A Personalised Integrated Care Platform

(Grant Agreement No. 689209)

D7.4 First Private and Public Cloud Integration

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0.4	Armanas Povilionis (INUIT)	2017-10-27	Added Identity, Access and Policy manager descriptions
0.5	Matts Ahlsén, Peter Rosengren (CNET)	2017-11-07	Update of ODS and DRB models and formats
0.6	Carlos Velasco (Fraunhofer)	2017-11-29	Added Reference data server
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0.8	Peter Rosengren (CNet)	2017-12-04	Review by Technical Coordinator
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1 Executive Summary

The PICASO project aims to research and demonstrate a service oriented, ICT based integration platform that will support collaborative sharing of care plans across sectors based on dynamic and personalised orchestration of care services. It will further provide a method for sharing patient information across all relevant formal and informal care providers using a unique, trust federated solution to the problem of data privacy in cloud based health systems.

This deliverable describes the software, which is the core of the Demonstrator for Private and Public Cloud and how the components have been integrated for the first deployment of the PICASO Platform.

2 Introduction

The major technological objectives to be achieved in the PICASO project are:

O1. Create a Care Management system based on dynamic design of complex care plans guided by *narratives* using goal-driven heuristic search and with secure authentication of patients and carers involved.

O2. Develop a robust, privacy compliant, cloud based Resource Management system that can perform *acquisition of physiological and behavioural data in non-clinically controlled care spaces,* taking into account the variability in the population in order to provide carers with realistic *situational awareness.*

O3. Develop a Service Orchestration framework that *orchestrates and executes care narratives* across a multitude of care platforms providing event detection and processing and incorporating risk assessment based on risk prediction models and contextual situation awareness, which can be used for decision support for professional and non-professional cares.

O4. Develop a Data Management framework for secure, privacy compliant, and role based information sharing based on *distributed shared memory* and *tuple object spaces* allowing carers to share patient information and exchange knowledge across care networks using intuitive, interactive ad-hoc information search.

This deliverable describes the software that has been developed and integrated to meet these objectives for the first set of clinical trials.

2.1 Content and structure of this deliverable

This document accompanies the Demonstrator demonstrator deliverable D7.4, and describes the configuration for the first integrated version of the PICASO Care Private Cloud and the Public Cloud.

The PICASO Care Private Cloud and the Public Cloud are implemented in two deliverables,

- D7.4 – First Private and Public Cloud Integration (*this deliverable*)
- D7.5 – First PICASO Integrated Care Platform

Task 7.4 “Care System Private Cloud Integration” and Task 7.5 “PICASO Integrated Care Platform” have contributed to this deliverable.

Chapter 3 describes the individual components, while Chapter 4 focuses on the specific integration mechanisms that are being used. Chapter 5 discusses the main data models used such as the Clinical ODS model.

3 Components

The following components implement the core functionality of the PICASO platform.

AL	Activity Log (AL)	CNET	Core	WP5	
CPO	Care Plan Orchestration (CPO)	CNET	Core	WP6	
CM	Clinician Manager (CM)	TUK	Core	WP7	
DRB	Data Resource Browser	TUK	Core	WP5	
IM	Identity Manager	INUIT	Core	WP5	
MR	Metadata Registry	TUK	Core	WP5	
CPM	Care Plan Manager	FIT	Core	WP7	
PD SV	Patient Dashboard SV	CNET	Core	WP4	
PDO	Patient Data Orchestration	TUK	Core	WP5	
PM	Policy Manager	INUIT	Core	WP5	For t1 Policy Manager will provide services only to Authentication and Access Manager.
RDS	Reference Data Server	FIT	Core	WP7	
RM	Risk Manager	INUIT	Core	WP6	Not t1

3.1 Date Resource Browser

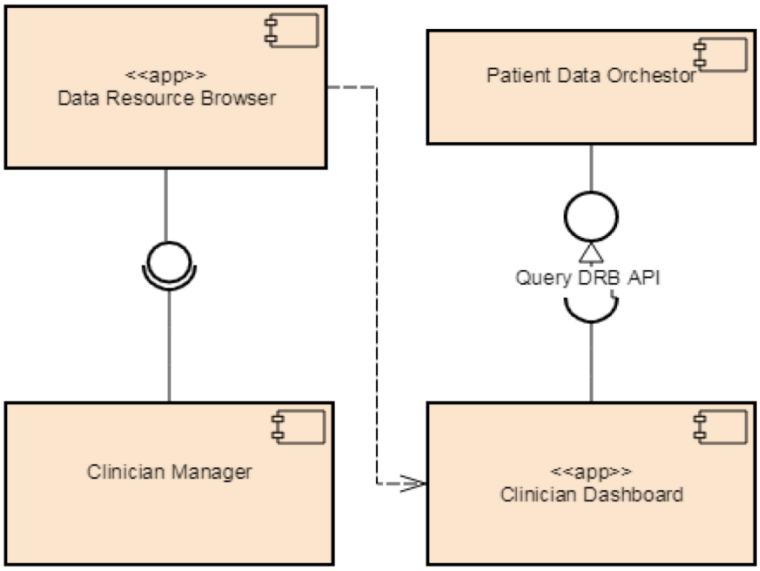
3.1.1 Description

The Resource Data Browser is a web-based, interactive interface where clinicians (logged in) can search for combinations of all the information stored in the shared memory such us patients, other carers, data and care plans. The user retrieves data by querying the Data Orchestration (the call of DRB API is delegated to Clinician Dashboard, as it integrates the authentication and authorisations services) for data relevant to a certain patient (thus DRB is directly dependent on the data from HISs and data from Home monitoring). The Data Orchestrator orchestrate data and it transforms them into predefined format suitable for DRB component. The query provides a visual image of which data are found and that the user can retrieve.

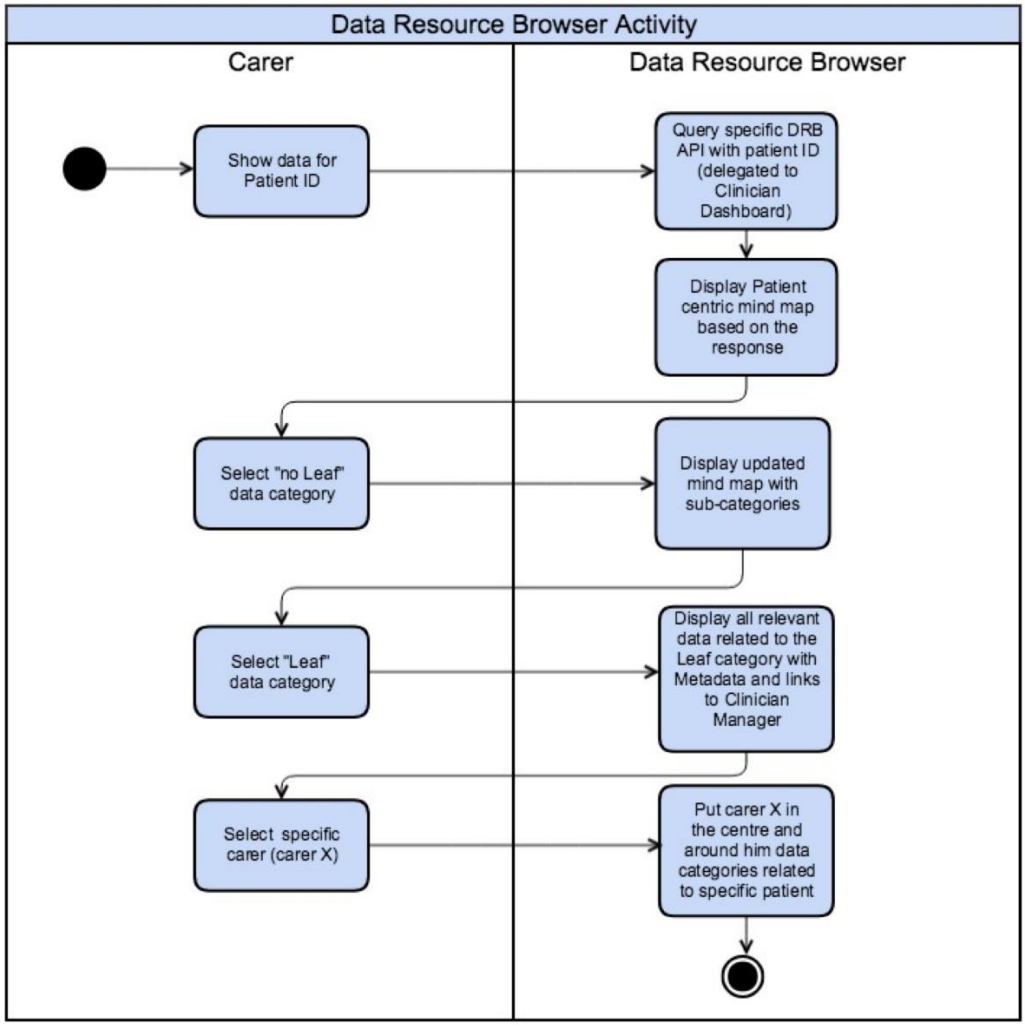
The relationship between the kind of data (data category) available and the data owner is presented in the form of a mind map (i.e. a tree graph). The graph is interactive and iterative meaning that it is dynamically updated when the user clicks on the different nodes up until the node is a leaf node. If, for example, a general practitioner searches for data related to her patient, the graph will show the actual patient as the centre node together with all relevant data categories including the carers in form of surrounding nodes. This also means that these carers have agreed to share this information with the doctor. By clicking on one of the carers, a new carer centric graph forms showing which data the carer has received from the patient (again provided that the doctor has been authorised to see this information). Finally, the doctor can click on a certain leaf node (leaf data category) and see all the measurements performed (including contextual data and again, provided the proper authorisation is established). The doctor can click around the different branches and see other carers' interventions, the care plans executed, and dig further into the relevant data according to her access rights.

The Data Resource Browser is a read-only tool. It does not write any data within PICASO. However logging of access to data (that are accessed by DRB) is done by the Activity Log. Note, such logging is triggered DRB but not directly performed by this component (it is performed within the sequence that provides data response to the DRB data request - see Patient Data Orchestrator and Activity Log components for details).

3.1.2 Dependencies



3.1.3 Use case/sequence diagram

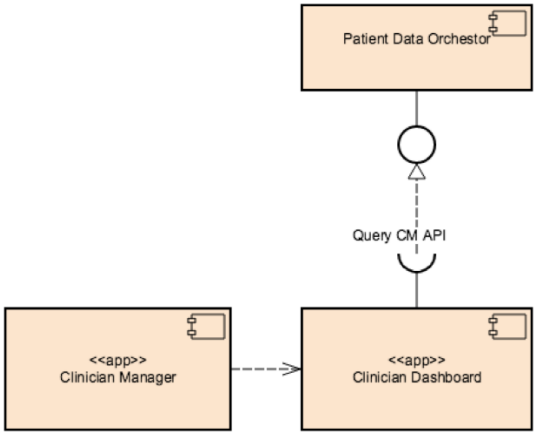


3.2 Clinician Manager

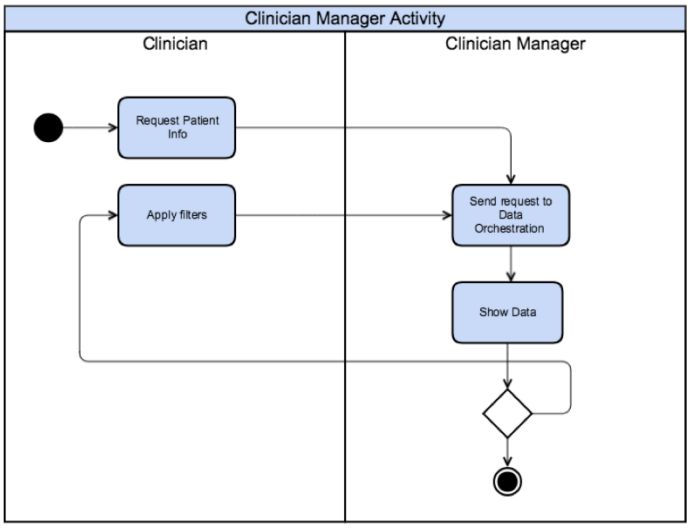
3.2.1 Description

The Clinician Manager is a subcomponent of the Clinician Dashboard tool and will be one of the views of the patient that a clinician sees when wishing to interrogate a patient's data. The purpose of the Clinician Manager is to provide a tailored summary of the current status and history of different data related to patients. The Clinician Manager allows the clinician to see the results of patient remote monitoring, like blood pressure, weight, activity home measurements together with patient clinical care results like test results, clinician visits, medication history. The Clinician Manager uses the common mechanism of the Clinician Dashboard (used also by the Data Resource Browser or Narratives Manager) to retrieve data from all available sources through the Patient Data Orchestrator. Data is then presented in integrated views in the Clinician Manager Web based UI.

3.2.2 Dependencies



3.2.3 Use case/sequence diagram



3.3 Care Plan Manager

3.3.1 Description

The Care Plan Manager, which is part of the Clinician Dashboard, allows the creation, integration and effective sharing of a Patient pathway between all involved professionals. These pathways are expressed in the form of a care plan, which comprises several services (device requests, medication requests and other procedures expressed via customised extensions of the FHIR standard. Its more important features are:

- FHIR v3.0 compatibility
- Creation, cloning and deletion of care plans
- Creation, cloning and deletion of services
- Management of service templates for their later reuse

Through the Clinician Dashboard, the CPM authenticates against the Identity and Policy Manager. All of the services described in the deliverables D7.1/D7.2 are dependent basically on 2 components:

- Reference Data Server
- Patient Data Orchestrator

3.3.2 Dependencies

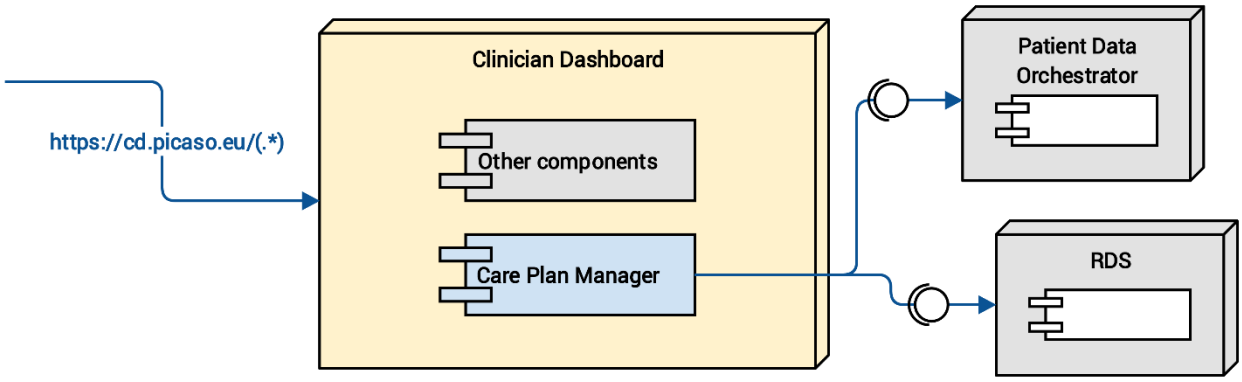


Figure 1. Care Plan Manager dependencies and workflow.

3.4 Care Plan Orchestrator

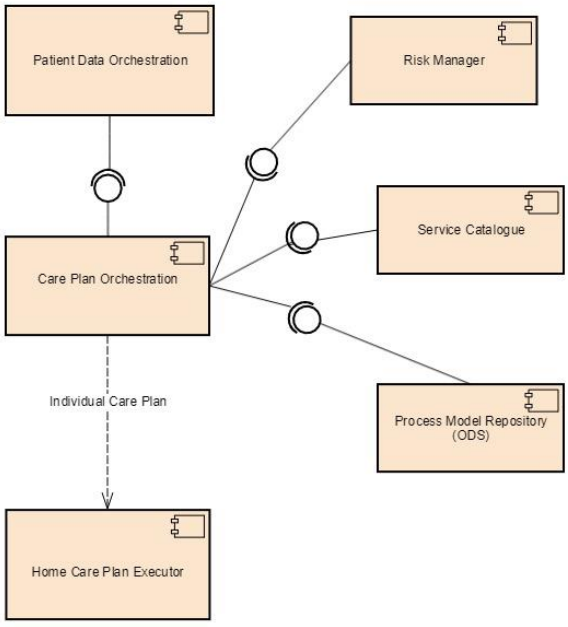
3.4.1 Description

The purpose of the Care Plan Orchestration component is to execute the care plan narrative expressed in the FHIR format. It works closely with the Decision Support & Interaction Tools components to control the process flow in the PICASO application and aid the PICASO actors in logically stepping through the care plan.

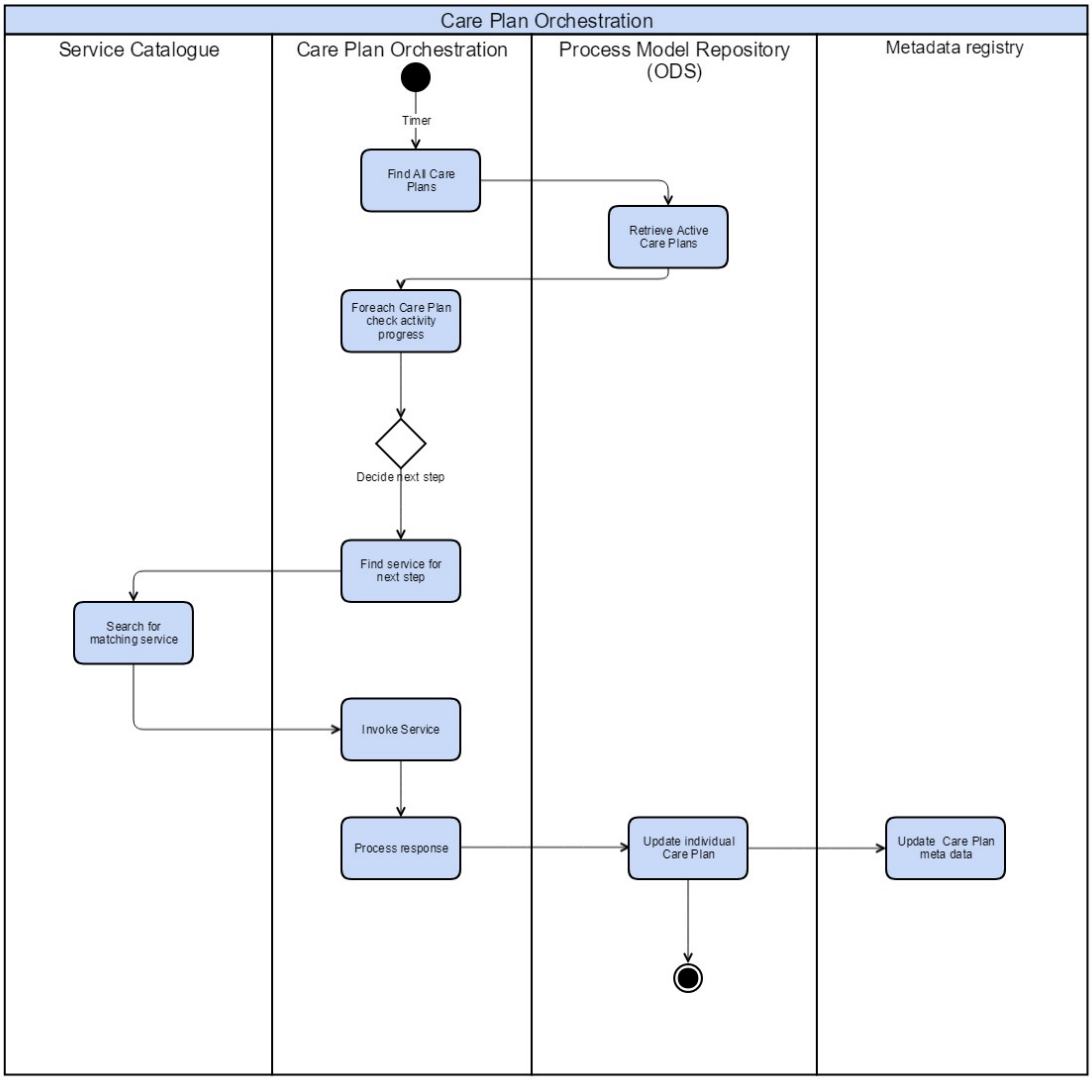
Care Plan orchestration will also work in a batch mode; processing remote patient monitoring data to identify whether a clinical intervention is required when monitoring data falls outside defined tolerances.

