

# *SurPass FHIR*



Transmission Data Model

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## **1. INTRO**

### **1.1. Introduction**

This document try to solve the fundamentals of the transmission data model for the SurPass FHIR Implementation Guide applied to La Fe's Hospital. This document also tries to evade mistakes in the model architecture and try to join all the questions for FHIR experts in only one place.

### **1.2. Some warnings**

As our hospital is still developing and linking the Physician's form and the EHR data extraction with the FHIR resource creation, all the data provided in this document is dummy data. The examples doesn't reflect the final resource structures. They are released only for conceptual purposes. Next weeks, we would like to provide more complete and precise examples managed by the HAPI framework.

All the examples were created with the objective of understand the structure and behavior of the specification. If you find some errors or mistakes, please, communicate to the IT team. The best way to accomplish this matter is emailing to [cerbero\\_luc@gva.es](mailto:cerbero_luc@gva.es) . Take note that the examples from this document could change during the development process of the application.

## 2. TRANSMISSION SCHEMA

### 2.1. Approach

Before the team finish to code the application we need to clarify the transmission data structure. In the next pages you can find some options that could solve this, as well as lots of questions to answer.

### 2.2. Single Transmission

The application sends one message to the server to set data and after receive the Id assigned by the FHIR server. After that our software sends another message to retrieve the Passport structured data. Working on the design of this first message for the Patient data, we believe in this possible solutions.

#### *(2.2.a) Using the Patient Resource to attach Diagnosis with Contained element*

Send the Patient (01) resource to the Patient url on the server and inside this profile, in a Contained element we introduce the rest of resources (02). Look at page 22 to find one JSON example.

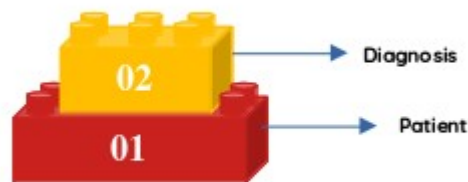


Figure 1: Diagnosis Attached as Contained

After building some examples, some questions arise from this structure. See page 22 to find one FHIR example.

How much profiles can we attach in this matter, there is some limitation?

Can we use contained elements inside contained resources?

***(2.2.b) Using the Encounter Resource to attach Diagnosis***

This approach is build following the schema from the figure 2. The application sends a bundle (00) with a composition resource (01) that links the encounter resources to the Patient demographics resource (02). The diagnosis logical model is attached to the encounter resource, maybe as different conditions and other resources.

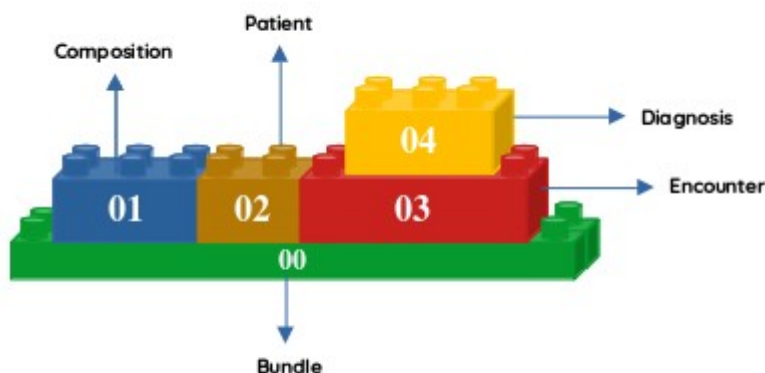


Figure 2: Diagnosis Attached to the Encounter Resource

Some questions to solve in reference to this structure.

What is the best resource to attach the Diagnosis Logical Model?

Is possible to include Diagnosis inside Encounter if encounter is also inside a bundle? Only by reference? Using contained element? Or the Diagnosis profiles must go outside the encounter element?

How we reference the elements inside a bundle? Using the identifier element or using the element id?

***(2.2.c) Using the resources as an array with references***

Other option that could be good to use is the array of resources. In this manner we include all the resources into one bundle (00) and build context for them using the composition resource. As we see into the next figure, we put the patient (02), the Primary Cancer Condition (03), Secondary Cancer Condition (04), the Organization resource (05), etc., one after another inside the bundle until complete all the Patient Diagnosis.

