



PERÚ

Ministerio  
de Salud



BICENTENARIO  
DEL PERÚ  
2021 - 2024

# HL7 FHIR Paciente

---

Oficina General de Tecnologías de la Información

NOVIEMBRE 2024



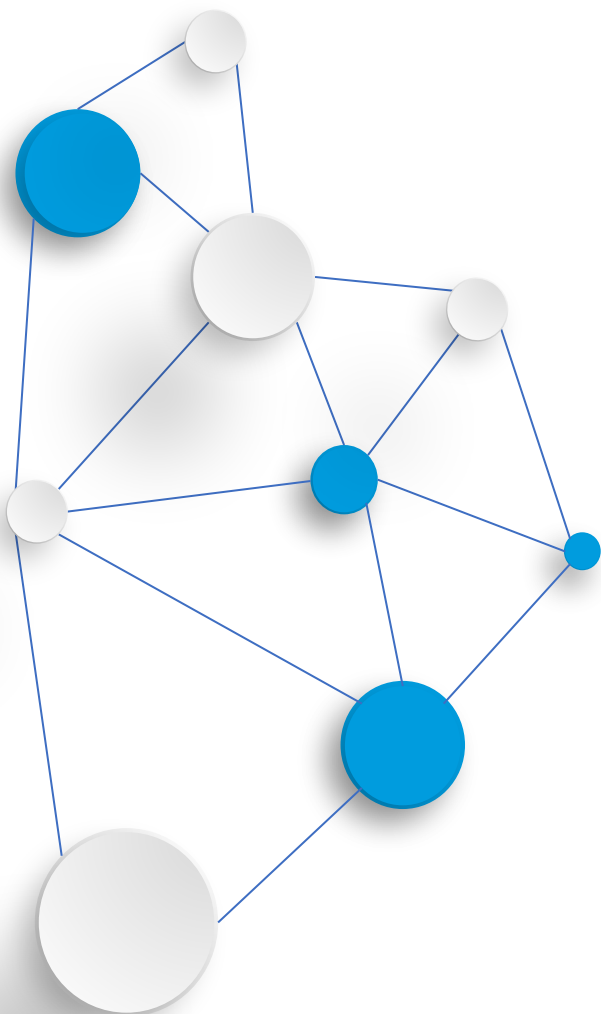
PERÚ

Ministerio  
de Salud



BICENTENARIO  
DEL PERÚ  
2021 - 2024

# UBICACIÓN EN LA GI FHIR





PERÚ

Ministerio  
de Salud

# Recurso Paciente:



BICENTENARIO  
DEL PERÚ  
2021 - 2024

## Level 1 Basic framework on which the specification is built

 <b>Foundation</b>	Base Documentation, XML, JSON, Data Types, Extensions
--	---

## Level 2 Supporting implementation and binding to external specifications

 <b>Implementer Support</b> Downloads, Version Mgmt, Use Cases, Testing	 <b>Security &amp; Privacy</b> Security, Consent, Provenance, AuditEvent	 <b>Conformance</b> StructureDefinition, CapabilityStatement, ImplementationGuide, Profiling	 <b>Terminology</b> CodeSystem, ValueSet, ConceptMap, Terminology Svc	 <b>Exchange</b> REST API + S Documents Messaging Services Databases
---	---	---	--	--

## Level 3 Linking to real world concepts in the healthcare system

 <b>Administration</b>	Patient, Practitioner, CareTeam, Device, Organization, Location, Healthcare Service
--	---

## Level 4 Record-keeping and Data Exchange for the healthcare process

 <b>Clinical</b> Allergy, Problem, Procedure, CarePlan/Goal, ServiceRequest, Family History, RiskAssessment, etc.	 <b>Diagnostics</b> Observation, Report, Specimen, ImagingStudy, Genomics, Specimen, ImagingStudy, etc.	 <b>Medications</b> Medication, Request, Dispense, Administration, Statement, Immunization, etc.	 <b>Workflow</b> Introduction + Task, Appointment, Schedule, Referral, PlanDefinition, etc	 <b>Financial</b> Claim, Account, Invoice, ChargeItem, Coverage + Eligibility Request & Response, ExplanationOfBenefit, etc.
---	---	--	---	---

