XpanDH

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

D4.3 – (D4.2) XpanDH Feasibility Demonstrators

WP4 – Feasibility & Experimentation

30.09.2024

Authors:

Name	*Organisation*	*Name*	*Organisation*
Maria Marques; Fábio Januário; Andreia Pimenta; Carla Pereira	UNINOVA	Alexander Berler; Argiris Gkogkidis	Gnomon
Orsolya Becze; Gergely Héja	OKFŐ	Haralampos Karanikas; Konstantinos Chalkias; Ellie Vaggeli; Evgenia Christopoulou	KETEKNY
Maria Salazar; António Abelha	CHUdSA	Eva Sabajová	NCZI

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Present the main methodological approaches in bullet point format	- Regular meetings with the X-Bubbles - Clear definition of aims and challenges - Work based on eHN guidelines
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List of abbreviations

Acronym	Description
AIDA	Agency for Integration, Diffusion and Archive of Medical Information
CHUdSA	Centro Hospitalar Universitário de Santo António
D	Deliverable
KETEKNY/Greek DRG Institute	Center of Documentation and Costing of Hospital Services (Greek)
DRG	Diagnosis Related Groups
EC	European Commission
EEHRxF	European Electronic Health Record Exchange Format
EESZT	Hungary National eHealth infrastructure
EHDS	European Health Data Space
EHDSI	eHealth Digital Service Infrastructure
EHR	Electronic Health Record
EOPYY	National Organization for the Provision of Health Services
ESZKF	Hungary Health IT Service Provider and Development Center
EU	European Union
eGFR	estimated glomerular filtration rate
eHN	eHealth Network
FHIR	Fast Healthcare Interoperability Resources
FTGM	Fondazione toscana gabriele monasterio
FTSS	Fundacion TicSalut
GMPC ETIP	Greek Medical Procedures Classification
HbA1C	haemoglobin A1c
HDL	High-density lipoprotein
HIS	Hospital Information System
HL7	Health Level 7
HSE	Health Service Executive HSE
ICD-10	International Classification of Diseases – 10th Revision
ICD-10-GrM	ICD-10-GrM ICD-International Classification of Diseases (Greek Modification)
IDIKA	Greek e-Government Center for Social Security Services
ISO	International Organization for Standardization
IT	Information Technology
LDL	Low-density lipoproteins
LIS	Laboratory Information System
LOINC	Logical Observation Identifiers Names and Codes
M	Month
NCPeH	National Contact Point for eHealth
NCZI	Slovakia National Center for Health Information
NeHA	Ethniki archi ilektronikis igeias
OKFO	National Directorate General for Hospitals
PCE	"Processo Clínico Eletrónico"

SNOMED-CT	Systemized Nomenclature of Medicine – Clinical Terms
SPMS	Portuguese Shared Services of the Ministry of Health
SRS	Secretaria Regional da Saude
TTSA	Telemedicine technologies
XML	Extensible Markup Language
WP	Work Package

Executive summary

This deliverable is a second version and focuses on the presentation and description of the XpanDH feasibility demonstrators responsible for experimentation around the European Electronic Health Records Exchange format (EEHRxF). Each demonstrator is associated with an X-Bubble whose use case is described in *D4.1 – (D4.1.1) XpanDH Adoption Domains (M6)*.

The strategy employed to advance the demonstrators is presented with the objective of outlining a common framework for the progression of the X-bubbles and expected outcomes. This strategy is based on the analysis of eHN guidelines as a basis of understanding, allowing verification of alignment levels and convergence needs.

The description of each demonstrator presents the AS-IS and TO-BE scenarios, including the associated actors and flows, the demonstrator's plan outlined to progress between scenarios, the work developed, the main results, and the main barriers and challenges encountered.

Moreover, a working progress format support maturity model provided by EC was applied to the 6 X-bubbles, allowing to verify at what stage each one is in the full adoption of EEHRxF.

The work presented in this document focuses only on the feasibility demonstrators associated with the X-Bubbles, being complemented by additional discussions with other bubbles and collaborations whose results are presented in *D4.2 – (D4.1.2) Adoption opportunities, challenges and barriers (M21)*.

1 Introduction

This deliverable is focused on the presentation and description of the XpanDH feasibility demonstrators responsible for experimentation around the European Electronic Health Records Exchange format (EEHRxF) in XpanDH. The results of these demonstrators are presented within the scope of task 4.2. Furthermore, the "in-silico" bubbles that resulted from collaborations throughout the project are also presented, with the results of these discussions being presented in *D4.2 – (D4.1.2) Adoption opportunities, challenges and barriers (M21)*.

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 EEHRxF across Europe.

To achieve this objective, the project collaborates with a set of partners interested in working around the EEHRxF, the so-called "early adopters", which constitute the X-Bubbles. 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.

For each X-Bubble, its motivation, the adoption domain considered, and a detailed description of the use case have been specified in *D4.1 – (D4.1.1) XpanDH Adoption Domains (M6)*.

In order to expand the work developed with X-Bubbles, a series of workshops were held with different entities discussing the results achieved and collecting new perspectives on the adoption of the EEHRxF. Furthermore, three online surveys related to the assessment of practice for production and exchange of health information in three specific priority categories (Patient Summary, Laboratory Report and Hospital Discharge Report) are make available and disseminated. This work is reported in *D4.2 – (D4.1.2) Adoption opportunities, challenges and barriers (M21)*.

1.2 Scope and objectives

This document intends to:

- Present the strategy used to progress in the feasibility demonstrators.
- Present and specify the feasibility demonstrators for each X-Bubble.
- Present the results.
- Identify challenges and barriers.
- Apply a format support maturity model.

The XpanDH feasibility demonstrators have a strong relationship and collaboration with WP2 regarding specifications and WP3 regarding readiness assessment. The work carried out with WP2 relied on regular meetings with the X-Bubbles to create examples and address any doubts regarding the provided material available at: https://build.fhir.org/ig/hl7-eu/xpandh/. Regarding WP3, X-Bubbles reviewed the readiness model and held discussion meetings with the WP3 leaders, providing input for its improvement.

1.3 Structure of the deliverable

This deliverable is structured into the following parts:

- Strategy for feasibility demonstrators: Presentation of the strategy considered for conducting the feasibility demonstrators with the aim of assisting organizations in reaching the next level of adoption around the EEHRxF. Presentation of the Bubbles groups considered in XpanDH, taking into account the heterogeneity of the demonstrators and the desired level of alignment.
- XpanDH feasibility demonstrators: detailed description and specification of the feasibility demonstrators including scenarios, data flows, results, challenges and barriers.

2 Strategy for Feasibility Demonstrators

The XpanDH feasibility demonstrators aim to showcase the work developed around the EEHRxF, being organized into experimentation bubbles (X-Bubbles). The creation of these experimentation bubbles was described in *D4.1 – (D4.1.1) XpanDH Adoption Domains (M6)*, taking into consideration the motivations of the partnering entities and their perspectives regarding the use of the EEHRxF. Additionally, the same deliverable delineates the corresponding use cases under consideration.

In accordance with the strategy outlined in the XpanDH project, the X-Bubbles (Figure 1) are constituted by organizations identified as "early adopters" that focus on priority adoption domains and guided by the available guidelines and specifications, present their feasibility demonstrators, with the following primary objectives:

- Demonstrate feasibility in real-world experimentations with a set of EEHRxF early adopters' organizations grouped under selected adoption domains.
- Prove that guidelines and specifications produced are useful, creating conditions for the purposeful use of the EEHRxF in concrete health and care domains.
- Understanding the landscape of EEHRxF adoption as a whole.

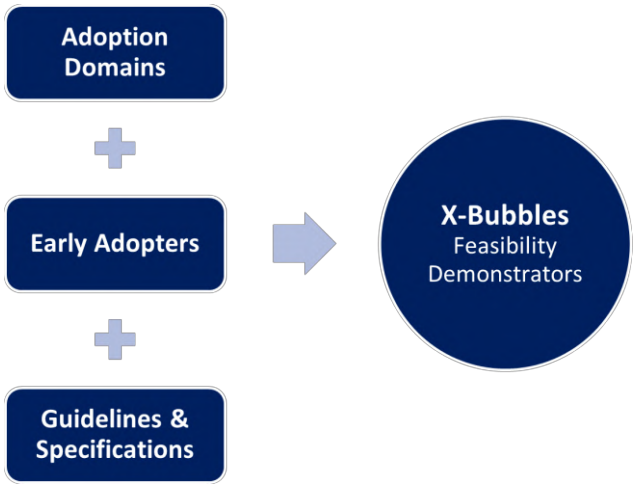

Figure 1 – X-Bubbles constitution.

2.1 High level strategy

The high-level strategy developed for the advancement of the X-Bubbles, aligned with the project objectives, is depicted in Figure 2. This strategy aims to guide organizations towards achieving the next readiness level in their experimentation around the EEHRxF. Additionally, the identification of adoption obstacles and opportunities is consistently integrated throughout the strategy.

The first step involves the selection of specific adoption domains where the demonstrators will focus in accordance with the project objectives. Subsequently,

considering the selected adoption domains, the scenarios of the feasibility demonstrators are specified, realizing the partners' visions regarding the utilization of the EEHRxF.

In order to advance in the presented scenarios and achieve a common understanding regarding the EEHRxF, the eHealth Network (eHN) guidelines serve as the foundation for specifications. In this context, the X-Bubbles review these guidelines and explore how they can adapt them to their own context. Subsequently, various interactions take place among the partners to extract requirements that feed into specifications, ultimately resulting in the final demonstrators. These demonstrators list and identify needs towards better guidelines and draft implementation acts.

Throughout all processes, challenges, barriers, and adoption opportunities are always considered, primarily with the partners of the X-Bubbles, but also extending beyond them.

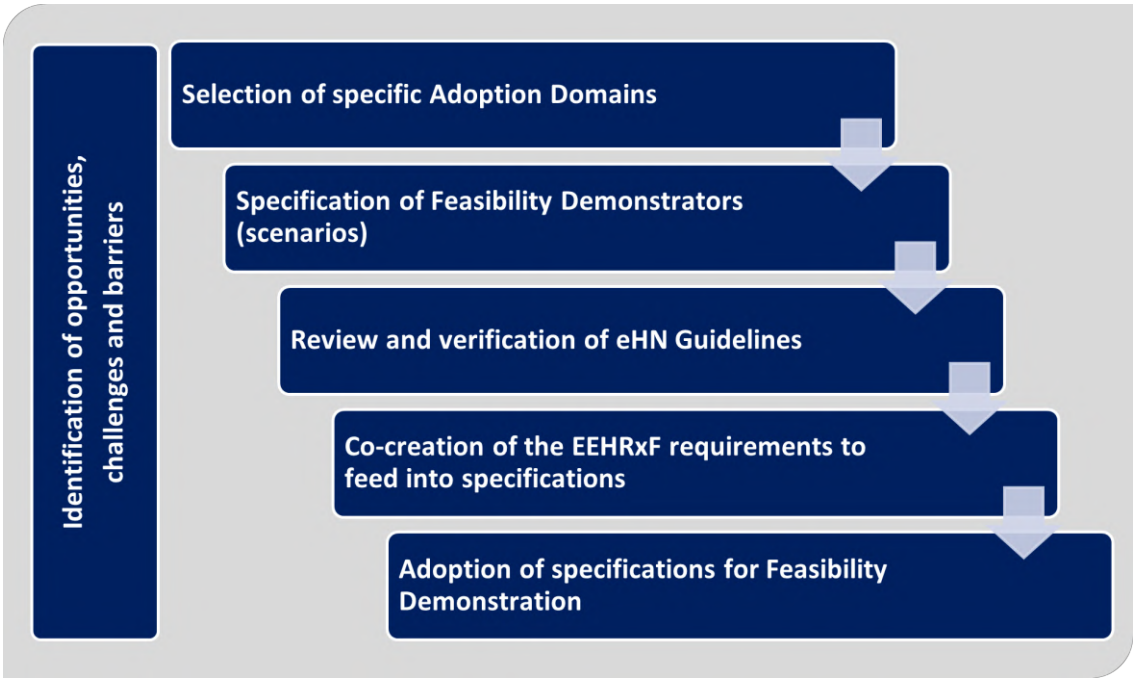

Figure 2 - X-Bubbles high level strategy.

2.2 Adoption Domains

The adoption domains selected by the project for deep analysis to determine their feasibility of experimentation were described in *D1.5 – (D1.4) Definition of the EEHRxF adoption domains Report*. These adoption domains derive from the EC priority categories shown in Figure 3. With the new EHDS resolution, these names have changed to: (a) patient summaries; (b) electronic prescriptions; (c) electronic dispensations; (d) medical imaging studies and related imaging reports; (e) medical test results, including laboratory and other diagnostic results and related reports; and (f) discharge reports.

Taking into account the analysis conducted and based on the priority categories at that time, the selected priority categories were the laboratory report and hospital discharge report, from which the adoption domains were derived and analyzed within the X-Bubbles. In addition to these categories, and during the project's progress, the patient summary was also considered as a relevant category for analysis.

The work developed in the feasibility demonstrators began with the adoption domains related to laboratory reports, hence the progress in this category is at a more mature level compared to the hospital discharge report. This is also due to the fact that the eHN guidelines for hospital discharge reports were only made available towards the end of the year 2023.

Regarding the patient summary, it is a more mature category where the aim is to analyze, along with associated partners of the project, its state of implementation and utilization in diverse contexts. The results of this analysis are documented in *D4.2 – (D4.1.2) Adoption opportunities, challenges and barriers (M21).*

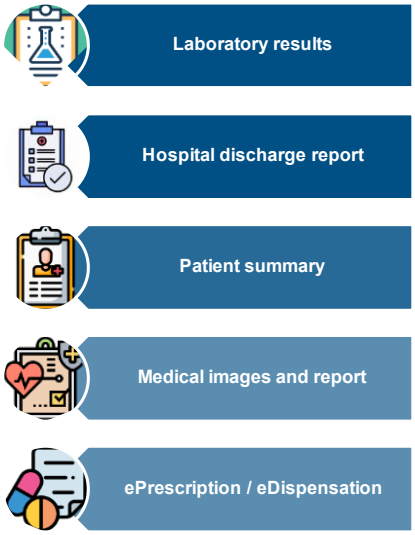

Figure 3 - EC priority categories.

2.3 Bubbles

Taking into account the adoption domains selected for depth analysis in WP4 and the motivation of the involved partners, the bubbles depicted in Figure 4 were established. Considering the heterogeneity and levels of maturity among the partners comprising the bubbles, as well as the phase at which they joined the project and the work they undertake around the EEHRxF, the bubbles are divided into three main groups:

- X-Bubbles 1-6: X-Bubbles are constituted by groups of organizations, partners within XpanDH consortium, that voluntarily test the use of EEHRxF through the definition of concrete use cases for exchange and adoption scenarios. Their objective is to assess and validate the appropriateness of the

EEHRxF, identifying gaps and plan its adoption via feasibility demonstrators. These bubbles were created at the beginning of the project, focusing on two specific categories: laboratory reports and hospital discharge reports in different data exchange scenarios. The specification of these bubbles can be consulted in *D4.1 – (D4.1.1) XpanDH Adoption Domains (M6)*. These bubbles are accountable for the feasibility demonstrators as they engage in a more in-depth analysis, which includes specifying concrete use cases and adoption scenarios.

- "In silico" bubbles: These bubbles are constituted by groups of organisations that are either associated partners to XpanDH or collaborate with the project in a more informal way. These bubbles do not delve as deeply as the X-Bubbles, but they are essential for extracting insights, barriers, and opportunities around the EEHRxF. Their objective is to identify requirements to the EEHRxF and its implementation via structured (workshops and surveys) exercises. All the work with the "in silico" bubbles is reported in *D4.2 – (D4.1.2) Adoption opportunities, challenges and barriers (M21)*.
- xShare Adoption Sites: These bubbles arise from the collaboration and synergy between the XpanDH and the xShare projects. The main input of these organisations was the response to the online surveys, whose results analyse is presented in *D4.2 – (D4.1.2) Adoption opportunities, challenges and barriers (M21)*.

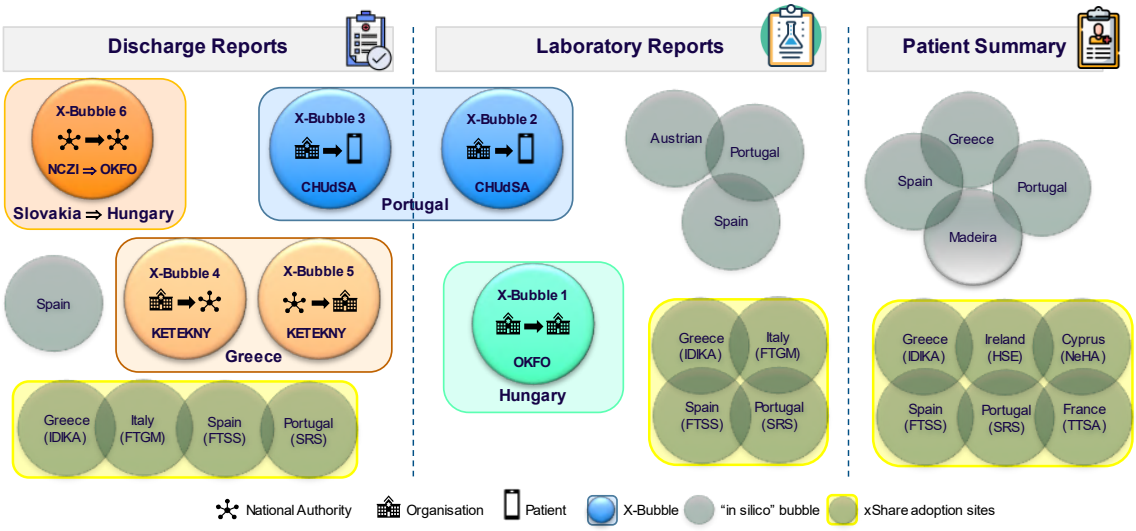

Figure 4 – XpanDH Bubbles.

It is important to note that the X-Bubbles are not intended to implement a EEHRxF compliant prototype but rather to assess the feasibility of its use and identify limitations and needs for improvement. In fact, and in direct relation to the character of XpanDH project (i.e. a CSA) any prototype implementation is out of scope. The aim is that, by the end of the project, partners of both types of bubbles are in a better position to move for a real implementation.

3 XpanDH Feasibility Demonstrators

In this chapter, the XpanDH feasibility demonstrators are presented, divided by X-Bubble. Within each feasibility demonstrator, the AS-IS and TO-BE scenarios are outlined, including the systems and actors involved, as well as the steps necessary to transition from one to the other. Additionally, the work developed is presented, including results, challenges and barriers encountered.

The XpanDH feasibility demonstrators worked around Article 6 of the EHDS resolution, namely on:

- harmonised datasets containing electronic health data and defining structures, such as data fields and data groups for the representation of clinical content and other parts of the electronic health data;
- coding systems and values to be used in datasets containing electronic health data;
- technical interoperability specifications for the exchange of electronic health data, including its content representation, standards and profiles.

3.1 X-Bubble 1

Partner leading the experiment: OKFŐ.

Adoption Domain: Laboratory results Organization to Organization.

X-Bubble 1 is focused on continuity of care for patients with diabetes, considering laboratory reports associated with this condition, within the context of health data exchange between organizations within the same country. Diabetic patients are followed-up in order to assure that the value of a group of laboratory parameters are maintained in a safe range. The list of laboratory results considered in this bubble is:

- Complete general blood count, with emphasis on fasting and postprandial (after meals) blood glucose levels, serum total cholesterol, HDL cholesterol, LDL cholesterol, triglycerides, creatinine, and estimated glomerular filtration rate (eGFR).
- Urine tests for glucose, acetone, and sediment.
- HbA1c measurement (most crucial for diabetes tracking).
- In cases where HbA1c measurement is not possible, fructosamine can be used as an alternative (although HbA1c is preferred and done every year or two).
- C-peptide measurement to determine the body's remaining insulin production.

The laboratory reports are securely stored within the Electronic Health Record System (EESZT), where they are accessible to all healthcare providers involved in the patient's care. This setup facilitates seamless information exchange and ensures that

pertinent medical information is readily available to facilitate informed decision-making and comprehensive patient management.

3.1.1 Scenarios and Data Flows

In the current situation (Figure 5) it is obligatory by law in Hungary for 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. Regarding laboratory reports, healthcare providers store these reports in their IT systems as provided by laboratory systems according to the standards used internally. The encoding of this data follows a Hungarian implementation of ICD10 and a partial Hungarian implementation of LOINC. Transmission to the EESZT, which functions as a national repository, until recently has been carried out only in unstructured PDF format, but structured laboratory reports has been introduced recently. The structured reports have a proprietary XML structure and allow the structured reporting of more than 400 laboratory measurements. The proprietary codes of these measurements have been mapped to LOINC.

Other healthcare providers can then access the legacy documents in PDF format and the structured documents in both structured and PDF formats. Patients through the patient portal can access the reports in PDF format.

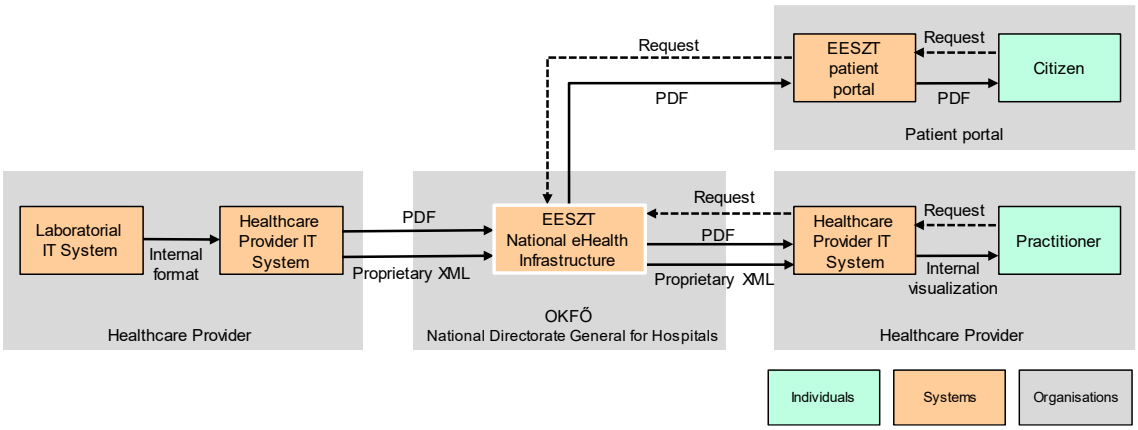

Figure 5 - X-Bubble 1: AS-IS scenario

With the work developed in this bubble, the aim is to support continuity of care for diabetic patients through structured data exchange. This will save considerable time for physicians by providing an integrated view of the patient's condition over time. Moreover, it will enable the provision of alerts based on the structured data, facilitating proactive management of the patient's health status. Additionally, the structured representation of laboratory reports is the first step towards cross-border exchange of such documents.

Two scenarios are envisaged in this context, one in the short term (Figure 6) and the other in the long term (Figure 7). Considering that the EESZT already has the capability to exchange structured data using a proprietary XML format, laboratory systems are already capable of sending structured reports for the selected

measurements, and most healthcare systems are capable to handle the structured documents in XML format, in the short term, this will be the data exchange format utilized between organizations. At the EESZT level, these structured data will be mapped according to the EEHRxF and made available to organizations adopting the format, including the EHDSI for cross-border exchange.

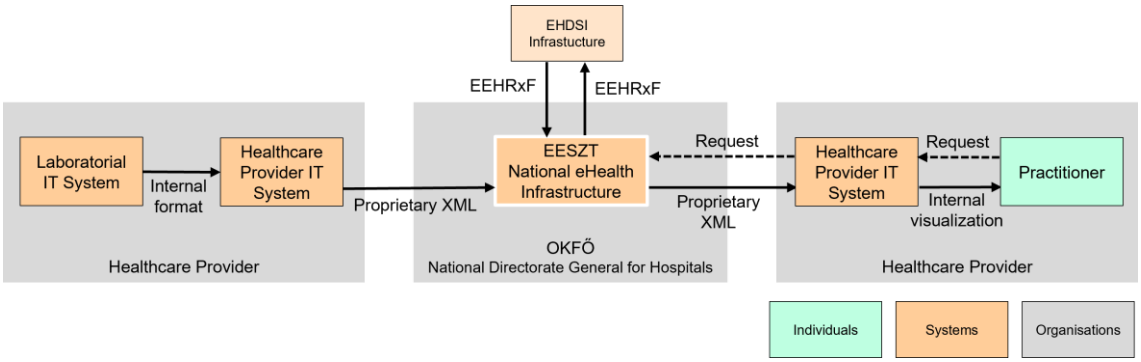

Figure 6 - X-Bubble 1: TO-BE scenario - short term.

In the long term, the goal is to progressively transition from the proprietary XML format to the EEHRxF, recognizing that during the transitional period, both formats may coexist simultaneously until all healthcare providers complete the full transition. Legacy documents remain in PDF format, and new documents will also need to have a PDF representation e.g. for the patient portal.

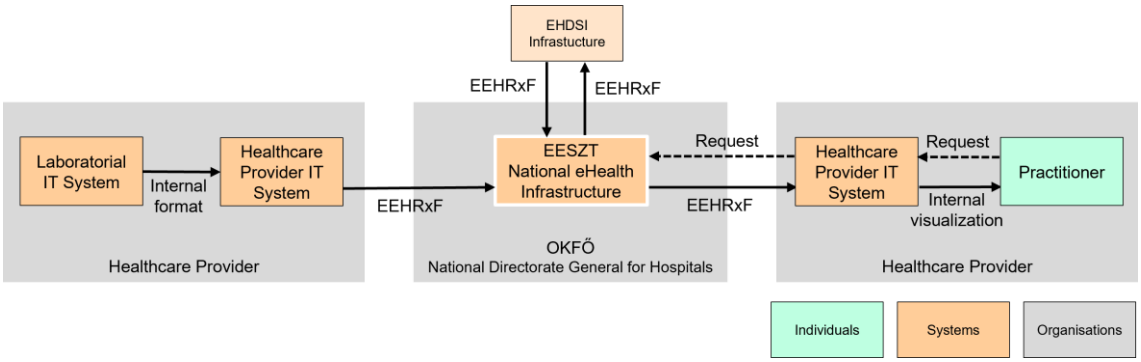

Figure 7 - X-Bubble 1: TO-BE scenario - long term.

3.1.2 Demonstrator plan

Table 1 - X-Bubble 1: demonstrator plan.

Step	Description	Status
1	Select adoption domain and specify the use case: available in *D4.1 – (D4.1.1) XpanDH Adoption Domains (M6).*	Done
2	Define the list of lab results: define the final list of lab results considered for diabetes patients.	Done
3	Analyse existing information systems	Done

4	Define information requirements: define the specific datasets and value sets[1] required for diabetes laboratory reports.	Done
5	Adapt EESZT and the HIS/LIS to handle EEHRxF structured laboratory reports.	Not feasible during the project
6	Functional and technical tests: perform internal tests to ensure the feasibility of the solution.	Not feasible during the project
7	Perform pilot / roll out to production system.	Not feasible during the project
8	Document lessons learned	In progress

3.1.3 Work developed

Since M6 until M21, the following tasks have been completed:

- Consultation was held with ESZKF on the capabilities of the National E-Health Infrastructure (EESZT) and one of the most widely used hospital systems regarding laboratory reports. As a result, it was identified that the system has limited capabilities for handling structured laboratory reports, using a proprietary XML model rather than FHIR.
- An annotated laboratory report has been completed, identifying all the available fields. This information is accessible in the GitHub repository.
- The mapping table of coded laboratory parameters to LOINC has been analysed and a list of relevant codes has been collected (Annex I).
- A reviewing of the Laboratory Report eHN guideline was conducted, focusing on the identification of required and optional data fields, cardinalities, code systems, and any potential missing fields. Annex II present the result of this analysis.
- High-level testing of the laboratory report specification (https://build.fhir.org/ig/hl7-eu/laboratory) was conducted using FHIR-based laboratory report examples created from a representative PDF Hungarian report with the support of WP2. These examples are available in the GitHub repository.

3.1.4 Results Discussion

X-Bubble 1 conducted an analysis of the feasibility of generating EEHRxF-compliant laboratory results based on the data available in the EESZT. The analysis identified the key laboratory parameters relevant for diabetes care for which structured reports are already available. This assessment highlights the potential to leverage

[1] A value set is a list of specific values, terms, and their codes, used to describe clinical and administrative concepts.

existing data in alignment with EEHRxF standards, although the integration is dependent on further developments in system interoperability.

Table 2 provides an overview of the eHN guidelines analysis performed in X-Bubble 1, including Table 2the total number of data fields in each data group, indicating the number of required, optional and not required (considered not needed for the use case) data fields and the data availability in the system, indicating structured, unstructured and unavailable number of data fields. In this X-Bubble 1, no missing data fields were identified. Regarding data importance 18/69 of the data fields are required, 42/69 are optional and 9/69 are not required. Regarding data availability 41/69 of the data fields are not available in X-Bubble 1 system. The reason for that numbers is related with national regulations and the fact that in X-Bubble 1 all the laboratory reports are stored in a central system. In that sense, some information is not available such as health insurance information and information recipient.

Table 2 – X-Bubble 1: eHN guidelines data groups analysis.