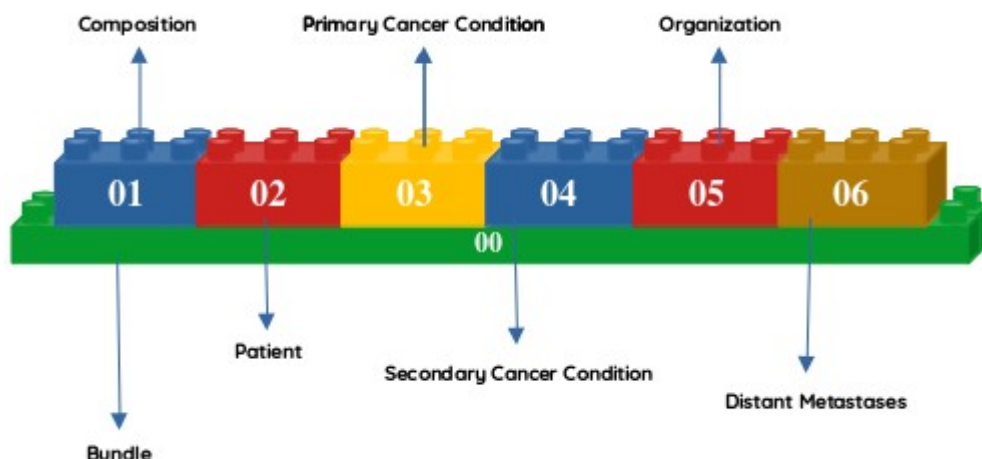


Figure 3: Array of resources using bundle

Look at the example on page 28 to have a in depth view. Some questions arise in reference to this schema.

What is the code elementfor the Composition type?

Could be done the same as bundle type collection? Can we elude composition resource? What if we use a transaction bundle or the transaction one? Visit page 20 for transaction example.

What is the best way to create “ids” for references inside bundles?

### 2.3. Multiple transactions to sever to set all resources

The application sends multiple transactions to the server to set all the resources. With this, we get the id of the resource (02) previously uploaded and build the next resource (03) with the reference to the server\_id of the previous resources (01)(02). The last transaction (06) is on charge to retrieve the SurPass Passport data.

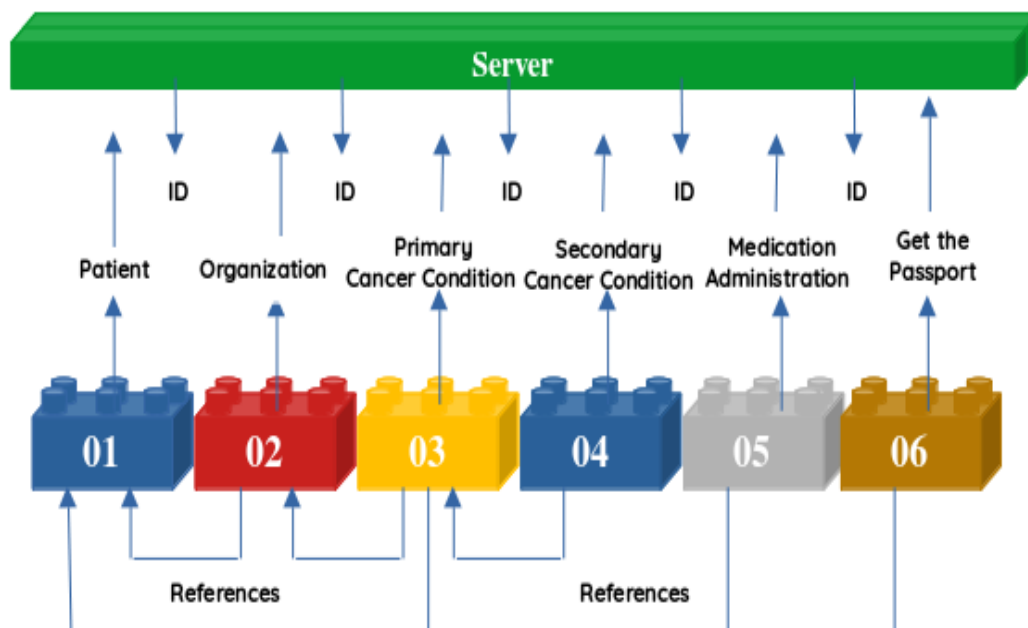


Figure 4: Multiple transactions

Look at the examples on pages 16 and 18 to have a in depth view. Some questions arise in reference to this schema.

What id is needed for the last transaction, the one needed to retrieve the passport? Is the Patient id assigned in the first transaction?

Isn't this approach too much time consuming?

