogue, device labeling, or accompanying packaging.	TEXT	Yes	Optional
		Model number	The exact model number assigned by the manufacturer and found on the device label or accompanying packaging.	TEXT	Yes	Optional
		Batch/Lot number	The number assigned by the manufacturer which identifies a group of items manufactured at the same time, usually found on the label or packaging material.	TEXT	Yes	Optional
		Software version	Identification of the version of software being used in the medical device.	TEXT	Yes	Optional
		Date of expiry	Date after which the device/product is no longer fit for use, usually found on the device itself or printed on the accompanying packaging.	DATE TIME	Yes	Optional
		Other identifier	Unspecified identifier, which can be further specified in a template or at run time.	IDENTIFIER	Yes	Optional, repeating
		Asset management	Further details about management and maintenance of the device.	SLOT / CLUSTER	No	Optional, repeating
		Components	Additional structured informations about identified components of the device.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local context or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
		Multimedia	Digital representation of the device.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the device not captured in other fields.	TEXT	Yes	Optional

Annex III – X-Bubble 3 available datasets in current situation

Archetypes included (Container archetype)	Archetype depth	Text	Description	Data Type	Included (Yes/No)	Occurrences
openEHR-EHR-COMPOSITION.transfer_summary.v1	1	Nota de Alta	Summary document to support transfer of critical clinical information from the sending healthcare organisation/provider to the receiving healthcare organisation/provider.	ARCHETYPE / COMPOSITION	Yes	Mandatory
		Extension	Additional information required to capture local context or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-ADMIN_ENTRY.episode_institution.v0 (openEHR-EHR-COMPOSITION.transfer_summary.v1)	1.1	Episódio	Administrative details about a period of admitted patient care between a formal or statistical admission and a formal or statistical separation, characterised by only one care type of care from a healthcare institution.	ARCHETYPE / ADMIN_ENTRY	Yes	Optional
		Episódio de admissão	An identifier for the episode of care.	IDENTIFIER	Yes	Optional
		Data de admissão	The date and/or time of the formal or statistical admission to the institution.	DATE TIME	Yes	Optional
		Motivo de admissão	The reason why the individual was admitted for an episode of care.	TEXT	Yes	Optional
		Admission category	The type of admission.	TEXT	No	Prohibited
		Source category	The type of residence where the individual resided prior to admission.	TEXT	No	Prohibited
		Source	The organisation or address for the individual prior to the admission.	SLOT / CLUSTER	No	Optional, repeating
		Referring clinician	Details about the clinicians responsible for referring the individual from the Source.	SLOT / CLUSTER	No	Optional, repeating
		Medical record number	Identification of the medical record number.	IDENTIFIER or TEXT	No	Prohibited
		Health insurance category	The type of health insurance applicable for the episode.	TEXT	No	Prohibited
		Attending unit	The clinical service unit assigned for care of the individual.	TEXT	No	Prohibited
		Attending clinicians	Details about the consultant and attending clinicians responsible for care during the episode.	SLOT / CLUSTER	No	Optional, repeating
		Physical location	The physical location of the individual within the institution during the episode of care.	CLUSTER	No	Prohibited

		Location onset	The date the individual was moved to the internal institution location.	DATE TIME	No	Optional
		Location category	The type of location.	TEXT	No	Optional
		Location	An organisation, physical address or structured address describing where the individual was located during the episode of care.	SLOT / CLUSTER	No	Optional, repeating
		Ward	The name of the Ward within the institution where the individual was located.	TEXT	No	Optional
		Room	The name of the Room within the institution where the individual was located.	TEXT	No	Optional
		Bed	The name of the Bed within the institution where the individual was located.	TEXT	No	Optional
		Location end	The date the individual was moved from the internal institution location.	DATE TIME	No	Optional
		Data da alta	The date and/or time of the formal or statistical end of the admission to the institution.	DATE TIME	Yes	Optional
		Resultado	Outcome for the individual at the end of the episode of care.	CODED TEXT	Yes	Optional, repeating
		Destino	The type of residence where the individual resided after the episode of care.	CODED TEXT	Yes	Optional
		Destination	The organisation or address for the individual after the admission.	SLOT / CLUSTER	Yes	Optional, repeating
		Additional details	Additional structured details about the episode of care within an institution.	SLOT / CLUSTER	No	Optional, repeating
		Detalhes auxiliares	Additional narrative about the episode, not captured in other fields.	CODED TEXT	Yes	Optional
openEHR-EHR-CLUSTER.organisation.v1 (openEHR-EHR-ADMIN_ENTRY.episode_institution.v0)	1.1.1	Destino	An entity comprising one or more people and having a particular purpose.	ARCHETYPE / CLUSTER	Yes	Optional
		Unidade	The unstructured name or label for the organisation.	CODED TEXT	Yes	Optional
		Identifier	Identifier associated with the organisation.	IDENTIFIER or TEXT	No	Prohibited
		Especialidade	The relationship or role of the organisation to the individual or subject of care.	CODED TEXT	Yes	Optional, repeating
		Address	Details about an address for the organisation.	SLOT / CLUSTER	No	Optional, repeating
		Electronic communication	Details about one or more types of electronic communication for the organisation.	SLOT / CLUSTER	No	Optional, repeating
		Contact person	Details about one or more people within the organisation.	SLOT / CLUSTER	No	Optional, repeating

		Parent organisation	A larger organisation of which this organisation is a child or subsidiary.	SLOT / CLUSTER	No	Optional, repeating
		Additional details	Additional details about the organisation.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the organisation not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-OBSERVATION.story.v1 (openEHR-EHR-COMPOSITION.transfer_summary.v1)	1.2	História clínica	The subjective clinical history of the subject of care as recorded directly by the subject, or reported to a clinician by the subject or a carer.	ARCHETYPE / OBSERVATION	Yes	Optional
		História clínica	Narrative description of the story or clinical history for the subject of care.	TEXT	Yes	Optional, repeating
		Structured detail	Structured detail about the individual's story or patient's history.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-OBSERVATION.story.v1 (openEHR-EHR-COMPOSITION.transfer_summary.v1)	1.3	Resumo da investigação	The subjective clinical history of the subject of care as recorded directly by the subject, or reported to a clinician by the subject or a carer.	ARCHETYPE / OBSERVATION	Yes	Optional
		Resumo da investigação	Narrative description of the story or clinical history for the subject of care.	TEXT	Yes	Optional, repeating
		Structured detail	Structured detail about the individual's story or patient's history.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-SECTION.adhoc.v1 (openEHR-EHR-COMPOSITION.transfer_summary.v1)	1.4	Diagnósticos de admissão	A generic section header which should be renamed in a template to suit a specific clinical context.	ARCHETYPE / SECTION	Yes	Optional
openEHR-EHR-EVALUATION.problem_diagnosis.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.4.1	Diagnóstico Principal	Details about a single identified health condition, injury, disability or any other issue which impacts on the physical, mental and/or social well-being of an individual.	ARCHETYPE / EVALUATION	Yes	Optional
		Diagnóstico	Identification of the problem or diagnosis, by name.	CODED TEXT	Yes	Mandatory
		Clinical description	Narrative description about the problem or diagnosis.	TEXT	No	Prohibited
		Body site	Identification of a simple body site for the location of the problem or diagnosis.	TEXT	No	Prohibited
		Structured body site	A structured anatomical location for the problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating

		Cause	A cause, set of causes, or manner of causation of the problem or diagnosis.	TEXT	No	Prohibited
		Date/time of onset	Estimated or actual date/time that signs or symptoms of the problem/diagnosis were first observed.	DATE TIME	No	Prohibited
		Date/time clinically recognised	Estimated or actual date/time the diagnosis or problem was recognised by a healthcare professional.	DATE TIME	No	Prohibited
		Severity	An assessment of the overall severity of the problem or diagnosis.	CODED TEXT: local::at0047::Mild local::at0048::Moderate local::at0049::Severe TEXT	No	Prohibited
		Specific details	Details that are additionally required to record as unique attributes of this problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating
		Course description	Narrative description about the course of the problem or diagnosis since onset.	TEXT	No	Prohibited
		Date/time of resolution	Estimated or actual date/time of resolution or remission for this problem or diagnosis, as determined by a healthcare professional.	DATE TIME	No	Prohibited
		Status	Structured details for location-, domain-, episode- or workflow-specific aspects of the diagnostic process.	SLOT / CLUSTER	Yes	Optional, repeating
		Diagnostic certainty	The level of confidence in the identification of the diagnosis.	CODED TEXT: local::at0074::Suspected local::at0075::Probable local::at0076::Confirmed TEXT	No	Prohibited
		Comment	Additional narrative about the problem or diagnosis not captured in other fields.	TEXT	No	Prohibited
		Last updated	The date this problem or diagnosis was last updated.	DATE TIME	No	Prohibited
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-CLUSTER.problem_qualifier.v2 (openEHR-EHR-EVALUATION.problem_diagnosis.v1)	1.4.1.1	Qualificador do Problema/Diagnóstico	Contextual or temporal qualifier for a specified problem or diagnosis.	ARCHETYPE / CLUSTER	Yes	Optional
		Diagnostic status	Stage or phase of diagnostic process.	CODED TEXT: local::at0016::Preliminary [SNOMED-CT::148006] local::at0017::Working [SNOMED-CT::5558000] local::at0018::Established	No	Prohibited

				[SNOMED-CT::14657009] local::at0088::Refuted TEXT		
		Current/Past?	Category that supports division of problems and diagnoses into Current or Past problem lists.	CODED TEXT: local::at0062::Current [SNOMED-CT::15240007] local::at0061::Past [SNOMED-CT::410513005]	No	Prohibited
		Active/Inactive?	Category that supports division of problems and diagnoses into Active or Inactive problem lists.	CODED TEXT: local::at0026::Active local::at0027::Inactive	No	Prohibited
		Level of control	Category of the level of control of the problem or diagnosis by the current management.	CODED TEXT: local::at0099::Controlled local::at0100::Indeterminate local::at0101::Not controlled TEXT	No	Prohibited
		Progression	Category of the progression through the course of a chronic problem or diagnosis.	CODED TEXT: local::at0103::Improving local::at0104::Stable local::at0105::Worsening local::at0106::Indeterminate TEXT	No	Prohibited
		Resolution phase	Phase of healing for an acute problem or diagnosis.	CODED TEXT: local::at0086::Not resolving local::at0085::Resolving local::at0084::Resolved local::at0087::Indeterminate local::at0097::Relapsed TEXT	No	Prohibited
		Remission status	Status of the remission of an incurable diagnosis.	CODED TEXT: local::at0090::In remission local::at0092::Not in remission local::at0093::Indeterminate TEXT	No	Prohibited
		Episodicity	Category of this episode for the identified problem/diagnosis.	CODED TEXT: local::at0034::New local::at0035::Ongoing local::at0070::Indeterminate TEXT	No	Prohibited

		Reason for an ongoing episode	Reason for a problem or diagnosis not resolving as expected.	TEXT	No	Prohibited
		Occurrence	Category of the occurrence for this problem or diagnosis.	CODED TEXT: local::at0095::First occurrence local::at0096::Recurrence TEXT	No	Prohibited
		Course label	Category reflecting the speed of onset and/or duration and persistence of the problem or diagnosis.	TEXT or CODED TEXT: local::at0081::Acute local::at0094::Acute-on-chronic local::at0079::Chronic	No	Prohibited
		Categoria do diagnóstico	Category of the problem or diagnosis within a specified episode of care and/or local care context.	CODED TEXT: local::at0064::Principal diagnosis [SNOMED-CT::8319008] local::at0066::Secondary diagnosis [SNOMED-CT::85097005] local::at0076::Complication TEXT	Yes	Optional, repeating
		Diagnóstico de admissão?	Was the problem or diagnosis present at admission?	BOOLEAN	Yes	Optional
		Comment	Additional narrative about the Problem/Diagnosis qualifier values, not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-EVALUATION.problem_diagnosis.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.4.2	Diagnóstico Secundário	Details about a single identified health condition, injury, disability or any other issue which impacts on the physical, mental and/or social well-being of an individual.	ARCHETYPE / EVALUATION	Yes	Optional
		Diagnóstico	Identification of the problem or diagnosis, by name.	CODED TEXT	Yes	Mandatory
		Clinical description	Narrative description about the problem or diagnosis.	TEXT	No	Prohibited
		Body site	Identification of a simple body site for the location of the problem or diagnosis.	TEXT	No	Prohibited
		Structured body site	A structured anatomical location for the problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating
		Cause	A cause, set of causes, or manner of causation of the problem or diagnosis.	TEXT	No	Prohibited
		Date/time of onset	Estimated or actual date/time that signs or symptoms of the problem/diagnosis were first observed.	DATE TIME	No	Prohibited

