



eLTSS Testing at HL7 Connectathon 24

Initial Report Out

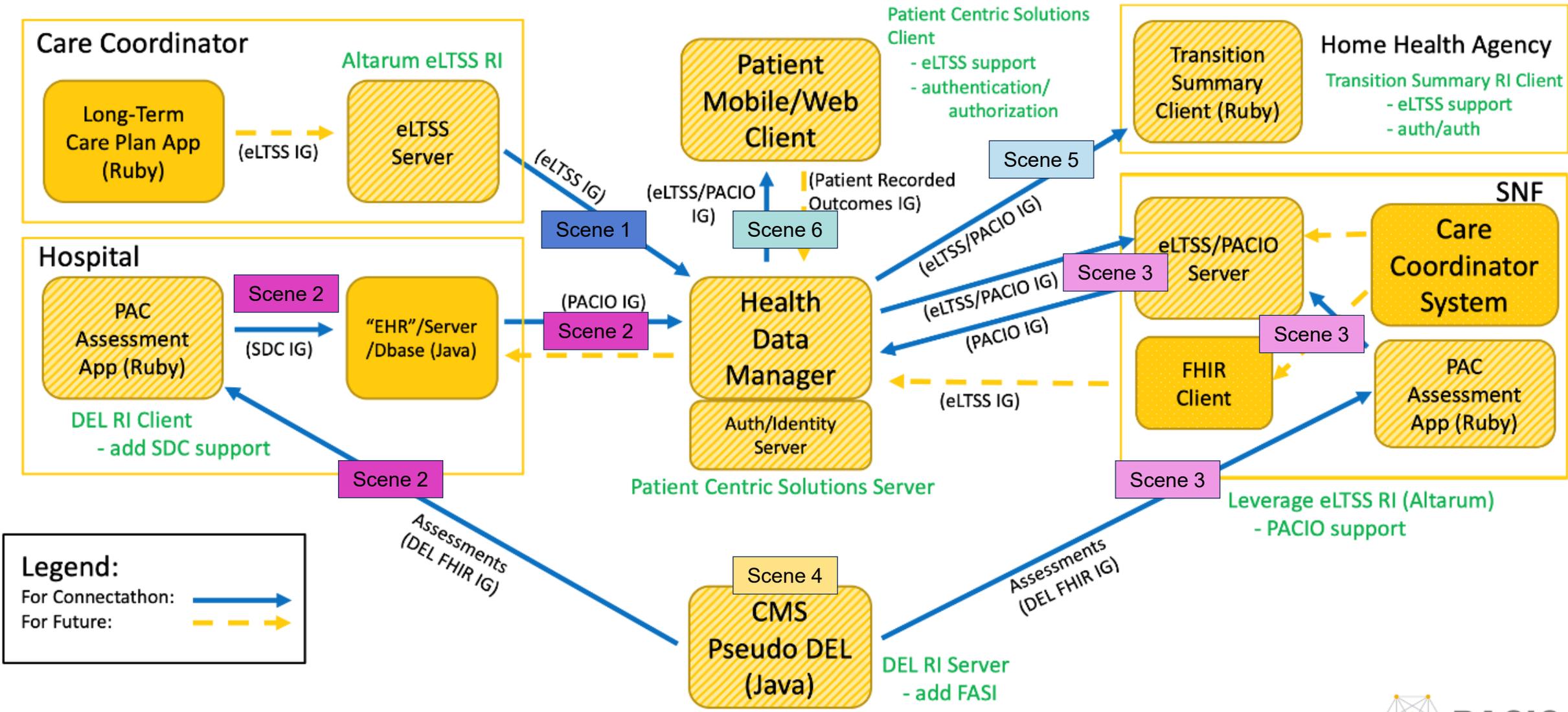
Agenda

1. Purpose of eLTSS Testing
2. PACIO-eLTSS Track Testing Architecture
3. Scene 1
4. Scene 3
5. Scene 5
6. Scene 6
7. Outcomes
8. Looking Ahead
9. Acknowledgements

Purpose of eLTSS Testing

- Implement and test the eLTSS FHIR IG within a variety of independently developed systems
- Exchange eLTSS care plans among disparate health IT (HIT) systems and clients, and display care plans in a consumable format for care providers, beneficiaries, and family members

