

MedMij FHIR use case BgZ , version 2017.01



A newer version is available, see https://informatiestandaarden.nictiz.nl/wiki/MedMij:Vcurrent_FHIR_IG



BGZ



AFSPRAKENSTELSEL



FUNCTIONEEL



TECHNISCH

Inhoud

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Introduction

The Basisgegevensset Zorg (BgZ) can be seen as representation of a patient summary. The patient journey of Thomas van Beek (<https://www.nictiz.nl/ehealth/MedMij>), provides a patient's context for exchanging a patient summary from a healthcare provider's system (XIS) to a personal health record (PHR). MedMij created a functional design (https://informatiestandaarden.nictiz.nl/wiki/MedMij:V2017.01_Ontwerpen) of the BgZ use case. This use case consists of enabling a patient to view his own BgZ in a PHR. This page will elaborate further on the HL7 FHIR details needed to exchange the BgZ information using FHIR.





FUNCTIONEEL

The BgZ is represents a selection of the minimal required information to provide continuity of healthcare. A total of 26 Health and Care Information models (Dutch: Zorginformatiebouwsteen or ZIB) constitute the BgZ version 1.0 (https://www.registratieaandebron.nl/pdf/Basisgegevensset_Zorg_v1_0.pdf). The BgZ makes a subselection of the information concepts within these 26 ZIBs or restricts the ZIBs to a certain category. For example, only include the general practitioner of the patient or only the last known value of 'X'.

MedMij created FHIR profiles that represent these 26 ZIBs completely, if no existing and usable profiles were available. The profiles represent their entire respective ZIB, to make them applicable in a broader context than a patient summary or a MedMij context. An overview of the profiles can be found at the [list of](#)

StructureDefinitions. This page shows how to use these profiles in the BgZ use case.

Actors involved

Persons		Systems		FHIR Capability Statements	
Name	Description	Name	Description	Name	Description
Patient	The user of a personal healthcare environment.	PHR	Personal health record	 CapabilityStatement: Client (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/CapabilityStatement/bg-z-clientcapabilities&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	BgZ FHIR Client requirements
Healthcare professional	The user of a XIS	XIS	Healthcare information system	 CapabilityStatement: Server (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/CapabilityStatement/bg-z-servercapabilities&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	BgZ FHIR Server requirements

Boundaries and Relationships

The BgZ use case has similarities and differences with other use cases such as Medication Process, Vital Signs and Lab Results. These use cases use the same ZIB based FHIR profiles for exchanging information. The BgZ use case covers practically all profiles included in the other use cases. However, the BgZ differs in scope of the actual health information content that should be exchanged. For example, the BgZ conveys only the last known lab result of each type while the Lab Results use case may cover all known information.

List of invocations

This FHIR implementation guide assumes that the PHR system is able to make a connection to the XIS that contains the patient's BgZ information. It does not provide information on finding the right XIS nor does it provide information about security. These infrastructure and interface specifications are described in section 7 (Architectuur en technische specificaties) of 'Afsprakenstelsel release 1.0 version 0.3' (<https://www.medmij.nl/afsprakenstelsel/>).



Client - PHR

The PHR system can request the BgZ using individual search interactions. The search interaction searches the current resources based on some filter criteria. The interaction can be performed by an HTTP GET or command as shown:

```
GET [base]/[type]/{?[parameters]}&_format=[mime-type]}
```

The BgZ consists of multiple FHIR resources with certain constraints. To obtain the patient's BgZ, the client can use multiple individual search operations based on specified search queries. The client may also bundle the search operations in a batch. The individual requests are discussed first, followed by the batch procedure.

Individual resource requests

The table below shows in the first four columns the BgZ sections, the ZIBs that constitute those sections and the specific content of the BgZ. The last column shows the FHIR search queries to obtain the needed information for the BgZ. These queries are based on StructureDefinitions listed in [this section](#).