		Date/time clinically recognised	Estimated or actual date/time the diagnosis or problem was recognised by a healthcare professional.	DATE TIME	No	Prohibited
		Severity	An assessment of the overall severity of the problem or diagnosis.	CODED TEXT: local::at0047::Mild local::at0048::Moderate local::at0049::Severe TEXT	No	Prohibited
		Specific details	Details that are additionally required to record as unique attributes of this problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating
		Course description	Narrative description about the course of the problem or diagnosis since onset.	TEXT	No	Prohibited
		Date/time of resolution	Estimated or actual date/time of resolution or remission for this problem or diagnosis, as determined by a healthcare professional.	DATE TIME	No	Prohibited
		Status	Structured details for location-, domain-, episode- or workflow-specific aspects of the diagnostic process.	SLOT / CLUSTER	Yes	Optional, repeating
		Diagnostic certainty	The level of confidence in the identification of the diagnosis.	CODED TEXT: local::at0074::Suspected local::at0075::Probable local::at0076::Confirmed TEXT	No	Prohibited
		Comment	Additional narrative about the problem or diagnosis not captured in other fields.	TEXT	No	Prohibited
		Last updated	The date this problem or diagnosis was last updated.	DATE TIME	No	Prohibited
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-CLUSTER.problem_qualifier.v2 (openEHR-EHR-EVALUATION.problem_diagnosis.v1)	1.4.2.1	Qualificador do Problema/Diagnóstico	Contextual or temporal qualifier for a specified problem or diagnosis.	ARCHETYPE / CLUSTER	Yes	Optional
		Diagnostic status	Stage or phase of diagnostic process.	CODED TEXT: local::at0016::Preliminary [SNOMED-CT::148006] local::at0017::Working [SNOMED-CT::5558000] local::at0018::Established [SNOMED-CT::14657009] local::at0088::Refuted TEXT	No	Prohibited

		Current/Past?	Category that supports division of problems and diagnoses into Current or Past problem lists.	CODED TEXT: local::at0062::Current [SNOMED-CT::15240007] local::at0061::Past [SNOMED-CT::410513005]	No	Prohibited
		Active/Inactive?	Category that supports division of problems and diagnoses into Active or Inactive problem lists.	CODED TEXT: local::at0026::Active local::at0027::Inactive	No	Prohibited
		Level of control	Category of the level of control of the problem or diagnosis by the current management.	CODED TEXT: local::at0099::Controlled local::at0100::Indeterminate local::at0101::Not controlled TEXT	No	Prohibited
		Progression	Category of the progression through the course of a chronic problem or diagnosis.	CODED TEXT: local::at0103::Improving local::at0104::Stable local::at0105::Worsening local::at0106::Indeterminate TEXT	No	Prohibited
		Resolution phase	Phase of healing for an acute problem or diagnosis.	CODED TEXT: local::at0086::Not resolving local::at0085::Resolving local::at0084::Resolved local::at0087::Indeterminate local::at0097::Relapsed TEXT	No	Prohibited
		Remission status	Status of the remission of an incurable diagnosis.	CODED TEXT: local::at0090::In remission local::at0092::Not in remission local::at0093::Indeterminate TEXT	No	Prohibited
		Episodicity	Category of this episode for the identified problem/diagnosis.	CODED TEXT: local::at0034::New local::at0035::Ongoing local::at0070::Indeterminate TEXT	No	Prohibited
		Reason for an ongoing episode	Reason for a problem or diagnosis not resolving as expected.	TEXT	No	Prohibited

		Occurrence	Category of the occurrence for this problem or diagnosis.	CODED TEXT: local::at0095::First occurrence local::at0096::Recurrence TEXT	No	Prohibited
		Course label	Category reflecting the speed of onset and/or duration and persistence of the problem or diagnosis.	TEXT or CODED TEXT: local::at0081::Acute local::at0094::Acute-on-chronic local::at0079::Chronic	No	Prohibited
		Categoria do diagnóstico	Category of the problem or diagnosis within a specified episode of care and/or local care context.	CODED TEXT: local::at0064::Principal diagnosis [SNOMED-CT::8319008] local::at0066::Secondary diagnosis [SNOMED-CT::85097005] local::at0076::Complication TEXT	Yes	Optional, repeating
		Diagnóstico de admissão?	Was the problem or diagnosis present at admission?	BOOLEAN or CODED TEXT: local::at0108::Yes local::at0109::No	Yes	Optional
		Comment	Additional narrative about the Problem/Diagnosis qualifier values, not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-EVALUATION.problem_diagnosis.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.4.3	Outro Diagnóstico	Details about a single identified health condition, injury, disability or any other issue which impacts on the physical, mental and/or social well-being of an individual.	ARCHETYPE / EVALUATION	Yes	Optional
		Diagnóstico	Identification of the problem or diagnosis, by name.	CODED TEXT	Yes	Mandatory
		Clinical description	Narrative description about the problem or diagnosis.	TEXT	No	Prohibited
		Body site	Identification of a simple body site for the location of the problem or diagnosis.	TEXT	No	Prohibited
		Structured body site	A structured anatomical location for the problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating
		Cause	A cause, set of causes, or manner of causation of the problem or diagnosis.	TEXT	No	Prohibited
		Date/time of onset	Estimated or actual date/time that signs or symptoms of the problem/diagnosis were first observed.	DATE TIME	No	Prohibited

		Date/time clinically recognised	Estimated or actual date/time the diagnosis or problem was recognised by a healthcare professional.	DATE TIME	No	Prohibited
		Severity	An assessment of the overall severity of the problem or diagnosis.	CODED TEXT: local::at0047::Mild local::at0048::Moderate local::at0049::Severe TEXT	No	Prohibited
		Specific details	Details that are additionally required to record as unique attributes of this problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating
		Course description	Narrative description about the course of the problem or diagnosis since onset.	TEXT	No	Prohibited
		Date/time of resolution	Estimated or actual date/time of resolution or remission for this problem or diagnosis, as determined by a healthcare professional.	DATE TIME	No	Prohibited
		Status	Structured details for location-, domain-, episode- or workflow-specific aspects of the diagnostic process.	SLOT / CLUSTER	Yes	Optional, repeating
		Diagnostic certainty	The level of confidence in the identification of the diagnosis.	CODED TEXT: local::at0074::Suspected local::at0075::Probable local::at0076::Confirmed TEXT	No	Prohibited
		Comment	Additional narrative about the problem or diagnosis not captured in other fields.	TEXT	No	Prohibited
		Last updated	The date this problem or diagnosis was last updated.	DATE TIME	No	Prohibited
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-CLUSTER.problem_qualifier.v2 (openEHR-EHR-EVALUATION.problem_diagnosis.v1)	1.4.3.1	Problem/Diagnosis qualifier	Contextual or temporal qualifier for a specified problem or diagnosis.	ARCHETYPE / CLUSTER	Yes	Optional
		Diagnostic status	Stage or phase of diagnostic process.	CODED TEXT: local::at0016::Preliminary [SNOMED-CT::148006] local::at0017::Working [SNOMED-CT::5558000] local::at0018::Established [SNOMED-CT::14657009] local::at0088::Refuted TEXT	Yes	Optional
		Current/Past?	Category that supports division of problems and diagnoses into Current or Past problem lists.	CODED TEXT: local::at0062::Current	Yes	Optional

				[SNOMED-CT::15240007] local::at0061::Past [SNOMED-CT::410513005]		
		Active/Inactive?	Category that supports division of problems and diagnoses into Active or Inactive problem lists.	CODED TEXT: local::at0026::Active local::at0027::Inactive	Yes	Optional
		Level of control	Category of the level of control of the problem or diagnosis by the current management.	CODED TEXT: local::at0099::Controlled local::at0100::Indeterminate local::at0101::Not controlled TEXT	Yes	Optional
		Progression	Category of the progression through the course of a chronic problem or diagnosis.	CODED TEXT: local::at0103::Improving local::at0104::Stable local::at0105::Worsening local::at0106::Indeterminate TEXT	Yes	Optional
		Resolution phase	Phase of healing for an acute problem or diagnosis.	CODED TEXT: local::at0086::Not resolving local::at0085::Resolving local::at0084::Resolved local::at0087::Indeterminate local::at0097::Relapsed TEXT	Yes	Optional
		Remission status	Status of the remission of an incurable diagnosis.	CODED TEXT: local::at0090::In remission local::at0092::Not in remission local::at0093::Indeterminate TEXT	Yes	Optional
		Episodicity	Category of this episode for the identified problem/diagnosis.	CODED TEXT: local::at0034::New local::at0035::Ongoing local::at0070::Indeterminate TEXT	Yes	Optional
		Reason for an ongoing episode	Reason for a problem or diagnosis not resolving as expected.	TEXT	Yes	Optional, repeating
		Occurrence	Category of the occurrence for this problem or diagnosis.	CODED TEXT: local::at0095::First occurrence	Yes	Optional

				local::at0096::Recurrence TEXT		
		Course label	Category reflecting the speed of onset and/or duration and persistence of the problem or diagnosis.	TEXT or CODED TEXT: local::at0081::Acute local::at0094::Acute-on-chronic local::at0079::Chronic	Yes	Optional
		Diagnostic category	Category of the problem or diagnosis within a specified episode of care and/or local care context.	CODED TEXT: local::at0064::Principal diagnosis [SNOMED-CT::8319008] local::at0066::Secondary diagnosis [SNOMED-CT::85097005] local::at0076::Complication TEXT	Yes	Optional, repeating
		Admission diagnosis?	Was the problem or diagnosis present at admission?	BOOLEAN or CODED TEXT: local::at0108::Yes local::at0109::No	Yes	Optional
		Comment	Additional narrative about the Problem/Diagnosis qualifier values, not captured in other fields.	TEXT	Yes	Optional
openEHR-EHR-CLUSTER.problem_qualifier.v2 (openEHR-EHR-EVALUATION.problem_diagnosis.v1)	1.4.3.2	Qualificador do Problema/Diagnóstico	Contextual or temporal qualifier for a specified problem or diagnosis.	ARCHETYPE / CLUSTER	Yes	Optional
		Diagnostic status	Stage or phase of diagnostic process.	CODED TEXT: local::at0016::Preliminary [SNOMED-CT::148006] local::at0017::Working [SNOMED-CT::5558000] local::at0018::Established [SNOMED-CT::14657009] local::at0088::Refuted TEXT	No	Prohibited
		Current/Past?	Category that supports division of problems and diagnoses into Current or Past problem lists.	CODED TEXT: local::at0062::Current [SNOMED-CT::15240007] local::at0061::Past [SNOMED-CT::410513005]	No	Prohibited
		Active/Inactive?	Category that supports division of problems and diagnoses into Active or Inactive problem lists.	CODED TEXT: local::at0026::Active	No	Prohibited

				local::at0027::Inactive		
		Level of control	Category of the level of control of the problem or diagnosis by the current management.	CODED TEXT: local::at0099::Controlled local::at0100::Indeterminate local::at0101::Not controlled TEXT	No	Prohibited
		Progression	Category of the progression through the course of a chronic problem or diagnosis.	CODED TEXT: local::at0103::Improving local::at0104::Stable local::at0105::Worsening local::at0106::Indeterminate TEXT	No	Prohibited
		Resolution phase	Phase of healing for an acute problem or diagnosis.	CODED TEXT: local::at0086::Not resolving local::at0085::Resolving local::at0084::Resolved local::at0087::Indeterminate local::at0097::Relapsed TEXT	No	Prohibited
		Remission status	Status of the remission of an incurable diagnosis.	CODED TEXT: local::at0090::In remission local::at0092::Not in remission local::at0093::Indeterminate TEXT	No	Prohibited
		Episodicity	Category of this episode for the identified problem/diagnosis.	CODED TEXT: local::at0034::New local::at0035::Ongoing local::at0070::Indeterminate TEXT	No	Prohibited
		Reason for an ongoing episode	Reason for a problem or diagnosis not resolving as expected.	TEXT	No	Prohibited
		Occurrence	Category of the occurrence for this problem or diagnosis.	CODED TEXT: local::at0095::First occurrence local::at0096::Recurrence TEXT	No	Prohibited
		Course label	Category reflecting the speed of onset and/or duration and persistence of the problem or diagnosis.	TEXT or CODED TEXT: local::at0081::Acute	No	Prohibited

				local::at0094::Acute-on-chronic local::at0079::Chronic		
		Diagnostic category	Category of the problem or diagnosis within a specified episode of care and/or local care context.	CODED TEXT: local::at0064::Principal diagnosis [SNOMED-CT::8319008] local::at0066::Secondary diagnosis [SNOMED-CT::85097005] local::at0076::Complication TEXT	No	Prohibited
		Diagnóstico de admissão?	Was the problem or diagnosis present at admission?	BOOLEAN or CODED TEXT: local::at0108::Yes local::at0109::No	Yes	Optional
		Comment	Additional narrative about the Problem/Diagnosis qualifier values, not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-SECTION.adhoc.v1 (openEHR-EHR-COMPOSITION.transfer_summary.v1)	1.5	Histórico de procedimentos	A generic section header which should be renamed in a template to suit a specific clinical context.	ARCHETYPE / SECTION	Yes	Optional
openEHR-EHR-EVALUATION.device_summary.v0 (openEHR-EHR-SECTION.adhoc.v1)	1.5.1	Dispositivos implantáveis	An ongoing and persistent overview about medical devices that have been fitted or implanted.	ARCHETYPE / EVALUATION	Yes	Optional, repeating
		Tipo de dispositivo	Name of the type of medical device.	TEXT	Yes	Optional
		Estado	Assertion about the fitting or implanting of devices, as at the date 'Last updated'.	CODED TEXT: local::at0003::Never local::at0004::Current local::at0005::Previous	Yes	Optional
		Descrição	Narrative description about the use of the fitted device type.	TEXT	Yes	Optional
		Detalhes do dispositivo	Details about each device.	CLUSTER	Yes	Optional, repeating
		Nome do dispositivo	Identification of the specific device, by name.	TEXT	No	Prohibited
		Data de início	Date of fitting or implant of the device.	DATE TIME	Yes	Optional
		Localização anatómica	Identification of the body site where the device is fitted/implanted.	TEXT	Yes	Optional