Data groups	N° data fields	Data Importance	Data Availability
A.1 Report header data elements			
A.1.1 Identification of the patient/subject	5	4 required 1 optional	3 structured 1 unstructured 1 unavailable
A.1.2 Patient/subject related contact information	2	2 optional	2 unavailable
A.1.3 Health insurance and payment information	4	4 optional	4 unavailable
A.1.4 Information recipient	6	6 not required	6 unavailable
A.1.5 Author	3	1 required 2 optional	1 structured 2 unavailable
A.1.6 Legal authenticator	4	1 required 3 optional	2 structured 2 unavailable
A.1.7 Result validator	4	3 required 1 optional	2 structured 1 unstructured 1 unavailable
A.1.8 Laboratory report metadata	9	4 required 4 optional 1 not required	6 structured 1 unstructured 2 unavailable
A.2 Order information	6	6 optional	2 structured 1 unstructured 3 unavailable
A.3 Order reason	1	1 optional	1 structured
A.4 Specimen information	9	9 optional	1 structured 8 unavailable
A.5 Results data elements			
A.5.1 Laboratory report narrative	2	1 required 1 optional	1 unstructured 1 unavailable
A.5.2 Observation details	14	4 required 7 optional 3 not required	3 structured 2 unstructured 9 unavailable
Total	69	18 required 42 optional 9 not required	21 structured 7 unstructured 41 unavailable

3.1.5 Challenges and barriers

The main barrier to executing this demonstrator was the inability to engage any Hungarian healthcare providers willing to actively participate in the project. This limitation significantly hindered the practical implementation and testing of the EEHRxF framework in a real-world clinical setting. Furthermore, the widespread use of a proprietary XML format within the current infrastructure presents additional challenges for transitioning systems to EEHRxF.

3.2 X-Bubble 2

Partner leading the experiment: CHUdSA.

Adoption Domain: Laboratory results Organisation to Patient.

X-Bubble 2 is focused on continuity of care for patients with diabetes, considering laboratory reports associated with this condition, within the context where the hospital shares health data with the patient. Diabetic patients are followed-up in order to assure that the value of a group of laboratory parameters are maintained in a secure range. Laboratory results are made available to those patients that allowed this information to be consulted through the mobile app. The list of laboratory results considered in this bubble is:

- Hemoglobin A1C.
- Spot urinary albumin-to-creatinine ratio.
- Serum creatinine and estimated glomerular filtration rate.
- Lipid profile: including total, LDL, and HDL cholesterol and triglyceride.
- Liver function tests.

The laboratory reports are securely stored within the AIDA platform, where they are accessible to all healthcare professionals involved in the patient's care inside the hospital.

3.2.1 Scenarios

In the current situation (Figure 8) laboratory results are interoperated and archived by AIDA platform inside the healthcare provider. The laboratory IT systems upload the laboratory reports to the AIDA data lake using HL7 or FHIR communication. The encoding of this data follows a Portuguese implementation of LOINC and SNOMED-CT which can be consulted here. The communication between the AIDA data lake and its various modules is conducted in FHIR, with the AIDA-PCE module being responsible for generating information in PDF format. The provision of these reports to the patient is already allowed through the mobile app but only in unstructured PDF format. Additionally, patients can request a paper copy of the report from the patient office. Regarding healthcare professionals inside the organization, they already have access to all structured data provided by the AIDA data lake.

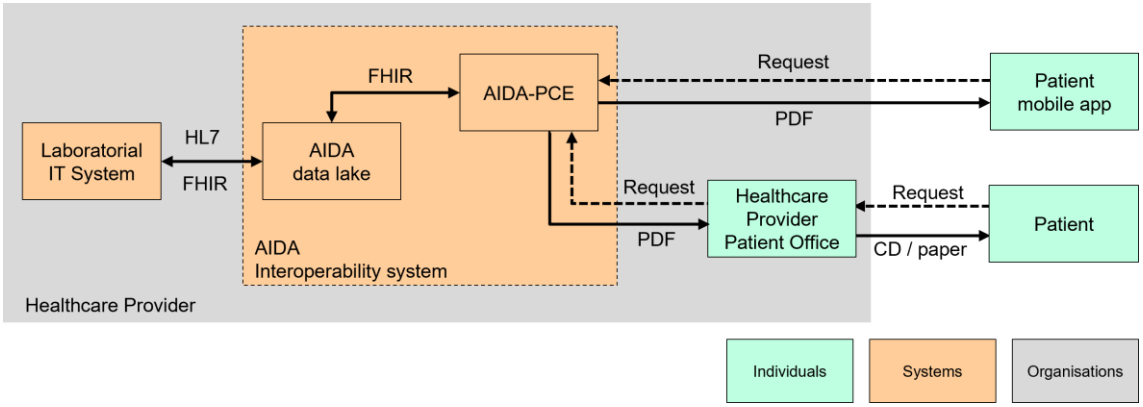

Figure 8 - X-Bubble 2: AS-IS scenario.

With the work developed in this bubble, the aim is to support laboratory reports consultation through the mobile app in structured format. This will ensure continuity of care and empower patients to manage their health data effectively.

The envisaged scenario in this context is depicted in Figure 9. A new AIDA-EEHRxF module will be added to map the information according to the EEHRxF and made available to patients through the mobile app. With this new module, the AIDA platform is equipped with the ability to share this type of structured information in the EEHRxF with other systems in the future.

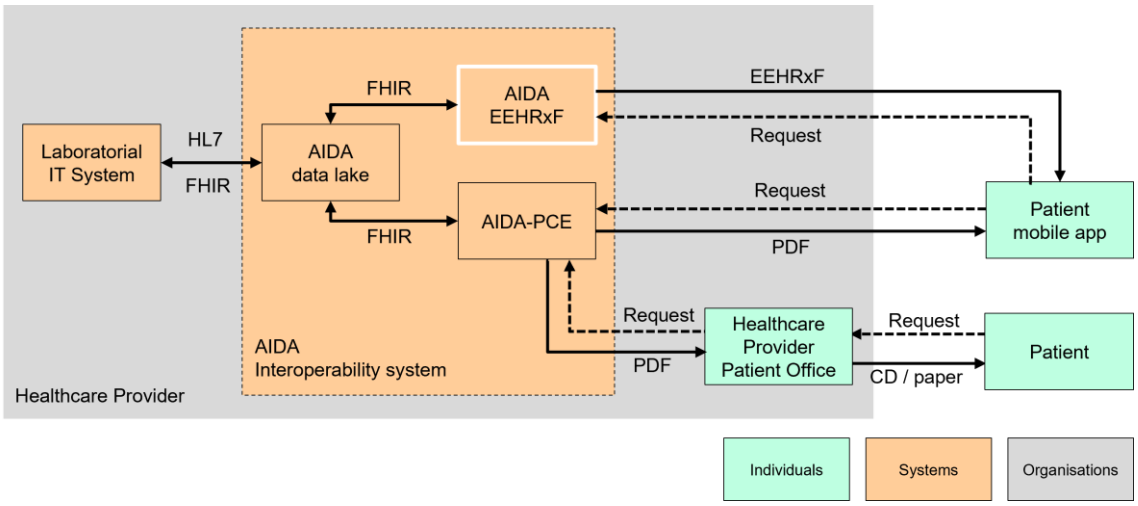

Figure 9 - X-Bubble 2: TO-BE scenario.

3.2.2 Demonstrator plan

Table 3 - X-Bubble 2: demonstrator plan.

Step	Description	Status
1	Select adoption domain and specify the use case: available in *D4.1 – (D4.1.1) XpanDH Adoption Domains (M6).*	Done
2	Define the list of lab results: define the final list of lab results considered for diabetes patients.	Done
3	Analyse existing national laboratory report structure.	Done

4	Define information requirements: define the specific datasets and code systems required for diabetes laboratory reports.	Done
5	Data transformation: developed the processes to mapping the laboratory results from their existing format to the EEHRxF (AIDA-EEHRxF).	In progress
6	Interoperability: configure the interoperability between AIDA platform and mobile APP; configure and adapt the mobile APP.	Not feasible during the project
7	Functional and technical tests: perform internal tests to ensure the feasibility of the solution.	Not feasible during the project
8	Document lessons learned.	In progress

3.2.3 Work developed

Since M6 until M21, the following tasks have been completed:

- Analysis of the national specifications provided by SPMS for structuring laboratory reports in FHIR. An example of one of these reports has been provided and is available on the GitHub repository.
- Reviewing the Laboratory Report eHN guideline. Identification of required and optional data fields, cardinalities, code systems and possible missing fields. Annex III presents the result of this analysis.
- Analysis of the laboratory report specification (https://build.fhir.org/ig/hl7-eu/laboratory), verifying that the FHIR versions used differ from those specified by SPMS, and some value sets are not recognized due to being national internal codes.
- Progress in the data transformation process, specifically in mapping the laboratory results from their existing format to the EEHRxF (AIDA-EEHRxF). This transformation ensures that laboratory results are converted into a structured format that complies with the EEHRxF, enabling their use in various digital health contexts.

3.2.4 Results Discussion

The results from the work developed in X-Bubble 2 demonstrated the feasibility of structuring laboratory results into EEHRxF. The main success was the identification and transformation of a specific dataset relevant to diabetes management, including Hemoglobin A1C, serum creatinine, and lipid profile data. Despite the progress, challenges arose due to discrepancies between the national implementation standards and EEHRxF specifications, namely regarding data formats, terminology and standardization procedures, leading to delays in the adaptation process.

The introduction of a new AIDA-EEHRxF module within the platform aimed to facilitate structured data exchange but was hindered by the following technical complexities:

- Inconsistent Data Standards: Different healthcare systems and laboratories may use varying formats for recording health data such as Hemoglobin A1C, creatinine, and lipid profiles. Aligning these formats with EEHRxF specifications requires significant effort in standardization and harmonization.
- Data Interoperability Issues: Ensuring that data can seamlessly flow between different systems (national and European) without loss of meaning or structure is a major technical challenge. This includes handling differences in terminologies, coding systems (e.g., ICD, SNOMED CT), and data models.
- Integration with Legacy Systems: Many national healthcare infrastructures rely on older, legacy systems that were not built with modern interoperability standards in mind. Integrating these with EEHRxF-compliant systems can require complex middleware solutions or even system overhauls.
- Data Security and Privacy: Ensuring that the transformed data complies with privacy regulations (such as GDPR) while maintaining security during exchange and storage is another significant technical challenge, especially in cross-border scenarios.

For a full implementation of AIDA-EEHRxF the following topics need to be addressed:

- Finalized National Specifications: National healthcare systems may not yet have fully defined or adopted the specifications needed to comply with EEHRxF standards. For example, terminologies, data models, and communication protocols might still be in development or require updates.
- Standardized Data Formats: To implement the EEHRxF, there needs to be agreement on a standardized data format across all systems. This format must be interoperable with both national and EU systems and should cover all types of health data relevant for diabetes management (and beyond).
- Governance and Compliance Frameworks: Without a clearly defined regulatory and governance framework, it is difficult to ensure compliance with EEHRxF, especially regarding data privacy and data-sharing protocols. The absence of these frameworks can lead to delays in adoption.
- Technical Infrastructure: Some national systems may lack the necessary technical infrastructure or integration tools to support EEHRxF-compliant exchanges, such as APIs or middleware for real-time data exchange.

The overview of the eHN guidelines analysis performed in X-bubble 2 is presented in Table 4, indicating the total number of data fields in each data group, indicating the number of required, optional and not required (considered not needed for the use case) data fields and the data availability in the system, indicating structured, unstructured and unavailable number of data fields. In this X-Bubble 2, no missing data fields were identified. Regarding data importance 29/69 of the data fields are

required, 32/69 are optional and 8/69 are not required. Regarding data availability 16/69 of the data fields are not available and 22/69 are stored in a structured way in X-Bubble 2 system. Some specific data fields are coded with internal and/or national codes such as the order and recipient identifiers by regulation purposes.

Table 4 - X-Bubble 2: eHN guidelines data groups analysis.

Data groups	N° data fields	Data Importance	Data Availability
A.1 Report header data elements			
A.1.1 Identification of the patient/subject	5	4 required 1 optional	1 structured 3 unstructured 1 unavailable
A.1.2 Patient/subject related contact information	2	2 optional	2 unstructured
A.1.3 Health insurance and payment information	4	4 optional	4 unstructured
A.1.4 Information recipient	6	5 optional 1 not required	1 structured 4 unstructured 1 unavailable
A.1.5 Author	3	3 required	3 unstructured
A.1.6 Legal authenticator	4	4 not required	4 unavailable
A.1.7 Result validator	4	4 required	4 unstructured
A.1.8 Laboratory report metadata	9	6 required 3 optional	5 structured 2 unstructured 2 unavailable
A.2 Order information	6	4 required 2 optional	3 structured 3 unstructured
A.3 Order reason	1	1 optional	1 structured
A.4 Specimen information	9	4 required 5 optional	7 structured 2 unstructured
A.5 Results data elements			
A.5.1 Laboratory report narrative	2	2 optional	2 unstructured
A.5.2 Observation details	14	4 required 7 optional 3 not required	4 structured 2 unstructured 8 unavailable
Total	69	29 required 32 optional 8 not required	22 structured 31 unstructured 16 unavailable

3.2.5 Challenges and barriers

The heterogeneity and interoperability among systems are already taken into account and operationalized through the AIDA platform. However, the lack of final specifications makes the rapid implementation of the new AIDA-EEHRxF module challenging. Furthermore, the alignment between SPMS specifications and EEHRxF must also be considered and analysed, as the hospital must ensure compliance with national rules. Finally, the provision of data to the patient through the mobile app involves technical developments that are not feasible within the project timeline, and also includes approvement by the ethics department, which has its associated timeframe.

3.3 X-Bubble 3

Partner leading the experiment: CHUdSA.

Adoption Domain: Hospital Discharge Reports Organisation to Patient.

X-Bubble 3 is focused on continuity of care, considering the information available when a patient is discharged, within the context where the hospital shares health data with the patient. Whenever a patient is discharged, a report is completed by the medical and nursing professionals. Hospital Discharge Report summarizes clinical and administrative information on the patient condition at the moment of discharge. Also includes information about further procedures and medication. The hospital discharge report is made available to those patients that allowed this information to be consulted through the mobile app. The hospital discharge reports are securely stored within the AIDA platform, where they are accessible to all healthcare professionals involved in the patient's care inside the hospital.

3.3.1 Scenarios

In the current situation (Figure 10) hospital discharge information is interoperated and archived by AIDA platform inside the healthcare provider. Doctors and nurses have access to the patient's clinical episode and can add all necessary information, which is then stored in the AIDA data lake. The encoding of this data follows a Portuguese implementation of SNOMED-CT, ICD10 and LOINC which can be consulted here. The communication between the AIDA data lake and its various modules is conducted in FHIR, with the AIDA-PCE module being responsible for manage and export information in PDF format. The provision of these reports to the patient is only available upon request at the patient office and is provided in PDF/paper format. Regarding healthcare professionals inside the organization, they already have access to all structured data provided by the AIDA data lake.

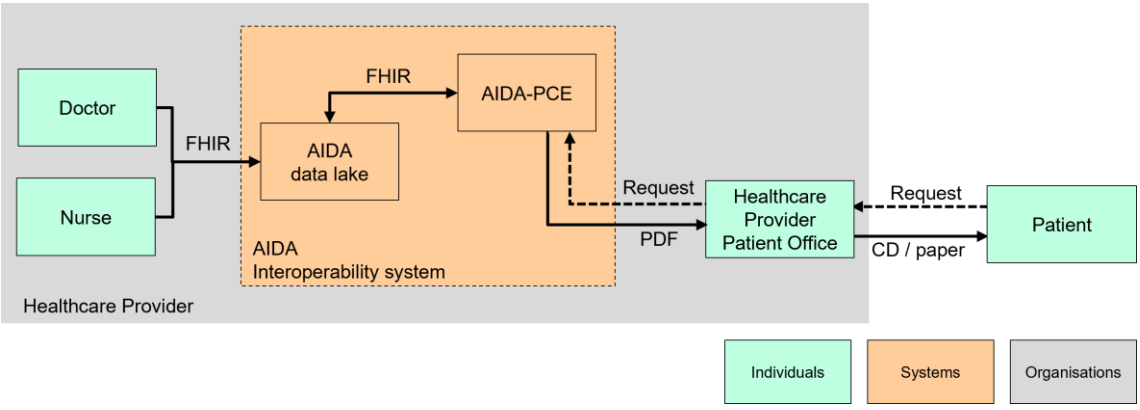

Figure 10 - X-Bubble 3: AS-IS scenario.

With the work developed in this bubble, the aim is to support hospital discharge reports consultation through the mobile app in structured and unstructured (PDF)

format. This will ensure continuity of care and empower patients to manage their health data effectively.

The envisaged scenario in this context is depicted in Figure 11. A new AIDA-EEHRxF module will be added to map the information according to the EEHRxF and made available to patients through the mobile app. With this new module, the AIDA platform is equipped with the ability to share this type of structured information in the EEHRxF with other systems in the future. Additionally, the same information is also provided in PDF format for easy reading and possible sharing with healthcare providers that are not yet prepared to receive data in the EEHRxF format.

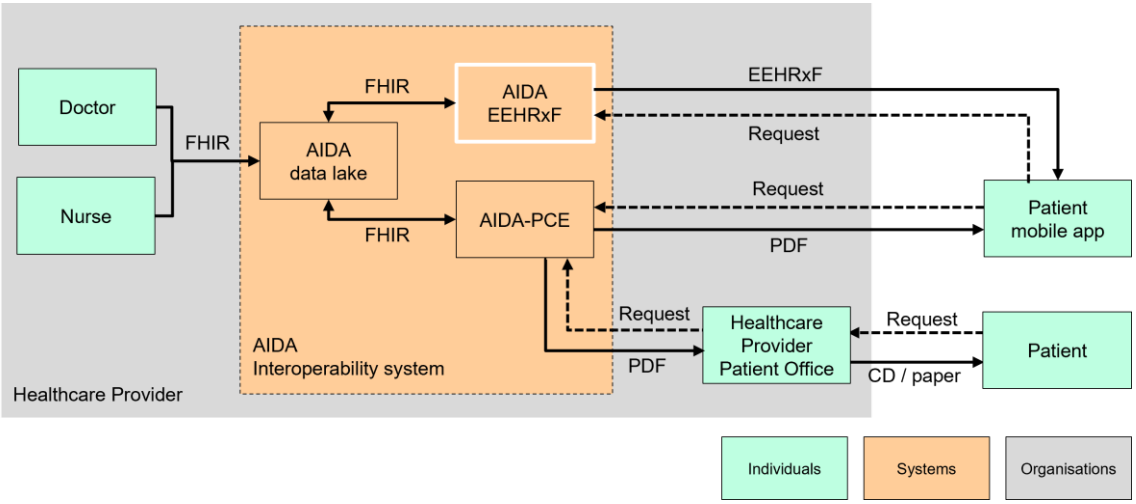

Figure 11 - X-Bubble 3: TO-BE scenario.

3.3.2 Demonstrator plan

Table 5 - X-Bubble 3: demonstrator plan.

Step	Description	Status
1	Select adoption domain and specify the use case: available in *D4.1 – (D4.1.1) XpanDH Adoption Domains (M6).*	Done
2	Analyse existing national hospital discharge report structure	Done
3	Define information requirements: define the specific datasets and code systems required for hospital discharge reports.	Done
4	Data transformation: developed the processes to mapping the hospital discharge reports from their existing format to the EEHRxF (AIDA-EEHRxF)	In progress
5	Interoperability: configure the interoperability between AIDA platform and mobile APP; configure and adapt the mobile APP.	Not feasible during the project
6	Functional and technical tests: perform internal tests to ensure the feasibility of the solution.	Not feasible during the project
7	Document lessons learned	In progress

3.3.3 Work developed

Since M6 until M21, the following tasks have been completed:

- Analysis of the national specifications provided by SPMS for structuring hospital discharge reports in FHIR.
- Reviewing the hospital discharge report eHN guideline. Identification of required and optional data fields, cardinalities, code systems and possible missing fields. Annex IV presents the result of this analysis. From this analysis, the need for one additional data field was identified.
- Progress in the data transformation process, specifically in mapping the hospital discharge reports from their existing format to the EEHRxF (AIDA-EEHRxF). The goal is to ensure that the hospital discharge reports adhere to the European standards for health data exchange. This task involves the analysis and adaptation of the current data structures, ensuring compliance with both national standards and the EEHRxF.

3.3.4 Results Discussion

In X-Bubble 3, the focus was on hospital discharge reports, specifically the structuring and sharing of these reports via a mobile application. While the AIDA platform provided a solid foundation for storing and managing structured data, the introduction of EEHRxF-compliant discharge reports required significant adjustments. The adjustments required to align the existing national discharge report structures with the EEHRxF format involved significant reworking of the underlying data models and exchange protocols. This process revealed several challenges, particularly concerning system interoperability between hospital information systems and external entities using the EEHRxF format. Key issues include:

- Discrepancies in Data Structures: The existing format of hospital discharge reports followed specific national standards, which did not directly align with the EEHRxF requirements, especially in how data fields were structured and coded.
- Interoperability Challenges: While mapping the existing data structure to EEHRxF was technically feasible, there were major difficulties in achieving seamless interoperability between different healthcare systems. These challenges stemmed from differences in national and European standards for health data exchange.
- Adjustments to Data Models: The AIDA platform required significant updates to its data models to support the more complex and detailed structure demanded by EEHRxF. This included updating the way patient discharge summaries, clinical details, and treatment plans were encoded to meet the new standard.

The results showed that while it was technically feasible to map the existing discharge report structure to EEHRxF, the lack of interoperability between systems presented a major challenge. The next steps involve enhancing the mobile app to support both structured and unstructured report formats and resolving national-specific integration issues.

The overview of the eHN guidelines analysis performed in X-bubble 3 is presented in Table 6, indicating the total number of data fields in each data group, indicating the number of required, optional and not required (considered not needed for the use case) data fields and the data availability in the system, indicating structured, unstructured and unavailable number of data fields.

Regarding data importance 102/249 of the data fields are required, 130/249 are optional and 14/249 are not required. Regarding data availability 22/249 of the data fields are not available and 80/249 are stored in a structured way in X-Bubble 3 system. Three specific data groups are not required: Information recipient, author and attester. In X-Bubble 3 only the legal authenticator is required and stored in the system concerning the person responsible for the hospital discharge report. In this X-Bubble 3, one missing data field was identified in discharge group: "Hospitalization outcome - Patient' discharge condition".

Table 6 - X-Bubble 3: eHN guidelines data groups analysis.

Data groups	N° data fields	Data Importance	Data Availability
A.1 Report header data elements			
A.1.1 Identification of the patient/subject	7	4 required 3 optional	1 structured 5 unstructured 1 unavailable
A.1.2 Patient/subject related contact information	15	4 required 11 optional	8 structured 4 unstructured 3 unavailable
A.1.3 Health insurance and payment information	3	3 optional	3 unstructured
A.1.4 Information recipient	7	7 not required	7 unavailable
A.1.5 Author	5	5 not required	5 unavailable
A.1.6 Attester	5	5 not required	5 unavailable
A.1.7 Legal authenticator	5	5 required	5 unstructured
A.1.8 Document metadata	9	9 required	3 structured 6 unstructured
A.2 Report body data elements			
A.2.0 Narrative form	1	1 required	1 unstructured
A.2.1 Advance directives			
A.2.1.1 Living will	5	5 optional	2 structured 3 unstructured
A.2.2 Alerts			
A.2.2.1 Allergy and Intolerance	10	4 required 6 optional	6 structured 4 unstructured
A.2.2.2 Medical alerts	1	1 required	1 structured
A.2.3 Encounter	2	2 required	2 unstructured
A.2.3.3 Admission	11	11 required	2 structured 9 unstructured

A.2.3.4 Admission reason	3	2 required 1 optional	2 structured 1 unstructured
A.2.3.5 Discharge	3	3 required	1 structured 2 unstructured
A.2.3.6 Location	4	4 required	1 structured 3 unstructured
A.2.4 Admission evaluation			
A.2.4.1 Objective findings	7	1 required 6 optional	3 structured 4 unstructured
A.2.4.2 Functional status	5	5 optional	5 unstructured
A.2.6 Patient history			
A.2.6.1 Medical history	35	35 optional	24 structured 11 unstructured
A.2.6.2 Family history	5	5 optional	3 structured 2 unstructured
A.2.6.3 Social determinants of health	15	15 optional	6 structured 8 unstructured 1 unavailable
A.2.6.4 Use of substances	11	11 optional	3 structured 8 unstructured
A.2.7 Course of hospitalisation			
A.2.7.1 Diagnostic summary	10	5 required 5 optional	3 structured 7 unstructured
A.2.7.2 Significant procedures	8	6 required 2 optional	4 structured 4 unstructured
A.2.7.3 Medical devices and implants	5	4 required 1 optional	2 structured 3 unstructured
A.2.7.5 Pharmacotherapy	10	10 required	1 structured 9 unstructured
A.2.7.6 Significant observation results	6	5 required 1 optional	2 structured 4 unstructured
A.2.7.7 Synthesis	2	2 required	2 unstructured
A.2.8 Discharge details			
A.2.8.1 Objective findings	8	5 required 3 optional	1 structured 7 unstructured
A.2.8.2 Functional status	5	1 required 4 optional	5 unstructured
A.2.8.3 Discharge note	1	1 optional	1 unstructured
A.2.9 Care plan and other recommendations after discharge			
A.2.9.1 Care plan	8	1 required 7 optional	1 structured 7 unstructured
A.2.9.2 Medication summary	11	11 required	11 unstructured
A.2.9.3 Other recommendations	1	1 required	1 unstructured
Total	249	102 required 130 optional 17 not required	80 structured 147 unstructured 22 unavailable

3.3.5 Challenges and barriers

Given that it is the same organization, and the same interoperability system is being used, the challenges are the same as those described in 3.2.5 of X-Bubble 2.

3.4 X-Bubble 4 and 5

Partner leading the experiment: KETEKNY - Greek DRG Institute.

Adoption Domain: Hospital Discharge Report Organisations to National Authority to Organisations.

X-Bubble 4 focuses on gathering clinical and administrative information into a single document that summarizes all discharge information for a patient and sending it to the national authority as a hospital discharge report. On the other hand, Bubble 5 complements Bubble 4 by forwarding the hospital discharge report between the national authority and the organization, adding additional information generated by the DRG system. In this scenario, it makes sense to keep these two bubbles together in the same demonstrator. The main objective, in terms of health data information exchange, is to pilot the use of hospital discharge report including DRG data:

- 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,
- to contribute to the validation and cross-check of structured and coded information on patient administrative and clinical data (as defined in the Greek DRG-Dataset),
- 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.

3.4.1 Scenarios

Prior to the introduction of the new Greek DRG system, data in relation with Hospital EHRs, were collected via various methods (majority not in a coded or standard structured manner). Currently, under the new Greek DRG Grouper Platform, operated by KETEKNY, data are transmitted to hospitals using proprietary XML/JSON files and are not directly interconnected with the official discharge forms (Figure 12). Hospitals provide patients with two other official discharge forms: the Administrative Discharge Report and the Medical Discharge Reports/Letters.

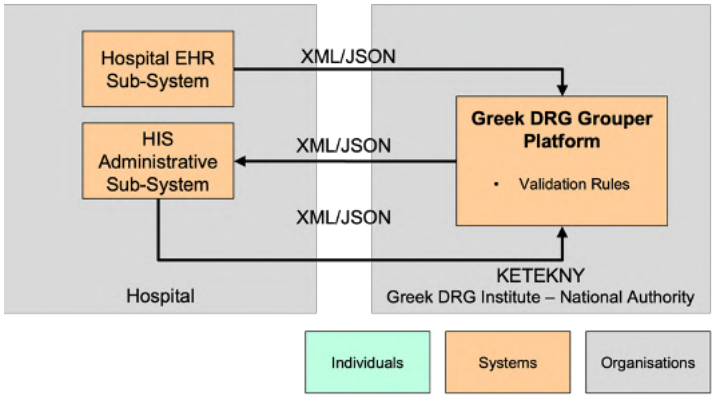

Figure 12 - X-Bubble 4 and 5: AS-IS scenario.

With the work developed in these bubbles, the ultimate aim was the 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.

The envisaged scenario in this context is depicted in Figure 13. The Greek DRG Grouper Platform, by utilizing the EEHRxF Interoperability Engine, will have the capability to receive and send hospital discharge reports containing all the relevant information for the DRG system using the EEHRxF. Hospital EHR systems will also need to adapt to create a unified document with all the information and structure it according to the EEHRxF (possibly i.e. Hospital EHR systems will be enhanced with additional modules to interface seamlessly with the EEHRxF, ensuring that existing workflows are augmented rather than replaced, to create a unified document that aligns with the required information structure). The Greek DRG Platform is supposed to function as a national repository, allowing it to provide discharge data in the case of care transition (such as patient transfer) to ensure continuity of care.

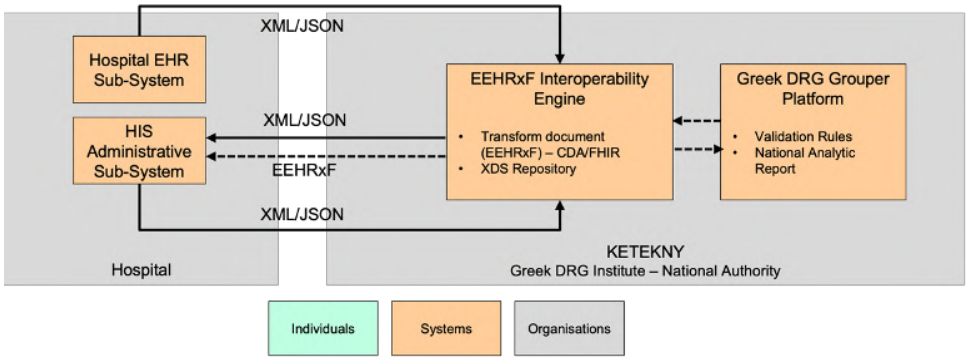

Figure 13 - X-Bubble 4 and 5: TO-BE scenario.

