

Switzerland on FHIR: learning and success

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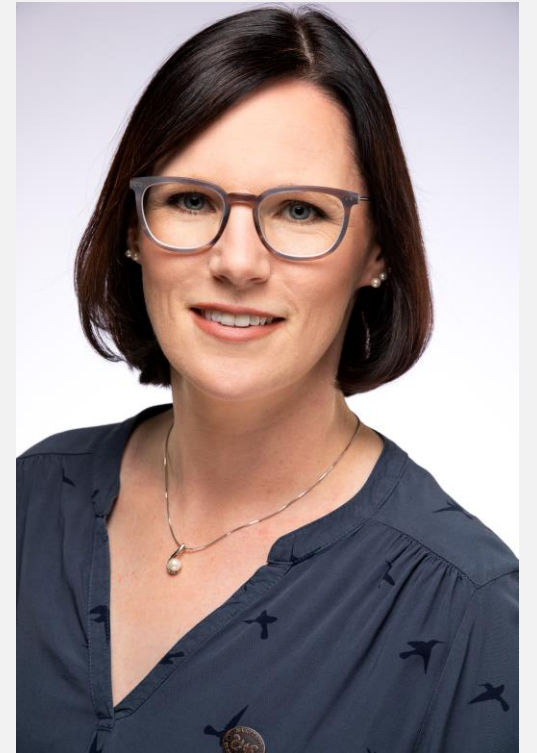
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HL7[®]
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Who am I?

- Michaela Ziegler
- eHealth Solution Consultant, ahdis ag
- Background
 - FHIR Consulting
 - HL7 Activities
 - IHE Activities



Agenda

- Swiss FHIR Implementation Guides
 - Exchange Formats
 - (IHE) FHIR based mHealth Profiles
- Learning & Success
- Q&A