		Structured body site	A structured anatomical location of the body site where the device is fitted/implanted.	SLOT / CLUSTER	No	Optional, repeating
		Description	Narrative description about the device.	TEXT	No	Prohibited
		Structured detail	Additional structured detail about the device.	SLOT / CLUSTER	Yes	Optional, repeating
		Multimedia	Digital image, video or diagram about the device.	SLOT / CLUSTER	No	Optional, repeating
		Data do fim de uso	Date when the device stopped being used or was removed.	DATE TIME	Yes	Optional
		URI to original data	Link to the original data about the fitting or insertion.	URI	No	Prohibited
		Next review due	Date on which this device should be reviewed.	DATE TIME	No	Prohibited
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
		Last updated	The date this summary was last updated.	DATE TIME	No	Prohibited
openEHR-EHR-CLUSTER.device.v1 (openEHR-EHR-EVALUATION.device_summary.v0)	1.5.1.1	Dispositivo	An instrument, apparatus, implant, material or similar, used in the provision of healthcare. In this context, a medical device includes a broad range of devices which act through a variety of physical, mechanical, thermal or similar means but specifically excludes devices which act through medicinal means such as pharmacological, metabolic or immunological methods. The scope is inclusive of disposable devices as well as durable or persisting devices that require tracking, maintenance activities or regular calibration, recognising that each type of device has specific data recording requirements.	ARCHETYPE / CLUSTER	Yes	Optional
		Nome do dispositivo	Identification of the medical device, preferably by a common name, a formal fully descriptive name or, if required, by class or category of device.	TEXT	Yes	Mandatory
		Tipo	The category or kind of device.	CODED TEXT	Yes	Optional
		Description	Narrative description of the medical device.	TEXT	No	Prohibited
		Properties	Further details about specific properties about the medical device.	SLOT / CLUSTER	No	Optional, repeating
		Unique device identifier (UDI)	A numeric or alphanumeric string that is associated with this device within a given system.	IDENTIFIER	Yes	Optional
		Fabricante	Name of manufacturer.	TEXT	Yes	Optional

		Data de fabrico	Date the device was manufactured.	DATE TIME	Yes	Optional
		Número de série	Number assigned by the manufacturer which can be found on the device, and should be specific to each device., its label, or accompanying packaging.	TEXT	Yes	Optional
		Catalogue number	The exact number assigned by the manufacturer, as it appears in the manufacturer's catalogue, device labeling, or accompanying packaging.	TEXT	No	Prohibited
		Modelo	The exact model number assigned by the manufacturer and found on the device label or accompanying packaging.	TEXT	Yes	Optional
		Lote de fabrico	The number assigned by the manufacturer which identifies a group of items manufactured at the same time, usually found on the label or packaging material.	TEXT	Yes	Optional
		Software version	Identification of the version of software being used in the medical device.	TEXT	No	Prohibited
		Data de expiração	Date after which the device/product is no longer fit for use, usually found on the device itself or printed on the accompanying packaging.	DATE TIME	Yes	Optional
		Other identifier	Unspecified identifier, which can be further specified in a template or at run time.	IDENTIFIER	No	Prohibited
		Asset management	Further details about management and maintenance of the device.	SLOT / CLUSTER	No	Optional, repeating
		Components	Additional structured informations about identified components of the device.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local context or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
		Multimedia	Digital representation of the device.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the device not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-ACTION.procedure.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.2	Intervenções cirúrgicas	A clinical activity carried out for screening, investigative, diagnostic, curative, therapeutic, evaluative or palliative purposes.	ARCHETYPE / ACTION	Yes	Optional, repeating
		Procedure planned	The procedure to be undertaken is planned.	ISM TRANSITION	Yes	Optional
		X - Procedure planned	This pathway step has been deprecated as it was incorrectly associated with 'initial' status - use the new 'Procedure planned' (at0004) pathway step which is correctly associated with 'planned' status.	ISM TRANSITION	Yes	Optional

		Procedure request sent	Request for procedure sent.	ISM TRANSITION	Yes	Optional
		X - Procedure request sent	This pathway step has been deprecated as it was incorrectly associated with 'initial' status - use the new 'Procedure request sent' (at0007) pathway step which is correctly associated with 'planned' status.	ISM TRANSITION	Yes	Optional
		Procedure postponed	The procedure has been postponed.	ISM TRANSITION	Yes	Optional
		Procedure cancelled	The planned procedure has been cancelled prior to commencement.	ISM TRANSITION	Yes	Optional
		Procedure scheduled	The procedure has been scheduled.	ISM TRANSITION	Yes	Optional
		Procedure commenced	The procedure, or subprocedure in a multicomponent procedure, has been commenced.	ISM TRANSITION	Yes	Optional
		Procedure performed	The procedure, or subprocedure in a multicomponent procedure, has been performed.	ISM TRANSITION	Yes	Optional
		Procedure suspended	The procedure has been suspended.	ISM TRANSITION	Yes	Optional
		Procedure aborted	The procedure has been aborted.	ISM TRANSITION	Yes	Optional
		Procedure completed	The procedure has been performed and all associated clinical activities completed.	ISM TRANSITION	Yes	Optional
		Procedimento	Identification of the procedure by name.	CODED TEXT	Yes	Mandatory
		Descrição	Narrative description about the procedure, as appropriate for the pathway step.	TEXT	Yes	Optional
		Motivo	The clinical or process-related reason for the procedure.	CODED TEXT	Yes	Optional, repeating
		Method	Identification of specific method or technique for the procedure.	TEXT	No	Prohibited
		Urgency	Urgency of the procedure.	TEXT	No	Prohibited
		Localização anatómica	Identification of the body site for the procedure.	TEXT	Yes	Optional, repeating
		Procedure detail	Structured information about the procedure.	SLOT / CLUSTER	No	Optional, repeating
		Outcome	Outcome of procedure performed.	TEXT	No	Prohibited
		Procedural difficulty	Difficulties or issues encountered during performance of the procedure.	TEXT	No	Prohibited
		Complicações	Details about any complication arising from the procedure.	CODED TEXT	Yes	Optional, repeating

		Scheduled date/time	The date and/or time on which the procedure is intended to be performed.	DATE TIME	No	Prohibited
		Data de fim	The date and/or time when the entire procedure, or the last component of a multicomponent procedure, was finished.	DATE TIME	Yes	Optional
		Duração	The total amount of time taken to complete the procedure, which may include time spent during the active phase of the procedure plus time during which the procedure was suspended.	DURATION	Yes	Optional
		Multimedia	Mulitimedia representation of a performed procedure.	SLOT / CLUSTER	No	Optional, repeating
		Procedure type	The type of procedure.	TEXT	No	Prohibited
		Reason	Reason that the activity or care pathway step for the identified procedure was carried out.	TEXT	No	Prohibited
		Comment	Additional narrative about the activity or care pathway step not captured in other fields.	TEXT	No	Prohibited
		Requestor order identifier	The local ID assigned to the order by the healthcare provider or organisation requesting the service.	TEXT or IDENTIFIER	Yes	Optional
		Requestor	Details about the healthcare provider or organisation requesting the service.	SLOT / CLUSTER	No	Optional
		Receiver order identifier	The ID assigned to the order by the healthcare provider or organisation receiving the request for service. This is also referred to as Filler Order Identifier.	TEXT or IDENTIFIER	Yes	Optional
		Receiver	Details about the healthcare provider or organisation receiving the request for service.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	Yes	Optional, repeating
openEHR-EHR-CLUSTER.person.v1 (openEHR-EHR-ACTION.procedure.v1)	1.5.2.1	Executante	An individual human being.	ARCHETYPE / CLUSTER	Yes	Optional
		Nome	The unstructured name for the individual.	TEXT	No	Prohibited
		Label	A label for the individual.	TEXT	No	Prohibited
		Gender		CODED TEXT: local::at0013::Male local::at0014::Female local::at0015::Other	No	Prohibited
		Structured name	Alternative representation of an individual's complete name by separation into discrete, structured components.	SLOT / CLUSTER	No	Optional, repeating

		Identificador	Identifier associated with the individual.	IDENTIFIER or TEXT	Yes	Optional, repeating
		Role	The relationship or role of the individual to the subject of the health record.	TEXT	No	Prohibited
		Address	Details about an address for the individual.	SLOT / CLUSTER	No	Optional, repeating
		Electronic communication	Details about one or more types of electronic communication for the individual.	SLOT / CLUSTER	No	Optional, repeating
		Organisation	Details about the organisational context for the individual.	SLOT / CLUSTER	No	Optional, repeating
		Additional details	Additional details about the individual.	SLOT / CLUSTER	No	Optional, repeating
		Photo	Photograph of the individual.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the individual not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-ACTION.procedure.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.3	Ventilação mecânica	A clinical activity carried out for screening, investigative, diagnostic, curative, therapeutic, evaluative or palliative purposes.	ARCHETYPE / ACTION	Yes	Optional, repeating
		Procedure planned	The procedure to be undertaken is planned.	ISM TRANSITION	Yes	Optional
		X - Procedure planned	This pathway step has been deprecated as it was incorrectly associated with 'initial' status - use the new 'Procedure planned' (at0004) pathway step which is correctly associated with 'planned' status.	ISM TRANSITION	Yes	Optional
		Procedure request sent	Request for procedure sent.	ISM TRANSITION	Yes	Optional
		X - Procedure request sent	This pathway step has been deprecated as it was incorrectly associated with 'initial' status - use the new 'Procedure request sent' (at0007) pathway step which is correctly associated with 'planned' status.	ISM TRANSITION	Yes	Optional
		Procedure postponed	The procedure has been postponed.	ISM TRANSITION	Yes	Optional
		Procedure cancelled	The planned procedure has been cancelled prior to commencement.	ISM TRANSITION	Yes	Optional
		Procedure scheduled	The procedure has been scheduled.	ISM TRANSITION	Yes	Optional
		Procedure commenced	The procedure, or subprocedure in a multicomponent procedure, has been commenced.	ISM TRANSITION	Yes	Optional
		Procedure performed	The procedure, or subprocedure in a multicomponent procedure, has been performed.	ISM TRANSITION	Yes	Optional

		Procedure suspended	The procedure has been suspended.	ISM TRANSITION	Yes	Optional
		Procedure aborted	The procedure has been aborted.	ISM TRANSITION	Yes	Optional
		Procedure completed	The procedure has been performed and all associated clinical activities completed.	ISM TRANSITION	Yes	Optional
		Procedimento	Identification of the procedure by name.	TEXT	Yes	Mandatory
		Descrição	Narrative description about the procedure, as appropriate for the pathway step.	TEXT	Yes	Optional
		Motivo	The clinical or process-related reason for the procedure.	TEXT	Yes	Optional, repeating
		Method	Identification of specific method or technique for the procedure.	TEXT	No	Prohibited
		Urgency	Urgency of the procedure.	TEXT	No	Prohibited
		Body site	Identification of the body site for the procedure.	TEXT	No	Prohibited
		Procedure detail	Structured information about the procedure.	SLOT / CLUSTER	Yes	Optional, repeating
		Outcome	Outcome of procedure performed.	TEXT	No	Prohibited
		Procedural difficulty	Difficulties or issues encountered during performance of the procedure.	TEXT	No	Prohibited
		Complicações	Details about any complication arising from the procedure.	TEXT	Yes	Optional, repeating
		Scheduled date/time	The date and/or time on which the procedure is intended to be performed.	DATE TIME	No	Prohibited
		Data de fim	The date and/or time when the entire procedure, or the last component of a multicomponent procedure, was finished.	DATE TIME	Yes	Optional
		Duração	The total amount of time taken to complete the procedure, which may include time spent during the active phase of the procedure plus time during which the procedure was suspended.	DURATION	Yes	Optional
		Multimedia	Mulitimedia representation of a performed procedure.	SLOT / CLUSTER	No	Optional, repeating
		Procedure type	The type of procedure.	TEXT	No	Prohibited
		Reason	Reason that the activity or care pathway step for the identified procedure was carried out.	TEXT	No	Prohibited
		Comment	Additional narrative about the activity or care pathway step not captured in other fields.	TEXT	No	Prohibited

