

2020-05 DaVinci PDex Plan-Net

Submitting WG/Project/Implementer Group

Financial Management WG / DaVinci

Track Resources

- Implementation Guide:
 - <https://build.fhir.org/ig/HL7/davinci-pdex-plan-net/index.html>
- Hosted Reference Implementations
 - Server: <https://davinci-plan-net-ri.logicahealth.org/fhir>
 - Client: <https://davinci-plan-net-client.logicahealth.org>
 - Now works with both
 - <https://cthon24.wh-fhir.dev.cloud.ibm.com/basic>
 - <https://davinci-plan-net-ri.logicahealth.org/fhir>
- Reference Implementation Code
 - Server: <https://github.com/HL7-DaVinci/plan-net-ri>
 - Sample Data: <https://github.com/HL7-DaVinci/pdex-plan-net-sample-data>
 - Client: https://github.com/HL7-DaVinci/plan-net_client
- Test Scripts
 - [Touchstone_DaVinci_PDex_PlanNet_Scripts](#)
- Postman query collection:
 - <https://github.com/saulakravitz/plan-net-postman-collection>. (There is a bug in scenarios 5 and 6...you can run these using the following)
 - <https://github.com/Jammjammjamm/plan-net-postman-collection>. (Changes will be merged into the above collection eventually)

General CMS Connectathon Participant Information:

- Recording: <insert here>
- Slides: [PDex Plan-Net Track 2020-05.pptx](#)

Justification and Objectives

This project defines a FHIR interface to a directory of a health insurer's in-network providers and pharmacies for patients/consumers. The [PDEX Plan-Net Implementation Guide](#) was recently balloted for STU and comments are currently being addressed and resolved.

Note: The Connectathon will use the STU1 ballot version of the IG, not the Continuous Integration build.

The objectives of the hackathon are:

- Test and gather feedback on the design and implementation feasibility of the PDEX Plan-Net model and its FHIR Implementation Guide to drive ballot reconciliation.
- Identify areas of improvement and expansion of the PDEX Plan-Net model to future use cases.
- Foster mindshare and innovation ideas on potential applications using the PDEX Plan-Net

This track will use the **R4** version of FHIR.

Related tracks

Da Vinci PDex

Da Vinci PDex Formulary

Proposed Track Lead

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Participants: (Please add your name/organization)

- Praneeta Pappula (Aetna)
- Aziz Khalmukhamedov (Cigna)
- Anand Rakshe (Aetna)
- Ricky (1uphealth)
- Shaheer AbdulKareem (Healthsparq/Cambia)

Track Orientation

The track kickoff presentation from 11/15 can be seen here:

- [PPT](#)
- [Video](#)

Zulip Channel: <https://chat.fhir.org/#narrow/stream/207606-DaVinci.2Fplan-net-connectathon>

System Roles

Local Requester (Client)

An application that can query a FHIR server implementing the Plan-net IG in support of provider or consumer use cases.

Available Clients

- Postman Collection for Scenarios listed below: <https://github.com/saulakravitz/plan-net-postman-collection>
- Initial Web GUI (Ruby):
 - Code: <https://github.com/FHIR/davinci-pdex-plan-net>
 - Deployed Web-Client: <https://davinci-plan-net-client.logicahealth.org/>
 - This web-client has been tested with the reference server described below, and allows browsing of the loaded resources, and support for scenarios 10a and 10b described below.

Payer Directory (aka Plan-net) (Server)

A server that makes provider data available.

Available Servers

Reference Implementation: <https://davinci-plan-net-ri.logicahealth.org/fhir>

- Authentication/Authorization: none
- This is a HAPI server with an interceptor that supports the 'near' query on Location resources.
- The dataset is an extended version of relevant data from the VhDir demo implementation that includes pharmacies.