Each query contains the patient's identifier indicated with the following parameter: [patient-id]. In a MedMij PHR context, this cannot be the Patient's BSN (citizen service number). The BSN is by law not allowed to be used by other systems than those of healthcare providers. Based on infrastructure and interface specifications as described in the 'Afsprakenstelsel' (<https://www.medmij.nl/afsprakenstelsel/>) a token will be used to identify the patient across the MedMij network.

[verbergen] #	BgZ Section	ZIB EN	Content	Example Search URL
1	Patient information	Patient	BSN, birthdate, gender, deceasedindicator, contact details, contact persons, and general practitioner (practitioner or organization)	<pre>GET [base]/Patient?identifier=[patient-id]&_include=Patient:general-practitioner</pre>
2	Payment details	Payer	Insurance information	<pre>GET [base]/Coverage?subscriber:Patient.identifier=[patient-id]&_include=Coverage:payor:Patient&_include=Coverage:payor:Organization</pre>
3	Treatment directives	TreatmentDirective	Known treatment directives	<pre>GET [base]/Consent?patient.identifier=[patient-id]&category=http://snomed.info/sct 11291000146105</pre>
		Advance directive	Known advance directives	<pre>GET [base]/Consent?patient.identifier=[patient-id]&category=http://snomed.info/sct 11341000146107</pre>
4	Contactperson	Contact	Primary relation/contact	<pre>see Patient</pre>
5	Functional status	FunctionalOrMentalStatus	Last known functional / mental status	<pre>GET [base]/Observation/\$lastn?patient.identifier=[patient-id]&category=http://snomed.info/sct 118228005,http://snomed.info/sct 364644000</pre>
6	Problems	Concern	All known problems for the following categories: problem, condition, diagnosis, symptom, finding, complaint, functional limitation, complication.	<pre>GET [base]/Condition?patient.identifier=[patient-id]&category=in=http://decor.nictiz.nl/fhir/ValueSet/2.16.840.1.113883.2.4.3.11.60.40.2.5.1.1--20150401000000</pre>
8	Social history	MaritalStatus	Current marital status	<pre>see Patient</pre>
		LivingSituation	Current living situation	<pre>GET [base]/Observation/\$lastn?patient.identifier=[patient-id]&code=http://snomed.info/sct 365508006</pre>
		DrugUse	All known drug use	<pre>GET [base]/Observation?patient.identifier=[patient-id]&code=http://snomed.info/sct 228366006</pre>
		AlcoholUse	All known alcohol use	<pre>GET [base]/Observation?patient.identifier=[patient-id]&code=http://snomed.info/sct 228273003</pre>
		TobaccoUse	All known tobacco use	<pre>GET [base]/Observation?patient.identifier=[patient-id]&code=http://snomed.info/sct 365980008</pre>
		NutritionAdvice	All known current dietary recommendations	<pre>GET [base]/NutritionOrder?patient.identifier=[patient-id]&status=active</pre>
9	Alerts	Alert	All known alerts	<pre>GET [base]/Flag?patient.identifier=[patient-id]</pre>
		AllergyIntolerance	All known information regarding allergies	<pre>GET [base]/AllergyIntolerance?patient.identifier=[patient-id]</pre>
10	Medication	MedicationUse	Current medication use	<pre>GET [base]/MedicationStatement?patient.identifier=[patient-id]&status=active&category=urn:oid:2.16.840.1.113883.2.4.3.11.60.20.77.5.3 6&_include=MedicationStatement:medication</pre>