		Requestor order identifier	The local ID assigned to the order by the healthcare provider or organisation requesting the service.	TEXT or IDENTIFIER	Yes	Optional
		Requestor	Details about the healthcare provider or organisation requesting the service.	SLOT / CLUSTER	No	Optional
		Receiver order identifier	The ID assigned to the order by the healthcare provider or organisation receiving the request for service. This is also referred to as Filler Order Identifier.	TEXT or IDENTIFIER	Yes	Optional
		Receiver	Details about the healthcare provider or organisation receiving the request for service.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-CLUSTER.ventilator_settings2.v0 (openEHR-EHR-ACTION.procedure.v1)	1.5.3.1	Detalhes da ventilação	Details of ventilator settings and reported findings	ARCHETYPE / CLUSTER	Yes	Optional
		Tipo de ventilação	Type of ventilation of patient	CODED TEXT: local::at0145::INVASIVE local::at0146::NON-INVASIVE	Yes	Optional
		Modo de ventilação	The mode of mechanical ventilation used.	CODED TEXT: local::at0104::A/C local::at0108::SIMV local::at0105::BILEVEL local::at0065::SPONTANEOUS local::at0106::PS local::at0077::MMV local::at0152::SIMV / ASB local::at0076::IPPV local::at0070::CPAP local::at0072::CMV local::at0079::BIPAP local::at0153::BIPAP / ASB local::at0073::HFO local::at0075::PTV local::at0080::PSV local::at0083::PCV local::at0084::S/T local::at0085::PAV/T local::at0097::Sigh local::at0155::HFO + CMV	Yes	Optional
		Submodo de ventilação	Ventilation submode	CODED TEXT: local::at0151::TC local::at0147::VS	Yes	Optional, repeating

				local::at0124::PS local::at0143::VS+ local::at0117::PC/PS local::at0118::PC/TC local::at0119::VC/PS local::at0120::VC/TC local::at0129::CV local::at0131::CMV local::at0116::VC local::at0122::TS local::at0115::PC local::at0135::ASB local::at0138::Assist ocal::at0139::ST local::at0140::PS/CPAP local::at0141::CPAP/APRV local::at0142::ASB/Assist		
		Ventilation device	Details of the ventilation device.	SLOT / CLUSTER	No	Optional
		Oxygen delivery	Details of oxygen delivery.	SLOT / CLUSTER	No	Optional
		Heater used	If true a heater should be used/ is used.	BOOLEAN	No	Prohibited
		Frequency	A ventilator frequency setting.	QUANTITY	Yes	Optional, repeating
		Pressure	A ventilator pressure setting.	QUANTITY	Yes	Optional, repeating
		Volume	A ventilator volume setting.	QUANTITY	Yes	Optional, repeating
		Flow rate	A ventilator flow rate parameter.	QUANTITY	Yes	Optional, repeating
		Timing	A ventilator duration or timing setting.	DURATION	Yes	Optional, repeating
		Trigger value	The trigger value setting.	COUNT or QUANTITY	No	Prohibited
		Trigger type	Type of trigger applied.	TEXT	No	Prohibited
		I:E Inspiração/expiração	Ration of inspiratory phase to expiratory phase.	PROPORTION	Yes	Optional
		I:T Inspiratório/Total	Ratio of inspiratory phase to total phase.	PROPORTION	Yes	Optional

		Compensação artificial das vias aéreas	Artificial airway compensation.	PROPORTION	Yes	Optional
		NO2 admnistrado	Amount of Nitrogen monoxide delivered.	QUANTITY	Yes	Optional
		NO2 removido	Amount of Nitrogen monoxide removed.	QUANTITY	Yes	Optional
openEHR-EHR-EVALUATION.problem_diagnosis.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.4	Infeção nosocomial	Details about a single identified health condition, injury, disability or any other issue which impacts on the physical, mental and/or social well-being of an individual.	ARCHETYPE / EVALUATION	Yes	Optional, repeating
		Tipo de infeção	Identification of the problem or diagnosis, by name.	CODED TEXT	Yes	Mandatory
		Descrição clínica	Narrative description about the problem or diagnosis.	TEXT	Yes	Optional
		Body site	Identification of a simple body site for the location of the problem or diagnosis.	TEXT	No	Prohibited
		Structured body site	A structured anatomical location for the problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating
		Agente infecioso	A cause, set of causes, or manner of causation of the problem or diagnosis.	CODED TEXT	Yes	Optional, repeating
		Data de observação	Estimated or actual date/time that signs or symptoms of the problem/diagnosis were first observed.	DATE TIME	Yes	Optional
		Data de diagnóstico	Estimated or actual date/time the diagnosis or problem was recognised by a healthcare professional.	DATE TIME	Yes	Optional
		Severity	An assessment of the overall severity of the problem or diagnosis.	CODED TEXT: local::at0047::Mild local::at0048::Moderate local::at0049::Severe TEXT	No	Prohibited
		Specific details	Details that are additionally required to record as unique attributes of this problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating
		Course description	Narrative description about the course of the problem or diagnosis since onset.	TEXT	No	Prohibited
		Data de resolução	Estimated or actual date/time of resolution or remission for this problem or diagnosis, as determined by a healthcare professional.	DATE TIME	Yes	Optional
		Status	Structured details for location-, domain-, episode- or workflow-specific aspects of the diagnostic process.	SLOT / CLUSTER	No	Optional, repeating
		Diagnostic certainty	The level of confidence in the identification of the diagnosis.	CODED TEXT: local::at0074::Suspected local::at0075::Probable	No	Prohibited

				local::at0076::Confirmed TEXT		
		Comentários	Additional narrative about the problem or diagnosis not captured in other fields.	TEXT	Yes	Optional
		Last updated	The date this problem or diagnosis was last updated.	DATE TIME	No	Prohibited
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-SECTION.adhoc.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.5	Meios complementares de diagnóstico	A generic section header which should be renamed in a template to suit a specific clinical context.	ARCHETYPE / SECTION	Yes	Optional
openEHR-EHR-SECTION.adhoc.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.5.1	Exame de imagiologia	A generic section header which should be renamed in a template to suit a specific clinical context.	ARCHETYPE / SECTION	Yes	Optional, repeating
openEHR-EHR-INSTRUCTION.service_request.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.5.1.1	Pedido de exame	Request for a health-related service or activity to be delivered by a clinician, organisation or agency.	ARCHETYPE / INSTRUCTION	Yes	Optional
		Serviço	The name of the single service or activity requested.	CODED TEXT	Yes	Mandatory
		Categoria	Category of service requested.	CODED TEXT	Yes	Optional
		Descrição	Narrative description about the service requested.	TEXT	Yes	Optional
		Código do MCD	Additional details and instructions about how the services are to be delivered.	CODED TEXT	Yes	Optional, repeating
		Motivo	A short phrase describing the reason for the request.	CODED TEXT	Yes	Optional, repeating
		Descrição do motivo	Narrative description about the reason for request.	TEXT	Yes	Optional
		Indicação clínica	The clinical reason for the ordered service.	TEXT	Yes	Optional, repeating
		Propósito	Description of the intent for the request.	CODED TEXT	Yes	Optional, repeating
		Prioridade	Urgency of the request for service.	CODED TEXT: local::at0136::Emergency local::at0137::Urgent local::at0138::Routine TEXT	Yes	Optional
		Meta	The date/time, or acceptable interval of date/time, for provision of the service.	DATE TIME or INTERVAL:DATE TIME or TEXT	Yes	Optional

		Complex timing	Details about a complex service request requiring a sequence of timings.	SLOT / CLUSTER	No	Optional, repeating
		Data de ínicio	The date/time that marks the beginning of the valid period of time for delivery of this service.	DATE TIME	Yes	Optional
		Data de fim	The date/time that marks the conclusion of the clinically valid period of time for delivery of this service.	DATE TIME	Yes	Optional
		Indefinite?	The valid period for this request is open ended and has no date of expiry.	BOOLEAN	No	Prohibited
		Specific details	Additional detail about the service requested.	SLOT / CLUSTER	No	Optional, repeating
		Supporting information	Digital document, image, video or diagram supplied as additional information to support or inform the request.	SLOT / CLUSTER	No	Optional, repeating
		Supplementary information	Supplementary information will be following request.	BOOLEAN	No	Prohibited
		Information description	Description of the supplementary information.	TEXT	No	Prohibited
		Patient requirements	Language, transport or other personal requirements to support the patient's attendance or participation in provision of the service.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the service request not captured in other fields.	TEXT	No	Prohibited
		ID da requisição	The local identifier assigned by the requesting clinical system.	TEXT or IDENTIFIER	Yes	Optional
		Requester	Details about the clinician or organisation requesting the service.	SLOT / CLUSTER	Yes	Optional
		ID do MCD	The local identifier assigned to the request by the clinician or organisation receiving the request for service.	TEXT or IDENTIFIER	Yes	Optional
		Receiver	Details about the clinician or organisation receiving the request for service.	SLOT / CLUSTER	No	Optional
		Estado	The status of the request for service as indicated by the requester.	CODED TEXT local_terms::1::Rascunho local_terms::2::Ativo local_terms::3::Suspenso local_terms::4::Finalizado local_terms::5::Erro local_terms::6::Cancelado	Yes	Optional
		Distribution list	Details of additional clinicians, organisations or agencies who require copies of any communication.	SLOT / CLUSTER	No	Optional, repeating

		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-CLUSTER.person.v1 (openEHR-EHR-INSTRUCTION.service_request.v1)	1.5.5.1.1.1	Requisitante	An individual human being.	ARCHETYPE / CLUSTER	Yes	Optional
		Nome	The unstructured name for the individual.	TEXT	Yes	Optional
		Label	A label for the individual.	TEXT	No	Prohibited
		Gender		CODED TEXT: local::at0013::Male local::at0014::Female local::at0015::Other	No	Prohibited
		Structured name	Alternative representation of an individual's complete name by separation into discrete, structured components.	SLOT / CLUSTER	No	Optional, repeating
		Identificador	Identifier associated with the individual.	IDENTIFIER or TEXT	Yes	Optional, repeating
		Role	The relationship or role of the individual to the subject of the health record.	TEXT	No	Prohibited
		Address	Details about an address for the individual.	SLOT / CLUSTER	No	Optional, repeating
		Electronic communication	Details about one or more types of electronic communication for the individual.	SLOT / CLUSTER	No	Optional, repeating
		Organisation	Details about the organisational context for the individual.	SLOT / CLUSTER	No	Optional, repeating
		Additional details	Additional details about the individual.	SLOT / CLUSTER	No	Optional, repeating
		Photo	Photograph of the individual.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the individual not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-OBSERVATION.imaging_exam_result.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.5.1.2	Resultado exame de imagiologia	The result of an imaging examination performed on an individual, using radiological techniques.	ARCHETYPE / OBSERVATION	Yes	Optional
		Study name	The name of the imaging examination performed.	TEXT	Yes	Mandatory
		Modality	The type of imaging device, process or method that originally acquired or produced the data used to create the images in the study.	TEXT	Yes	Optional, repeating
		Target body site	Description of the simple body site or region targetted for imaging.	TEXT	Yes	Optional
		Structured target body site	Structured detail about the body site or region targetted for imaging.	SLOT / CLUSTER	No	Optional, repeating

		Study date	Date/time when the imaging started.	DATE TIME	Yes	Optional
		Overall result status	The status of the imaging examination result as a whole.	CODED TEXT: local::at0073::Registered local::at0074::Partial local::at0075::Preliminary local::at0076::Final local::at0077::Amended local::at0078::Corrected local::at0079::Appended local::at0080::Cancelled local::at0090::Unknown TEXT	Yes	Optional, repeating
		Status timestamp	The date and/or time that 'Overall result status' was assigned.	DATE TIME	Yes	Optional
		Clinical indication	Narrative description about the reason the examination was originally requested.	TEXT	Yes	Optional
		Clinical summary	Narrative description of relevant clinical history that provides context for the examination and interpretation of results.	TEXT	Yes	Optional
		Imaging findings	Narrative description or overview of all clinical findings.	TEXT	Yes	Optional
		Structured imaging findings	Structured details about the imaging examination findings targeting a specific structure or region.	SLOT / CLUSTER	No	Optional, repeating
		Comparison findings	Narrative description about the comparison of this examination with previous similar studies.	TEXT	Yes	Optional
		Imaging quality	Assessment about the quality of the examination.	TEXT	Yes	Optional
		Imaging quality description	Narrative description about the quality of the examination.	TEXT	Yes	Optional
		Overall impression	Narrative concise, clinically relevant interpretation of all imaging findings, and include a comparison with previous studies where appropriate.	TEXT	Yes	Optional
		Imaging differential diagnosis	Single word, phrase or brief description representing a possible condition or diagnosis.	TEXT	Yes	Optional, repeating
		Imaging diagnosis	Single word, phrase or brief description representing the likely condition or diagnosis.	TEXT	Yes	Optional, repeating
		Recommendation	Suggestion for further imaging, investigations and/or referral, and associated rationale.	TEXT	Yes	Optional, repeating
		Report representation	Digital representation of the examination result.	SLOT / CLUSTER	No	Optional, repeating