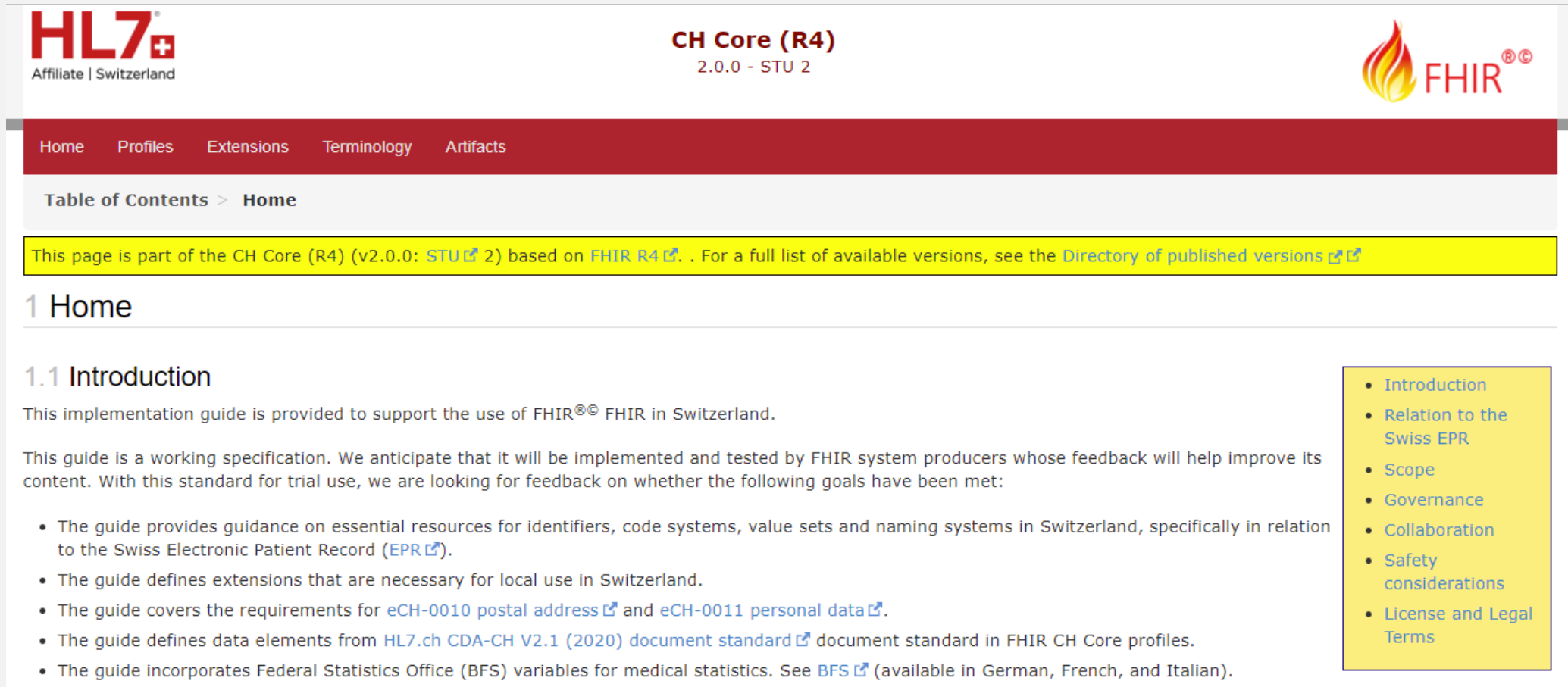
fhir.ch – Swiss Implementation Guides

- By HL7 Switzerland
 - Core Profiles & Electronic Patient Record (EPR)
 - Medication, Vaccination & Immunization, Allergy & Intolerance
 - Order & Referral by Form
- By eHealth Suisse
 - Mobile access to Health Documents
 - Privacy Policy Query for Mobile
- By Federal Office of Public Health (FOPH)
- By other organizations



<http://fhir.ch/>

Core Profiles for Switzerland



The screenshot shows the website for the HL7 FHIR CH Core (R4) 2.0.0 - STU 2. The page features a navigation menu with links for Home, Profiles, Extensions, Terminology, and Artifacts. A yellow banner at the top of the content area states: "This page is part of the CH Core (R4) (v2.0.0: STU 2) based on FHIR R4. For a full list of available versions, see the Directory of published versions". The main content area is titled "1 Home" and includes a section "1.1 Introduction". The introduction text reads: "This implementation guide is provided to support the use of FHIR® FHIR in Switzerland. This guide is a working specification. We anticipate that it will be implemented and tested by FHIR system producers whose feedback will help improve its content. With this standard for trial use, we are looking for feedback on whether the following goals have been met:" followed by a list of five bullet points. A sidebar on the right contains a list of navigation links: Introduction, Relation to the Swiss EPR, Scope, Governance, Collaboration, Safety considerations, and License and Legal Terms.

HL7+
Affiliate | Switzerland

CH Core (R4)
2.0.0 - STU 2

FHIR

Home Profiles Extensions Terminology Artifacts

Table of Contents > Home

This page is part of the CH Core (R4) (v2.0.0: STU 2) based on FHIR R4. For a full list of available versions, see the Directory of published versions.

1 Home

1.1 Introduction

This implementation guide is provided to support the use of FHIR® FHIR in Switzerland.

This guide is a working specification. We anticipate that it will be implemented and tested by FHIR system producers whose feedback will help improve its content. With this standard for trial use, we are looking for feedback on whether the following goals have been met:

- The guide provides guidance on essential resources for identifiers, code systems, value sets and naming systems in Switzerland, specifically in relation to the Swiss Electronic Patient Record (EPR).
- The guide defines extensions that are necessary for local use in Switzerland.
- The guide covers the requirements for eCH-0010 postal address and eCH-0011 personal data.
- The guide defines data elements from HL7.ch CDA-CH V2.1 (2020) document standard document standard in FHIR CH Core profiles.
- The guide incorporates Federal Statistics Office (BFS) variables for medical statistics. See BFS (available in German, French, and Italian).

- Introduction
- Relation to the Swiss EPR
- Scope
- Governance
- Collaboration
- Safety considerations
- License and Legal Terms

<https://fhir.ch/ig/ch-core>

Swiss Electronic Patient Record (EPR)

- CH Core EPR Profiles
 - According to the Swiss law, specifying the technical and semantic requirements for interoperability
 - Metadata (IG CH EPR Term)
 - Exchange formats (various IGs)
 - FHIR documents
 - CDA documents
 - XDS
 - CH Core DocumentReference EPR profile
 - IG CH EPR mHealth

