DXC Open Health Connect

FHIR Connectathon 16 – Consumer Centered Data Exchange
Potential Business Problems

What if one or more data sources are not FHIR DSTU v3 compatible?

What if the transaction is more complex than a simple p2p exchange?

e.g., the target app needs data integrated from more than one data source?

e.g., there are additional services involved for consent validation, authentication validation, or some other additional business logic?

e.g., the message exchange pattern is not asynchronous peer-to-peer but instead wants to pub/sub or some asynchronous exchange?

What if the target app(s) needs a population view or analytics capabilities?

A middleware mediation service sitting between the Target and the Source can solve some of these potential problems...
Open Health Connect (OHC)
Cloud Based, Open Platform

OHC is an integrated set of **pre-configured** and **optimized** to deliver improved **outcomes for patients** and reduce variation in care

...as a platform OHC enables **vendor neutral data acquisition & integration** platform supported with built-in operational and clinical surveillance

...as an innovation enabler, orchestrates **intelligent routing of contextual and pre-curated information** to deliver improved patient care
Vendor Neutral Data Acquisition & Integration

- OHC a solution to connect Healthcare networks using flexible connectors for popular protocols such as HL7v2, CDA/CCD, and FHIR

- Supports FHIR standard for external & internal data information model

- Underpinned by a schema-less data store enabling support for large scale deployment avoiding the need for data normalization.

- Supports OAuth 2.0, OpenId, Policy-based Access Control, and auditing

- Business process orchestration with internal functions or external service calls
Enabling Digital Health Platform

**Build the Platform**
- Digital Patient/Service User Experience
  - Omnichannel UX
  - Patient & Outcomes Analytics
  - Patient Journey Mapping
  - Digital Engagement

**Create the Ecosystem**
- Self-Service / Direct
- Partners & Aggregators
- Digital Health
- IoT/ Wearables
- TeleService

**Connect the Legacy**

**Build the New**
- RESTful API / Stateless Resources
- Externalization / Componentization
- Cloud Enablement / SaaS
- Data Aggregation
- Federated Query

**Tackle the Legacy**
- 3rd Party Platform Services
- 3rd Party API Services – Technology
- 3rd Party API Services – Ecosystem

**Embrace the API Economy**
Scenario 1. OHC as a source system

1. Preload OHC with FHIR resources

Security Considerations
None. OHC supports SMART-on-FHIR OAuth requirements.
Scenario 2. OHC as a FHIR transformation service (proxy for non-FHIR enabled sources)

Security Considerations
If the source is not FHIR-security enabled, we will work with the existing source security controls directly and secure the FHIR resources within OHC using OAuth.
Scenario 3. OHC as a data aggregator of FHIR enabled data sources

Security Considerations
OAuth is designed for securing point-to-point transactions. OHC or other intermediaries can technically store and manage OAuth tokens and proxy security controls for the source systems, but this may be sub-optimal.
Scenario 4. OHC as an orchestration engine

Security Considerations
No additional considerations expected, but if the source system(s) are natively FHIR-security enabled, then the same considerations apply as Scenario 3.
Scenario 5. OHC as an analytics data source

Source (provider) → 2. Construct FHIR queries → 3. FHIR Request/Response

External Service → 3. Call External Service

Target (consumer) → 5. Analytics response

Source (provider) → 3. FHIR Request/Response

4. Index, Process Results

Security Considerations
No additional considerations expected, but if the source system(s) are natively FHIR-security enabled, then the same considerations apply as Scenario 3.
Pre-work Considerations

Done at Connectathon

Registering FHIR and non-FHIR end-points for source systems (assuming cloud based deployments for source systems)

Simple mappings for non-FHIR to FHIR transforms

Simple identity maps configured statically in OHC

Done before the Connectathon

Complex mappings for non-FHIR to FHIR transforms

Full-featured MPI

Interface non-FHIR based external services

OAuth token proxy solution (Scenario 3)