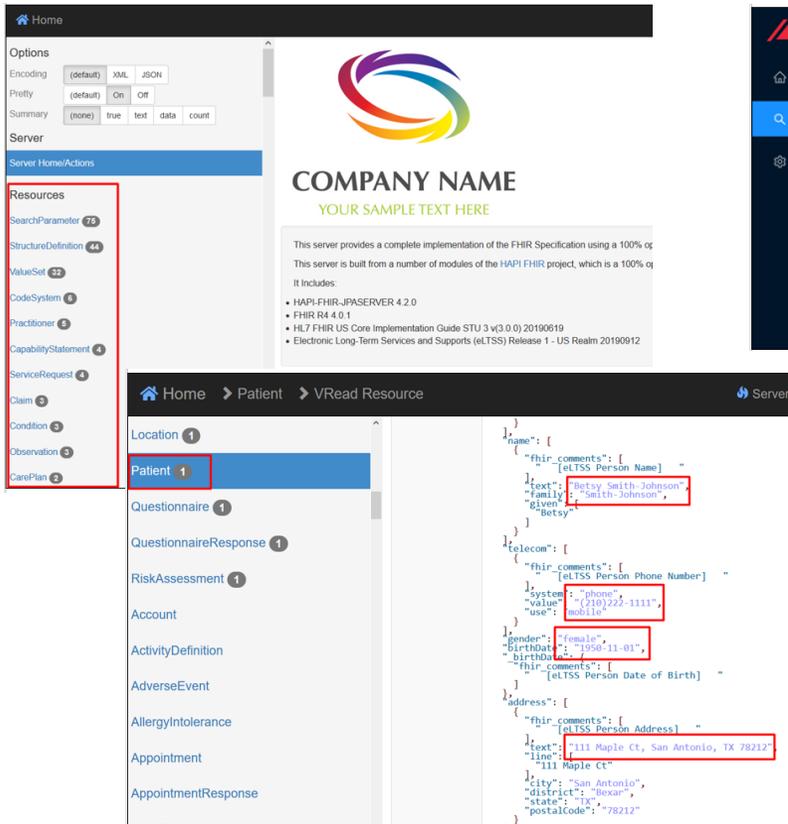
PACIO-eLTSS Track Testing Architecture



Scene 1

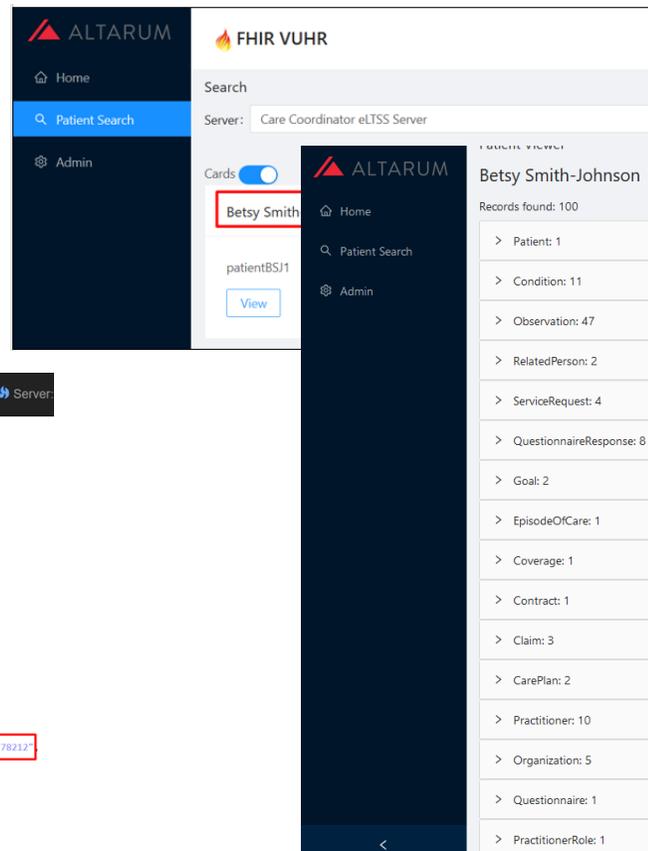
- Ms. Betsy Smith Johnson receives home community-based services (HCBS) services at home. A social worker documents eLTSS data including care plan and goals. eLTSS data is pushed to the Data Hub.