Care Plan Orchestration will also have to address the two way updates of comments and updates from the Patient or Clinicians and synchronise the replicated patient care plan and patient master care plan. The replicated care plan is to ensure that Patient and RPM can operate, without an online connection, autonomously for a period of time e.g. at least 24 hours.

3.4.2 Dependencies



3.4.3 Use case/sequence diagram



3.5 Patient Data Orchestrator

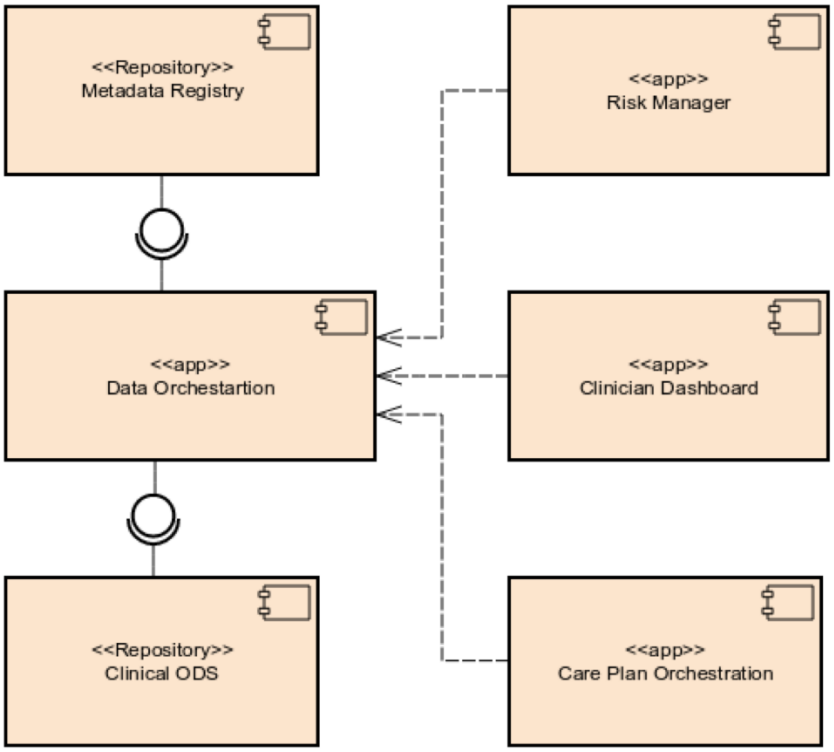
3.5.1 Description

The Patient Data Orchestrator (PDO) component serves as the data access layer for the PICASO application, interacting closely with the Metadata Registry component and all other components, which require to consume data (Clinician Dashboard, Care Plan Orchestrator and Risk Manager).

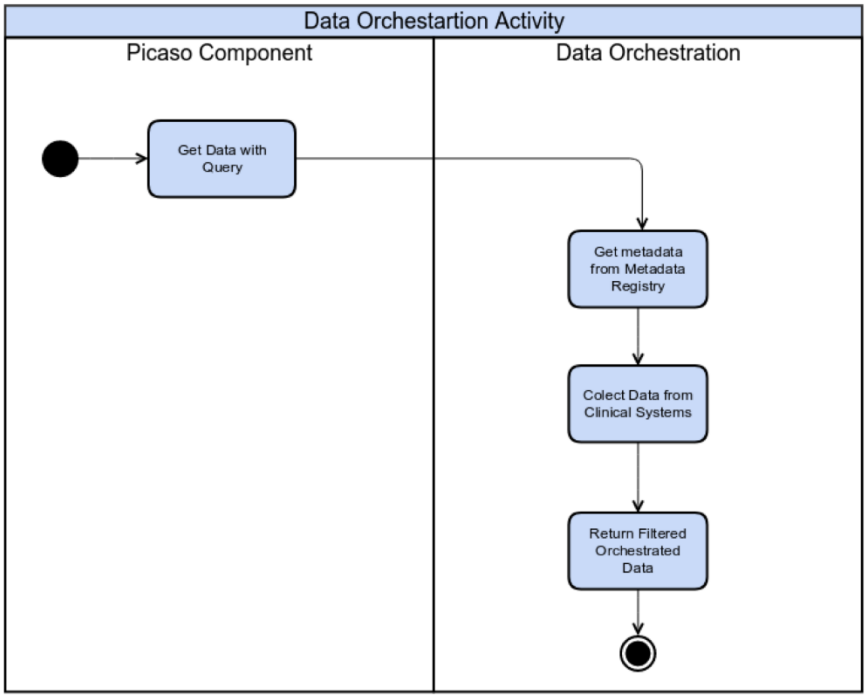
The PDO receives data requests from data consuming components, interrogates the Metadata Registry to determine whether the data exist and obtain the location of the actual data in the Clinical ODS Systems. Filtering of data according to policy rules is the responsibility of Metadata Registry.

The Metadata Registry provides the Patient Data Orchestrator with all relevant metadata including their locations in Clinical ODS systems. Patient Data Orchestrator then uses the retrieved metadata records to acquire the real data from relevant Clinical ODS Systems. The result from several Clinical ODS Systems are joined and returned to the requesting component; be it the Clinician Dashboard, Care Plan Orchestrator and Risk Manager component.

3.5.2 Dependencies



3.5.3 Use case/sequence diagram



3.6 Metadata Registry

3.6.1 Description

The purpose of the Metadata Registry is to hold a reference to requester, requestee, data type and location information that is necessary to allow the Patient Data Orchestration component to retrieve the specific data requested by the PICASO application.

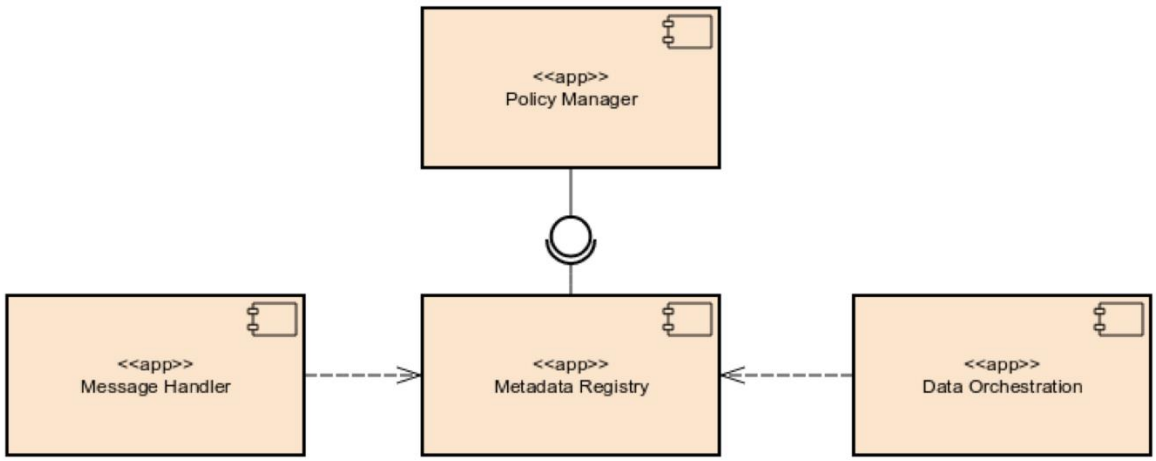
The metadata held here will include:

- A unique identifier for each metadata registry entry – so that the PICASO application can collate whole "reports" which consist of multiple data items.
- Identifiers of requester, requestee and related data source (Clinical ODS) to be able to fetch the real data and also to filter metadata according to the policy rules by consulting the Policy Manager.
- Identifiers or real data in related Clinical ODS system

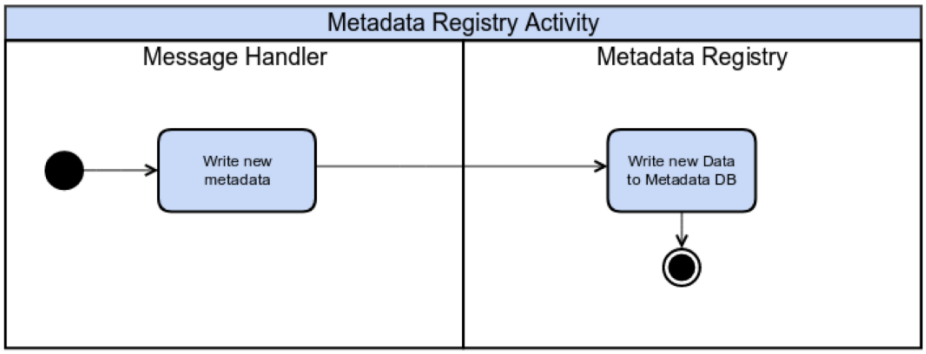
Each time the new record in any of existing Clinical ODS systems is affected (created, updated, deleted), the metadata record is published and stored in Metadata Registry.

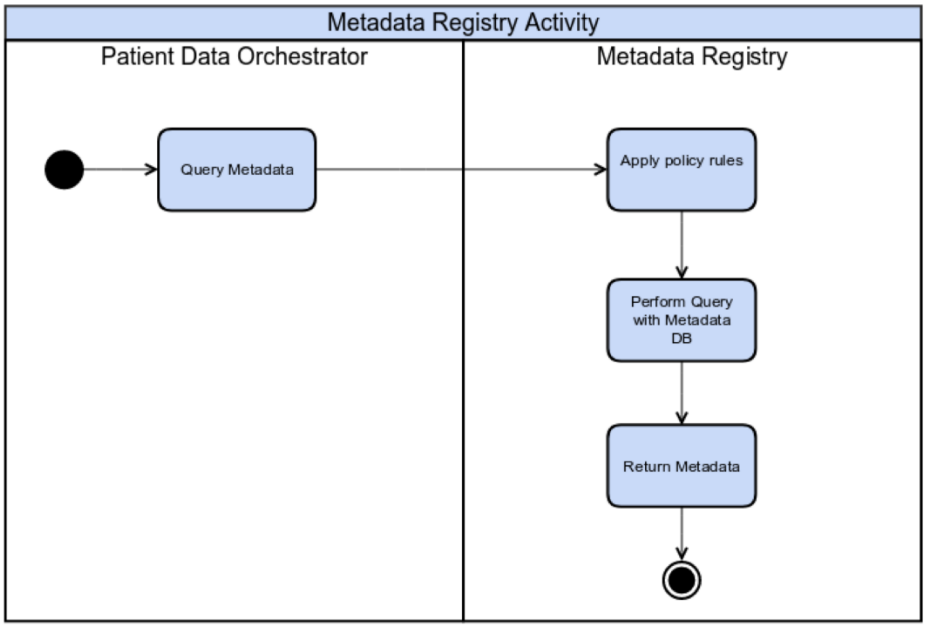
Each data consumption request to Patient Data Orchestrator is consulted with Metadata Registry to obtain all metadata records related to request. Metadata are filtered according to policy rules managed by Policy Manager.

3.6.2 Dependencies



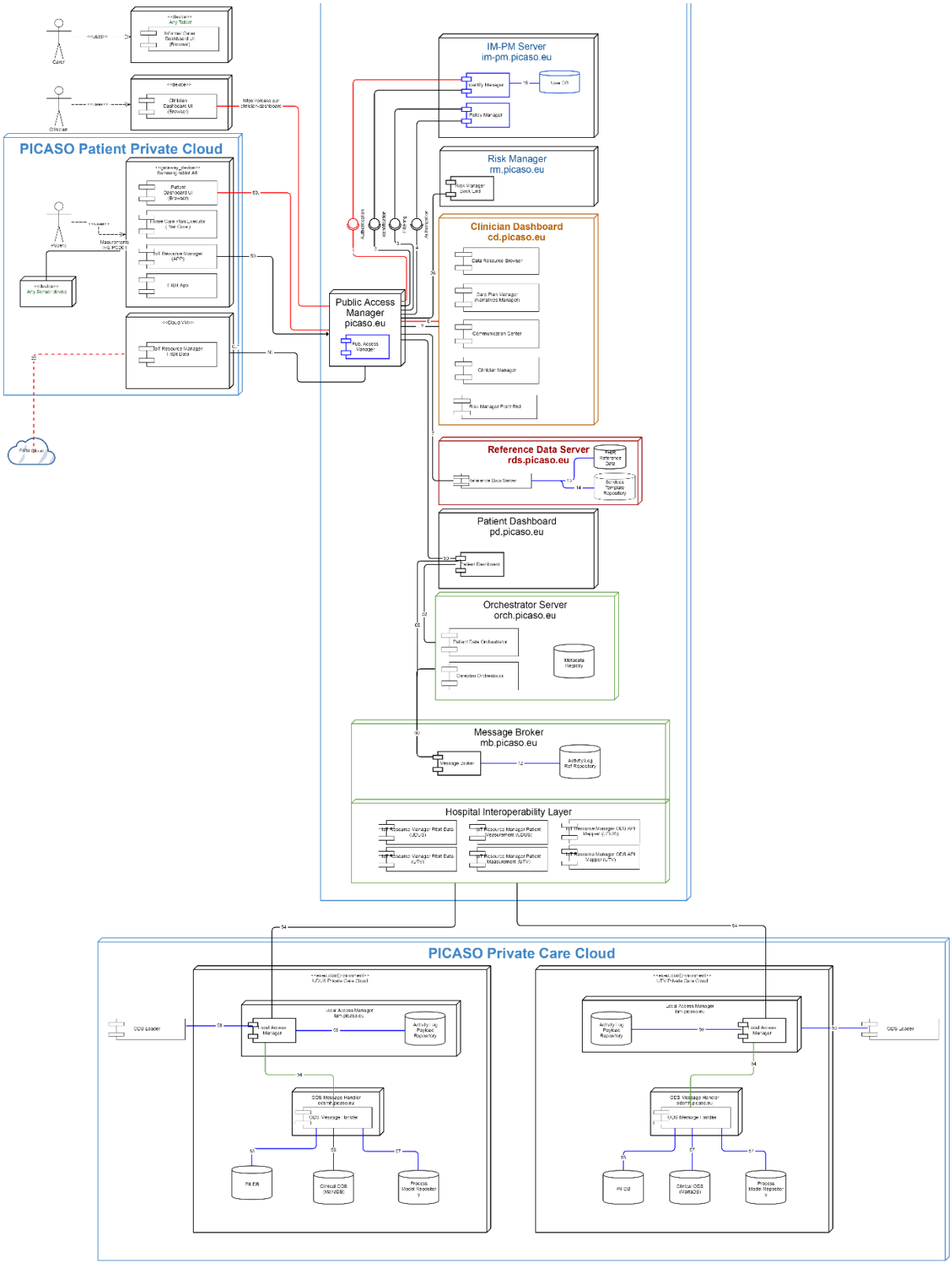
3.6.3 Use case/sequence diagram


Metadata Registry Activity
Message Handler
Metadata Registry
Write new metadata
Write new Data to Metadata DB


Metadata Registry Activity
Patient Data Orchestrator
Metadata Registry
Query Metadata
Apply policy rules
Perform Query with Metadata DB
Return Metadata

4 Integration mechanism components

4.1 PICASO Cloud deployment



The following components implement the main integration mechanisms between the PICASO Clouds,

- Activity Log
- Public Access Manager
- Local Access Manager
- Identity Manager
- Policy Manager
- Reference Data Server
- Message Broker
- ODS Message Broker

4.2 Activity Log

The activity log provides the ability to store and retrieve business defined events.

Using examples from the banking world a business event may be customer opened a new account, customer made a payment, account was closed, customer logged into internet banking. If we translate this to PICASO examples would be patient PICASO account created (after signing consent letter), patient logged into patient dashboard, clinician signed into clinician dashboard, patient uploaded home monitoring data, patient authorised clinician, clinician created care plan.

Business events are catalogued and the business event details that are stored in the activity log are specified with any special retention periods for the business event data. A business event is stored in the activity log as a single entry.

A business event has an associated technical id that may be used in technical logs (not stored in the activity log) to refer to. The activity log is not to be used for technical logs e.g. dashboard opened connection to ODS. Nb. technical logs should not contain user data c.f. activity logs in the local cloud may contain user data.