## Level 5 Providing the ability to reason about the healthcare process

 <b>Clinical Reasoning</b> Library, PlanDefinition & GuidanceResponse, Measure/MeasureReport, etc.	 <b>Medication Definition</b> Medicinal, Packaged & Administrable product definitions, Regulated Authorization, etc.
--	---

## Level 3 Linking to real world concepts in the healthcare system

 <b>Administration</b>	Patient, Practitioner, CareTeam, Device, Organization, Location, Healthcare Service
---	---

<https://hl7.org/fhir/R4/patient.html>



PERÚ

Ministerio  
de Salud

# Contenido del recurso

BICENTENARIO  
DEL PERÚ  
2021 - 2024

Structure

UML

XML

JSON

Turtle

R3 Diff

All

## Structure

Name	Flags	Card.	Type	Description & Constraints
Patient	<b>N</b>		DomainResource	Information about an individual or animal receiving health care services Elements defined in Ancestors: id, meta, implicitRules, language, text, contained, extension, modifierExtension An identifier for this patient
identifier	$\Sigma$	0..*	Identifier	Whether this patient's record is in active use
active	?! $\Sigma$	0..1	boolean	A name associated with the patient
name	$\Sigma$	0..*	HumanName	A contact detail for the individual
telecom	$\Sigma$	0..*	ContactPoint	male   female   other   unknown AdministrativeGender (Required)
gender	$\Sigma$	0..1	code	The date of birth for the individual
birthDate	$\Sigma$	0..1	date	Indicates if the individual is deceased or not
deceased[x]	?! $\Sigma$	0..1	boolean	
deceasedBoolean			boolean	
deceasedDateTime			dateTime	
address	$\Sigma$	0..*	Address	An address for the individual
maritalStatus		0..1	CodeableConcept	Marital (civil) status of a patient MaritalStatus (Extensible)
multipleBirth[x]		0..1		Whether patient is part of a multiple birth
multipleBirthBoolean			boolean	
multipleBirthInteger			integer	
photo		0..*	Attachment	Image of the patient
contact	<b>I</b>	0..*	BackboneElement	A contact party (e.g. guardian, partner, friend) for the patient + Rule: SHALL at least contain a contact's details or a reference to an organization
relationship		0..*	CodeableConcept	The kind of relationship Patient Contact Relationship (Extensible)
name		0..1	HumanName	A name associated with the contact person
telecom		0..*	ContactPoint	A contact detail for the person
address		0..1	Address	Address for the contact person
gender		0..1	code	male   female   other   unknown AdministrativeGender (Required)
organization	<b>I</b>	0..1	Reference(Organization)	Organization that is associated with the contact
period		0..1	Period	The period during which this contact person or organization is valid to be contacted relating to this patient
communication		0..*	BackboneElement	A language which may be used to communicate with the patient about his or her health
language		1..1	CodeableConcept	The language which can be used to communicate with the patient about his or her health Common Languages (Preferred but limited to AllLanguages)
preferred		0..1	boolean	Language preference indicator
generalPractitioner		0..*	Reference(Organization   Practitioner   PractitionerRole)	Patient's nominated primary care provider
managingOrganization	$\Sigma$	0..1	Reference(Organization)	Organization that is the custodian of the patient record
link	?! $\Sigma$	0..*	BackboneElement	Link to another patient resource that concerns the same actual person
other	$\Sigma$	1..1	Reference(Patient   RelatedPerson)	The other patient or related person resource that the link refers to
type	$\Sigma$	1..1	code	replaced-by   replaces   refer   seealso LinkType (Required)

