

FHIRPath by example

Brian Postlethwaite – Microsoft Research



HL7 FHIR DevDays International 2022 | Hybrid Edition, Cleveland, OH | June 6–9, 2022 | @HL7 | @FirelyTeam | #fhirdevdays | www.devdays.com

ORGANIZED BY

firely

HL7[®]
International

Who am I?

- Brian Postlethwaite
- Senior Software Engineer
Microsoft Research
- HL7 International Patient Administration Co-Chair
- HL7 International FHIR Management Group
- Contributor to the dotnet FHIR SDK and also fhir façade web-api project
- Implementer of SDC
- Working with FHIR since 2014!



Learning Objectives

- Background material
 - Quick (very) walkthrough of FHIRPath spec (and FHIR extensions)
 - Quick walkthrough of FhirPathTester tool (for use in the lab exercises)
- Lab Exercises
 - Create some search parameter data extractions
 - Create some Invariants (for use in StructureDefinitions)
 - Questionnaire invariants
 - Questionnaire pre-population

The session will cover the use of variables, context and launch context, type conversions and handling collections and filters

- *Pre-populating a patient admission form*
- *Cross Field and complex validations in an assessment form*
- *Complex scoring in an assessment form*
- *Validating a patient resource for identifiers, contacts and birthdate restrictions*
- *Defining a Custom search parameter*

FHIRPath Specifications





- <http://hl7.org/fhirpath/>
 - Navigation, where, select, implies, exists, resolve, hasValue
 - Collections/indexing
 - String literals (single quotes)
- <http://hl7.org/fhir/fhirpath.html>
 - Polymorphism Patient.deceasedDateTime
 - Extensions Patient.birthDate.extension('http://...birthTime')

FHIRPath Tester



Fhirpath Lab

 EXPRESSION SOURCES 
<https://sqlonfhir-r4.azurewebsites.net/fhir/Patient/example>

 .NET (firely)  

fx EXPRESSION

Context Expression (optional)

name

RESOURCE

Fhirpath Expression

trace('nerd').given

TRACE

DEBUG

RESULTS

 Context: **Patient.name[0]**

Peter

(String)

James

(String)

 Context: **Patient.name[1]**

Jim

(String)

 Context: **Patient.name[2]**

Peter

(String)

James

(String)

<https://fhirpath-lab.azurewebsites.net/FhirPath>

Exercise: Search Parameters

- Extract a specific Identifier
- Extract the mobile phone number
- Extract the US-Core Race extension value

Exercise: Invariants

- Check a property is within a specific range
- Check a property exists under some conditions

Exercise: Questionnaires

Invariants

- Check a property is within a specific range
- Check a date property is in the future or in the past
- Cross check an answer with another one

Data Extractions

- Retrieve a value from the LaunchContext (patient)

Contact

- During DevDays, you can find / reach me here:
 - Via Whova App – Speaker’s Gallery
 - brian_pos@hotmail.com
 - <https://chat.fhir.org>
- github: <https://github.com/brianpos>
- My personal blog <https://brianpos.com>

ORGANIZED BY