Components of PICASO that initiate or receive business events will write business events to the Activity Log. There will be a mechanism to associate business events to each other if required

4.3 Local / Public Access Managers

4.3.1 Description

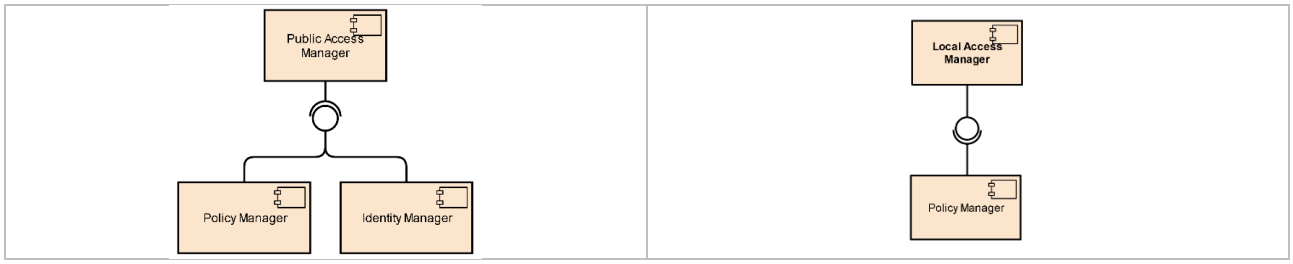
The Local Access Manager (LAM) and Public Access Manager (PAM) components are designed to secure and protect PICASO's local and public cloud installations. LAM and PAM inspect every incoming and outgoing connection stream at the application layer and forwards or drops a connection depending on policies which are created to respect the requirements of:

- security
- data protection
- consent
- privacy

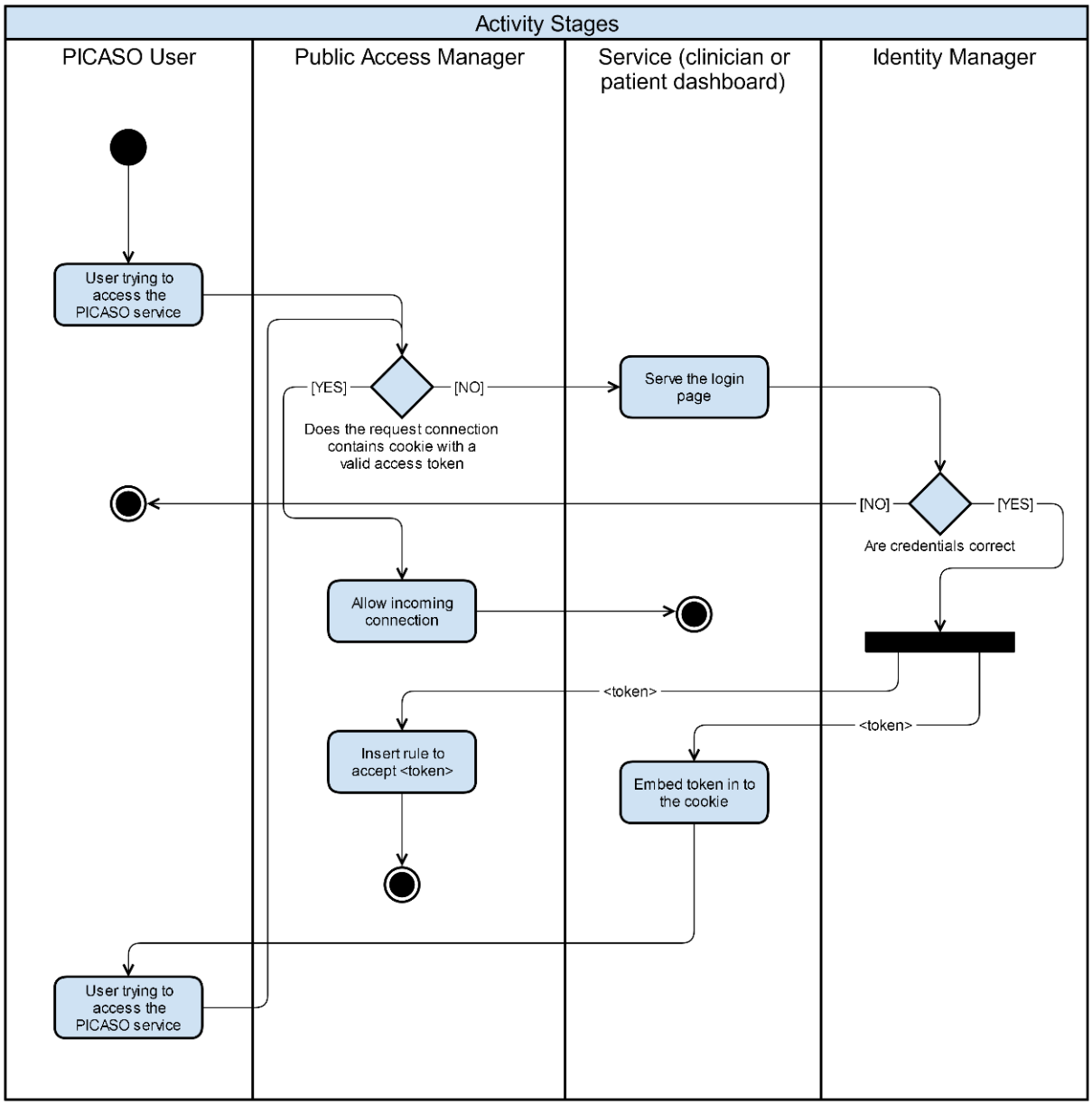
PAM and LAM design enables fine grain modification of consent policies by using services of Policy Manager.

4.3.2 Dependencies

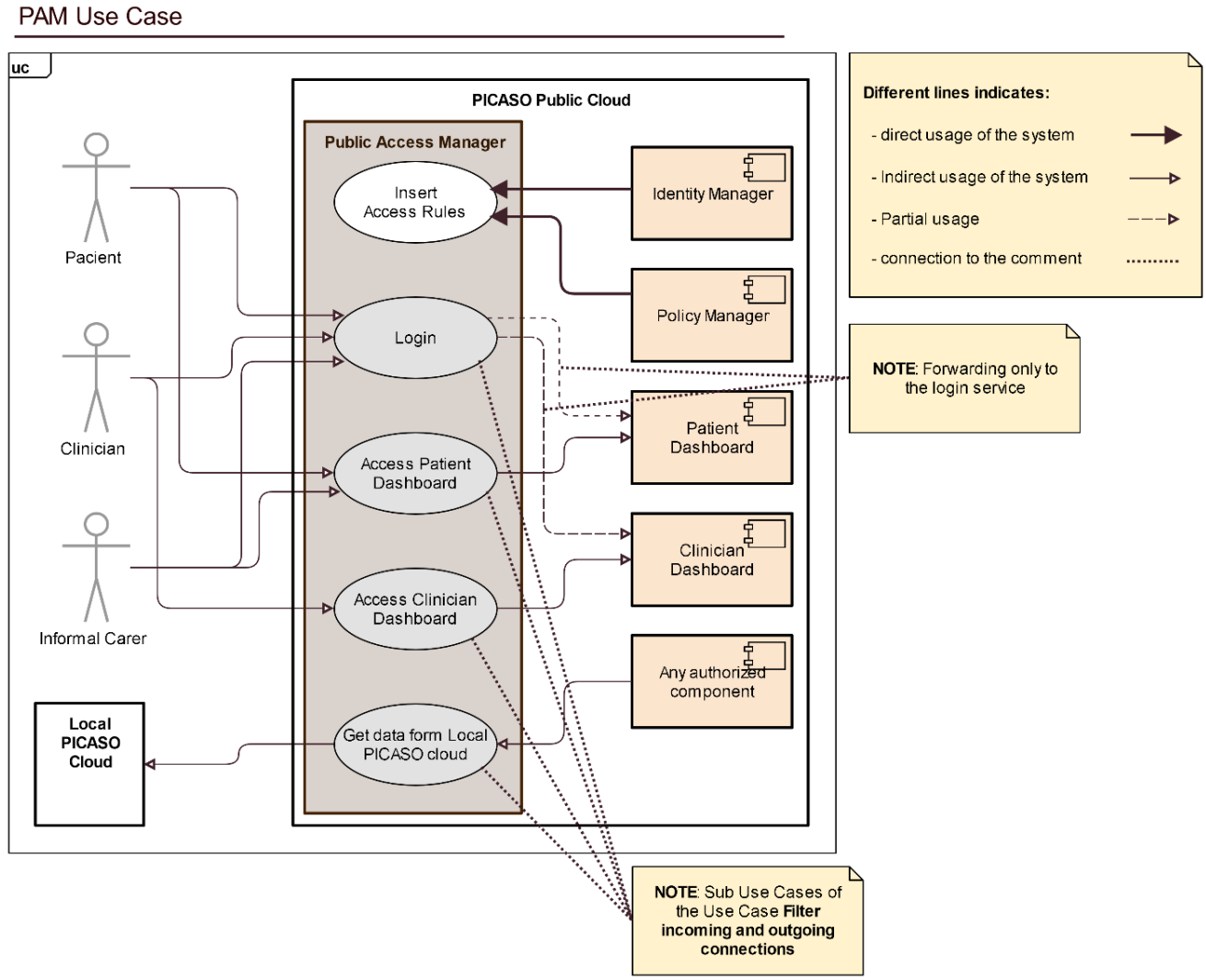
PAM dependencies	LAM dependencies



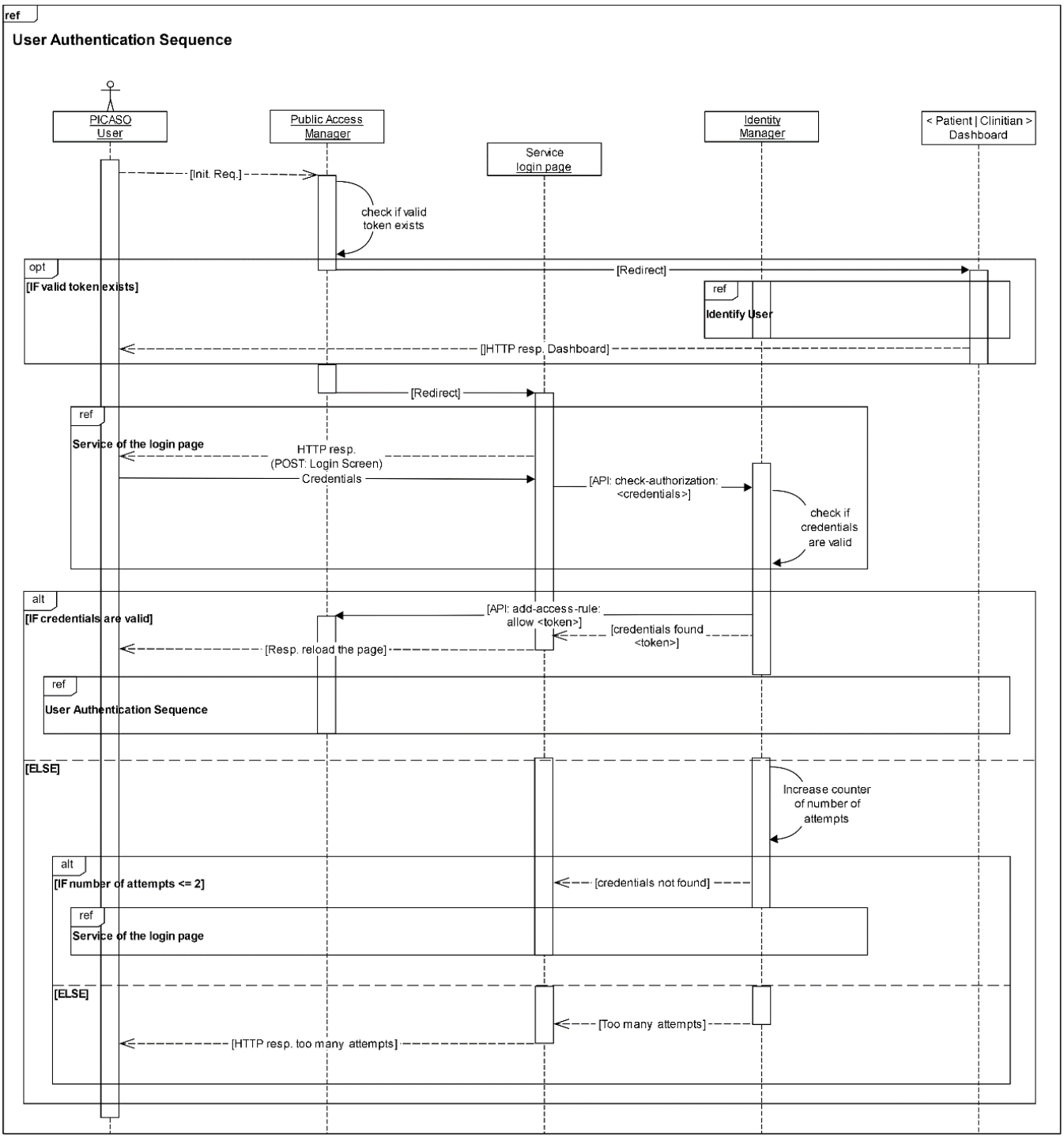
4.3.3 Activity diagram



4.3.4 Use case diagram



4.3.5 Sequence diagram



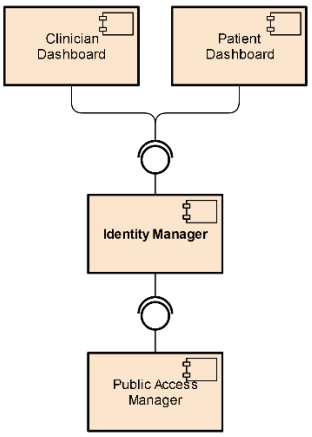
4.4 Identity Manager

4.4.1 Description

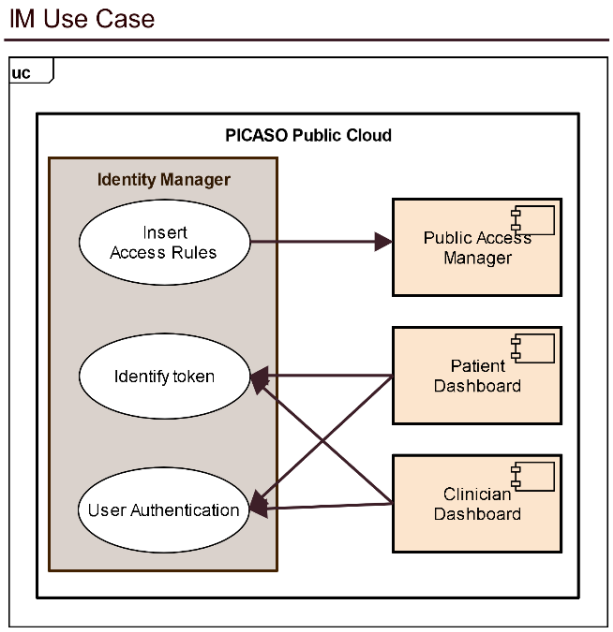
The Identity Manager (IM) ensures that all actors are properly authenticated and access to data is only granted if all access requirements are met. IM component provides an Authentication and Identification

services for PICASO users. During the authentication IM generates a token used to uniquely identify each user for a session. The IM updates the PAM with access rules determining which service a specific user is allowed to access.

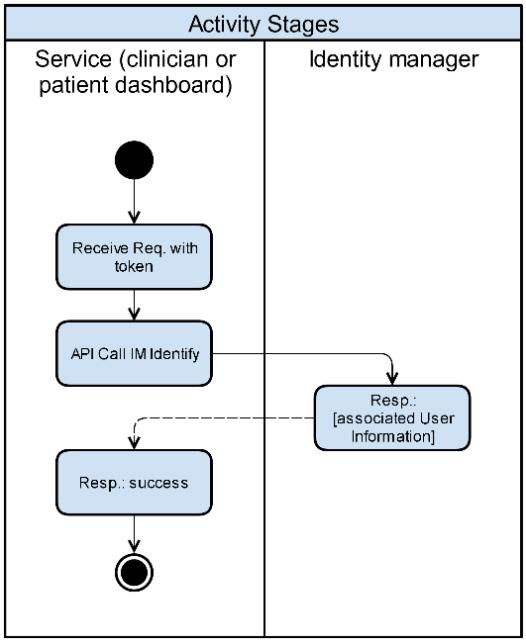
4.4.2 Dependencies



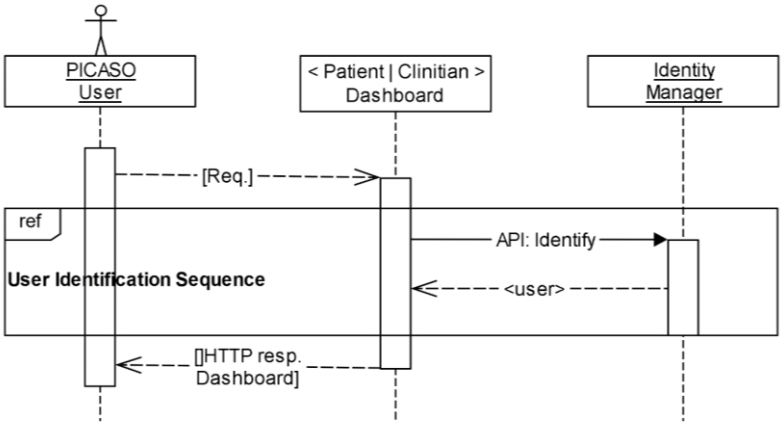
4.4.3 Use case Diagram



4.4.4 Activity Diagram



4.4.5 Sequence diagram



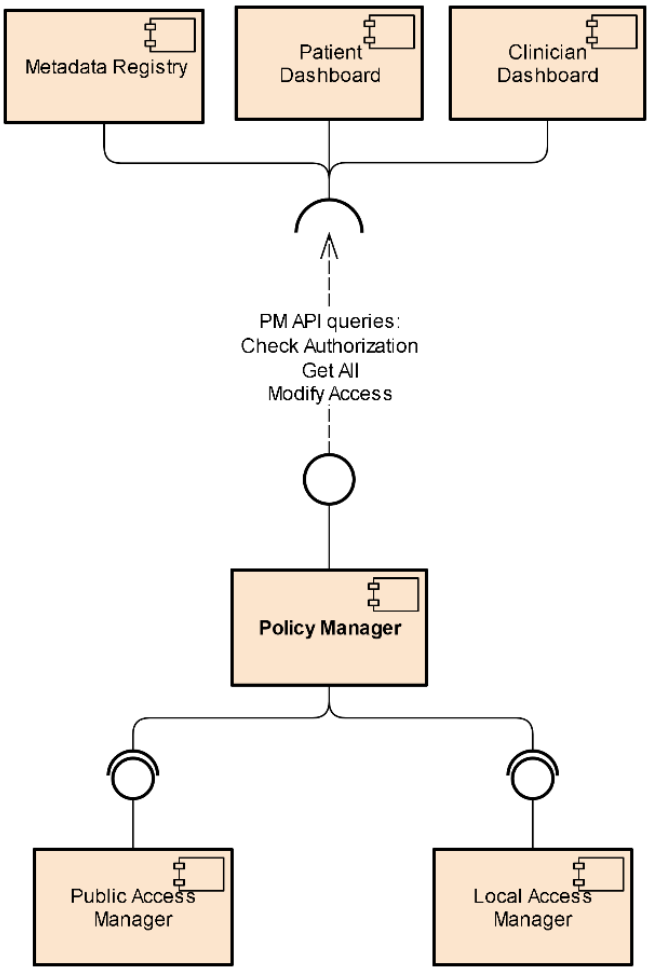
4.5 Policy manager

4.5.1 Description

The Policy Manager (PM) enables users to check policies and modify the consent policies. Each can modify access rights to their data for any other user on a platform. PM provides services for policy management:

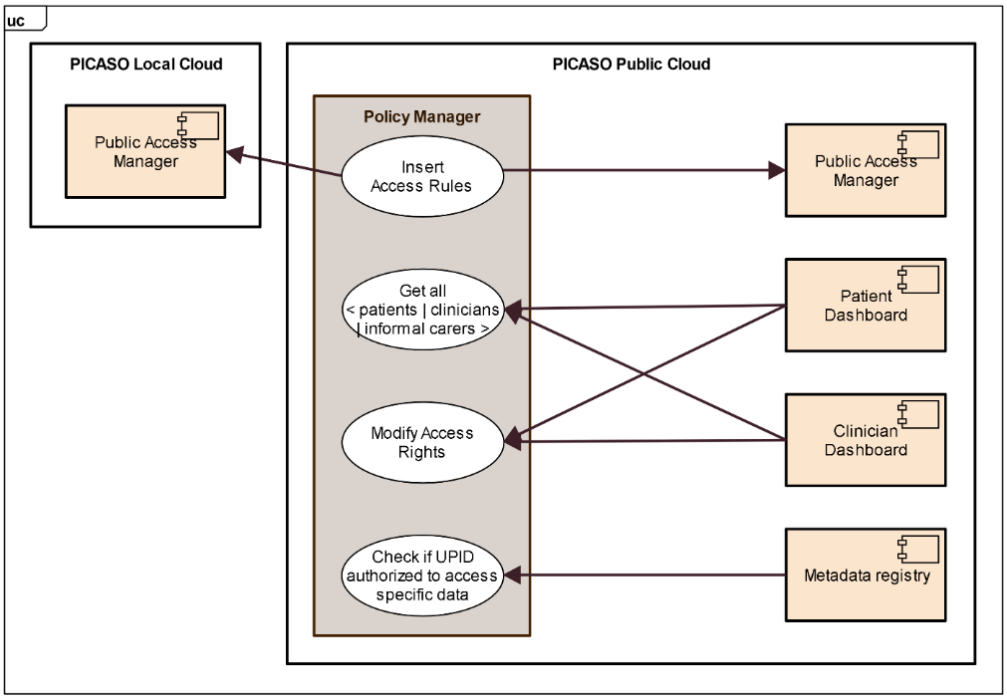
- Check authorization: checks whether a user A (e.g. a clinician) can access certain data of another user B (e.g. a patient). Input: set of requested data types; Output: subset of permitted datatypes.
- Modify access: enables users (e.g. patients) to modify access rights of another user (e.g. clinician, informal carer) to their data.
- Get all: provides a list - filtered by roles, institutions, and specific policies - of UPID's to whose associated user data a data requester has been given partial or full access to; e.g. the UPIDs of all patients whose data can be accessed (at least in part) by clinician A.