Server



The screenshot shows the 'Server' interface with a sidebar menu on the left containing items like SearchParameter, StructureDefinition, ValueSet, CodeSystem, Practitioner, CapabilityStatement, ServiceRequest, Claim, Condition, Observation, and CarePlan. The main area displays 'COMPANY NAME' and 'YOUR SAMPLE TEXT HERE'. Below this, a breadcrumb trail shows 'Home > Patient > VRead Resource'. A patient list is visible with 'Patient 1' selected. The patient details for 'Patient 1' are shown in a JSON format, with several fields highlighted in red boxes: 'name', 'family', 'given', 'telecom', 'gender', 'birthdate', 'address', and 'postalCode'.

Viewer



The screenshot shows the 'FHIR VUHR' interface. A search bar at the top is set to 'Care Coordinator eLTSS Server'. Below the search bar, there is a 'Cards' toggle and a search result for 'Betsy Smith' with the identifier 'patientBSJ1'. A 'View' button is visible. The interface also shows a sidebar with 'Home', 'Patient Search', and 'Admin' options.

Push to Data Hub

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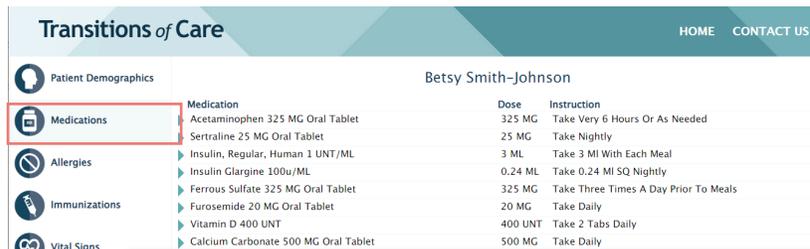
The screenshot shows the 'Patient Viewer' interface for 'Betsy Smith-Johnson'. It displays 'Records found: 33' and a list of records. The patient details are shown in a red-bordered box:

- Name:** Betsy Smith-Johnson
- ID:** patientBSJ1
- Phone:** (210)222-1111
- Gender:** female
- Birthdate:** 1950-11-01
- Address:** 111 Maple Ct, San Antonio, TX 78212

Below the details, there is a 'Link' field with the URL: <https://fhirconnect.altarum.org/hapi-fhir-jpasever-eltss-CC/fhir/Patient/patientBSJ1>. A 'CarePlan: 2' link is also visible at the bottom.

Scene 3

- Betsy is admitted to the SNF for PT/OT/SLP services for 14 days. The SNF retrieves the eLTSS data and assessment data from the Data Manager to inform her care. Functional and cognitive status is assessed on admission and discharge and pushed to the Data Hub.

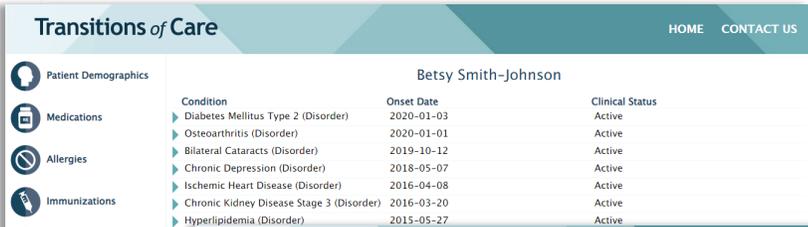


Transitions of Care HOME CONTACT US

Patient Demographics: Betsy Smith-Johnson

Medications

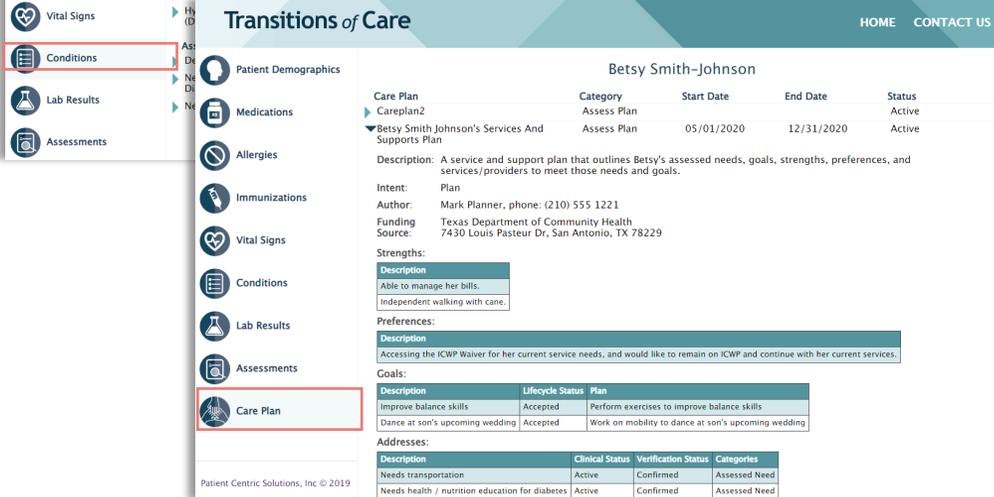
Medication	Dose	Instruction
Acetaminophen 325 MG Oral Tablet	325 MG	Take Very 6 Hours Or As Needed
Sertraline 25 MG Oral Tablet	25 MG	Take Nightly
Insulin, Regular, Human 1 UNT/ML	3 ML	Take 3 MI With Each Meal
Insulin Glargine 100u/ML	0.24 ML	Take 0.24 MI SQ Nightly
Ferrous Sulfate 325 MG Oral Tablet	325 MG	Take Three Times A Day Prior To Meals
Furosemide 20 MG Oral Tablet	20 MG	Take Daily
Vitamin D 400 UNT	400 UNT	Take 2 Tabs Daily
Calcium Carbonate 500 MG Oral Tablet	500 MG	Take Daily