Documentation for this format

# Contenido del recurso

Structure

UML

XML

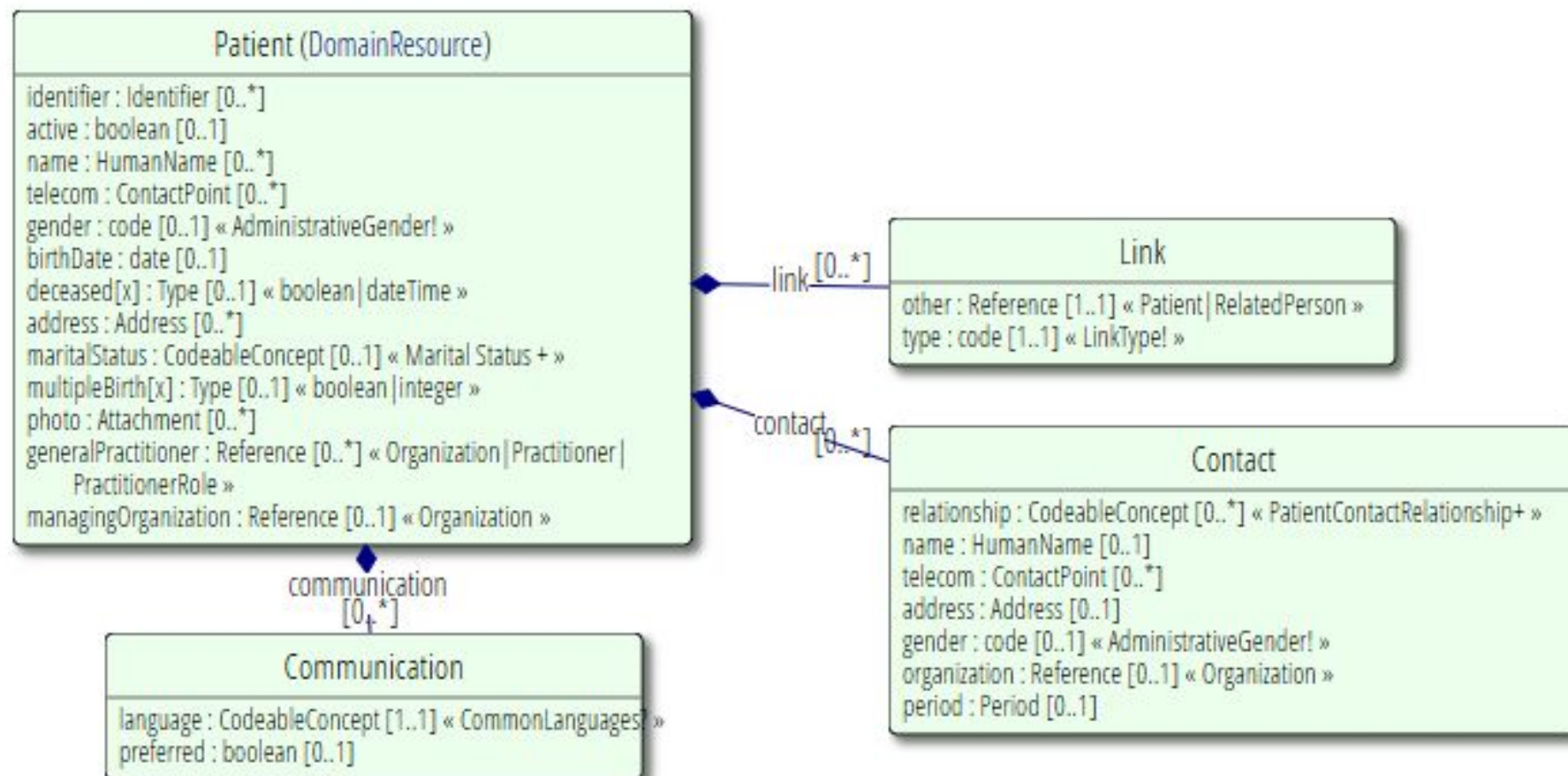
JSON

Turtle

R3 Diff

All

## UML Diagram (Legend)





Structure

UML

XML

JSON

Turtle

R3 Diff

All

## JSON Template

```
{
  "resourceType": "Patient",
  // from Resource: id, meta, implicitRules, and language
  // from DomainResource: text, contained, extension, and modifierExtension
  "identifier": [{ Identifier }], // An identifier for this patient
  "active": <boolean>, // Whether this patient's record is in active use
  "name": [{ HumanName }], // A name associated with the patient
  "telecom": [{ ContactPoint }], // A contact detail for the individual
  "gender": "<code>", // male | female | other | unknown
  "birthDate": "<date>", // The date of birth for the individual
  // deceased[x]: Indicates if the individual is deceased or not. One of these 2:
  "deceasedBoolean": <boolean>,
  "deceasedDateTime": "<dateTime>",
  "address": [{ Address }], // An address for the individual
  "maritalStatus": { CodeableConcept }, // Marital (civil) status of a patient
  // multipleBirth[x]: Whether patient is part of a multiple birth. One of these 2:
  "multipleBirthBoolean": <boolean>,
  "multipleBirthInteger": <integer>,
  "photo": [{ Attachment }], // Image of the patient
  "contact": [{ // A contact party (e.g. guardian, partner, friend) for the patient
    "relationship": [{ CodeableConcept }], // The kind of relationship
    "name": { HumanName }, // A name associated with the contact person
    "telecom": [{ ContactPoint }], // A contact detail for the person
    "address": { Address }, // Address for the contact person
    "gender": "<code>", // male | female | other | unknown
    "organization": { Reference(Organization) }, // C? Organization that is associated with the contact
    "period": { Period } // The period during which this contact person or organization is valid to be c
    ontacted relating to this patient
  }],
  "communication": [{ // A language which may be used to communicate with the patient about his or her h
    ealth
    "language": { CodeableConcept }, // R! The language which can be used to communicate with the patie
    nt about his or her health