4.5.2 Dependencies

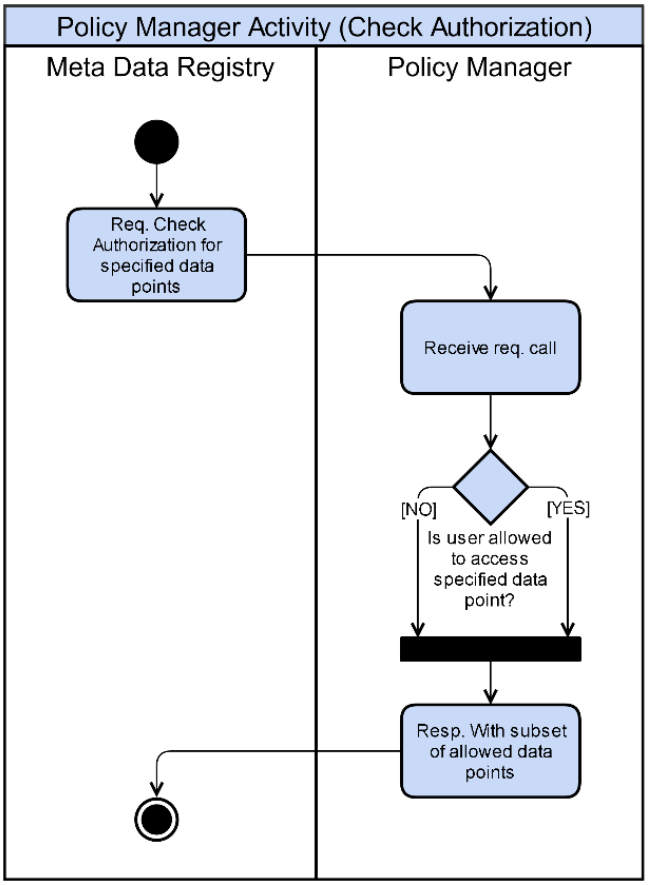


4.5.3 Use case Diagram

PM Use Case



4.5.4 Activity Diagram

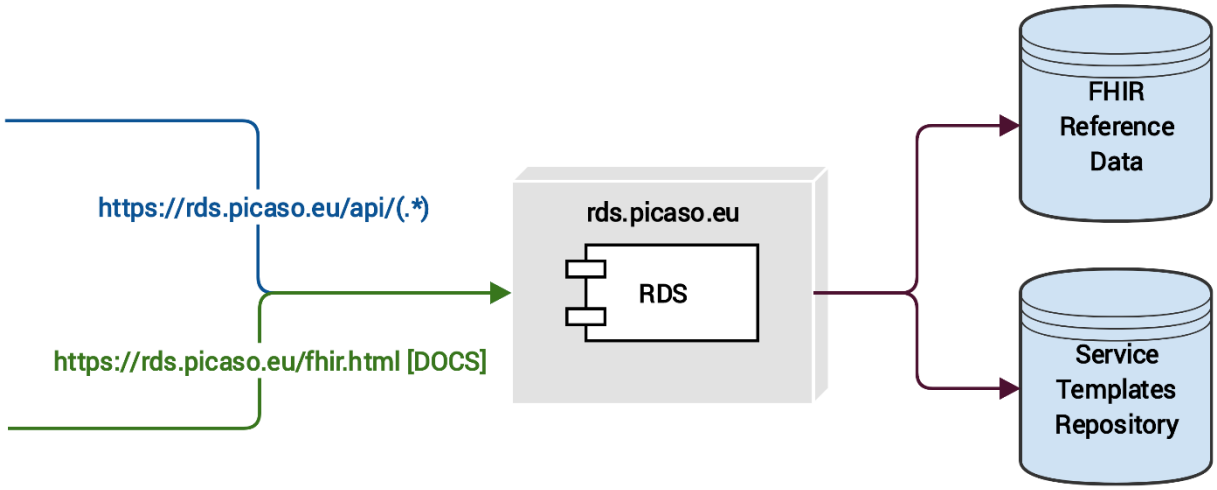


4.6 Reference Data Server

This component allows the management of PICASO reference data including both clinical reference data and more PICASO trial generated data. Its main purpose is to facilitate to other components access to:[1]

- FHIR value sets, code systems and concept maps
- Service templates
- Other PICASO extensions

Among the components that access this server, we can mention the Care Plan Manager, the Patient Dashboard, etc. **Fehler! Verweisquelle konnte nicht gefunden werden.** presents an overview on how other components access the APIs of the Reference Data Server.



Reference Data Server workflow.

This access is through the Public Access Manager, which controls all security restrictions within the public cloud of PICASO.

This component does not have external dependencies.

4.7 Message Broker

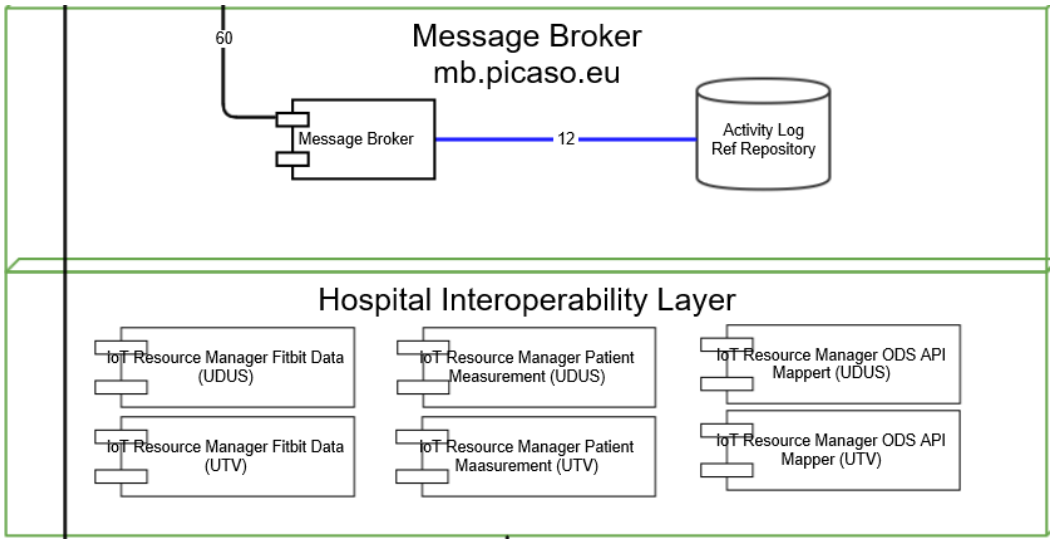
The PICASO Message Broker implements message validation, transformation and routing. The message broker can receive messages from multiple destinations, determine the correct destination and route the message to the correct channel. The Message Broker, also provides the means to manage scalability in a consistent manner. Thus, the general communication mechanism for the system will be data-centric and messaging-based.

The message broker component is implemented using the open source software RabbitMQ It is standards-based, easy to configure and maintain, well tested in production, robust, scalable and highly extensible. The general-purpose applicability, plugin architecture and extension mechanisms will allow for built-in multiprotocol support. In the overall solution the message broker does not perform any translations or transformation of the data and in the current architecture provides more a message passing, queuing type functionality.

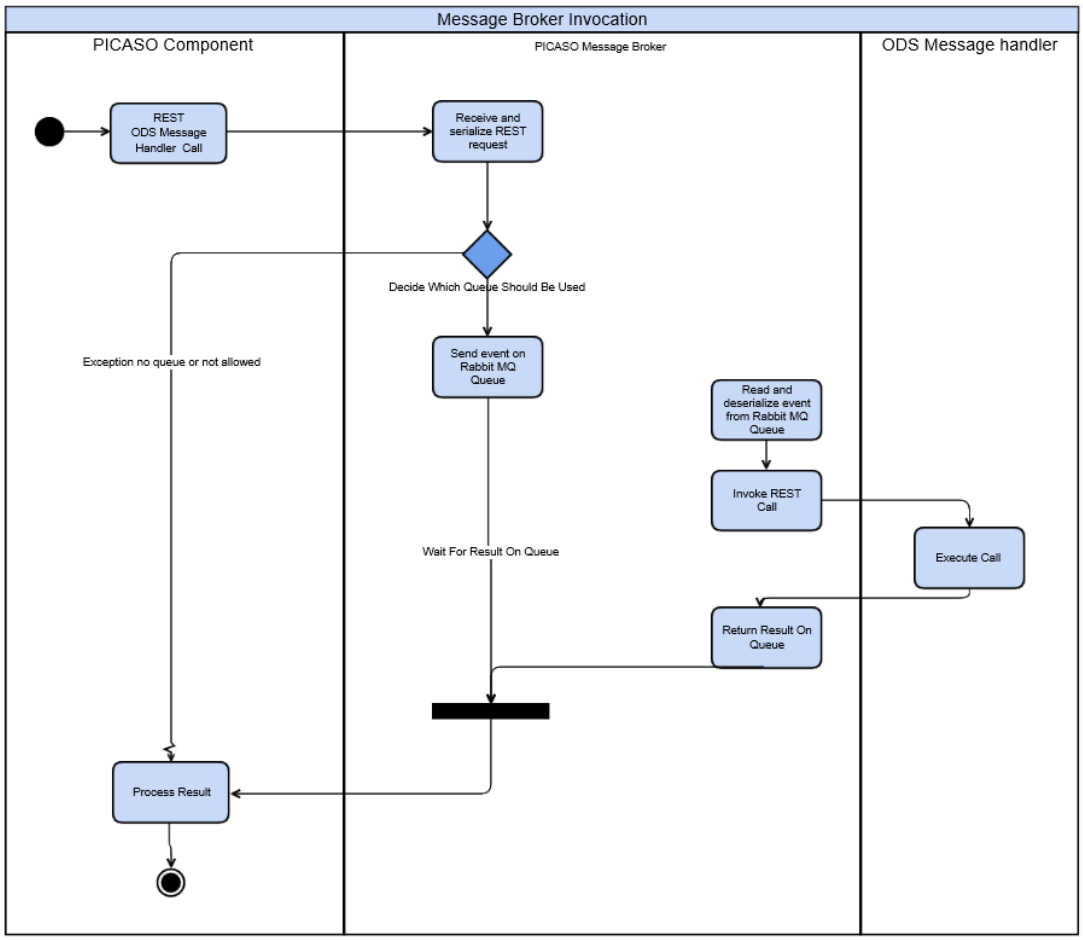
The extensions provided to RabbitMQ is an encapsulation layer for both inbound and outbound calls. Other components can call the Message Broker using standard REST calls and does not have to manage the RabbitMQ queues. In the same way the broker forwards message to recipients using standard REST calls.

[1] see definitions in deliverable D7.1.

The Broker contains an interoperability layer for mapping incoming requests to the different hospital specific APIs that exists.



4.7.1 Activity Diagram

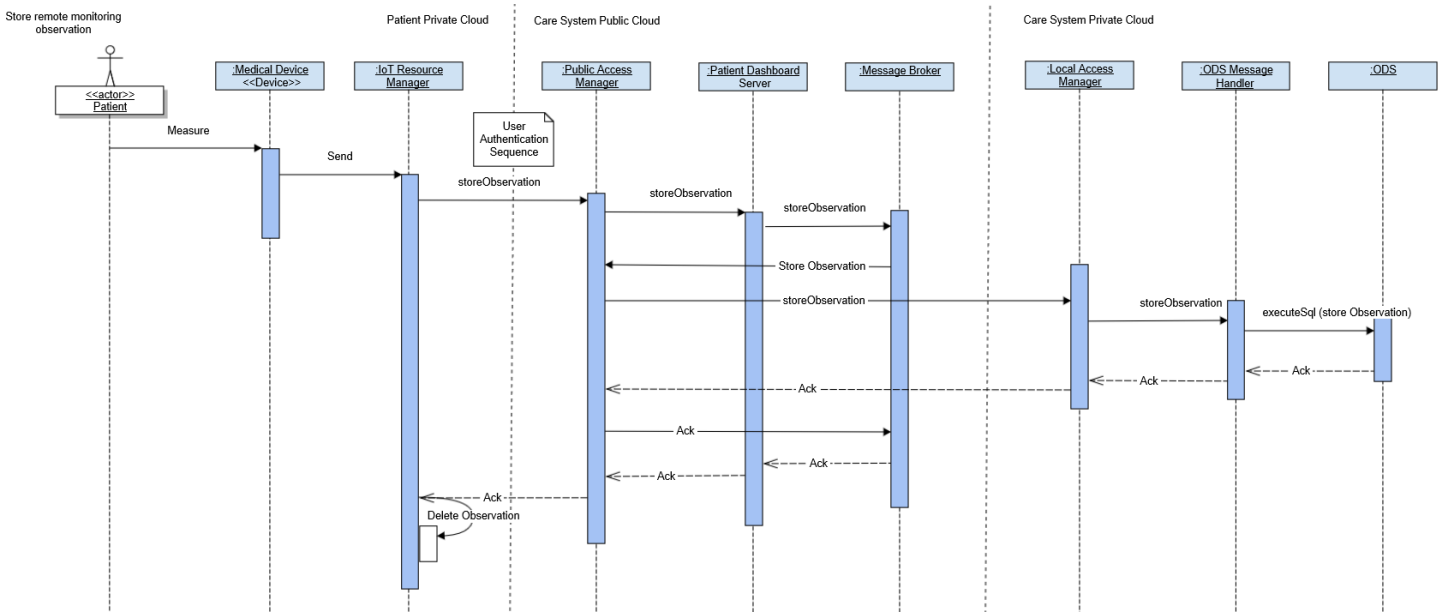


4.8 ODS Message Handler

The ODS MH is a service layer encapsulating all clinical data and patient generated data from home monitoring. It provides a FHIR based (Fast Healthcare Interoperability Resources) API for insertion and retrieval of care related data. The ODSMH API supports the following functionality,

- Receives and submits updates to the ODS
- Forwards retrieval requests to the ODS
- Receives (update) triggers from the ODS
- Informs the Meta Data Registry component when patient care plans are added, updated or deleted.

4.8.1 Sequence Diagram



5 PICASO Operational Data Store - ODS

5.1 Data model and deployment

The ODS (Operational Data Store) implements persistent storage for the PICASO platform. The ODS stores data extracted from the back-end clinical systems, in combination with data (observations) retrieved from remote patient monitoring. The ODS is used by the PICASO user interface components (Clinician/Patient Dashboards) and by any internal PICASO component requiring persistent storage.

The database schema is based on the CIM (Common Information Model) as defined by PICASO, and conforms to subsets of HL7 and the FHIR model for care plans.

The ODS separates all Personally Identifiable Information (PII) which could identify an individual, from the related clinical data. This is supported by the use of pseudonymization in combination with separate physical storage of the corresponding database subsets.

The clinical database subset includes the following categories,

- Patients clinical data
- Diagnosis data
- Observations (remote monitoring data)
- Medication
- Questionnaires (data collected from patients)
- Care Plan Instances
- Monitoring devices meta data

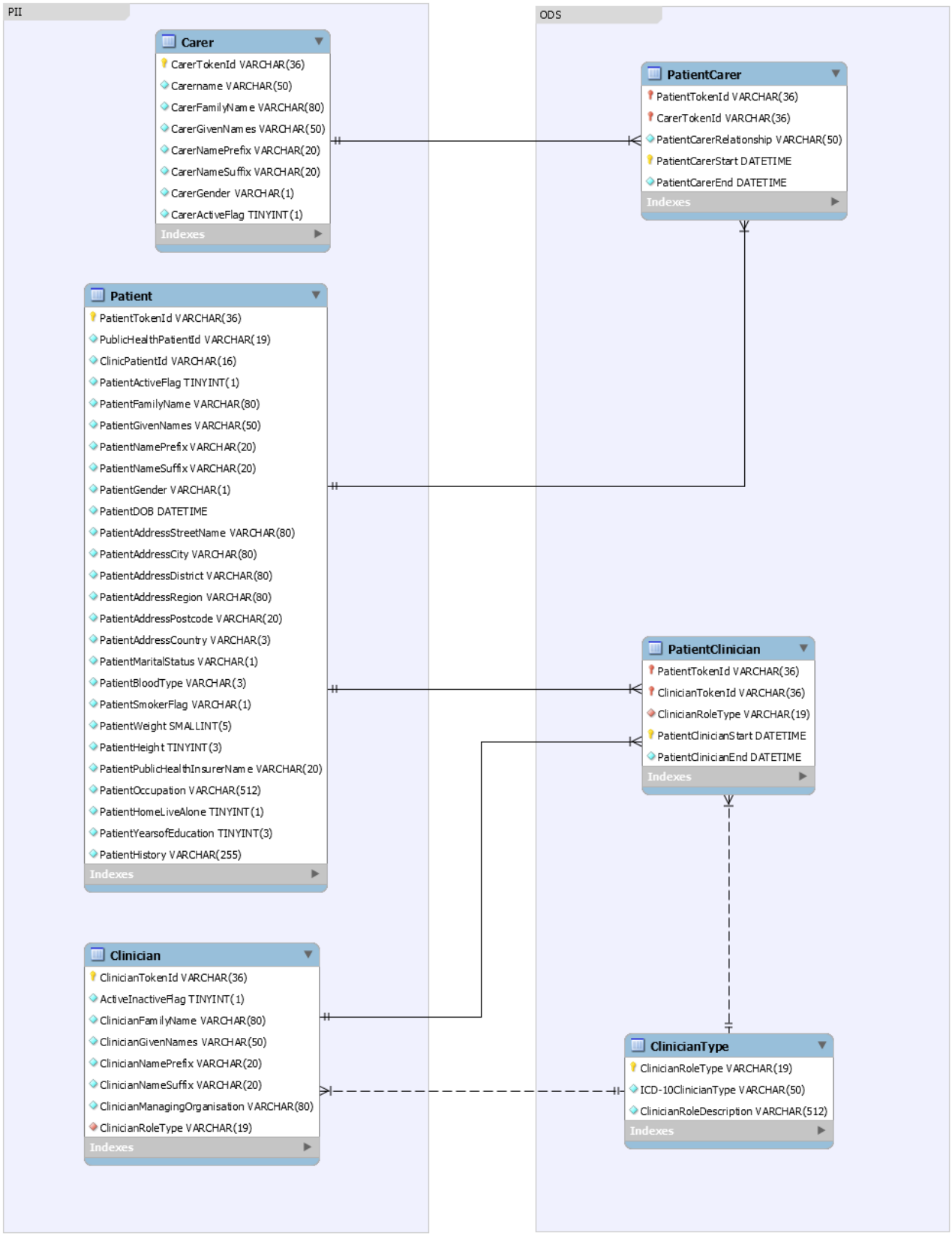
The PII database subset stores personal and demographic data related to the patients, their informal carers and clinicians.