		Comment	Additional narrative about the examination not captured in other fields.	TEXT	Yes	Optional, repeating
		Confounding factors	Narrative description of factors, not recorded elsewhere, that may influence the examination findings and/or result.	TEXT	Yes	Optional
		Position	Position of the individual during the imaging examination.	TEXT	Yes	Optional
		Stabilising appliance	Identification of a stabilising appliance in use.	SLOT / CLUSTER	No	Optional, repeating
		Study instance identifier	Unique identifier for the imaging study assigned by the imaging device.	IDENTIFIER or TEXT	Yes	Optional
		Study description	Radiology service-generated description or classification of the study.	TEXT	Yes	Optional
		Report identifier	Unique identifier for the imaging report assigned by the radiology service.	IDENTIFIER or TEXT	Yes	Optional
		Study status	The current state of the imaging study.	CODED TEXT: local::at0100::Registered local::at0101::Available local::at0102::Cancelled local::at0103::Unknown TEXT	Yes	Optional
		Study end point	Digital location of the imaging content and metadata.	TEXT or URI	Yes	Optional
		Image details	Link to full details of any imaging carried out during the study.	URI	Yes	Optional, repeating
		Imaging service	Details about the service, organisation or individual carrying out the imaging examination.	SLOT / CLUSTER	No	Optional, repeating
		Technique	Name of the radiological procedure used to capture the study.	TEXT	Yes	Optional, repeating
		Technique summary	Narrative description about the radiological procedure used to capture the study.	TEXT	Yes	Optional
		Procedure	Identification of the clinical procedure or management used to capture the study.	TEXT	Yes	Optional, repeating
		Procedure summary	Narrative description about the clinical procedure or other clinical considerations used to capture the study.	TEXT	Yes	Optional
		Structured technique/procedure	Additional structured details of technical and clinical aspects of capturing the image/s.	SLOT / CLUSTER	No	Optional, repeating
		Series details	Details about a series included in this report.	SLOT / CLUSTER	No	Optional, repeating

		Device	Details about imaging device/s used to capture the study.	SLOT / CLUSTER	No	Optional, repeating
		Comparison study details	Details about images from a prior study used for comparison to the reported study.	CLUSTER	Yes	Optional, repeating
		Study name	The name of the comparison imaging examination performed.	TEXT	Yes	Optional
		Study identifier	Unique identifier for the comparison imaging study.	IDENTIFIER or TEXT	Yes	Optional
		Study date	Date and time the comparison examination started.	DATE TIME	Yes	Optional
		Study end point	Digital location of the comparison imaging content and metadata.	TEXT or URI	Yes	Optional, repeating
		Comparison series details	Details about an imaging series being compared to the reported study.	SLOT / CLUSTER	No	Optional, repeating
		Examination request details	Details about a single imaging examination requested.	CLUSTER	Yes	Optional, repeating
		Receiver order identifier	Unique identifier for the imaging examination order assigned by the radiology service.	IDENTIFIER or CODED TEXT	Yes	Optional
		Requester order identifier	Unique identifier for the imaging examination order assigned by the requester.	IDENTIFIER or TEXT	Yes	Optional
		Examination requested name	Identification of imaging examination requested.	TEXT	Yes	Optional, repeating
		Requester	Details about the clinician and/or organisation requesting the imaging examination.	SLOT / CLUSTER	No	Optional, repeating
		Distribution list	Details of additional clinicians or organisations who require a copy of the examination result.	SLOT / CLUSTER	No	Optional
		Extension	Additional information required to extend the model with local content or to align with other reference models or formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-SECTION.adhoc.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.5.2	Análise laboratorial	A generic section header which should be renamed in a template to suit a specific clinical context.	ARCHETYPE / SECTION	Yes	Optional, repeating
openEHR-EHR-INSTRUCTION.service_request.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.5.2.1	Pedido de análise	Request for a health-related service or activity to be delivered by a clinician, organisation or agency.	ARCHETYPE / INSTRUCTION	Yes	Optional
		Serviço	The name of the single service or activity requested.	CODED TEXT	Yes	Mandatory
		Categoria	Category of service requested.	CODED TEXT	Yes	Optional
		Descrição	Narrative description about the service requested.	TEXT	Yes	Optional

		Código do MCD	Additional details and instructions about how the services are to be delivered.	CODED TEXT	Yes	Optional, repeating
		Motivo	A short phrase describing the reason for the request.	CODED TEXT	Yes	Optional, repeating
		Descrição do motivo	Narrative description about the reason for request.	TEXT	Yes	Optional
		Indicação clínica	The clinical reason for the ordered service.	TEXT	Yes	Optional, repeating
		Propósito	Description of the intent for the request.	CODED TEXT	Yes	Optional, repeating
		Prioridade	Urgency of the request for service.	CODED TEXT: local::at0136::Emergency local::at0137::Urgent local::at0138::Routine TEXT	Yes	Optional
		Meta	The date/time, or acceptable interval of date/time, for provision of the service.	DATE TIME or INTERVAL:DATE TIME or TEXT	Yes	Optional
		Complex timing	Details about a complex service request requiring a sequence of timings.	SLOT / CLUSTER	No	Optional, repeating
		Data de ínicio	The date/time that marks the beginning of the valid period of time for delivery of this service.	DATE TIME	Yes	Optional
		Data de fim	The date/time that marks the conclusion of the clinically valid period of time for delivery of this service.	DATE TIME	Yes	Optional
		Indefinite?	The valid period for this request is open ended and has no date of expiry.	BOOLEAN	No	Prohibited
		Specific details	Additional detail about the service requested.	SLOT / CLUSTER	Yes	Optional, repeating
		Supporting information	Digital document, image, video or diagram supplied as additional information to support or inform the request.	SLOT / CLUSTER	No	Optional, repeating
		Supplementary information	Supplementary information will be following request.	BOOLEAN	No	Prohibited
		Information description	Description of the supplementary information.	TEXT	No	Prohibited
		Patient requirements	Language, transport or other personal requirements to support the patient's attendance or participation in provision of the service.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the service request not captured in other fields.	TEXT	No	Prohibited
		ID da requisição	The local identifier assigned by the requesting clinical system.	TEXT or IDENTIFIER	Yes	Optional

		Requester	Details about the clinician or organisation requesting the service.	SLOT / CLUSTER	Yes	Optional
		ID do MCD	The local identifier assigned to the request by the clinician or organisation receiving the request for service.	TEXT or IDENTIFIER	Yes	Optional
		Receiver	Details about the clinician or organisation receiving the request for service.	SLOT / CLUSTER	No	Optional
		Estado	The status of the request for service as indicated by the requester.	CODED TEXT local_terms::1::Rascunho local_terms::2::Ativo local_terms::3::Suspenso local_terms::4::Finalizado local_terms::5::Erro local_terms::6::Cancelado	Yes	Optional
		Distribution list	Details of additional clinicians, organisations or agencies who require copies of any communication.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-CLUSTER.specimen.v1 (openEHR-EHR-INSTRUCTION.service_request.v1)	1.5.5.2.1.1	Detalhes da amostra	A physical sample collected from, or related to, an individual for the purpose of investigation, examination or analysis.	ARCHETYPE / CLUSTER	Yes	Optional
		Tipo de amostra	The type of specimen.	CODED TEXT	Yes	Optional
		Nome da amostra	A name or label describing the specimen.	TEXT	Yes	Optional
		Descrição da amostra	Narrative description about the specimen being examined.	TEXT	Yes	Optional
		Number of fragments	The number of tissue fragments comprising the specimen.	COUNT	No	Prohibited
		Laboratory specimen identifier	A unique identifier of the specimen, normally assigned by the laboratory.	IDENTIFIER or TEXT	No	Prohibited
		External identifier	A unique identifier of the specimen, assigned by a party external to the laboratory.	IDENTIFIER or TEXT	No	Prohibited
		Data de receção	The date and time that the sample was received at the laboratory.	DATE TIME	Yes	Optional
		Sampling context	The context in which the specimen is collected.	TEXT	No	Prohibited
		Physical properties	Physical dimensions, mass or non-measurable properties of the specimen.	SLOT / CLUSTER	No	Optional, repeating
		Collection method	The method of collection used.	TEXT	No	Prohibited

		Collection description	Narrative description about the collection of the specimen.	TEXT	No	Prohibited
		Source site	Identification of the body site or other location from where the specimen is collected.	TEXT	No	Prohibited
		Structured source site	A structured description of the area of the body from where the specimen is collected.	SLOT / CLUSTER	No	Optional, repeating
		Collection date/time	The date and time that collection has been ordered to take place or has taken place.	DATE TIME or INTERVAL:DATE TIME	No	Prohibited
		Hazard warning	Identified health risk or biohazard to the collector or laboratory staff due to exposure to, or contact with, the specimen.	TEXT	No	Prohibited
		Collection setting	Identification of the physical setting in which the specimen is collected.	TEXT	No	Prohibited
		Specimen collector identifier	Identifier of the person or organisation responsible for collecting the specimen.	IDENTIFIER or TEXT	No	Prohibited
		Specimen collector details	The person or organisation responsible for collecting the specimen.	SLOT / CLUSTER	No	Optional, repeating
		Additional details	Additional structured details about the specimen.	SLOT / CLUSTER	No	Optional, repeating
		Number of containers	The total number of physical units holding this specimen.	COUNT	No	Prohibited
		Container details	Details about containers used.	SLOT / CLUSTER	No	Optional, repeating
		Processing details	Structured details about preparation or processing of the specimen.	SLOT / CLUSTER	No	Optional, repeating
		Storage details	Structured details about the storage of the specimen.	SLOT / CLUSTER	No	Optional, repeating
		Transport details	Structured details about transport of the specimen.	SLOT / CLUSTER	No	Optional, repeating
		Digital representation	Structured details about a digital representation of the specimen.	SLOT / CLUSTER	No	Optional, repeating
		Parent specimen identifier	Unique identifier of the parent specimen, where the specimen is split into sub-samples.	IDENTIFIER or TEXT	No	Prohibited
		Specimen quality issue	A specific quality issue with a specimen.	CODED TEXT: local::at0052::Haemolysed local::at0053::Lipaemic local::at0089::Icteric local::at0094::Clotted	No	Prohibited

				local::at0054::Incorrect additive local::at0055::Insufficient amount local::at0090::Handling error local::at0095::Incorrectly labelled local::at0091::Age local::at0092::Technical failure TEXT		
		Adequacy for testing	Information about whether the specimen was adequate for testing.	CODED TEXT: local::at0062::Satisfactory local::at0063::Unsatisfactory local::at0064::Unsatisfactory TEXT	No	Prohibited
		Comment	Additional narrative about the specimen not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-CLUSTER.person.v1 (openEHR-EHR-INSTRUCTION.service_request.v1)	1.5.5.2.1.2	Requisitante	An individual human being.	ARCHETYPE / CLUSTER	Yes	Optional
		Nome	The unstructured name for the individual.	TEXT	Yes	Optional
		Label	A label for the individual.	TEXT	No	Prohibited
		Gender		CODED TEXT: local::at0013::Male local::at0014::Female local::at0015::Other	No	Prohibited
		Structured name	Alternative representation of an individual's complete name by separation into discrete, structured components.	SLOT / CLUSTER	No	Optional, repeating
		Identificador	Identifier associated with the individual.	IDENTIFIER orTEXT	Yes	Optional, repeating
		Role	The relationship or role of the individual to the subject of the health record.	TEXT	No	Prohibited
		Address	Details about an address for the individual.	SLOT / CLUSTER	No	Optional, repeating
		Electronic communication	Details about one or more types of electronic communication for the individual.	SLOT / CLUSTER	No	Optional, repeating
		Organisation	Details about the organisational context for the individual.	SLOT / CLUSTER	No	Optional, repeating

		Additional details	Additional details about the individual.	SLOT / CLUSTER	No	Optional, repeating
		Photo	Photograph of the individual.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the individual not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-OBSERVATION.laboratory_test_result.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.5.5.2.2	Resultado da análise	The result, including findings and the laboratory's interpretation, of an investigation performed on specimens collected from an individual or related to that individual.	ARCHETYPE / OBSERVATION	Yes	Optional
		Test name	Name of the laboratory investigation performed on the specimen(s).	TEXT	Yes	Mandatory
		Specimen detail	Details about the physical substance that has been analysed.	SLOT / CLUSTER	No	Optional, repeating
		Overall test status	The status of the laboratory test result as a whole.	CODED TEXT: local::at0107::Registered local::at0037::Partial local::at0120::Preliminary local::at0038::Final local::at0040::Amended local::at0115::Corrected local::at0119::Appended local::at0074::Cancelled local::at0116::Entered in error TEXT	Yes	Optional, repeating
		Overall test status timestamp	The date and/or time that 'Overall test status' was issued.	DATE TIME	Yes	Optional
		Diagnostic service category	The diagnostic service or discipline that is responsible for the laboratory test result.	TEXT	Yes	Optional
		Clinical information provided	Description of clinical information available at the time of interpretation of results.	TEXT	Yes	Optional
		Test result	Results of the test performed on the specimen(s).	SLOT / CLUSTER	No	Optional, repeating
		Conclusion	Narrative description of the key findings.	TEXT	Yes	Optional
		Test diagnosis	Single word, phrase or brief description that represents the clinical meaning and significance of the laboratory test result.	TEXT	Yes	Optional, repeating
		Structured test diagnosis	A structured or complex diagnosis for the laboratory test.	SLOT / CLUSTER	No	Optional, repeating