- Sample Data Generation code: <https://github.com/HL7-DaVinci/pdex-plan-net-sample-data>
- Server Code and Docker Image: <https://github.com/HL7-DaVinci/plan-net-ri> (based on HAPI)

IBM FHIR Server: <https://cthon24.wh-fhir.dev.cloud.ibm.com/basic>

- Authentication/Authorization: Basic auth
 - fhiruser:change-password
 - example:
`curl -u fhiruser:change-password 'https://cthon24.wh-fhir.dev.cloud.ibm.com/basic/metadata'`
- This is an API-only (no UI) version of the IBM FHIR Server running on IBM Cloud
- Its loaded with the sample data generated from <https://github.com/HL7-DaVinci/pdex-plan-net-sample-data>
- Server Code: <https://github.com/IBM/FHIR>
- Docker image: <https://hub.docker.com/r/ibmcom/ibm-fhir-server> (note: doesn't yet pre-package this IG)

Scenarios

Note: Scenarios are based on those from previous VhDir Connectathons, in some cases slimmed down due to the differences between VhDir and Plan-Net, or because current test data doesn't support the scenario well. Illustrative queries for each scenario are found in the associated [postman collection](#).

Find details on an individual practitioner

These actions allow the Local Requester to find current, detailed information on a practitioner from a Validated Healthcare Directory to support local workflow. Expected uses include verifying the local data is current e.g. address, license status, accepting new patients, etc.

Scenario 1: Request data on a particular Practitioner

This scenario tests the ability to send a fully qualified query to the Healthcare Directory to receive data that describes an individual provider. Local Requester will use predetermined NPI numbers to get the practitioner and the practitioner's qualifications.

1. Using a Practitioner's NPI number 1238367938 get the practitioner's information including qualifications.

```
{{url}}/Practitioner?identifier=1236246543
```

Profiles Utilized: Practitioner, PractitionerRole

Precondition: Server is available, local system can access server

Success Criteria: Visual inspection of data received.

Scenario 2: Request data on a set of Practitioners

This scenario tests the ability to send a qualified query to the Healthcare Directory and receive data on a set of providers. (This example will be obtaining data with addresses in a particular state jurisdiction.)

1. Request all practitioners with any practitioner.address that is in the state of RI (Rhode Island).
2. Or any practitioners who have a qualification (e.g. license) where the qualification is valid is in the state of RI (Rhode Island).
3. Feel free to repeat for Massachusetts (MA) and Connecticut (CT).
4. Stretch goal II - programmatically identify any providers who are license outside of the state where their office address is located.

```
{{url}}/Practitioner?address-state=RI
```

```
{{url}}/Practitioner?qualification-wherevalid-code=CT
```

Profiles Utilized: Practitioner, PractitionerRole

Precondition: Server is available, local system can access server

Success Criteria: Visual inspection of data.

Find details on an individual organization

Scenario 3: Request data on an individual Organization

This scenario tests the ability to query the Healthcare Directory and receive organizational information including locations and services provided by the organization. Requester will use a specific Organization to receive the locations of the organization and specialty areas by location.

1. Using the organization GREATER LAWRENCE FAMILY HEALTH CENTER, INC., query the locations, services, and direct address for that organization.

```
{{url}}/Organization?name=GREATER LAWRENCE FAMILY HEALTH CENTER, INC.&_revinclude=Location:organization&_revinclude=HealthcareService:organization&_revinclude=Endpoint:organization
```

Profiles Utilized: Organization, HealthcareService, Location, Endpoint

Precondition: Server is available, local system can access server

Success Criteria: Visual inspection of data.

Scenario 4: Request Data on Organizations

This scenario tests the ability of a Requester to query the Healthcare Directory and receive organizational information including affiliations with other organizations. Requester will use a specific organization to receive the locations of the organization and specialty areas by location.

1. Using the organization BAY STATE COMMUNITY SERVICES, INC. query the Healthcare Directory to receive related Organizations, HealthcareServices provided, and Endpoints for each organization.

```
{{url}}/Organization?name=BAY STATE COMMUNITY SERVICES, INC.&_revinclude=OrganizationAffiliation:participating-organization&_revinclude=Endpoint:organization&_revinclude=HealthcareService:organization
```

Profiles Utilized: Organization, OrganizationAffiliation, HealthcareService, Endpoint

Precondition: Server is available, local system can access server

Success Criteria: Visual inspection of data.

