PACIO SPLASCH
TRACK Kickoff

HL7’s FHIR Connectathon 29

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01/05/2022
Track Leads

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Agenda

• Background information
• Track Overview
• Use Case
• Technical Overview
• Track Schedule
• Next Steps
PACIO Project

Primary goal:

Since its inception on February 24, 2019, the PACIO Project endeavors to establish a framework for the development of a Fast Healthcare Interoperability Resource (FHIR) technical implementation guide and Reference Implementation that will facilitate health information exchange (HIE) through standards-based application programming interfaces (APIs).

Purpose:

Consensus-based approach to advance interoperable health information exchange (HIE) between post-acute care providers, patients, and other key stakeholders across health care and to promote HIE among policy makers, standards organizations, and industry, through open source FHIR IGs and vendor-based reference implementations.

Problem Statement:

Care coordination, when a person transitions between healthcare settings, including ambulatory care, acute care, long term post-acute care (LTPAC), and home & community-based services (HCBS), often is fragmented and can lead to poor health outcomes, increased burden and increased costs. Interoperable health information exchange has the potential to improve patient and provider communications and supports access to longitudinal health information that enables improved efficiencies, improved quality of care, and improved health outcomes. Data should be usable across the continuum of care, and beyond the traditional healthcare system – into the community.
PACIO Project:
Speech, Language, Swallowing, Cognitive Communication, and Hearing (SPLASCH)

Problem Statement:

The SPLASCH FHIR implementation guide (IG) is used to explain how to represent and exchange data elements related to eating, swallowing, and functional communication that need to be exchanged through transitions of care.
Track Goals

- Orient participants to the SPLASCH Implementation Guide (IG), references and profiles.
- Create, exchange, and query information related to eating, swallowing, and functional communication between disparate health IT (HIT) systems, in a consumable format for clinicians, patients, and family members.
- Test the SPLASCH IG
  - Show where additional revisions or clarifications to the IG may be helpful for implementers.
Track Introduction

PACIO Advance Directive Interoperability Track

• Track Page: https://confluence.hl7.org/display/FHIR/2022-01+PACIO+SPLASCH
• Implementation Guide: https://paciowg.github.io/splasch-ig/
• Zulip Stream: https://chat.fhir.org/#narrow/stream/305997-PACIO-SPLASCH
• ConMan: http://conman.clinfhir.com/connectathon.html?event=con29
Known Participants

- American Speech-Language-Hearing Association (ASHA)
- Interoperability Institute
- MaxMD
- MITRE
USE CASE
SCENE 1: Home with LTSS

Day 1 (7/6/20): Betsy Smith-Johnson receives LTSS at her home. Social Work (SW) assesses her and documents a care plan and goals into the community manager EHR. Betsy is functionally independent without the use of assistive devices.

Day 2 (7/7/20): Betsy experiences an acute onset of right sided weakness, partial paralysis of her lower face, blurred vision, and difficulty speaking resulting in slurred speech. She calls 911 for help and an ambulance transports her to the emergency department.

ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>FHR</td>
<td>Electronic Health Record</td>
</tr>
<tr>
<td>ED</td>
<td>Emergency Department</td>
</tr>
<tr>
<td>HCA</td>
<td>Health Care Advocate</td>
</tr>
<tr>
<td>HHA</td>
<td>Home Health Agency</td>
</tr>
<tr>
<td>L MCA</td>
<td>Left Middle Cerebral Artery</td>
</tr>
<tr>
<td>LTSS</td>
<td>Long Term Support Services</td>
</tr>
<tr>
<td>OT</td>
<td>Occupational Therapy/Therapist</td>
</tr>
<tr>
<td>PT</td>
<td>Physical Therapy/Therapist</td>
</tr>
<tr>
<td>RN</td>
<td>Registered Nurse</td>
</tr>
<tr>
<td>STAT</td>
<td>To be completed immediately</td>
</tr>
<tr>
<td>SLP</td>
<td>Speech Language Pathologist</td>
</tr>
<tr>
<td>SNF</td>
<td>Skilled Nursing Facility</td>
</tr>
<tr>
<td>SW</td>
<td>Social Work/Clinical Social Worker</td>
</tr>
<tr>
<td>TPA</td>
<td>Tissue Plasminogen Activator (clot dissolving medicine)</td>
</tr>
<tr>
<td>VFSS</td>
<td>Video Fluoroscopic Swallow Study</td>
</tr>
</tbody>
</table>

SCENE 2: Hospital

Day 2 (7/7/20): ED team evaluates and admits Betsy. Neurology consult and imaging studies reveal Betsy has L MCA occlusion (ischemic stroke) but is not a candidate for TPA intervention. Nursing evaluation finds Betsy alert and oriented, but only able to follow basic commands. RN documents Betsy’s speech comprehension, expression, and swallowing deficits and ensures orders are placed for SLP, OT, and PT consults (1930).

Day 3 (7/8/20): PT (0800), OT (0840), and SLP (0930) document observations of poor speech comprehension and expression. SLP documents (0930) observations of difficulty swallowing and recommends Video Fluoroscopic Swallow Study (VFSS) for objective evaluation.