		Multimedia representation	Digital image, video or diagram representing the test result.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the test result not captured in other fields.	TEXT	Yes	Optional, repeating
		Confounding factors	Issues or circumstances that impact on the accurate interpretation of the measurement or test result.	TEXT	Yes	Optional, repeating
		Structured confounding factors	Details of issues or circumstances that impact on the accurate interpretation of the measurement or test result.	SLOT / CLUSTER	No	Optional, repeating
		Receiving laboratory	Details of the laboratory which received the request and has overall responsibility to manage reporting of the test, even if other labs perform specific aspects.	SLOT / CLUSTER	No	Optional, repeating
		Laboratory internal identifier	A local identifier assigned by the receiving Laboratory Information System (LIS) to track the test process.	IDENTIFIER or TEXT	Yes	Optional
		Test request details	Details about the test request.	CLUSTER	Yes	Optional, repeating
		Original test requested name	Name of the original laboratory test requested.	TEXT	Yes	Optional, repeating
		Requester order identifier	The local identifier assigned by the requesting clinical system.	IDENTIFIER or TEXT	Yes	Optional
		Receiver order identifier	The local identifier assigned to the test order by the order filler, usually by the Laboratory Information System (LIS).	IDENTIFIER or TEXT	Yes	Optional
		Requester	Details of the clinician or organisation requesting the laboratory test result.	SLOT / CLUSTER	No	Optional
		Distribution list	Details of additional clinicians or organisations who require a copy of the test result.	SLOT / CLUSTER	No	Optional, repeating
		Point-of-care test	This indicates whether the test was performed directly at Point-of-Care (POCT) as opposed to a formal result from a laboratory or other service delivery organisation.	BOOLEAN	Yes	Optional
		Test method	Description about the method used to perform the test.	ELEMENT	Yes	Optional
		Testing details	Structured details about the method of analysis, device or interpretation used.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-SECTION.adhoc.v1 (openEHR-EHR-	1.6	Instruções pós-alta	A generic section header which should be renamed in a template to suit a specific clinical context.	ARCHETYPE / SECTION	Yes	Optional

COMPOSITION.transfer_summary.v1)						
openEHR-EHR-EVALUATION.advance_care_directive.v2 (openEHR-EHR-SECTION.adhoc.v1)	1.6.1	Proposta de monitorização e tratamento	A framework to communicate the preferences of an individual for future medical treatment and care.	ARCHETYPE / EVALUATION	Yes	Optional
		Type of directive	The type of advance care directive.	TEXT	No	Prohibited
		Status	The status of the advance care directive.	CODED TEXT: local::at0044::Present [SNOMED-CT::410515003] local::at0045::Absent [SNOMED-CT::410516002] local::at0047::Unknown [SNOMED-CT::261665006] TEXT	No	Prohibited
		Descrição	Narrative description of the overall advance care directive.	TEXT	Yes	Optional
		Condition	The conditions or situations in which the individual wishes the advance care directive to apply.	TEXT	No	Prohibited
		Directive detail	Structured details about the advance care directive decisions.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the advance care directive not captured in other fields.	TEXT	No	Prohibited
		Valid period start	The date/time that marks the beginning of the valid period of time for this advance care directive.	DATE TIME	No	Prohibited
		Valid period end	The date/time that marks the conclusion of the valid period of time for this advance care directive.	DATE TIME	No	Prohibited
		Review due date	The date at which the advance care directive is due to be reviewed.	DATE TIME	No	Prohibited
		Data de registo	The date when this advance directive record was last updated.	DATE TIME	Yes	Optional
		Witness	Personal details of a person who witnesses the completion of the advance care directive.	SLOT / CLUSTER	No	Optional, repeating
		Mandate	Description of any legislation or other authoritative guidance that apply.	TEXT or URI	No	Prohibited
		Digital representation	Digital document, image or video representing the Advance care directive.	SLOT / CLUSTER	No	Optional
		Directive location	Information about the physical or digital location of the Advance care directive.	CLUSTER	Yes	Optional, repeating

		Location	Physical or digital location of the Advance care directive.	TEXT or URI	No	Prohibited
		Copy holder	Details of a person who has a copy of the Advance care directive.	SLOT / CLUSTER	No	Optional
		Extension	Additional information required to extend the model with local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-EVALUATION.advance_care_directive.v2 (openEHR-EHR-SECTION.adhoc.v1)	1.6.2	Proposta de investigação	A framework to communicate the preferences of an individual for future medical treatment and care.	ARCHETYPE / EVALUATION	Yes	Optional
		Type of directive	The type of advance care directive.	TEXT	No	Prohibited
		Status	The status of the advance care directive.	CODED TEXT: local::at0044::Present [SNOMED-CT::410515003] local::at0045::Absent [SNOMED-CT::410516002] local::at0047::Unknown [SNOMED-CT::261665006] TEXT	No	Prohibited
		Descrição	Narrative description of the overall advance care directive.	TEXT	Yes	Optional
		Condition	The conditions or situations in which the individual wishes the advance care directive to apply.	TEXT	No	Prohibited
		Directive detail	Structured details about the advance care directive decisions.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the advance care directive not captured in other fields.	TEXT	No	Prohibited
		Valid period start	The date/time that marks the beginning of the valid period of time for this advance care directive.	DATE TIME	No	Prohibited
		Valid period end	The date/time that marks the conclusion of the valid period of time for this advance care directive.	DATE TIME	No	Prohibited
		Review due date	The date at which the advance care directive is due to be reviewed.	DATE TIME	No	Prohibited
		Data de registo	The date when this advance directive record was last updated.	DATE TIME	Yes	Optional
		Witness	Personal details of a person who witnesses the completion of the advance care directive.	SLOT / CLUSTER	No	Optional, repeating
		Mandate	Description of any legislation or other authoritative guidance that apply.	TEXT or URI	No	Prohibited

		Digital representation	Digital document, image or video representing the Advance care directive.	SLOT / CLUSTER	No	Optional
		Directive location	Information about the physical or digital location of the Advance care directive.	CLUSTER	Yes	Optional, repeating
		Location	Physical or digital location of the Advance care directive.	TEXT or URI	No	Prohibited
		Copy holder	Details of a person who has a copy of the Advance care directive.	SLOT / CLUSTER	No	Optional
		Extension	Additional information required to extend the model with local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-INSTRUCTION.service_request.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.6.3	Orientação/agendamentos	Request for a health-related service or activity to be delivered by a clinician, organisation or agency.	ARCHETYPE / INSTRUCTION	Yes	Optional, repeating
		Especialidade	The name of the single service or activity requested.	CODED TEXT	Yes	Mandatory
		Tipo de consulta	Category of service requested.	CODED TEXT local_terms::1::Primeira local_terms::2::Subsquente	Yes	Optional
		Description	Narrative description about the service requested.	TEXT	No	Prohibited
		Order detail	Additional details and instructions about how the services are to be delivered.	TEXT	No	Prohibited
		Reason for request	A short phrase describing the reason for the request.	TEXT	No	Prohibited
		Reason description	Narrative description about the reason for request.	TEXT	No	Prohibited
		Clinical indication	The clinical reason for the ordered service.	TEXT	No	Prohibited
		Intent	Description of the intent for the request.	TEXT	No	Prohibited
		Urgency	Urgency of the request for service.	CODED TEXT: local::at0136::Emergency local::at0137::Urgent local::at0138::Routine TEXT	No	Prohibited
		Service due	The date/time, or acceptable interval of date/time, for provision of the service.	DATE TIME or INTERVAL:DATE TIME or TEXT	No	Prohibited
		Complex timing	Details about a complex service request requiring a sequence of timings.	SLOT / CLUSTER	No	Optional, repeating
		Data de agendamento	The date/time that marks the beginning of the valid period of time for delivery of this service.	DATE TIME	Yes	Optional
		Service period expiry	The date/time that marks the conclusion of the clinically valid period of time for delivery of this service.	DATE TIME	No	Prohibited

		Indefinite?	The valid period for this request is open ended and has no date of expiry.	BOOLEAN	No	Prohibited
		Specific details	Additional detail about the service requested.	SLOT / CLUSTER	No	Optional, repeating
		Supporting information	Digital document, image, video or diagram supplied as additional information to support or inform the request.	SLOT / CLUSTER	No	Optional, repeating
		Supplementary information	Supplementary information will be following request.	BOOLEAN	No	Prohibited
		Information description	Description of the supplementary information.	TEXT	No	Prohibited
		Patient requirements	Language, transport or other personal requirements to support the patient's attendance or participation in provision of the service.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the service request not captured in other fields.	TEXT	No	Prohibited
		Requester order identifier	The local identifier assigned by the requesting clinical system.	TEXT or IDENTIFIER	No	Prohibited
		Requester	Details about the clinician or organisation requesting the service.	SLOT / CLUSTER	No	Optional
		Receiver order identifier	The local identifier assigned to the request by the clinician or organisation receiving the request for service.	TEXT or IDENTIFIER	No	Prohibited
		Receiver	Details about the clinician or organisation receiving the request for service.	SLOT / CLUSTER	No	Optional
		Request status	The status of the request for service as indicated by the requester.	TEXT	No	Prohibited
		Distribution list	Details of additional clinicians, organisations or agencies who require copies of any communication.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-EVALUATION.health_risk.v1 (openEHR-EHR-COMPOSITION.transfer_summary.v1)	1.7	Prognósticos	Assessment of the potential and likelihood of future adverse health effects as determined by identified risk factors.	ARCHETYPE / EVALUATION	Yes	Optional
		Prognósticos	Identification of the potential future disease, condition or health issue for which the risk is being assessed, by name.	TEXT	Yes	Mandatory
		Risk factors	Details about each possible risk factor.	CLUSTER	No	Prohibited
		Risk factor	Identification of the risk factor, by name.	TEXT	No	Mandatory

		Presence	Presence of the risk factor.	CODED TEXT: local::at0018::Present [SNOMED-CT::52101004] local::at0026::Indeterminate [SNOMED-CT::82334004] local::at0019::Absent [SNOMED-CT::2667000]	No	Optional
		Description	Narrative description about the risk factor.	TEXT	No	Optional
		Date identified	The date/time that the risk factor was identified.	DATE TIME	No	Optional
		Mitigated	The risk factor has been identified as present, but then subsequently been mitigated by treatment or investigation.	BOOLEAN	No	Optional
		Link to evidence	Identification of the path to the archetype or data node for the evidence of risk.	URI	No	Optional, repeating
		Detail	Structured detail about other aspects of the risk factor assessment.	SLOT / CLUSTER	No	Optional, repeating
		Comment	Additional narrative about the risk factor not captured in other fields.	TEXT	No	Optional
		Risk assessment	Evaluation of the health risk.	TEXT or PROPORTION or QUANTITY	No	Prohibited
		Assessment type	Record of whether the risk assessment is a relative or absolute.	CODED TEXT: local::at0021::Relative risk local::at0022::Absolute risk	No	Prohibited
		Time period	The time period during which the predicted health risk is relevant.	DURATION	No	Prohibited
		Rationale	Justification for this risk assessment.	TEXT	No	Prohibited
		Comment	Additional narrative about the risk assessment not captured in other fields.	TEXT	No	Prohibited
		Last updated	The date this health risk assessment was last updated.	DATE TIME	No	Prohibited
		Assessment method	Identification of the algorithm or guideline used to make the assessment of risk.	TEXT	No	Prohibited
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-SECTION.adhoc.v1 (openEHR-EHR-COMPOSITION.transfer_summary.v1)	1.8	Diagnósticos médicos na alta	A generic section header which should be renamed in a template to suit a specific clinical context.	ARCHETYPE / SECTION	Yes	Optional

openEHR-EHR-EVALUATION.problem_diagnosis.v1 (openEHR-EHR-SECTION.adhoc.v1)	1.8.1	Diagnóstico	Details about a single identified health condition, injury, disability or any other issue which impacts on the physical, mental and/or social well-being of an individual.	ARCHETYPE / EVALUATION	Yes	Optional, repeating
		Diagnóstico	Identification of the problem or diagnosis, by name.	CODED TEXT	Yes	Mandatory
		Descrição clínica	Narrative description about the problem or diagnosis.	TEXT	Yes	Optional
		Body site	Identification of a simple body site for the location of the problem or diagnosis.	TEXT	No	Prohibited
		Structured body site	A structured anatomical location for the problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating
		Cause	A cause, set of causes, or manner of causation of the problem or diagnosis.	TEXT	No	Prohibited
		Date/time of onset	Estimated or actual date/time that signs or symptoms of the problem/diagnosis were first observed.	DATE TIME	No	Prohibited
		Date/time clinically recognised	Estimated or actual date/time the diagnosis or problem was recognised by a healthcare professional.	DATE TIME	No	Prohibited
		Severity	An assessment of the overall severity of the problem or diagnosis.	CODED TEXT: local::at0047::Mild local::at0048::Moderate local::at0049::Severe TEXT	No	Prohibited
		Specific details	Details that are additionally required to record as unique attributes of this problem or diagnosis.	SLOT / CLUSTER	No	Optional, repeating
		Course description	Narrative description about the course of the problem or diagnosis since onset.	TEXT	No	Prohibited
		Date/time of resolution	Estimated or actual date/time of resolution or remission for this problem or diagnosis, as determined by a healthcare professional.	DATE TIME	No	Prohibited
		Status	Structured details for location-, domain-, episode- or workflow-specific aspects of the diagnostic process.	SLOT / CLUSTER	Yes	Optional, repeating
		Diagnostic certainty	The level of confidence in the identification of the diagnosis.	CODED TEXT: local::at0074::Suspected local::at0075::Probable local::at0076::Confirmed TEXT	No	Prohibited
		Comment	Additional narrative about the problem or diagnosis not captured in other fields.	TEXT	No	Prohibited
		Last updated	The date this problem or diagnosis was last updated.	DATE TIME	No	Prohibited