### 3. MAPPING FROM LOGICAL MODEL TO RESOURCES<sup>1</sup>

We build some tables to relate the logical model with the resources profiles provided by the Pcsp Implementation Guide. This tables presents the minimal information to continue building data upon them.

#### 3.1. Subject Of Care<sup>2</sup>

Subject of Care	Patient						
identifier	Identifier <table><tr><td>System (oid)</td></tr><tr><td>Value</td></tr></table>	System (oid)	Value				
System (oid)							
Value							
name <table><tr><td>lastname</td></tr><tr><td>middleName</td></tr><tr><td>firstName</td></tr></table>	lastname	middleName	firstName	name <table><tr><td>Family MULTIPLE</td></tr><tr><td>NONE</td></tr><tr><td>given</td></tr></table>	Family MULTIPLE	NONE	given
lastname							
middleName							
firstName							
Family MULTIPLE							
NONE							
given							
lastNameAtDiagnosis	NONE						
gender	gender						
dateOfBirth	birthDate						
placeOfBirth	address						
contact	contact						

Some things must be discussed with clinicians and FHIR experts..

- Deceased variable for old patient records? Would be good to include it? And deceased time? We have it?
- What happened with motherMaidenName? Why it dessappear from Patient profile? Can we still use it?

---

<sup>1</sup> Profiles and references are in **bold**, elements are inside table boxes, side by side.

<sup>2</sup> The links for this relation [Subject of Care](#) – [Patient](#)



### 3.2. Diagnosis<sup>3</sup>

Diagnosis	
	Encounter
identifier	????
dateOfDiagnosis	Period (maybe NONE) <div><div>status</div><div>start</div><div>end</div></div>
	Subject → Reference
centerOfDiagnosis	serviceProvider <div><div>identifier</div><div>system</div><div>value</div><div>display</div><div>reference</div></div>
<div><div>identifier</div><div>name</div><div>city</div><div>country</div></div>	<div><div><b>Organization</b></div><div><div>identifier</div><div>name</div><div>Address<div><div>city</div><div>country</div></div></div></div></div>
	Encounter
primaryTreatmentCenter <div><div>name</div><div>city</div><div>country</div></div>	????  serviceProvider/hospitalization  another <b>Organization</b> reference?

<sup>3</sup> The links for this relation [Diagnosis](#) – [Encounter](#) – [Organization](#) – [PrimaryCancerCondition](#) – [Condition](#) – [BodyLocationQualifier](#) – [LateralityQualifier](#) – [ObservationGenetics](#) – [Observation](#) – [FamilyMemberHistory](#)

## SurPass FHIR - Transmission Data Model

dateOfArrivalAtCenter	NONE
	Diagnosis <div>Reference -&gt; PrimaryCancerCondition</div>
	<b>PrimaryCancerCondition</b>
dateOfDiagnosis	condition-assertedDate -- extension
	Subject → Reference
	Encounter -> Reference
diagnosticGroup	??????  code <div>             Coding – ICC3 Clasification              text           </div>
morphologyCode	mcode-histology-morphology-behavior ICDO-3-Morpho
tumorBehavior	???? GENERATED BY THE SYSTEM?
description	?????  code <div>             Coding – ICC3 Clasification              text           </div>
site <div>             code              description           </div>	bodySite – extension <b>Body-Location-Qualifier</b> <div>             system              code – ICDO3 Topography              display           </div>
laterality	bodySite – extension <b>Laterality-Qualifier</b> <div>             system              code – Laterality valueset              display           </div>
stage/risk	stage
notes	note

metastases	<b>SecondaryCancerCondition</b> <div> <div>identifier</div> <div> <div>site</div> <div> <div>code</div> <div>description</div> </div> </div> </div>
	<b>Observation-Genetics</b>
geneticMarkers	????  DNARegionName – outside IG extension observation-geneticsGene – outsid extension
	Subject -> Reference
	<b>Condition</b>
immunology	<div> <div>category</div> <div>severity</div> <div>Subject → Reference</div> </div>
hereditaryPredisposition	???? <b>Condition</b>

Some things must be discussed with clinicians and FHIR experts

- Do we have data about centerOfDiagnosis? Only one center or more?
- There is a dateOfArrivalAtCenter?
- Would be good to include also data of discharge?
- What's the identifier of diagnosis? It comes from Encounter identifier?
- Have to use Organization resource from HL7 FHIR to represent the centerOfDiagnosis and primaryTreatmentCenter, if this reference is also in chemotherapy min?
- Can we use Observation-Genetics? This resource is in a draft stage, may be can we do it in different way with a simple observation resource?
- About immunology and hereditaryPredisposition. Are they Condition resources?
- I don't understand diagnosticGroup, tumorBehavior neither "description". I suppose description is the (ICC3 pediatric cancer classification) but I don't understand what they say about auto generation of icc3 if there is morphology-code and topography-code. May be diagnosticGroup is autogenerated, but I couldn't find the reference (see: cancer category) of site.code explanation.
- What's about cancer [stage](#) group profile? Where it fits inside diagnosis logical model?

