

```
"resourceType" : "Patient"
"text" : {
  "status" : "generated"
  "_status" : {
    "id" : "12344"
  },
  "div" : "<div
"},
"identifier"
{
  "use"
  "ty
```

FHIR FUNDAMENTALS COURSE

FAST HEALTHCARE INTEROPERABILITY RESOURCES



FHIR Course, Unit 4:
FHIR Conformance
Activity

HL7 FHIR FUNDAMENTALS COURSE

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ASSIGNMENT

Create a valid example for a Berzerkistan Patient resource

CONTEXT

These are the requirements for the Patient resource as they are appeared in the BMOHORB (Berzerkistan Ministry of Health Official Requirement Bulletin), as is part of the new Smart Berzerkistan Health Credential Project started by the BZ.MOH



DISCLAIMER

Berzerkistan is not a real country. There is no site ending in .bk. It's pure fantasy, not inspired in any real country.

REQUIREMENTS

April 25, 2023 – Edition #150 – this is a fragment of the English translation regarding the FHIR Patient Resource constraints:

Berzerkistan Ministry of Health, April 25, 2023 - BMOHORB #150

Req # BMHO.121 - BMHO Patient Resource Constraints

- **Req # BMHO.121.1: Gender** - Element **gender** is mandatory and should be extracted from the FHIR vocabulary for gender: Options for value are 'male' and 'female'.
- **Req # BMHO.121.2: Birth Date** - Element **birthdate** is mandatory, birth-date, shall be populated with the patient birthdate in the format 'yyyy-mm-dd'.
- **Req # BMHO.121.3: Name** - Element **name** is mandatory and shall contain:
 - **Req # BMHO.121.3.a: Given**: The first name of the patient in the **given** element.
 - **Req # BMHO.121.3.b: Family**: The last name of the patient in the **family** element
- **Req # BMHO.121.4: Identifier**: The resource shall include **ONLY TWO** mandatory **identifier** elements
 - **Req # BMHO.121.4.a: BNI** : The first one shall be the BNI identifier (system: <http://berzerkistan.gov/bni>, value equal to the BNI identifier for the patient)
 - **Req # BMHO.121.4.b: NHIB**: The second one shall be the NHIB identifier (system: <http://berzerkistan.gov/nhib>, value equal to the NHIB identifier for the patient)
- **Req # BMHO.121.5: PPH Tax**: The resource shall include the **PPH TaxSituation extension** PPHTaxSituation which is mandatory and shall be coded using the **PPHTaxSituationVS**
- **Req # BMHO.121.6: Telephone**: A local Berzerkistan telephone number (beginning with +5411) is required in the telecom.value, and telecom.system should be fixed to 'phone'
- **Req # BMHO.121.7: Text**: The resource text shall include all the precedent information in a text concatenating the title and value for each item in one line. Example: Gender: male

The FHIR Profile for these requirements is published here:

<http://courses.hl7fundamentals.org/profile-berze>

THE FIHR PROFILE

This is the most important view of the profile, called the “differential view”: what is unique about a Patient resource valid for this project?

The differential view allows you to understand what is ‘special’ about a Patient because of the requirements. Which elements are mandatory (1..1)? Which codes should be used? Which identifiers?

2.1.1.1 Formal Views of Profile Content

Description of Profiles, Differentials, Snapshots and how the different presentations work [↗](#).

Differential Table
Key Elements Table
Snapshot Table
Statistics/References
All

This structure is derived from [Patient](#) [↗](#)