		MedicationAgreement	Current prescriptions	<pre>GET [base]/MedicationRequest?patient.identifier=[patient-id]& status=active &category=http://snomed.info/sct 16076005& include=MedicationRequest:medication</pre>
11	Medial aids	MedicalAid	All known medicalaids	<pre>GET [base]/DeviceUseStatement?patient.identifier=[patient- id]& include=DeviceUseStatement:device</pre>
12	Vaccinations	Vaccination	All known vaccinations	<pre>GET [base]/Immunization?patient.identifier=[patient-id]& status=completed</pre>
13	Vital signs	BloodPressure	Last known bloodpressure	<pre>GET [base]/Observation/\$lastn?patient.identifier=[patient-id]& code=http://loinc.org 85354-9</pre>
		BodyWeight	Last known body weight	<pre>GET [base]/Observation/\$lastn?patient.identifier=[patient-id]& code=http://loinc.org 29463-7</pre>
		BodyHeight	Last known body height	<pre>GET [base]/Observation/\$lastn?patient.identifier=[patient-id]& code=http://loinc.org 8302-2,http://loinc.org 8306-3,http: //loinc.org 8308-9</pre>
14	Results	LaboratoryTestResult	Last known laboratory results per type	<pre>GET [base]/Observation/\$lastn?patient.identifier=[patient-id]& category=http://snomed.info/sct 275711006& include=Observation:related-target& include=Observation:specimen</pre>
15	Procedures	Procedure	All surgical procedures	<pre>GET [base]/Procedure?patient.identifier=[patient-id]& category=http://snomed.info/sct 365508006</pre>
16	Encounters	Contact	All hospital admissions (no outpatient contacts)	<pre>GET [base]/Encounter?patient.identifier=[patient-id] &class=http://hl7.org/fhir/v3/ActCode IMP,http://hl7.org/fhir/v3 /ActCode ACUTE,http://hl7.org/fhir/v3/ActCode NONAC</pre>
17	Planned care	PlannedCareActivity	All known planned care activities	<pre>GET [base]/ProcedureRequest?patient.identifier=[patient-id]& status=active</pre>
				<pre>GET [base]/ImmunizationRecommendation?patient.identifier=[patient- id]</pre>
				<pre>GET [base]/MedicationDispense?patient.identifier=[patient-id]& category=http://snomed.info/sct 422037009&status=in- progress,preparation</pre>
				<pre>GET [base]/DeviceRequest?patient.identifier=[patient-id]& status=active</pre>
				<pre>GET [base]/Appointment?patient.identifier=[patient-id]& status=booked,pending,proposed</pre>
18	General practitioner	HealthProfessional	General Practitioner of the patient	<pre>see Patient</pre>

Batch request

A FHIR [Bundle](http://hl7.org/fhir/bundle.html) resource (<http://hl7.org/fhir/bundle.html>) can be used to group the individual resources requests of the BgZ. If a bundle is used to query the BgZ, the bundle SHALL be of type = "batch".

A batch (type = "batch") consists of a series of entries. Each entry element SHALL contain a request element. Each entry has the details of an HTTP operation that informs the system processing the batch what to do with the entry. The bundle with type = batch is a transaction that is intended to be processed by a server as a group of actions in contrary to a bundle with type = 'transaction' where the entire set of HTTP operations is intended to be processed by a server as an atomic commit.

A batch interaction is performed by an HTTP POST command as shown:

```
POST [base] {?_format=[mime-type]}
```

The content of the post submission is a Bundle with Bundle.type = batch. Each entry carries request details (Bundle.entry.request) that provides the HTTP details of the action in order to inform the system processing the batch or what to do for the entry (note: the request is optional, but SHOULD be present). Every bundle.entry retrieves a resource using a GET method and a specified url. The XML below demonstrates a batch of requests that can be send to a server. This example can also be found [here](http://hl7.org/fhir/bundle-request-simplesummary.xml.html) (<http://hl7.org/fhir/bundle-request-simplesummary.xml.html>).

```
<Bundle xmlns="http://hl7.org/fhir">
  <id value="bundle-request-simplesummary"/>
  <type value="batch"/>

  <!-- Each entry is used to represent a RESTful API request
        This request retrieves a single Patient resource -->
  <entry>
    <request>
      <method value="GET"/>
      <url value="/Patient/example"/>
    </request>
  </entry>
  <!-- This request will retrieve the conditions for the patient -->
  <entry>
    <request>
      <method value="GET"/>
      <url value="/Condition?patient=example"/>
    </request>
  </entry>
  <!-- This request will retrieve the MedicationStatements for the patient
        requested above -->
  <entry>
    <request>
      <method value="GET"/>
      <url value="/MedicationStatement?patient=example"/>
    </request>
  </entry>
</Bundle>
```

Example batch request

A predefined BgZ bundle batch can be found here: <https://simplifier.net/packages/nictiz.fhir.nl.stu3.zib2015/1.0.0/files/133104/~xml>.