An ODS is deployed in the Carers Private Cloud (Hospital DMZ) in isolation from the back-end clinical systems, with no update dependencies between clinical systems and PICASO. Clinical data extraction is considered to be performed periodically using specific ETL tools.

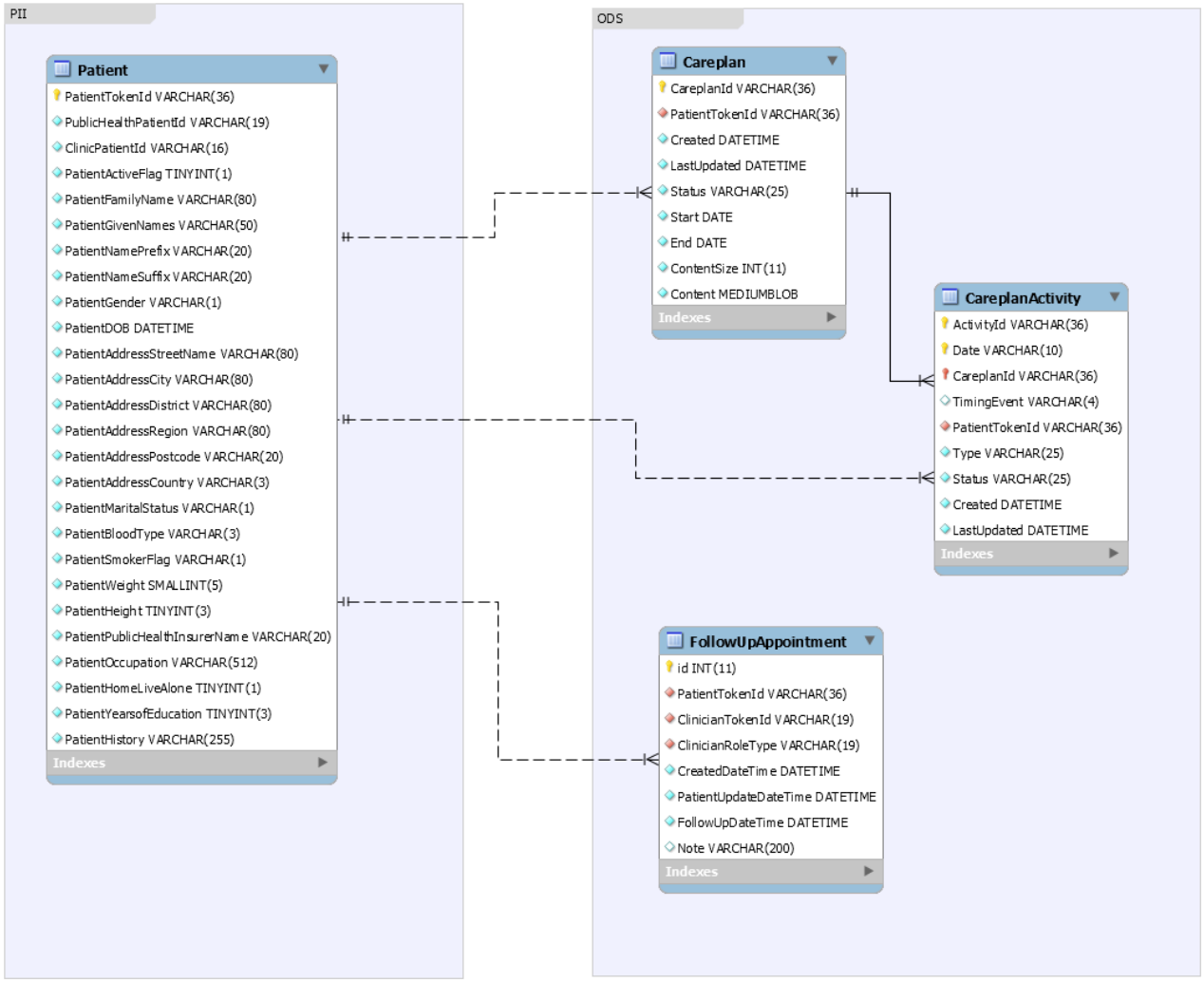
5.2 Schema

5.2.1 PII DB

These are the separate ODS tables storing PII for patients, clinicians and informal carers.


PII
ODS
Carer
CarerTokenId VARCHAR(36)
Carername VARCHAR(50)
CarerFamilyName VARCHAR(80)
CarerGivenNames VARCHAR(50)
CarerNamePrefix VARCHAR(20)
CarerNameSuffix VARCHAR(20)
CarerGender VARCHAR(1)
CarerActiveFlag TINYINT(1)
Indexes
PatientCarer
PatientTokenId VARCHAR(36)
CarerTokenId VARCHAR(36)
PatientCarerRelationship VARCHAR(50)
PatientCarerStart DATETIME
PatientCarerEnd DATETIME
Indexes
Patient
PatientTokenId VARCHAR(36)
PublicHealthPatientId VARCHAR(19)
ClinicPatientId VARCHAR(16)
PatientActiveFlag TINYINT(1)
PatientFamilyName VARCHAR(80)
PatientGivenNames VARCHAR(50)
PatientNamePrefix VARCHAR(20)
PatientNameSuffix VARCHAR(20)
PatientGender VARCHAR(1)
PatientDOB DATETIME
PatientAddressStreetName VARCHAR(80)
PatientAddressCity VARCHAR(80)
PatientAddressDistrict VARCHAR(80)
PatientAddressRegion VARCHAR(80)
PatientAddressPostcode VARCHAR(20)
PatientAddressCountry VARCHAR(3)
PatientMaritalStatus VARCHAR(1)
PatientBloodType VARCHAR(3)
PatientSmokerFlag VARCHAR(1)
PatientWeight SMALLINT(5)
PatientHeight TINYINT(3)
PatientPublicHealthInsurerName VARCHAR(20)
PatientOccupation VARCHAR(512)
PatientHomeLiveAlone TINYINT(1)
PatientYearsofEducation TINYINT(3)
PatientHistory VARCHAR(255)
Indexes
PatientClinician
PatientTokenId VARCHAR(36)
ClinicianTokenId VARCHAR(36)
ClinicianRoleType VARCHAR(19)
PatientClinicianStart DATETIME
PatientClinicianEnd DATETIME
Indexes
Clinician
ClinicianTokenId VARCHAR(36)
ActiveInactiveFlag TINYINT(1)
ClinicianFamilyName VARCHAR(80)
ClinicianGivenNames VARCHAR(50)
ClinicianNamePrefix VARCHAR(20)
ClinicianNameSuffix VARCHAR(20)
ClinicianManagingOrganisation VARCHAR(80)
ClinicianRoleType VARCHAR(19)
Indexes
ClinicianType
ClinicianRoleType VARCHAR(19)
ICD-10ClinicianType VARCHAR(50)
ClinicianRoleDescription VARCHAR(512)
Indexes

5.2.2 Careplan



Careplan and CareplanActivity relations hold the meta data for the FHIR care plans. The FHIR care plan JSON instances are stored as content BLOBs.

The FollowUpApointment is a result of a care plan activity, and links a patient and a clinician.

The HL7 FHIR CarePlan resource definition can be found at: https://www.hl7.org/fhir/careplan.html

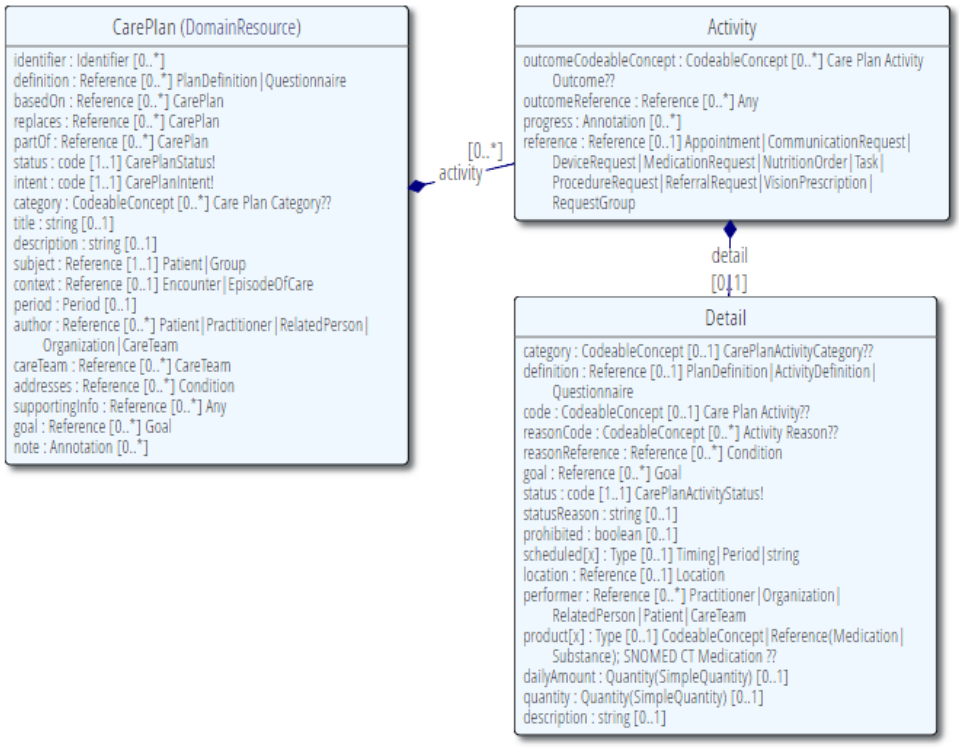
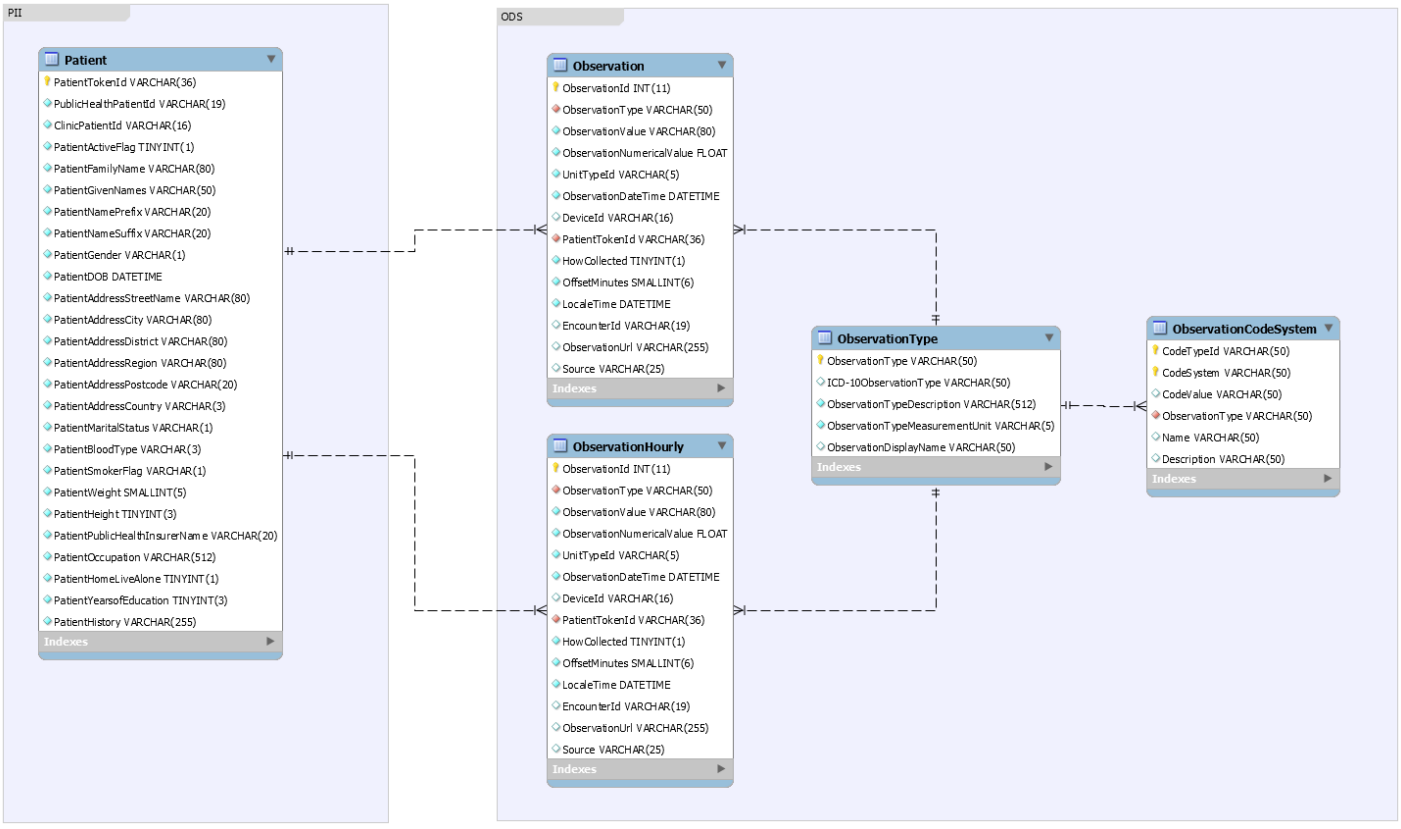


Figure 2: FHIR CarePlan resource

5.2.3 Observation



The corresponding SQL DDL script (see Appendix) can be found in the PICASO repository.

