



Health Gorilla Clinical Network™ API

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Table of Contents

FHIR RESTful Health Gorilla API	5
What Is New	5
Organization	6
Endpoint	6
FHIR Operations	6
Practitioner	7
Endpoint	8
FHIR Operations	8
PractitionerRole	10
Endpoint	10
FHIR Operations	10
Patient	12
Endpoint	12
FHIR Operations	13
AllergyIntolerance	15
Endpoint	15
FHIR Operations	16
CarePlan	18
Endpoint	19
FHIR Operations	19
Condition	21
Endpoint	21
FHIR Operations	21
Coverage	23
Endpoint	23
FHIR Operations	23
DeviceUseStatement	25
Endpoint	25
FHIR Operations	25
DiagnosticReport	27
Endpoint	28
FHIR Operations	28
DocumentReference	29
Endpoint	30
FHIR Operations	30

Encounter	32
Endpoint	33
FHIR Operations	33
Goal	35
Endpoint	35
FHIR Operations	35
FamilyMemberHistory	36
Endpoint	37
FHIR Operations	37
Immunization	38
Endpoint	39
FHIR Operations	40
MedicationStatement	41
Endpoint	42
FHIR Operations	42
Observation	45
Endpoint	46
FHIR Operations	46
Procedure	52
Endpoint	53
FHIR Operations	53
ProcedureRequest	55
Endpoint	55
FHIR Operations	56
RequestGroup	56
Endpoint	58
FHIR Operations	58
DirectMessage	59
Endpoint	60
FHIR Operations	60
Subscriptions	61
Endpoint	61
FHIR Operations	61
Examples	62
Subscription channel types	62
Appendix A	64
DiagnosticReport	64

Observation (Observation Group)	67
Observation (Observation Result)	69

FHIR RESTful Health Gorilla API

FHIR®, or Fast Healthcare Interoperability Resources, provides a lightweight REST-based access layer for standard HL7-defined data models.

The most actual list of endpoints can be found at the following URL:

<https://api.healthgorilla.com/fhir/metadata>

What Is New

- March'9 2019
 - New [Goal](#) FHIR resource and end point support was added
- March'21 2019
 - New [PractitionerRole](#) FHIR resource and end point support was added
 - [Practitioner](#) end point was extended to support search of all practitioners available in Health Gorilla catalog
- April'18 2019
 - New [Bundle](#) FHIR resource and end point support was added. Bundle resource is used to aggregate Clinical Note and related resources in a single document in the scope of C-CDA on FHIR implementation. Read more at [Clinical Notes](#)
 - New [MedicationDispense](#) FHIR resource and end point support was added.
 - [Subscriptions](#) end point was extended to support changes to Patient Conditions, Allergy Intolerance, Immunizations, Medication Requests, Medication Orders, Medication Dispensers, Encounters, Care Plans, Device Use, Observations, Family Member History, Goals and Procedures
 - Endpoints were extended to support *_lastUpdated*, *_offset* and *_count* search parameters
 - [Patient](#) end point supports Optimistic Locking now
 - [MedicationStatement](#) resource updated to include *derivedFrom* attribute to reference corresponding MedicationRequest and *method* attribute.
 - [Observation](#) FHIR resource was extended to support imaging category

Organization

Using Organization resource, you can obtain information about Practices, Laboratories, Hospitals and other facilities managed by HealthGorilla.

FHIR Resource: Organization <https://www.hl7.org/fhir/organization.html>

The following attributes are supported:

Field Name	Comments
<code>active</code>	
<code>type</code>	There are several value sets supported: <ol style="list-style-type: none">1. https://www.hl7.org/fhir/valueset-organization-type.html2. https://www.healthgorilla.com/fhir/ValueSet/facility-type3. https://www.healthgorilla.com/fhir/ValueSet/organization-type
<code>name</code>	
<code>telecom</code>	
<code>address</code>	
<code>partOf</code>	Link to the department or to the parent Organization.

Endpoint

<https://api.healthgorilla.com/fhir/Organization>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/Organization/{ID}</code>	GET	Retrieve organization by ID

2. Search

HTTP Request	Method	Action
--------------	--------	--------

<code>/Organization?[parameter={value}]</code>	GET	Retrieve Organizations by the specified search criteria
--	-----	---

Search Parameters:

Name	Type	Description
type	Token	A code for the type of organization.
name	string	A portion of the organization's name or alias.
address-state	string	A state specified in an address.
address-city	string	A city specified in an address.
address-postalcode	string	A postal code specified in an address.
ordering-enabled	token	A ordering-enabled property. Use to get only organizations that support ordering.
_count	number	A positive integer. If passed, then the server will not return more than specified.

Examples:

1. Search laboratories with name LabCorp that support ordering:

```
https://api.healthgorilla.com/fhir/Organization?type=http://hl7.org/fhir/organization-type|prov&name=LabCorp&ordering-enabled=true
```

2. Search practices in Sunnyvale:

```
https://api.healthgorilla.com/fhir/Organization?type=https://www.healthgorilla.com/fhir/organization-type|PR&address-city=Sunnyvale&name=HealthCenter
```

3. Search AETNA insurance companies in California

```
https://api.healthgorilla.com/fhir/Organization?type=http://hl7.org/fhir/organization-type|ins&name=AETNA&address-state=CA&_count=15
```

Practitioner

Using Practitioner resource, you can obtain information about Healthcare providers managed by HealthGorilla.

FHIR Resource: Practitioner <https://www.hl7.org/fhir/practitioner.html>

The following attributes are supported:

Field Name	Comments
identifier	- NPI - UID
active	
birthDate	
name	
telecom	
address	

Endpoint

<https://api.healthgorilla.com/fhir/Practitioner>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/Practitioner/{ID}</code>	GET	Retrieve provider by ID

2. Search

HTTP Request	Method	Action
<code>/Practitioner?[parameter={value}]</code>	GET	Retrieve providers by the specified search criteria

Search Parameters:

Name	Type	Description
Identifier	Token	A practitioner's Identifier.
name	String	
role	Token	The only value supported: doctor
speciality	Token	
near	Token	The coordinates expressed as [latitude]:[longitude] (using the WGS84 datum, see notes) to find locations near to.
near-distance	Quantity	Miles
address-state	String	
address-city	String	

address-postalcode	String	
_offset	Number	
_count	Number	Page size

Examples:

1. Search practitioner by NPI number:

```
https://api.healthgorilla.com/fhir/Practitioner?identifier=http://hl7.org/fhir/sid/us-npi|1234567893
```

2. Search practitioner by HealthGorilla assigned identifier:

```
https://api.healthgorilla.com/fhir/Practitioner?identifier=https://www.healthgorilla.com|f3c88f5b53910aba83b224f4
```

3. Search cardiologists by name within 10 miles around Sunnyvale, CA. PractitionerRole entries that refer to Practitioner records are also included into result bundle:

```
https://api.healthgorilla.com/fhir/Practitioner?
name=Gregory House
&role=doctor
&speciality=Cardiologist
&address-city=Sunnyvale
&address-state=CA
&near-distance=10
&_revinclude=PractitionerRole:practitioner
&_count=20
```

4. Search providers by name within 1000 miles in CA:

```
https://api.healthgorilla.com/fhir/Practitioner?
name=Gregory House
&role=doctor
&address-state=CA
&near-distance=1000
```

5. Search providers by name within 5 miles around the specified point:

```
https://api.healthgorilla.com/fhir/Practitioner?
name=Gregory House
&role=doctor
&near=37.3910024:-122.0765676
&near-distance=5
```

PractitionerRole

Using PractitionerRole resource, you can obtain information about Healthcare providers managed by HealthGorilla.