### 3.3. Chemotherapy (minimal)<sup>4</sup>

Chemotherapy minimal	
<p>productAdministration</p> <div> <p>agent</p> </div> <div> <p>cumulativeDose</p> <div> <p>notAvaliable</p> <p>Value</p> </div> <div> <p>unit</p> </div> </div>	<p>Medication Administration 1</p> <div> <p>medication[x] SNOMEDCTMedicationCodes</p> <p>Subject -&gt; Reference</p> <p>Dosage</p> <p><b>ReourceRelatedInfo-eu-pcsp</b> Reference -&gt; Observation ChemotherapyCumulativeDose</p> </div> <p>Observation Chemotherapy Cumulative Dose</p> <div> <p>NONE – EMPTY</p> <p>value[x]</p> <div> <p>valueCodeableConcept</p> <p>ValueQuantity</p> <div> <p>system</p> <p>code</p> <p>value</p> <p>unit</p> </div> </div> <p>ParOf -&gt; Reference to MedicationAdministration</p> </div>

<sup>4</sup> The links for this relation: [Chemotherapy \(minimal\)](#) – [Medication Administration](#) – [Observation Chemotherapy Cumulative Dose](#)

	Medication Administration part2							
Corticosteroids	<table><tr><td>medication[x] SNOMEDCTMedicationCodes</td></tr><tr><td>Subject -&gt; Reference</td></tr><tr><td>Dosage</td></tr><tr><td><b>ReourceRelatedInfo-eu-pcsp</b> Reference -&gt; Observation ChemotherapyCumulativeDose</td></tr><tr><td>method</td></tr><tr><td>site</td></tr><tr><td>ParOf -&gt; Reference to MedicationAdministration</td></tr></table>	medication[x] SNOMEDCTMedicationCodes	Subject -> Reference	Dosage	<b>ReourceRelatedInfo-eu-pcsp</b> Reference -> Observation ChemotherapyCumulativeDose	method	site	ParOf -> Reference to MedicationAdministration
medication[x] SNOMEDCTMedicationCodes								
Subject -> Reference								
Dosage								
<b>ReourceRelatedInfo-eu-pcsp</b> Reference -> Observation ChemotherapyCumulativeDose								
method								
site								
ParOf -> Reference to MedicationAdministration								
	Medication Administration part3							
intrathecalInjections	<table><tr><td>medication[x] SNOMEDCTMedicationCodes</td></tr><tr><td>Subject -&gt; Reference</td></tr><tr><td>Dosage</td></tr><tr><td><b>ReourceRelatedInfo-eu-pcsp</b> Reference -&gt; Observation ChemotherapyCumulativeDose</td></tr><tr><td>method</td></tr><tr><td>site</td></tr><tr><td>ParOf -&gt; Reference to MedicationAdministration</td></tr></table>	medication[x] SNOMEDCTMedicationCodes	Subject -> Reference	Dosage	<b>ReourceRelatedInfo-eu-pcsp</b> Reference -> Observation ChemotherapyCumulativeDose	method	site	ParOf -> Reference to MedicationAdministration
medication[x] SNOMEDCTMedicationCodes								
Subject -> Reference								
Dosage								
<b>ReourceRelatedInfo-eu-pcsp</b> Reference -> Observation ChemotherapyCumulativeDose								
method								
site								
ParOf -> Reference to MedicationAdministration								

Some things must be discussed with clinicians and FHIR experts

- Can we attach multiple “Medication Administration” using “partOf” element?

