Searching FHIR with HTTP

3. Bundles and Search Exercise

This exercise aims to allow you to familiarize yourself with how you can search for FHIR resources and how the search results are represented.

To carry out these exercises, you need to have a tool that monitors your HTTP traffic, like Postman or Fiddler.

Exercises

1. Request the history of the patient you created in the previous exercise.

2. Look at the Bundle that was returned and identify the links.

3. Try searching for all patients that have a birthdate of December 25, 1974 and look at the result Bundle.

4. Search for all Observations, but limit the number of results to 5.

5. How can you get a summary of the patient data?

6. *(extra) Perform a search for all Procedures done in March 2013 and include the patient information. Look at the result Bundle and find the included resources.*

7. *(extra) Try out some other search parameters and search syntaxes.*

To see which parameters you can use for your search, look at the specific resource type (http://www.hl7.org/fhir/resourcelist.html) and scroll down the page. For the parameter types and modifiers, look at the details of the search operation on (http://www.hl7.org/fhir/search.html).

Solution

The solution shown below identifies the search criteria you can use.

Exercise 3.1.   Requesting the history of a resource

Use the following command to request the history of a Patient resource with the supplied id:

```
GET [fhir endpoint]/Patient/[id]/_history
```


Exercise 3.2.   History Bundle

The Bundle resource that was returned should have a `type` with value `history` and for each entry, there will be a `request` element that will contain the action that led to this version of the resource.

Exercise 3.3.   Searching patients by birthdate

Use the following command to search for patients by their birthdate:

```
GET [fhir endpoint]/Patient?birthdate=1974-12-25
```

The response should be a Bundle with 0 or more results, each entry listing the Patient resource that fulfilled the criteria. The `self link` contains the search request as understood by the server.

Exercise 3.4.   Limiting the number of results

Use the following command to limit the number of search results:

```
GET [fhir endpoint]/Observation?_count=5
```


Exercise 3.5.   Summary

Supply your search request with the parameter _summary to get a summary of the resource's data. To see which data is included in a summary, look at the definition of the resource. The structure of the resource lists a ∑ next to all elements included in the summary, and in the detailed descriptions of the elements the summary is also noted.

Exercise 3.6.   Searching with an include

Use the following command:

```
GET [fhir endpoint]/Procedure?date=2013-03
                        &_include=Procedure:patient
```

The number of results listed in the Bundle is the number of Procedures that match the search criteria. In the Bundle you will find this number of entries, plus a number of entries for each Patient resource that was referenced from the Procedure resources.