FHIR Resource: Practitioner <https://www.hl7.org/fhir/practitionerrole.html>

The following attributes are supported:

Field Name	Comments
identifier	<ul style="list-style-type: none">- NPI- UID
active	
code	Administrative Role <ul style="list-style-type: none">- http://hl7.org/fhir/practitioner-role- https://www.healthgorilla.com/administrative-role
specialty	
practitioner	
organization	
location	
telecom	
address	

Endpoint

<https://api.healthgorilla.com/fhir/PractitionerRole>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/PractitionerRole/{ID}</code>	GET	Retrieve provider by ID

2. Search

HTTP Request	Method	Action
<code>/PractitionerRole?[parameter={value}]</code>	GET	Retrieve providers by the specified search criteria

Search Parameters:

Name	Type	Description
Identifier	Token	A practitioner's Identifier.
practitioner	Reference	
organization	Reference	
location	Reference	
role	Token	The only value supported: doctor
specialty	Token	

Examples:

3. Search entries by NPI number:

```
https://api.healthgorilla.com/fhir/Practitioner?identifier=http://hl7.org/fhir/sid/us-npi|1234567893
```

4. Search entries by HealthGorilla assigned identifier:

```
https://api.healthgorilla.com/fhir/Practitioner?identifier=https://www.healthgorilla.com|f3c88f5b53910aba83b224f4
```

3. Search endocrinologists in the specified practice. Related Practitioner entries are also included into the result bundle:

```
https://api.healthgorilla.com/fhir/PractitionerRole?organization=t-d5da4352af2201ace56ca725&role=http://hl7.org/fhir/practitioner-role|doctor&specialty=Endocrinology&_include=PractitionerRole:practitioner
```

4. Search nurses in the specified practice and location. Related Organization entries are also included into the result bundle::

```
https://api.healthgorilla.com/fhir/PractitionerRole?organization=t-d5da4352af2201ace56ca725&location=t-d5da4352af2201ace56ca725-f3c88f5b53910aba83b224f4&role=http://hl7.org/fhir/practitioner-role|nurse&_include=PractitionerRole:organization
```

5. Get PractitionerRole entries by Practitioner:

```
https://api.healthgorilla.com/fhir/PractitionerRole
```

?paractitioner=d5da4352bb6290302c4cc8d7

Patient

The FHIR Patient resource defines demographics, care providers, and other administrative information about a person receiving care at a health organization. The Patient resource can be thought of as the starting point for many different client application workflows; often, a workflow will begin with a patient query and selection, and the server ID will be used to drive additional queries for diagnostic and care-related information.

FHIR Resource: Patient <https://www.hl7.org/fhir/patient.html>

Endpoint

<https://api.healthgorilla.com/fhir/Patient>

The following attributes are supported:

Field Name	Comments
active	
identifier	- MRN - SSN
photo	
name	
gender	
birthDate	
telecom	
address	
maritalStatus	
communication	
managingOrganization	
link	
http://hl7.org/fhir/extension-patient-interpretterrequired.html	Interpreter Required

http://hl7.org/fhir/us/core/StructureDefinition-us-core-race.html	Race
http://hl7.org/fhir/us/core/StructureDefinition-us-core-ethnicity	Ethnicity

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/Patient/{ID}</code>	GET	Retrieve patient by ID

2. Search

HTTP Request	Method	Action
<code>/Patient?[parameter={value}]</code>	GET	Retrieve Patient resources meeting the specified search criteria

Search Parameters:

Name	Type	Description
identifier	Token	Patient Identifier (MRN)
family	String	Patient Family Name
given	String	Patient Given Name
birthdate	String	Patient DOB (in YYYYMMDD format)
gender	Token	Patient Gender (F/M)
address-postalcode	String	Patient Postal (zip) code
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Search patients updated since March 2019

```
https://api.healthgorilla.com/fhir/Patient?_lastUpdated=gt2019-03&_offset=0&_count=5
```

2. Search patient by MRN:

```
https://api.healthgorilla.com/fhir/Patient?identifier=https://www.healthgorilla.com|8063965523692105bfc35def
```

3. Search patient by SSN:

```
https://api.healthgorilla.com/fhir/Patient?identifier=http://hl7.org/fhir/sid/us-ssn|000-00-0001
```

4. Search patient by name:

```
https://api.healthgorilla.com/fhir/Patient?given=Homer&family=Simpson
```

5. Search males were born after October 1998 and whose firstname contains 'Alex':

```
https://api.healthgorilla.com/fhir/Patient?given:contains=Alex&birthdate=gt1998-10&gender=male
```

3. Create

HTTP Request	Method	Action
/Patient	POST	Creates patient resource

The following attributes are required:

Name	Details
name	
gender	
birthDate	

3.1. Conditional create

This method also supports [conditional create](#). To use it, you need to set additional header:

If-None-Exist: [search parameters]

Supported parameters:

- given
- family
- gender
- birthdate

Example:

If-None-Exist:

given=Rajesh&family=Koothrappali&gender=male&birthdate=1981-01-30

4. Update

HTTP Request	Method	Action
--------------	--------	--------

<code>/Patient/{ID}</code>	PUT	Updates patient resource
----------------------------	-----	--------------------------

Update operation supports 'Optimistic Locking'

See <https://www.hl7.org/fhir/http.html#concurrency> for fore details.

If passed resource does not exist then it will be created (HTTP 201).

AllergyIntolerance

The FHIR AllergyIntolerance resource defines clinical information about a patient's allergic response to a substance. The AllergyIntolerance resource defines the substance that elicited the response, as well as when the reaction occurred, the severity, and the type of reaction noted.

FHIR Resource: AllergyIntolerance <https://www.hl7.org/fhir/allergyintolerance.html>

The following attributes are supported:

Name	Comment
verificationStatus	
criticality	
type	
category	
clinicalStatus	
code	
patient	
recorder	
onset	
assertedDate	Documentation Date
lastOccurrence	Completion Date
reaction	
reaction.manifestation	
reaction.severity	
reaction.substance	
reaction.description	

Endpoint

<https://api.healthgorilla.com/fhir/AllergyIntolerance>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/AllergyIntolerance/{ID}</code>	GET	Retrieve allergy resource by ID

2. Search

HTTP Request	Method	Action
<code>/AllergyIntolerance?[parameter={value}]</code>	GET	Retrieve allergies by the specified search criteria

Search Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve allergies by patient:

```
https://api.healthgorilla.com/fhir/AllergyIntolerance?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/AllergyIntolerance?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve allergies for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/AllergyIntolerance?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
<code>/AllergyIntolerance</code>	POST	Creates allergy resource

The following attributes are required:

Name	Details
type	
category	
code	
patient	

4. Update

HTTP Request	Method	Action
<code>/AllergyIntolerance/{ID}</code>	PUT	Updates allergy resource or creates new one

The following attributes are immutable:

Name	Details
type	
category	
patient	
code	
recorder	

5. Delete

HTTP Request	Method	Action
<code>/AllergyIntolerance/{ID}</code>	DELETE	Deletes allergy resource

Bundle

The Bundle resource is a container for a collection of resources.

FHIR Resource: Bundle <https://www.hl7.org/fhir/stu3/bundle.html>

Bundle resource is used to aggregate Clinical Note and related resources in a single document in scope of C-CDA on FHIR implementation. Bundle of type 'document' is used for this purpose. See FHIR Document <http://hl7.org/fhir/stu3/documents.html>

Endpoint

<https://api.healthgorilla.com/fhir/Bundle>

FHIR Operations

The following operations are currently supported

1. Create

HTTP Request	Method	Action
/Bundle	POST	Create new document

The operation outcome contains link to the newly created Composition resource.

3.1. Conditional create

This method also supports [conditional create](#). To use it, you need to set additional header: If-None-Exist: [search parameters] The only parameter is accepted 'identifier'.

Example:

If-None-Exist: identifier=00025

CarePlan

The CarePlan resource describes the intention of how one or more practitioners intend to deliver care for a patient, group or community for a period of time, possibly limited to care for a specific condition or set of conditions.

FHIR Resource: CarePlan <https://www.hl7.org/fhir/careplan.html>

The following attributes are supported:

Name	Comment
------	---------

subject	
status	
description	
participant	
careTeam	
period	
intent	
goal	
activity	
activity.outcomeReference	MedicationStatement, Encounter, Procedure, DeviceUseStatement
activity.detail	
activity.detail.category	
activity.detail.code	
activity.detail.description	
activity.detail.scheduled	
activity.detail.quantity	
activity.detail.product	
activity.detail.location	
activity.detail.performer	
activity.detail.reasonCode	
activity.detail.reasonReference	
note	
https://www.healthgorilla.com//fhir/StructureDefinition/record-recorder	Recorder

Endpoint

<https://api.healthgorilla.com/fhir/CarePlan>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/CarePlan/{ID}</code>	GET	Retrieve CarePlan resource by ID

2. Search

HTTP Request	Method	Action
<code>/CarePlan?[parameter={value}]</code>	GET	Retrieve CarePlan resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve CarePlans by patient:

```
https://api.healthgorilla.com/fhir/CarePlan?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/CarePlan?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/CarePlan?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
--------------	--------	--------

<code>/CarePlan</code>	POST	Creates CarePlan resource
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Activity may be passed using `activity.outcomeReference` or inside `activity.detail`.