Day 4 (7/9/20): SLP observes swallowing when VFSS performed (0830). Two hours later (1030), nursing notices Betsy’s condition worsening (complete right sided paralysis, increased slurred speech, difficulty following commands, and difficulty swallowing pills). RN calls neurologist, who conducts STAT imaging. Care team performs an emergent mechanical thrombectomy, resulting in clinical improvement post-procedure.

Day 5 (7/10/20): Rehab team provides care.

Day 6 (7/11/20): Rehab team completes discharge observations (1120) documenting improved function, but the team recommends rehab in a SNF.

Day 7 (7/12/20): Physician documents current speech, language, and swallowing function, medications, and places order for discharge to SNF. While nursing prepares for her discharge, Betsy calls her son, Charles, in Michigan informing him she is moving to the SNF. Charles, her designated Healthcare agent (HCA), accesses her FHIR Consumer app to get the most recent information about his mother's hospital stay.

SCENE 3: SNF

Day 7 (7/12/20): Betsy is transported to the SNF. RN verifies presence of PT/OT/SLP evaluation and treatment orders, reviews medications and acute care records. RN (1332), PT (1500), and SLP (1630) document observations of Betsy’s speech comprehension and expression. SLP also documents swallowing observations (1630).

Day 8 (7/13/20): OT (1035) documents observations of speech comprehension and expression.

Days 9-20 (7/14/20-7/25/20): Betsy improves with participation in OT, PT, and SLP therapy.

Day 21 (7/26/20): SLP observes swallowing when VFSS performed (0830). The care team finalizes the SNF stay 14-day progress note and SW initiates a discharge plan.

Day 25 (7/30/20): The rehab team completes the discharge documentation, including the speech, language, and swallowing observations (1515) indicating Betsy’s improvement. The team’s recommendations include home health services and a continuation of her home and community-based services while Betsy returns to her baseline functioning.

Day 26 (7/31/20): SW completes discharge documentation (1020) including current observations of speech, language, and swallowing function. SNF discharges Betsy to her home with a home health nurse visit planned for the next morning. Betsy calls her son Charles to let him know she is now home, and he accesses her SNF stay information from his consumer facing app.
**Use Case Overview**

**Use Case-Scene 1**
- Social Worker
- Discuss & Documents Care Plan & Goals
- EHR
- LTSS Care Manager
- Health Data Manager (HDM) Repository

**Use Case-Scene 2**
- Multidisciplinary Hospital team
- Hospital EHR
- Health Data Manager (HDM) Repository
- Consumer App

**Use Case-Scene 3**
- Multidisciplinary SNF team
- SNF EHR
- Health Data Manager (HDM) Repository
- Consumer App

**KEY**
- Data flow directions:
  - 

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Data Flow Diagram

Systems - January Connectathon Focus (Scenes 2 and 3)

- **Hospital EHR Client (MITRE)**
  - Creator
  - Retriever

- **SNF EHR Client (MITRE)**
  - Retriever
  - Creator

- **Health Data Manager (HDM) Repository**
  - Receiver
  - Custodian

- **Consumer Client (MaxMD)**
  - Retriever

- **Consumer Client (MaxMD)**
  - Retriever

**KEY**
Data flow directions:

1. **Creator** to **Retriever**
2. **Retriever** to **Receiver**
3. **Receiver** to **Custodian**
4. **Custodian** to **Retriever**
TECHNICAL OVERVIEW
<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Data Manager Repository Server</td>
<td>A system that stores and makes available for query SPLASCH IG conformant FHIR resources. <em>Advance preparation:</em> The system will be able to store SPLASCH resources and make them available for query through a FHIR interface.</td>
<td>Interoperability Institute</td>
</tr>
<tr>
<td>(Receiver / Custodian)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital EHR Client (Creator / Retriever)</td>
<td>A system that, in this scenario, creates a SPLASCH IG conformant set of FHIR resources, stores, and pushes to the SPLASCH information repository. <em>Advance preparation:</em> The system will have the ability to create SPLASCH IG conformant FHIR resources</td>
<td>MITRE Reference Implementation Server/ Pseudo EHR client</td>
</tr>
<tr>
<td>Skilled Nursing Facility EHR Client</td>
<td>A system that, in this scenario, queries a SPLASCH information repository for SPLASCH FHIR resources, and displays or otherwise uses the information contained within. <em>Advance preparation:</em> The system will have the ability to query for SPLASCH resources through a FHIR interface.</td>
<td>MITRE Pseudo EHR client</td>
</tr>
<tr>
<td>(Creator / Retriever)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer Client (Retriever)</td>
<td>An optional additional system that queries a SPLASCH information repository for SPLASCH FHIR resources and displays or otherwise uses the information contained within. <em>Advance preparation:</em> The system will have the ability to query for SPLASCH resources through a FHIR interface.</td>
<td>MaxMD</td>
</tr>
</tbody>
</table>
Implementation Guide Overview

https://paciowg.github.io/splasch-ig/

1 Home

This PACIO SPLASCH implementation guide describes a means for exchanging observations related to patients’ Speech, Language, Swallowing, Cognitive Communication, and Hearing abilities across various care settings.