3.4.2 Demonstrator plan

Table 7 - X-Bubble 4&5: demonstrator plan.

Step	Description	Status
1	Select adoption domain and specify the use case: available in D4.1 – *(D4.1.1) XpanDH Adoption Domains (M6).*	Done
2	Analyse existing national hospital discharge report structure and validation rules.	Done
3	Define information requirements: define the specific datasets and value sets required for hospital discharge reports satisfying the DRG.	Done
4	Perform a mapping exercise on existing format vs desired EEHRxF data fields of discharge report from two HIS vendors.	Done
5	Conduct experimentation, depending on the availability of final relevant technical specifications (otherwise not feasible during the project)	To Do
6	Document lessons learned.	In progress

3.4.3 Work developed

Since M6 until M21, the following tasks have been completed:

- Involvement of healthcare providers that are onboard to participate in the demonstrator.
- Analyse the existing national hospital discharge report structure and validation rules, providing a list of important datasets for DRG operation.
- Reviewing the hospital discharge report eHN guideline. Identification of required and optional data fields and possible missing fields. Two HIS vendors got on board to participate as early adopters, by providing feedback about the data availability in their systems regarding the identified required data fields. In annex V, the status of this analysis is presented. From this analysis, the need for 2 additional data fields was identified for this use case, and some necessary value sets were indicated in the Greek context.

3.4.4 Results Discussion

Although no massive or even pilot of real data exchange has been performed until now (due to challenges concerning final specifications, regulatory issues, etc.), several benefits were obtained by work done in the field of X-Bubbles 4 and 5, as for achieving the goal of feasibility.

One of our primary lessons learned was the need for a detailed appropriate standardization and homogeneity of HDR format and structure, in order to reach a significantly high level of interoperability in healthcare data transfer in the domain of HDR.

The results achieved contained the conduction of a detailed analysis and mapping of existing HDR structures, as well as a thorough review of the hospital discharge report eHN guidelines (overview presented in Table 8). Furthermore, identification of all required and optional data fields and of relevant coding systems was performed, and a proposal was formulated for additional fields to be implemented, due to the special needs within the Greek context (DRG-relevant fields).

In particular, a sample of two HIS vendors were onboarded to participate as early adopters in this project. Their role was to provide feedback relevant to the eHN guidelines data groups analysis, as per XpanDH project's implementation. The vendors initially examined 161 parameters deemed "required" for achieving interoperability within healthcare systems. These parameters were assessed based on their usage, availability, and alignment with relevant coding systems. While a significant portion of the 161 parameters has already been implemented, either fully or partially, they were mostly available in a descriptive and, in many cases, inadequately encoded according to international standards.

Out of the 161 parameters analysed by the two HIS vendors, 75 parameters have been fully realized in both systems, and an additional 58 have been partially implemented, demonstrating a positive trend towards compliance. However, the fact that 28 parameters remain unimplemented indicates that further efforts are needed to ensure full compliance and facilitate seamless data exchange.

As a result from this analysis, in this X-Bubbles 4 and 5, two missing data fields were identified in admission group: "Admitting weight - Weight on admission (to be completed for patients age less than 1 year)"; and discharge group: "Hospitalization outcome - Patient' discharge condition". Regarding the required value sets in the context of X-Bubbles 4 and 5 concrete lists were defined for some data fields, such as Admission urgency, Admit source, Discharge destination type and Hospitalization outcome.

Finally, it should be mentioned that input from other HIS vendors is essential for a more comprehensive approach to be obtained in the future, especially when specifications are finalized (beyond project).

As for our recommendations, we concluded that, in order to generate a unified document, which will be properly structured and adequately completed, incorporating all necessary information, according to the EEHRxF we should insist on implementing:

- a detailed appropriate standardization and homogeneity of HDR format and structure, and
- a proper adaptation of existing Hospital EHR systems.

Table 8 - X-Bubble 4&5: eHN guidelines data groups analysis.

Data groups	N° data fields	Data Importance	Data Availability
A.1 Report header data elements			
A.1.1 Identification of the patient/subject	7	7 required	5 structured 2 unstructured
A.1.2 Patient/subject related contact information	15	6 required 9 optional	3 structured 3 unstructured 9 n/a
A.1.3 Health insurance and payment information	3	3 required	2 structured 1 unstructured
A.1.4 Information recipient	7	7 optional	7 n/a
A.1.5 Author	5	5 required	3 structured 2 unstructured
A.1.6 Attester	5	5 optional	5 n/a
A.1.7 Legal authenticator	5	5 optional	5 n/a
A.1.8 Document metadata	9	8 required 1 optional	6 structured 2 unstructured 1 n/a
A.2 Report body data elements			
A.2.0 Narrative form	1	1 required	1 unstructured
A.2.1 Advance directives			
A.2.1.1 Living will	5	5 optional	1 structured 4 n/a
A.2.2 Alerts			
A.2.2.1 Allergy and Intolerance	10	5 required 5 optional	3 unstructured 2 unavailable 5 n/a
A.2.2.2 Medical alerts	1	1 required	1 unstructured
A.2.3 Encounter	2	2 required	1 structured 1 unstructured
A.2.3.3 Admission	11	11 required	4 structured 7 unstructured
A.2.3.4 Admission reason	3	2 required 1 optional	1 structured 1 unstructured 1 n/a
A.2.3.5 Discharge	3	3 required	2 structured 1 unstructured
A.2.3.6 Location	4	4 required	4 unstructured
A.2.4 Admission evaluation			
A.2.4.1 Objective findings	7	7 required	1 structured 6 unstructured
A.2.4.2 Functional status	5	2 required 3 optional	1 structured 1 unstructured 3 n/a
A.2.6 Patient history			
A.2.6.1 Medical history	35	26 required 9 optional	10 structured 7 structured 9 unavailable 9 n/a
A.2.6.2 Family history	5	3 required 2 optional	2 structured 1 unstructured 2 n/a
A.2.6.3 Social determinants of health	15	15 optional	15 n/a
A.2.6.4 Use of substances	11	8 required 3 optional	5 unstructured 3 unavailable 3 n/a

A.2.7 Course of hospitalisation			
A.2.7.1 Diagnostic summary	10	7 required 3 optional	2 structured 5 unstructured 3 n/a
A.2.7.2 Significant procedures	8	6 required 2 optional	4 structured 2 unstructured 2 n/a
A.2.7.3 Medical devices and implants	5	4 required 1 optional	3 structured 1 unavailable 1 n/a
A.2.7.5 Pharmacotherapy	10	9 required 1 optional	6 structured 3 unstructured 1 n/a
A.2.7.6 Significant observation results	6	4 required 2 optional	1 structured 3 unstructured 2 n/a
A.2.7.7 Synthesis	2	2 required	1 unstructured 1 unavailable
A.2.8 Discharge details			
A.2.8.1 Objective findings	8	5 required 3 optional	1 unstructured 4 unavailable 3 n/a
A.2.8.2 Functional status	5	4 required 1 optional	4 unavailable 1 n/a
A.2.8.3 Discharge note	1	1 required	1 unstructured
A.2.9 Care plan and other recommendations after discharge			
A.2.9.1 Care plan	8	4 required 4 optional	1 structured 3 unavailable 4 n/a
A.2.9.2 Medication summary	11	9 required 2 optional	2 structured 6 unstructured 1 unavailable 2 n/a
A.2.9.3 Other recommendations	1	1 required	1 unstructured
Total	249	166 required 83 optional 0 not required	61 structured 72 unstructured 28 unavailable 88 n/a

3.4.5 Challenges and barriers

For the implementation of a demonstrator, the availability of final technical specifications is necessary, otherwise this could pose a significant barrier to the experimentation part from KETEKNY, in collaboration with GNOMON. Legal and regulatory issues, relevant mainly to exchange of data and interoperability process, to be addressed is often quite challenging.

3.5 X-Bubble 6

Partner leading the experiment: NCZI

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

X-Bubble 6 is focused on transmitting relevant data from the hospital discharge report from Slovakia (stored in the Slovak national health information system) to other country displaying them in the destination doctor's information system. For the feasibility scenario the destination country is Hungary. By piloting this X-Bubble, the intention is 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.

It is important to note that the existing legislation and technical infrastructure do not currently support such cross-border exchanges. The output of this X-Bubble 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 (Slovakia side) and exploitation of the potential solutions and challenges associated with cross-border document exchange of this kind.

3.5.1 Scenarios

In the current situation (Figure 14) cross-border exchange between Slovakia and Hungary is not possible. Internally in Slovakia, the ISO 13606 standard is used for hospital discharge report exchange, while in Hungary, this data is exchanged in an unstructured format (PDF).

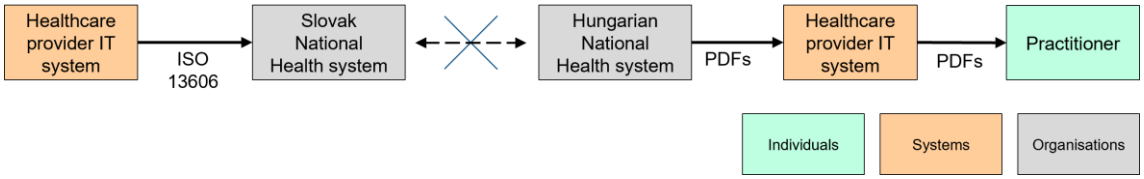

Figure 14 - X-Bubble 6: AS-IS scenario.

With the work developed in this bubble, 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.

Two scenarios are envisaged in this context, one in the short term (Figure 15) and the other in the long term (Figure 16). Considering Slovakia's capability to exchange structured data using ISO 13606 and Hungary's using proprietary XML, in the short term, these standards will continue to be used internally in both countries. The NCPeH will be responsible for mapping the hospital discharge report to the EEHRxF.

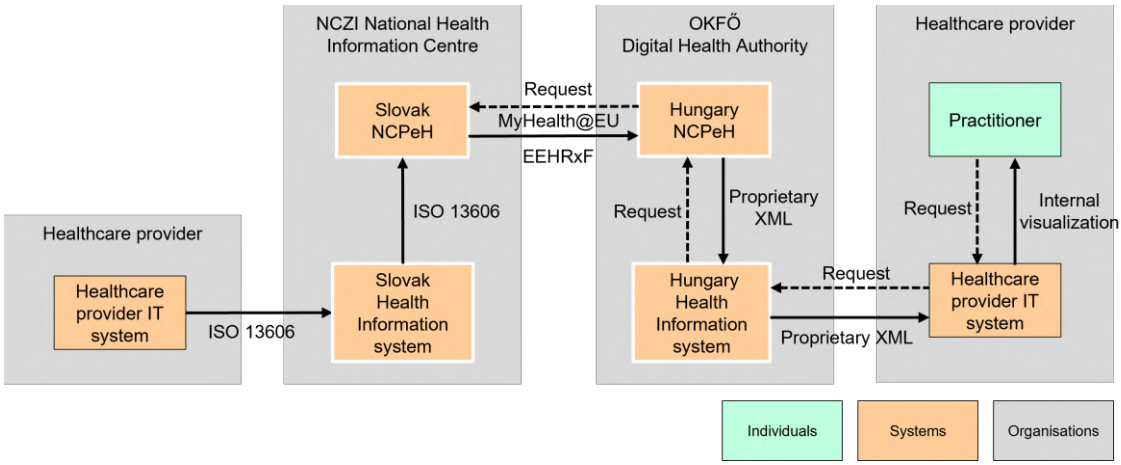

Figure 15 – X-Bubble 6: TO-BE scenario – short term.

In the long term, the goal is to progressively transition from the ISO 13606 and proprietary XML format to the EEHRxF, and also to use it internally in countries. It is recognized that during the transitional period, both formats may coexist simultaneously until all healthcare providers complete the full transition.

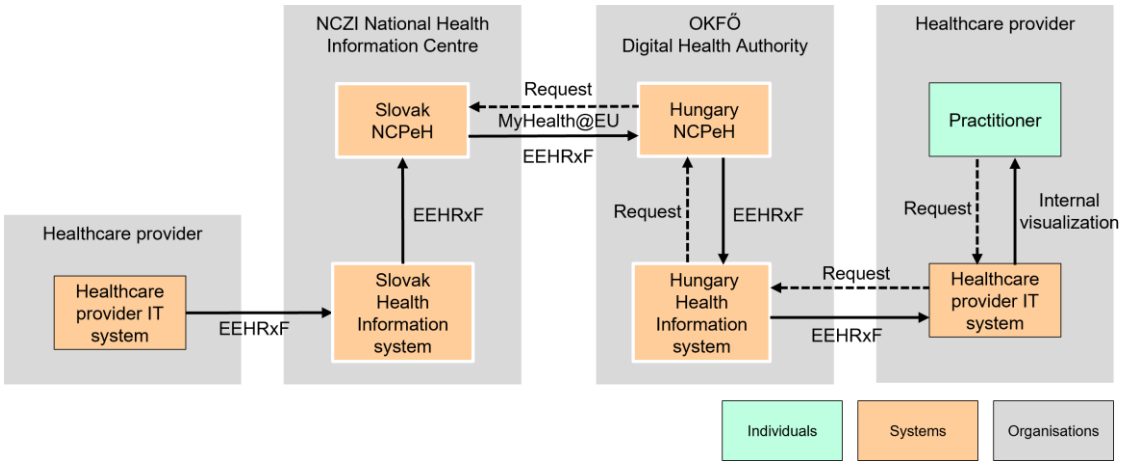

Figure 16 – X-Bubble 6: TO-BE scenario – long term.

3.5.2 Demonstrator plan

Table 9 – X-Bubble 6: demonstrator plan.

Step	Description	Status
1	Select adoption domain and specify the use case: available in *D4.1 – (D4.1.1) XpanDH Adoption Domains (M6).*	Done
2	Define information requirements: define the specific datasets and value sets required for hospital discharge reports.	Done

3	Data transformation and formatting: developed the processes to mapping the hospital discharge reports from their existing format to the EEHRxF.	Not feasible during the project
4	Implement the NCPeHs as a secure and data exchange mechanism.	Not feasible during the project
5	Functional and technical tests: perform internal tests to ensure the feasibility of the solution.	Not feasible during the project
6	Evaluate Feasibility and Effectiveness	Not feasible during the project
7	Document lessons learned	In progress

3.5.3 Work developed

Since M6 until M21, the following tasks have been completed:

- Reviewing the hospital discharge report eHN guideline. Identification of required and optional data fields, cardinalities, code systems and possible missing fields. In annex VI, the status of this analysis from Slovakia side is presented. From this analysis, the need for 2 additional data fields was identified for this use case.
- Providing concrete examples for all relevant fields.

3.5.4 Results Discussion

NCZI has already initiated a project to implement NCPeH in Slovakia. This project, planned from October 2023 to September 2026, focuses on implementing cross-border exchange services for Patient Summaries and ePrescription/eDispensation, but not yet for Hospital Discharge Reports. The cross-border service for Hospital Discharge Reports will be the subject of a future project to meet EHDS requirements.

The outcomes of the XpanDH project will support Slovakia in implementing changes to the current national Hospital Discharge Report solution, ensuring that interim changes align with EHDS requirements and comply with the EEHRxF framework until the long-term implementation is completed.

The overview of the eHN guidelines analysis performed in X-bubbles 6 is presented in Table 10, indicating the total number of data fields in each data group, the number of required, optional and not required (considered not needed for the use case) data fields and the data availability in the actual system, indicating structured, unstructured and unavailable number of data fields.

Regarding data importance 29/249 of the data fields are required, 44/249 are optional and 176/249 are not required. Regarding data availability 156/249 of the data fields are not available and 44/249 are stored in a structured way in Slovakia system.

A large number of data fields are not available in current system, and a large number of them are also considered not necessary in this context. In this X-Bubbles 6, two missing data fields were identified in preferred health professional group: "ID organisation - code of HP organization"; "ID department - code of department in the HP organization".

Table 10 - X-Bubble 6: eHN guidelines data groups analysis.

Data groups	N° data fields	Data Importance	Data Availability
A.1 Report header data elements			
A.1.1 Identification of the patient/subject	7	2 required 5 optional	3 structured 4 unavailable
A.1.2 Patient/subject related contact information	15	4 required 11 optional	5 structured 8 unstructured 2 unavailable
A.1.3 Health insurance and payment information	3	3 required	3 structured
A.1.4 Information recipient	7	7 not required	7 unavailable
A.1.5 Author	5	5 required	3 structured 2 unstructured
A.1.6 Attester	5	5 not required	5 unavailable
A.1.7 Legal authenticator	5	5 not required	5 unavailable
A.1.8 Document metadata	9	9 not required	8 structured 1 unavailable
A.2 Report body data elements			
A.2.0 Narrative form	1	1 required	1 unstructured
A.2.1 Advance directives			
A.2.1.1 Living will	5	5 not required	5 unavailable
A.2.2 Alerts			
A.2.2.1 Allergy and Intolerance	10	5 optional 5 not required	1 structured 3 unstructured 6 unavailable
A.2.2.2 Medical alerts	1	1 optional	1 unstructured
A.2.3 Encounter	2	2 not required	1 unstructured 1 unavailable
A.2.3.3 Admission	11	7 required 4 not required	5 structured 6 unstructured
A.2.3.4 Admission reason	3	3 required	1 structured 1 unstructured 1 unavailable
A.2.3.5 Discharge	3	1 required 2 not required	1 structured 1 unavailable
A.2.3.6 Location	4	4 not required	4 unavailable
A.2.4 Admission evaluation			
A.2.4.1 Objective findings	7	2 required 5 not required	1 structured 4 unstructured 2 unavailable
A.2.4.2 Functional status	5	5 not required	5 unavailable
A.2.6 Patient history			
A.2.6.1 Medical history	35	7 optional 28 not required	5 structured 2 unstructured 28 unavailable
A.2.6.2 Family history	5	5 not required	5 unavailable
A.2.6.3 Social determinants of health	15	15 not required	1 structured 14 unavailable

A.2.6.4 Use of substances	11	11 not required	11 unavailable
A.2.7 Course of hospitalisation			
A.2.7.1 Diagnostic summary	10	1 required 9 not required	4 structured 5 unstructured 1 unavailable
A.2.7.2 Significant procedures	8	8 not required	8 unavailable
A.2.7.3 Medical devices and implants	5	5 not required	3 structured 1 unstructured 1 unavailable
A.2.7.5 Pharmacotherapy	10	10 not required	10 unstructured
A.2.7.6 Significant observation results	6	6 not required	6 unavailable
A.2.7.7 Synthesis	2	2 not required	2 unavailable
A.2.8 Discharge details			
A.2.8.1 Objective findings	8	2 optional 6 not required	8 unavailable
A.2.8.2 Functional status	5	1 optional 4 not required	5 unavailable
A.2.8.3 Discharge note	1	1 optional	1 unstructured
A.2.9 Care plan and other recommendations after discharge			
A.2.9.1 Care plan	8	1 optional 7 not required	3 unstructured 5 unavailable
A.2.9.2 Medication summary	11	10 optional 1 not required	11 unavailable
A.2.9.3 Other recommendations	1	1 optional	1 unavailable
Total	249	29 required 44 optional 176 not required	44 structured 49 unstructured 156 unavailable

3.5.5 Challenges and barriers

- Technical infrastructure challenges

Although NCZI is committed to aligning the Hospital Discharge Reports with EHDS requirements, lack of technical infrastructure in both countries currently limits the full implementation of the cross-border exchange. NCZI's existing infrastructure, based on ISO 13606 must align with the EEHRxF and the challenge lies in building the necessary translation/transformation mechanisms.

- Regulatory barriers

There are legal and policy challenges in implementing cross-border document exchange, as current Slovak legislation doesn't allow this kind of services.

3.6 Format support maturity model

Table 11 presents the format support maturity model provided by EC as ongoing work. Given the lack of final specifications for the EEHRxF, to apply this model we need to make some assumptions:

- Data structurisation:
  - We consider aligned with the format the structured provided by the eHN guidelines.
  - We consider "must support" fields that one's indicated as "Required" by X-Bubble.
- Data coding/values:
  - We considered "format-compliant" the preferred code system of the eHN guidelines.

Table 11 – Format Support Maturity model

Semantic domain				Technical domain	
Data structurisation		**Data coding/values**		**Technical interface (API)**	
sE	Non-structured data only (original clinical documents)	**cE**	No coding of data	**tD**	No API available
sD	Data structures not aligned with the format but can be partially converted into it	**cD**	Proprietary or other non-compliant coding of data that can be partially converted into format-compliant	**tC**	An API is available, but not compatible with format-supported technology
sC	Supports all "must support" fields	**cC**	Proprietary or other non-compliant coding of data that can be fully converted into format-compliant	**tB**	Broadly format-compliant API with limitations that affect the access to or acceptance of data
sB	Supports more than 80% of fields	**cB**	Supports all mandatory coding requirements	**tA**	Fully format-compliant API
sA	Full conformity	**cA**	Full conformity with all mandatory and recommended code systems and value sets		

Table 12 presents the application of the format support maturity model to the X-Bubbles. Regarding data structurisation, all X-Bubbles have their internal structures for health data exchange, which largely allow the conversion to the format. Specifically, X-Bubbles 2 and 3 already widely use FHIR for national reasons, which allows them to be more aligned. In relation to data coding/values, all X-Bubbles have the same maturity level, due to the need to use some national codes regarding order systems, DRG systems, among others. Finally, in the technical domain, all X-Bubbles

allow the exchange of health data through APIs, with the exception of bubble 6 where NCPeH are not yet implemented.

Table 12 – X-Bubbles Format Support Maturity model

X-Bubble	s	c	t
1	D	D	C
2	C	D	C
3	C	D	C
4&5	D	D	C
6	D	D	D

4 Final remarks

In this document it is possible to identify and understand the XpanDH feasibility demonstrators responsible for experimentation around the EEHRxF. The strategy employed to advance the demonstrators is presented with the objective of outlining a common framework for the progression of the X-bubbles and expected outcomes.

These demonstrators encompass two priority categories, Laboratory Reports and Hospital Discharge Reports, across six X-Bubbles. For each demonstrator, AS-IS and TO-BE scenarios are presented with associated actors and flows, as well as the demonstrator's plan, work developed and achieved results. Considering the gradual manner in which some X-Bubbles plan the transition to the EEHRxF, in some cases, short-term and long-term scenarios are presented, demonstrating the complexity and alignment necessary for this transition. Furthermore, the analysis of eHN guidelines for each domain is used as a basis for a common understanding of the format, allowing verification of alignment levels and convergence needs. Finally, a format maturity model was applied to the X-Bubbles, allowing us to check in what stage they are and the path they need to take to achieve the full implementation of the EEHRxF.

As next steps, the lessons learned taken from the feasibility demostrators will continue to be compiled and will be presented in *D4.4 – (D4.3) X-Bundle refinement Report (M24)*.

Annex I – X-Bubble 1 Hungarian Laboratory Codes for Diabetes

Hungarian laboratory result code	Short code	Unit	UCUM code	Codable concept	LOINC Code	LOINC name	Hungarian procedure code
LE-56	ALBU	g/L	g/L		1751-7	Albumin [Mass/volume] in Serum or Plasma	21040
LE-72	ALBU	g/L	g/L		2862-1	Albumin [Mass/volume] in Serum or Plasma by Electrophoresis	21042
LE-66	ALBS	%	%		13980-8	Albumin/Protein.total in Serum or Plasma by Electrophoresis	21042
LE-47	AP	U/L	U/L		6768-6	Alkaline phosphatase [Enzymatic activity/volume] in Serum or Plasma	24720
LE-300		umol/L OR: negative	umol/L	{negative}	68367-2	Bilirubin.total [Moles/volume] in Urine by Automated test strip	22550
LE-143	DBIL	umol/L	umol/L		14629-0	Bilirubin.direct [Moles/volume] in Serum or Plasma	21151
LE-170	EGFR	mL/min/1.73m2			62238-1	Glomerular filtration rate/1.73 sq M.predicted [Volume Rate/Area] in Serum, Plasma or Blood by Creatinine-based formula (CKD-EPI)	
LE-46	GGTL	U/L	U/L		2324-2	Gamma glutamyl transferase [Enzymatic activity/volume] in Serum or Plasma	24640
LE-144	GLU	mmol/L	mmol/L		14749-6	Glucose [Moles/volume] in Serum or Plasma	21310
LE-133	PGLC	mmol/L	mmol/L		14771-0	Fasting glucose [Moles/volume] in Serum or Plasma	21310
LE-304		mmol/L	mmol/L		59156-0	Glucose [Moles/volume] in Urine by Automated test strip	22550
LE-145	GLCPRE	mmol/L	mmol/L		40193-5	Glucose [Moles/volume] in Serum or Plasma --pre-meal	21310
LE-146	GLCPOST	mmol/L	mmol/L		53094-9	Glucose [Moles/volume] in Serum or Plasma --post meal	21310

LE-157	GLCPREINZ	mmol/L	mmol/L		54257-1	Glucose [Moles/volume] in Serum or Plasma --pre dose insulin IV	21310
LE-163	GLCINZ120	mmol/L	mmol/L		54258-9	Glucose [Moles/volume] in Serum or Plasma --2 hours post dose insulin IV	21310
LE-158	GLCINZ15	mmol/L	mmol/L		54260-5	Glucose [Moles/volume] in Serum or Plasma --15 minutes post dose insulin IV	21310
LE-159	GLCINZ30	mmol/L	mmol/L		54263-9	Glucose [Moles/volume] in Serum or Plasma --30 minutes post dose insulin IV	21310
LE-160	GLCINZ45	mmol/L	mmol/L		54264-7	Glucose [Moles/volume] in Serum or Plasma --45 minutes post dose insulin IV	21310
LE-161	GLCINZ60	mmol/L	mmol/L		54265-4	Glucose [Moles/volume] in Serum or Plasma --1 hour post dose insulin IV	21310
LE-162	GLCINZ90	mmol/L	mmol/L		54267-0	Glucose [Moles/volume] in Serum or Plasma --1.5 hours post dose insulin IV	21310
LE-147	GLC0	mmol/L	mmol/L		14996-3	Glucose [Moles/volume] in Serum or Plasma --pre 75 g glucose PO	21310
LE-151	GLC120	mmol/L	mmol/L		14995-5	Glucose [Moles/volume] in Serum or Plasma --2 hours post 75 g glucose PO	21310
LE-152	GLC3H	mmol/L	mmol/L		32320-4	Glucose [Moles/volume] in Serum or Plasma --3 hours post 75 g glucose PO	21310
LE-148	GLC30	mmol/L	mmol/L		32319-6	Glucose [Moles/volume] in Serum or Plasma --30 minutes post 75 g glucose PO	21310
LE-153	GLC4H	mmol/L	mmol/L		32321-2	Glucose [Moles/volume] in Serum or Plasma --4 hours post 75 g glucose PO	21310
LE-154	GLC5H	mmol/L	mmol/L		32322-0	Glucose [Moles/volume] in Serum or Plasma --5 hours post 75 g glucose PO	21310
LE-149	GLC60	mmol/L	mmol/L		51597-3	Glucose [Moles/volume] in Serum or Plasma --1 hour post 75 g glucose PO	21310
LE-150	GLC90	mmol/L	mmol/L		55351-1	Glucose [Moles/volume] in Serum or Plasma --1.5 hours post 75 g glucose PO	21310
LE-43	GOT	U/L	U/L		1920-8	Aspartate aminotransferase [Enzymatic activity/volume] in Serum or Plasma	24600

LE-44	GPT	U/L	U/L		1742-6	Alanine aminotransferase [Enzymatic activity/volume] in Serum or Plasma	24610
LE-140	HDL	mmol/L	mmol/L		14646-4	Cholesterol in HDL [Moles/volume] in Serum or Plasma	2142A
LE-171	HBACL	mmol/mol	mmol/mol		59261-8	Hemoglobin A1c/Hemoglobin.total in Blood by IFCC protocol	28494
LE-172	HBA1CL	%	%		17856-6	Hemoglobin A1c/Hemoglobin.total in Blood by HPLC	28494
LE-87	INZ	uU/mL	u[IU]/mL		20448-7	Insulin [Units/volume] in Serum or Plasma	23310
LE-93	INZ120	uU/mL	u[IU]/mL		27860-6	Insulin [Units/volume] in Serum or Plasma --2 hours post 75 g glucose PO	23310
LE-94	INZ180	uU/mL	u[IU]/mL		27861-4	Insulin [Units/volume] in Serum or Plasma --3 hours post 75 g glucose PO	23310
LE-95	INZ240	uU/mL	u[IU]/mL		27862-2	Insulin [Units/volume] in Serum or Plasma --4 hours post 75 g glucose PO	23310
LE-90	INZ30	uU/mL	u[IU]/mL		30362-8	Insulin [Units/volume] in Serum or Plasma --30 minutes post 75 g glucose PO	23310
LE-91	INZ60	uU/mL	u[IU]/mL		27830-9	Insulin [Units/volume] in Serum or Plasma --1 hour post 75 g glucose PO	23310
LE-92	INZ90	uU/mL	u[IU]/mL		27834-1	Insulin [Units/volume] in Serum or Plasma --1.5 hours post 75 g glucose PO	23310
LE-89	INZFA	uU/mL	u[IU]/mL		47668-9	Insulin [Units/volume] in Serum or Plasma --pre dose glucose	23310
LE-88	INZPREGL	uU/mL	u[IU]/mL		47669-7	Insulin [Units/volume] in Serum or Plasma --pre dose glucagon	23310
LE-136	CREA	umol/L	umol/L		14682-9	Creatinine [Moles/volume] in Serum or Plasma	21141
LE-45	LDH	U/L	U/L		14805-6	Lactate dehydrogenase [Enzymatic activity/volume] in Serum or Plasma by Pyruvate to lactate reaction	24500
LE-141	LDLK	mmol/L	mmol/L		69419-0	Cholesterol in LDL [Moles/volume] in Serum or Plasma by Direct assay	21422
LE-142	BIL	umol/L	umol/L		14631-6	Bilirubin.total [Moles/volume] in Serum or Plasma	21150
LE-55	OFEH	g/L	g/L		2885-2	Protein [Mass/volume] in Serum or Plasma	21020
LE-138	CHOL	mmol/L	mmol/L		14647-2	Cholesterol [Moles/volume] in Serum or Plasma	21420