<https://fhir.ch/ig/ch-core>

<https://fhir.ch/ig/ch-epr-term>

Medication, Vaccination & Immunization, Allergy & Intolerance

Exchange Format	CH EMED	CH VACD	CH-AllergyIntolerance
Defined documents for information exchange about	Medication	Vaccination and immunization	Allergies and intolerances
Based on/influenced by	<ul style="list-style-type: none"> IHE Pharmacy (PHARM) Minimal data set according IPAG* report 	<ul style="list-style-type: none"> IHE Patient Care Coordination (PCC) <ul style="list-style-type: none"> Immunization Content (IC) International Patient Summary (IPS) FHIR IG 	<ul style="list-style-type: none"> IPAG* report International Patient Summary (IPS) FHIR IG IG for Use of SNOMED CT in Documentation of Allergy, Non-allergic Hypersensitivity and Intolerance
FHIR Implementation Guide	http://fhir.ch/ig/ch-emed	http://fhir.ch/ig/ch-vacd	http://fhir.ch/ig/ch-allergyintolerance
Specialty	CDA-FHIR-Maps		

* IPAG = National interprofessional working group

Mapping

ch-epr-term 

ch-epr 

ch-core 

cda-ch-v2 

ch-emed 

Medication Treatment Plan document

Medication Prescription document

Medication Dispense document

Pharmaceutical Advice document

Medication Card document

Medication List document

cda-ch-emed 

Medication Treatment Plan document

Medication Prescription document

Medication Dispense document

Pharmaceutical Advice document

Medication Card document

Medication List document

cda-ch-pharm **IHE**

IHE MTP

IHE PRE

IHE DIS

IHE PADV

IHE PML

Mapping

- Mapping with FHIR
 - Session by Oliver Egger
 - Let's Build!
 - Thursday, 2:55 PM

ch-epr-term 🔥

ch-core 🔥

ch-epr 📄

cda-ch-v2 📄

ch-emed 🔥

Bundle: Medication Card document

Entry: Composition

- Parameters like Date, Identifier

Patient (Reference)

Practitioner (Reference)

...

Medication Card (Section)

n MedicationStatement (Reference)

- Medication (Reference)
- Reference to MTP document
- ...

Annotation (Section)

Original Representation (Section)

Entry: Patient

Entry: Practitioner

Entry: MedicationStatement

Entry: ...

cda-ch-emed 📄

Medikationsplan

Header

- Dokumenteninformation
- Patient
- Autor
- Erfasser
- Unterzeichner
- Empfänger

Body

Medikationsliste

Liste von Therapieentscheiden Medikation

Kommentar

Originalrepräsentation

cda-ch-pharm IHE

IHE MTP

IHE PRE

IHE DIS

IHE PADV

IHE PML

CDA-FHIR-Maps


Order & Referral by Form

- CH ORF implementation guide
 - Form for eReferrals, requests for information with Questionnaire and QuestionnaireResponse
 - EPR exchange format as Bundle (type document)
 - Based on CH Core and SDC (Structured Data Capture)
 - Base definition for
 - CH LAB-Order,
 - CH RAD-Order and
 - CH eTOC.

<http://fhir.ch/ig/ch-orf>

Order & Referral by Form - Process

LinkId	Text
OrderReferralForm	
order	Auftrag
order.1	Unable to resolve 'orde
receiver	Empfänger
receiver.1	Unable to resolve 'recei
patient	Patient
patient.1	Unable to resolve 'patie
requestedEncounter	Patientenaufnahme
requestedEncounter.1	Unable to resolve 'requ
coverage	Kostenträger
coverage.1	Unable to resolve 'cove
sender	Absender
sender.1	Unable to resolve 'send
receiverCopy	Kopieempfänger (Kopie resultierenden Resultat
receiverCopy.1	Unable to resolve 'recei
appointment	Ort und Zeit der Durchf
appointment.1	Unable to resolve 'appc
note	Bemerkungen
note.text	Kommentar



Order-Referral-Form

Auftrag

Auftragsnummer des Auftraggebers

Auftragsnummer des Auftragsempfängers

Dringender Benachrichtigungskontakt für dieses Dokument

Zu benachrichtigende Person

Titel

Name

```

{
  "resourceType": "QuestionnaireResponse",
  "id": "order-referral-form",
  "text": {
    "status": "generated",
    "div": "<div xmlns=\\"http://www.w3.org/

group OrfQrToBundle(source qr : QuestionnaireResponse,
qr -> bundle.identifier as documentIdentifier, doc
d:', uuidDoc) "documentIdentifier";
qr as qrcp -> bundle.entry as e, e.resource = crea
bundle.entry as e2, bundle.timestamp = (now()) as tim
uid2, e2.fullUrl = append('urn:uuid:', uuid2), bundl
= append('urn:uuid:', uuid4), bundle.entry as e5, e5
ppend('urn:uuid:', uuid5) then {
qr.questionnaire as can -> bundle.entry as e6, ei
oBundle(qr, q, patient, questionnairesp, servicerequ
} "orfbundle";
}
    
```