1.1 Introduction

This project will identify the data elements regarding eating, swallowing, and functional communication that need to be captured and exchanged across transitions of care in health care settings, based on the framework for the International Classification of Functioning, Disability, and Health (ICF). Examples may include:

- **Learning and applying knowledge**
  - Patient is unable to read and/or comprehend/retain awareness of complex content in documents or through conversation (such as financial or medical material).

- **Performing general tasks and demands**
  - Patient requires assistance with simple and complex living tasks such as meal preparation and basic and/or complex activities of daily living.

- **Communicating with others**
  - Patient is unable to independently communicate in high demand situations (such as an emergency phone call).
  - Patient is unable to produce intelligible words/phrases to unfamiliar listeners.
  - Patient requires excessive effort and strain to vocalize.
  - Patient requires technology for communication (i.e., hearing aids and/or speech generating devices).

- **Performing self-care activities related to eating and drinking**
  - Patient requires supervision, assistance, and/or diet modification with all meals related to the patient’s ability to swallow independently.

1.2 Background
Reference Implementation

- MITRE Pseudo EHR
- Source code: https://github.com/paciowg/pseudo-ehr

- Open Access Server
  Endpoint: https://gw.interop.community/SPLASCH/open
Testing with Inferno

• Open Source FHIR® Testing
  – Is a streamlined FHIR Server testing tool that is use-case / implementation guide focused
  – Supports the creation of automated tests through Implementation Guide Capability Statements
  – Makes it easier to write or reuse tests assessing conformance to other FHIR Implementation Guides with flexibility to test non-FHIR requirements
  – Is sponsored by the Office of the National Coordinator
  – Acts as a client to validate that servers adhere to SMART on FHIR and FHIR Implementation Guide requirements
  – Can write custom tests in Ruby

  [https://inferno.healthit.gov/](https://inferno.healthit.gov/)
# Track Schedule for January 11th

<table>
<thead>
<tr>
<th>Date</th>
<th>Time EST/(CST)</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/11/2021</td>
<td>9.30am-10.00am (8.30am-9.00am CST)</td>
<td>Introductions/Track Overview</td>
</tr>
<tr>
<td>1/11/2021</td>
<td>10.00am-11.30am (9.00am-10.30am CST)</td>
<td>Implementation Guide Review</td>
</tr>
<tr>
<td>1/11/2021</td>
<td>11.30am-12.00pm (10.30am-11.00am CST)</td>
<td>BREAK</td>
</tr>
<tr>
<td>1/11/2021</td>
<td>12.00pm-2.00pm (11.00am-3.00pm CST)</td>
<td>Build / Test / Validate</td>
</tr>
<tr>
<td>1/11/2021</td>
<td>2.00pm-2.15pm (1.00pm-1.15pm CST)</td>
<td>BREAK</td>
</tr>
<tr>
<td>1/11/2021</td>
<td>2.15pm-4.00pm (1.15pm-3.00pm CST)</td>
<td>Build / Test / Validate</td>
</tr>
<tr>
<td>1/11/2021</td>
<td>4.00pm-4.30pm (3.00pm-3.30pm CST)</td>
<td>Wrap Up</td>
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## Track Schedule for January 12th

<table>
<thead>
<tr>
<th>Date</th>
<th>Time EST/(CST)</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/12/2021</td>
<td>9.30am-10.30am (8.30am-9.30am CST)</td>
<td>Implementer Demos</td>
</tr>
<tr>
<td>1/12/2021</td>
<td>10.30am-11.30pm (9.30am-10.30am CST)</td>
<td>Create Track Report Slides / Backup Demo recording time</td>
</tr>
<tr>
<td>1/12/2021</td>
<td>11.30pm-12.15pm (10.30am-11.00am CST)</td>
<td>BREAK</td>
</tr>
<tr>
<td>1/12/2021</td>
<td>12.15pm-12.25pm (11.15am-11.25pm CST)</td>
<td>PACIO SPLASCH Track Highlight</td>
</tr>
</tbody>
</table>
NEXT STEPS
Participant Checklist

✓ Complete Connectathon registration (closed December 13, 2021)
✓ Complete the HL7 Pre-Connectathon Survey to designate which track you plan to participate in
✓ Attend HL7 FHIR Connectathon Basic Training (required for 1st time connectathon attendees)
✓ Attend SPLASCH Track Kick Off

☑ Create a Whova Account
☑ Join the PACIO-SPLASCH Zulip Stream
☑ Review the Connectathon Track List and visit Track Pages to learn more
☑ Read the Connectathon version of the FHIR Specification to become familiar with FHIR concepts
☑ If you plan to test, enter your information in Connectathon Manager (ConMan)
Whova Tips

- Use Chrome or Safari to access through Web app
- Must use the same email address used for Connectathon registration
- Whova for Connectathon Participants recording for additional guidance
- For technical support contact: HL7Connectathon@HL7.org
QUESTIONS
SEE YOU ON JANUARY 11TH!

HL7Connectathon 29: SPLASCH Track