		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating
openEHR-EHR-CLUSTER.problem_qualifier.v2 (openEHR-EHR-EVALUATION.problem_diagnosis.v1)	1.8.1.1	Qualificador do Problema/Diagnóstico	Contextual or temporal qualifier for a specified problem or diagnosis.	ARCHETYPE / CLUSTER	Yes	Optional
		Diagnostic status	Stage or phase of diagnostic process.	CODED TEXT: local::at0016::Preliminary [SNOMED-CT::148006] local::at0017::Working [SNOMED-CT::5558000] local::at0018::Established [SNOMED-CT::14657009] local::at0088::Refuted TEXT	No	Prohibited
		Current/Past?	Category that supports division of problems and diagnoses into Current or Past problem lists.	CODED TEXT: local::at0062::Current [SNOMED-CT::15240007] local::at0061::Past [SNOMED-CT::410513005]	No	Prohibited
		Active/Inactive?	Category that supports division of problems and diagnoses into Active or Inactive problem lists.	CODED TEXT: local::at0026::Active local::at0027::Inactive	No	Prohibited
		Level of control	Category of the level of control of the problem or diagnosis by the current management.	CODED TEXT: local::at0099::Controlled local::at0100::Indeterminate local::at0101::Not controlled TEXT	No	Prohibited
		Progression	Category of the progression through the course of a chronic problem or diagnosis.	CODED TEXT: local::at0103::Improving local::at0104::Stable local::at0105::Worsening local::at0106::Indeterminate TEXT	No	Prohibited
		Resolution phase	Phase of healing for an acute problem or diagnosis.	CODED TEXT: local::at0086::Not resolving local::at0085::Resolving local::at0084::Resolved local::at0087::Indeterminate local::at0097::Relapsed TEXT	No	Prohibited

		Remission status	Status of the remission of an incurable diagnosis.	CODED TEXT: local::at0090::In remission local::at0092::Not in remission local::at0093::Indeterminate TEXT	No	Prohibited
		Episodicity	Category of this episode for the identified problem/diagnosis.	CODED TEXT: local::at0034::New local::at0035::Ongoing local::at0070::Indeterminate TEXT	No	Prohibited
		Reason for an ongoing episode	Reason for a problem or diagnosis not resolving as expected.	TEXT	No	Prohibited
		Occurrence	Category of the occurrence for this problem or diagnosis.	CODED TEXT: local::at0095::First occurrence local::at0096::Recurrence TEXT	No	Prohibited
		Course label	Category reflecting the speed of onset and/or duration and persistence of the problem or diagnosis.	TEXT or CODED TEXT: local::at0081::Acute local::at0094::Acute-on-chronic local::at0079::Chronic	No	Prohibited
		Categoria do diagnóstico	Category of the problem or diagnosis within a specified episode of care and/or local care context.	CODED TEXT: local::at0064::Principal diagnosis [SNOMED-CT::8319008] local::at0066::Secondary diagnosis [SNOMED-CT::85097005] local::at0076::Complication TEXT	Yes	Optional, repeating
		Diagnóstico de admissão?	Was the problem or diagnosis present at admission?	BOOLEAN	Yes	Optional
		Comment	Additional narrative about the Problem/Diagnosis qualifier values, not captured in other fields.	TEXT	No	Prohibited
openEHR-EHR-OBSERVATION.story.v1 (openEHR-EHR-	1.9	Diários	The subjective clinical history of the subject of care as recorded directly by the subject, or reported to a clinician by the subject or a carer.	ARCHETYPE / OBSERVATION	Yes	Optional

COMPOSITION.transfer_summary.v1)		Diários	Narrative description of the story or clinical history for the subject of care.	TEXT	Yes	Optional, repeating
		Structured detail	Structured detail about the individual's story or patient's history.	SLOT / CLUSTER	No	Optional, repeating
		Extension	Additional information required to capture local content or to align with other reference models/formalisms.	SLOT / CLUSTER	No	Optional, repeating

Annex IV – X-Bubble 6 available datasets in current situation

#	Data element	Description
A.1	**Report header data element**	
A.1.1	**Identification of the patient/subject**	
A.1.1.1	Given name	The given name/first name of the patient (also known as forename or first name). This field can contain more than one element.
A.1.1.2	Family name/surname	The family name/surname/last name of the patient. This field can contain more than one element or multiple fields could be present.
A.1.1.3	Date of birth	The date of birth of the patient [ISO TS 22220]. As age of the patient might be important for correct interpretation of the test result values, complete date of birth should be provided.
A.1.1.4	Personal identifier	An identifier of the patient that is unique within a defined scope. Example: National ID (birth number) for Czech patient. Multiple identifiers could be provided.
A.1.1.5	Nationality	Nationality of the patient.
A.1.1.6	Gender	This field must contain a recognised valid value for "administrative gender". If different, "physiological gender" should be communicated elsewhere.
A.1.2	**Patient/subject related contact information**	
A.1.2.1	**Patient address**	
A.1.2.1.1	Address	Mailing and home or office addresses. The addresses are always sequences of address parts (e.g. street address line, country, ZIP code, city) even if postal address formats may vary depending on the country. An address may or may not include a specific use code; if this attribute is not present it is assumed to be the default address useful for any purpose.
A.1.2.1.2	Telecom	Telecommunication contact information (addresses) associated to a person. Multiple telecommunication addresses might be provided.
A.1.2.2	**Preferred healthcare professional (HP)** – This section can be repeated and linked to any specific information in the document, for example a link between a rare disease problem and the rare disease specialist responsible for the care of the individual patient (this section).	
A.1.2.2.1	Identifier	An identifier of the healthcare professional that is unique within a defined scope. Example: National healthcare professional ID. Multiple identifiers could be provided.
A.1.2.2.2	Name of the HP	Name of the Health Professional that has been treating or taking responsibility for the patient. [the structure of the name will be the same as for the patient (given name, family name / surname)] This element can be repeated if several medical problems for the patient require multiple contact information, with references from individual entries.
A.1.2.2.3	Role of the HP	Healthcare professional role
A.1.2.2.4	HP Organisation	Healthcare Professional Organisation
A.1.2.2.5	Address	Mailing and home or office addresses. The addresses are always sequences of address parts (e.g. street address line, country, ZIP code, city) even if postal address formats may vary depending on the country. An address may or may not include a specific use code; if this attribute is not present it is assumed to be the default address useful for any purpose.
A.1.2.2.6	Telecom	Telecommunication contact information (addresses) associated to a person. Multiple telecommunication addresses might be provided.

A.1.2.3	**Contact person/ legal guardian**	
A.1.2.3.4	Given name	The first name of the contact person/guardian (example: Peter). This field can contain more than one element.
A.1.2.3.5	Family name/surname	This field can contain more than one element. Example: Español Smith
~~A.1.2.3.6~~	~~Address~~	~~Mailing, home or office addresses. The addresses are always sequences of address parts (e.g. street address line, country, ZIP code, city) even if postal address formats may vary depending on the country. An address may or may not include a specific use code; if this attribute is not present it is assumed to be the default address useful for any purpose.~~
~~A.1.2.3.7~~	~~Telecom~~	~~Telecommunication contact information (addresses) associated to a person. Multiple telecommunication addresses might be provided.~~
A.1.3	**Health insurance and payment information** - Health insurance information is not always required, however, in some jurisdictions, the insurance number is also used as the patient identifier. It is necessary not just for identification but also forms access to funding for care.	
A.1.3.1	Health insurance code	Unique health insurance company identification code.
A.1.3.2	Health insurance name	Full, official name of the healthcare insurance provider.
A.1.3.3	Health insurance number	Number or code under which the insured person is registered at the insurance provider.
A.1.4	**Information recipient –** (intended recipient or recipients of the report, additional recipients might be identified by the ordering party, e.g. GP, other specialist)	
A.1.5	**Author (by whom the Hospital discharge report was authored)**	
A.1.5.1	Author identifier	The health professional identification number. Either an internal identifier assigned by a healthcare provider institution or (preferably) a national health professional ID such as the license or registration number.
A.1.5.2	Author name	Person name.
A.1.5.3	Author organization ID	The healthcare provider organization identifier if known. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.
A.1.5.4	Author organization	The healthcare provider organization identifier if known. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.
A.1.5.5	DateTime	Date and time of the last modification of the document by its Author.
A.1.6	**Attester**	
A.1.7	**Legal authenticator** (The person taking responsibility for the medical content of the document)	
A.1.7.2	Legal authenticator name	Person name.
A.1.8	**Document metadata**	
A.1.9	**Digital signatures**	
A.2.1	**Advance directives**	
A.2.1.1	**Living will**	Only directives being expressed only during current inpatient stay.
A.2.1.1.3	Comment	Comment on the living will.
A.2.2	**Emergency information**	

A.2.2.1	**Allergy and Intolerance**	A record of allergies and intolerances is mandatory. For patients without allergies or intolerances, this fact must be explicitly expressed with the appropriate code.
A.2.2.1.1	Allergy description	Textual description of the allergy or intolerance
A.2.2.1.2	Agent or Allergen	A specific allergen or other agent/substance (drug, food, chemical agent, etc.) to which the patient has an adverse reaction propensity.
A.2.2.1.3	Type of propensity	This element describes whether this condition refers to an allergy, non-allergy intolerance, or unknown class of intolerance (not known to be allergy or intolerance)
A.2.2.1.4	Allergy manifestation	Description of the clinical manifestation of the allergic reaction including date of manifestation and severity. Example: anaphylactic shock, angioedema (the clinical manifestation also gives information about the severity of the observed reaction)
A.2.2.1.6	Onset date	Date of onset of allergy, e.g., date of the first observation of the reaction. Could be also expressed using a life period (childhood, adolescency)
A.2.2.1.9	Certainty	Assertion about the certainty associated with a propensity, or potential risk, of a reaction to the identified substance. Diagnostic and/or clinical evidence of condition.
A.2.2.2	**Medical alerts**	
A.2.3	**Encounter**	
A.2.3.3	**Admission**	
A.2.3.3.1	Admission urgency	Admission type, either emergency or planned
A.2.3.3.2	Admission date	Admission date and time.
A.2.3.3.3	Admitting professional Id	The health professional identification number. Either an internal identifier assigned by a healthcare provider institution or (preferably) a national health professional ID such as the license or registration number.
A.2.3.3.4	Admitting professional name	Person name.
A.2.3.3.5	Admit Source	From where patient was admitted (e.g. physician referral, transfer).
A.2.3.3.6	Referring professional Id	The health professional identification number. Either an internal identifier assigned by a healthcare provider institution or (preferably) a national health professional ID such as the license or registration number.
A.2.3.3.7	Referring professional name	Person name.
A.2.3.3.8	Referring organization	The healthcare provider organization information.
A.2.3.4	**Admission reason**	
A.2.3.4.3	Admission legal status	Legal status/situation at admission. The legal status indicates the basis on which the patient is staying in a healthcare organization. This can be either voluntary or involuntary, however the legal status is always determined by a court. A patient can also receive healthcare based on a forensic status. (voluntary, involuntary, admission by legal authority).
A.2.3.5	**Discharge**	
A.2.3.6	**Location –** All locations/departments where the patient stayed within the hospital.	
A.2.4	**Admission evaluation –** Admission status should be reported exceptionally only if it is relevant to ensure continuity of care.	
A.2.4.1	***Objective findings***	
A.2.4.1.3	**Anthropometric obsevations**	Observation of Body weight and height of the patient, BMI, circumference of head, waist, hip, limbs and skin fold thickness.
		Result of the observation includes text, numeric and coded results of the measurement including measurement units.
A.2.4.1.3.1	Observation category	Fixed value "vital-signs"
A.2.4.1.4	**Vital signs**	Vital signs observation:
		• Required: Pulse rate, respiratory rate, systolic and diastolic blood pressure with site information
		• Optional: 02 saturation