Transitions of Care HOME CONTACT US

Patient Demographics: Betsy Smith-Johnson

Condition	Onset Date	Clinical Status
Diabetes Mellitus Type 2 (Disorder)	2020-01-03	Active
Osteoarthritis (Disorder)	2020-01-01	Active
Bilateral Cataracts (Disorder)	2019-10-12	Active
Chronic Depression (Disorder)	2018-05-07	Active
Ischemic Heart Disease (Disorder)	2016-04-08	Active
Chronic Kidney Disease Stage 3 (Disorder)	2016-03-20	Active
Hyperlipidemia (Disorder)	2015-05-27	Active



Transitions of Care HOME CONTACT US

Patient Demographics: Betsy Smith-Johnson

Care Plan

Care Plan	Category	Start Date	End Date	Status
Careplan2	Assess Plan			Active
Betsy Smith Johnson's Services And Supports Plan	Assess Plan	05/01/2020	12/31/2020	Active

Description: A service and support plan that outlines Betsy's assessed needs, goals, strengths, preferences, and services/providers to meet those needs and goals.

Intent: Plan

Author: Mark Planner, phone: (210) 555 1221

Funding: Texas Department of Community Health

Source: 7430 Louis Pasteur Dr, San Antonio, TX 78229

Strengths:

- able to manage her bills.
- Independent walking with cane.

Preferences:

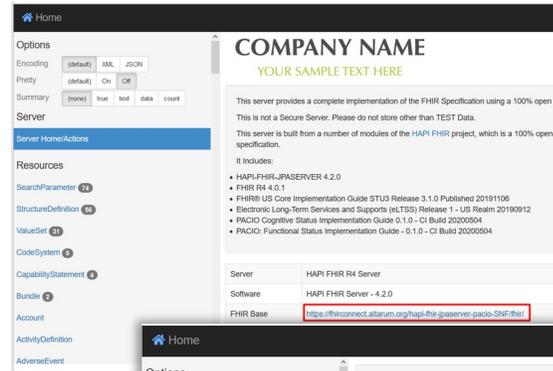
- Accessing the ICWP Waiver for her current service needs, and would like to remain on ICWP and continue with her current services.

Goals:

Description	Lifecycle Status	Plan
Improve balance skills	Accepted	Perform exercises to improve balance skills
Dance at son's upcoming wedding	Accepted	Work on mobility to dance at son's upcoming wedding

Addresses:

Description	Clinical Status	Verification Status	Categories
Needs transportation	Active	Confirmed	Assessed Need
Needs health / nutrition education for diabetes	Active	Confirmed	Assessed Need



Options: Encoding (default), XML, JSON; Pretty (default), On, Off; Summary (none), true, text, data, count

Server: YOUR SAMPLE TEXT HERE

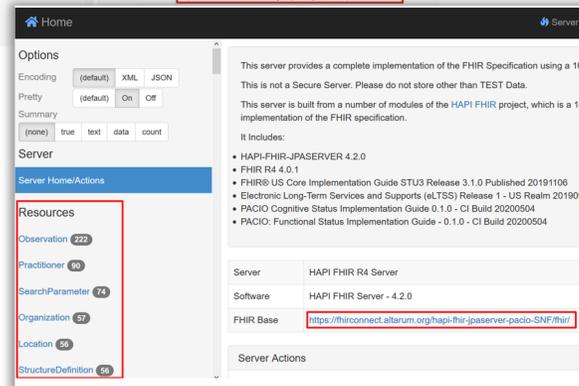
Resources:

- SearchParameter (12)
- StructureDefinition (2)
- ValueSet (1)
- CodeSystem (1)
- CapabilityStatement (1)
- Bundle (1)
- Account
- ActivityDefinition
- AdverseEvent

Server: HAPI FHIR R4 Server

Software: HAPI FHIR Server - 4.2.0

FHIR Base: <https://fhirconnect.altarum.org/hapi-fhir-jpaserver-pacio-SNF/fhir/>



Options: Encoding (default), XML, JSON; Pretty (default), On, Off; Summary (none), true, text, data, count

Server: This server provides a complete implementation of the FHIR Specification using a 100% open source implementation of the FHIR specification.

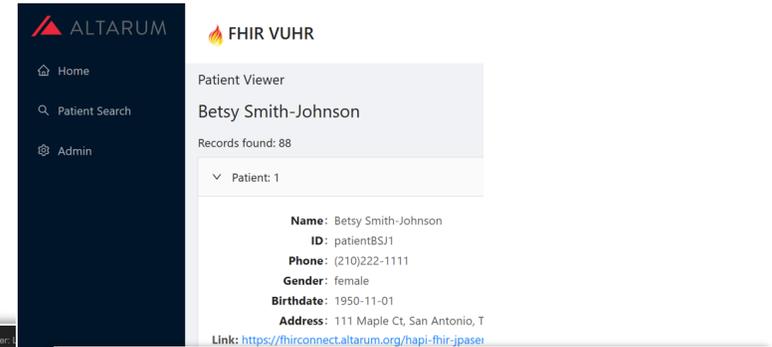
Resources:

- Observation (222)
- Practitioner (10)
- SearchParameter (74)
- Organization (57)
- Location (56)
- StructureDefinition (60)

Server: HAPI FHIR R4 Server

Software: HAPI FHIR Server - 4.2.0

FHIR Base: <https://fhirconnect.altarum.org/hapi-fhir-jpaserver-pacio-SNF/fhir/>



ALTARUM FHIR VUHR

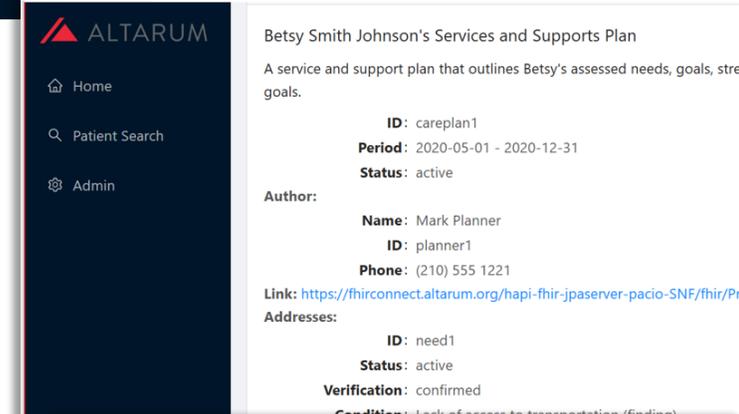
Home Patient Search Admin

Patient Viewer: Betsy Smith-Johnson

Records found: 88

Patient: 1

Name: Betsy Smith-Johnson
ID: patientBSJ1
Phone: (210)222-1111
Gender: female
Birthdate: 1950-11-01
Address: 111 Maple Ct, San Antonio, TX
Link: <https://fhirconnect.altarum.org/hapi-fhir-jpaserver-pacio-SNF/fhir/>



ALTARUM

Home Patient Search Admin

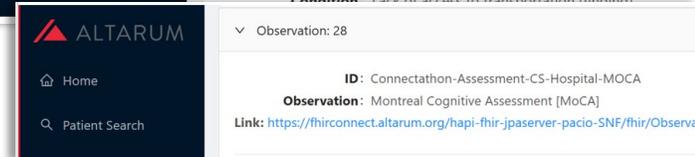
Betsy Smith Johnson's Services and Supports Plan

A service and support plan that outlines Betsy's assessed needs, goals, strer goals.