Server - XIS

Important sections of the FHIR specification for a server in this use case are the RESTful API section (<http://hl7.org/fhir/STU3/http.html#2.21.0>) the search section (<http://hl7.org/fhir/STU3/search.html>) and operation section (<http://hl7.org/fhir/STU3/operations.html>) (for the nlast operation).

Response on individual resource requests

If the search succeeds, the server SHALL return a 200 OK HTTP status code and the return content SHALL be a Bundle with type = searchset containing the results of the search as a collection of zero or more resources in a defined order. The result collection can be long, so servers may use paging. If they do, they SHALL use the method described below (adapted from RFC 5005 (Feed Paging and Archiving) for breaking the collection into pages if appropriate. The server MAY also return an [OperationOutcome](http://hl7.org/fhir/operationoutcome.html) resource (<http://hl7.org/fhir/operationoutcome.html>) within the searchset Bundle entries that contains additional information about the search; if one is sent it SHALL NOT include any issues with a fatal or error severity, and it SHALL be marked with a Bundle.entry.search.mode of outcome.

In order to allow the client to be confident about what search parameters were used as criteria by the server, the server SHALL return the parameters that were actually used to process the search. Applications processing search results SHALL check these returned values where necessary. For example, if the server did not support some of the filters specified in the search, a client might manually apply those filters to the retrieved result set, display a warning message to the user or take some other action.

In the case of a RESTful search, these parameters are encoded in the self link in the bundle that is returned:

```
<link>
  <relation value="self"/>
  <url value="http://example.org/Patient?identifier=[Patient-ID]"/>
</link>
```

Link to the relevant FHIR specification: <http://hl7.org/fhir/STU3/http.html#search>

Response for a batch request

For a batch the response the server SHALL return a Bundle with type set to batch-response that contains one entry for each entry in the request, in the same order, with the outcome of processing the entry. For the BgZ bundle batch, the response is a bundle of type = batch-response with multiple entries containing bundles of type = searchset that correspond to the individual search queries.

A client may use the returned Bundle to track the outcomes of processing the entry, and the identities assigned to the resources by the server. Each entry element

SHALL contain a response element which details the outcome of processing the entry - the HTTP status code, and the location and ETag header values, which are used for identifying and versioning the resources. In addition, a resource may be included in the entry, as specified by the Prefer header.

Link to relevant FHIR specification: <http://hl7.org/fhir/STU3/http.html#transaction-response>

Handling errors

If the search fails (cannot be executed, not that there is no matches), the return value is a status code 4xx or 5xx with an OperationOutcome. A HTTP status code of 403 signifies that the server refused to perform the search, while other 4xx and 5xx codes signify that some sort of error has occurred. When the search fails, a server SHOULD return an OperationOutcome detailing the cause of the failure. Note: An empty search result is not a failure.

In some cases, parameters may cause an error. For instance:

- A parameter may refer to a non-existent resource e.g. GET [base]/Observation?subject=101, where "101" does not exist
- A parameter may refer to an unknown code e.g. GET [base]/Observation?code=loinc|1234-1, where the LOINC code "1234-1" is not known to the server
- A parameter may refer to a time that is out of scope e.g. GET [base]/Condition?onset=1e1995, where the system only has data going back to 2001
- A parameter may use an illegal or unacceptable modifier e.g. GET [base]/Condition?onset:text=1995, where the modifier cannot be processed by the server
- A data time parameter may have incorrect format e.g. GET [base]/Condition?onset=23%20May%202009
- A parameter may be unknown or unsupported

Where the content of the parameter is syntactically incorrect, servers SHOULD return an error. However, where the issue is a logical condition (e.g. unknown subject or code), the server SHOULD process the search, including processing the parameter - with the result of returning an empty search set, since the parameter cannot be satisfied.

In such cases, the search process MAY include an OperationOutcome in the search set that contains additional hints and warnings about the search process. This is included in the search results as an entry with search mode = outcome. Clients can use this information to improve future searches.