    "preferred": <boolean> // Language preference indicator
  }],
  "generalPractitioner": [{ Reference(Organization|Practitioner|
    PractitionerRole) }], // Patient's nominated primary care provider
  "managingOrganization": { Reference(Organization) }, // Organization that is the custodian of the pati
  ent record
  "link": [{ // Link to another patient resource that concerns the same actual person
    "other": { Reference(Patient|RelatedPerson) }, // R! The other patient or related person resource t
    hat the link refers to
    "type": "<code>" // R! replaced-by | replaces | refer | seealso
  }],
}
```


Componente	Descripción	Ejemplo
Identifier	Identificaciones únicas para el paciente (e.g., seguro, registro médico).	"12345", "Seguro XYZ"
Name	Nombre completo con soporte para múltiples representaciones (e.g., oficial, apodo).	"John Doe", "Dr. Doe"
Gender	Sexo del paciente: masculino, femenino, otro, desconocido.	"male", "female"
BirthDate	Fecha de nacimiento para calcular la edad.	"1980-01-01"
Address	Dirección física, incluyendo ciudad, estado y país.	"Springfield, USA"
Telecom	Información de contacto como teléfono y correo.	"555-1234, john@example.com"
Deceased[x]	Indica si el paciente está vivo o fallecido.	"false, 2023-10-01"
Communication	Idiomas hablados y preferencias de comunicación.	"Español, Inglés"
Contact	Personas de contacto en emergencias, como familiares o cuidadores.	"Jane Doe (hermana)"

# Ejemplo JSON Patient

```
{
  "resourceType": "Patient",
  "id": "example",
  "identifier": [
    {
      "use": "official",
      "value": "12345"
    }
  ],
  "name": [
    {
      "use": "official",
      "family": "Doe",
      "given": [
        "John"
      ]
    }
  ],
  "gender": "male",
  "birthDate": "1980-01-01",
  "address": [
    {
      "city": "Springfield",
      "country": "USA"
    }
  ]
}
```



<https://hapi.fhir.org/baseR4/swagger-ui/>



## HAPI FHIR Test/Demo Server R4 Endpoint

HAPI FHIR Server 7.7.0-SNAPSHOT62a8e5c512024-10-31

**FHIR Server Base URL** <https://hapi.fhir.org/baseR4>  
**OpenAPI Docs** <https://hapi.fhir.org/baseR4/api-docs>  
**FHIR Version** 4.0.1 (R4)

This server is **Open Source Software**, licensed under the terms of the [Apache Software License 2.0](#).