6 Appendix: ODS DDL

```
-- MySQL dump 10.13  Distrib 5.7.17, for Win64 (x86_64)
--
-- Host: 192.168.9.114    Database: PICASO_ODS
-- ------------------------------------------------------
-- Server version      5.5.5-10.1.24-MariaDB-1~jessie

/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8 */;
/*!40103 SET @OLD_TIME_ZONE=@@TIME_ZONE */;
/*!40103 SET TIME_ZONE='+00:00' */;
/*!40014 SET @OLD_UNIQUE_CHECKS=@@UNIQUE_CHECKS, UNIQUE_CHECKS=0 */;
/*!40014 SET @OLD_FOREIGN_KEY_CHECKS=@@FOREIGN_KEY_CHECKS, FOREIGN_KEY_CHECKS=0 */;
/*!40101 SET @OLD_SQL_MODE=@@SQL_MODE, SQL_MODE='NO_AUTO_VALUE_ON_ZERO' */;
/*!40111 SET @OLD_SQL_NOTES=@@SQL_NOTES, SQL_NOTES=0 */;

--
-- Table structure for table `Careplan`
--

DROP TABLE IF EXISTS `Careplan`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `Careplan` (
  `CareplanId` varchar(36) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `Created` datetime NOT NULL,
  `LastUpdated` datetime NOT NULL,
  `Status` varchar(25) NOT NULL,
  `Start` date NOT NULL,
  `End` date NOT NULL,
  `ContentSize` int(11) NOT NULL,
  `Content` mediumblob NOT NULL,
  PRIMARY KEY (`CareplanId`),
  KEY `careplan_index1` (`CareplanId`,`PatientTokenId`),
  KEY `careplan_ifk1` (`PatientTokenId`),
  CONSTRAINT `careplan_ifk1` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `CareplanActivity`
--

DROP TABLE IF EXISTS `CareplanActivity`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `CareplanActivity` (
  `ActivityId` varchar(36) NOT NULL,
  `Date` varchar(10) NOT NULL,
  `CareplanId` varchar(36) NOT NULL,
  `TimingEvent` varchar(4) DEFAULT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `Type` varchar(25) NOT NULL,
  `Status` varchar(25) NOT NULL,
  `Created` datetime NOT NULL,
  `LastUpdated` datetime NOT NULL,
  PRIMARY KEY (`ActivityId`,`Date`,`CareplanId`),
  KEY `CareplanId` (`CareplanId`),
  KEY `PatientTokenId` (`PatientTokenId`),
  KEY `SearchIndex` (`ActivityId`,`CareplanId`,`Date`,`PatientTokenId`,`Type`),
  CONSTRAINT `CareplanActivities_FK_CareplanId` FOREIGN KEY (`CareplanId`) REFERENCES `Careplan` (`CareplanId`),
  CONSTRAINT `CareplanActivities_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient`
(`PatientTokenId`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8 COMMENT='Activity sub part for each careplan';
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `ClinicianType`
--
```

```
DROP TABLE IF EXISTS `ClinicianType`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `ClinicianType` (
  `ClinicianRoleType` varchar(19) NOT NULL,
  `ICD-10ClinicianType` varchar(50) NOT NULL,
  `ClinicianRoleDescription` varchar(512) NOT NULL,
  PRIMARY KEY (`ClinicianRoleType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `Device`
--

DROP TABLE IF EXISTS `Device`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `Device` (
  `DeviceId` varchar(50) NOT NULL,
  `DeviceType` varchar(20) NOT NULL,
  `EUI64` varchar(16) DEFAULT NULL,
  `AcquisitionDate` datetime NOT NULL,
  `Status` varchar(20) NOT NULL,
  `Manufactorer` varchar(50) DEFAULT NULL,
  `Model` varchar(50) DEFAULT NULL,
  `SerialNumber` varchar(50) DEFAULT NULL,
  `PatientTokenId` varchar(36) DEFAULT NULL,
  `EquipmentId` varchar(50) NOT NULL,
  `LatestSync` datetime DEFAULT NULL,
  PRIMARY KEY (`DeviceId`),
  KEY `FK_DeviceType` (`DeviceType`),
  KEY `FK_PatientTokenId` (`PatientTokenId`),
  CONSTRAINT `Device_FK_DeviceType` FOREIGN KEY (`DeviceType`) REFERENCES `DeviceType` (`DeviceType`),
  CONSTRAINT `Device_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient`
(`PatientTokenId`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `DeviceType`
--

DROP TABLE IF EXISTS `DeviceType`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `DeviceType` (
  `DeviceType` varchar(20) NOT NULL,
  `DeviceTypeDescription` varchar(100) NOT NULL,
  PRIMARY KEY (`DeviceType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `DeviceTypeCodeSystem`
--

DROP TABLE IF EXISTS `DeviceTypeCodeSystem`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `DeviceTypeCodeSystem` (
  `CodeTypeId` varchar(50) NOT NULL,
  `CodeSystem` varchar(50) NOT NULL,
  `CodeValue` varchar(50) DEFAULT NULL,
  `DeviceType` varchar(20) NOT NULL,
  `Name` varchar(50) NOT NULL,
  `Description` varchar(50) DEFAULT NULL,
  PRIMARY KEY (`CodeTypeId`,`CodeSystem`),
  KEY `DeviceType` (`DeviceType`),
  CONSTRAINT `DeviceTypeCodeSystem_ifk1` FOREIGN KEY (`DeviceType`) REFERENCES `DeviceType` (`DeviceType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `DiseaseType`
```

```
--

DROP TABLE IF EXISTS `DiseaseType`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `DiseaseType` (
  `DiseaseType` varchar(19) NOT NULL,
  `SnomedDiseaseType` varchar(19) NOT NULL,
  `DiseaseTypeDescription` varchar(512) NOT NULL,
  `Site` varchar(25) NOT NULL,
  PRIMARY KEY (`DiseaseType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `EncounterType`
--

DROP TABLE IF EXISTS `EncounterType`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `EncounterType` (
  `EncounterType` varchar(19) NOT NULL,
  `EncounterTypeDescription` varchar(512) NOT NULL,
  `Site` varchar(25) NOT NULL,
  PRIMARY KEY (`EncounterType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `FollowUpAppointment`
--

DROP TABLE IF EXISTS `FollowUpAppointment`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `FollowUpAppointment` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `PatientTokenId` varchar(36) NOT NULL,
  `ClinicianTokenId` varchar(19) NOT NULL,
  `ClinicianRoleType` varchar(19) NOT NULL,
  `CreatedDateTime` datetime NOT NULL,
  `PatientUpdateDateTime` datetime NOT NULL,
  `FollowUpDateTime` datetime NOT NULL,
  `Note` varchar(200) DEFAULT NULL,
  PRIMARY KEY (`id`),
  KEY `PatientTokenId` (`PatientTokenId`),
  KEY `ClinicianTokenId` (`ClinicianTokenId`),
  KEY `ClinicianRoleType` (`ClinicianRoleType`),
  KEY `Index5` (`PatientTokenId`,`FollowUpDateTime`),
  CONSTRAINT `FollowUpAppointment_ifk1` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient`
(`PatientTokenId`),
  CONSTRAINT `FollowUpAppointment_ifk2` FOREIGN KEY (`ClinicianTokenId`) REFERENCES `PICASO_PII`.`Clinician`
(`ClinicianTokenId`),
  CONSTRAINT `FollowUpAppointment_ifk3` FOREIGN KEY (`ClinicianRoleType`) REFERENCES `ClinicianType` (`ClinicianRoleType`)
) ENGINE=InnoDB AUTO_INCREMENT=3 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `ImportApiLookup`
--

DROP TABLE IF EXISTS `ImportApiLookup`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `ImportApiLookup` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `Date` varchar(10) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `DeviceType` varchar(20) NOT NULL,
  `Checksum` varchar(32) NOT NULL,
  PRIMARY KEY (`id`),
  KEY `FK_PatientTokeId` (`PatientTokenId`),
  KEY `FK2_DeviceType` (`DeviceType`),
  CONSTRAINT `ImportApiLookup_FK_DeviceType` FOREIGN KEY (`DeviceType`) REFERENCES `DeviceType` (`DeviceType`),
```

```
  CONSTRAINT `ImportApiLookup_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB AUTO_INCREMENT=238 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `Observation`
--

DROP TABLE IF EXISTS `Observation`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `Observation` (
  `ObservationId` int(11) NOT NULL AUTO_INCREMENT,
  `ObservationType` varchar(50) NOT NULL,
  `ObservationValue` varchar(80) NOT NULL,
  `ObservationNumericalValue` float NOT NULL,
  `UnitTypeId` varchar(5) NOT NULL,
  `ObservationDateTime` datetime NOT NULL,
  `DeviceId` varchar(16) DEFAULT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `HowCollected` tinyint(1) NOT NULL,
  `OffsetMinutes` smallint(6) NOT NULL,
  `LocaleTime` datetime NOT NULL,
  `EncounterId` varchar(19) DEFAULT NULL,
  `ObservationUrl` varchar(255) DEFAULT NULL,
  `Source` varchar(25) DEFAULT NULL,
  PRIMARY KEY (`ObservationId`),
  KEY `patientTokenId` (`PatientTokenId`),
  KEY `ObservationType` (`ObservationType`),
  KEY `CommonQuery` (`ObservationType`,`ObservationDateTime`,`PatientTokenId`),
  CONSTRAINT `Obseration_FK_ObservationType` FOREIGN KEY (`ObservationType`) REFERENCES `ObservationType` (`ObservationType`),
  CONSTRAINT `Observation_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB AUTO_INCREMENT=32680 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `ObservationCodeSystem`
--

DROP TABLE IF EXISTS `ObservationCodeSystem`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `ObservationCodeSystem` (
  `CodeTypeId` varchar(50) NOT NULL,
  `CodeSystem` varchar(50) NOT NULL,
  `CodeValue` varchar(50) DEFAULT NULL,
  `ObservationType` varchar(50) NOT NULL COMMENT 'Key for ObservationType',
  `Name` varchar(50) DEFAULT NULL,
  `Description` varchar(50) DEFAULT NULL,
  PRIMARY KEY (`CodeTypeId`,`CodeSystem`),
  KEY `ObservationType` (`ObservationType`),
  CONSTRAINT `ObsevrationCodeSystem_ifk1` FOREIGN KEY (`ObservationType`) REFERENCES `ObservationType` (`ObservationType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `ObservationHourly`
--

DROP TABLE IF EXISTS `ObservationHourly`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `ObservationHourly` (
  `ObservationId` int(11) NOT NULL AUTO_INCREMENT,
  `ObservationType` varchar(50) NOT NULL,
  `ObservationValue` varchar(80) NOT NULL,
  `ObservationNumericalValue` float NOT NULL,
  `UnitTypeId` varchar(5) NOT NULL,
  `ObservationDateTime` datetime NOT NULL,
  `DeviceId` varchar(16) DEFAULT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
```

```
  `HowCollected` tinyint(1) NOT NULL,
  `OffsetMinutes` smallint(6) NOT NULL,
  `LocaleTime` datetime NOT NULL,
  `EncounterId` varchar(19) DEFAULT NULL,
  `ObservationUrl` varchar(255) DEFAULT NULL,
  `Source` varchar(25) DEFAULT NULL,
  PRIMARY KEY (`ObservationId`),
  KEY `patientTokenId` (`PatientTokenId`),
  KEY `ObservationType` (`ObservationType`),
  KEY `CommonQuery` (`ObservationType`,`ObservationDateTime`,`PatientTokenId`),
  CONSTRAINT `ObseRationHourly_FK_ObservationType` FOREIGN KEY (`ObservationType`) REFERENCES `ObservationType` (`ObservationType`),
  CONSTRAINT `ObservationHourly_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB AUTO_INCREMENT=52996 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `ObservationIntraDay`
--

DROP TABLE IF EXISTS `ObservationIntraDay`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `ObservationIntraDay` (
  `ObservationId` int(11) NOT NULL AUTO_INCREMENT,
  `ObservationType` varchar(50) NOT NULL,
  `ObservationValue` varchar(80) NOT NULL,
  `ObservationNumericalValue` float NOT NULL,
  `UnitTypeId` varchar(5) NOT NULL,
  `ObservationDateTime` datetime NOT NULL,
  `DeviceId` varchar(16) DEFAULT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `HowCollected` tinyint(1) NOT NULL,
  `OffsetMinutes` smallint(6) NOT NULL,
  `LocaleTime` datetime NOT NULL,
  `EncounterId` varchar(19) DEFAULT NULL,
  `ObservationUrl` varchar(255) DEFAULT NULL,
  `Source` varchar(25) DEFAULT NULL,
  PRIMARY KEY (`ObservationId`),
  KEY `encounterId` (`EncounterId`),
  KEY `patientTokenId` (`PatientTokenId`),
  KEY `ObservationType` (`ObservationType`),
  CONSTRAINT `observationintraday_ibfk_1` FOREIGN KEY (`ObservationType`) REFERENCES `ObservationType` (`ObservationType`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `observationintraday_ibfk_2` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `observationintraday_ibfk_3` FOREIGN KEY (`EncounterId`) REFERENCES `PatientEncounter` (`EncounterId`) ON DELETE NO ACTION ON UPDATE CASCADE
) ENGINE=InnoDB AUTO_INCREMENT=537791 DEFAULT CHARSET=utf8 ROW_FORMAT=COMPACT;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `ObservationType`
--

DROP TABLE IF EXISTS `ObservationType`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `ObservationType` (
  `ObservationType` varchar(50) NOT NULL,
  `ICD-10ObservationType` varchar(50) DEFAULT '',
  `ObservationTypeDescription` varchar(512) NOT NULL,
  `ObservationTypeMeasurementUnit` varchar(5) NOT NULL,
  `ObservationDisplayName` varchar(50) DEFAULT NULL,
  PRIMARY KEY (`ObservationType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientCarer`
--

DROP TABLE IF EXISTS `PatientCarer`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
```

```
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientCarer` (
  `PatientTokenId` varchar(36) NOT NULL,
  `CarerTokenId` varchar(36) NOT NULL,
  `PatientCarerRelationship` varchar(50) NOT NULL,
  `PatientCarerStart` datetime NOT NULL,
  `PatientCarerEnd` datetime NOT NULL,
  PRIMARY KEY (`PatientTokenId`,`CarerTokenId`,`PatientCarerStart`),
  KEY `patientcarer_ibfk_1` (`CarerTokenId`),
  KEY `patientcarer_ibfk_2` (`PatientTokenId`),
  CONSTRAINT `patientcarer_ibfk_1` FOREIGN KEY (`CarerTokenId`) REFERENCES `PICASO_PII`.`Carer` (`CarerTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientcarer_ibfk_2` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientClinician`
--

DROP TABLE IF EXISTS `PatientClinician`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientClinician` (
  `PatientTokenId` varchar(36) NOT NULL,
  `ClinicianTokenId` varchar(36) NOT NULL,
  `ClinicianRoleType` varchar(19) NOT NULL,
  `PatientClinicianStart` datetime NOT NULL,
  `PatientClinicianEnd` datetime NOT NULL,
  PRIMARY KEY (`PatientTokenId`,`ClinicianTokenId`,`PatientClinicianStart`),
  KEY `PatientTokenId` (`PatientTokenId`,`ClinicianTokenId`,`ClinicianRoleType`),
  KEY `patientclinician_ibfk_2` (`ClinicianTokenId`),
  KEY `patientclinician_ibfk_3` (`ClinicianRoleType`),
  CONSTRAINT `patientclinician_ibfk_1` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientclinician_ibfk_2` FOREIGN KEY (`ClinicianTokenId`) REFERENCES `PICASO_PII`.`Clinician` (`ClinicianTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientclinician_ibfk_3` FOREIGN KEY (`ClinicianRoleType`) REFERENCES `ClinicianType` (`ClinicianRoleType`) ON DELETE NO ACTION ON UPDATE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientDisease`
--

DROP TABLE IF EXISTS `PatientDisease`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientDisease` (
  `DiseaseType` varchar(19) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `EncounterId` varchar(19) NOT NULL,
  `ClinicianTokenId` varchar(19) NOT NULL,
  `PatientDiseaseSeverity` varchar(19) NOT NULL,
  `PatientDiseaseDateOfOnset` datetime NOT NULL,
  `PatientDiseaseDateofAbatement` datetime NOT NULL,
  `PatientDiseaseFamilyHistoryFlag` tinyint(1) NOT NULL,
  `PatientDiseaseStage` varchar(19) NOT NULL,
  `PatientDiseaseSummary` varchar(512) NOT NULL,
  `PatientDiseaseNotes` varchar(255) NOT NULL,
  `SideofOnset` varchar(1) NOT NULL,
  `ClinicalPhenotype` varchar(255) NOT NULL,
  PRIMARY KEY (`DiseaseType`,`PatientTokenId`),
  KEY `diseaseType` (`DiseaseType`,`PatientTokenId`,`EncounterId`),
  KEY `ClinicianTokenId` (`ClinicianTokenId`),
  KEY `patientdisease_ibfk_2` (`PatientTokenId`),
  KEY `patientdisease_ibfk_3` (`EncounterId`),
  CONSTRAINT `patientdisease_ibfk_1` FOREIGN KEY (`DiseaseType`) REFERENCES `DiseaseType` (`DiseaseType`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientdisease_ibfk_2` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientdisease_ibfk_3` FOREIGN KEY (`EncounterId`) REFERENCES `PatientEncounter` (`EncounterId`) ON DELETE NO ACTION ON UPDATE CASCADE,
```

```
  CONSTRAINT `patientdisease_ibfk_4` FOREIGN KEY (`ClinicianTokenId`) REFERENCES `PICASO_PII`.`Clinician` (`ClinicianTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientDiseaseEvent`
--

DROP TABLE IF EXISTS `PatientDiseaseEvent`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientDiseaseEvent` (
  `DiseaseType` varchar(19) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `PatientDiseaseEventDate` datetime NOT NULL,
  `EncounterId` varchar(19) NOT NULL,
  `ClinicianTokenId` varchar(19) NOT NULL,
  `PatientDiseaseEventSeverity` varchar(19) NOT NULL,
  `PatientDiseaseStage` varchar(19) NOT NULL,
  `PatientDiseaseSummary` varchar(512) NOT NULL,
  `PatientDiseaseNotes` varchar(255) NOT NULL,
  `ClinicalPhenotype` varchar(255) NOT NULL,
  PRIMARY KEY (`DiseaseType`,`PatientTokenId`,`PatientDiseaseEventDate`),
  KEY `diseaseType` (`DiseaseType`,`PatientTokenId`,`PatientDiseaseEventDate`,`EncounterId`),
  KEY `ClinicianTokenId` (`ClinicianTokenId`),
  KEY `patientdiseaseevent_ibfk_2` (`PatientTokenId`),
  KEY `patientdiseaseevent_ibfk_3` (`EncounterId`),
  CONSTRAINT `patientdiseaseevent_ibfk_1` FOREIGN KEY (`DiseaseType`) REFERENCES `DiseaseType` (`DiseaseType`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientdiseaseevent_ibfk_2` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientdiseaseevent_ibfk_3` FOREIGN KEY (`EncounterId`) REFERENCES `PatientEncounter` (`EncounterId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientdiseaseevent_ibfk_4` FOREIGN KEY (`ClinicianTokenId`) REFERENCES `PICASO_PII`.`Clinician` (`ClinicianTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientEncounter`
--

DROP TABLE IF EXISTS `PatientEncounter`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientEncounter` (
  `EncounterId` varchar(19) NOT NULL,
  `EncounterType` varchar(19) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `EncounterStart` datetime NOT NULL,
  `EncounterEnd` datetime NOT NULL,
  `ClinicianTokenId` varchar(19) NOT NULL,
  `EncounterClinicalType` varchar(25) NOT NULL,
  `EncounterDocuments` varchar(255) NOT NULL,
  `EncounterLocation` varchar(255) NOT NULL,
  `PatientCaseId` varchar(19) NOT NULL,
  PRIMARY KEY (`EncounterId`),
  KEY `encounterType` (`EncounterType`),
  KEY `patientTokenId` (`PatientTokenId`),
  KEY `clinicalTokenId` (`ClinicianTokenId`),
  CONSTRAINT `patientencounter_ibfk_1` FOREIGN KEY (`EncounterType`) REFERENCES `EncounterType` (`EncounterType`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientencounter_ibfk_2` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientencounter_ibfk_3` FOREIGN KEY (`ClinicianTokenId`) REFERENCES `PICASO_PII`.`Clinician` (`ClinicianTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientProfile`
--

DROP TABLE IF EXISTS `PatientProfile`;
```

```
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientProfile` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `PatientTokenId` varchar(36) CHARACTER SET utf8 NOT NULL,
  `Site` varchar(50) NOT NULL,
  `Language` varchar(50) NOT NULL,
  `ManualInput` tinyint(1) NOT NULL,
  `ManualDevice` tinyint(1) NOT NULL,
  PRIMARY KEY (`id`),
  KEY `PatientProfile_FK_PatientTokenId` (`PatientTokenId`),
  CONSTRAINT `PatientProfile_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB AUTO_INCREMENT=7 DEFAULT CHARSET=latin1;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientReminders`
--

DROP TABLE IF EXISTS `PatientReminders`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientReminders` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `PatientTokenId` varchar(36) NOT NULL,
  `Questinnaire` tinyint(1) NOT NULL,
  `Medication` tinyint(1) NOT NULL,
  `Measurement` tinyint(1) NOT NULL,
  PRIMARY KEY (`id`),
  KEY `PatientTokenId` (`PatientTokenId`),
  CONSTRAINT `PatientReminders_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB AUTO_INCREMENT=5 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientSymptom`
--

DROP TABLE IF EXISTS `PatientSymptom`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientSymptom` (
  `PatientTokenId` varchar(36) NOT NULL,
  `SymptomType` varchar(19) NOT NULL,
  `SymptomFirstObserved` datetime NOT NULL,
  PRIMARY KEY (`PatientTokenId`,`SymptomType`),
  KEY `patientTokenId` (`PatientTokenId`,`SymptomType`),
  KEY `patientsymptom_ibfk_2` (`SymptomType`),
  CONSTRAINT `patientsymptom_ibfk_1` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patientsymptom_ibfk_2` FOREIGN KEY (`SymptomType`) REFERENCES `SymptomType` (`SymptomType`) ON DELETE NO ACTION ON UPDATE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientTimes`
--

DROP TABLE IF EXISTS `PatientTimes`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientTimes` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `PatientTokenId` varchar(36) NOT NULL,
  `Sleep_Asleep` varchar(5) NOT NULL,
  `Sleep_Awake` varchar(5) NOT NULL,
  `Meal_Breakfast` varchar(5) NOT NULL,
  `Meal_Lunch` varchar(5) NOT NULL,
  `Meal_Dinner` varchar(5) NOT NULL,
  PRIMARY KEY (`id`),
  KEY `PatientTokenId` (`PatientTokenId`),
```

```
  CONSTRAINT `PatientTimes_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB AUTO_INCREMENT=2 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientTreatment`
--

DROP TABLE IF EXISTS `PatientTreatment`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientTreatment` (
  `PatientTreatmentId` int(11) NOT NULL AUTO_INCREMENT,
  `TreatmentType` varchar(10) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `SymptomType` varchar(19) NOT NULL,
  `DiseaseType` varchar(19) NOT NULL,
  `TreatmentStart` date NOT NULL,
  `TreatmentEnd` datetime NOT NULL,
  `TreatmentStopType` smallint(5) unsigned DEFAULT NULL,
  `Dosage` varchar(20) NOT NULL,
  `DosageInstructions` varchar(20) NOT NULL,
  `ClinicianTokenId` varchar(19) NOT NULL,
  PRIMARY KEY (`PatientTreatmentId`,`TreatmentType`,`PatientTokenId`),
  KEY `clinicianTokenId` (`ClinicianTokenId`),
  KEY `symptomType` (`SymptomType`),
  KEY `diseaseType` (`DiseaseType`),
  KEY `treatmentStopType` (`TreatmentStopType`),
  KEY `PatientTokenId` (`PatientTokenId`,`SymptomType`,`DiseaseType`,`TreatmentStopType`,`ClinicianTokenId`),
  KEY `patienttreatment_ibfk_6_idx` (`TreatmentType`),
  CONSTRAINT `patienttreatment_ibfk_1` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patienttreatment_ibfk_2` FOREIGN KEY (`SymptomType`) REFERENCES `SymptomType` (`SymptomType`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patienttreatment_ibfk_3` FOREIGN KEY (`DiseaseType`) REFERENCES `DiseaseType` (`DiseaseType`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patienttreatment_ibfk_4` FOREIGN KEY (`TreatmentStopType`) REFERENCES `TreatmentStopType` (`TreatmentStopType`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patienttreatment_ibfk_5` FOREIGN KEY (`ClinicianTokenId`) REFERENCES `PICASO_PII`.`Clinician` (`ClinicianTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patienttreatment_ibfk_6` FOREIGN KEY (`TreatmentType`) REFERENCES `TreatmentType` (`TreatmentType`) ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB AUTO_INCREMENT=47 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `PatientTreatmentEvent`
--

DROP TABLE IF EXISTS `PatientTreatmentEvent`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `PatientTreatmentEvent` (
  `TreatmentType` varchar(10) NOT NULL,
  `PatientTreatmentEventStatus` varchar(1) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `TreatmentStart` date NOT NULL,
  `TreatmentNotTaken` tinyint(1) NOT NULL,
  `TreatmentNotTakenReason` varchar(255) NOT NULL,
  `TreatmentTakenReason` varchar(255) NOT NULL,
  `TreatmentRecordedDateTime` datetime NOT NULL,
  `ActualDosage` varchar(50) NOT NULL,
  `PatientTreatmentId` int(11) NOT NULL,
  PRIMARY KEY (`TreatmentType`,`PatientTokenId`) USING BTREE,
  KEY `TreatmentType` (`TreatmentType`,`PatientTokenId`) USING BTREE,
  KEY `PatientTreatmentId` (`PatientTreatmentId`),
  KEY `patienttreatmentevent_ibfk_1` (`PatientTokenId`),
  CONSTRAINT `patienttreatmentevent_ibfk_1` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patienttreatmentevent_ibfk_3` FOREIGN KEY (`PatientTreatmentId`) REFERENCES `PatientTreatment` (`PatientTreatmentId`) ON DELETE NO ACTION ON UPDATE CASCADE,
  CONSTRAINT `patienttreatmentevent_ibfk_5` FOREIGN KEY (`TreatmentType`) REFERENCES `TreatmentType` (`TreatmentType`) ON DELETE NO ACTION ON UPDATE NO ACTION
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
```

```
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `QuestionnaireAnswers`
--

DROP TABLE IF EXISTS `QuestionnaireAnswers`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `QuestionnaireAnswers` (
  `id` int(11) unsigned NOT NULL AUTO_INCREMENT,
  `SubId` varchar(36) NOT NULL,
  `AnswerId` varchar(50) NOT NULL,
  `Value` varchar(50) NOT NULL,
  PRIMARY KEY (`id`),
  KEY `SubId` (`SubId`),
  KEY `AnswerId` (`AnswerId`),
  CONSTRAINT `questionnaireanswers_ifk1` FOREIGN KEY (`SubId`) REFERENCES `QuestionnaireMeta` (`SubId`)
) ENGINE=InnoDB AUTO_INCREMENT=314 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `QuestionnaireMeta`
--

DROP TABLE IF EXISTS `QuestionnaireMeta`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `QuestionnaireMeta` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `SubId` varchar(36) NOT NULL,
  `QuestionnaireId` varchar(100) NOT NULL,
  `Timestamp` datetime NOT NULL,
  `OffsetMinutes` int(11) NOT NULL,
  `Date` varchar(10) NOT NULL,
  `TimingEvent` varchar(4) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `Completed` tinyint(1) NOT NULL,
  `Source` varchar(25) DEFAULT NULL,
  PRIMARY KEY (`id`),
  UNIQUE KEY `SubId` (`SubId`),
  KEY `QuestionnaireId` (`QuestionnaireId`),
  KEY `Date` (`Date`),
  KEY `PatientTokenId` (`PatientTokenId`),
  CONSTRAINT `QuestionnaireMeta_FK1` FOREIGN KEY (`PatientTokenId`) REFERENCES `PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB AUTO_INCREMENT=37 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `SymptomType`
--

DROP TABLE IF EXISTS `SymptomType`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `SymptomType` (
  `SymptomType` varchar(19) NOT NULL,
  `SymptomTypeDescription` varchar(512) NOT NULL,
  `CodeSystem` varchar(25) DEFAULT NULL,
  `Site` varchar(25) NOT NULL,
  PRIMARY KEY (`SymptomType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `ThirdPartyAPINotificationLog`
--

DROP TABLE IF EXISTS `ThirdPartyAPINotificationLog`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `ThirdPartyAPINotificationLog` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `Timestamp` datetime NOT NULL,
  `Date` varchar(10) NOT NULL,
```

```
  `API` varchar(25) NOT NULL,
  `Endpoint` varchar(25) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `Status` varchar(10) NOT NULL,
  PRIMARY KEY (`id`),
  KEY `PatientTokenId` (`PatientTokenId`),
  CONSTRAINT `ThirdPartyAPINotificationLog_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES
`PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB AUTO_INCREMENT=392 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `ThirdPartyAPISubscriber`
--

DROP TABLE IF EXISTS `ThirdPartyAPISubscriber`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `ThirdPartyAPISubscriber` (
  `id` int(11) NOT NULL AUTO_INCREMENT,
  `API` varchar(25) NOT NULL,
  `SubscriberId` varchar(25) NOT NULL,
  `PatientTokenId` varchar(36) NOT NULL,
  `CreatedDatetime` datetime NOT NULL,
  `CollectorType` varchar(25) DEFAULT NULL,
  PRIMARY KEY (`id`),
  KEY `PatientTokenId` (`PatientTokenId`),
  CONSTRAINT `ThirdPartyAPISubscriber_FK_PatientTokenId` FOREIGN KEY (`PatientTokenId`) REFERENCES
`PICASO_PII`.`Patient` (`PatientTokenId`)
) ENGINE=InnoDB AUTO_INCREMENT=5 DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `TreatmentStopType`
--

DROP TABLE IF EXISTS `TreatmentStopType`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `TreatmentStopType` (
  `TreatmentStopType` smallint(5) unsigned NOT NULL,
  `TreatmentTypeDescription` varchar(512) NOT NULL,
  PRIMARY KEY (`TreatmentStopType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;

--
-- Table structure for table `TreatmentType`
--

DROP TABLE IF EXISTS `TreatmentType`;
/*!40101 SET @saved_cs_client     = @@character_set_client */;
/*!40101 SET character_set_client = utf8 */;
CREATE TABLE `TreatmentType` (
  `TreatmentType` varchar(10) NOT NULL,
  `TreatmentClass` char(1) NOT NULL,
  `TreatmentCode` varchar(50) NOT NULL,
  `TreatmentTypeDescription` varchar(512) DEFAULT NULL,
  `Site` varchar(25) NOT NULL,
  PRIMARY KEY (`TreatmentType`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
/*!40101 SET character_set_client = @saved_cs_client */;
/*!40103 SET TIME_ZONE=@OLD_TIME_ZONE */;

/*!40101 SET SQL_MODE=@OLD_SQL_MODE */;
/*!40014 SET FOREIGN_KEY_CHECKS=@OLD_FOREIGN_KEY_CHECKS */;
/*!40014 SET UNIQUE_CHECKS=@OLD_UNIQUE_CHECKS */;
/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
/*!40111 SET SQL_NOTES=@OLD_SQL_NOTES */;

-- Dump completed on 2017-10-30 10:43:39
```