Common HTTP Status codes returned on FHIR-related errors (in addition to normal HTTP errors related to security, header and content type negotiation issues):

- 400 Bad Request - search could not be processed or failed basic FHIR validation rules
- 401 Not Authorized - authorization is required for the interaction that was attempted
- 404 Not Found - resource type not supported, or not a FHIR end-point

Link to relevant FHIR specification: <http://hl7.org/fhir/STU3/search.html#errors>

Example batch response

An example of a batch response can be found here: <https://simplifier.net/NictizSTU3/batch-response/~xml>.

The batch-response is a bundle that contains bundles of the type = searchset in the entries. These bundles of type = searchset represent the individual queries in the bundle that is posted to the server. Please note that this example does not contain actual search results. There is no patient with the identifier '123456789' on the server. Therefore all the returned bundles are empty.

Interactions, operations, search parameters

Interactions

The following logical interactions are needed for the BgZ use case:

- Search (<http://hl7.org/fhir/STU3/http.html#search>)
- Batch/Transaction (<http://hl7.org/fhir/STU3/http.html#transaction>)

Operations

The following operation (<http://hl7.org/fhir/STU3/operations.html>) is needed to support this use case.

- Last N Observations Query (<http://hl7.org/fhir/STU3/observation-operations.html#lastn>)

The lastn query meets the common need for searching for the most recent or last n=number of observations for a subject. For example, retrieving the last 5 temperatures for a patient to view trends or fetching the most recent laboratory results or vitals signs. The link will provide more detailed information and examples regarding this operation.

Search parameters

The following search parameter types and search result parameters need to be supported for this use case.











Search parameter types:











- token (<http://hl7.org/fhir/STU3/search.html#token>)
 - Including modifier 'in'
- reference (<http://hl7.org/fhir/STU3/search.html#reference>)







Search result parameters:





- `_include` (<http://hl7.org/fhir/STU3/search.html#include>)
- `_revinclude` (<http://hl7.org/fhir/STU3/search.html#include>)

List of StructureDefinitions

Section	ZIB NL	ZIB EN	FHIR Resource	URL Profile	Reference to section
01	Patient	Patient	Patient	http://fhir.nl/fhir/StructureDefinition/nl-core-patient (https://simplifier.net/resolve?target=simplifier&canonical=http://fhir.nl/fhir/StructureDefinition/nl-core-patient&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Patient
02	Betalers	Payer	Coverage	http://nictiz.nl/fhir/StructureDefinition/zib-Payer (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-Payer&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Payer
			Organization	http://fhir.nl/fhir/StructureDefinition/nl-core-organization (https://simplifier.net/resolve?target=simplifier&canonical=http://fhir.nl/fhir/StructureDefinition/nl-core-organization&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 HealthcareProvider
			Patient	http://fhir.nl/fhir/StructureDefinition/nl-core-patient (https://simplifier.net/resolve?target=simplifier&canonical=http://fhir.nl/fhir/StructureDefinition/nl-core-patient&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Patient
03	BehandelAanwijzing	TreatmentDirective	Consent	http://nictiz.nl/fhir/StructureDefinition/zib-TreatmentDirective (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-TreatmentDirective&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 TreatmentDirective
	Wilsverklaring	AdvanceDirective	Consent	http://nictiz.nl/fhir/StructureDefinition/zib-AdvanceDirective (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-AdvanceDirective&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 AdvanceDirective
04	Contactpersoon	Contact	RelatedPerson	http://fhir.nl/fhir/StructureDefinition/nl-core-relatedperson (https://simplifier.net/resolve?target=simplifier&canonical=http://fhir.nl/fhir/StructureDefinition/nl-core-relatedperson&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 RelatedPerson
05	Funct. OfMentaleStatus	FunctionalOrMentalStatus	Observation	http://nictiz.nl/fhir/StructureDefinition/zib-FunctionalOrMentalStatus (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-FunctionalOrMentalStatus&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 FunctionalOrMentalStatus
06	OverdrachtConcern	Concern	Condition	http://nictiz.nl/fhir/StructureDefinition/zib-Concern (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-Concern&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Concern
08	BurgerlijkeStaat	MaritalStatus	Patient	http://fhir.nl/fhir/StructureDefinition/nl-core-patient (https://simplifier.net/resolve?target=simplifier&canonical=http://fhir.nl/fhir/StructureDefinition/nl-core-patient&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Patient