LE-21	PTIDO	sec	s		5902-2	Prothrombin time (PT)	28620
LE-22	PTR	sec/sec	s/s		5894-1	Prothrombin time (PT) actual/Normal	28620
LE-24	PTKEV	sec	s		5901-4	Prothrombin time (PT) in Control Platelet poor plasma by Coagulation assay	28620
LE-25	PTB+K	sec	s		5959-2	Prothrombin time (PT) factor substitution in Platelet poor plasma by Coagulation assay --immediately after addition of normal plasma	28620
LE-139	TG	mmol/L	mmol/L		14927-8	Triglyceride [Moles/volume] in Serum or Plasma	21411
LE-322	UCRE	umol/L	umol/L		14683-7	Creatinine [Moles/volume] in Urine	22111
LE-323	UCREGY	umol/L	umol/L		55593-8	Creatinine [Moles/volume] in Urine collected for unspecified duration	22111
LE-338	UMALB	mg/L	mg/L		14957-5	Microalbumin [Mass/volume] in Urine	22042
LE-339	UMALB	mg/L	mg/L		100158-5	Microalbumin [Mass/volume] in Urine collected for unspecified duration	22042

Annex II – X-Bubble 1 eHN guidelines analysis

#	Field	Field description	Preferred Code System	Organisation to Organisation - bubble 1 - OKFO					
				Required Optional Not required	Cardinality	Have this information available? (Y)es (N)o (S)tructured	Code System	Value Sets	Comments
A.1 Report header data elements									
A.1.1 Identification of the patient/subject									
A.1.1.1	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.		Required	1	Y			Name may not be available in structured format
A.1.1.2	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.		Optional	0..*	N			
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.	Complete date, without time, following the ISO 8601	Required	1	S	N/A		
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.		Required	1	S	type of identifier is proprietary code system issued by Health Insurance Fund		typically SSN is used
A.1.1.5	Gender	This field must contain a recognised valid value for "administrative gender". If different, "physiological gender" should be communicated elsewhere.	HL7 Administrative Gender	Required	1	S	proprietary code system issued by Health Insurance Fund	0 Male, 1 Female, 9 unknown	
A.1.2 Patient/subject related contact information									
A.1.2.1	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	ISO 3166	Optional	0..1	N			

		attribute is not present it is assumed to be the default address useful for any purpose.							
A.1.2.2	Telecom	Telecommunication contact information (addresses) associated to a person. Multiple telecommunication addresses might be provided.		Optional	0..*	N			
A.1.3 Health insurance and payment information									
A.1.3.1	Health insurance 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.		Optional	0..1	N			SSN is used for patient identification. Private health insurance information is not transmitted to EESZT
A.1.3.1.1	Health insurance code	Unique health insurance company identification code.		Optional	0..1	N			
A.1.3.1.2	Health insurance name	Full, official name of the healthcare insurance provider.		Optional	0..1	N			
A.1.3.1.3	Health insurance number	Number or code under which the insured person is registered at the insurance provider.		Optional	0..1	N			
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), if applicable									
A.1.4.1	Recipient 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. In case when recipient is not a health professional, e.g. patient, appropriate personal identifier should be used.		Not Required		N			Lab report is sent as any other kind of medical document to the EESZT and later can be retrived by any HCP treating the patient, however data governance rules set by the patient govern the access.
A.1.4.2	Recipient name	Person name.		Not Required		N			

A.1.4.3	Recipient organization	The healthcare provider organization information.		Not Required		N			
A.1.4.4	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.		Not Required		N			
A.1.4.5	Country	Country of the recipient.	ISO 3166	Not Required		N			
A.1.4.6	Telecom	Telecommunication contact information (addresses) associated to a person. Multiple telecommunication addresses might be provided.		Not Required		N			
A.1.5 Author (by whom the Laboratory result report or a subset of its results was authored)									
A.1.5.1	Author identifier	The health professional or authoring device 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.		Optional	0..1	N			
A.1.5.2	Author name	Person or device name.		Optional	0..1	N			
A.1.5.3	Author organization	The healthcare provider organization information.		Required	0..1	S			Identifier from healthcare provider's registry
A.1.6 Legal authenticator (The person taking responsibility for the medical content of the document)									
A.1.6.1	Legal authenticator	The health professional identification number. Either an internal identifier assigned by a healthcare provider institution or identifier (preferably) a national health professional ID such as the license or registration number.		Optional	0..1	N			Lab reports are typically automatically sent by the HIS/LIS to EESZT after validation
A.1.6.2	Legal authenticator name	Person name.		Optional	0..1	N			
A.1.6.3	Legal authenticator organization	The healthcare provider organization information.		Optional	0..1	S			Identifier from healthcare

									provider's registry
A.1.6.4	Authentication date and time	Date and time when the document was authorized.	ISO 8601	Required	1	S			
A.1.7 Result validator									
A.1.7.1	Result validator identifier	The health professional identification number. Either an internal identifier assign by a healthcare provider institution or (preferably) a national health professional ID such as the license or registration number.		Required	1	S			Identifier from physician's or associate professional's registry
A.1.7.2	Result validator name	Person name.		Required	1	Y			
A.1.7.3	Result validator organisation	The healthcare provider organisation information.		Required	1	S			
A.1.7.4	Validation date and time	Date and time when the document was validated.	ISO 8601	Optional	0..1	N			
A.1.8 Laboratory report metadata									
A.1.8.1	Document type	A coded type of the document. Fixed value "Laboratory report"	LOINC	Required	1	S			Appropriate code can be provided
A.1.8.2	Document status	The status of the laboratory test result report. E.g., preliminary, final.	hl7:DiagnosticReport Status	Required	1	S			Will be set to "final" because only validated results are sent to EESZT
A.1.8.3	Report date and time	Date and time of the result report creation.	ISO 8601	Required	1	S			
A.1.8.4	Document title	Document title, e.g. "Laboratory Result report"		Optional	0..1	Y			
A.1.8.5	Study type	Type (or types) of the laboratory study performed.	LOINC / SNOMED CT	Required	1	S	Appropriate generic code	1:26436-6 - LABORATORY STUDIES	Appropriate generic code (1:26436-6 - LABORATORY STUDIES) can be provided
A.1.8.6	Report custodian	Organisation that is in charge of maintaining the laboratory report		Optional	0..1	S			Identifier from healthcare provider's registry

A.1.8.7	Confidentiality	Level of confidentiality of the document. Implicit value is normal.	hl7:Confidentiality	Optional	0..1	N			Confidentiality is set by data governance of EESZT
A.1.8.8	Language	Language in which the document is written. Language is expressed by the ISO language code.	BCP 47	Not Required		N			Can be automatically set to HU
A.1.8.9	Version	Version of the document.		Optional	0..1	S			EESZT maintains version control
A.2 Order information (Laboratory Result Report could respond to multiple test orders)									
A.2.1	Order Id	An identifier of the laboratory test order. Laboratory Result Report may respond to multiple orders.		Optional	0..1	N			
A.2.2	Order date and time	Date and time of the order placement.	ISO 8601	Optional	0..1	N			
A.2.3	Order placer 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. In case when order placer is not a health professional, e.g. by patients themselves where applicable, appropriate personal identifier should be used.		Optional	0..1	S			Identifier from physician's registry
A.2.4	Order placer name	Person name.		Optional	0..1	Y			
A.2.5	Order placer contact details	Contact details of order placer (address and telecom details).		Optional	0..1	N			
A.2.6	Order placer organization	Order placer organization information.		Optional	0..1	S			Identifier from healthcare provider's registry
A.3 Order reason (Laboratory Result Report could respond to multiple reasons)									
A.3.1	Problem / diagnosis / condition description	Health conditions affecting the health of the patient and are important to be known for a health professional during a health encounter. Clinical conditions of the subject relevant for the results interpretation.	ICD-10 (ICD-11 when available) SNOMED CT Orphacode	Optional	0..1	S	Hungarian implementation of ICD10		
A.4 Specimen information									

A.4.1	Specimen identifier	An identifier of the specimen which is unique within in a defined scope. Example: identifier assigned by ordering system, identifier assigned by laboratory etc. Multiple identifiers can be used.		Optional	0..1	N			Not likely to be present for routine lab examinations like diabetes care
A.4.2	Type of species	Biologic type of species for laboratory result reports bound to non- human subjects.	SNOMED CT	Optional	0..1	N			
A.4.3	Material	Specimen material.	SNOMED CT	Optional	0..1	N			
A.4.4	Collection period	Collection date time or period.	ISO 8601	Optional	0..1	S			
A.4.5	Anatomic location	Anatomic location (body location, laterality) where the material is collected, e.g. Elbow, left	SNOMED CT	Optional	0..1	N			
A.4.6	Morphology	Morphological abnormalities of the anatomical location where the material is taken, for example wound, ulcer.	SNOMED CT	Optional	0..1	N			
A.4.7	Source Device	If the material is not collected directly from the patient but comes from a patient-related object, e.g. a catheter	SNOMED CT EMDN	Optional	0..1	N			
A.4.8	Collection procedure/method	If relevant for the results, the method of obtaining the specimen.	SNOMED CT	Optional	0..1	N			
A.4.9	Received date	Date and time that the material is handed over at the laboratory or specimen collection centre.	ISO 8601	Optional	0..1	N			
A.5 Results data elements									
A.5.1 Laboratory report narrative									
A.5.1.1	Narrative report	Entire report (textual summary inside the laboratory result report document) as issued by the laboratory.		Required	1	Y			Report content should be rendered in human readable format
A.5.1.2	Comments, interpretation and recommendations	Comments, such as a textual interpretation or advice accompanying the result report, for example.		Optional	0..1	N			
A.5.2 Observation details (report could consist of multiple observations)									
A.5.2.1	Observation date	Date and time of the observation	ISO 8601	Optional	0..1	N			Typically date and time is specified on the level of the lab report

A.5.2.3	Observation code	Code representing the observation using the agreed code systems.	LOINC NPU SNOMED CT	Required	1	S	LOINC		At the moment only the most important laboratory parameters (about 420) are handled in structured form. Almost every is mapped to LOINC
A.5.2.3.1	Observation name	Full name of the observation according to the used test coding standard.		Optional	0..1	N			
A.5.2.3.2	Observation original name	Original (conventional) name of the observation as used by the laboratory		Optional	0..1	Y			
A.5.2.3.3	Observation display name	Simplified (short name of the observation) for display.		Required	1	Y			
A.5.2.4	Observation method	Observation method (measurement principle) to obtain the result.	SNOMED CT	Optional	0..1	N			Not likely to be present for routine lab examinations like diabetes care
A.5.2.5	Observation device	Device (analyser), laboratory test kit and used calibrator information (identifier, type, name, model, manufacturer)	SNOMED CT EMDN	Optional	0..1	N			
A.5.2.8	Order	Identifies order and order placer this observation belongs to.		Optional	0..1	N			
A.5.2.9	Performer	Identifies the originator/author and provides provenance information about the source of the results data that may have not originated with the source of the whole Laboratory Report document.		Optional	0..1	N			Not likely to be present for routine lab examinations like diabetes care
A.5.2.10	Reporter	With certain observation results, e.g. there may also be an interpreter or a person responsible for validation.		Not Required	0..1	N			Validator is typically given on the report level

A.5.2.11	Observation result	Result of the observation including text, numeric and coded results of the measurement and measurement uncertainty. Content of the observation result will vary according to the type of the observation.	SNOMED CT (for ordinal or nominal scale results and result interpretation) UCUM (for units)	Required	1	S			Appropriate structure can be provided
A.5.2.12	Observation interpretation	Information about reference intervals and result interpretation.	SNOMED CT HL7 v3 Code System ObservationInterpretation	Required	1	S			Appropriate structure can be provided
A.5.2.13	Result description	Comments and narrative representation of the observation result and findings.		Not Required		N			
A.5.2.14	Accreditation status	Accreditation status of the laboratory for the particular observation.		Not Required		N			

Annex III – X-Bubble 2 eHN guidelines analysis

#	Field	Field description	Preferred Code System	Organisation to Patient - bubble 2 - CHUdSA					
				Required Optional Not required	Cardinality	Have this information available? (Y)es (N)o (S)tructured	Code System	VaLue Sets	Comments
A.1 Report header data elements									
A.1.1 Identification of the patient/subject									
A.1.1.1	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.		Required	1..1	Y			
A.1.1.2	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.		Optional	0..1	N			
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.	Complete date, without time, following the ISO 8601	Required	1..1	Y			
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.		Required	1..1	Y			SNS number
A.1.1.5	Gender	This field must contain a recognised valid value for "administrative gender". If different, "physiological gender" should be communicated elsewhere.	HL7 Administrative Gender	Required	1..1	S	HL7 Administrative Gender		
A.1.2 Patient/subject related contact information									
A.1.2.1	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.	ISO 3166	Optional	0..1	Y			From national database
A.1.2.2	Telecom	Telecommunication contact information (addresses) associated to a person. Multiple telecommunication addresses might be provided.		Optional	0..*	Y			From national database
A.1.3 Health insurance and payment information									
A.1.3.1	Health insurance information	Health insurance information is not always required, however, in some jurisdictions, the insurance number is also used as the		Optional	0..1	Y			Only when involving

		patient identifier. It is necessary not just for identification but also forms access to funding for care.							insurers (e.g., workplace accidents, school, car, etc.)
A.1.3.1.1	Health insurance code	Unique health insurance company identification code.		Optional	0..1	Y			
A.1.3.1.2	Health insurance name	Full, official name of the healthcare insurance provider.		Optional	0..1	Y			
A.1.3.1.3	Health insurance number	Number or code under which the insured person is registered at the insurance provider.		Optional	0..1	Y			
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), if applicable									Information from the physician who received the report before it is made available to the patient.
A.1.4.1	Recipient 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. In case when recipient is not a health professional, e.g. patient, appropriate personal identifier should be used.		Optional	0..1	S			Internal database in hospital
A.1.4.2	Recipient name	Person name.		Optional	0..1	Y			
A.1.4.3	Recipient organization	The healthcare provider organization information.		Optional	0..1	Y			
A.1.4.4	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.		Optional	0..1	Y			
A.1.4.5	Country	Country of the recipient.	ISO 3166	Optional	0..1	Y			
A.1.4.6	Telecom	Telecommunication contact information (addresses) associated to a person. Multiple telecommunication addresses might be provided.		Not Required		N			
A.1.5 Author (by whom the Laboratory result report or a subset of its results was authored)									
A.1.5.1	Author identifier	The health professional or authoring device identification number. Either an internal identifier assigned by a healthcare provider institution or (preferably) a national health professional ID		Required	1..1	Y			

		such as the license or registration number.							
A.1.5.2	Author name	Person or device name.		Required	1..1	Y			
A.1.5.3	Author organization	The healthcare provider organization information.		Required	1..1	Y			
A.1.6 Legal authenticator (The person taking responsibility for the medical content of the document)									
A.1.6.1	Legal authenticator	The health professional identification number. Either an internal identifier assigned by a healthcare provider institution or identifier (preferably) a national health professional ID such as the license or registration number.		Not Required		N			
A.1.6.2	Legal authenticator name	Person name.		Not Required		N			
A.1.6.3	Legal authenticator organization	The healthcare provider organization information.		Not Required		N			
A.1.6.4	Authentication date and time	Date and time when the document was authorized.	ISO 8601	Not Required		N			
A.1.7 Result validator									
A.1.7.1	Result validator identifier	The health professional identification number. Either an internal identifier assign by a healthcare provider institution or (preferably) a national health professional ID such as the license or registration number.		Required	1..1	Y			
A.1.7.2	Result validator name	Person name.		Required	1..1	Y			
A.1.7.3	Result validator organisation	The healthcare provider organisation information.		Required	1..1	Y			
A.1.7.4	Validation date and time	Date and time when the document was validated.	ISO 8601	Required	1..1	Y			
A.1.8 Laboratory report metadata									
A.1.8.1	Document type	A coded type of the document. Fixed value "Laboratory report"	LOINC	Required	1..1	S	LOINC		
A.1.8.2	Document status	The status of the laboratory test result report. E.g., preliminary, final.	hl7:DiagnosticReportStatus	Required	1..1	S	HL7		
A.1.8.3	Report date and time	Date and time of the result report creation.	ISO 8601	Required	1..1	Y			
A.1.8.4	Document title	Document title, e.g. "Laboratory Result report"		Optional	0..1	Y			
A.1.8.5	Study type	Type (or types) of the laboratory study performed.	LOINC / SNOMED CT	Required	1..1	S	SNOMED CT		
A.1.8.6	Report custodian	Organisation that is in charge of maintaining the laboratory report		Optional	0..1	N			
A.1.8.7	Confidentiality	Level of confidentiality of the document. Implicit value is normal.	hl7:Confidentiality	Required	1..1	S	HL7		
A.1.8.8	Language	Language in which the document is written. Language is expressed by the ISO language code.	BCP 47	Optional	0..1	N			
A.1.8.9	Version	Version of the document.		Required	1..1	S			internal system

A.2 Order information (Laboratory Result Report could respond to multiple test orders)									
A.2.1	Order Id	An identifier of the laboratory test order. Laboratory Result Report may respond to multiple orders.		Required	1..1	S			SPMS system for external order and internal system
A.2.2	Order date and time	Date and time of the order placement.	ISO 8601	Required	1..1	Y			
A.2.3	Order placer 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. In case when order placer is not a health professional, e.g. by patients themselves where applicable, appropriate personal identifier should be used.		Required	1..1	S			
A.2.4	Order placer name	Person name.		Required	1..1	Y			
A.2.5	Order placer contact details	Contact details of order placer (address and telecom details).		Optional	0..1	Y			
A.2.6	Order placer organization	Order placer organization information.		Optional	0..1	S			
A.3 Order reason (Laboratory Result Report could respond to multiple reasons)									
A.3.1	Problem / diagnosis / condition description	Health conditions affecting the health of the patient and are important to be known for a health professional during a health encounter. Clinical conditions of the subject relevant for the results interpretation.	ICD-10 (ICD-11 when available) SNOMED CT Orphacode	Optional	0..1	S	ICD10		
A.4 Specimen information									
A.4.1	Specimen identifier	An identifier of the specimen which is unique within in a defined scope. Example: identifier assigned by ordering system, identifier assigned by laboratory etc. Multiple identifiers can be used.		Required	1..1	S			
A.4.2	Type of species	Biologic type of species for laboratory result reports bound to non- human subjects.	SNOMED CT	Required	1..1	S	SNOMED CT		
A.4.3	Material	Specimen material.	SNOMED CT	Required	1..1	S	SNOMED CT		
A.4.4	Collection period	Collection date time or period.	ISO 8601	Required	1..1	Y			
A.4.5	Anatomic location	Anatomic location (body location, laterality) where the material is collected, e.g. Elbow, left	SNOMED CT	Optional	0..1	S	SNOMED CT		
A.4.6	Morphology	Morphological abnormalities of the anatomical location where the material is taken, for example wound, ulcer.	SNOMED CT	Optional	0..1	S	SNOMED CT		
A.4.7	Source Device	If the material is not collected directly from the patient but comes from a patient-related object, e.g. a catheter	SNOMED CT EMDN	Optional	0..1	S	SNOMED CT		
A.4.8	Collection procedure/method	If relevant for the results, the method of obtaining the specimen.	SNOMED CT	Optional	0..1	S	SNOMED CT		
A.4.9	Received date	Date and time that the material is handed over at the laboratory or specimen collection centre.	ISO 8601	Optional	0..1	Y			
A.5 Results data elements									

A.5.1 Laboratory report narrative									
A.5.1.1	Narrative report	Entire report (textual summary inside the laboratory result report document) as issued by the laboratory.		Optional	0..1	Y			
A.5.1.2	Comments, interpretation and recommendations	Comments, such as a textual interpretation or advice accompanying the result report, for example.		Optional	0..1	Y			
A.5.2 Observation details (report could consist of multiple observations)									
A.5.2.1	Observation date	Date and time of the observation	ISO 8601	Optional	0..1	N			
A.5.2.3	Observation code	Code representing the observation using the agreed code systems.	LOINC NPU SNOMED CT	Required	1..1	S	LOINC		
A.5.2.3.1	Observation name	Full name of the observation according to the used test coding standard.		Optional	0..1	N			
A.5.2.3.2	Observation original name	Original (conventional) name of the observation as used by the laboratory		Required	1..1	Y			
A.5.2.3.3	Observation display name	Simplified (short name of the observation) for display.		Optional	0..1	Y			
A.5.2.4	Observation method	Observation method (measurement principle) to obtain the result.	SNOMED CT	Optional	0..1	S	SNOMED CT		
A.5.2.5	Observation device	Device (analyser), laboratory test kit and used calibrator information (identifier, type, name, model, manufacturer)	SNOMED CT EMDN	Not Required		N			
A.5.2.8	Order	Identifies order and order placer this observation belongs to.		Optional	0..1	Y			
A.5.2.9	Performer	Identifies the originator/author and provides provenance information about the source of the results data that may have not originated with the source of the whole Laboratory Report document.		Optional	0..1	N			
A.5.2.10	Reporter	With certain observation results, e.g. there may also be an interpreter or a person responsible for validation.		Optional	0..1	N			
A.5.2.11	Observation result	Result of the observation including text, numeric and coded results of the measurement and measurement uncertainty. Content of the observation result will vary according to the type of the observation.	SNOMED CT (for ordinal or nominal scale results and result interpretation) UCUM (for units)	Required	1..1	S	SNOMED CT		
A.5.2.12	Observation interpretation	Information about reference intervals and result interpretation.	SNOMED CT HL7 v3 Code System ObservationInterpretation	Required	1..1	S	HL7		
A.5.2.13	Result description	Comments and narrative representation of the observation result and findings.		Not Required		N			
A.5.2.14	Accreditation status	Accreditation status of the laboratory for the particular observation.		Not Required		N			

Annex IV – X-Bubble 3 eHN guidelines analysis

#	Field	Field description	Preferred Code System	Core	Organisation to Patient - bubble 3 - CHUdSA					
					Required Optional Not required	Cardinality	Have this information available? (Y)es N(o) (S)tructured	Code System	Value Sets	Comments
HOSPITAL DISCHARGE REPORT HEADER										
A.1	**Hospital Discharge Report header data element**									
A.1.1	**Identification of the patient/subject**				**Required**					
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.			Optional	0..1	N			
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.			Required	1..1	Y			Name may not be available in structured format
A.1.1.3	Date of birth	Complete date, following the ISO 8601.	ISO 8601		Required	1..1	Y			
A.1.1.4	National healthcare patient ID	An identifier of the patient that is unique within a defined scope. Example: National ID (birth number) for a Czech patient. Multiple identifiers could be provided			Required	1..1	Y			SNS number
A.1.1.5	Nationality	Nationality of the patient.	ISO 3166		Optional	0..1	Y			
A.1.1.6	Gender	This field must contain a recognised valid value for "administrative gender". If different, "physiological gender" should be communicated elsewhere in the relevant clinical information section.	HL7 Administrative Gender		Required	1..1	S	HL7 Administrative Gender		
A.1.1.7	Country of affiliation	Name of country of affiliation	ISO 3166		Optional	0..1	Y			
A.1.2	**Patient/subject related contact information**									
A.1.2.1	**Patient address**				**Optional**					
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, postcode, 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	ISO 3166		Optional	0..1	S	HL7 FHIR Datatypes		From national database

		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 with a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Optional	0..*	S	HL7 FHIR Datatypes		From national database
A.1.2.2	**Preferred health 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).**				**Optional**					
A.1.2.2.1	Identifier of the HP	An identifier of the health professional that is unique within a defined scope. Example: National health professional ID. Multiple identifiers could be provided.			Optional	0..1	Y			
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)]			Optional	0..1	Y			
A.1.2.2.3	Role of the HP	Health professional role. Multiple roles could be provided.	ISCO		Optional	0..1	N			
A.1.2.2.4	HP Organisation	Health professional organisation			Optional	0..1	Y			
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, postcode, 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.	ISO 3166		Optional	0..1	S	HL7 FHIR Datatypes		
A.1.2.2.6	Telecom	Telecommunication contact information (addresses) associated with a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Optional	0..*	S	HL7 FHIR Datatypes		
A.1.2.3	**Contact person/ legal guardian (multiple contacts could be provided)**				**Required**					
A.1.2.3.1	Role of that person	Role of the contact person: legal guardian, next of kin, other person to contact.	HL7 RoleClass		Required	1..1	S	HL7		
A.1.2.3.2	Relationship level	Relationship type with the patient (e.g. father, wife, daughter)	HL7 RoleCode SNOMED CT		Required	1..1	S	HL7		

A.1.2.3.4	Given name	Given name of the contact person/guardian . This field can contain more than one element.			Optional	0..1	N			
A.1.2.3.5	Family name/surname	Family name of the contact person. This field can contain more than one element [the structure of the name will be the same as for the patient (given name, family name / surname)]..			Required	1..1	Y			
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, postcode, 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.	ISO 3166		Optional	0..1	S	HL7 FHIR Datatypes		
A.1.2.3.7	Telecom	Telecommunication contact information (addresses) associated with a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Required	1..1	S	HL7 FHIR Datatypes		
A.1.2.3.8	Contact person organisation	Contact person organisation information.			Optional	0..1	N			
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.**				**Optional**					
A.1.3.1	Health insurance code	Unique health insurance company identification code.			Optional	0..1	Y			
A.1.3.2	Health insurance name	Full, official name of the healthcare insurance provider.			Optional	0..1	Y			
A.1.3.3	Health insurance number	Number or code under which the insured person is registered at the insurance provider.			Optional	0..1	Y			
A.1.4	**Information recipient - (intended recipient or recipients of the report), if applicable**				**Not Required**					
A.1.4.1	Recipient identifier	The health professional or patient identifier. Either an internal identifier assigned by a healthcare provider institution or (preferably) a national health professional ID such as the licence or registration number. In case when the			Not Required		N			

		recipient is not a health professional, e.g. patient, appropriate personal identifier could be used.								
A.1.4.2	Recipient name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Not Required		N			
A.1.4.3	Recipient organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Not Required		N			
A.1.4.4	Recipient organisation	The healthcare provider organisation information.			Not Required		N			
A.1.4.5	Address	Mailing and home or office addresses. The addresses are always sequences of address parts (e.g. street address line, country, postcode, 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.			Not Required		N			
A.1.4.6	Country	Country of the intended recipient as part of the address.	ISO 3166		Not Required		N			
A.1.4.7	Telecom	Telecommunication contact information (addresses) associated to a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Not Required		N			
A.1.5	**Author (by whom the Hospital discharge report was/were authored). Multiple authors could be provided.**				**Not Required**					
A.1.5.1	Author identifier	The health professional identifier that will allow addressing recipients within a national or international data exchange infrastructure, such as the licence or registration number. In case when the recipient is not a health professional, e.g. patient, appropriate personal identifier should be used.			Not Required		N			
A.1.5.2	Author name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Not Required		N			