The following attributes are required:

Name	Details
<code>subject</code>	

4. Update

HTTP Request	Method	Action
<code>/CarePlan/{ID}</code>	PUT	Updates CarePlan resource or creates new one

The following attributes are immutable:

Name	Details
<code>subject</code>	
<code>recorder</code>	

5. Delete

HTTP Request	Method	Action
<code>/CarePlan/{ID}</code>	DELETE	Deletes CarePlan resource

Composition

The Composition resource is a set of healthcare-related information that is assembled together into a single logical document that provides a single coherent statement of meaning, establishes its own context and that has clinical attestation with regard to who is making the statement.

FHIR Resource: Composition <https://www.hl7.org/fhir/stu3/composition.html>

Composition resource is used to describe Clinical Note document in scope of C-CDA on FHIR implementation.

Supported C-CDA on FHIR profile required to be set.

Endpoint

<https://api.healthgorilla.com/fhir/Composition>

FHIR Operations

The following operations are currently supported

1. Read

HTTP Request	Method	Action
<code>/Composition/{ID}</code>	GET	Retrieve Composition resource by ID

2. Search

HTTP Request	Method	Action
<code>/Composition?[parameter={value}]</code>	GET	Retrieve Composition resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
type	Token	Kind of composition (LOINC)

Examples:

1. Retrieve Progress Notes updated in April 2019 for the given patient:

```
https://api.healthgorilla.com/fhir/Composition?patient=8063965523692105bfc35def&type=11506-3&_lastUpdated=2019-04
```

3. Document

HTTP Request	Method	Action
<code>/Composition/{ID}/\$document</code>	GET	Generate a Document by ID

See <http://hl7.org/fhir/stu3/composition-operations.html>

Returns Composition and related resources packed into a single Bundle.

Condition

The Condition resource describes a clinical condition, problem, diagnosis, or other event, situation, issue, or clinical concept that has risen to a level of concern.

FHIR Resource: Condition <https://www.hl7.org/fhir/condition.html>

The following attributes are supported:

Name	Comment
<code>clinicalStatus</code>	
<code>onset</code>	
<code>subject</code>	
<code>code</code>	ICD10, Snomed
<code>asserter</code>	
<code>assertedDate</code>	

Endpoint

<https://api.healthgorilla.com/fhir/Condition>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/Condition/{ID}</code>	GET	Retrieve Condition resource by ID

2. Search

HTTP Request	Method	Action
<code>/Condition?[parameter={value}]</code>	GET	Retrieve Condition resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve Conditions by patient:

```
https://api.healthgorilla.com/fhir/Condition?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/Condition?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/Condition?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
<code>/Condition</code>	POST	Creates Condition resource

The following attributes are required:

Name	Details
<code>subject</code>	
<code>code</code>	

4. Update

HTTP Request	Method	Action
<code>/Condition/{ID}</code>	PUT	Updates Condition resource

The following attributes are immutable:

Name	Details
------	---------

subject	
code	

5. Delete

HTTP Request	Method	Action
/Condition/{ID}	DELETE	Deletes Condition resource

Coverage

The Coverage resource describes a patient's insurance.

FHIR Resource: Condition <https://www.hl7.org/fhir/coverage.html>

The following attributes are supported:

Name	Comment
identifier	Policy ID
type	
beneficiary	Related patient
relationship	Self, Spouse, Parent, Other
subscriber	
payor	Reference to insurance provider
grouping	
grouping.group	Group Number
grouping.planDisplay	Plan Name

order	1 - primary insurance 2 - secondary insurance 3 - tertiary insurance
-------	--

Endpoint

<https://api.healthgorilla.com/fhir/Coverage>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
/Coverage/{ID}	GET	Retrieve Coverage resource by ID

2. Search

HTTP Request	Method	Action
/Coverage?[parameter={value}]	GET	Retrieve Condition resources by the specified search criteria

Parameters:

Key	Type	Description
beneficiary	Reference	Patient Identifier

Examples:

1. Retrieve insurances by patient:

```
https://api.healthgorilla.com/fhir/Coverage?beneficiary=8063965523692105bfc35def
```

3. Create

HTTP Request	Method	Action
/Coverage	POST	Adds insurance to patient

The following attributes are required:

Name	Details
identifier	

beneficiary	
relationship	
payor	
grouping	

4. Delete

HTTP Request	Method	Action
/Coverage/{ID}	DELETE	Deletes insurance from patient

DeviceUseStatement

The DeviceUseStatement resource is a record of a device being used by a patient.

FHIR Resource: DeviceUseStatement <https://www.hl7.org/fhir/deviceusestatement.html>

The following attributes are supported:

Name	Comment
subject	Patient
whenUsed	
source	Practitioner
indication	
note	
device	

Device Resource support the following attributes:

Name	Comment
identifier	Serial Number (SNO)
type	
manufacturer	
manufactureDate	
model	
expirationDate	
lotNumber	
note	

Endpoint

<https://api.healthgorilla.com/fhir/DeviceUseStatement>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/DeviceUseStatement/{ID}</code>	GET	Retrieve DeviceUseStatement resource by ID

2. Search

HTTP Request	Method	Action
<code>/DeviceUseStatement?[parameter={value}]</code>	GET	Retrieve DeviceUseStatement resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	

Examples:

1. Retrieve Conditions by patient:

```
https://api.healthgorilla.com/fhir/DeviceUseStatement?patient=8063965523692105bfc35def
```

2. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/DeviceUseStatement?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
<code>/DeviceUseStatement</code>	POST	Creates DeviceUseStatement resource

The following attributes are required:

Name	Details
<code>subject</code>	
<code>device</code>	
<code>device.type</code>	

4. Update

HTTP Request	Method	Action
<code>/DeviceUseStatement/{ID}</code>	PUT	Updates DeviceUseStatement resource

The following attributes are immutable:

Name	Details
<code>subject</code>	
<code>device</code>	

5. Delete

HTTP Request	Method	Action
<code>/DeviceUseStatement/{ID}</code>	DELETE	Deletes DeviceUseStatement resource

DiagnosticReport

The DiagnosticReport resource contains the findings and interpretation of diagnostic tests performed on patients, groups of patients, devices, and locations, and/or specimens derived from these. The report includes clinical context such as requesting and provider information, and some mix of atomic results, images, textual and coded interpretations, and formatted representation of diagnostic reports.

FHIR Resource: DiagnosticReport <https://www.hl7.org/fhir/diagnosticreport.html>

The following attributes are supported:

Name	Comment
<code>identifier</code>	HG ID, ACSN
<code>status</code>	
<code>code</code>	
<code>category</code>	
<code>subject</code>	Patient
<code>effective</code>	
<code>issued</code>	

performer	Organization
result	Observations
conclusion	
codedDiagnosis	
presentedForm	
basedOn	ProcedureRequests
https://www.healthgorilla.com/fhir/StructureDefinition/patient-location	Patient Location (Room, Bad, Hospital)

Endpoint

<https://api.healthgorilla.com/fhir/DiagnosticReport>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
/DiagnosticReport/{ID}	GET	Retrieve DiagnosticReport resource by ID

2. Search

HTTP Request	Method	Action
/DiagnosticReport?[parameter={value}]	GET	Retrieve DiagnosticReport resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
category	Token	Which diagnostic discipline/department created the report
subject	Reference	The subject of the report
based-on	Reference	Reference to the procedure request.
_lastUpdated	Date	

Examples:

1. Retrieve diagnostic reports by patient:

```
https://api.healthgorilla.com/fhir/DiagnosticReport?patient=8063965523692105bfc35def
```

2. Get all laboratory reports by updated since 2017:

```
https://api.healthgorilla.com/fhir/DiagnosticReport?category=http://hl7.org/fhir/v2/0074|LAB&_lastUpdated=gt2017
```

DocumentReference

A DocumentReference resource is used to describe a document that is made available to a healthcare system. See: <https://www.hl7.org/fhir/documentreference.html>

FHIR Resource: DocumentReference <https://www.hl7.org/fhir/documentreference.html>

The following attributes are supported:

Name	Comment
identifier	
docStatus	
type	<ul style="list-style-type: none">- Loinc- https://www.healthgorilla.com/document-type
class	
subject	Patient
created	
description	
indexed	
author	Organization
authenticator	Practitioner
custodian	
securityLabel	

content	
content.attachment	
related	

Endpoint

<https://api.healthgorilla.com/fhir/DocumentReference>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
/DocumentReference/{ID}	GET	Retrieve document by ID

2. Search

HTTP Request	Method	Action
/DocumentReference?[parameter={value}]	GET	Retrieve documents by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
type	Token	Kind of document (LOINC if possible)
class	Token	Categorization of document
_lastUpdated	Date	

Examples:

1. Retrieve documents by patient:

```
https://api.healthgorilla.com/fhir/DocumentReference?patient=8063965523692105bfc35def
```

2. Get all Discharge Summary documents updated in August 2018:

```
https://api.healthgorilla.com/fhir/DocumentReference?type=18842-5&_lastUpdated=2018-08
```

3. Create

HTTP Request	Method	Action
<code>/DocumentReference</code>	POST	Creates new Document to the specified patient chart

The following attributes are required:

Name	Details
<code>subject</code>	
<code>type</code>	
<code>content.attachment</code>	

Example

```
{
  "resourceType": "DocumentReference",
  "status": "current",
  "type": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "56447-6",
        "display": "Plan of care note"
      },
      {
        "system":
"https://www.healthgorilla.com/document-type",
        "code": "PlanOfCare",
        "display": "Plan of Care"
      }
    ],
    "text": "Plan of Care"
  },
  "class": {
    "coding": [
      {
        "system": "http://loinc.org",
        "code": "56447-6",
        "display": "Plan of care note"
      }
    ]
  },
  "subject": {
```

```

    "reference": "Patient/03db435262ce2aba13b8d8c6",
    "display": "Lisa Simpson"
  },
  "created": "2018-10-02T04:30:00+03:00",
  "author": [
    {
      "display": "El Camino Hospital"
    }
  ],
  "authenticator": {
    "reference": "Practitioner/fc076a524383b188ffc10051",
    "display": "Robert Kelso, M.D."
  },
  "content": [
    {
      "attachment": {
        "contentType": "text/plain",
        "data": "d2Vla2x5IGRpZ2VzdCBj...",
        "size": 186,
        "title": "file.txt"
      }
    }
  ]
}

```

4. Delete

HTTP Request	Method	Action
<code>/DocumentReference/{ID}</code>	DELETE	Deletes Document

Encounter

The Encounter resource describes an interaction between a patient and healthcare provider(s) for the purpose of providing healthcare service(s) or assessing the health status of a patient.

FHIR Resource: Encounter <https://www.hl7.org/fhir/encounter.html>

The following attributes are supported:

Name	Comment
<code>type</code>	

subject	Patient
period	
reason	
diagnosis	
participant	
location	
https://www.healthgorilla.com/fhir/StructureDefinition/record-recorder	Recorder (Participant)

Endpoint

<https://api.healthgorilla.com/fhir/Encounter>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
/Encounter/{ID}	GET	Retrieve Encounter resource by ID

2. Search

HTTP Request	Method	Action
/Encounter?[parameter={value}]	GET	Retrieve Encounter resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve encounters by patient:

```
https://api.healthgorilla.com/fhir/Encounter?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/Encounter?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/Encounter?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
<code>/Encounter</code>	POST	Creates Encounter resource

The following attributes are required:

Name	Details
<code>subject</code>	
<code>type</code>	

4. Update

HTTP Request	Method	Action
<code>/Encounter/{ID}</code>	PUT	Updates Encounter resource

The following attributes are immutable:

Name	Details
<code>subject</code>	
<code>type</code>	
<code>recorder</code>	

5. Delete

HTTP Request	Method	Action
<code>/Encounter/{ID}</code>	DELETE	Deletes Encounter resource

Goal

The Goal resource describes the intended objectives for a patient, group or organization care.

FHIR Resource: Encounter <https://www.hl7.org/fhir/goal.html>

The following attributes are supported:

Name	Comment
subject	Patient
description	
startDate	
expressedBy	Practitioner
note	

Endpoint

<https://api.healthgorilla.com/fhir/Goal>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/Goal/{ID}</code>	GET	Retrieve Goal resource by ID

2. Search

HTTP Request	Method	Action
<code>/Goal?[parameter={value}]</code>	GET	Retrieve Goal resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve goals by patient:

```
https://api.healthgorilla.com/fhir/Goal?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/Goal?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/Goal?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
/Goal	POST	Creates Goal resource

The following attributes are required:

Name	Details
subject	
description	

4. Update

HTTP Request	Method	Action
/Goal/{ID}	PUT	Updates Goal resource

The following attributes are immutable:

Name	Details
subject	
description	

5. Delete

HTTP Request	Method	Action
/Goal/{ID}	DELETE	Deletes Goal resource

FamilyMemberHistory

The FamilyMemberHistory resource describes significant health events and conditions for a person related to the patient relevant in the context of care for the patient. This resource returns the current status, age, and medical and surgical history of relatives related to a specific patient.

FHIR Resource: FamilyMemberHistory <https://www.hl7.org/fhir/familymemberhistory.html>

The following attributes are supported:

Name	Comment
patient	
name	
relationship	
gender	
born	
deceased	
condition	
condition.code	
condition.outcome	
condition.onset	
condition.note	
https://www.healthgorilla.com/fhir/StructureDefinition/record-recorder	Recorder (Participant)

Endpoint

<https://api.healthgorilla.com/fhir/FamilyMemberHistory>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
--------------	--------	--------

<code>/FamilyMemberHistory/{ID}</code>	GET	Retrieve FamilyMemberHistory resource by ID
--	-----	---

2. Search

HTTP Request	Method	Action
<code>/FamilyMemberHistory?[parameter={value}]</code>	GET	Retrieve FamilyMemberHistory resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve FamilyMemberHistory records by patient:

```
https://api.healthgorilla.com/fhir/FamilyMemberHistory?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/FamilyMemberHistory?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/FamilyMemberHistory?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
<code>/FamilyMemberHistory</code>	POST	Creates FamilyMemberHistory resource

The following attributes are required:

Name	Details
------	---------

patient	
relationship	

4. Update

HTTP Request	Method	Action
<code>/FamilyMemberHistory/{ID}</code>	PUT	Updates FamilyMemberHistory resource

The following attributes are immutable:

Name	Details
patient	
recorder	

5. Delete

HTTP Request	Method	Action
<code>/FamilyMemberHistory/{ID}</code>	DELETE	Deletes FamilyMemberHistory resource

Immunization

The Immunization resource describes the event of a patient being administered a vaccination or a record of a vaccination as reported by a patient, a clinician or another party and may include vaccine reaction information and what vaccination protocol was followed.