3.4. Radiotherapy (minimal)<sup>5</sup>

Radiotherapy (min)	
	<b>Procedure Radiotherapy (minml set)</b>
type	code – <a href="#">CDL</a>
startDate	Encounter → Reference performed[x]
target	<div> <div> <div>site</div> <div>comulativeDose</div> </div> <div> <div>Boost</div> <div> <div>Given</div> <div>site</div> <div>ComulativeDose</div> </div> </div> </div> <div> <div>bodySite – <a href="#">CDL</a></div> <div><b>ResourceRelatedInfo-eu-pcsp</b> Reference → Observation Radiotherapy Cumulative Dose</div> <div><b>Procedure Radiotherapy (minml set)</b></div> <div> <div>????? ObservationYesNoAnswers</div> <div>bodySite</div> <div><b>ResourceRelatedInfo-eu-pcsp</b> Reference → Observation Radiotherapy Cumulative Dose</div> <div>partOf → Reference to Procedure or encounter → Reference</div> </div> </div>
radionuclides	???? usedReference → Device

Some things must be discussed with clinicians and FHIR experts

- The startDate could be represented as a reference to an “encounter” resource or as “performed[x]” element. What’s the best option?
- Is correct to represent the boost as another “Procedure Radiotherapy”? I think boost is another session of radio but with focus in a more little region.
- How we represent the given flag? With Yes, No Observation?
- Radionuclides, how can we represent it? What FHIR resource? As device?

<sup>5</sup> The links for the relation: [Radiotherapy min](#) – [Procedure Radiotherapy Minimal Set](#)

### **3.5. Chemotherapy**

TTD

### **3.6. Minimal Treatment Summary**

TTD

### **3.7. Treatment Summary**

TTD

**FIGURE INDEX**

Figure 1: Diagnosis Attached as Contained.....3

Figure 2: Diagnosis Attached to the Encounter Resource.....4

Figure 3: Array of resources using bundle.....5

Figure 4: Multiple transactions.....6



## A. EXAMPLES<sup>6</sup>

Here you can find some examples to test against CINECA FHIR server in order to learn some concepts about the specification.

### i. Another Patient example

This is a Patient resource created with the HAPI framework to be attached and referenced in the FHIR server in a set of consecutive REST operations.

```
{
  "resourceType": "Patient",
  "id": "HulafePatient",
  "meta": {
    "profile": [ "http://hl7.eu/fhir/ig/pcsp/StructureDefinition/Patient-eu-pcsp",
      "http://hl7.org/fhir/StructureDefinition/Patient" ],
    "security": [ {
      "system": "http://terminology.hl7.org/CodeSystem/v3-ActCode",
      "code": "SYSDEV"
    } ]
  },
  "contained": [ {
    "resourceType": "Encounter",
    "id": "1",
    "meta": {
      "profile": [ "http://hl7.org/fhir/StructureDefinition/Encounter" ]
    }
  } ],
  "extension": [ {
    "url": "http://hl7.org/fhir/StructureDefinition/patient-mothersMaidenName",
    "valueString": "Tester"
  }, {
    "url": "http://hl7.org/fhir/StructureDefinition/patient-birthPlace",
    "valueAddress": {
      "city": "Mislata",
      "state": "Valencia",
      "country": "España"
    }
  } ]
}
```

---

<sup>6</sup> The text element was deleted to get more clarity in the examples.

```
    }
  } ],
  "identifier": [ {
    "system": "http://example.com/fictitious-encntrs",
    "value": "ECN003"
  }, {
    "use": "official",
    "system": "urn:oid:2.16.724.4.10.50.200",
    "value": "123457"
  } ],
  "name": [ {
    "text": "John Doe Tester",
    "family": "Doe",
    "given": [ "John" ]
  } ],
  "telecom": [ {
    "system": "email",
    "value": "correo@noexiste.gva.es"
  }, {
    "system": "phone",
    "value": "600000000"
  } ],
  "gender": "male",
  "birthDate": "2000-01-01",
  "contact": [ {
    "relationship": [ {
      "coding": [ {
        "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
        "code": "PRN",
        "display": "parent"
      } ]
    } ]
  } ],
  "name": {
    "text": "Nombre Padre Madre",
    "family": "Padre Madre",
    "given": [ "Nombre" ]
  }
}
```

```
  },
  "telecom": [ {
    "system": "email",
    "value": "email.del.padre@noexiste.gva.es"
  }, {
    "system": "phone",
    "value": "600000002"
  } ],
  "address": {
    "line": [ "C./Una, 2" ],
    "city": "Alicante",
    "postalCode": "03000",
    "country": "España"
  }
} ],
"communication": [ {
  "language": {
    "coding": [ {
      "system": "urn:ietf:bcp:47",
      "code": "es-ES",
      "display": "Español"
    } ]
  }
} ]
}
```