A.2.4.1.5	**Physical examination**	Physical examination is the process of evaluating objective anatomical findings. It is typically the first diagnostic measure performed after taking the patient's history, which allows an initial assessment of symptoms and is useful for determining the differential diagnoses and further steps. Physical examination can be performed through observation, palpation, percussion, and auscultation.
A.2.4.2	**Functional status**	
	Functional status can be assessed in several different ways, usually with a focus on the person's abilities to perform basic activities of daily living (ADL), which include basic self-care such as bathing, feeding, and toileting and instrumental activities of daily living (IADL), which includes activities such as cooking, shopping, and managing one's own affairs.	
	For details see: https://paciowg.github.io/functional-status-ig/	
A.2.4.2.1	Date and time	Date and time of the examination
A.2.6	**Patient history**	
A.2.6.1	**Medical history**	
A.2.6.1.1	***Past problems***	A list of conditions of a patient that patient suffered in the past or still suffers. Unlike diagnostic summary, medical history is not only a list but could contain broader description of the condition and its progress, details about treatment including medication and patient response to treatment. Past problem section (unlike the same section of the patient summary) should include only conditions that are important for continuity of care. This section, if provided, complements diagnostic summary section of the discharge report.
A.2.6.1.1.1	Problem description	Problem specification
A.2.6.1.1.2	Code	Problem code
A.2.6.1.1.3	Onset date	Onset date of the problem/condition
A.2.6.1.1.7	Severity	A subjective assessment of the severity of the condition as evaluated by the clinician.
A.2.6.1.2	***Devices and Implants***	Devices and Implants
A.2.6.1.2.1	Device and implant description	Describes the patient's implanted and external medical devices and equipment upon which their health status depends. Includes devices such as cardiac pacemakers, implantable fibrillator, prosthesis, ferromagnetic bone implants, etc. of which the HP needs to be aware.
A.2.6.1.2.2	Device ID	Normalised identifier of the device instance such as UDI according to REGULATION (EU) 2017/745
A.2.6.1.2.3	Implant date	The date and time the device was implanted or when its use began.
A.2.6.1.3	***History of procedures***	Historical procedures performed on or for a patient, relevant for the current encounter.
		Examples include surgical procedures, diagnostic procedures, endoscopic procedures, biopsies, counseling, physiotherapy, personal support services, adult day care services, etc.
A.2.6.1.3.2	Procedure description	Narrative description of the procedure
A.2.6.1.4	***Vaccination***	Vaccination history of the patient.
A.2.6.1.4.1	Disease or agent targeted	Disease or agent that the vaccination provides protection against
A.2.6.1.4.2	Vaccine/prophylaxis	Generic description of the vaccine/prophylaxis or its component(s)
A.2.6.1.4.4	Vaccine medicinal product	Medicinal product name
A.2.6.1.4.6	Number in a series of vaccinations / doses	Order in the vaccination course.
A.2.6.1.4.7	Date of vaccination	The date and time when the vaccination was administered

A.2.6.1.5	***Epidemiological history***	Travel history and infectious contacts
A.2.6.2	***Family history***	Information about serious illnesses in close blood relatives with known or suspected genetic potential or with possible impact on patient care.
A.2.6.3	***Social history***	
A.2.6.3.4	Family situation	Family situation details.
A.2.6.3.4.1	Comment	A comment on the family situation.
A.2.6.4	***Abuse***	
A.2.6.4.1	*Alcohol use*	Alcohol consuption by the patient
A.2.6.4.1.1	Status	The status of the patient's alcohol use.
A.2.6.4.1.2	Period and quantity	Period of use and ammount (The extent of the patient's alcohol use in units of alcohol per time period.)
A.2.6.4.1.3	Comment	Textual comment.
A.2.6.4.2	*Tobacco use*	Represent smoking or tobacco habits.
A.2.6.4.2.1	Status	The status of the patient's tobacco use.
A.2.6.4.2.2	Period and quantity	Period of use and amount (The extent of the patient's tobacco use in units of alcohol per time period.)
A.2.6.4.2.3	Comment	Textual comment.
A.2.6.4.3	*Drug abuse*	Abuse of drugs and other substances.
A.2.6.4.3.1	Status	The status of the patient's drug use.
A.2.6.4.3.2	Period and quantity	Period of use and amount.
A.2.6.4.3.3	Drug or medication type	Type of the drug abuse
A.2.6.4.3.4	Route of administration	Route of administration
A.2.6.4.3.5	Comment	Textual comment
A.2.6.4.4	*Addiction*	Type of addiction.
A.2.7	**Hospital stay**	
A.2.7.1	**Diagnostic summary**	All problems/diagnoses that affected care during the inpatient case or are important to be recorded to ensure continuity of care. The diagnostic summary differentiates, in accordance with the international recommendation, between problems treated during hospital stay and other (untreated) problems. Treated problems are problems that were the subject of diagnostics, therapy, nursing, or (continuous) monitoring during the hospitalisation. Furthermore problems could by divided into three categories: problems present on admission (POA), conditions acquired during hospital stay (HAC) and problems that cannot be classified as being of any of the two (N/A). The diagnostic summary contains all conditions as they were recognised at the end of hospitalisation, after all examinations. This section contains concise, well specified, codeable, summary of problems. Problems are ordered by importance (main problems first) during hospital stay. Description of the problem might be completed with additional details in the medical history section and/or in the Synthesis section.
A.2.7.1.1	Problem description	Problem specification in narrative form
A.2.7.1.2	Code	Problem code
A.2.7.1.3	Onset date	Onset date of a problem/condition
A.2.7.1.7	Resolution circumstances	Describes the reason for which the status of the problem changed from current to inactive (e.g. surgical procedure, medical treatment, etc.). This field includes "free text" if the resolution circumstances are not already included in other fields such as surgical procedure, medical device,

		etc., e.g. hepatic cystectomy (this will be the resolution circumstances for the problem "hepatic cyst" and will be included in surgical procedures).
A.2.7.1.8	Severity	A subjective assessment of the severity of the condition as evaluated by the clinician.
A.2.7.2	**Major procedures**	Surgeries and other "instrumental" interventions (endoscopic, intravascular) performed during hospitalisation and significant for continuity of care.
		This section does not include purely diagnostic procedures (MRI, CT, etc.). If no significant performance has been performed, this fact must be explicitly stated using the IPS code Absent and Unknown Data.
A.2.7.2.2	Procedure description	Narrative description of the procedure
A.2.7.3	**Medical devices and implants**	Implants and used medical devices that affect or may affect the provision of health services (diagnosis and treatment). Also medical devices explanted or its use was stopped during hospitalization. If the section is blank, the reason must be explicitly stated using the IPS Absent and Unknown Data coding system
A.2.7.3.1	Device and implant description	Describes the patient's implanted and external medical devices and equipment upon which their health status depends. Includes devices such as cardiac pacemakers, implantable fibrillator, prosthesis, ferromagnetic bone implants, etc. of which the HP needs to be aware.
A.2.7.4	**Another significant treatment**	Treatment provided, which cannot be unequivocally characterized as the major procedure (in the sense of the previous definition), but is significant - typically chemotherapy, radiotherapy, purification methods (dialysis, hemoperfusion), circulation support methods (counterpulsation, etc.), administration of blood derivatives or others.
A.2.7.5	**Pharmacotherapy**	Selected drug treatment during hospitalization. Medicinal products that were administered during hospitalization and whose administration has already been discontinued before discharge or continues only for a short time after discharge, while knowledge of their administration is important for continuity of care (antibiotics other than completely routine, corticosteroids in high doses, etc.) will be listed.
		Medicinal products, the administration of which was started during hospitalization, but is also recommended after discharge, will be listed in the summary table in the recommendation section.
A.2.7.5.1	Medication reason	The reason why the medication is or was prescribed, or used. It provides a link to the Past or current health conditions or problems that the patient has had or has.
A.2.7.5.4	Active ingredient list	Substance that alone or in combination with one or more other ingredients produces the intended activity of a medicinal product. Example: "paracetamol"
A.2.7.5.5	Strength	The content of the active ingredient expressed quantifiably per dosage unit, per unit of volume or per unit of weight, according to the pharmaceutical dose form. Example: 500 mg per tablet
A.2.7.5.6	Pharmaceutical dose form	The form in which a pharmaceutical product is presented in the medicinal product package (e.g. tablet, syrup)
A.2.7.5.7	Dosage Regimen	Number of units per intake and frequency of intake over a specified duration of time. Example: 1 tablet every 24h, for 10 days
A.2.7.5.8	Route of administration	Path by which the pharmaceutical product is taken into or makes contact with the body.
A.2.7.5.9	Period of treatement	The time interval when the patient was, or was not, given the medication.
A.2.7.6	**Significant Observation Results**	Results of significant functional, diagnostic and imaging examinations to ensure continuity of care, performed during hospitalization. Results of examinations ordered but not yet delivered (status = "registered") should be presented separately from results already delivered.
A.2.7.6.5	Observation result	Result of the observation including numeric and coded results of the measurement, details about how the tests were done to get the result values, information about referential ranges and result interpretation. Content of the observation result will vary according to the type of the observation.
A.2.7.7	**Synthesis**	This section provides clinical synthesis (e.g. description of reasons and course of hospital stay) clustered by managed conditions, Clinical synthesis may include clinical reasoning (differential diagnostics, explanaition of clinical context) in clinically complex conditions.
A.2.7.7.1.1	Problem description	Problem specification in narrative form and/or a link to the problem managed during hospital stay.

A.2.8	**Discharge details** (structured information should be provided, however if not available, at least a summary note should be present).	
A.2.8.1	**Objective findings**	
A.2.8.1.3	**Anthropometric obsevations**	Results of anthropometric observations:
		• Required: body weight and height, BMI
		• Optional: circumference of head, waist, hip, limbs and skin fold thickness…
A.2.8.1.3.1	Result description	Narrative representation of the observation result and findings.
A.2.8.1.3.2	Observation details	Observation details including code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection.
A.2.8.1.3.3	Observation result	Result of the observation including numeric and coded results of the measurement, details about how the tests were done to get the result values, information about referential ranges and result interpretation. Content of the observation result will vary according to the type of the observation.
A.2.8.1.4	**Vital signs**	Observation of Vital signs:
		• Required: systolic and diastolic blood pressure including site of measurement, pulse rate, respiratory rate
		• Optional: 02 saturation, temperature, , pain (scale), …
A.2.8.1.5	**Physical examination**	Physical examination is the process of evaluating objective anatomical findings. It is typically the first diagnostic measure performed after taking the patient's history, which allows an initial assessment of symptoms and is useful for determining the differential diagnoses and further steps. Physical examination can be performed through observation, palpation, percussion, and auscultation.
A.2.8.2	**Functional status at discharge**	Functional status can be assessed in several different ways, usually with a focus on the person's abilities to perform basic activities of daily living (ADL), which include basic self-care such as bathing, feeding, and toileting and instrumental activities of daily living (IADL), which includes activities such as cooking, shopping, and managing one's own affairs.
		For details see: https://paciowg.github.io/functional-status-ig/
A.2.8.3	Discharge note	Discharge summary note
A.2.9	**Recommendations**	
	Care plan and other recommendations after discharge.	
A.2.9.1	**Care plan**	Care plan after discharge
A.2.9.1.3	Description	A description of the scope and nature of the plan.
A.2.9.2	Medication summary	Summary information on the medication recommended for the period after discharge, indicating whether the medication is changed or newly started. Compared to previous practices, the overview is supplemented with medication that has been discontinued.
A.2.9.2.6	Active ingredient list	Substance that alone or in combination with one or more other ingredients produces the intended activity of a medicinal product. Example: "paracetamol"
A.2.9.2.7	Strength	The content of the active ingredient expressed quantifiably per dosage unit, per unit of volume or per unit of weight, according to the pharmaceutical dose form. Example: 500 mg per tablet
A.2.9.2.8	Pharmaceutical dose form	The form in which a pharmaceutical product is presented in the medicinal product package (e.g. tablet, syrup)
A.2.9.2.9	Dosage Regimen	Number of units per intake and frequency of intake over a specified duration of time.

		Example: 1 tablet every 24h, for 10 days
A.2.9.2.10	Route of administration	Path by which the pharmaceutical product is taken into or makes contact with the body.
A.2.9.2.11	Period of treatment	The interval of time during which it is being asserted that the patient is/was/will be taking the medication (or was not taking).
A.2.9.2.12	Days supplied	Number of days for which the patient was provided with the drug. By supply is meant either handing over the medicine or writing out a prescription. If the patient has not been provided with the drug (e.g. if the patient has a sufficient supply of the drug), O value is recorded.