A.1.5.3	Author organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Not Required		N			
A.1.5.4	Author organisation	The healthcare provider organisation information.			Not Required		N			
A.1.5.5	Date Time	Date and time of the last modification of the document by its Author.	ISO 8601		Not Required		N			
A.1.6	**Attester (multiple attesters could be provided)**				**Not Required**					
A.1.6.1	Attester 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 licence or registration number.			Not Required		N			
A.1.6.2	Attester name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Not Required		N			
A.1.6.3	Attester organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Not Required		N			
A.1.6.4	Attester organisation	The healthcare provider organisation information.			Not Required		N			
A.1.6.5	Approval date and time	Date and time of the approval of the document by Attester.	ISO 8601		Not Required		N			
A.1.7	**Legal authenticator (The person taking responsibility for the medical content of the document)**				**Required**					
A.1.7.1	Legal authenticator 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 licence or registration number. Multiple identifiers could be provided.			Required	1..1	Y			
A.1.7.2	Legal authenticator name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Required	1..1	Y			
A.1.7.3	Legal authenticator organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a			Required	1..1	Y			

		defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.								
A.1.7.4	Legal authenticator organisation	The healthcare provider organisation information.			Required	1..1	Y			
A.1.7.5	Authentication date and time	Date and time when the document was authorised.	ISO 8601		Required	1..1	Y			
A.1.8	**Document metadata**				**Required**					
A.1.8.1	Document ID	Unique identifier of the document			Required	1..1	Y			
A.1.8.2	Document type	Identifies the type of document at hand, e.g. Hospital discharge report.	LOINC		Required	1..1	S	LOINC		
A.1.8.3	Document status	The status of the Hospital discharge report. E.g., preliminary, final.	hl7:CompositionStatus		Required	1..1	S	HL7		
A.1.8.4	Report date and time	Date and time of the Hospital discharge report creation.	ISO 8601		Required	1..1	Y			
A.1.8.5	Document title	Document title, fix value "Hospital discharge report".			Required	1..1	Y			
A.1.8.6	Report custodian	Organisation that is in charge of maintaining the report [this element will include organisation ID, name, address etc., as other elements describing organisations].			Required	1..1	Y			
A.1.8.7	Confidentiality	Level of confidentiality of the document. Implicit value is normal.	hl7:Confidentiality		Required	1..1	S	HL7		
A.1.8.8	Language	Language in which the document is written. Language is expressed by the ISO language code.	ISO 639		Required	1..1	Y			
A.1.8.9	Version	Version of the document			Required	1..1	Y			
HOSPITAL DISCHARGE REPORT BODY										
A.2.0	**Hospital Discharge Report in its narrative form**			**Core**	**Required**	**1..1**	**Y**			
A.2.1	**Advance directives**				**Optional**					
A.2.1.1	**Living will**	**Only directives being expressed during current inpatient stay. Multiple records of living wills could be provided.**			**Optional**					
A.2.1.1.1	Date and time	The date and time on which the living will was recorded.	ISO 8601		Optional	0..1	Y			
A.2.1.1.2	Type	Type of a living will, e.g. Do not resuscitate, donorship statement, power of attorney etc.	SNOMED CT		Optional	0..1	S	Snomed CT		
A.2.1.1.3	Comment	Comment on the living will.			Optional	0..1	Y			
A.2.1.1.4	Related conditions		ICD-10* SNOMED CT		Optional	0..1	S	ICD-10		

		The problem or disorder to which the living will applies. Multiple fields could be provided.	Orphacode if rare disease is diagnosed							
A.2.1.1.5	Living will document	Scanned source document with the living will and the patient's signature, such as a PDF.			Optional	0..1	Y			
A.2.2	**Alerts**			**Core**	**Required**					
A.2.2.1	**Allergy and Intolerance**	**A record of allergies and intolerances (primarily to be used for new allergies or intolerances that occurred during the hospital stay).**		**Core**	**Required**					
A.2.2.1.1	Allergy description	Textual description of the allergy or intolerance		Core	Required	1..1	Y			
A.2.2.1.2	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)	SNOMED CT		Required	1..1	S	Snomed CT		
A.2.2.1.3	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). Multiple manifestations could be provided.	SNOMED CT	Core	Required	1..1	S	Snomed CT		
A.2.2.1.4	Severity	Severity of the clinical manifestation of the allergic reaction.	SNOMED CT		Optional	0..1	Y			
A.2.2.1.5	Criticality	Potential risk for future life-threatening adverse reactions when exposed to a substance known to cause an adverse reaction.	SNOMED CT		Optional	0..1	Y			
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 date, partial date or life period (childhood, adolescence).	ISO 8601 SNOMED CT (Age group)		Optional	0..1	S	Snomed CT		
A.2.2.1.7	End date	Date of resolution of the allergy (e.g. when the clinician deemed there is no longer any need to track the underlying condition)	ISO 8601 SNOMED CT (Age group)		Optional	0..1	S	Snomed CT		
A.2.2.1.8	Status	Current status of the allergy or intolerance, for example, whether it is active, in remission, resolved, and so on …	Active, resolved, …		Optional	0..1	Y			

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.	SNOMED CT		Optional	0..1	S	Snomed CT		
A.2.2.1.10	Agent or Allergen	A specific allergen or other agent/substance (drug, food, chemical agent, etc.) to which the patient has an adverse reaction propensity.	SNOMED CT ATC (IDMP / EMA SPOR SMS)	Core	Required	1..1	S	Snomed CT		
A.2.2.2	**Medical alerts (relevant for the respective hospital stay)**			**Core**	**Required**					
A.2.2.2.1	Healthcare alert description	A warning, other than included in allergies.	SNOMED CT	Core	Required	1..*	S	LOINC		
		The warning can be entered in code (there are codes for frequently used alerts) but seeing the dynamic nature of the warnings, these alerts will often be entered as free text.	LOINC							
		Any clinical information that is imperative to know so that the life or health of the patient does not come under threat.								
		Example 1: the patient has a rare disease that requires special treatment								
		Example 2: Airway Alert / Difficult Intubation								
		Example 3: Diagnoses such as malignant hyperthermia, porphyria, and bleeding disorders; special treatments like anticoagulants or immunosuppressants; implanted devices.								
		Example 4: transplanted organs illustrate other information that has to be taken into account in a healthcare contact.								
		Example 5: participation in a clinical trial that has to be taken into account in a healthcare contact.								
A.2.3	**Encounter**			**Core**	**Required**					
A.2.3.1	Encounter type	The type of the encounter whether inpatient or short stay encounter.	hl7v3:ActEncounterCode		Required	1..1	Y			
A.2.3.2	Encounter note	A narrative description of the encounter course.			Required	1..1	Y			
A.2.3.3	**Admission**			**Core**	**Required**					

A.2.3.3.1	Admission urgency	Admission type, either emergency or planned	hl7:v3-xEncounterAdmissionUrgency	Core	Required	1..1	S	HL7		
A.2.3.3.2	Admission date	Admission date and time.	ISO 8601	Core	Required	1..1	Y			
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 licence or registration number.			Required	1..1	Y			
A.2.3.3.4	Admitting professional name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Required	1..1	Y			
A.2.3.3.5	Admitting organisation ID	The healthcare provider organisation identifier.			Required	1..1	Y			
A.2.3.3.6	Admitting organisation	The healthcare provider organisation information.		Core	Required	1..1	Y			
A.2.3.3.7	Admit Source	From where the patient was admitted (e.g. physician referral, transfer).	Hl7:admit-source		Required	1..1	S	HL7		
A.2.3.3.8	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 licence or registration number.			Required	1..1	Y			
A.2.3.3.9	Referring professional name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Required	1..1	Y			
A.2.3.3.10	Referring organisation ID	The healthcare provider organisation identifier.			Required	1..1	Y			
A.2.3.3.11	Referring organisation	The healthcare provider organisation information.			Required	1..1	Y			
A.2.3.4	**Admission reason**			**Core**	**Required**					
A.2.3.4.1	Admission reason	Reason or reasons for admission, e.g. Problem, procedure or finding.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed	Core	Required	1..*	S	ICD-10		
A.2.3.4.2	Admission reason comment	Explanation of the reason for the encounter.		Core	Required	1..1	Y			
A.2.3.4.3	Admission legal status	Legal status/situation at admission. The legal status indicates the basis on which	SNOMED CT		Optional	0..1	S	Snomed CT		

		the patient is staying in a healthcare organisation. 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**			**Core**	**Required**					
A.2.3.5.1	Discharge date	Discharge date and time	ISO 8601	Core	Required	1..1	Y			
A.2.3.5.2	Discharge destination type	Type of location to which the patient will go after the encounter. E.g. home, hospital, nursing home, left against medical advice etc.	hl7.discharge-disposition	Core	Required	1..1	S	HL7		
A.2.3.5.3	Destination location	The location/organisation to which the patient will go after the encounter. Name, address and telecommunication contact.		Core	Required	1..1	Y			
A.2.3.6	**Location - All locations/departments where the patient stayed (was boarded) within the hospital.**			**Core**	**Required**					
A.2.3.6.1	Period	Time period during which the patient was present at the location		Core	Required	1..1	Y			
A.2.3.6.2	Organisation Part ID	The organisation's part identifier.			Required	1..1	Y			
A.2.3.6.3	Organisation Part Name	Full name of the organisation part, e.g. Name of the department		Core	Required	1..1	Y			
A.2.3.6.4	Organisation Part Details	Address, contact names and contact details, specialty of the organisation part.	SNOMED CT	Core	Required	1..1	S	Snomed CT		
A.2.4	**Admission evaluation - Admission status should be reported exceptionally only if it is relevant to ensure continuity of care.**				**Required**					
A.2.4.1	**Objective findings**				**Required**					
A.2.4.1.1	Date and time	Date and time of the examination	ISO 8601		Optional	0..1	Y			
A.2.4.1.3	**Anthropometric observations**	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. Multiple observations could be provided.			**Optional**					
A.2.4.1.3.1	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation..	SNOMED CT LOINC ISO 8601		Optional	0..1	S	Snomed CT		

A.2.4.1.3.2	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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (for units of measurement)		Optional	0..1	Y			
A.2.4.1.4	**Vital signs**	Vital signs observation: • Recommended: Pulse rate, respiratory rate, systolic and diastolic blood pressure with site information • Optional: 02 saturation, temperature, pain (scale), …			**Optional**					
A.2.4.1.4.1	Result description	Narrative representation of the observation result and findings.			Optional	0..1	Y			
A.2.4.1.4.2	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	SNOMED CT LOINC ISO 8601		Optional	0..1	S	Snomed CT		
A.2.4.1.4.3	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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (measurement units)		Optional	0..1	S	HL7 FHIR Resources		
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.			**Required**					
A.2.4.1.5.1	Observation Note	A narrative description of the observation. It should be structured by the organ system (e.g. head, neck, body, arms, ...)			Required	1..1	Y			
A.2.4.2	**Functional status**				**Optional**					

	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	Description	Need for the patient to be continuously assessed by third parties; functional status may influence decisions about how to plan and administer treatments			Optional	0..1	Y			
A.2.4.2.2	Onset Date	Onset date of a condition	ISO 8601		Optional	0..1	Y			
A.2.4.2.3	Functional assessment description	Description of the functional assessment	ICF		Optional	0..1	Y			
A.2.4.2.4	Functional assessment date	Date of the functional assessment	ISO 8601		Optional	0..1	Y			
A.2.4.2.5	Functional assessment result	Functional assessment result value	ICF		Optional	0..1	Y			
A.2.6	**Patient history (might include information about provenance of the information)**				**Required**					
A.2.6.1	**Medical history**				**Required**					
A.2.6.1.1	**History of problems**	A list of conditions of a patient that the patient suffered in the past or still suffers. Unlike diagnostic summary, medical history is not only a list of problems, 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 the diagnostic summary section of the discharge report.			**Optional**					
A.2.6.1.1.1	Problem description	Problem specification			Optional	0..1	Y			
A.2.6.1.1.2	Problem details	Problem details include code that identifies problem, specification of the body structure, laterality, and other aspects of the problem.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed IPS Absent and Unknown Data ICD-O-3		Optional	0..1	S	ICD10		
A.2.6.1.1.3	Onset date	Onset date of the problem/condition	ISO 8601		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.1.4	End date	The date or estimated date that the condition resolved or went into remission.	ISO 8601		Optional	0..1	S	HL7 FHIR Resources		

A.2.6.1.1.5	Clinical status	Status of the condition/problem (active, resolved, inactive, ...)	hl7:condition-clinical		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.1.6	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).			Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.1.7	Severity	A subjective assessment of the severity of the condition as evaluated by the clinician.	SNOMED CT		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.1.8	Stage	Stage/grade, usually assessed formally using a specific staging/grading system.	e.g. TNM, ICD-O-3		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.2	**Devices and Implants**	Devices and Implants			**Optional**					
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.	SNOMED CT EMDN IPS Absent and Unknown Data		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.2.2	Device ID	Normalised identifier of the device instance such as UDI according to REGULATION (EU) 2017/745			Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.2.3	Implant date	The date and time the device was implanted or when its use began.	ISO 8601		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.2.4	End date	Date and time when the device was explanted from the patient or the external device was no longer in use; likewise when the device is planned to be explanted	ISO 8601		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.2.5	Reason	The medical reason for use of the medical device.	ICD-10 SNOMED CT Orphacode if rare disease is diagnosed		Optional	0..1	S	ICD 10		
A.2.6.1.3	**History of procedures**	Historical procedures performed on or for a patient, relevant for the current encounter.			**Optional**					

		Examples include surgical procedures, diagnostic procedures, endoscopic procedures, biopsies, counselling, physiotherapy, personal support services, adult day care services, etc.								
A.2.6.1.3.1	Procedure code	Procedure code	SNOMED CT LOINC, NPU (for laboratory procedures) IPS Absent and Unknown Data		Optional	0..1	S	LOINC		
A.2.6.1.3.2	Procedure description	Narrative description of the procedure			Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.3.3	Body site	Procedure target body site and laterality	SNOMED CT		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.3.4	Procedure date	Date and time when procedure was performed	ISO 8601		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.3.5	Procedure reason	The coded reason why the procedure was performed. This may be a coded entity or may simply be present as text.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Optional	0..1	S	Snomed CT		
A.2.6.1.3.6	Outcome	The outcome of the procedure - did it resolve the reasons for the procedure being performed? Applicable mainly on surgical procedures.	SNOMED CT		Optional	0..1	S	Snomed CT		
A.2.6.1.3.7	Focal device	A reference to the device or devices that is implanted, removed or otherwise manipulated (calibration, battery replacement, fitting a prosthesis, attaching a wound-vac, etc.) as a focal portion of the Procedure.			Optional	0..1	S	HL7 FHIR Resources		
A.2.6.1.4	**Vaccination**	Vaccination history of the patient.			**Optional**					
A.2.6.1.4.1	Disease or agent targeted	Disease or agent that the vaccination provides protection against	ICD-10* SNOMED CT		Optional	0..1	S	ICD 10		
A.2.6.1.4.2	Vaccine/prophylaxis	Generic description of the vaccine/prophylaxis or its component(s)	SNOMED CT ATC (IDMP/ EMA SPOR SMS)		Optional	0..1	S	Snomed CT		
A.2.6.1.4.4	Vaccine medicinal product	Medicinal product name			Optional	0..1	Y			
A.2.6.1.4.5	Marketing Authorisation Holder	Marketing Authorisation Holder or manufacturer (Identifier and name)	EMA's Organisations		Optional	0..1	Y			

			Management Service (EMA SPOR OMS)							
A.2.6.1.4.6	Number in a series of vaccinations / doses	Order in the vaccination course.			Optional	0..1	Y			
A.2.6.1.4.7	Date of vaccination	The date and time when the vaccination was administered	ISO 8601		Optional	0..1	Y			
A.2.6.1.4.8	Next vaccination date	The date when the vaccination is planned to be given/repeated (e.g. next dose)	ISO 8601		Optional	0..1	Y			
A.2.6.1.5	**Epidemiological history**	Travel history and infectious contacts			**Optional**					
A.2.6.1.5.1	***Infectious contacts***	Infectious contacts of the patient			**Optional**					
A.2.6.1.5.1.1	Time period	A date and duration or date time interval of contact. Partial dates are allowed.	ISO 8601		Optional	0..1	S	ICD 10		
A.2.6.1.5.1.2	Infectious agent	Information about a suspected infectious agent or agents the person was exposed to.	ICD-10* (chapter 1) SNOMED CT		Optional	0..1	S	Snomed CT		
A.2.6.1.5.1.3	Proximity	Proximity to the source/carrier of the infectious agent during exposure. Proximity could be expressed by text, code (direct, indirect) or value specifying distance from the InfectiousAgentCarrier.	SNOMED CT UCUM (measurement units)		Optional	0..1	S	Snomed CT		
A.2.6.1.5.1.4	Country	Country in which the person was potentially exposed to an infectious agent.	ISO 3166		Optional	0..1	Y			
A.2.6.1.5.1.5	Additional information	A textual note with additional information about infectious contact.			Optional	0..1	Y			
A.2.6.1.5.2	***Travel history***	Travel history reported by the patient. Multiple records could be provided.			**Optional**					
A.2.6.1.5.2.1	Time period	Start and end date or end date and duration of stay in a country. Partial dates are allowed.	ISO 8601		Optional	0..1	Y			
A.2.6.1.5.2.2	Country visited	A country visited by the patient.	ISO 3166		Optional	0..1	Y			
A.2.6.1.5.2.3	Comment	Relevant notes on the travel stay.			Optional	0..1	Y			
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.			**Optional**					
A.2.6.2.1	Patient relationship	The family relation between the related person and the patient.	hl7:v3-RoleCode		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.2.2	Date of birth	Full or partial date of birth	ISO 8601		Optional	0..1	Y			

A.2.6.2.3	Age or date of death	Age or date of the death of the family member.	ISO 8601		Optional	0..1	Y			
A.2.6.2.5	Condition	Medical problems this person suffers or suffered.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Optional	0..1	S	ICD 10		
A.2.6.2.6	Cause of death	Information about disease or condition that was the main cause of death.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Optional	0..1	S	ICD 10		
A.2.6.3	**Social determinants of health**	Information about social determinants of health.			**Optional**					
A.2.6.3.1	**Participation in society**	Participation in society details.			**Optional**					
A.2.6.3.1.1	Work situation	Work Situation describes the extent to which and in what way the patient participates in the workforce. Work is meant in the broadest sense of the word: activities that contribute to the person themselves, their environment or society. This includes both paid and unpaid work.			Optional	0..1	Y			
A.2.6.3.1.2	Hobby	An activity the patient enjoys doing in their free time.			Optional	0..1	Y			
A.2.6.3.1.3	Social network	A description of the patient's social network, such as family, neighbours and friends.			Optional	0..1	Y			
A.2.6.3.2	**Education**				**Optional**					
A.2.6.3.2.1	Education level	Indication of the highest level of education achieved.	hl7:v3.EducationLevel		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.3.2.2	Comment	If deemed relevant, a specification of the degree program can be provided by means of an explanation (e.g.: patient is in medical school).			Optional	0..1	Y			
A.2.6.3.3	**Living situation**	Household type and other related living situation information.			**Optional**					
A.2.6.3.3.1	House type	Type of home the patient lives in.	SNOMED CT		Optional	0..1	S	Snomed CT		
A.2.6.3.3.2	Home adaption	Adaptions present in the home that have been made in the context of the illness or disability to make the functioning of the patient safer and more comfortable and to	SNOMED CT		Optional	0..1	S	Snomed CT		

		enable independent living. Multiple data elements could be provided.								
A.2.6.3.3.3	Living conditions	Conditions that affect the accessibility of the home or the stay in the home. Multiple data elements could be provided.	SNOMED CT		Optional	0..1	S	Snomed CT		
A.2.6.3.4	**Family situation**	Family situation details.			**Optional**					
A.2.6.3.4.1	Comment	A comment on the family situation.			Optional	0..1	N			
A.2.6.3.4.2	Family composition	The family composition describes the patient's home situation and the form of cohabitation. A family can consist of one or more people.	SNOMED CT		Optional	0..1	S	Snomed CT		
A.2.6.3.4.3	Marital status	A person's marital status according to the terms and definition in the national civil code.	hl7: v3-MaritalStatus		Optional	0..1	S	HL7 FHIR Resources		
A.2.6.3.4.4	Number of children	The number of children the patient has. Children in the context of this information model include step children, foster children, biological and adopted children.			Optional	0..1	Y			
A.2.6.3.4.5	Number of children at home	The number of children living at home with the patient.			Optional	0..1	Y			
A.2.6.3.4.6	Child details	Child age, co-living status and comment. Multiple child details could be provided.			Optional	0..1	Y			
A.2.6.3.4.7	Care responsibility	The activities the patient carries out to care for a dependent family member.			Optional	0..1	Y			
A.2.6.4	**Use of substances**				**Optional**					
A.2.6.4.1	**Alcohol use**	Alcohol consumption by the patient. Multiple records on alcohol use could be provided.			**Optional**					
A.2.6.4.1.1	Status	The status of the patient's alcohol use.	SNOMED CT		Optional	0..1	Y			
A.2.6.4.1.2	Period and quantity	Period of use and amount (The extent of the patient's alcohol use in units of alcohol per time period.)			Optional	0..1	Y			
A.2.6.4.1.3	Comment	Textual comment.			Optional	0..1	Y			
A.2.6.4.2	**Tobacco use**	Represent smoking or tobacco habits. Multiple records on tobacco use could be provided.			**Optional**					
A.2.6.4.2.1	Status	The status of the patient's tobacco use.	SNOMED CT		Optional	0..1	S	SNOMED CT		
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.)			Optional	0..1	Y			
A.2.6.4.2.3	Comment	Textual comment.			Optional	0..1	Y			

A.2.6.4.3	**Drug consumption**	Consumption of drugs and other substances (in terms of abuse).			**Optional**					
A.2.6.4.3.1	Status	The status of the patient's drug use.	SNOMED CT		Optional	0..1	S	SNOMED CT		
A.2.6.4.3.2	Period and quantity	Period of use and amount.			Optional	0..1	Y			
A.2.6.4.3.3	Drug or medication type	Type of the drug consumption	SNOMED CT		Optional	0..1	S	SNOMED CT		
A.2.6.4.3.4	Route of administration	Route or routes of administration	EDQM Standard Terms		Optional	0..1	Y			
A.2.6.4.3.5	Comment	Textual comment			Optional	0..1	Y			
A.2.7	**Course of hospitalisation (Hospital stay)**			**Core**	**Required**					
A.2.7.1	**Diagnostic summary**	All problems/diagnoses that affect 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 be 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.		**Core**	**Required**					
A.2.7.1.1	Problem description	Problem specification in narrative form		Core	Required	1..1	Y			
A.2.7.1.2	Problem details	Problem details include code that identifies problem, specification of the body structure, laterality, and other aspects of the problem.	ICD-10* SNOMED CT ICD-O-3 Orphacode if rare disease is diagnosed IPS Absent and Unknown Data	Core	Required	1..1	S	ICD-10		
A.2.7.1.3	Onset date	Onset date of a problem/condition	ISO 8601	Core	Required	1..1	Y			
A.2.7.1.4	End date	The date or estimated date that the condition resolved or went into remission.	ISO 8601		Optional	0..1	Y			

A.2.7.1.5	Category	Category of the problem allows flagging for conditions acquired during hospital stay. - Present on admission [POA]) - Hospital acquired condition [HAC] Not applicable or unknown		Core	Required	1..1	Y			
A.2.7.1.6	Treatment class	Class of the problem (treated, other) in relation to the hospital encounter. Treated problems were treated or affected provisioning of care (diagnostics, therapy, nursing, monitoring) during the hospital encounter. At least one problem should be marked as Treated. Other problems are recorded only if they are important for continuity of care (after discharge).	Treated, Other	Core	Required	1..1	Y			
A.2.7.1.7	Clinical status	Status of the condition/problem (active, resolved, inactive, ...)	hl7:condition-clinical		Optional		S	HL7		
A.2.7.1.8	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).			Optional	0..1	Y			
A.2.7.1.9	Severity	A subjective assessment of the severity of the condition as evaluated by the clinician.	hl7:condition-severity		Optional	0..1	Y			
A.2.7.1.10	Stage	Stage/grade usually assessed formally using a specific staging/grading system. Multiple assessment systems could be used.	e.g. TNM ICD-O-3		Optional	0..1	S	TNM		
A.2.7.2	**Significant procedures**	Significant surgical and non-surgical procedures performed during hospitalisation which are significant for continuity of care, e.g. surgeries and other "instrumental" interventions (endoscopic, intravascular), chemotherapy, radiotherapy, purification methods (dialysis, hemoperfusion), circulation support methods (counterpulsation, etc.),		**Core**	**Required**					

		administration of blood derivatives or others. 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 Absent and Unknown Data.								
A.2.7.2.1	Procedure code	Procedure code	SNOMED CT IPS Absent and Unknown Data	Core	Required	1..1	S	SNOMED CT		
A.2.7.2.2	Procedure description	Narrative description of the procedure		Core	Required	1..1	Y			
A.2.7.2.3	Body site	Procedure target body site and laterality	SNOMED CT		Optional	1..1	S	SNOMED CT		
A.2.7.2.4	Procedure date	Date and time when procedure was performed	ISO 8601	Core	Required	1..1	Y			
A.2.7.2.5	Procedure reason	The coded reason why the procedure was performed. This may be a coded entity or may simply be present as text.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required	1..1	Y			
A.2.7.2.6	Outcome	The outcome of the procedure - did it resolve the reasons for the procedure being performed?	SNOMED CT		Optional	1..1	S	SNOMED CT		
A.2.7.2.7	Complication	Any complications that occurred during the procedure, or in the immediate post-performance period. These are generally tracked separately from the procedure description, which will typically describe the procedure itself rather than any 'post procedure' issues.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required	1..1	S	SNOMED CT		
A.2.7.2.8	Focal device	A reference to the device or devices that is/are implanted, removed, or otherwise manipulated (calibration, battery replacement, fitting a prosthesis, attaching a wound-vac, etc.) as a focal portion of the Procedure.		Core	Required	1..1	Y			
A.2.7.3	**Medical devices and implants**	Implants and used medical devices that affected or may affect the provision of health services (diagnosis and treatment). Also medical devices explanted, or its use was stopped during hospitalisation. If the section is blank, the reason must be		**Core**	**Required**					

		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.	SNOMED CT EMDN IPS Absent and Unknown Data	Core	Required	1..1	S	SNOMED CT		
A.2.7.3.2	Device ID	Normalised identifier of the device instance such as UDI according to REGULATION (EU) 2017/745			Optional	0..1	Y			
A.2.7.3.3	Implant date	The date and time the device was implanted or when its use began.	ISO 8601	Core	Required	1..1	Y			
A.2.7.3.4	End date	Date and time when the device was explanted from the patient or the external device was no longer in use; likewise when the device is planned to be explanted	ISO 8601	Core	Required	1..1	Y			
A.2.7.3.5	Reason	The medical reason for use of the medical device.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required	1..1	S	SNOMED CT		
A.2.7.5	**Pharmacotherapy**	Selected drug treatment during hospitalisation. Medicinal products that were administered during hospitalisation and whose administration has already been discontinued before discharge. Only products which are important for continuity of care (antibiotics other than completely routine, corticosteroids in high doses, etc.) will be listed. Products which administration will continue after discharge will be also recorder in the Medication summary section. Medicinal products, the administration of which was started during hospitalisation, but is also recommended after discharge, will be listed in the summary table in the recommendation section.		**Core**	**Required**					
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.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required	1..1	S	SNOMED CT		
A.2.7.5.2	Code	Product code	IDMP	Core	Required	1..1	Y			

A.2.7.5.3	Intended use	Indication intended use as: prevention or treatment Example: prophylaxis, treatment, diagnostic, anaesthesia.			Required	1..1	Y			
A.2.7.5.4	Brand name	Brand name if biological medicinal product or when justified by the health professional (ref. Commission Directive 2012/52/EU)		Core	Required	1..1	Y			
A.2.7.5.5	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"	ATC (IDMP / EMA SPOR SMS)		Required	1..1	Y			
A.2.7.5.6	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	UCUM EDQM Standard terms		Required	1..1	Y			
A.2.7.5.7	Pharmaceutical dose form	The form in which a pharmaceutical product is presented in the medicinal product package (e.g. tablet, syrup)	EDQM Standard Terms		Required	1..1	Y			
A.2.7.5.8	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			Required	1..1	Y			
A.2.7.5.9	Route of administration	Path by which the pharmaceutical product is taken into or makes contact with the body.	EDQM Standard Terms		Required	1..1	Y			
A.2.7.5.10	Period of treatment	The time interval when the patient was, or was not, given the medication.		Core	Required	1..1	Y			
A.2.7.6	**Significant Observation Results**	Results of significant functional, diagnostic, and imaging examinations to ensure continuity of care, performed during hospitalisation. Results of examinations ordered but not yet delivered should be presented separately from results already delivered.			**Required**					
A.2.7.6.1	Date	Date and time of the observation	ISO 8601	Core	Required	1..1	Y			
A.2.7.6.2	Observation status	Status of the observation (e.g. registered, preliminary, final)	hl7:observation-status		Required	1..1	Y			
A.2.7.6.3	Result description	Narrative representation of the observation result and findings.		Core	Required	1..1	Y			
A.2.7.6.4	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection,	LOINC NPU SNOMED CT ISO 8601	Core	Required	1..1	S	SNOMED CT		

		observation method or protocol used and other aspects of the observation.								
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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	SNOMED CT UCUM (measurement units)	Core	Required	1..1	S	SNOMED CT		
A.2.7.6.7	Reporter	With certain observation results, e.g. there may also be an interpreter or a person responsible for validation.			Optional	0..1	Y			
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, explanation of clinical context) in clinically complex conditions.		**Core**	**Required**					
A.2.7.7.1	Problem synthesis	Summary description of the reason and course of hospitalisation for a specific problem.		Core	Required	1..1	Y			
A.2.7.7.2	Clinical reasoning	The clinical summary can be concluded with a clinical consideration (diff. diagnosis, explanation of context, etc.) for clinically complex conditions.			Required	1..1	Y			
A.2.8	**Discharge details (structured information should be provided, however if not available, at least a summary note should be present).**			**Core**	**Required**					
A.2.8.1	**Objective findings**			**Core**	**Required**					
A.2.8.1.1	Date	Date and time of the examination at or before discharge	ISO 8601		Optional	0..1	Y			
A.2.8.1.3	**Anthropometric observations**	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. Multiple observations could be provided.		**Core**	**Required**					
A.2.8.1.3.1	Result description	Narrative representation of the observation result and findings.			Optional	0..1	Y			
A.2.8.1.3.2	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection,	SNOMED CT LOINC ISO 8601	Core	Required	1..1	Y			

		observation method or protocol used and other aspects of the observation.								
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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (measurement units)	Core	Required	1..1	Y			
A.2.8.1.4	**Vital signs**	Observation of Vital signs: • Recommended: systolic and diastolic blood pressure including site of measurement, pulse rate, respiratory rate • Optional: 02 saturation, temperature, pain (scale), ...		**Core**	**Required**					
A.2.8.1.4.1	Result description	Narrative representation of the observation result and findings.			Optional	0..1	Y			
A.2.8.1.4.2	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	SNOMED CT LOINC ISO 8601	Core	Required	1..1	S	LOINC		
A.2.8.1.4.3	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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (measurement units)	Core	Required	1..1	Y			
A.2.8.1.5	**Physical examination**	Physical examination (at discharge) is the process of evaluating objective anatomical findings. Physical examination can be performed through observation, palpation, percussion, and auscultation.		**Core**	**Required**					
A.2.8.1.5.1	Observation Note	A narrative description of the observation. It should be structured by the organ system (e.g. head, neck, body, arms, ...)		Core	Required	1..1	Y			
A.2.8.2	**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		**Core**	**Required**					