				3.zib2015@1.0.0)	
	Woonsituatie	LivingSituation	Observation	http://nictiz.nl/fhir/StructureDefinition/zib-LivingSituation (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-LivingSituation&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 LivingSituation
	DrugsGebruik	DrugUse	Observation	http://nictiz.nl/fhir/StructureDefinition/zib-DrugUse (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-DrugUse&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 DrugUse
	AlcoholGebruik	AlcoholUse	Observation	http://nictiz.nl/fhir/StructureDefinition/zib-AlcoholUse (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-AlcoholUse&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 AlcoholUse
	TabakGebruik	TobaccoUse	Observation	http://nictiz.nl/fhir/StructureDefinition/zib-TobaccoUse (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-TobaccoUse&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 TobaccoUse
	Voedingsadvies	NutritionAdvice	NutritionOrder	http://nictiz.nl/fhir/StructureDefinition/zib-NutritionAdvice (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-NutritionAdvice&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 NutritionAdvice
	Nationaliteit	Nationality	Patient	http://fhir.nl/fhir/StructureDefinition/nl-core-patient (https://simplifier.net/resolve?target=simplifier&canonical=http://fhir.nl/fhir/StructureDefinition/nl-core-patient&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Patient
09	Alert	Alert	Flag	http://nictiz.nl/fhir/StructureDefinition/zib-Alert (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-Alert&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Alert
	Allergielntolerantie	AllergyIntolerance	AllergyIntolerance	http://nictiz.nl/fhir/StructureDefinition/zib-AllergyIntolerance (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-AllergyIntolerance&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 AllergyIntolerance
10	MedicatieGebruik	MedicationUse	MedicationStatement	http://nictiz.nl/fhir/StructureDefinition/zib-MedicationUse (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-MedicationUse&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 MedicationUse
		MedicationAgreement	MedicationRequest	http://nictiz.nl/fhir/StructureDefinition/zib-MedicationAgreement (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-MedicationAgreement&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 MedicationAgreement

11	MedischHulpmiddel	MedicalAid	Device	http://nictiz.nl/fhir/StructureDefinition/zib-MedicalAidProduct (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-MedicalAidProduct&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 MedicalAid
			DeviceUseStatement	http://nictiz.nl/fhir/StructureDefinition/zib-MedicalAid (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-MedicalAid&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	
12	Vaccinatie	Vaccination	Immunization	http://nictiz.nl/fhir/StructureDefinition/zib-Vaccination (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-Vaccination&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Vaccination
			ImmunizationRecommendation	http://nictiz.nl/fhir/StructureDefinition/zib-VaccinationRecommendation (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-VaccinationRecommendation&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	
13	Bloeddruk	BloodPressure	Observation	http://nictiz.nl/fhir/StructureDefinition/zib-BloodPressure (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-BloodPressure&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 BloodPressure
	LichaamsGewicht	BodyWeight	Observation	http://nictiz.nl/fhir/StructureDefinition/zib-BodyWeight (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-BodyWeight&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 BodyWeight
	LichaamsLengte	BodyHeight	Observation	http://nictiz.nl/fhir/StructureDefinition/zib-BodyHeight (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-BodyHeight&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 BodyHeight
14	LaboratoriumUitslag	LaboratoryTestResult	Observation	http://nictiz.nl/fhir/StructureDefinition/zib-LaboratoryTestResult-Observation (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-LaboratoryTestResult-Observation&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 LaboratoryTestResult
			DiagnosticReport	http://nictiz.nl/fhir/StructureDefinition/zib-LaboratoryTestResult-DiagnosticReport (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-LaboratoryTestResult-DiagnosticReport&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	
			Specimen	http://nictiz.nl/fhir/StructureDefinition/zib-LaboratoryTestResult-Specimen (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-LaboratoryTestResult-Specimen)	