All **System Level Operations** Observation 4213375 Specimen 1875903 Composition 938713 Patient 846038 Bundle 402939 Encounter 187110 Claim 134765 Condition 108893 AuditEvent 95336

QuestionnaireResponse 90190 ExplanationOfBenefit 89371 MedicationStatement 88349 Procedure 79963 Location 73838 Binary 68926 DiagnosticReport 62701 Practitioner 58708 Organization 57747

Immunization 56356 Slot 47635 MedicationKnowledge 42988 Schedule 40562 DocumentReference 37968 MedicationRequest 36191 Appointment 34520 TestScript 32678 MessageHeader 28553 Coverage 28010

PractitionerRole 27470 Media 23209 ClaimResponse 18316 Device 16153 List 15930 AllergyIntolerance 15831 CarePlan 11354 Medication 10103 ServiceRequest 9665 MedicationAdministration 9659

Questionnaire 7909 CareTeam 7645 ImagingStudy 7499 Goal 6907 StructureDefinition 5438 Provenance 5396 ValueSet 4914 CodeSystem 3832 HealthcareService 3722 SupplyDelivery 2696

OrganizationAffiliation 2612 Task 2598 Endpoint 2548 DeviceRequest 2434 MedicationDispense 2157 RelatedPerson 1874 ImmunizationRecommendation 1767 Communication 1571 Flag 1564 Basic 1528

Consent 1514 SpecimenDefinition 1344 SubstanceProtein 1339 OperationOutcome 1163 Person 1151 RiskAssessment 1122 ChargeItemDefinition 1100 Invoice 904 CommunicationRequest 817

PlanDefinition 755 ActivityDefinition 734 Group 711 Account 665 CoverageEligibilityRequest 642 FamilyMemberHistory 611 MolecularSequence 581 Subscription 570 SearchParameter 517 ConceptMap 509

ChargeItem 477 EpisodeOfCare 470 Measure 457 Parameters 441 ClinicalImpression 426 MeasureReport 398 AppointmentResponse 384 InsurancePlan 375 Substance 345 AdverseEvent 316


DocumentManifest 290 DeviceMetric 282 BodyStructure 265 DetectedIssue 240 SupplyRequest 238 ResearchSubject 235 Library 210 CapabilityStatement 188 NamingSystem 182 Contract 152

RequestGroup 149 ResearchStudy 144 OperationDefinition 143 DeviceUseStatement 120 NutritionOrder 106 StructureMap 100 ObservationDefinition 82 PaymentNotice 82 ImplementationGuide 71

Evidence 63 PaymentReconciliation 61 MessageDefinition 57 ResearchDefinition 56 DeviceDefinition 55 ImmunizationEvaluation 53 MedicinalProduct 53 EvidenceVariable 52 RiskEvidenceSynthesis 51

EnrollmentRequest 49 EventDefinition 48 Linkage 48 CoverageEligibilityResponse 44 GraphDefinition 44 ResearchElementDefinition 44 ExampleScenario 40 CompartmentDefinition 38

TerminologyCapabilities 38 VisionPrescription 38 EffectEvidenceSynthesis 36 GuidanceResponse 31 BiologicallyDerivedProduct 30 SubstanceSpecification 28 VerificationResult 26 TestReport 24



## HAPI FHIR Test/Demo Server R4 Endpoint

HAPI FHIR Server 7.7.0-SNAPSHOT62a8e5c512024-10-31

**FHIR Server Base URL** <https://hapi.fhir.org/baseR4>  
**OpenAPI Docs** <https://hapi.fhir.org/baseR4/api-docs>  
**FHIR Version** 4.0.1 (R4)

This server is **Open Source Software**, licensed under the terms of the [Apache Software License 2.0](#).

All **System Level Operations** Observation 4213375 Specimen 1875903 Composition 938713 Patient 846038 Bundle 402939 Encounter 187110 Claim 134765 Condition 108893 AuditEvent 95336

QuestionnaireResponse 90190 ExplanationOfBenefit 89371 MedicationStatement 88349 Procedure 79963 Location 73838 Binary 68926 DiagnosticReport 62701 Practitioner 58708 Organization 57747

Immunization 56356 Slot 47635 MedicationKnowledge 42988 Schedule 40562 DocumentReference 37968 MedicationRequest 36191 Appointment 34520 TestScript 32678 MessageHeader 28553 Coverage 28010

PractitionerRole 27470 Media 23209 ClaimResponse 18316 Device 16153 List 15930 AllergyIntolerance 15831 CarePlan 11354 Medication 10103 ServiceRequest 9665 MedicationAdministration 9659

Questionnaire 7909 CareTeam 7645 ImagingStudy 7499 Goal 6907 StructureDefinition 5438 Provenance 5396 ValueSet 4914 CodeSystem 3832 HealthcareService 3722 SupplyDelivery 2696