		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.2.8.2.1	Description	Need for the patient to be continuously assessed by third parties; functional status may influence decisions about how to plan and administer treatments		Core	Required	1..1	Y			
A.2.8.2.2	Onset Date	Onset date of a condition	ISO 8601		Optional	0..1	Y			
A.2.8.2.3	Functional assessment description	Description of the functional assessment	e.g. ICF		Optional	0..1	Y			
A.2.8.2.4	Functional assessment date	Date of the functional assessment	ISO 8601		Optional	0..1	Y			
A.2.8.2.5	Functional assessment result	Functional assessment result value	e.g. ICF		Optional	0..1	Y			
A.2.8.3	**Discharge note**	Discharge summary note			**Optional**	**0..1**	**Y**			
A.2.9	**Care plan and other recommendations after discharge.**			**Core**	**Required**					
A.2.9.1	**Care plan**	Care plan after discharge. Multiple care plans could be provided.		**Core**	**Required**					
A.2.9.1.1	Title	Human-friendly name for the care plan (e.g. Hip replacement care plan)			Optional	0..1	Y			
A.2.9.1.2	Addresses	Identifies the conditions/problems/concerns/diagnoses/ etc. whose management and/or mitigation are handled by this plan. This element provides a linkage to the conditions recorded in the diagnostic summary section.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Optional	0..1	Y			
A.2.9.1.3	Description	A description of the scope and nature of the plan.		Core	Required	1..1	Y			
A.2.9.1.4	Plan Period	Indicates when the plan did (or is intended to) come into effect and end.			Optional	0..1	Y			
A.2.9.1.5	Other details	Other structured and coded details, care team, goals to be achieved.			Optional	0..1	Y			
A.2.9.1.6	**Activity**	Actions to occur as part of the plan.			**Optional**					
A.2.9.1.6.1	Kind	A description of the type of care plan activity. For example, a	hl7:resource-types		Optional	0..1	S	HL7		

		MedicationRequest, a ServiceRequest, or a CommunicationRequest.								
A.2.9.1.6.2	Activity description	A detailed description of the activity.			Optional	0..1	Y			
A.2.9.1.6.3	Specific attributes	Specific structured attributes per each activity type expressed by the Activity kind element, E.g., specific attributes for prescription request, appointment, etc.			Optional	0..1	Y			
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.		**Core**	**Required**					
A.2.9.2.1	Medication reason	The reason why the medication is or was prescribed or used. It provides a link to the Past or current health condition(s) or problem(s) that the patient has had or has and for which this medication was prescribed.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed	Core	Required	1..1	Y			
A.2.9.2.2	Reason for change	Reason for change of medication	hl7:reason-medication-status-codes	Core	Required	1..1	Y			
A.2.9.2.3	Code	Product code.	IDMP	Core	Required	1..1	Y			
A.2.9.2.4	Brand name	Brand name if biological medicinal product or when justified by the health professional (ref. Commission Directive 2012/52/EU)		Core	Required	1..1	Y			
A.2.9.2.5	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"	ATC (IDMP / EMA SPOR SMS)	Core	Required	1..1	Y			
A.2.9.2.6	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	UCUM EDQM Standard terms	Core	Required	1..1	Y			
A.2.9.2.7	Pharmaceutical dose form	The form in which a pharmaceutical product is presented in the medicinal product package (e.g. tablet, syrup)	EDQM Standard terms	Core	Required	1..1	Y			
A.2.9.2.8	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		Core	Required	1..1	Y			

A.2.9.2.9	Route of administration	Path by which the pharmaceutical product is taken into or makes contact with the body.	EDQM Standard terms	Core	Required	1..1	Y			
A.2.9.2.10	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).		Core	Required	1..1	Y			
A.2.9.2.11	Days supplied	Number of days for which the patient was provided with the drug. Supply is intended to either hand over the medicine or write out a prescription. A 0 value indicates that the patient has not been provided with the drug (e.g. if the patient has a sufficient supply of the drug)	UCUM	Core	Required	1..1	Y			
A.2.9.3	**Other recommendations**	Other recommendations (advice) after discharge. Multiple recommendations could be provided. E.g., recommendation to suggest hip replacement, reduce number of cigarettes, stop smoking, increase physical exercises, etc.		**Core**	**Required**	**1..1**	**Y**			
Other required data fields that are not present in these guidelines.										
A.2.3.5.x	Hospitalization outcome	Patient' discharge condition.		Core	Required	1..1	S			

Annex V – X-Bubble 4 e 5 eHN guidelines analysis

#	Field	Field description	Preferred Code System	Core	Organisation to National Authority to Organisation- bubble 4&5 - KETEKNY					
					Required Optional Not required	Cardinality	Have this information available? (Y)es N(o) (S)tructured	Code System	Value Sets	Comments
HOSPITAL DISCHARGE REPORT HEADER										
A.1	**Hospital Discharge Report header data element**									
A.1.1	**Identification of the patient/subject**				**Required**					
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.			Required		Y			String
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.			Required		Y			String
A.1.1.3	Date of birth	Complete date, following the ISO 8601.	ISO 8601		Required		S	ISO 8601		At least one IT Company
A.1.1.4	National healthcare patient ID	An identifier of the patient that is unique within a defined scope. Example: National ID (birth number) for a Czech patient. Multiple identifiers could be provided			Required		S			Number
A.1.1.5	Nationality	Nationality of the patient.	ISO 3166		Required		S	ISO 3166		At least one IT Company
A.1.1.6	Gender	This field must contain a recognised valid value for "administrative gender". If different, "physiological gender" should be communicated elsewhere in the relevant clinical information section.	HL7 Administrative Gender		Required		S	HL7 Administrative Gender		
A.1.1.7	Country of affiliation	Name of country of affiliation	ISO 3166		Required		S	ISSO 3166		At least one IT Company
A.1.2	**Patient/subject related contact information**									
A.1.2.1	**Patient address**				**Optional**					
A.1.2.1.1	Address	Mailing and home or office addresses. The addresses are always sequences of address parts (e.g.	ISO 3166		Optional		NA			

		street address line, country, postcode, 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 with a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Optional		NA			
A.1.2.2	**Preferred health 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).**				**Optional**					
A.1.2.2.1	Identifier of the HP	An identifier of the health professional that is unique within a defined scope. Example: National health professional ID. Multiple identifiers could be provided.			Optional		NA			
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)]			Optional		NA			
A.1.2.2.3	Role of the HP	Health professional role. Multiple roles could be provided.	ISCO		Optional		NA			
A.1.2.2.4	HP Organisation	Health professional organisation			Optional		NA			
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, postcode, 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.	ISO 3166		Optional		NA			

A.1.2.2.6	Telecom	Telecommunication contact information (addresses) associated with a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Optional		NA			
A.1.2.3	**Contact person/ legal guardian (multiple contacts could be provided)**				**Required**					
A.1.2.3.1	Role of that person	Role of the contact person: legal guardian, next of kin, other person to contact.	HL7 RoleClass		Required		S	HL7 RoleClass		At least one IT Company
A.1.2.3.2	Relationship level	Relationship type with the patient (e.g. father, wife, daughter)	HL7 RoleCode SNOMED CT		Required		S	HL7 RoleCode		At least one IT Company
A.1.2.3.4	Given name	Given name of the contact person/guardian . This field can contain more than one element.			Required		Y			At least one IT Company
A.1.2.3.5	Family name/surname	Family name of the contact person. This field can contain more than one element [the structure of the name will be the same as for the patient (given name, family name / surname)]..			Required		Y			At least one IT Company
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, postcode, 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.	ISO 3166		Required		S	ISO 3166		At least one IT Company
A.1.2.3.7	Telecom	Telecommunication contact information (addresses) associated with a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Required		Y			At least one IT Company
A.1.2.3.8	Contact person organisation	Contact person organisation information.			Optional		NA			
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**				**Required**					

	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.			Required		S			String or Number
A.1.3.2	Health insurance name	Full, official name of the healthcare insurance provider.			Required		Y			String
A.1.3.3	Health insurance number	Number or code under which the insured person is registered at the insurance provider.			Required		S			String
A.1.4	**Information recipient - (intended recipient or recipients of the report), if applicable**				**Optional**					
A.1.4.1	Recipient identifier	The health professional or patient identifier. Either an internal identifier assigned by a healthcare provider institution or (preferably) a national health professional ID such as the licence or registration number. In case when the recipient is not a health professional, e.g. patient, appropriate personal identifier could be used.			Optional		NA			
A.1.4.2	Recipient name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Optional		NA			
A.1.4.3	Recipient organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Optional		NA			
A.1.4.4	Recipient organisation	The healthcare provider organisation information.			Optional		NA			
A.1.4.5	Address	Mailing and home or office addresses. The addresses are always sequences of address parts (e.g. street address line, country, postcode, 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			Optional		NA			

		to be the default address useful for any purpose.								
A.1.4.6	Country	Country of the intended recipient as part of the address.	ISO 3166		Optional		NA			
A.1.4.7	Telecom	Telecommunication contact information (addresses) associated to a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Optional		NA			
A.1.5	**Author (by whom the Hospital discharge report was/were authored). Multiple authors could be provided.**				**Required**					
A.1.5.1	Author identifier	The health professional identifier that will allow addressing recipients within a national or international data exchange infrastructure, such as the licence or registration number. In case when the recipient is not a health professional, e.g. patient, appropriate personal identifier should be used.			Required		S			Doctor AMKA#
A.1.5.2	Author name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Required		Y			
A.1.5.3	Author organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Required		S			Hospital VAT#
A.1.5.4	Author organisation	The healthcare provider organisation information.			Required		Y			
A.1.5.5	Date Time	Date and time of the last modification of the document by its Author.	ISO 8601		Required		S	ISO 8601		At least one IT Company
A.1.6	**Attester (multiple attesters could be provided)**				**Optional**					
A.1.6.1	Attester identifier	The health professional identification number. Either an internal identifier assigned by a healthcare provider institution or (preferably) a national			Optional		NA			

		health professional ID such as the licence or registration number.								
A.1.6.2	Attester name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Optional		NA			
A.1.6.3	Attester organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Optional		NA			
A.1.6.4	Attester organisation	The healthcare provider organisation information.			Optional		NA			
A.1.6.5	Approval date and time	Date and time of the approval of the document by Attester.	ISO 8601		Optional		NA			
A.1.7	**Legal authenticator (The person taking responsibility for the medical content of the document)**				**Optional**					
A.1.7.1	Legal authenticator 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 licence or registration number. Multiple identifiers could be provided.			Optional		NA			
A.1.7.2	Legal authenticator name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Optional		NA			
A.1.7.3	Legal authenticator organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Optional		NA			
A.1.7.4	Legal authenticator organisation	The healthcare provider organisation information.			Optional		NA			
A.1.7.5	Authentication date and time	Date and time when the document was authorised.	ISO 8601		Optional		NA			
A.1.8	**Document metadata**				**Required**					
A.1.8.1	Document ID	Unique identifier of the document			Required		S			String

A.1.8.2	Document type	Identifies the type of document at hand, e.g. Hospital discharge report.	LOINC		Required		S	LOINC	18842-5	Document type for hospital discharge letter
A.1.8.3	Document status	The status of the Hospital discharge report. E.g., preliminary, final.	hl7:CompositionStatus		Required		S	hl7:CompositionStatus		At least one IT Company
A.1.8.4	Report date and time	Date and time of the Hospital discharge report creation.	ISO 8601		Required		S	ISO 8601		
A.1.8.5	Document title	Document title, fix value "Hospital discharge report".			Required		Y			
A.1.8.6	Report custodian	Organisation that is in charge of maintaining the report [this element will include organisation ID, name, address etc., as other elements describing organisations].			Required		Y			
A.1.8.7	Confidentiality	Level of confidentiality of the document. Implicit value is normal.	hl7:Confidentiality		Optional		NA			
A.1.8.8	Language	Language in which the document is written. Language is expressed by the ISO language code.	ISO 639		Required		S	ISO 639		At least one IT Company
A.1.8.9	Version	Version of the document			Required		S			At least one IT Company
HOSPITAL DISCHARGE REPORT BODY										
A.2.0	**Hospital Discharge Report in its narrative form**			**Core**	**Required**		**Y**			
A.2.1	**Advance directives**				**Optional**					
A.2.1.1	**Living will**	**Only directives being expressed during current inpatient stay. Multiple records of living wills could be provided.**			**Optional**					
A.2.1.1.1	Date and time	The date and time on which the living will was recorded.	ISO 8601		Optional		NA			
A.2.1.1.2	Type	Type of a living will, e.g. Do not resuscitate, donorship statement, power of attorney etc.	SNOMED CT		Optional		NA			
A.2.1.1.3	Comment	Comment on the living will.			Optional		NA			
A.2.1.1.4	Related conditions	The problem or disorder to which the living will applies. Multiple fields could be provided.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Optional		S	ICD-10-GrM ICD-International Classification of Diseases		(Greek Modification) (version of classification must be indicated)

A.2.1.1.5	Living will document	Scanned source document with the living will and the patient's signature, such as a PDF.			Optional		NA			
A.2.2	**Alerts**			**Core**	**Required**					
A.2.2.1	**Allergy and Intolerance**	**A record of allergies and intolerances (primarily to be used for new allergies or intolerances that occurred during the hospital stay).**		**Core**	**Required**					
A.2.2.1.1	Allergy description	Textual description of the allergy or intolerance		Core	Required		Y			
A.2.2.1.2	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)	SNOMED CT		Required		N			
A.2.2.1.3	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). Multiple manifestations could be provided.	SNOMED CT	Core	Required		Y			Descriptive At least one IT Company
A.2.2.1.4	Severity	Severity of the clinical manifestation of the allergic reaction.	SNOMED CT		Required		N			
A.2.2.1.5	Criticality	Potential risk for future life-threatening adverse reactions when exposed to a substance known to cause an adverse reaction.	SNOMED CT		Optional		NA			
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 date, partial date or life period (childhood, adolescence).	ISO 8601 SNOMED CT (Age group)		Optional		NA			
A.2.2.1.7	End date	Date of resolution of the allergy (e.g. when the clinician deemed there is no longer any need to track the underlying condition)	ISO 8601 SNOMED CT (Age group)		Optional		NA			
A.2.2.1.8	Status	Current status of the allergy or intolerance, for example, whether it is active, in remission, resolved, and so on …	Active, resolved, …		Optional		NA			

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.	SNOMED CT		Optional		NA			
A.2.2.1.10	Agent or Allergen	A specific allergen or other agent/substance (drug, food, chemical agent, etc.) to which the patient has an adverse reaction propensity.	SNOMED CT ATC (IDMP / EMA SPOR SMS)	Core	Required		Y			Descriptive At least one IT Company
A.2.2.2	**Medical alerts (relevant for the respective hospital stay)**			**Core**	**Required**					
A.2.2.2.1	Healthcare alert description	A warning, other than included in allergies.	SNOMED CT	Core	Required		Y			Descriptive At least one IT Company
		The warning can be entered in code (there are codes for frequently used alerts) but seeing the dynamic nature of the warnings, these alerts will often be entered as free text.	LOINC							
		Any clinical information that is imperative to know so that the life or health of the patient does not come under threat.								
		Example 1: the patient has a rare disease that requires special treatment								
		Example 2: Airway Alert / Difficult Intubation								
		Example 3: Diagnoses such as malignant hyperthermia, porphyria, and bleeding disorders; special treatments like anticoagulants or immunosuppressants; implanted devices.								
		Example 4: transplanted organs illustrate other information that has to be taken into account in a healthcare contact.								
		Example 5: participation in a clinical trial that has to be taken into account in a healthcare contact.								
A.2.3	**Encounter**			**Core**	**Required**					

A.2.3.1	Encounter type	The type of the encounter whether inpatient or short stay encounter.	hl7v3:ActEncounterCode		Required		S	hl7v3:ActEncounterCode		
A.2.3.2	Encounter note	A narrative description of the encounter course.			Required		Y			At least one IT Company
A.2.3.3	**Admission**			**Core**	**Required**					
A.2.3.3.1	Admission urgency	Admission type, either emergency or planned	hl7:v3-xEncounterAdmissionUrgency	Core	Required		S	admissionType	01. Full Hospital treatment, Normal (not from another institution) 03. Short stay for dialysis 08. Inpatient admission for organ removal (as transplants)	
A.2.3.3.2	Admission date	Admission date and time.	ISO 8601	Core	Required		S	ISO 8601		
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 licence or registration number.			Required		Y			
A.2.3.3.4	Admitting professional name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Required		Y			
A.2.3.3.5	Admitting organisation ID	The healthcare provider organisation identifier.			Required		Y			
A.2.3.3.6	Admitting organisation	The healthcare provider organisation information.		Core	Required		Y			
A.2.3.3.7	Admit Source	From where the patient was admitted (e.g. physician referral, transfer).	HI7:admit-source		Required		S	HI7:admit-source	P. Referral from a doctor E. Emergency referral from hospital's emergency department (ТЕП)	

									R. Transferred from rehabilitation unit T. Transfer from another hospital/institution in more than 24 hours S. Transfer from another hospital/institution in less than 24 hours B. Birth H. Regular referral from hospital's outpatient clinics (T.E.I.)	
A.2.3.3.8	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 licence or registration number.			Required		S			Doctor AMKA#
A.2.3.3.9	Referring professional name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Required		Y			
A.2.3.3.10	Referring organisation ID	The healthcare provider organisation identifier.			Required		Y			
A.2.3.3.11	Referring organisation	The healthcare provider organisation information.			Required		Y			
A.2.3.4	**Admission reason**			**Core**	**Required**					
A.2.3.4.1	Admission reason	Reason or reasons for admission, e.g. Problem, procedure or finding.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed	Core	Required		S	ICD10-GrM		
A.2.3.4.2	Admission reason comment	Explanation of the reason for the encounter.		Core	Required		Y			

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 organisation. 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).	SNOMED CT		Optional		NA			
A.2.3.5	**Discharge**			**Core**	**Required**					
A.2.3.5.1	Discharge date	Discharge date and time	ISO 8601	Core	Required		S	ISO 8601		
A.2.3.5.2	Discharge destination type	Type of location to which the patient will go after the encounter. E.g. home, hospital, nursing home, left against medical advice etc.	hl7.discharge-disposition	Core	Required		S	dischargeReason	01. Treatment ended regularly (not including Death or Transfer to another hospital or institution) 02. Treatment ended regularly, post-treatment foreseen, not further defined 03. Treatment discontinued for other reasons 04. Treatment discontinued against medical advice	

									06. Transfer to another hospital 07.Death 09.Discharge/ transfer in a rehabilitation facility	
A.2.3.5.3	Destination location	The location/organisation to which the patient will go after the encounter. Name, address and telecommunication contact.		Core	Required		Y			At least one IT Company
A.2.3.6	**Location - All locations/departments where the patient stayed (was boarded) within the hospital.**			**Core**	**Required**					
A.2.3.6.1	Period	Time period during which the patient was present at the location		Core	Required		Y			
A.2.3.6.2	Organisation Part ID	The organisation's part identifier.			Required		Y			ONLY discharge Clinic there is a list of Discharge Clinics
A.2.3.6.3	Organisation Part Name	Full name of the organisation part, e.g. Name of the department		Core	Required		Y			
A.2.3.6.4	Organisation Part Details	Address, contact names and contact details, specialty of the organisation part.	SNOMED CT	Core	Required		Y			At least one IT Company
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**				**Required**					
A.2.4.1.1	Date and time	Date and time of the examination	ISO 8601		Required		S	ISO 8601		At least one IT Company
A.2.4.1.3	**Anthropometric observations**	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. Multiple observations could be provided.			**Required**					
A.2.4.1.3.1	Observation details	Observation details include code that identifies observation, specification of the observed body structure or	SNOMED CT LOINC ISO 8601		Required		Y			Descriptive At least one IT Company

		specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation..								
A.2.4.1.3.2	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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (for units of measurement)		Required		Y			Descriptive At least one IT Company
A.2.4.1.4	**Vital signs**	Vital signs observation: • Recommended: Pulse rate, respiratory rate, systolic and diastolic blood pressure with site information • Optional: 02 saturation, temperature, pain (scale), …			**Required**					
A.2.4.1.4.1	Result description	Narrative representation of the observation result and findings.			Required		Y			
A.2.4.1.4.2	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	SNOMED CT LOINC ISO 8601		Required		Y			At least one IT Company
A.2.4.1.4.3	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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (measurement units)		Required		Y			At least one IT Company
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			**Required**					

		diagnoses and further steps. Physical examination can be performed through observation, palpation, percussion, and auscultation.								
A.2.4.1.5.1	Observation Note	A narrative description of the observation. It should be structured by the organ system (e.g. head, neck, body, arms, ...)			Required		Y			
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/				**Required**					
A.2.4.2.1	Description	Need for the patient to be continuously assessed by third parties; functional status may influence decisions about how to plan and administer treatments			Required		Y			At least one IT Company
A.2.4.2.2	Onset Date	Onset date of a condition	ISO 8601		Required		S	ISO 8601		At least one IT Company
A.2.4.2.3	Functional assessment description	Description of the functional assessment	ICF		Optional		NA			
A.2.4.2.4	Functional assessment date	Date of the functional assessment	ISO 8601		Optional		NA			
A.2.4.2.5	Functional assessment result	Functional assessment result value	ICF		Optional		NA			
A.2.6	**Patient history (might include information about provenance of the information)**									
A.2.6.1	**Medical history**				**Required**					
A.2.6.1.1	**History of problems**	A list of conditions of a patient that the patient suffered in the past or still suffers. Unlike diagnostic summary, medical history is not only a list of problems, 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 the diagnostic summary section of the discharge report.			**Required**					

A.2.6.1.1.1	Problem description	Problem specification			Required		Y			
A.2.6.1.1.2	Problem details	Problem details include code that identifies problem, specification of the body structure, laterality, and other aspects of the problem.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed IPS Absent and Unknown Data ICD-O-3		Required		S	ICD10-GrM		
A.2.6.1.1.3	Onset date	Onset date of the problem/condition	ISO 8601		Required		S	ISO 8601		
A.2.6.1.1.4	End date	The date or estimated date that the condition resolved or went into remission.	ISO 8601		Required		S	ISO 8601		At least one IT Company
A.2.6.1.1.5	Clinical status	Status of the condition/problem (active, resolved, inactive, ...)	hl7:condition-clinical		Required		S	hl7:condition-clinical		At least one IT Company
A.2.6.1.1.6	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).			Optional		NA			
A.2.6.1.1.7	Severity	A subjective assessment of the severity of the condition as evaluated by the clinician.	SNOMED CT		Required		N			
A.2.6.1.1.8	Stage	Stage/grade, usually assessed formally using a specific staging/grading system.	e.g. TNM, ICD-O-3		Optional		NA			
A.2.6.1.2	**Devices and Implants**	Devices and Implants			**Required**					
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,	SNOMED CT EMDN IPS Absent and Unknown Data		Required		Y			At least one IT Company

		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			Optional		NA			
A.2.6.1.2.3	Implant date	The date and time the device was implanted or when its use began.	ISO 8601		Required		S	ISO 8601		At least one IT Company
A.2.6.1.2.4	End date	Date and time when the device was explanted from the patient or the external device was no longer in use; likewise when the device is planned to be explanted	ISO 8601		Required		N			
A.2.6.1.2.5	Reason	The medical reason for use of the medical device.	ICD-10 SNOMED CT Orphacode if rare disease is diagnosed		Required		S	ICD10-GrM		At least one IT Company
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, counselling, physiotherapy, personal support services, adult day care services, etc.			**Required**					
A.2.6.1.3.1	Procedure code	Procedure code	SNOMED CT LOINC, NPU (for laboratory procedures) IPS Absent and Unknown Data		Required		S	ETIP- Greek Classification of Medical Procedures version 2017-v.2		At least one IT Company
A.2.6.1.3.2	Procedure description	Narrative description of the procedure			Required		Y			
A.2.6.1.3.3	Body site	Procedure target body site and laterality	SNOMED CT		Required		Y			At least one IT Company
A.2.6.1.3.4	Procedure date	Date and time when procedure was performed	ISO 8601		Required		S	ISO 8601		
A.2.6.1.3.5	Procedure reason	The coded reason why the procedure was performed. This may be a coded entity or may simply be present as text.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required		S	ICD10-GrM		

A.2.6.1.3.6	Outcome	The outcome of the procedure - did it resolve the reasons for the procedure being performed? Applicable mainly on surgical procedures.	SNOMED CT		Required		Y			
A.2.6.1.3.7	Focal device	A reference to the device or devices that is implanted, removed or otherwise manipulated (calibration, battery replacement, fitting a prosthesis, attaching a wound-vac, etc.) as a focal portion of the Procedure.			Optional		NA			
A.2.6.1.4	**Vaccination**	Vaccination history of the patient.			**Required**					
A.2.6.1.4.1	Disease or agent targeted	Disease or agent that the vaccination provides protection against	ICD-10* SNOMED CT		Required		S	ICD10-GrM		
A.2.6.1.4.2	Vaccine/prophylaxis	Generic description of the vaccine/prophylaxis or its component(s)	SNOMED CT ATC (IDMP/ EMA SPOR SMS)		Required		Y			At least one IT Company
A.2.6.1.4.4	Vaccine medicinal product	Medicinal product name			Required		Y			
A.2.6.1.4.5	Marketing Authorisation Holder	Marketing Authorisation Holder or manufacturer (Identifier and name)	EMA's Organisations Management Service (EMA SPOR OMS)		Optional		NA			
A.2.6.1.4.6	Number in a series of vaccinations / doses	Order in the vaccination course.			Optional		NA			
A.2.6.1.4.7	Date of vaccination	The date and time when the vaccination was administered	ISO 8601		Optional		NA			
A.2.6.1.4.8	Next vaccination date	The date when the vaccination is planned to be given/repeated (e.g. next dose)	ISO 8601		Optional		NA			
A.2.6.1.5	**Epidemiological history**	Travel history and infectious contacts			**Required**					
A.2.6.1.5.1	***Infectious contacts***	Infectious contacts of the patient			**Required**					
A.2.6.1.5.1.1	Time period	A date and duration or date time interval of contact. Partial dates are allowed.	ISO 8601		Required		N			
A.2.6.1.5.1.2	Infectious agent	Information about a suspected infectious agent or agents the person was exposed to.	ICD-10* (chapter 1) SNOMED CT		Required		N			
	Proximity		SNOMED CT		Required		N			

A.2.6.1.5.1.3		Proximity to the source/carrier of the infectious agent during exposure. Proximity could be expressed by text, code (direct, indirect) or value specifying distance from the InfectiousAgentCarrier.	UCUM (measurement units)							
A.2.6.1.5.1.4	Country	Country in which the person was potentially exposed to an infectious agent.	ISO 3166		Required		N			
A.2.6.1.5.1.5	Additional information	A textual note with additional information about infectious contact.			Required		N			
A.2.6.1.5.2	***Travel history***	Travel history reported by the patient. Multiple records could be provided.			**Required**					
A.2.6.1.5.2.1	Time period	Start and end date or end date and duration of stay in a country. Partial dates are allowed.	ISO 8601		Required		N			
A.2.6.1.5.2.2	Country visited	A country visited by the patient.	ISO 3166		Required		N			
A.2.6.1.5.2.3	Comment	Relevant notes on the travel stay.			Optional		NA			
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.			**Required**					
A.2.6.2.1	Patient relationship	The family relation between the related person and the patient.	hl7:v3-RoleCode		Required		Y			
A.2.6.2.2	Date of birth	Full or partial date of birth	ISO 8601		Optional		NA			
A.2.6.2.3	Age or date of death	Age or date of the death of the family member.	ISO 8601		Optional		NA			
A.2.6.2.5	Condition	Medical problems this person suffers or suffered.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required		S	ICD10-GrM		
A.2.6.2.6	Cause of death	Information about disease or condition that was the main cause of death.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required		S	ICD10-GrM		
A.2.6.3	**Social determinants of health**	Information about social determinants of health.			**Required**					