## ii. One Encounter example

This example shows how the encounter references other resources, like the Patient registered before.

```
{
  "resourceType": "Encounter",
  "id": "HulafeEncounter_6969",
  "meta": {
    "profile": [ "http://hl7.org/fhir/StructureDefinition/Encounter" ],
    "security": [ {
      "system": "http://terminology.hl7.org/CodeSystem/v3-ActCode",
      "code": "SYSDEV"
```

```
    } ]
  },
  "identifier": [ {
    "system": "http://example.com/fictitious-encntrs",
    "value": "ECN003"
  } ],
  "status": "finished",
  "class": {
    "system": "http://terminology.hl7.org/CodeSystem/v3-ActCode",
    "code": "EMER",
    "display": "emergency"
  },
  "subject": {
    "reference": "Patient/6969",
    "type": "Patient"
  },
  "period": {
    "start": "2010-07-01T19:20:30+02:00",
    "end": "2021-10-12T19:20:30+02:00"
  },
  "diagnosis": [ {
    "condition": {
      "reference": "HulafePrimaryCancer/6969",
      "type": "Condition"
    }
  }, {
    "condition": {
      "reference": "HulafeSecondaryCancer/6969",
      "type": "Condition"
    }
  } ],
  "serviceProvider": {
    "reference": "HulafeOrganization/6969",
    "type": "Organization"
  }
}
```

### iii. Transaction Bundle example

```
{
  "resourceType": "Bundle",
  "id": "HuLaFePatientBundleTransaction",
  "type": "transaction",
  "entry": [
    {
      "resource": {
        "resourceType": "Patient",
        "id": "PatientHulafe",
        "meta": {
          "profile": [ "http://hl7.eu/fhir/ig/pcsp/StructureDefinition/Patient-eu-pcsp" ],
          "security": [ {
            "system": "http://terminology.hl7.org/CodeSystem/v3-ActCode",
            "code": "SYSDEV"
          } ]
        },
        "url": "http://hl7.org/fhir/StructureDefinition/patient-mothersMaidenName",
        "valueString": "Tester"
      }, {
        "url": "http://hl7.org/fhir/StructureDefinition/patient-birthPlace",
        "valueAddress": {
          "city": "Mislata",
          "state": "Valencia",
          "country": "España"
        }
      } ],
    {
      "identifier": [ {
        "system": "http://example.com/fictitious-mrns",
        "value": "MRN001"
      } ],
      "use": "official",
      "system": "urn:oid:2.16.724.4.10.50.200",
    }
  ]
}
```

```
"value": "123457"
} ],
"name": [ {
  "text": "John Doe Tester",
  "family": "Doe",
  "given": [ "John" ]
} ],
"telecom": [ {
  "system": "email",
  "value": "correo@noexiste.gva.es"
}, {
  "system": "phone",
  "value": "6000000000"
} ],
"gender": "male",
"birthDate": "2000-01-01",
"contact": [ {
  "relationship": [ {
    "coding": [ {
      "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
      "code": "PRN",
      "display": "parent"
    } ]
  } ]
} ],
"name": {
  "text": "Nombre Padre Madre",
  "family": "Padre Madre",
  "given": [ "Nombre" ]
},
"telecom": [ {
  "system": "email",
  "value": "email.del.padre@noexiste.gva.es"
}, {
  "system": "phone",
  "value": "6000000002"
} ],
```

```
"address": {
  "line": [ "C./Una, 2" ],
  "city": "Alicante",
  "postalCode": "03000",
  "country": "España"
}
} ],
"communication": [ {
  "language": {
    "coding": [ {
      "system": "urn:ietf:bcp:47",
      "code": "es-ES",
      "display": "Español"
    } ]
  }
} ]
},
"request": {
  "method": "POST",
  "url": "Patient"
}
}
]
```