OrganizationAffiliation 2612 Task 2598 Endpoint 2548 DeviceRequest 2434 MedicationDispense 2157 RelatedPerson 1874 ImmunizationRecommendation 1767 Communication 1571 Flag 1564 Basic 1528

Consent 1514 SpecimenDefinition 1344 SubstanceProtein 1339 OperationOutcome 1163 Person 1151 RiskAssessment 1122 ChargeItemDefinition 1100 Invoice 904 CommunicationRequest 817 PlanDefinition 755

ActivityDefinition 734 Group 711 Account 665 CoverageEligibilityRequest 642 FamilyMemberHistory 611 MolecularSequence 581 Subscription 570 SearchParameter 517 ConceptMap 509 ChargeItem 477

EpisodeOfCare 470 Measure 457 Parameters 441 ClinicalImpression 426 MeasureReport 398 AppointmentResponse 384 InsurancePlan 375 Substance 345 AdverseEvent 316 DocumentManifest 290

DeviceMetric 282 BodyStructure 265 DetectedIssue 240 SupplyRequest 238 ResearchSubject 235 Library 210 CapabilityStatement 188 NamingSystem 182 Contract 152 RequestGroup 149

ResearchStudy 144 OperationDefinition 143 DeviceUseStatement 120 NutritionOrder 106 StructureMap 100 ObservationDefinition 82 PaymentNotice 82 ImplementationGuide 71 Evidence 63

PaymentReconciliation 61 MessageDefinition 57 ResearchDefinition 56 DeviceDefinition 55 ImmunizationEvaluation 53 MedicinalProduct 53 EvidenceVariable 52 RiskEvidenceSynthesis 51 EnrollmentRequest 49

EventDefinition 48 Linkage 48 CoverageEligibilityResponse 44 GraphDefinition 44 ResearchElementDefinition 44 ExampleScenario 40 CompartmentDefinition 38 TerminologyCapabilities 38 VisionPrescription 38

EffectEvidenceSynthesis 36 GuidanceResponse 31 BiologicallyDerivedProduct 30 SubstanceSpecification 28 VerificationResult 26 TestReport 24

SubstanceNucleicAcid 24 SubstanceReferenceInformation 21 EnrollmentResponse 20 MedicinalProductAuthorization 20 MedicinalProductPharmaceutical 20 CatalogEntry 18 MedicinalProductPackaged 18

MedicinalProductIndication 18 MedicinalProductManufactured 18 SubstanceSourceMaterial 17 SubstancePolymer 12 MedicinalProductContraindication 8 MedicinalProductUndesirableEffect 8