A.2.6.3.1	**Participation in society**	Participation in society details.			**Optional**					
A.2.6.3.1.1	Work situation	Work Situation describes the extent to which and in what way the patient participates in the workforce. Work is meant in the broadest sense of the word: activities that contribute to the person themselves, their environment or society. This includes both paid and unpaid work.			Optional		NA			
A.2.6.3.1.2	Hobby	An activity the patient enjoys doing in their free time.			Optional		NA			
A.2.6.3.1.3	Social network	A description of the patient's social network, such as family, neighbours and friends.			Optional		NA			
A.2.6.3.2	**Education**				**Optional**					
A.2.6.3.2.1	Education level	Indication of the highest level of education achieved.	hl7:v3.EducationLevel		Optional		NA			
A.2.6.3.2.2	Comment	If deemed relevant, a specification of the degree program can be provided by means of an explanation (e.g.: patient is in medical school).			Optional		NA			
A.2.6.3.3	**Living situation**	Household type and other related living situation information.			**Optional**					
A.2.6.3.3.1	House type	Type of home the patient lives in.	SNOMED CT		Optional		NA			
A.2.6.3.3.2	Home adaption	Adaptions present in the home that have been made in the context of the illness or disability to make the functioning of the patient safer and more comfortable and to enable independent living. Multiple data elements could be provided.	SNOMED CT		Optional		NA			
A.2.6.3.3.3	Living conditions	Conditions that affect the accessibility of the home or the stay in the home. Multiple data elements could be provided.	SNOMED CT		Optional		NA			
A.2.6.3.4	**Family situation**	Family situation details.			**Optional**					
A.2.6.3.4.1	Comment	A comment on the family situation.			Optional		NA			

A.2.6.3.4.2	Family composition	The family composition describes the patient's home situation and the form of cohabitation. A family can consist of one or more people.	SNOMED CT		Optional		NA			
A.2.6.3.4.3	Marital status	A person's marital status according to the terms and definition in the national civil code.	hl7: v3-MaritalStatus		Optional		NA			
A.2.6.3.4.4	Number of children	The number of children the patient has. Children in the context of this information model include step children, foster children, biological and adopted children.			Optional		NA			
A.2.6.3.4.5	Number of children at home	The number of children living at home with the patient.			Optional		NA			
A.2.6.3.4.6	Child details	Child age, co-living status and comment. Multiple child details could be provided.			Optional		NA			
A.2.6.3.4.7	Care responsibility	The activities the patient carries out to care for a dependent family member.			Optional		NA			
A.2.6.4	**Use of substances**				**Required**					
A.2.6.4.1	**Alcohol use**	Alcohol consumption by the patient. Multiple records on alcohol use could be provided.			**Required**					
A.2.6.4.1.1	Status	The status of the patient's alcohol use.	SNOMED CT		Required		Y			
A.2.6.4.1.2	Period and quantity	Period of use and amount (The extent of the patient's alcohol use in units of alcohol per time period.)			Optional		NA			
A.2.6.4.1.3	Comment	Textual comment.			Optional		NA			
A.2.6.4.2	**Tobacco use**	Represent smoking or tobacco habits. Multiple records on tobacco use could be provided.			**Required**					
A.2.6.4.2.1	Status	The status of the patient's tobacco use.	SNOMED CT		Required		Y			
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.)			Required		Y			
A.2.6.4.2.3	Comment	Textual comment.			Required		Y			

A.2.6.4.3	**Drug consumption**	Consumption of drugs and other substances (in terms of abuse).			**Required**					
A.2.6.4.3.1	Status	The status of the patient's drug use.	SNOMED CT		Optional		NA			
A.2.6.4.3.2	Period and quantity	Period of use and amount.			Required		Y			At least one IT Company
A.2.6.4.3.3	Drug or medication type	Type of the drug consumption	SNOMED CT		Required		N			
A.2.6.4.3.4	Route of administration	Route or routes of administration	EDQM Standard Terms		Required		N			
A.2.6.4.3.5	Comment	Textual comment			Required		N			
A.2.7	**Course of hospitalisation (Hospital stay)**			**Core**	**Required**					
A.2.7.1	**Diagnostic summary**	All problems/diagnoses that affect 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 be 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.		**Core**	**Required**					
A.2.7.1.1	Problem description	Problem specification in narrative form		Core	Required		Y			
A.2.7.1.2	Problem details	Problem details include code that identifies problem, specification of the body structure, laterality, and other aspects of the problem.	ICD-10* SNOMED CT ICD-O-3 Orphacode if rare disease is diagnosed IPS Absent and Unknown Data	Core	Required		S	ICD10-GrM		

A.2.7.1.3	Onset date	Onset date of a problem/condition	ISO 8601	Core	Required		S	ISO 8601		At least one IT Company
A.2.7.1.4	End date	The date or estimated date that the condition resolved or went into remission.	ISO 8601		Optional		NA			
A.2.7.1.5	Category	Category of the problem allows flagging for conditions acquired during hospital stay. - Present on admission [POA]) - Hospital acquired condition [HAC] Not applicable or unknown		Core	Required		Y			At least one IT Company
A.2.7.1.6	Treatment class	Class of the problem (treated, other) in relation to the hospital encounter. Treated problems were treated or affected provisioning of care (diagnostics, therapy, nursing, monitoring) during the hospital encounter. At least one problem should be marked as Treated. Other problems are recorded only if they are important for continuity of care (after discharge).	Treated, Other	Core	Required		Y			At least one IT Company
A.2.7.1.7	Clinical status	Status of the condition/problem (active, resolved, inactive, ...)	hl7:condition-clinical		Required		Y			At least one IT Company
A.2.7.1.8	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).			Optional		NA			
A.2.7.1.9	Severity	A subjective assessment of the severity of the condition as evaluated by the clinician.	hl7:condition-severity		Required		Y			At least one IT Company
A.2.7.1.10	Stage		e.g. TNM		Optional		NA			

		Stage/grade usually assessed formally using a specific staging/grading system. Multiple assessment systems could be used.	ICD-O-3							
A.2.7.2	**Significant procedures**	Significant surgical and non-surgical procedures performed during hospitalisation which are significant for continuity of care, e.g. surgeries and other "instrumental" interventions (endoscopic, intravascular), chemotherapy, radiotherapy, purification methods (dialysis, hemoperfusion), circulation support methods (counterpulsation, etc.), administration of blood derivatives or others. 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 Absent and Unknown Data.		**Core**	**Required**					
A.2.7.2.1	Procedure code	Procedure code	SNOMED CT IPS Absent and Unknown Data	Core	Required		S	ETIP- Greek Classification of Medical Procedures version 2017-v.2 & ELOKIP		
A.2.7.2.2	Procedure description	Narrative description of the procedure		Core	Required		Y			
A.2.7.2.3	Body site	Procedure target body site and laterality	SNOMED CT		Optional		NA			
A.2.7.2.4	Procedure date	Date and time when procedure was performed	ISO 8601	Core	Required		S	ISO 8601		
A.2.7.2.5	Procedure reason	The coded reason why the procedure was performed. This may be a coded entity or may simply be present as text.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required		S	ICD10-GrM		
A.2.7.2.6	Outcome	The outcome of the procedure - did it resolve the reasons for the procedure being performed?	SNOMED CT		Optional		NA			
A.2.7.2.7	Complication	Any complications that occurred during the procedure, or in the	ICD-10* SNOMED CT		Required		S	ICD10-GrM		

		immediate post-performance period. These are generally tracked separately from the procedure description, which will typically describe the procedure itself rather than any 'post procedure' issues.	Orphacode if rare disease is diagnosed							
A.2.7.2.8	Focal device	A reference to the device or devices that is/are implanted, removed, or otherwise manipulated (calibration, battery replacement, fitting a prosthesis, attaching a wound-vac, etc.) as a focal portion of the Procedure.		Core	Required		Y			At least one IT Company
A.2.7.3	**Medical devices and implants**	Implants and used medical devices that affected or may affect the provision of health services (diagnosis and treatment). Also medical devices explanted, or its use was stopped during hospitalisation. If the section is blank, the reason must be explicitly stated using the IPS Absent and Unknown Data coding system		**Core**	**Required**					
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.	SNOMED CT EMDN IPS Absent and Unknown Data	Core	Required		S	ETIP- Greek Classification of Medical Procedures version 2017-v.2 & ELOKIP		At least one IT Company
A.2.7.3.2	Device ID	Normalised identifier of the device instance such as UDI according to REGULATION (EU) 2017/745			Optional		NA			
A.2.7.3.3	Implant date	The date and time the device was implanted or when its use began.	ISO 8601	Core	Required		S	ISO 8601		At least one IT Company
A.2.7.3.4	End date	Date and time when the device was explanted from the patient or the external device was no longer in use; likewise when the device is planned to be explanted	ISO 8601	Core	Required		N			
A.2.7.3.5	Reason	The medical reason for use of the medical device.	ICD-10* SNOMED CT		Required		S	ICD10-GrM		

			Orphacode if rare disease is diagnosed							
A.2.7.5	**Pharmacotherapy**	Selected drug treatment during hospitalisation. Medicinal products that were administered during hospitalisation and whose administration has already been discontinued before discharge. Only products which are important for continuity of care (antibiotics other than completely routine, corticosteroids in high doses, etc.) will be listed. Products which administration will continue after discharge will be also recorder in the Medication summary section. Medicinal products, the administration of which was started during hospitalisation, but is also recommended after discharge, will be listed in the summary table in the recommendation section.		**Core**	**Required**					
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.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required		S	ICD10-GrM		
A.2.7.5.2	Code	Product code	IDMP	Core	Required		S	National Organization for Medicines (EOF) Code		
A.2.7.5.3	Intended use	Indication intended use as: prevention or treatment Example: prophylaxis, treatment, diagnostic, anaesthesia.			Optional		NA			
A.2.7.5.4	Brand name	Brand name if biological medicinal product or when justified by the health professional (ref. Commission Directive 2012/52/EU)		Core	Required		S	National Organization for Medicines (EOF) Code		
A.2.7.5.5	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"	ATC (IDMP / EMA SPOR SMS)		Required		S	National Organization for Medicines (EOF) Code		
A.2.7.5.6	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	UCUM EDQM Standard terms		Required		Y			At least one IT Company

A.2.7.5.7	Pharmaceutical dose form	The form in which a pharmaceutical product is presented in the medicinal product package (e.g. tablet, syrup)	EDQM Standard Terms		Required		S	National Organization for Medicines (EOF) Code		
A.2.7.5.8	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			Required		S	National Organization for Medicines (EOF) Code		
A.2.7.5.9	Route of administration	Path by which the pharmaceutical product is taken into or makes contact with the body.	EDQM Standard Terms		Required		Y			At least one IT Company
A.2.7.5.10	Period of treatment	The time interval when the patient was, or was not, given the medication.		Core	Required		Y			At least one IT Company
A.2.7.6	**Significant Observation Results**	Results of significant functional, diagnostic, and imaging examinations to ensure continuity of care, performed during hospitalisation. Results of examinations ordered but not yet delivered should be presented separately from results already delivered.			**Required**					
A.2.7.6.1	Date	Date and time of the observation	ISO 8601	Core	Required		S	ISO 8601		At least one IT Company
A.2.7.6.2	Observation status	Status of the observation (e.g. registered, preliminary, final)	hl7:observation-status		Optional		NA			
A.2.7.6.3	Result description	Narrative representation of the observation result and findings.		Core	Required		Y			
A.2.7.6.4	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	LOINC NPU SNOMED CT ISO 8601	Core	Required		Y			At least one IT Company
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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	SNOMED CT UCUM (measurement units)	Core	Required		Y			At least one IT Company

A.2.7.6.7	Reporter	With certain observation results, e.g. there may also be an interpreter or a person responsible for validation.			Optional		NA			
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, explanation of clinical context) in clinically complex conditions.		**Core**	**Required**					
A.2.7.7.1	Problem synthesis	Summary description of the reason and course of hospitalisation for a specific problem.		Core	Required		N			
A.2.7.7.2	Clinical reasoning	The clinical summary can be concluded with a clinical consideration (diff. diagnosis, explanation of context, etc.) for clinically complex conditions.			Required		Y			Descriptive At least one IT Company
A.2.8	**Discharge details (structured information should be provided, however if not available, at least a summary note should be present).**			**Core**	**Required**					
A.2.8.1	**Objective findings**			**Core**	**Required**					
A.2.8.1.1	Date	Date and time of the examination at or before discharge	ISO 8601		Optional		NA			
A.2.8.1.3	**Anthropometric observations**	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. Multiple observations could be provided.		**Core**	**Required**					
A.2.8.1.3.1	Result description	Narrative representation of the observation result and findings.			Optional		NA			
A.2.8.1.3.2	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	SNOMED CT LOINC ISO 8601	Core	Required		N			
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 reference ranges and result interpretation.	UCUM (measurement units)	Core	Required		N			

		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: • Recommended: systolic and diastolic blood pressure including site of measurement, pulse rate, respiratory rate • Optional: 02 saturation, temperature, pain (scale), ...		**Core**	**Required**					
A.2.8.1.4.1	Result description	Narrative representation of the observation result and findings.			Optional		NA			
A.2.8.1.4.2	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	SNOMED CT LOINC ISO 8601	Core	Required		Y			At least one IT Company
A.2.8.1.4.3	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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (measurement units)	Core	Required		N			
A.2.8.1.5	**Physical examination**	Physical examination (at discharge) is the process of evaluating objective anatomical findings. Physical examination can be performed through observation, palpation, percussion, and auscultation.		**Core**	**Required**					
A.2.8.1.5.1	Observation Note	A narrative description of the observation. It should be structured by the organ system (e.g. head, neck, body, arms, ...)		Core	Required		N			
A.2.8.2	**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/		**Core**	**Required**					

A.2.8.2.1	Description	Need for the patient to be continuously assessed by third parties; functional status may influence decisions about how to plan and administer treatments		Core	Required		N			
A.2.8.2.2	Onset Date	Onset date of a condition	ISO 8601		Required		N			
A.2.8.2.3	Functional assessment description	Description of the functional assessment	e.g. ICF		Required		N			
A.2.8.2.4	Functional assessment date	Date of the functional assessment	ISO 8601		Optional		NA			
A.2.8.2.5	Functional assessment result	Functional assessment result value	e.g. ICF		Required		N			
A.2.8.3	**Discharge note**	Discharge summary note			**Required**		**Y**			**At least one IT Company**
A.2.9	**Care plan and other recommendations after discharge.**			**Core**	**Required**					
A.2.9.1	**Care plan**	Care plan after discharge. Multiple care plans could be provided.		**Core**	**Required**					
A.2.9.1.1	Title	Human-friendly name for the care plan (e.g. Hip replacement care plan)			Required		N			
A.2.9.1.2	Addresses	Identifies the conditions/problems/concerns/diagnoses/etc. whose management and/or mitigation are handled by this plan. This element provides a linkage to the conditions recorded in the diagnostic summary section.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Required		S	ICD10-GrM		At least one IT Company
A.2.9.1.3	Description	A description of the scope and nature of the plan.		Core	Required		N			
A.2.9.1.4	Plan Period	Indicates when the plan did (or is intended to) come into effect and end.			Optional		NA			
A.2.9.1.5	Other details	Other structured and coded details, care team, goals to be achieved.			Optional		NA			
A.2.9.1.6	**Activity**	Actions to occur as part of the plan.			**Required**					
A.2.9.1.6.1	Kind	A description of the type of care plan activity. For example, a MedicationRequest, a	hl7:resource-types		Optional		NA			

		ServiceRequest, or a CommunicationRequest.								
A.2.9.1.6.2	Activity description	A detailed description of the activity.			Required		N			
A.2.9.1.6.3	Specific attributes	Specific structured attributes per each activity type expressed by the Activity kind element, E.g., specific attributes for prescription request, appointment, etc.			Optional		NA			
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.		**Core**	**Required**					
A.2.9.2.1	Medication reason	The reason why the medication is or was prescribed or used. It provides a link to the Past or current health condition(s) or problem(s) that the patient has had or has and for which this medication was prescribed.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed	Core	Required		S	ICD10-GrM		
A.2.9.2.2	Reason for change	Reason for change of medication	hl7:reason-medication-status-codes	Core	Required		N			
A.2.9.2.3	Code	Product code.	IDMP	Core	Optional		NA			
A.2.9.2.4	Brand name	Brand name if biological medicinal product or when justified by the health professional (ref. Commission Directive 2012/52/EU)		Core	Required		Y			
A.2.9.2.5	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"	ATC (IDMP / EMA SPOR SMS)	Core	Required		Y			At least one IT Company
A.2.9.2.6	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	UCUM EDQM Standard terms	Core	Required		S	National Organiation for Medicines (EOF) Code		At least one IT Company
A.2.9.2.7	Pharmaceutical dose form	The form in which a pharmaceutical product is presented in the medicinal product package (e.g. tablet, syrup)	EDQM Standard terms	Core	Required		Y			At least one IT Company

A.2.9.2.8	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		Core	Required		Y			
A.2.9.2.9	Route of administration	Path by which the pharmaceutical product is taken into or makes contact with the body.	EDQM Standard terms	Core	Required		Y			At least one IT Company
A.2.9.2.10	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).		Core	Required		Y			At least one IT Company
A.2.9.2.11	Days supplied	Number of days for which the patient was provided with the drug. Supply is intended to either hand over the medicine or write out a prescription. A 0 value indicates that the patient has not been provided with the drug (e.g. if the patient has a sufficient supply of the drug)	UCUM	Core	Optional		NA			
A.2.9.3	**Other recommendations**	Other recommendations (advice) after discharge. Multiple recommendations could be provided. E.g., recommendation to suggest hip replacement, reduce number of cigarettes, stop smoking, increase physical exercises, etc.		**Core**	**Required**		**Y**			**Descriptive**
Other required data fields that are not present in these guidelines.										
A.2.3.3.x	Admitting weight	Weight on admission. To be completed for patients age less than 1 year.		Core	Required		Y			In grams
A.2.3.5.x	Hospitalization outcome	Patient' discharge condition.		Core	Required		S	HL7.PV2.PatientCondition Code (Greek Values - NOT STANDARD HL7)	A. Satisfactory C. Critical P. Poor S. Stable O. Other U. Unknown D. Death	

Annex VI – X-Bubble 6 eHN guidelines analysis

#	Field	Field description	Preferred Code System	Core	National Authority to National Authority - bubble 6 - NCZI					
					Required Optional Not required	Cardinality	Have this information available? (Y)es N(o) (S)tructured	Code System	Value Sets	Comments
HOSPITAL DISCHARGE REPORT HEADER										
A.1	**Hospital Discharge Report header data element**				**Required**					
A.1.1	**Identification of the patient/subject**				**Required**					
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.			Optional	0:1	N			3th part information (RFO)
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.			Optional	0:1	N			3th part information (RFO)
A.1.1.3	Date of birth	Complete date, following the ISO 8601.	ISO 8601		Optional	0:1	N			
A.1.1.4	National healthcare patient ID	An identifier of the patient that is unique within a defined scope. Example: National ID (birth number) for a Czech patient. Multiple identifiers could be provided			Required	1:1	S			
A.1.1.5	Nationality	Nationality of the patient.	ISO 3166		Optional	0:1	N			3th part information (RFO)
A.1.1.6	Gender	This field must contain a recognised valid value for "administrative gender". If different, "physiological gender" should be communicated elsewhere in the relevant clinical information section.	HL7 Administrative Gender		Optional	0:1	S			3th part information (RFO)
A.1.1.7	Country of affiliation	Name of country of affiliation	ISO 3166		Required	1:1	S			only SK public healthcare insurance.
A.1.2	**Patient/subject related contact information**				**Required**					
A.1.2.1	**Patient address**				**Optional**					
A.1.2.1.1	Address	Mailing and home or office addresses. The addresses are always sequences of	ISO 3166		Optional	0:1	S			

		address parts (e.g. street address line, country, postcode, 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 with a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Optional	0:1	Y			
A.1.2.2	**Preferred health 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).**				**Required**					
A.1.2.2.1	Identifier of the HP	An identifier of the health professional that is unique within a defined scope. Example: National health professional ID. Multiple identifiers could be provided.			Required	1:1	S			
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)]			Required	1:1	Y			
A.1.2.2.3	Role of the HP	Health professional role. Multiple roles could be provided.	ISCO		Required	1:1	S	National code system	1.3.158.00165387.100.10.34 Zdravotnícka odbornosť	
A.1.2.2.4	HP Organisation	Health professional organisation			Required	1:1	Y			
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, postcode, 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.	ISO 3166		Optional	0:1	S			
A.1.2.2.6	Telecom	Telecommunication contact information (addresses) associated with a person,			Optional	1:1	Y			

		such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.								
A.1.2.3	**Contact person/ legal guardian (multiple contacts could be provided)**				**Optional**					
A.1.2.3.1	Role of that person	Role of the contact person: legal guardian, next of kin, other person to contact.	HL7 RoleClass		Optional	0:N	N			
A.1.2.3.2	Relationship level	Relationship type with the patient (e.g. father, wife, daughter)	HL7 RoleCode SNOMED CT		Optional	0:N	Y			
A.1.2.3.4	Given name	Given name of the contact person/guardian . This field can contain more than one element.			Optional	0:N	Y			
A.1.2.3.5	Family name/surname	Family name of the contact person. This field can contain more than one element [the structure of the name will be the same as for the patient (given name, family name / surname)]..			Optional	0:N	Y			
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, postcode, 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.	ISO 3166		Optional	0:N	S			
A.1.2.3.7	Telecom	Telecommunication contact information (addresses) associated with a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Optional	0:N	Y			
A.1.2.3.8	Contact person organisation	Contact person organisation information.			Optional	0:N	N			
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.**				**Required**					
A.1.3.1	Health insurance code	Unique health insurance company identification code.			Required	1:1	S			

A.1.3.2	Health insurance name	Full, official name of the healthcare insurance provider.			Required	1:1	S			
A.1.3.3	Health insurance number	Number or code under which the insured person is registered at the insurance provider.			Required	1:1	S			
A.1.4	**Information recipient - (intended recipient or recipients of the report), if applicable**				**Not required**					
A.1.4.1	Recipient identifier	The health professional or patient identifier. Either an internal identifier assigned by a healthcare provider institution or (preferably) a national health professional ID such as the licence or registration number. In case when the recipient is not a health professional, e.g. patient, appropriate personal identifier could be used.			Not required		N			just in requirement for MD, recipient, patient, Reviewing doctor, ...
A.1.4.2	Recipient name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Not required		N			just in requirement for MD, recipient, patient, Reviewing doctor, ...
A.1.4.3	Recipient organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Not required		N			just in requirement for MD, recipient, patient, Reviewing doctor, ...
A.1.4.4	Recipient organisation	The healthcare provider organisation information.			Not required		N			just in requirement for MD, recipient, patient, Reviewing doctor, ...
A.1.4.5	Address	Mailing and home or office addresses. The addresses are always sequences of address parts (e.g. street address line, country, postcode, 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.			Not required		N			just in requirement for MD, recipient, patient, Reviewing doctor, ...

A.1.4.6	Country	Country of the intended recipient as part of the address.	ISO 3166		Not required		N			just in requirement for MD, recipient, patient, Reviewing doctor, ...
A.1.4.7	Telecom	Telecommunication contact information (addresses) associated to a person, such as phone number, email, or messaging service. Multiple telecommunication addresses might be provided.			Not required		N			just in requirement for MD, recipient, patient, Reviewing doctor, ...
A.1.5	**Author (by whom the Hospital discharge report was/were authored). Multiple authors could be provided.**				**Required**					
A.1.5.1	Author identifier	The health professional identifier that will allow addressing recipients within a national or international data exchange infrastructure, such as the licence or registration number. In case when the recipient is not a health professional, e.g. patient, appropriate personal identifier should be used.			Required	1:1	S			
A.1.5.2	Author name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Required	1:1	Y			
A.1.5.3	Author organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Required	1:1	S			
A.1.5.4	Author organisation	The healthcare provider organisation information.			Required	1:1	Y			
A.1.5.5	Date Time	Date and time of the last modification of the document by its Author.	ISO 8601		Required	1:1	S			
A.1.6	**Attester (multiple attesters could be provided)**				**Not required**					
A.1.6.1	Attester 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 licence or registration number.			Not required		N			Author = Attester

A.1.6.2	Attester name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Not required		N			Author = Attester
A.1.6.3	Attester organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Not required		N			Author = Attester
A.1.6.4	Attester organisation	The healthcare provider organisation information.			Not required		N			Author = Attester
A.1.6.5	Approval date and time	Date and time of the approval of the document by Attester.	ISO 8601		Not required		N			Author = Attester
A.1.7	**Legal authenticator (The person taking responsibility for the medical content of the document)**				**Not required**					
A.1.7.1	Legal authenticator 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 licence or registration number. Multiple identifiers could be provided.			Not required		N			Authenticator = NCZI
A.1.7.2	Legal authenticator name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Not required		N			Authenticator = NCZI
A.1.7.3	Legal authenticator organisation ID	The healthcare provider organisation identifier. Identifier that is unique within a defined scope. Example: National healthcare provider ID. Multiple identifiers could be provided.			Not required		N			Authenticator = NCZI
A.1.7.4	Legal authenticator organisation	The healthcare provider organisation information.			Not required		N			Authenticator = NCZI
A.1.7.5	Authentication date and time	Date and time when the document was authorised.	ISO 8601		Not required		N			Authenticator = NCZI
A.1.8	**Document metadata**				**Not required**					
A.1.8.1	Document ID	Unique identifier of the document			Not required		S			no documents (no attachments), just data
A.1.8.2	Document type	Identifies the type of document at hand, e.g. Hospital discharge report.	LOINC		Not required		S			no documents (no attachments), just data

A.1.8.3	Document status	The status of the Hospital discharge report. E.g., preliminary, final.	hl7:CompositionStatus		Not required		S			no documents (no attachments), just data
A.1.8.4	Report date and time	Date and time of the Hospital discharge report creation.	ISO 8601		Not required		S			no documents (no attachments), just data
A.1.8.5	Document title	Document title, fix value "Hospital discharge report".			Not required		S			no documents (no attachments), just data
A.1.8.6	Report custodian	Organisation that is in charge of maintaining the report [this element will include organisation ID, name, address etc., as other elements describing organisations].			Not required		S			no documents (no attachments), just data
A.1.8.7	Confidentiality	Level of confidentiality of the document. Implicit value is normal.	hl7:Confidentiality		Not required		S			no documents (no attachments), just data
A.1.8.8	Language	Language in which the document is written. Language is expressed by the ISO language code.	ISO 639		Not required		N			no documents (no attachments), just data
A.1.8.9	Version	Version of the document			Not required		S			no documents (no attachments), just data
HOSPITAL DISCHARGE REPORT BODY										
A.2.0	**Hospital Discharge Report in its narrative form**			**Core**	**Required**	**1:1**	**Y**			
A.2.1	**Advance directives**				**Not required**					
A.2.1.1	**Living will**	**Only directives being expressed during current inpatient stay. Multiple records of living wills could be provided.**			**Not required**					
A.2.1.1.1	Date and time	The date and time on which the living will was recorded.	ISO 8601		Not required		N			
A.2.1.1.2	Type	Type of a living will, e.g. Do not resuscitate, donorship statement, power of attorney etc.	SNOMED CT		Not required		N			
A.2.1.1.3	Comment	Comment on the living will.			Not required		N			
A.2.1.1.4	Related conditions		ICD-10*		Not required		N			

		The problem or disorder to which the living will applies. Multiple fields could be provided.	SNOMED CT Orphacode if rare disease is diagnosed							
A.2.1.1.5	Living will document	Scanned source document with the living will and the patient's signature, such as a PDF.			Not required		N			
A.2.2	**Alerts**			**Core**	**Optional**					
A.2.2.1	**Allergy and Intolerance**	**A record of allergies and intolerances (primarily to be used for new allergies or intolerances that occurred during the hospital stay).**		**Core**	**Optional**					
A.2.2.1.1	Allergy description	Textual description of the allergy or intolerance		Core	Optional	0:N	Y			
A.2.2.1.2	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)	SNOMED CT		Optional	0:N	N			
A.2.2.1.3	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). Multiple manifestations could be provided.	SNOMED CT	Core	Optional	0:N	Y			
A.2.2.1.4	Severity	Severity of the clinical manifestation of the allergic reaction.	SNOMED CT		Optional	0:N	N			
A.2.2.1.5	Criticality	Potential risk for future life-threatening adverse reactions when exposed to a substance known to cause an adverse reaction.	SNOMED CT		Not required		N			
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 date, partial date or life period (childhood, adolescence).	ISO 8601 SNOMED CT (Age group)		Not required		Y			
A.2.2.1.7	End date	Date of resolution of the allergy (e.g. when the clinician deemed there is no longer any need to track the underlying condition)	ISO 8601 SNOMED CT (Age group)		Not required		N			
A.2.2.1.8	Status	Current status of the allergy or intolerance, for example, whether it is	Active, resolved, …		Not required		N			

		active, in remission, resolved, and so on …								
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.	SNOMED CT		Not required		N			
A.2.2.1.10	Agent or Allergen	A specific allergen or other agent/substance (drug, food, chemical agent, etc.) to which the patient has an adverse reaction propensity.	SNOMED CT ATC (IDMP / EMA SPOR SMS)	Core	Optional		S	National code system	1.3.158.00165387.100.10.158 1.3.158.00165387.100.10.208	
A.2.2.2	**Medical alerts (relevant for the respective hospital stay)**			**Core**	**Optional**					
A.2.2.2.1	Healthcare alert description	A warning, other than included in allergies.	SNOMED CT	Core	Optional	0:N	Y			
		The warning can be entered in code (there are codes for frequently used alerts) but seeing the dynamic nature of the warnings, these alerts will often be entered as free text.	LOINC							
		Any clinical information that is imperative to know so that the life or health of the patient does not come under threat.								
		Example 1: the patient has a rare disease that requires special treatment								
		Example 2: Airway Alert / Difficult Intubation								
		Example 3: Diagnoses such as malignant hyperthermia, porphyria, and bleeding disorders; special treatments like anticoagulants or immunosuppressants; implanted devices.								
		Example 4: transplanted organs illustrate other information that has to be taken into account in a healthcare contact.								
		Example 5: participation in a clinical trial that has to be taken into account in a healthcare contact.								
A.2.3	**Encounter**			**Core**	**Required**					
A.2.3.1	Encounter type	The type of the encounter whether inpatient or short stay encounter.	hl7v3:ActEncounter Code		Not required		N			
A.2.3.2	Encounter note	A narrative description of the encounter course.			Not required		Y			