#### **iv. Patient Resource with Contained Diagnosis**

```
{
  "resourceType" : "Patient",
  "id" : "PatientHulafe",
  "meta" : {
    "profile" : [
      "http://hl7.eu/fhir/ig/pcsp/StructureDefinition/Patient-eu-pcsp"
    ]
  },
}
```

```
"extension" : [
  {
    "url" : "http://hl7.org/fhir/StructureDefinition/patient-birthPlace",
    "valueAddress" : {
      "city" : "Valencia",
      "country" : "España"
    }
  }
],
"identifier" : [
  {
    "system" : "urn:oid:2.16.724.4.10.50.200",
    "value" : "04969377"
  }
],
"name" : [
  {
    "family" : "APELLIDO1 APELLIDO2",
    "given" : [
      "Urbano"
    ]
  }
],
"gender" : "male",
"birthDate" : "2014-07-01",
"contact" : [
  {
    "relationship" : [
      {
        "coding" : [
          {
            "system" : "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
            "code" : "PRN",
            "display" : "Parent"
          }
        ]
      }
    ]
  }
]
```



```
    }
  ],
  "telecom" : [
    {
      "system" : "email",
      "value" : "tattedblack@gmail.com"
    }
  ]
}
],
"contained" : [
{
  "resourceType" : "Condition",
  "id" : "ConditionPrimaryCancer1",
  "meta" : {
    "profile" : [
      "http://hl7.eu/fhir/ig/pcsp/StructureDefinition/Condition-primaryCancer-eu-pcsp"
    ]
  },
  "extension" : [
    {
      "url" : "http://hl7.org/fhir/StructureDefinition/condition-assertedDate",
      "valueDateTime" : "2010-09-15"
    },
    {
      "url": "http://hl7.eu/fhir/ig/pcsp/StructureDefinition/mcode-histology-morphology-behavior",
      "valueCodeableConcept" : {
        "coding" : [
          {
            "system" : "http://terminology.hl7.org/CodeSystem/icd-o-3",
            "code" : "C71.6",
            "display" : "Vermis del cerebello"
          }
        ]
      }
    }
  ]
}
```

```
    },
    {
      "url" : "http://hl7.eu/fhir/ig/pcsp/StructureDefinition/mcode-laterality-qualifier",
      "valueCodeableConcept" : {
        "coding" : [
          {
            "system" : "http://snomed.info/sct",
            "code" : "51440002",
            "display" : "Right and left"
          }
        ]
      }
    }
  ],
  "code" : {
    "coding" : [
      {
        "system" : "http://terminology.hl7.org/CodeSystem/iccc-3",
        "code" : "C77.0"
      }
    ]
  },
  "bodySite" : [
    {
      "coding" : [
        {
          "system" : "http://terminology.hl7.org/CodeSystem/icd-o-3",
          "code" : "9470/3",
          "display" : "Meduloblastoma NE"
        }
      ]
    }
  ],
  "subject" : {
    "reference" : "Patient/PatientHulafe"
  }
},
```

```
{
  "resourceType": "Organization",
  "id": "HulafeOrganization",
  "name": "Hospital de Ontinyent",
  "address":
  {
    "city": "Ontinyent",
    "country": "España"
  },
  "telecom": [
    {
      "system": "phone",
      "value": "+91 351232454",
      "use": "mobile"
    },
    {
      "system": "email",
      "value": "onti@gva.resan.es",
      "use": "work"
    }
  ]
},
```

```
{
  "resourceType": "SecondaryCancerCondition",
  "id": "doc-example3",
  "subject": {
    "reference": "Patient/SIP48676567"
  }...
},
```

```
{
```

```
"resourceType": "Condition",
"id": "doc-example4",
"subject": {
  "reference": "Patient/SIP48676567"
}...
},

{
  "resourceType": "Observation",
"id": "doc-example5",
"subject": {
  "reference": "Patient/SIP48676567"
}...
},

{
  "resourceType": "Condition",
"id": "doc-example6",
"subject": {
  "reference": "Patient/SIP48676567"
}...
},

{
  "resourceType": "MedicationAdministration",
"id": "doc-example7",
"subject": {
  "reference": "Patient/SIP48676567"
} ....
},

, {etc, complete the diagnosis and treatment }
]
```

```
}
```