				atoryTestResult-Specimen&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	
15	Verrichting	Procedure	Procedure	http://nictiz.nl/fhir/StructureDefinition/zib-Procedure (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-Procedure&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Procedure
16	Contact	Contact	Encounter	http://nictiz.nl/fhir/StructureDefinition/zib-Contact (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-Contact&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 Contact
17	GeplandeZorgActiviteit	PlannedCareActivity	ProcedureRequest	http://nictiz.nl/fhir/StructureDefinition/zib-ProcedureRequest (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-ProcedureRequest&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 PlannedCareActivity
			MedicationRequest	http://nictiz.nl/fhir/StructureDefinition/zib-MedicationAgreement (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-MedicationAgreement&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	
			ImmunizationRecommendation	http://nictiz.nl/fhir/StructureDefinition/zib-VaccinationRecommendation (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-VaccinationRecommendation&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	
			DeviceRequest	http://nictiz.nl/fhir/StructureDefinition/zib-MedicalAidRequest (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-MedicalAidRequest&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	
			Appointment	http://nictiz.nl/fhir/StructureDefinition/zib-Appointment (https://simplifier.net/resolve?target=simplifier&canonical=http://nictiz.nl/fhir/StructureDefinition/zib-Appointment&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	
18	Zorgverlener	HealthProfessional	Practitioner	http://fhir.nl/fhir/StructureDefinition/nl-core-practitioner (https://simplifier.net/resolve?target=simplifier&canonical=http://fhir.nl/fhir/StructureDefinition/nl-core-practitioner&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	 HealthProfessional
			PractitionerRole	http://fhir.nl/fhir/StructureDefinition/nl-core-practitionerrole (https://simplifier.net/resolve?target=simplifier&canonical=http://fhir.nl/fhir/StructureDefinition/nl-core-practitionerrole&scope=nictiz.fhir.nl.stu3.zib2015@1.0.0)	
	Zorgaanbieder	HealthcareProvider	Organization	http://fhir.nl/fhir/StructureDefinition/nl-core-organization (https://simplifier.net/resolve?target=simplifier&canonical=http://fhir.nl	 HealthcareProvider

Terminology, NamingSystems, Mappings

Terminology

Relevant value sets can be found in the package (<https://simplifier.net/packages/nictiz.fhir.nl.stu3.zib2015/1.0.0>).

NamingSystems

Relevant NamingSystems can be found in the package (<https://simplifier.net/packages/nictiz.fhir.nl.stu3.zib2015/1.0.0>).

Mappings

Relevant ZIB to FHIR value set mappings can be found in the package (<https://simplifier.net/packages/nictiz.fhir.nl.stu3.zib2015/1.0.0>). All profiles include ZIB mappings. ZIB concepts are mapped in the corresponding FHIR elements using the ZIB' concept id. The top of the StructureDefinition contains meta information regarding the ZIB mapping, such as the name and uri of the ZIB. In the StructureDefinition elements the corresponding ZIB ID is given including the mapping meta information id. This is illustrated in the following example.

```
<StructureDefinition>
  <id value="nl-core-patient" />
  .....
  <mapping>
    <identity value="zib-patient" />
    <uri value="https://zibs.nl/wiki/Patient(NL)" />
    <name value="Zorginformatiebouwsteen Patient" />
  </mapping>
  .....
  <element id="Patient.name">
    <path value="Patient.name" />
    <short value="NameInformation" />
    <alias value="Naamgegevens" />
    <type>
      <code value="HumanName" />
      <profile value="http://fhir.nl/fhir/StructureDefinition/nl-core-humanname" />
    </type>
    <mapping>
      <identity value="zib-patient" />
      <map value="NL-CM:0.1.6" />
    </mapping>
  </element>
  .....
</StructureDefinition>
```

Overgenomen van "https://informatiestandaarden.nictiz.nl/index.php?title=MedMij:V2017.01_FHIR_BGZ&oldid=32639"

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