A.2.3.3	**Admission**			**Core**	**Required**					
A.2.3.3.1	Admission urgency	Admission type, either emergency or planned	hl7:v3-xEncounterAdmissionUrgency	Core	Required	1:1	Y			
A.2.3.3.2	Admission date	Admission date and time.	ISO 8601	Core	Required	1:1	S			
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 licence or registration number.			Required	1:1	S			
A.2.3.3.4	Admitting professional name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Required	1:1	Y			
A.2.3.3.5	Admitting organisation ID	The healthcare provider organisation identifier.			Required	1:1	S			
A.2.3.3.6	Admitting organisation	The healthcare provider organisation information.		Core	Required	1:1	Y			
A.2.3.3.7	Admit Source	From where the patient was admitted (e.g. physician referral, transfer).	Hl7:admit-source		Required	1:1	Y			
A.2.3.3.8	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 licence or registration number.			Not required		S			
A.2.3.3.9	Referring professional name	Person name [the structure of the name will be the same as for the patient (given name, family name / surname)].			Not required		Y			
A.2.3.3.10	Referring organisation ID	The healthcare provider organisation identifier.			Not required		Y			
A.2.3.3.11	Referring organisation	The healthcare provider organisation information.			Not required		S			
A.2.3.4	**Admission reason**			**Core**	**Required**					
A.2.3.4.1	Admission reason	Reason or reasons for admission, e.g. Problem, procedure or finding.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed	Core	Required	1:1	S			
A.2.3.4.2	Admission reason comment	Explanation of the reason for the encounter.		Core	Required	1:1	Y			
A.2.3.4.3	Admission legal status	Legal status/situation at admission. The legal status indicates the basis on which	SNOMED CT		Required	1:1	N			

		the patient is staying in a healthcare organisation. 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**			**Core**	**Required**					
A.2.3.5.1	Discharge date	Discharge date and time	ISO 8601	Core	Required	1:1	S			
A.2.3.5.2	Discharge destination type	Type of location to which the patient will go after the encounter. E.g. home, hospital, nursing home, left against medical advice etc.	hl7.discharge-disposition	Core	Not required		N			default by Author.
A.2.3.5.3	Destination location	The location/organisation to which the patient will go after the encounter. Name, address and telecommunication contact.		Core	Not required		N			default by Author.
A.2.3.6	**Location - All locations/departments where the patient stayed (was boarded) within the hospital.**			**Core**	**Not required**					
A.2.3.6.1	Period	Time period during which the patient was present at the location		Core	Not required		N			just filan discharge
A.2.3.6.2	Organisation Part ID	The organisation's part identifier.			Not required		N			just filan discharge
A.2.3.6.3	Organisation Part Name	Full name of the organisation part, e.g. Name of the department		Core	Not required		N			just filan discharge
A.2.3.6.4	Organisation Part Details	Address, contact names and contact details, specialty of the organisation part.	SNOMED CT	Core	Not required		N			just filan discharge
A.2.4	**Admission evaluation - Admission status should be reported exceptionally only if it is relevant to ensure continuity of care.**				**Required**					
A.2.4.1	**Objective findings**				**Required**					
A.2.4.1.1	Date and time	Date and time of the examination	ISO 8601		Not required		S			
A.2.4.1.3	**Anthropometric observations**	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. Multiple observations could be provided.			**Required**	**1:1**	**Y**			
A.2.4.1.3.1	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or	SNOMED CT LOINC ISO 8601		Not required		Y			

		protocol used and other aspects of the observation..								
A.2.4.1.3.2	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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (for units of measurement)		Not required		Y			
A.2.4.1.4	**Vital signs**	Vital signs observation: • Recommended: Pulse rate, respiratory rate, systolic and diastolic blood pressure with site information • Optional: 02 saturation, temperature, pain (scale), …			**Required**					
A.2.4.1.4.1	Result description	Narrative representation of the observation result and findings.			Required	1:1	Y			
A.2.4.1.4.2	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	SNOMED CT LOINC ISO 8601		Not required		N			
A.2.4.1.4.3	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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (measurement units)		Not required		N			
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.			**Required**					

A.2.4.1.5.1	Observation Note	A narrative description of the observation. It should be structured by the organ system (e.g. head, neck, body, arms, ...)			Required	1:1	Y			
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/				**Not required**					
A.2.4.2.1	Description	Need for the patient to be continuously assessed by third parties; functional status may influence decisions about how to plan and administer treatments			Not required		N			
A.2.4.2.2	Onset Date	Onset date of a condition	ISO 8601		Not required		N			
A.2.4.2.3	Functional assessment description	Description of the functional assessment	ICF		Not required		N			
A.2.4.2.4	Functional assessment date	Date of the functional assessment	ISO 8601		Not required		N			
A.2.4.2.5	Functional assessment result	Functional assessment result value	ICF		Not required		N			
A.2.6	**Patient history (might include information about provenance of the information)**				**Optional**					
A.2.6.1	**Medical history**				**Optional**					
A.2.6.1.1	**History of problems**	A list of conditions of a patient that the patient suffered in the past or still suffers. Unlike diagnostic summary, medical history is not only a list of problems, 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 the diagnostic summary section of the discharge report.			**Optional**					
A.2.6.1.1.1	Problem description	Problem specification			Optional	0:N	Y			
A.2.6.1.1.2	Problem details	Problem details include code that identifies problem, specification of the body structure, laterality, and other aspects of the problem.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed IPS Absent and Unknown Data		Not required		S			

			ICD-O-3							
A.2.6.1.1.3	Onset date	Onset date of the problem/condition	ISO 8601		Not required		S			
A.2.6.1.1.4	End date	The date or estimated date that the condition resolved or went into remission.	ISO 8601		Not required		N			
A.2.6.1.1.5	Clinical status	Status of the condition/problem (active, resolved, inactive, ...)	hl7:condition-clinical		Not required		S			
A.2.6.1.1.6	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).			Optional	0:N	N			
A.2.6.1.1.7	Severity	A subjective assessment of the severity of the condition as evaluated by the clinician.	SNOMED CT		Not required		N			
A.2.6.1.1.8	Stage	Stage/grade, usually assessed formally using a specific staging/grading system.	e.g. TNM, ICD-O-3		Not required		N			
A.2.6.1.2	**Devices and Implants**	Devices and Implants			**Optional**					
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.	SNOMED CT EMDN IPS Absent and Unknown Data		Optional	0:N	Y			
A.2.6.1.2.2	Device ID	Normalised identifier of the device instance such as UDI according to REGULATION (EU) 2017/745			Not required		S			
A.2.6.1.2.3	Implant date	The date and time the device was implanted or when its use began.	ISO 8601		Optional	0:N	S			
A.2.6.1.2.4	End date	Date and time when the device was explanted from the patient or the external device was no longer in use; likewise when the device is planned to be explanted	ISO 8601		Not required		N			
A.2.6.1.2.5	Reason		ICD-10		Not required		N			

		The medical reason for use of the medical device.	SNOMED CT Orphacode if rare disease is diagnosed							
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, counselling, physiotherapy, personal support services, adult day care services, etc.			**Not required**					
A.2.6.1.3.1	Procedure code	Procedure code	SNOMED CT LOINC, NPU (for laboratory procedures) IPS Absent and Unknown Data		Not required		N			
A.2.6.1.3.2	Procedure description	Narrative description of the procedure			Not required		N			
A.2.6.1.3.3	Body site	Procedure target body site and laterality	SNOMED CT		Not required		N			
A.2.6.1.3.4	Procedure date	Date and time when procedure was performed	ISO 8601		Not required		N			
A.2.6.1.3.5	Procedure reason	The coded reason why the procedure was performed. This may be a coded entity or may simply be present as text.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Not required		N			
A.2.6.1.3.6	Outcome	The outcome of the procedure - did it resolve the reasons for the procedure being performed? Applicable mainly on surgical procedures.	SNOMED CT		Not required		N			
A.2.6.1.3.7	Focal device	A reference to the device or devices that is implanted, removed or otherwise manipulated (calibration, battery replacement, fitting a prosthesis, attaching a wound-vac, etc.) as a focal portion of the Procedure.			Not required		N			
A.2.6.1.4	**Vaccination**	Vaccination history of the patient.			**Optional**					
A.2.6.1.4.1	Disease or agent targeted	Disease or agent that the vaccination provides protection against	ICD-10* SNOMED CT		Not required		N			
A.2.6.1.4.2	Vaccine/prophylaxis	Generic description of the vaccine/prophylaxis or its component(s)	SNOMED CT ATC (IDMP/ EMA SPOR SMS)		Not required		N			

A.2.6.1.4.4	Vaccine medicinal product	Medicinal product name			Optional	0:N	N			
A.2.6.1.4.5	Marketing Authorisation Holder	Marketing Authorisation Holder or manufacturer (Identifier and name)	EMA's Organisations Management Service (EMA SPOR OMS)		Optional	0:N	N			
A.2.6.1.4.6	Number in a series of vaccinations / doses	Order in the vaccination course.			Not required		N			
A.2.6.1.4.7	Date of vaccination	The date and time when the vaccination was administered	ISO 8601		Optional	0:N	N			
A.2.6.1.4.8	Next vaccination date	The date when the vaccination is planned to be given/repeated (e.g. next dose)	ISO 8601		Not required		N			
A.2.6.1.5	**Epidemiological history**	Travel history and infectious contacts			**Not required**					
A.2.6.1.5.1	***Infectious contacts***	Infectious contacts of the patient			**Not required**					
A.2.6.1.5.1.1	Time period	A date and duration or date time interval of contact. Partial dates are allowed.	ISO 8601		Not required		N			
A.2.6.1.5.1.2	Infectious agent	Information about a suspected infectious agent or agents the person was exposed to.	ICD-10* (chapter 1) SNOMED CT		Not required		N			
A.2.6.1.5.1.3	Proximity	Proximity to the source/carrier of the infectious agent during exposure. Proximity could be expressed by text, code (direct, indirect) or value specifying distance from the InfectiousAgentCarrier.	SNOMED CT UCUM (measurement units)		Not required		N			
A.2.6.1.5.1.4	Country	Country in which the person was potentially exposed to an infectious agent.	ISO 3166		Not required		N			
A.2.6.1.5.1.5	Additional information	A textual note with additional information about infectious contact.			Not required		N			
A.2.6.1.5.2	***Travel history***	Travel history reported by the patient. Multiple records could be provided.			**Not required**					
A.2.6.1.5.2.1	Time period	Start and end date or end date and duration of stay in a country. Partial dates are allowed.	ISO 8601		Not required		N			
A.2.6.1.5.2.2	Country visited	A country visited by the patient.	ISO 3166		Not required		N			
A.2.6.1.5.2.3	Comment	Relevant notes on the travel stay.			Not required		N			
A.2.6.2	**Family history**	Information about serious illnesses in close blood relatives with known or			**Not required**		**Y**			**textual description**

		suspected genetic potential or with possible impact on patient care.								
A.2.6.2.1	Patient relationship	The family relation between the related person and the patient.	hl7:v3-RoleCode		Not required		N			
A.2.6.2.2	Date of birth	Full or partial date of birth	ISO 8601		Not required		N			
A.2.6.2.3	Age or date of death	Age or date of the death of the family member.	ISO 8601		Not required		N			
A.2.6.2.5	Condition	Medical problems this person suffers or suffered.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Not required		N			
A.2.6.2.6	Cause of death	Information about disease or condition that was the main cause of death.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Not required		N			
A.2.6.3	**Social determinants of health**	Information about social determinants of health.			**Not required**					
A.2.6.3.1	**Participation in society**	Participation in society details.			**Not required**					
A.2.6.3.1.1	Work situation	Work Situation describes the extent to which and in what way the patient participates in the workforce. Work is meant in the broadest sense of the word: activities that contribute to the person themselves, their environment or society. This includes both paid and unpaid work.			Not required		N			
A.2.6.3.1.2	Hobby	An activity the patient enjoys doing in their free time.			Not required		N			
A.2.6.3.1.3	Social network	A description of the patient's social network, such as family, neighbours and friends.			Not required		N			
A.2.6.3.2	**Education**				**Not required**					
A.2.6.3.2.1	Education level	Indication of the highest level of education achieved.	hl7:v3.EducationLevel		Not required		N			
A.2.6.3.2.2	Comment	If deemed relevant, a specification of the degree program can be provided by means of an explanation (e.g.: patient is in medical school).			Not required		N			
A.2.6.3.3	**Living situation**	Household type and other related living situation information.			**Not required**					
A.2.6.3.3.1	House type	Type of home the patient lives in.	SNOMED CT		Not required		N			

A.2.6.3.3.2	Home adaption	Adaptions present in the home that have been made in the context of the illness or disability to make the functioning of the patient safer and more comfortable and to enable independent living. Multiple data elements could be provided.	SNOMED CT		Not required		N			
A.2.6.3.3.3	Living conditions	Conditions that affect the accessibility of the home or the stay in the home. Multiple data elements could be provided.	SNOMED CT		Not required		N			
A.2.6.3.4	**Family situation**	Family situation details.			**Not required**					
A.2.6.3.4.1	Comment	A comment on the family situation.			Not required		N			
A.2.6.3.4.2	Family composition	The family composition describes the patient's home situation and the form of cohabitation. A family can consist of one or more people.	SNOMED CT		Not required		N			
A.2.6.3.4.3	Marital status	A person's marital status according to the terms and definition in the national civil code.	hl7: v3-MaritalStatus		Not required		S			
A.2.6.3.4.4	Number of children	The number of children the patient has. Children in the context of this information model include step children, foster children, biological and adopted children.			Not required		N			
A.2.6.3.4.5	Number of children at home	The number of children living at home with the patient.			Not required		N			
A.2.6.3.4.6	Child details	Child age, co-living status and comment. Multiple child details could be provided.			Not required		N			
A.2.6.3.4.7	Care responsibility	The activities the patient carries out to care for a dependent family member.			Not required		N			
A.2.6.4	**Use of substances**				**Not required**					
A.2.6.4.1	**Alcohol use**	Alcohol consumption by the patient. Multiple records on alcohol use could be provided.			**Not required**					
A.2.6.4.1.1	Status	The status of the patient's alcohol use.	SNOMED CT		Not required		N			
A.2.6.4.1.2	Period and quantity	Period of use and amount (The extent of the patient's alcohol use in units of alcohol per time period.)			Not required		N			
A.2.6.4.1.3	Comment	Textual comment.			Not required		N			

A.2.6.4.2	**Tobacco use**	Represent smoking or tobacco habits. Multiple records on tobacco use could be provided.			**Not required**		**N**			
A.2.6.4.2.1	Status	The status of the patient's tobacco use.	SNOMED CT		Not required		N			
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.)			Not required		N			
A.2.6.4.2.3	Comment	Textual comment.			Not required		N			
A.2.6.4.3	**Drug consumption**	Consumption of drugs and other substances (in terms of abuse).			**Not required**					
A.2.6.4.3.1	Status	The status of the patient's drug use.	SNOMED CT		Not required		N			
A.2.6.4.3.2	Period and quantity	Period of use and amount.			Not required		N			
A.2.6.4.3.3	Drug or medication type	Type of the drug consumption	SNOMED CT		Not required		N			
A.2.6.4.3.4	Route of administration	Route or routes of administration	EDQM Standard Terms		Not required		N			
A.2.6.4.3.5	Comment	Textual comment			Not required		N			
A.2.7	**Course of hospitalisation (Hospital stay)**			**Core**	**Required**					
A.2.7.1	**Diagnostic summary**	All problems/diagnoses that affect 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 be 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.		**Core**	**Required**					
A.2.7.1.1	Problem description	Problem specification in narrative form		Core	Required	1:1	Y			freetext
A.2.7.1.2	Problem details	Problem details include code that identifies problem, specification of the body structure, laterality, and other aspects of the problem.	ICD-10* SNOMED CT ICD-O-3 Orphacode if rare disease is diagnosed	Core	Not required		S			

			IPS Absent and Unknown Data							
A.2.7.1.3	Onset date	Onset date of a problem/condition	ISO 8601	Core	Not required		S			
A.2.7.1.4	End date	The date or estimated date that the condition resolved or went into remission.	ISO 8601		Not required		S			
A.2.7.1.5	Category	Category of the problem allows flagging for conditions acquired during hospital stay. - Present on admission [POA]) - Hospital acquired condition [HAC] Not applicable or unknown		Core	Not required		Y			
A.2.7.1.6	Treatment class	Class of the problem (treated, other) in relation to the hospital encounter. Treated problems were treated or affected provisioning of care (diagnostics, therapy, nursing, monitoring) during the hospital encounter. At least one problem should be marked as Treated. Other problems are recorded only if they are important for continuity of care (after discharge).	Treated, Other	Core	Not required		Y			
A.2.7.1.7	Clinical status	Status of the condition/problem (active, resolved, inactive, ...)	hl7:condition-clinical		Not required		S			
A.2.7.1.8	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).			Not required		Y			freetext
A.2.7.1.9	Severity	A subjective assessment of the severity of the condition as evaluated by the clinician.	hl7:condition-severity		Not required		Y			
A.2.7.1.10	Stage	Stage/grade usually assessed formally using a specific staging/grading system. Multiple assessment systems could be used.	e.g. TNM ICD-O-3		Not required		N			

A.2.7.2	**Significant procedures**	Significant surgical and non-surgical procedures performed during hospitalisation which are significant for continuity of care, e.g. surgeries and other "instrumental" interventions (endoscopic, intravascular), chemotherapy, radiotherapy, purification methods (dialysis, hemoperfusion), circulation support methods (counterpulsation, etc.), administration of blood derivatives or others. 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 Absent and Unknown Data.		**Core**	**Not required**					
A.2.7.2.1	Procedure code	Procedure code	SNOMED CT IPS Absent and Unknown Data	Core	Not required		N			
A.2.7.2.2	Procedure description	Narrative description of the procedure		Core	Not required		N			
A.2.7.2.3	Body site	Procedure target body site and laterality	SNOMED CT		Not required		N			
A.2.7.2.4	Procedure date	Date and time when procedure was performed	ISO 8601	Core	Not required		N			
A.2.7.2.5	Procedure reason	The coded reason why the procedure was performed. This may be a coded entity or may simply be present as text.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Not required		N			
A.2.7.2.6	Outcome	The outcome of the procedure - did it resolve the reasons for the procedure being performed?	SNOMED CT		Not required		N			
A.2.7.2.7	Complication	Any complications that occurred during the procedure, or in the immediate post-performance period. These are generally tracked separately from the procedure description, which will typically describe the procedure itself rather than any 'post procedure' issues.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Not required		N			
A.2.7.2.8	Focal device	A reference to the device or devices that is/are implanted, removed, or otherwise manipulated (calibration, battery		Core	Not required		N			

		replacement, fitting a prosthesis, attaching a wound-vac, etc.) as a focal portion of the Procedure.								
A.2.7.3	**Medical devices and implants**	Implants and used medical devices that affected or may affect the provision of health services (diagnosis and treatment). Also medical devices explanted, or its use was stopped during hospitalisation. If the section is blank, the reason must be explicitly stated using the IPS Absent and Unknown Data coding system		**Core**	**Not required**					
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.	SNOMED CT EMDN IPS Absent and Unknown Data	Core	Not required		Y			
A.2.7.3.2	Device ID	Normalised identifier of the device instance such as UDI according to REGULATION (EU) 2017/745			Not required		S			
A.2.7.3.3	Implant date	The date and time the device was implanted or when its use began.	ISO 8601	Core	Not required		S			
A.2.7.3.4	End date	Date and time when the device was explanted from the patient or the external device was no longer in use; likewise when the device is planned to be explanted	ISO 8601	Core	Not required		N			
A.2.7.3.5	Reason	The medical reason for use of the medical device.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Not required		S			
A.2.7.5	**Pharmacotherapy**	Selected drug treatment during hospitalisation. Medicinal products that were administered during hospitalisation and whose administration has already been discontinued before discharge. Only products which are important for continuity of care (antibiotics other than completely routine, corticosteroids in high doses, etc.) will be listed. Products which administration will continue after discharge will be also recorder in the Medication summary section.		**Core**	**Not required**					

		Medicinal products, the administration of which was started during hospitalisation, 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.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Not required		Y			
A.2.7.5.2	Code	Product code	IDMP	Core	Not required		Y			
A.2.7.5.3	Intended use	Indication intended use as: prevention or treatment Example: prophylaxis, treatment, diagnostic, anaesthesia.			Not required		Y			
A.2.7.5.4	Brand name	Brand name if biological medicinal product or when justified by the health professional (ref. Commission Directive 2012/52/EU)		Core	Not required		Y			
A.2.7.5.5	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"	ATC (IDMP / EMA SPOR SMS)		Not required		Y			
A.2.7.5.6	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	UCUM EDQM Standard terms		Not required		Y			
A.2.7.5.7	Pharmaceutical dose form	The form in which a pharmaceutical product is presented in the medicinal product package (e.g. tablet, syrup)	EDQM Standard Terms		Not required		Y			
A.2.7.5.8	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			Not required		Y			
A.2.7.5.9	Route of administration	Path by which the pharmaceutical product is taken into or makes contact with the body.	EDQM Standard Terms		Not required		Y			
A.2.7.5.10	Period of treatment	The time interval when the patient was, or was not, given the medication.		Core	Not required		Y			
A.2.7.6	**Significant Observation Results**	Results of significant functional, diagnostic, and imaging examinations to ensure continuity of care, performed during hospitalisation. Results of examinations ordered but not yet			**Not required**					

		delivered should be presented separately from results already delivered.								
A.2.7.6.1	Date	Date and time of the observation	ISO 8601	Core	Not required		N			
A.2.7.6.2	Observation status	Status of the observation (e.g. registered, preliminary, final)	hl7:observation-status		Not required		N			
A.2.7.6.3	Result description	Narrative representation of the observation result and findings.		Core	Not required		N			
A.2.7.6.4	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	LOINC NPU SNOMED CT ISO 8601	Core	Not required		N			
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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	SNOMED CT UCUM (measurement units)	Core	Not required		N			
A.2.7.6.7	Reporter	With certain observation results, e.g. there may also be an interpreter or a person responsible for validation.			Not required		N			
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, explanation of clinical context) in clinically complex conditions.		**Core**	**Not required**					
A.2.7.7.1	Problem synthesis	Summary description of the reason and course of hospitalisation for a specific problem.		Core	Not required		N			
A.2.7.7.2	Clinical reasoning	The clinical summary can be concluded with a clinical consideration (diff. diagnosis, explanation of context, etc.) for clinically complex conditions.			Not required		N			
A.2.8	**Discharge details (structured information should be provided, however if not available, at least a summary note should be present).**			**Core**	**Optional**					
A.2.8.1	**Objective findings**			**Core**	**Optional**					
A.2.8.1.1	Date	Date and time of the examination at or before discharge	ISO 8601		Not required		N			

A.2.8.1.3	**Anthropometric observations**	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. Multiple observations could be provided.		**Core**	**Not required**					
A.2.8.1.3.1	Result description	Narrative representation of the observation result and findings.			Not required		N			
A.2.8.1.3.2	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	SNOMED CT LOINC ISO 8601	Core	Not required		N			
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 reference ranges and result interpretation. Content of the observation result will vary according to the type of the observation.	UCUM (measurement units)	Core	Not required		N			
A.2.8.1.4	**Vital signs**	Observation of Vital signs: • Recommended: systolic and diastolic blood pressure including site of measurement, pulse rate, respiratory rate • Optional: 02 saturation, temperature, pain (scale), ...		**Core**	**Optional**					
A.2.8.1.4.1	Result description	Narrative representation of the observation result and findings.			Optional	0:N	N			
A.2.8.1.4.2	Observation details	Observation details include code that identifies observation, specification of the observed body structure or specimen, date and time of the specimen collection, observation method or protocol used and other aspects of the observation.	SNOMED CT LOINC ISO 8601	Core	Not required		N			
A.2.8.1.4.3	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 reference ranges and result interpretation. Content of the	UCUM (measurement units)	Core	Optional	0:N	N			

		observation result will vary according to the type of the observation.								
A.2.8.1.5	**Physical examination**	Physical examination (at discharge) is the process of evaluating objective anatomical findings. Physical examination can be performed through observation, palpation, percussion, and auscultation.		**Core**	**Not required**					
A.2.8.1.5.1	Observation Note	A narrative description of the observation. It should be structured by the organ system (e.g. head, neck, body, arms, ...)		Core	Not required		N			
A.2.8.2	**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/		**Core**	**optional**					
A.2.8.2.1	Description	Need for the patient to be continuously assessed by third parties; functional status may influence decisions about how to plan and administer treatments		Core	Optional	0:N	N			
A.2.8.2.2	Onset Date	Onset date of a condition	ISO 8601		Not required		N			
A.2.8.2.3	Functional assessment description	Description of the functional assessment	e.g. ICF		Not required		N			
A.2.8.2.4	Functional assessment date	Date of the functional assessment	ISO 8601		Not required		N			
A.2.8.2.5	Functional assessment result	Functional assessment result value	e.g. ICF		Not required		N			
A.2.8.3	**Discharge note**	Discharge summary note			**optional**		**Y**			**freetext**
A.2.9	**Care plan and other recommendations after discharge.**			**Core**	**optional**					
A.2.9.1	**Care plan**	Care plan after discharge. Multiple care plans could be provided.		**Core**	**optional**					
A.2.9.1.1	Title	Human-friendly name for the care plan (e.g. Hip replacement care plan)			Not required		Y			freetext
A.2.9.1.2	Addresses	Identifies the conditions/problems/concerns/diagnoses /etc. whose management and/or mitigation are handled by this plan. This element provides a linkage to the conditions recorded in the diagnostic summary section.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed		Not required		N			

A.2.9.1.3	Description	A description of the scope and nature of the plan.		Core	Optional	0:1	Y			freetext
A.2.9.1.4	Plan Period	Indicates when the plan did (or is intended to) come into effect and end.			Not required		N			
A.2.9.1.5	Other details	Other structured and coded details, care team, goals to be achieved.			Not required		N			
A.2.9.1.6	**Activity**	Actions to occur as part of the plan.			**Not required**					
A.2.9.1.6.1	Kind	A description of the type of care plan activity. For example, a MedicationRequest, a ServiceRequest, or a CommunicationRequest.	hl7:resource-types		Not required		N			
A.2.9.1.6.2	Activity description	A detailed description of the activity.			Not required		Y			
A.2.9.1.6.3	Specific attributes	Specific structured attributes per each activity type expressed by the Activity kind element, E.g., specific attributes for prescription request, appointment, etc.			Not required		N			
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.		**Core**	**optional**					**freetext**
A.2.9.2.1	Medication reason	The reason why the medication is or was prescribed or used. It provides a link to the Past or current health condition(s) or problem(s) that the patient has had or has and for which this medication was prescribed.	ICD-10* SNOMED CT Orphacode if rare disease is diagnosed	Core	Optional	0:N	N			freetext
A.2.9.2.2	Reason for change	Reason for change of medication	hl7:reason-medication-status-codes	Core	Optional	0:N	N			freetext
A.2.9.2.3	Code	Product code.	IDMP	Core	Not required		N			
A.2.9.2.4	Brand name	Brand name if biological medicinal product or when justified by the health professional (ref. Commission Directive 2012/52/EU)		Core	Optional	0:N	N			freetext
A.2.9.2.5	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"	ATC (IDMP / EMA SPOR SMS)	Core	Optional	0:N	N			freetext
A.2.9.2.6	Strength		UCUM	Core	Optional	0:N	N			freetext

		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	EDQM Standard terms							
A.2.9.2.7	Pharmaceutical dose form	The form in which a pharmaceutical product is presented in the medicinal product package (e.g. tablet, syrup)	EDQM Standard terms	Core	Optional	0:N	N			freetext
A.2.9.2.8	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		Core	Optional	0:N	N			freetext
A.2.9.2.9	Route of administration	Path by which the pharmaceutical product is taken into or makes contact with the body.	EDQM Standard terms	Core	Optional	0:N	N			freetext
A.2.9.2.10	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).		Core	Optional	0:N	N			freetext
A.2.9.2.11	Days supplied	Number of days for which the patient was provided with the drug. Supply is intended to either hand over the medicine or write out a prescription. A 0 value indicates that the patient has not been provided with the drug (e.g. if the patient has a sufficient supply of the drug)	UCUM	Core	Optional	0:N	N			freetext
A.2.9.3	**Other recommendations**	Other recommendations (advice) after discharge. Multiple recommendations could be provided. E.g., recommendation to suggest hip replacement, reduce number of cigarettes, stop smoking, increase physical exercises, etc.		**Core**	**Optional**	**0:1**	**N**			**freetext**
Other required data fields that are not present in these guidelines.										
A.1.2.2.x	ID organisation	code of HP organization			Required	1:1	S			
A.1.2.2.x	ID department	code of department in the HP organization			Required	1:1	S			