#### **v. Bundle type document example**

```
{
  "resourceType": "Bundle",
  "id": "HuLaFePatientBundleDocument",
  "type": "document",
  "entry": [
    {
      "resource": {
        "resourceType": "Composition",
        "status": "final",
        "type": {
          "coding": [
            {
              "system": "http://loinc.org",
              "code": "29751-5"
            }
          ]
        },
        "date": "2021-11-22",
        "author": [{ "identifier": { "value": "Imaginary1" } }],
        "title": "Patient Record for Hulafe",
        "confidentiality": "N",
        "subject": {
          "reference": "PatientHulafe"
        }
      }
    },
    {
      "resource": {
        "resourceType": "Patient",
        "id": "PatientHulafe",
        "meta": {
          "profile": [ "http://hl7.eu/fhir/ig/pcsp/StructureDefinition/Patient-eu-pcsp" ],
          "security": [ {
```

```
"system": "http://terminology.hl7.org/CodeSystem/v3-ActCode",
"code": "SYSDEV"
} ]
},
"extension": [ {
"url": "http://hl7.org/fhir/StructureDefinition/patient-mothersMaidenName",
"valueString": "Tester"
}, {
"url": "http://hl7.org/fhir/StructureDefinition/patient-birthPlace",
"valueAddress": {
"city": "Mislata",
"state": "Valencia",
"country": "España"
}
} ],
"identifier": [ {
"system": "http://example.com/fictitious-mrns",
"value": "MRN001"
}, {
"use": "official",
"system": "urn:oid:2.16.724.4.10.50.200",
"value": "123457"
} ],
"name": [ {
"text": "John Doe Tester",
"family": "Doe",
"given": [ "John" ]
} ],
"telecom": [ {
"system": "email",
"value": "correo@noexiste.gva.es"
}, {
"system": "phone",
"value": "600000000"
} ],
"gender": "male",
```

```
"birthDate": "2000-01-01",
"contact": [ {
  "relationship": [ {
    "coding": [ {
      "system": "http://terminology.hl7.org/CodeSystem/v3-RoleCode",
      "code": "PRN",
      "display": "parent"
    } ]
  } ],
},
"name": {
  "text": "Nombre Padre Madre",
  "family": "Padre Madre",
  "given": [ "Nombre" ]
},
"telecom": [ {
  "system": "email",
  "value": "email.del.padre@noexiste.gva.es"
}, {
  "system": "phone",
  "value": "6000000002"
} ],
"address": {
  "line": [ "C./Una, 2" ],
  "city": "Alicante",
  "postalCode": "03000",
  "country": "España"
}
},
"communication": [ {
  "language": {
    "coding": [ {
      "system": "urn:ietf:bcp:47",
      "code": "es-ES",
      "display": "Español"
    } ]
  }
} ]
}
```

```
    } ]
  }
},
{
  "resource": {
    "resourceType": "Practitioner",
    "id": "Imaginary1",
    "name": [
      {
        "family": "Bacterio",
        "given": [
          "Saturnino"
        ],
        "prefix": [
          "Profesor"
        ]
      }
    ]
  }
},
{
  "resource": {
    "resourceType": "Encounter",
    "id": "doc-example1",
    "subject": {
      "reference": "Patient/SIP48676567"
    }
  }
},
{
  "resource": {
    "resourceType": "PrimaryCancerCondition",
    "id": "doc-example2",
    "subject": {
      "reference": "PatientHulafe"
    }
  }
},
{
  "resource": {
    "resourceType": "SecondaryCancerCondition",
    "id": "doc-example3",
    "subject": {
```



```
      "reference": "PatientHulafe"
    }...
  },
  {
    "resource": {
      "resourceType": "Condition",
      "id": "doc-example4",
      "subject": {
        "reference": "PatientHulafe"
      }...
    },
    {
      "resource": {
        "resourceType": "Observation",
        "id": "doc-example5",
        "subject": {
          "reference": "PatientHulafe"
        }...
      },
      {
        "resource": {
          "resourceType": "Condition",
          "id": "doc-example6",
          "subject": {
            "reference": "PatientHulafe"
          }...
        },
        {
          "resource": {
            "resourceType": "MedicationAdministration",
            "id": "doc-example7",
            "subject": {
              "reference": "PatientHulafe"
            } ....
          },
          "resource": {
```

```
"resourceType": "MedicationStatement",
"status": "completed",
"medicationCodeableConcept": {
  "text": "Ventolin Inhaler"
},
"subject": {
  "reference": "PatientHulafe"
},
"taken": "n",
"reasonNotTaken": [
  {
    "text": "Management of Asthma"
  }
]
},
, {etc, complete the diagnosis and treatment }
]
}
"signature": {
  "type": [
    {
      "system": "urn:iso-astm:E1762-95:2013",
      "code": "1.2.840.10065.1.12.1.1",
      "display": "Author's Signature"
    }
  ],
  "when": "2015-08-31T07:42:33+10:00",
  "whoReference": {
    "reference": "Device/software"
  },
  "onBehalfOfReference": {
    "reference": "Organization/LaFe"
  }
}
```

}