7 Appendix: Data Resource Browser response format

Sample JSON response for rendering in the Data Resource Browser retrieved via the Patient Data Orchestrator from the ODS


```
{
"resultForDRB": {
  "patient": {
    "name": "Peter Rosengren",
    "age": 56,
    "gender": "M"
  },
  "homeMeasurements": [
    {
      "TypeId": "bloodpressure",
      "ListOfEntries":

        {
          "Timestamp": "2017-09-08T05:36:25.000Z",
          "TypeId": "diastolic",
          "LOINC": "8480-4",
          "Value": "82",
          "UnitCode": "mmHg"
        },
        {
          "Timestamp": "2017-09-08T05:36:25.000Z",
          "TypeId": "systolic",
          "LOINC": "8480-6",
          "Value": "110",
          "UnitCode": "mmHg"
        },
        {
          "Timestamp": "2017-09-09T17:06:18.000Z",
          "TypeId": "diastolic",
          "LOINC": "8480-4",
          "Value": "60",
          "UnitCode": "mmHg"
        },
        {
          "Timestamp": "2017-09-09T17:06:18.000Z",
          "TypeId": "systolic",
          "LOINC": "8480-6",
          "Value": "92",
          "UnitCode": "mmHg"
        },
        {
          "Timestamp": "2017-09-11T05:04:38.000Z",
          "TypeId": "diastolic",
          "LOINC": "8480-4",
          "Value": "74",
          "UnitCode": "mmHg"
        },
        {
          "Timestamp": "2017-09-11T05:04:38.000Z",
          "TypeId": "systolic",
          "LOINC": "8480-6",
          "Value": "120",
          "UnitCode": "mmHg"
        },
        {
          "Timestamp": "2017-09-12T05:52:11.000Z",
          "TypeId": "diastolic",
          "LOINC": "8480-4",
          "Value": "72",
          "UnitCode": "mmHg"
        },
        {
          "Timestamp": "2017-09-12T05:52:11.000Z",
          "TypeId": "systolic",
          "LOINC": "8480-6",
          "Value": "105",
          "UnitCode": "mmHg"
```

```
      }
    ]
  },

  {
    "TypeId": "weighingscale",
    "ListOfEntries": [
      {
        "Timestamp": "2017-09-05T05:35:49.000Z",
        "TypeId": "weight",
        "LOINC": "29463-7",
        "Value": "82.3",
        "UnitCode": "kg"
      },
      {
        "Timestamp": "2017-09-06T05:07:48.000Z",
        "TypeId": "weight",
        "LOINC": "29463-7",
        "Value": "82.9",
        "UnitCode": "kg"
      },
      {
        "Timestamp": "2017-09-07T05:45:16.000Z",
        "TypeId": "weight",
        "LOINC": "29463-7",
        "Value": "82.4",
        "UnitCode": "kg"
      },
      {
        "Timestamp": "2017-09-08T05:34:45.000Z",
        "TypeId": "weight",
        "LOINC": "29463-7",
        "Value": "82.1",
        "UnitCode": "kg"
      },
      {
        "Timestamp": "2017-09-09T16:48:35.000Z",
        "TypeId": "weight",
        "LOINC": "29463-7",
        "Value": "82.4",
        "UnitCode": "kg"
      },
      {
        "Timestamp": "2017-09-11T04:46:06.000Z",
        "TypeId": "weight",
        "LOINC": "29463-7",
        "Value": "83.3",
        "UnitCode": "kg"
      },
      {
        "Timestamp": "2017-09-12T05:39:45.000Z",
        "TypeId": "weight",
        "LOINC": "29463-7",
        "Value": "82.9",
        "UnitCode": "kg"
      },
      {
        "Timestamp": "2017-09-13T03:43:21.000Z",
        "TypeId": "weight",
        "LOINC": "29463-7",
        "Value": "83.1",
        "UnitCode": "kg"
      }
    ]
  },
  {
    "TypeId": "sleep",
    "ListOfEntries": [
      {
        "Timestamp": "2017-09-01T03:58:30.000Z",
        "TypeId": "sleep_minutes",
        "SNOMED": "248263006",
        "Value": "334",
        "UnitCode": "min"
      },
```

```
    {
      "Timestamp": "2017-09-03T05:32:00.000Z",
      "TypeId": "sleep_minutes",
      "SNOMED": "248263006",
      "Value": "444",
      "UnitCode": "min"
    },
    {
      "Timestamp": "2017-09-04T03:58:00.000Z",
      "TypeId": "sleep_minutes",
      "SNOMED": "248263006",
      "Value": "368",
      "UnitCode": "min"
    },
    {
      "Timestamp": "2017-09-05T03:58:30.000Z",
      "TypeId": "sleep_minutes",
      "SNOMED": "248263006",
      "Value": "353",
      "UnitCode": "min"
    }
  ]
},

{
  "TypeId": "activitymonitor",
  "ListOfEntries": [

    {
      "Timestamp": "2017-09-02T23:00:00.000Z",
      "TypeId": "steps",
      "LOINC": "55423-8",
      "Value": "185",
      "UnitCode": ""
    },
    {
      "Timestamp": "2017-09-02T23:00:00.000Z",
      "TypeId": "distance",
      "Value": "137",
      "UnitCode": "m"
    },
    {
      "Timestamp": "2017-09-03T23:00:00.000Z",
      "TypeId": "steps",
      "LOINC": "55423-8",
      "Value": "860",
      "UnitCode": ""
    },
    {
      "Timestamp": "2017-09-03T23:00:00.000Z",
      "TypeId": "distance",
      "Value": "639",
      "UnitCode": "m"
    },
    {
      "Timestamp": "2017-09-04T23:00:00.000Z",
      "TypeId": "steps",
      "LOINC": "55423-8",
      "Value": "64",
      "UnitCode": ""
    },
    {
      "Timestamp": "2017-09-04T23:00:00.000Z",
      "TypeId": "distance",
      "Value": "48",
      "UnitCode": "m"
    },
    {
      "Timestamp": "2017-09-05T04:00:00.000Z",
      "TypeId": "steps",
      "LOINC": "55423-8",
      "Value": "0",
      "UnitCode": ""
    },
    {
```

```
      "Timestamp": "2017-09-05T04:00:00.000Z",
      "TypeId": "distance",
      "Value": "0",
      "UnitCode": "m"
    }
  ]
},

  {
    "Timestamp": "2017-09-01T04:00:00.000Z",
    "TypeId": "heartrate",
    "LOINC": "8867-4",
    "Value": "54",
    "UnitCode": "bpm"
  },
  {
    "Timestamp": "2017-09-02T23:00:00.000Z",
    "TypeId": "heartrate",
    "LOINC": "8867-4",
    "Value": "65",
    "UnitCode": "bpm"
  },
  {
    "Timestamp": "2017-09-03T23:00:00.000Z",
    "TypeId": "heartrate",
    "LOINC": "8867-4",
    "Value": "60",
    "UnitCode": "bpm"
  },
  {
    "Timestamp": "2017-09-04T23:00:00.000Z",
    "TypeId": "heartrate",
    "LOINC": "8867-4",
    "Value": "52",
    "UnitCode": "bpm"
  },
  {
    "Timestamp": "2017-09-05T04:00:00.000Z",
    "TypeId": "heartrate",
    "LOINC": "8867-4",
    "Value": "50",
    "UnitCode": "bpm"
  }
 ]
},

{
 "TypeId": "questionnaireHome",
 "ListOfEntries": [
  {
    "Timestamp": "2017-08-16T10:59:00.000Z",
    "TypeId": "ffbh",
    "Value": "80",
    "UnitCode": "score"
  },
  {
    "Timestamp": "2017-08-16T10:59:00.000Z",
    "TypeId": "haq",
    "Value": "0.9",
    "UnitCode": "score"
  },
  {
    "Timestamp": "2017-08-16T10:59:00.000Z",
    "TypeId": "radai",
    "Value": "2.0",
    "UnitCode": "score"
  },
  {
    "Timestamp": "2017-08-16T10:59:00.000Z",
    "TypeId": "morisky",
    "Value": "7",
    "UnitCode": "score"
  },
  {
    "Timestamp": "2017-08-16T10:59:00.000Z",
```

```
        "TypeId": "wellbeing",
        "Value": "4",
        "UnitCode": "score"
      },
      {
        "Timestamp": "2017-08-24T10:01:53.000Z",
        "TypeId": "morisky",
        "Value": "3",
        "UnitCode": "score"
      },
      {
        "Timestamp": "2017-08-24T12:41:44.000Z",
        "TypeId": "wellbeing",
        "Value": "1",
        "UnitCode": "score"
      },
      {
        "Timestamp": "2017-08-24T12:44:54.000Z",
        "TypeId": "radai",
        "Value": "8.0",
        "UnitCode": "score"
      },
      {
        "Timestamp": "2017-08-24T12:56:38.000Z",
        "TypeId": "ffbh",
        "Value": "93",
        "UnitCode": "score"
      },
      {
        "Timestamp": "2017-08-24T12:56:38.000Z",
        "TypeId": "haq",
        "Value": "0.6",
        "UnitCode": "score"
      },
      {
        "Timestamp": "2017-09-08T12:27:43.000Z",
        "TypeId": "wellbeing",
        "Value": "3",
        "UnitCode": "score"
      }
    ]
  },


  "carePlan": [
    {
      "TypeId": "active",
      "ListOfEntries": [
        {
          "Timestamp": "2017-08-11T21:00:00+00:00",
          "ClinicianId": "2001",
          "Source": "UDUS"
        },
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "2002",
          "Source": "UDUS"
        }
      ]
    },
    {
      "TypeId": "completed",
      "ListOfEntries": [
        {
          "Timestamp": "2017-08-11T21:00:00+00:00",
          "ClinicianId": "2002",
          "Source": "UDUS"
        },
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "2002",
          "Source": "UTV"
        }
      ]
    },
```

```
    {
      "TypeId": "suspended",
      "ListOfEntries": [
        {
          "Timestamp": "2017-08-11T21:00:00+00:00",
          "ClinicianId": "2001",
          "Source": "UDUS"
        },
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "T1",
          "Source": "UDUS"
        }
      ]
    }
  ],
  "funcDiagnostics": [
    {
      "TypeId": "EEG",
      "ListOfEntries": [
        {
          "Timestamp": "2017-08-11T21:00:00+00:00",
          "ClinicianId": "T1",
          "Source": "UDUS"
        },
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "T1",
          "Source": "UDUS"
        }
      ]
    },
    {
      "TypeId": "ECG",
      "ListOfEntries": [
        {
          "Timestamp": "2017-08-11T21:00:00+00:00",
          "ClinicianId": "T1",
          "Source": "UDUS"
        },
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "T1",
          "Source": "UTV"
        }
      ]
    },
    {
      "TypeId": "lungFuncTest",
      "ListOfEntries": [
        {
          "Timestamp": "2017-08-11T21:00:00+00:00",
          "ClinicianId": "T1",
          "Source": "UDUS"
        }
      ]
    }
  ],
  "imaging": [
    {
      "TypeId": "MRI",
      "ListOfEntries": [
        {
          "Timestamp": "2017-08-11T21:00:00+00:00",
          "ClinicianId": "2001",
          "Source": "UDUS radiology"
        },
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "2001",
          "Source": "UDUS"
        }
      ]
    },
    {
```

```
    "TypeId": "PET",
    "ListOfEntries": [
     {
      "Timestamp": "2017-08-11T21:00:00+00:00",
      "ClinicianId": "2001",
      "Source": "UDUS"
     },
     {
      "Timestamp": "2013-08-11T21:00:00+00:00",
      "ClinicianId": "2002",
      "Source": "UTV"
     }
    ]
   },
   {
    "TypeId": "DAT",
    "ListOfEntries": [
     {
      "Timestamp": "2017-08-11T21:00:00+00:00",
      "ClinicianId": "2001",
      "Source": "UDUS"
     },
     {
      "Timestamp": "2013-08-11T21:00:00+00:00",
      "ClinicianId": "2001",
      "Source": "UDUS"
     }
    ]
   },
   {
    "TypeId": "sonography",
    "ListOfEntries": [
     {
      "Timestamp": "2017-08-11T21:00:00+00:00",
      "ClinicianId": "2002",
      "Source": "UDUS"
     },
     {
      "Timestamp": "2013-08-11T21:00:00+00:00",
      "ClinicianId": "2001",
      "Source": "UDUS"
     }
    ]
   },
   {
    "TypeId": "tomography",
    "ListOfEntries": [

    ]
   },
   {
    "TypeId": "nuclear",
    "ListOfEntries": [

    ]
   },
   {
    "TypeId": "microcardial",
    "ListOfEntries": [

    ]
   },
   {
    "TypeId": "conventional",
    "ListOfEntries": [

    ]
   }
  ],
  "questionnaires": [
   {
    "TypeId": "raQuestionnaires",
    "ListOfEntries": [
     {
      "TypeId": "radai",
```

```
        "Timestamp": "2010-08-11T21:00:00+00:00",
        "ClinicianId": "2001",
        "Source": "home"
      },
      {
        "TypeId": "FFbH/HAQ",
        "Timestamp": "2015-08-11T21:00:00+00:00",
        "ClinicianId": "2001",
        "Source": "UDUS"
      },
      {
        "TypeId": "FFbH/HAQ",
        "Timestamp": "2014-08-11T21:00:00+00:00",
        "ClinicianId": "2002",
        "Source": "UDUS"
      },
      {
        "TypeId": "FFbH/HAQ",
        "Timestamp": "2013-08-11T21:00:00+00:00",
        "ClinicianId": "2002",
        "Source": "home"
      },
      {
        "TypeId": "EQ-5D",
        "Timestamp": "2009-08-11T21:00:00+00:00",
        "ClinicianId": "2002",
        "Source": "home"
      }
    ]
  },

  {
    "TypeId": "pdQuestionnaires",
    "ListOfEntries": [
      {
        "TypeId": "morisky",
        "Timestamp": "2013-08-11T21:00:00+00:00",
        "ClinicianId": "055",
        "Source": "UTV"
      },
      {
        "TypeId": "morisky",
        "Timestamp": "2011-08-11T21:00:00+00:00",
        "ClinicianId": "055",
        "Source": "home"
      }
      ]

  }
],
"labTest": [
  {
    "TypeId": "virology",
    "ListOfEntries": [
      {
        "Timestamp": "2012-08-11T21:00:00+00:00",
        "ClinicianId": "T1",
        "Source": "UDUS"
      }
    ]
  },
  {
    "TypeId": "microbiology",
    "ListOfEntries": [
      {
        "Timestamp": "2010-08-11T21:00:00+00:00",
        "ClinicianId": "T1",
        "Source": "UDUS"
      },
      {
        "Timestamp": "2011-08-11T21:00:00+00:00",
        "ClinicianId": "077",
        "Source": "UTV"
      }
    ]
```

```
    },
    {
      "TypeId": "urine",
      "ListOfEntries": [
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "077",
          "Source": "UTV"
        },
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "077",
          "Source": "UDUS"
        }
      ]
    },
    {
      "TypeId": "blood",
      "ListOfEntries": [
        {
          "TypeId": "serology",
          "Timestamp": "2011-08-11T21:00:00+00:00",
          "ClinicianId": "077",
          "Source": "UTV"

        },
        {
          "TypeId": "bloodCount",
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "2001",
          "Source": "UDUS"
        },
        {
          "TypeId": "thyroid",
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "077",
          "Source": "UTV"
        },
        {
          "TypeId": "thyroid",
          "Timestamp": "2010-08-11T21:00:00+00:00",
          "ClinicianId": "077",
          "Source": "UTV"
        },
        {
          "TypeId": "haemostaseology",
          "Timestamp": "",
          "ClinicianId": "",
          "Source": ""
        }
      ]
    }
  ],
  "psychoTests": [
    {
      "TypeId": "psychoHealth",
      "ListOfEntries": [
        {
          "TypeId": "BDI",
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "066",
          "Source": "UTV"
        },
        {
          "TypeId": "HDRS",
          "Timestamp": "2010-08-11T21:00:00+00:00",
          "ClinicianId": "055",
          "Source": "Santa Lucia"
        },
        {
          "TypeId": "anxietyHamilton",
          "Timestamp": "2012-08-11T21:00:00+00:00",
          "ClinicianId": "055",
          "Source": "UTV"
        },
```

```
    {
      "TypeId": "anxietyHamilton",
      "Timestamp": "2012-08-11T21:00:00+00:00",
      "ClinicianId": "055",
      "Source": "UTV"
    },
    {
      "TypeId": "snaithHamiltonPleasure",
      "Timestamp": "",
      "ClinicianId": "",
      "Source": ""
    },
    {
      "TypeId": "parkinsonPsychosis",
      "Timestamp": "2016-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
    },
    {
      "TypeId": "parkinsonPsychosis",
      "Timestamp": "2015-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
    },
    {
      "TypeId": "parkinsonPsychosis",
      "Timestamp": "2014-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
    },
    {
      "TypeId": "euroquol",
      "Timestamp": "",
      "ClinicianId": "",
      "Source": ""
    }
  ]
},
{
  "TypeId": "memory",
  "ListOfEntries": [
    {
      "TypeId": "15words",
      "Timestamp": "2013-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
    },
    {
      "TypeId": "15words",
      "Timestamp": "2010-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "Santa Lucia"
    },
    {
      "TypeId": "figureRecall",
      "Timestamp": "2012-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
    },
    {
      "TypeId": "figureRecall",
      "Timestamp": "2012-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
    },
    {
      "TypeId": "ravlt",
      "Timestamp": "",
      "ClinicianId": "",
      "Source": ""
    },
    {
      "TypeId": "roravlt",
      "Timestamp": "2016-08-11T21:00:00+00:00",
      "ClinicianId": "066",
```

```
      "Source": "Santa Lucia"
     }
    ]
   },
   {
    "TypeId": "language",
    "ListOfEntries": [
     {
      "TypeId": "fluency",
      "Timestamp": "2013-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
     },
     {
      "TypeId": "fluency",
      "Timestamp": "2010-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "Santa Lucia"
     },
     {
      "TypeId": "phonoFluency",
      "Timestamp": "2012-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
     }
    ]
   },
   {
    "TypeId": "executive",
    "ListOfEntries": [

     {
      "TypeId": "wisconsin",
      "Timestamp": "2013-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
     },
     {
      "TypeId": "wisconsin",
      "Timestamp": "2012-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
     }

    ]
   },
   {
    "TypeId": "praxia",
    "ListOfEntries": [
     {
      "TypeId": "reyosterreich",
      "Timestamp": "2013-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
     },
     {
      "TypeId": "reyosterreich",
      "Timestamp": "2010-08-11T21:00:00+00:00",
      "ClinicianId": "055",
      "Source": "Santa Lucia"
     }
    ]
   },
   {
    "TypeId": "globalCongnitive",
    "ListOfEntries": [
     {
      "TypeId": "minimental",
      "Timestamp": "2015-08-11T21:00:00+00:00",
      "ClinicianId": "066",
      "Source": "UTV"
     },
     {
      "TypeId": "minimental",
      "Timestamp": "2013-08-11T21:00:00+00:00",
```

```
        "ClinicianId": "066",
        "Source": "UTV"
       },
       {
        "TypeId": "minimental",
        "Timestamp": "2012-08-11T21:00:00+00:00",
        "ClinicianId": "066",
        "Source": "UTV"
       }
     ]
    },
    {
     "TypeId": "pdSeverity",
     "ListOfEntries": [
      {
       "TypeId": "hyscore",
       "Timestamp": "2013-08-11T21:00:00+00:00",
       "ClinicianId": "066",
       "Source": "Santa Lucia"
      }
     ]
    }
  ],

  "careProfessionals": [
    {
     "TypeId": "cardiologist",
     "TimestampLast": "2017-08-10T12:37:00.000Z",
     "ListOfEntries": [
      {
       "ClinicianId": "T1"
      }
     ]
    },
    {
     "TypeId": "rheumatologist",
     "TimestampLast": "2017-09-04T15:35:54.000Z",
     "ListOfEntries": [
      {
       "ClinicianId": "2001"
      },
      {
       "ClinicianId": "2002"
      }
     ]
    },
    {
     "TypeId": "neurologist",
     "TimestampLast": "",
     "ListOfEntries": []
    },
    {
     "TypeId": "neuropschologist",
     "TimestampLast": "",
     "ListOfEntries": []
    },
    {
     "TypeId": "radiologist",
     "TimestampLast": "",
     "ListOfEntries": []
    },
    {
     "TypeId": "gp",
     "TimestampLast": "",
     "ListOfEntries": []
    },
    {
     "TypeId": "dermatologist",
     "TimestampLast": "",
     "ListOfEntries": []
    },
    {
     "TypeId": "occphysic",
     "TimestampLast": "",
     "ListOfEntries": []
```

```
    },
    {
      "TypeId": "psychologist",
      "TimestampLast": "",
      "ListOfEntries": []
    },
    {
      "TypeId": "psychiatrist",
      "TimestampLast": "",
      "ListOfEntries": []
    },
    {
      "TypeId": "physiotherapist",
      "TimestampLast": "",
      "ListOfEntries": []
    },
    {
      "TypeId": "occtherap",
      "TimestampLast": "",
      "ListOfEntries": []
    }
  ],
  "patReported": [
    {
      "TypeId": "wellBeing",
      "ListOfEntries": [
        {
          "Timestamp": "2017-08-11T21:00:00+00:00",
          "ClinicianId": "077",
          "Source": "UDUS"
        },
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "077",
          "Source": "UDUS"
        }
      ]
    },
    {
      "TypeId": "painRating",
      "ListOfEntries": [
        {
          "Timestamp": "2017-09-11T21:00:00+00:00",
          "ClinicianId": "077",
          "Source": "UDUS"
        },
        {
          "Timestamp": "2013-08-11T21:00:00+00:00",
          "ClinicianId": "077",
          "Source": "UTV"
        }
      ]
    }
  ]
}
}
```