ID: careplan1
Period: 2020-05-01 - 2020-12-31
Status: active

Author: Name: Mark Planner
ID: planner1
Phone: (210) 555 1221
Link: <https://fhirconnect.altarum.org/hapi-fhir-jpaserver-pacio-SNF/fhir/Pr>

Addresses: ID: need1
Status: active
Verification: confirmed
Condition: Lack of access to transportation (for plan)



ALTARUM

Home Patient Search

Observation: 28

ID: Connectathon-Assessment-CS-Hospital-MOCA
Observation: Montreal Cognitive Assessment [MoCA]
Link: <https://fhirconnect.altarum.org/hapi-fhir-jpaserver-pacio-SNF/fhir/Observat>

Scene 5

- After 14 days, Betsy is ready for discharge back home. The HHA agency coordinator reviews the patient's data from the Data Manager as part of the triage process.

Betsy Smith Johnson's Services and Supports Plan		Conditions	
Patient	Betsy PatientShare	Needs transportation	
Description	A service and support plan that outlines Betsy's assessed needs, goals, strengths, preferences, and services/providers to meet those needs and goals.	Needs health / nutrition education for diabetes	
Time Period	05/01/2020 - 12/31/2020	Depression (on treatment)	
Status	active	Goals	
Intent	plan	Improve balance skills	
Activities		Dance at son's upcoming wedding	
Perform exercises to improve balance skills		Supporting info	
Work on mobility to dance at son's upcoming wedding		strength	Able to manage her bills.
		strength	Independent walking with cane.

Scene 6

- While at home, Betsy and her authorized family caregiver access the eLTSS data and assessment data through a patient mobile/web application.

Transitions of Care
HOME CONTACT US

-  Patient Demographics
-  Medications
-  Allergies
-  Immunizations
-  Vital Signs
-  Conditions
-  Lab Results
-  Assessments
-  Care Plan

Betsy Smith-Johnson

Care Plan	Category	Start Date	End Date	Status
▶ Careplan2	Assess Plan			Active
▼ Betsy Smith Johnson's Services And Supports Plan	Assess Plan	05/01/2020	12/31/2020	Active

Description: A service and support plan that outlines Betsy's assessed needs, goals, strengths, preferences, and services/providers to meet those needs and goals.

Intent: Plan

Author: Mark Planner, phone: (210) 555 1221

Funding Source: Texas Department of Community Health
7430 Louis Pasteur Dr, San Antonio, TX 78229

Strengths:

Description
Able to manage her bills.
Independent walking with cane.

Preferences:

Description
Accessing the ICWP Waiver for her current service needs, and would like to remain on ICWP and continue with her current services.

Goals:

Description	Lifecycle Status	Plan
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Dance at son's upcoming wedding	Accepted	Work on mobility to dance at son's upcoming wedding

Addresses:

Description	Clinical Status	Verification Status	Categories
Needs transportation	Active	Confirmed	Assessed Need
Needs health / nutrition education for diabetes	Active	Confirmed	Assessed Need

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Outcomes

- Over 30 participants attended the track
- An eLTSS care plan stored on an eLTSS FHIR server was displayed in a reader-friendly manner in Altarum's Patient Viewer client
- eLTSS data was effectively and rapidly "pushed" from Altarum's eLTSS server to a Patient Centric Solutions data hub
- eLTSS care plan data was successfully aggregated with PACIO data within the data hub
- eLTSS data and PACIO data were "pulled" from the data hub to an Altarum server playing the SNF role and displayed together in Altarum's Patient Viewer client
- eLTSS care plan, along with PACIO data, was "pulled" from the data hub and presented in a user-friendly rendering in MITRE's transitions of care client
- eLTSS care plan was "pulled" to Patient Centric Solutions PatientShare client and displayed in graphically accessible manner
- Successful data storage, aggregation, exchange, and display demonstrated the interoperability of the eLTSS IG

Looking Ahead

- The project will collect feedback from partners and participants while it considers lessons learned and next steps
- The Inferno validation tool was run against the Altarum eLTSS server. Output suggests that updates to the US Core IG made since the eLTSS IG was published may necessitate some refinement of eLTSS profiles in the next version of the eLTSS IG
- The care plan was preloaded onto the Altarum eLTSS server. Testing an application which collects eLTSS data at the point of care and then uploads that information into the server could add value to future connectathon testing. The project will explore this option with FEI Systems
- Engaging a system which is currently used in the collection and storage of services and support information, such as the FEI Blue Compass system, could prove valuable to future testing

Acknowledgements

This testing and outcomes could not have been possible without the dedicated engagement of the project's connectathon partners

- Altarum
- MITRE
- Patient Centric Solutions