Name	Flags	Card.	Type	Description & Constraints
Patient		0..*	Patient	Information about an individual or animal receiving health care services
<div> text </div>		1..1	Narrative	Text summary of the resource, for human interpretation
<div> Slices for extension </div>		1..*	Extension	Extension Slice: Unordered, Open by value:url
<div> PPHTaxSituation </div>		1..1	code	Extension URL: http://minhealth.gov.bk/core/StructureDefinition/PPHTaxSituation Binding: Set of Valid Codes for PPH Tax Situation (required)
<div> Slices for identifier </div>		2..2	Identifier	An identifier for this patient Slice: Unordered, Open by value:use
<div> <div> Identifier:BniIdentifier </div> </div>		1..1	Identifier	An identifier for this patient
<div> <div> <div> use </div> </div> </div>		1..1	code	usual official temp secondary old (If known) Required Pattern: official
<div> <div> <div> system </div> </div> </div>		1..1	uri	The namespace for the identifier value Required Pattern: http://www.berzerkistan.gov/bni
<div> <div> <div> value </div> </div> </div>		1..1	string	The value that is unique
<div> <div> Identifier:NhibIdentifier </div> </div>		1..1	Identifier	An identifier for this patient
<div> <div> <div> use </div> </div> </div>		1..1	code	usual official temp secondary old (If known) Required Pattern: usual
<div> <div> <div> system </div> </div> </div>		1..1	uri	The namespace for the identifier value Required Pattern: http://www.berzerkistan.gov/nhib
<div> <div> <div> value </div> </div> </div>		1..1	string	The value that is unique
<div> name </div>		1..1	HumanName	A name associated with the patient
<div> <div> family </div> </div>		1..1	string	Family name (often called 'Surname')
<div> <div> given </div> </div>		1..*	string	Given names (not always 'first'). Includes middle names
<div> telecom </div>		1..1	ContactPoint	A contact detail for the individual
<div> <div> system </div> </div>		1..1	code	phone fax email pager url sms other Required Pattern: phone
<div> <div> value </div> </div>		1..1	string	The actual contact point details phone-number-country-code: Patient.telecom.value must begin with +5411
<div> gender </div>		1..1	code	male female other unknown
<div> birthDate </div>		1..1	date	The date of birth for the individual

[? Documentation for this format](#)

2.1.1.1.1 Constraints

Id	Grade	Path(s)	Details	Requirements
phone-number-country-code	error	Patient.telecom.value	Patient.telecom.value must begin with +5411 : substring(0,5) = '+5411'	

THE PROBLEM

The Implementation Guide is not providing a conformant **example**, and we need one to publish.

The infamous IG author provided us with a flawed example.

It contains 5 errors.

Your job is to validate the example and fix it.

This is the flawed example provided by the IG Author

```
{
  "resourceType" : "Patient",
  "id" : "PatientAlbertGruollian",
  "meta" : {
    "profile" :
["http://minhealth.gov.bk/core/StructureDefinition/Berzerki
stanPatient"]
  },
  "extension" : [{
    "url" :
"http://minhealth.gov.bk/core/StructureDefinition/PPHTaxSit
uation",
    "valueCode" : "X"
  }],
  "identifier" : [{
    "use" : "official",
    "system" : "http://www.berzerkistan.gov/bni",
    "value" : "9000031"
  }],
  {
    "use" : "usual",
    "system" : "http://www.mypatients.gov/number",
    "value" : "23327758999"
  }],
  "name" : [{
    "family" : "Gruollian",
    "given" : ["Albert"]
  }],
  "telecom" : [{
    "system" : "phone",
    "value" : "+341155555555"
  }],
  "birthDate" : "1922-06-14"
}
```

HOW TO PROCEED

Fixing the Example

You need to do a POST `[url]/Patient/$validate`
to a server capable of validating against this Implementation Guide.
We are providing one: <http://fhirserver.hl7fundamentals.org/fhir>

So, you need to do:

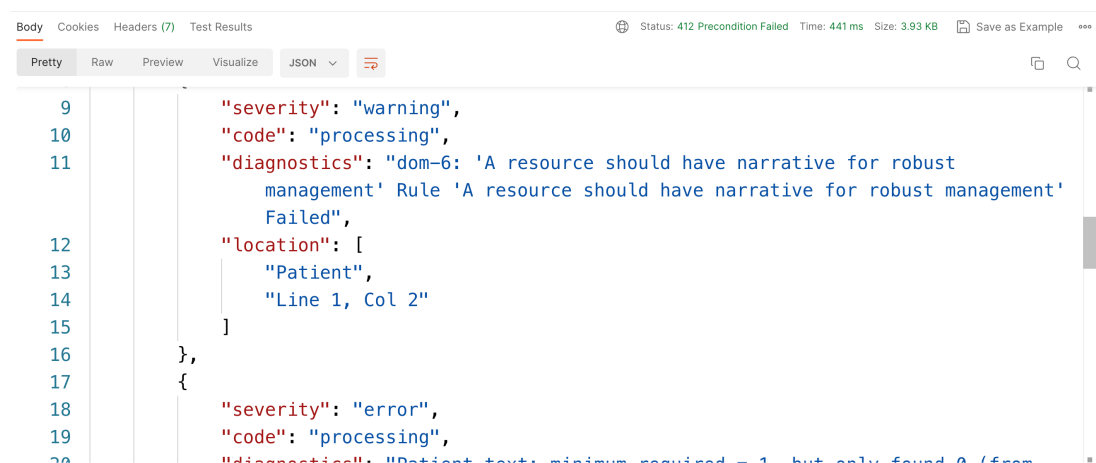
POST [http://fhirserver.hl7fundamentals.org/fhir/Patient/\\$validate](http://fhirserver.hl7fundamentals.org/fhir/Patient/$validate)

You need to include the flawed example as your request JSON Body
(Remember to include the header Content-Type : application/fhir+json)



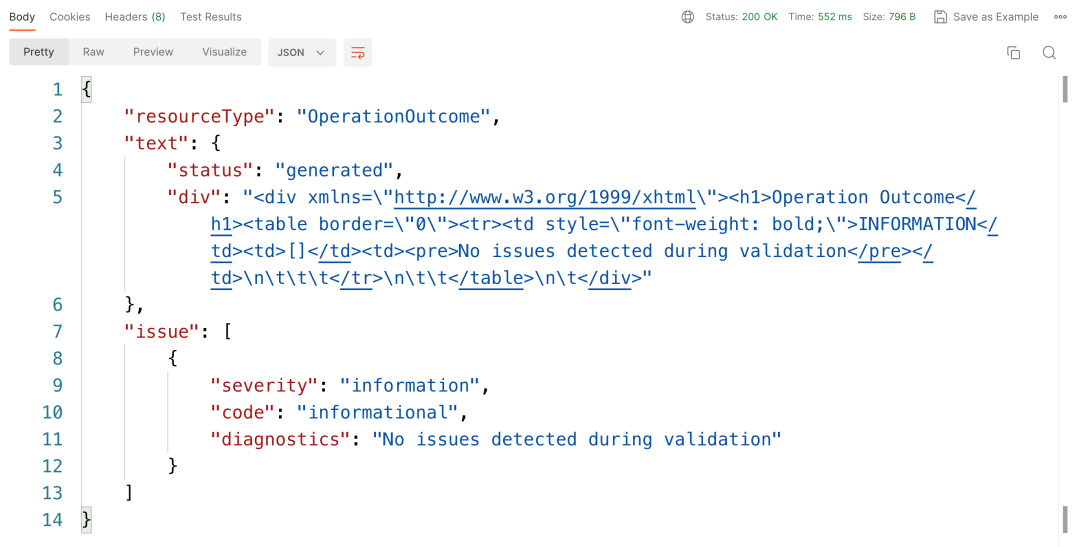
You need to include the flawed example as your request JSON Body

You will obtain a [412] status response detailing the errors in your JSON instance until you fix all the errors.



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This is what you will obtain once your instance is conformant to the requirements of the profile: an informational message stating that there were no issues.



```
1 {
2   "resourceType": "OperationOutcome",
3   "text": {
4     "status": "generated",
5     "div": "<div xmlns='http://www.w3.org/1999/xhtml'><h1>Operation Outcome</h1><table border='0'><tr><td style='font-weight: bold;'>INFORMATION</td><td>[]</td><td><pre>No issues detected during validation</pre></td></tr></table></div>"
6   },
7   "issue": [
8     {
9       "severity": "information",
10      "code": "informational",
11      "diagnostics": "No issues detected during validation"
12    }
13  ]
14 }
```

Submitting your assignment

Once your Patient resource is validated, you can use the submission page of the assignment to do a final test and submit (you need to submit only the JSON for your patient resource)