JSON schema of data response to the DRB:


```
{
 "definitions": {},
 "$schema": "http://json-schema.org/draft-06/schema#",
 "type": "object",
 "$id": "http://example.com/example.json",
 "properties": {
   "resultForDRB": {
     "type": "object",
     "$id": "/properties/resultForDRB",
     "properties": {
       "patient": {
         "type": "object",
         "$id": "/properties/resultForDRB/properties/patient",
         "properties": {
           "name": {
             "type": "string",
```

```
          "$id": "/properties/resultForDRB/properties/patient/properties/name",
          "title": "The Name Schema.",
          "description": "An explanation about the purpose of this instance.",
          "default": "",
          "examples": [
            "Peter Rosengren"
          ]
        },
        "age": {
          "type": "integer",
          "$id": "/properties/resultForDRB/properties/patient/properties/age",
          "title": "The Age Schema.",
          "description": "An explanation about the purpose of this instance.",
          "default": 0,
          "examples": [
            56
          ]
        },
        "gender": {
          "type": "string",
          "$id": "/properties/resultForDRB/properties/patient/properties/gender",
          "title": "The Gender Schema.",
          "description": "An explanation about the purpose of this instance.",
          "default": "",
          "examples": [
            "M"
          ]
        }
      }
    },
    "homeMeasurements": {
      "type": "array",
      "$id": "/properties/resultForDRB/properties/homeMeasurements",
      "items": {
        "type": "object",
        "$id": "/properties/resultForDRB/properties/homeMeasurements/items",
        "properties": {
          "TypeId": {
            "type": "string",
            "$id": "/properties/resultForDRB/properties/homeMeasurements/items/properties/TypeId",
            "title": "The Typeid Schema.",
            "description": "An explanation about the purpose of this instance.",
            "default": "",
            "examples": [
              "bloodpressure"
            ]
          },
          "ListOfEntries": {
            "type": "array",
            "$id": "/properties/resultForDRB/properties/homeMeasurements/items/properties/ListOfEntries",
            "items": {
              "type": "object",
              "$id": "/properties/resultForDRB/properties/homeMeasurements/items/properties/ListOfEntries/items",
              "properties": {
                "Timestamp": {
                  "type": "string",
                  "$id":
"/properties/resultForDRB/properties/homeMeasurements/items/properties/ListOfEntries/items/properties/Timestamp",
                  "title": "The Timestamp Schema.",
                  "description": "An explanation about the purpose of this instance.",
                  "default": "",
                  "examples": [
                    "2017-08-01T07:58:53.000Z"
                  ]
                },
                "TypeId": {
                  "type": "string",
                  "$id": "/properties/resultForDRB/properties/homeMeasurements/items/properties/ListOfEntries/items/properties/TypeId",
                  "title": "The Typeid Schema.",
                  "description": "An explanation about the purpose of this instance.",
                  "default": "",
                  "examples": [
                    "diastolic"
                  ]
                },
```

```
            "LOINC": {
              "type": "string",
              "$id": "/properties/resultForDRB/properties/homeMeasurements/items/properties/ListOfEntries/items/properties/LOINC",
              "title": "The Loinc Schema.",
              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
                "8480-4"
              ]
            },
            "Value": {
              "type": "string",
              "$id": "/properties/resultForDRB/properties/homeMeasurements/items/properties/ListOfEntries/items/properties/Value",
              "title": "The Value Schema.",
              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
                "79"
              ]
            },
            "UnitCode": {
              "type": "string",
              "$id": "/properties/resultForDRB/properties/homeMeasurements/items/properties/ListOfEntries/items/properties/UnitCode",
              "title": "The Unitcode Schema.",
              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
                "mmHg"
              ]
            }
          }
        }
      }
    }
  }
},
"carePlan": {
  "type": "array",
  "$id": "/properties/resultForDRB/properties/carePlan",
  "items": {
    "type": "object",
    "$id": "/properties/resultForDRB/properties/carePlan/items",
    "properties": {
      "TypeId": {
        "type": "string",
        "$id": "/properties/resultForDRB/properties/carePlan/items/properties/TypeId",
        "title": "The Typeid Schema.",
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        "examples": [
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        ]
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          "$id": "/properties/resultForDRB/properties/carePlan/items/properties/ListOfEntries/items",
          "properties": {
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              "$id": "/properties/resultForDRB/properties/carePlan/items/properties/ListOfEntries/items/properties/Timestamp",
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              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
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              ]
            },
            "ClinicianId": {
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              "title": "The Clinicianid Schema.",
              "description": "An explanation about the purpose of this instance.",
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            "default": "",
            "examples": [
              "2001"
            ]
          },
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            "default": "",
            "examples": [
              "UDUS"
            ]
          }
        }
      }
    }
  }
},
"funcDiagnostics": {
  "type": "array",
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  "items": {
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    "$id": "/properties/resultForDRB/properties/funcDiagnostics/items",
    "properties": {
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        "examples": [
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        ]
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              "examples": [
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              ]
            },
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              "default": "",
              "examples": [
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              ]
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              "title": "The Source Schema.",
              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
                "UDUS"
              ]
            }
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          }
        }
      }
    }
  }
},
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  "$id": "/properties/resultForDRB/properties/imaging",
  "items": {
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    "$id": "/properties/resultForDRB/properties/imaging/items",
    "properties": {
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        "$id": "/properties/resultForDRB/properties/imaging/items/properties/TypeId",
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        "default": "",
        "examples": [
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        ]
      },
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        "items": {
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          "$id": "/properties/resultForDRB/properties/imaging/items/properties/ListOfEntries/items",
          "properties": {
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              "title": "The Timestamp Schema.",
              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
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              ]
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              "default": "",
              "examples": [
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              ]
            },
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              "default": "",
              "examples": [
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              ]
            }
          }
        }
      }
    }
  }
},
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  "items": {
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    "$id": "/properties/resultForDRB/properties/questionnaires/items",
    "properties": {
      "TypeId": {
        "type": "string",
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        "description": "An explanation about the purpose of this instance.",
        "default": "",
        "examples": [
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        ]
      },
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          "$id": "/properties/resultForDRB/properties/questionnaires/items/properties/ListOfEntries/items",
          "properties": {
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              "$id": "/properties/resultForDRB/properties/questionnaires/items/properties/ListOfEntries/items/properties/TypeId",
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              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
                "radai"
              ]
            },
            "Timestamp": {
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              "default": "",
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              ]
            },
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              "default": "",
              "examples": [
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              ]
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              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
                "home"
              ]
            }
          }
        }
      }
    }
  },
  "labTest": {
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    "$id": "/properties/resultForDRB/properties/labTest",
    "items": {
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      "$id": "/properties/resultForDRB/properties/labTest/items",
      "properties": {
        "TypeId": {
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          "$id": "/properties/resultForDRB/properties/labTest/items/properties/TypeId",
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          "description": "An explanation about the purpose of this instance.",
          "default": "",
          "examples": [
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          "virology"
        ]
      },
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              "default": "",
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              ]
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              "examples": [
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              ]
            },
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              "title": "The Source Schema.",
              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
                "UDUS"
              ]
            }
          }
        }
      }
    }
  }
},
"psychoTests": {
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  "$id": "/properties/resultForDRB/properties/psychoTests",
  "items": {
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    "$id": "/properties/resultForDRB/properties/psychoTests/items",
    "properties": {
      "TypeId": {
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        "$id": "/properties/resultForDRB/properties/psychoTests/items/properties/TypeId",
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        "default": "",
        "examples": [
          "psychoHealth"
        ]
      },
      "ListOfEntries": {
        "type": "array",
        "$id": "/properties/resultForDRB/properties/psychoTests/items/properties/ListOfEntries",
        "items": {
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          "$id": "/properties/resultForDRB/properties/psychoTests/items/properties/ListOfEntries/items",
          "properties": {
            "TypeId": {
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              "$id": "/properties/resultForDRB/properties/psychoTests/items/properties/ListOfEntries/items/properties/TypeId",
              "title": "The Typeid Schema.",
              "description": "An explanation about the purpose of this instance.",
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            "default": "",
            "examples": [
              "BDI"
            ]
          },
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            ]
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            "examples": [
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            "examples": [
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            ]
          }
        }
      }
    }
  }
},
"careProfessionals": {
  "type": "array",
  "$id": "/properties/resultForDRB/properties/careProfessionals",
  "items": {
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    "$id": "/properties/resultForDRB/properties/careProfessionals/items",
    "properties": {
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        ]
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        ]
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        "items": {
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          "$id": "/properties/resultForDRB/properties/careProfessionals/items/properties/ListOfEntries/items",
          "properties": {
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              "examples": [
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              ]
            }
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    }
  }
},
"patReported": {
  "type": "array",
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  "items": {
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    "properties": {
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        "examples": [
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        ]
      },
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          "properties": {
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              "default": "",
              "examples": [
                "2017-08-11T21:00:00+00:00"
              ]
            },
            "ClinicianId": {
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              "examples": [
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              ]
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            "Source": {
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              "title": "The Source Schema.",
              "description": "An explanation about the purpose of this instance.",
              "default": "",
              "examples": [
                "UDUS"
              ]
            }
          }
        }
      }
    }
  }
}
```

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      }
    }
   }
  }
 }
}
```