### System Level Operations

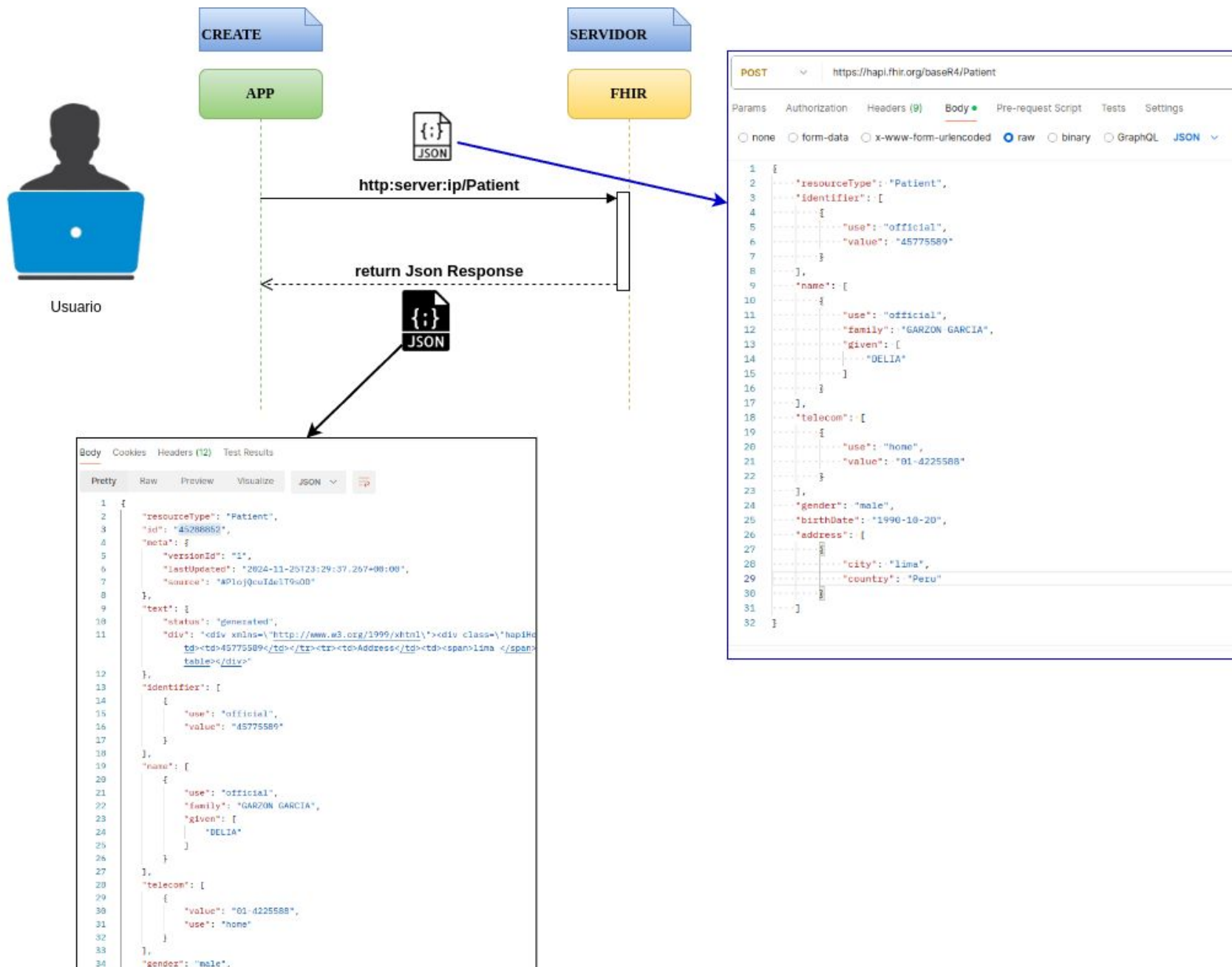
Server-level operations

- GET /metadata** server-capabilities: Fetch the server FHIR CapabilityStatement
- POST /\_history** server-history: Fetch the resource change history across all resource types on the server
- GET /\_diff** Compare two resources or two versions of a single resource
- POST /\_diff** Compare two resources or two versions of a single resource
- POST /\_reindex** POST: Reindex
- GET /\_export-poll-status** GET: Export poll status
- POST /\_export-poll-status** POST: Export poll status
- GET /\_export** GET: Export
- POST /\_export** POST: Export
- POST /\_shfql-execute** POST: Shfql-execute
- POST /\_perform-reindexing-pass** POST: Perform-reindexing-pass
- GET /\_meta** GET: Meta
- POST /\_meta** POST: Meta
- POST /\_mark-all-resources-for-reindexing** POST: Mark-all-resources-for-reindexing
- GET /\_get-resource-counts** Provides the number of resources currently stored on the server, broken down by resource type
- POST /\_get-resource-counts** Provides the number of resources currently stored on the server, broken down by resource type
- POST /\_sexpunge** POST: Sexpunge
- POST /\_reindex-terminology** POST: Reindex-terminology
- GET /\_graphql** GET: GraphQL
- POST /\_graphql** POST: GraphQL

### Schemas

- FHIR-JSON-RESOURCE >
- FHIR-XML-RESOURCE >

# Caso De Uso Crear Paciente



# Lenguajes de programación mediante librerías



<https://central.sonatype.com/artifact/ca.uhn.hapi.fhir/hapi-fhir>



<https://github.com/smart-on-fhir/client-js>



<https://pypi.org/project/fhir.resources/>



<https://github.com/FirelyTeam/firely-net-sdk>



PERÚ

Ministerio  
de Salud



BICENTENARIO  
DEL PERÚ  
2021 - 2024



Gracias