FHIR Resource: Immunization <https://www.hl7.org/fhir/immunization.html>

The following attributes are supported:

Name	Comment
status	
notGiven	
vaccine	
patient	
date	
deceased	

expirationDate	
doseQuantity	
route	
practitioner	
location	
note	

The following Vaccine attributes are supported:

Name	Comment
vaccineCode	
manufacturer	
lotNumber	

Endpoint

<https://api.healthgorilla.com/fhir/Immunization>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/Immunization/{ID}</code>	GET	Retrieve Immunization by ID

2. Search

HTTP Request	Method	Action
<code>/Immunization?[parameter={value}]</code>	GET	Retrieve immunizations by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	

_offset	Number	
_count	Number	

Examples:

1. Retrieve immunizations records by patient:

```
https://api.healthgorilla.com/fhir/Immunization?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/Immunization?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/Immunization?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
/Immunization	POST	Creates immunization resource

The following attributes are required:

Name	Details
patient	
vaccine	

4. Update

HTTP Request	Method	Action
/Immunization/{ID}	PUT	Updates immunization resource

The following attributes are immutable:

Name	Details
patient	
practitioner	

vaccine	
---------	--

5. Delete

HTTP Request	Method	Action
/Immunization/{ID}	DELETE	Deletes immunization resource

MedicationStatement

The MedicationStatement resource describes a record of a medication that is being consumed by a patient. A MedicationStatement may indicate that the patient may be taking the medication now or has taken the medication in the past or will be taking the medication in the future.

FHIR Resource: MedicationStatement <https://www.hl7.org/fhir/STU3/medicationstatement.html>

The following attributes are supported:

Name	Comment
status	
effective	
medication	
subject	Patient
dosage	
reasonCode	
reasonReference	
partOf	MedicationDispense
taken	
note	
derivedFrom	MedicationRequest
https://www.healthgorilla.com/fhir/StructureDefinition/record-recorder	Recorder (Participant)

The following Medication attributes are supported:

Name	Comment
------	---------

code	
manufacturer	
ingredient	
form	

The following Dosage attributes are supported:

Name	Comment
dose	
timing	
route	
additionalInstruction	
method	

The following MedicationDispense attributes are supported:

Name	Comment
medication	
subject	Patient
quantity	
performer	
note	
dosageInstruction	
http://hl7.org/fhir/StructureDefinition/medicationdispense-validityPeriod	

Endpoint

<https://api.healthgorilla.com/fhir/MedicationStatement>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/MedicationStatement/{ID}</code>	GET	Retrieve MedicationStatement resource by ID

2. Search

HTTP Request	Method	Action
<code>/MedicationStatement?[parameter={value}]</code>	GET	Retrieve MedicationStatement resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve MedicationStatement records by patient:

```
https://api.healthgorilla.com/fhir/MedicationStatement?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/MedicationStatement?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/MedicationStatement?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
<code>/MedicationStatement</code>	POST	Creates MedicationStatement resource

The following attributes are required:

Name	Details
subject	
medication	
taken	

4. Update

HTTP Request	Method	Action
<code>/MedicationStatement/{ID}</code>	PUT	Updates MedicationStatement resource

The following attributes are immutable:

Name	Details
patient	
recorder	
medication	

5. Delete

HTTP Request	Method	Action
<code>/MedicationStatement/{ID}</code>	DELETE	Deletes MedicationStatement resource

MedicationDispense

Indicates that a medication product is to be or has been dispensed for a named person/patient.

FHIR Resource: MedicationDispense <http://hl7.org/fhir/STU3/medicationdispense.html>

The following attributes are supported:

Name	Comment
medication	
subject	Patient
dosageInstruction	
performer	
quantity	
note	
http://hl7.org/fhir/StructureDefinition/medicationdispense-validityPeriod	

Endpoint

<https://api.healthgorilla.com/fhir/MedicationDispense>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
/MedicationDispense/{ID}	GET	Retrieve MedicationStatement resource by ID

2. Search

HTTP Request	Method	Action
/MedicationDispense?[parameter={value}]	GET	Retrieve MedicationStatement resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve MedicationStatement records by patient:

```
https://api.healthgorilla.com/fhir/MedicationDispense?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/MedicationDispense?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/MedicationDispense?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
<code>/MedicationDispense</code>	POST	Creates MedicationStatement resource

If resource has status not equal to **completed** or **notDone** attribute is True then request is rejected. Only completed supplies are supported.

The following attributes are required:

Name	Details
<code>subject</code>	
<code>medication</code>	

4. Update

HTTP Request	Method	Action
<code>/MedicationDispense/{ID}</code>	PUT	Updates MedicationDispense resource

The following attributes are immutable:

Name	Details
patient	
medication	

5. Delete

HTTP Request	Method	Action
/MedicationDispense/{ID}	DELETE	Deletes MedicationDispense resource

MedicationRequest

An order or request for both supply of the medication and the instructions for administration of the medication to a patient.

FHIR Resource: MedicationRequest <http://hl7.org/fhir/STU3/medicationrequest.html>

The following attributes are supported:

Name	Comment
medication	
subject	Patient
dosageInstruction	
requester	
note	
authoredOn	
recorder	
reasonCode	
reasonReference	

Endpoint

<https://api.healthgorilla.com/fhir/MedicationRequest>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/MedicationRequest/{ID}</code>	GET	Retrieve MedicationRequest resource by ID

2. Search

HTTP Request	Method	Action
<code>/MedicationRequest?[parameter={value}]</code>	GET	Retrieve MedicationRequest resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve MedicationRequest records by patient:

```
https://api.healthgorilla.com/fhir/MedicationRequest?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/MedicationRequest?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/MedicationRequest?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
--------------	--------	--------

<code>/MedicationRequest</code>	POST	Creates MedicationRequest resource
---------------------------------	------	------------------------------------

If resource has status not equal to **completed** or **active** then the request is rejected. Only the given statuses are supported.

The following attributes are required:

Name	Details
<code>subject</code>	
<code>medication</code>	

4. Update

HTTP Request	Method	Action
<code>/MedicationRequest/{ID}</code>	PUT	Updates MedicationRequest resource

The following attributes are immutable:

Name	Details
<code>patient</code>	
<code>medication</code>	

5. Delete

HTTP Request	Method	Action
<code>/MedicationRequest/{ID}</code>	DELETE	Deletes MedicationRequest resource

Observation

The Observation resource describes measurements and simple assertions made about a patient, device or other subject.

FHIR Resource: Observation <https://www.hl7.org/fhir/observation.html>

HealthGorilla supports the following categories of Observation:

System	Code	Display
<code>http://hl7.org/fhir/observation-category</code>	<code>laboratory</code>	Laboratory

http://hl7.org/fhir/observation-category	imaging	Imaging
http://hl7.org/fhir/observation-category	vital-signs	Vital Sign
http://hl7.org/fhir/observation-category	social-history	Social History
https://www.healthgorilla.com/fhir/observation-category	functional-status	Functional Status

The following attributes are supported:

Name	Comment
status	
category	
code	
subject	Patient
effective	
issued	
performer	
value	
interpretation	
comment	
referenceRange	
related	Observation, DeviceUseStatement
http://hl7.org/fhir/StructureDefinition/event-partOf	DiagnosticReport, Observation

Endpoint

<https://api.healthgorilla.com/fhir/Observation>

FHIR Operations

The following operations are currently supported:

List of available operations per category:

Laboratory, Imaging	Read, Search, Create
Vital Sign	Read, Search, Create, Update, Delete
Social History	Read, Search, Create, Update, Delete
Functional Status	Read, Search, Create, Update, Delete

1. Read

HTTP Request	Method	Action
<code>/Observation/{ID}</code>	GET	Retrieve Observation resource by ID

2. Search

HTTP Request	Method	Action
<code>/Observation?[parameter={value}]</code>	GET	Retrieve Observation resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
category	Token	The classification of the type of observation (see: http://hl7.org/fhir/codesystem-observation-category.html)
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve Laboratory Observations by patient:

```
https://api.healthgorilla.com/fhir/Observation?category=http://hl7.org/fhir/observation-category|laboratory&patient=8063965523692105bfc35def
```

2. Retrieve Vital Signs by patient:

```
https://api.healthgorilla.com/fhir/Observation?
```

```
category=http://hl7.org/fhir/observation-category|vital-signs
&patient=8063965523692105bfc35def
```

3. Retrieve Social History by patient:

```
https://api.healthgorilla.com/fhir/Observation?
category=http://hl7.org/fhir/observation-category|social-history
&patient=8063965523692105bfc35def
```