Bundle (document): Order-Referral-Form

- Parameters like Identifier, Timestamp

Entry: Composition

- Parameters like Type, Category

- Data Enterer (Reference)
- Urgent Notification Contact (Reference)
- Copy Receiver (Reference)
- Patient (Reference)
- Author (Reference)

Referral min (Section)

- Questionnaire (Reference)
- QuestionnaireResponse (Reference)
- ServiceRequest (Reference)

Entry: Questionnaire

Entry: QuestionnaireResponse

Entry: ServiceRequest

Modular Questionnaire
\$populate

→ QuestionnaireResponse →
\$extract (StructureMap)

Bundle

<https://www.matchbox.health/>

Mobile access to Health Documents

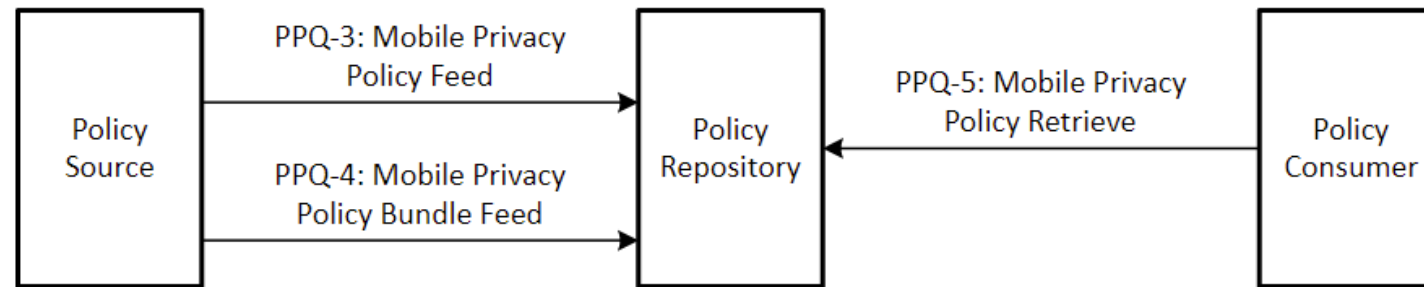
- IHE FHIR based mobile profiles (MHD, PIXm etc.)
- Ease the integration of mobile applications to the Swiss EPR
- Scope of CH EPR mHealth
 1. Client authentication and authorization;
 2. User Authentication;
 3. Read documents from the EPR;
 4. Write documents to the EPR;
 5. Write logs to the EPR ATNA Audit Record Repository.

<http://fhir.ch/ig/ch-epr-mhealth>

Privacy Policy Query for Mobile

- Swiss national integration profile (CH:PPQm)
- Provide a possibility to manage privacy policies using a lightweight technology stack suitable for mobile devices

The CH:PPQm profile defines the following actors and transactions:



- EPR privacy policies are represented as Consent resources

<http://fhir.ch/ig/ch-epr-ppqm>

Learning

Dos

- Start with simple use cases
- Maybe define a minimal dataset
- Define/restrict as much as necessary, as little as possible
- Integrate user-friendly elements in your IG
 - Examples
 - Links to the use cases
 - Illustrations
 - etc.
- Expect feedback not until real implementation and testing starts

Don'ts

- Do not want to map/cover every possibility
- Do not restrict too strictly
 - Later use cases may be restricted
 - Reusability is reduced
- To think that the technical specification is clear to all
- Because you don't expect feedback early on, not involving people from the start

Success

- FHIR profiles are tested at the annual EPR Projectathon and implementations are increasing
- Various IGs already went through one or more ballots successfully
- Improved acceptance of FHIR
- Increased demand for FHIR, as elements can be reused

Contact

- During DevDays, you can find / reach me here:
 - Via Whova App – Speaker’s Gallery
 - Email: michaela.ziegler@ahdis.ch
 - LinkedIn: www.linkedin.com/in/michaela-ziegler
- Zulip
 - # switzerland: <https://chat.fhir.org/#narrow/stream/214781-switzerland>



Q&A



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