4. Retrieve Functional Status by patient:

```
https://api.healthgorilla.com/fhir/Observation?
category=https://www.healthgorilla.com/fhir/observation-category|func
tional-status
&patient=8063965523692105bfc35def
```

5. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/Observation?
category=http://hl7.org/fhir/observation-category|vital-signs
&_lastUpdated=gt2019-03
&_offset=0
&_count=5
```

6. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/Observation?
category=http://hl7.org/fhir/observation-category|vital-signs
&patient=8063965523692105bfc35def
&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
/Observation	POST	Creates Observation resource

The following attributes are required for Vital Sign:

Name	Details
subject	
related	Observation (code, value)

The following attributes are required for Social History:

Name	Details
subject	
code	
value	

The following attributes are required for Functional Status:

Name	Details
subject	
code	
related	DeviceUseStatement

Example:

1. Add Vital Sign

```

<Observation xmlns="http://hl7.org/fhir">
  <meta>
    <profile
value="http://hl7.org/fhir/StructureDefinition/vitalspanel"/>
  </meta>
  <contained>
    <Observation xmlns="http://hl7.org/fhir">
      <id value="1"/>
      <status value="unknown"/>
      <category>
        <coding>
          <system
value="http://hl7.org/fhir/observation-category"/>
          <code value="vital-signs"/>
          <display value="Vital Signs"/>
        </coding>
      </category>
      <code>
        <coding>
          <system value="http://loinc.org"/>
          <code value="8310-5"/>
          <display value="Body temperature"/>
        </coding>
        <coding>
          <system value="http://snomed.info/sct"/>

```

```

        <code value="386725007"/>
        <display value="Body temperature"/>
    </coding>
</code>
<subject>
    <reference value="Patient/03db4352ee0190ad5e9e6748"/>
    <display value="Homer Simpson"/>
</subject>
<valueQuantity>
    <value value="36.5"/>
    <unit value="C"/>
    <system value="http://unitsofmeasure.org"/>
    <code value="Cel"/>
</valueQuantity>
</Observation>
</contained>
<status value="unknown"/>
<category>
    <coding>
        <system
value="http://hl7.org/fhir/observation-category"/>
        <code value="vital-signs"/>
        <display value="Vital Signs"/>
    </coding>
</category>
<code>
    <coding>
        <system value="http://loinc.org"/>
        <code value="85353-1"/>
        <display value="Vital Signs Panel"/>
    </coding>
</code>
<subject>
    <reference value="Patient/03db4352ee0190ad5e9e6748"/>
    <display value="Homer Simpson"/>
</subject>
<effectiveDateTime value="2018-06-01"/>
<performer>
    <reference value="Practitioner/ceda4352e8f6405dd2e42f09"/>
    <display value="John Doe"/>
</performer>
<related>
    <type value="has-member"/>
    <target>
        <reference value="#1"/>

```

```
    </target>
  </related>
</Observation>
```

2. Add Social History

```
<Observation xmlns="http://hl7.org/fhir">
  <status value="unknown"/>
  <category>
    <coding>
      <system
value="http://hl7.org/fhir/observation-category"/>
      <code value="social-history"/>
      <display value="Social History"/>
    </coding>
  </category>
  <code>
    <coding>
      <system value="http://snomed.info/sct"/>
      <code value="160573003"/>
      <display value="Alcohol Use"/>
    </coding>
    <text value="port wine, red"/>
  </code>
  <subject>
    <reference value="Patient/03db4352ee0190ad5e9e6748"/>
    <display value="Homer Simpson"/>
  </subject>
  <effectivePeriod>
    <start value="2017-12-06"/>
    <end value="2018-09-20T01:30:00+03:00"/>
  </effectivePeriod>
  <performer>
    <reference value="Practitioner/ceda4352e8f6405dd2e42f09"/>
    <display value="John Doe"/>
  </performer>
  <valueCodeableConcept>
    <coding>
      <display value="Only 10 old port wine"/>
    </coding>
  </valueCodeableConcept>
  <comment value="This began just after the trip to Lisboa."/>
</Observation>
```

4. Update

HTTP Request	Method	Action
<code>/Observation/{ID}</code>	PUT	Updates Observation resource

The following attributes are immutable for Vital Sign:

Name	Details
<code>patient</code>	
<code>performer</code>	

The following attributes are immutable for Social History:

Name	Details
<code>patient</code>	
<code>performer</code>	
<code>code</code>	

The following attributes are immutable for Functional Status:

Name	Details
<code>patient</code>	
<code>performer</code>	

5. Delete

HTTP Request	Method	Action
<code>/Observation/{ID}</code>	DELETE	Deletes Observation resource

Procedure

The Procedure resource describes an action that is or was performed on a patient. This can be a physical intervention like an operation, or less invasive like counseling or hypnotherapy.

FHIR Resource: Procedure <https://www.hl7.org/fhir/procedure.html>

The following attributes are supported:

Name	Comment
status	
category	
code	
subject	Patient
performed	
performer	
location	
usedReference	Medication, Device
bodySite	
reasonCode	
reasonReference	
outcome	
followUp	
partOf	ProcedureRequest
note	
https://www.healthgorilla.com/fhir/StructureDefinition/record-recorder	Recorder (Participant)
http://hl7.org/fhir/StructureDefinition/procedure-method	CodeableConcept

Endpoint

<https://api.healthgorilla.com/fhir/Procedure>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/Procedure/{ID}</code>	GET	Retrieve Procedure resource by ID

2. Search

HTTP Request	Method	Action
<code>/Procedure?[parameter={value}]</code>	GET	Retrieve Procedure resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve procedures by patient:

```
https://api.healthgorilla.com/fhir/Procedure?patient=8063965523692105bfc35def
```

2. Search records updated since March 2019

```
https://api.healthgorilla.com/fhir/Procedure?_lastUpdated=gt2019-03&_offset=0&_count=5
```

3. Retrieve records for the given patient updated in 2018:

```
https://api.healthgorilla.com/fhir/Procedure?patient=8063965523692105bfc35def&_lastUpdated=2018
```

3. Create

HTTP Request	Method	Action
<code>/Procedure</code>	POST	Creates Procedure resource

The following attributes are required:

Name	Details
subject	
code	

4. Update

HTTP Request	Method	Action
<code>/Procedure/{ID}</code>	PUT	Updates Procedure resource

The following attributes are immutable:

Name	Details
patient	
recorder	
code	

5. Delete

HTTP Request	Method	Action
<code>/Procedure/{ID}</code>	DELETE	Deletes Procedure resource

ProcedureRequest

The ProcedureRequest resource contains record of a request for diagnostic investigations, treatments, or operations to be performed.

FHIR Resource: ProcedureRequest <https://www.hl7.org/fhir/procedurerequest.html>

The following attributes are supported:

Name	Comment
identifier	ACSN (Lab Reference ID)
requisition	
status	
intent	
subject	Patient
priority	
category	
performer	Laboratory (Organization)
code	
authoredOn	
requester	
reasonCode	Diagnosis
supportingInfo	AOE
specimen	
note	
http://hl7.org/fhir/StructureDefinition/procedurerequest-authorizedBy	Author (Practitioner)

Endpoint

<https://api.healthgorilla.com/fhir/ProcedureRequest>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/ProcedureRequest/{ID}</code>	GET	Retrieve ProcedureRequest by ID

2. Search

HTTP Request	Method	Action
<code>/ProcedureRequest?[parameter={value}]</code>	GET	Retrieve ProcedureRequest resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
requisition	Token	Requisition Identifier
_lastUpdated	Date	

Examples:

1. Retrieve ProcedureRequest resources by patient and date:

```
https://api.healthgorilla.com/fhir/Procedure?
patient=8063965523692105bfc35def
&_lastUpdated=2018-07
```

2. Retrieve ProcedureRequest resources by order ID:

```
https://api.healthgorilla.com/fhir/Procedure?requisition=a5606c5b8998
949c08f49526
```

RequestGroup

The RequestGroup resource represents a group of related requests that can be used to capture intended activities that have inter-dependencies. In HealthGorilla this resource used to describe a laboratory/radiology order.

FHIR Resource: RequestGroup <https://www.hl7.org/fhir/requestgroup.html>

The following profile is required:

```
https://healthgorilla.com/fhir/StructureDefinition/hg-order
```

The following attributes are supported:

Name	Comment
identifier	ACSN (Lab Reference ID), HG ID
requisition	
status	
intent	
subject	Patient
priority	
author	Practitioner
authoredOn	
action	ProcedureRequest
note	
https://www.healthgorilla.com/fhir/StructureDefinition/requestgroup-authorizedBy	Author(Organization)
https://www.healthgorilla.com/fhir/StructureDefinition/requestgroup-account	Account
https://www.healthgorilla.com/fhir/StructureDefinition/requestgroup-performer	Performer(Organization)
https://www.healthgorilla.com/fhir/StructureDefinition/requestgroup-requester	Requester
https://www.healthgorilla.com/fhir/StructureDefinition/requestgroup-location	Room/Bed
https://www.healthgorilla.com/fhir/StructureDefinition/requestgroup-reasoncode	Diagnoses
https://www.healthgorilla.com/fhir/StructureDefinition/requestgroup-specimen	Specimen
https://www.healthgorilla.com/fhir/StructureDefinition/requestgroup-deliveryOptions	Delivery Options (location, method, electronic)

https://www.healthgorilla.com/fhir/StructureDefinition/performer-location	Performer Location (Location)
---	-------------------------------

Endpoint

<https://api.healthgorilla.com/fhir/RequestGroup>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
/RequestGroup/{ID}	GET	Retrieve RequestGroup by ID

2. Search

HTTP Request	Method	Action
/RequestGroup?[parameter={value}]	GET	Retrieve RequestGroup resources by the specified search criteria

Parameters:

Key	Type	Description
patient	Reference	Patient Identifier
identifier	Token	External Identifier
_lastUpdated	Date	
_offset	Number	
_count	Number	

Examples:

1. Retrieve Order by ID

<https://api.healthgorilla.com/fhir/RequestGroup/a5606c5b8998949c08f49526>

2. Retrieve Order by requisition ID:

<https://api.healthgorilla.com/fhir/RequestGroup?identifier=https://www.healthgorilla.com/a5606c5b8998949c08f49526>

3. Retrieve Orders by patient and date:

https://api.healthgorilla.com/fhir/RequestGroup?patient=8063965523692105bfc35def&_lastUpdated=2018-07

3. Create

Clients can submit new orders. Look for a separate documentation for that feature.

DirectMessage

A DirectMessage resource is used to describe a message between persons and organizations in HealthGorilla Application. A message is a composite object that contains sender and recipients, subject, message body and attachments. Users may send messages to (and receive from) physicians, practice staff, patients, healthcare organizations.

This is a custom HealthGorilla resource, that is not defined by FHIR specification.

You can find detailed resource description in a separate specification.

The following attributes are supported:

Name	Comment
identifier	
sentOn	
sender	
sender.person	
sender.organization	
sender.telecom	
sender.display	
recipient	
recipient.person	
recipient.organization	
recipient.telecom	
recipient.display	
title	
content	
content.text	
content.html	

subject	
highPriority	
active	
attachment	
attachment.file	
attachment.reference	
owner	Practitioner
direction	IN / OUT

Endpoint

<https://api.healthgorilla.com/fhir/DirectMessage>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
<code>/DirectMessage/{ID}</code>	GET	Retrieve DirectMessage by ID

2. Search

HTTP Request	Method	Action
<code>/DirectMessage?[parameter={value}]</code>	GET	Retrieve DirectMessage resources by the specified search criteria

Parameters:

Key	Type	Description
owner	Reference	Practitioner Identifier
direction	Token	
_lastUpdated	Date	

Examples:

1. Retrieve outgoing messages were sent by the given user since Sep'5:

```
https://api.healthgorilla.com/fhir/RequestGroup?
owner=8063965523692105bfc35def
&direction=OUT
```

Clinical Notes

Health Gorilla allows to create new and import existing Clinical Notes using FHIR endpoints and resource profiles described in C-CDA on FHIR architecture.

See C-CDA on FHIR Implementation Guide <http://hl7.org/fhir/us/ccda/index.html>

Clinical notes support is based on two FHIR resources: Composition and Bundle

- Composition <http://hl7.org/fhir/stu3/composition.html>
- Bundle <http://hl7.org/fhir/stu3/bundle.html>

FHIR Composition is used to describe Clinical Note document itself and FHIR Bundle is used to pack all related data into one message.

The following profiles are supported:

Name	URI
Discharge Summary	http://hl7.org/fhir/us/ccda/StructureDefinition/CCDA-on-FHIR-Discharge-Summary
Progress Note	http://hl7.org/fhir/us/ccda/StructureDefinition/CCDA-on-FHIR-Progress-Note
History and Physical	http://hl7.org/fhir/us/ccda/StructureDefinition/CCDA-on-FHIR-History-and-Physical
Consultation Note	http://hl7.org/fhir/us/ccda/StructureDefinition/CCDA-on-FHIR-Consultation-Note
Referral Note	http://hl7.org/fhir/us/ccda/StructureDefinition/CCDA-on-FHIR-Referral-Note
Procedure Note	http://hl7.org/fhir/us/ccda/StructureDefinition/CCDA-on-FHIR-Procedure-Note
Transfer Summary	http://hl7.org/fhir/us/ccda/StructureDefinition/CCDA-on-FHIR-Transfer-Summary
Operative Note	http://hl7.org/fhir/us/ccda/StructureDefinition/CCDA-on-FHIR-Operative-Note
Care Plan	http://hl7.org/fhir/us/ccda/StructureDefinition/CCDA-on-FHIR-Care-Plan

You can import Clinical Notes of the above types and export them from your Health Gorilla account.

Read existing Clinical Notes

- 1) Use FHIR Composition READ operation to read Clinical Note.
- 2) Or you can use FHIR Composition '[Generate a document](#)' operation to take the Composition and all related data in one Bundle.

Create new Clinical Note flow:

- 1) You should pack all related data into single Bundle of type 'document'.
See FHIR Documents <http://hl7.org/fhir/stu3/documents.html>
- 2) Then you should execute FHIR Bundle Create operation (HTTP POST)
- 3) The operation outcome contains link to the newly created Clinical Note

Subscriptions

The Subscription resource allows you to be notified about modifications of Health Gorilla resources in a most convenient way. You can use Subscription endpoint to create and manage subscriptions.

Attention! Newly created Subscription has 'Requested' status and need to be manually approved by Health Gorilla staff to become active.

FHIR Resource: Subscription <https://www.hl7.org/fhir/subscription.html>

Endpoint

<https://api.healthgorilla.com/fhir/Subscription>

FHIR Operations

The following operations are currently supported:

1. Read

HTTP Request	Method	Action
/Subscription/{ID}	GET	Get Subscription by ID

2. Search

HTTP Request	Method	Action
/Subscription?[parameter={value}]	GET	

Parameters:

Key	Type	Description
status	Token	The current state of the subscription

type	Token	The type of channel for the sent notifications
------	-------	--

3. Delete

HTTP Request	Method	Action
/Subscription/{ID}	DELETE	Deletes subscription

4. Create

HTTP Request	Method	Action
/Subscription	POST	Creates new subscription

Limited number of resources is supported, while some resources support filters that you can use in criteria:

Resource	Additional attributes you can use in criteria
DiagnosticReport	- patient - category
DocumentReference	- patient - class - type
RequestGroup	- patient
ProcedureRequest	- patient
DirectMessage	- owner - direction
Patient	
Condition	- patient
AllergyIntolerance	- patient
Immunization	- patient
MedicationRequest	- patient
MedicationOrder	- patient
MedicationDispense	- patient
Encounter	- patient
CarePlan	- patient

DeviceUseStatement	- patient
Observation	- patient, category
FamilyMemberHistory	- patient
Goal	- patient
Procedure	- patient

Examples

1. Retrieve Subscriptions by type:

<https://api.healthgorilla.com/fhir/Subscription?type=http://hl7.org/fhir/subscription-channel-type|rest-hook>

2. Create new subscription:

<https://api.healthgorilla.com/fhir/Subscription>

Headers:

Content-Type application/json

Body:

```
{
  "resourceType": "Subscription",
  "status": "requested",
  "end": "2021-01-01T00:00:00Z",
  "reason": "Monitor new neonatal function",
  "criteria": "DiagnosticReport",
  "channel": {
    "type": "rest-hook",
    "endpoint": "http://localhost:8080/extsub/webhook",
    "payload": "application/fhir+json",
    "header": [
      "Authorization: Bearer secret-token-abc-123"
    ]
  }
}
```

Subscription channel types

Health Gorilla supports rest-hook and web socket channels from the list

<https://www.hl7.org/fhir/valueset-subscription-channel-type.html>

Rest hook

You can receive callback to the specified endpoint. And this is a highly recommended to add HTTP headers to the channel, that you will use to authorize the callback.

Only HTTPS endpoints can be used.

Supported payloads:

Payload	Description
No payload	See https://www.hl7.org/fhir/subscription.html#2.46.6.1 for details
application/fhir+xml	
application/fhir+json	
application/hg-event+json	Health Gorilla sends simple JSON event to client's endpoint with the resource type and resource's identifier that triggered the event. For example: <pre>{ "resource" : "RequestGroup", "id" : "RequestGroup/d6fjlvj9gjb9djlaww8q" }</pre>

If you use no-payload mode, then you can query Health Gorilla FHIR server for the list of recently modified resources by appending “&_lastUpdated=<date>” parameter to the search criteria.

Web Socket

You can connect to secure Web Socket and receive runtime notifications.

To do so you need to use OAuth access token to authorize connection.

Web Socket endpoint is defined in the server's CapabilityStatement.

See <https://www.hl7.org/fhir/extension-capabilitystatement-websocket.html> for more information

Error Handling

The API will always return sensible HTTP status code.

API errors are of 2 types:

- 400 series status codes for client issues
- 500 series status codes for server issues.

Common HTTP Status codes returned on errors:

- **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
- **422 Unprocessable Entity** - resource was rejected by the server because it "violated applicable FHIR profiles or server business rules"
- **500 - Internal Server Error**

Along with the Status Code the API will return an OperationOutcome resource as response containing details about the error. Here is an example of OperationOutcome object:

```
{
  "resourceType": "OperationOutcome",
  "issue": [
    {
      "severity": "error",
      "code": "processing",
      "diagnostics": "Invalid request: The FHIR endpoint on this server does not know how to handle GET
operation[Patient] with parameters [[wrong_parameter]]"
    }
  ]
}
```

Appendix A

Resource samples

DiagnosticReport

```
{
  "resourceType": "DiagnosticReport",
  "id": "f816835975440b570eed9683",
  "meta": {
    "lastUpdated": "2017-08-03T12:30:34.527+00:00"
  },
  "text": {
    "status": "generated",
```

```

    "div": "<div xmlns=\"http://www.w3.org/1999/xhtml\">Emr Test
Compass Lab Services Result 08/03/2017 12:30 PM</div>"
  },
  "contained": [
    {
      "resourceType": "ProcedureRequest",
      "id": "1",
      "status": "unknown",
      "intent": "order",
      "category": [
        {
          "coding": [
            {
              "system": "http://snomed.info/sct",
              "code": "103693007",
              "display": "Diagnostic procedure"
            }
          ]
        }
      ],
      "subject": {
        "reference": "Patient/6a1783599edf3ae52e51947a",
        "display": "Emr Test"
      },
      "requester": {
        "agent": {
          "reference":
"Practitioner/c50f6150e4b8c94c4ba3b23d",
          "display": "John Gorilla Doe, Ph. D. Psychology"
        }
      }
    }
  ],
  "identifier": [
    {
      "system": "https://www.healthgorilla.com",
      "value": "f816835975440b570eed9683"
    },
    {
      "type": {
        "coding": [
          {
            "system": "http://hl7.org/fhir/v2/0203",
            "code": "ACSN",
            "display": "Accession ID"
          }
        ]
      }
    }
  ]
}

```

```

        }
      ],
      "text": "Accession Number"
    },
    "value": "770165"
  }
],
"basedOn": [
  {
    "reference": "#1"
  }
],
"status": "final",
"category": {
  "coding": [
    {
      "system": "http://hl7.org/fhir/v2/0074",
      "code": "LAB",
      "display": "Laboratory"
    }
  ],
  "text": "Laboratory"
},
"code": {
  "text": "CMOR, PDF Report"
},
"subject": {
  "reference": "Patient/6a1783599edf3ae52e51947a",
  "display": "Emr Test"
},
"issued": "2017-08-02T17:49:10.000+00:00",
"performer": [
  {
    "actor": {
      "reference":
"Organization/f-f6c78159fc6d1019e302215f",
      "display": "Compass Lab Services"
    }
  }
],
"result": [
  {
    "reference": "Observation/f816835975440b570eed9683-2000",
    "display": "PDF Report"
  }
],

```

```

    {
      "reference":
"Observation/f816835975440b570eed9683-1304040",
      "display": "CMOR"
    }
  ]
}

```

Observation (Observation Group)

```

{
  "resourceType": "Observation",
  "id": "f816835975440b570eed9683-1304040",
  "meta": {
    "lastUpdated": "2017-08-03T12:30:34.527+00:00"
  },
  "extension": [
    {
      "url":
"http://hl7.org/fhir/StructureDefinition/event-partOf",
      "valueReference": {
        "reference":
"DiagnosticReport/f816835975440b570eed9683",
        "display": "CMOR, PDF Report"
      }
    }
  ],
  "status": "unknown",
  "category": [
    {
      "coding": [
        {
          "system":
"http://hl7.org/fhir/observation-category",
          "code": "laboratory",
          "display": "Laboratory"
        }
      ]
    }
  ],
  "code": {
    "text": "CMOR"
  },
  "subject": {

```



```

    "display": "Emr Test"
  },
  "effectiveDateTime": "2017-08-01T19:00:00+00:00",
  "issued": "2017-08-02T17:49:10.000+00:00",
  "performer": [
    {
      "reference": "Organization/f-f6c78159fc6d1019e302215f",
      "display": "Compass Lab Services"
    }
  ],
  "related": [
    {
      "type": "has-member",
      "target": {
        "reference":
"Observation/f816835975440b570eed9683-1304040-1",
        "display": "Hydromorphone"
      }
    },
    {
      "type": "has-member",
      "target": {
        "reference":
"Observation/f816835975440b570eed9683-1304040-2",
        "display": "Hydromorphone, Quan"
      }
    },
    {
      "type": "has-member",
      "target": {
        "reference":
"Observation/f816835975440b570eed9683-1304040-3",
        "display": "Morphine"
      }
    },
    {
      "type": "has-member",
      "target": {
        "reference":
"Observation/f816835975440b570eed9683-1304040-4",
        "display": "Morphine, Quan"
      }
    }
  ]
}

```

Observation (ObservationResult)

```
{
  "resourceType": "Observation",
  "id": "f816835975440b570eed9683-1304040-1",
  "meta": {
    "lastUpdated": "2017-08-03T12:30:34.527+00:00"
  },
  "extension": [
    {
      "url":
"http://hl7.org/fhir/StructureDefinition/event-partOf",
      "valueReference": {
        "reference":
"Observation/f816835975440b570eed9683-1304040"
      }
    }
  ],
  "status": "final",
  "category": [
    {
      "coding": [
        {
          "system":
"http://hl7.org/fhir/observation-category",
          "code": "laboratory",
          "display": "Laboratory"
        }
      ]
    }
  ],
  "code": {
    "text": "Hydromorphone"
  },
  "subject": {
    "display": "Emr Test"
  },
  "effectiveDateTime": "2017-08-02T16:21:35+00:00",
  "issued": "2017-08-02T17:49:10.000+00:00",
  "valueString": "Negative",
  "interpretation": {
    "coding": [
      {
        "system": "http://hl7.org/fhir/v2/0078",
```

```
        "code": "N",
        "display": "Normal"
      }
    ],
  },
  "referenceRange": [
    {
      "text": "Cutoff level 50"
    }
  ]
}
```