Find details on a provider and their organizational relationships

Scenario 5: Request Organization data for a specific Provider

This scenario tests the ability for a Requester to query by a given provider to find all associated organizations, locations, networks and practice specialty, including a Direct address if available.

1. Given the NPI 1230782571, query for the associated provider, the organizations he/she is affiliated with, all locations and services and the networks he subscribes to.

```
{{url}}/Practitioner?identifier=1230782571&_revinclude=PractitionerRole:practitioner&_include=PractitionerRole:organization
```

```
{{url}}/Organization?_id={{pract_assoc_orgs}}&_revinclude=Location:organization&_revinclude=HealthcareService:organization&_revinclude=Endpoint:organization
```

Profiles Utilized: PractitionerRole Organization, OrganizationAffiliation, Network, Location, HealthcareService, Endpoint

Precondition: Server is available, local system can access server

Success Criteria: Visual inspection of data.

Scenario 6: Identify data associated with a Network

This scenario tests the ability for a Requester to query information about the Organizations, Locations, HealthcareServices, and Practitioners that are part of a Network.

Note: A Network 'is-a' Organization resource with a specific profile. So, to query all networks, one would use:

url /Organization?_profile=<http://hl7.org/fhir/us/davinci-pdex-plan-net/StructureDefinition/plannet-Network>

1. Using the State of Massachusetts Preferred Provider Network (id: plannet-network-HPID100000), locate all Organizations and Practitioners which belong to the network.
2. Identify all Locations and HealthcareServices for these Organizations.
3. Stretch goals: the following networks are on the server:

- United Technologies Preferred Provider Network
- State of Rhode Island Preferred Provider Network
- State of Connecticut HMO
- State of Massachusetts Preferred Provider Network
- Rhode Island Persona Preferred Provider Network
- Green Circle of Rhode Island HMO
- Acme of Rhode Island Preferred Provider Network
- Connecticut Persona Preferred Provider Network
- Green Circle of Connecticut HMO
- Acme of Connecticut Preferred Provider Network
- Massachusetts Persona Preferred Provider Network
- Green Circle of Massachusetts HMO
- Acme of Masechusetts Preferred Provider Network

Feel free to build a simple network Directories based on the data on the server

Profiles Utilized: Network, OrganizationAffiliation, Organization

Precondition: Server is available, local system can access server

Success Criteria: Visual inspection of data

```
{{url}}/Organization?name=State of Massachusetts Preferred Provider Network&_revinclude=OrganizationAffiliation:network&_revinclude=PractitionerRole:network
```

```
{{url}}/Organization?_id={{network_org_members}}&_revinclude=Location:organization&_revinclude=HealthcareService:organization
```

Scenario 7: Identify Available Services

This scenario tests the ability for a Requester to query information about the availability of services in an area.

- Return all organizations and the services provided by those Organizations in RI.
- Return all organizations and the services provider by those Organizations in Providence, RI.
- Return all organizations providing Respiratory Services in Rhode Island
- Return all organizations providing a Respiratory Services within 100 miles of a location

```
{{url}}/HealthcareService?location.address-state=RI&_include=HealthcareService:organization
```

```
{{url}}/HealthcareService?location.address-state=RI&location.address-city=Providence&_include=HealthcareService:organization
```

```
{{url}}/HealthcareService?service-type=respiratory-therapy&location.address-state=RI&_include=HealthcareService:organization
```

```
{{url}}/HealthcareService?service-type=respiratory-therapy&location.near={{lat}}|{{lon}}|100|[mi]&_include=HealthcareService:organization
```

**Note*

- *address-state, address-city, and near parameters part of base FHIR spec*
- *test server supports the near parameter for Location **only***

Scenario 8 - Find credentials and other items that are expiring

Find all licenses that are expired or will expire in the next 90 days. (**period on active** qualification on practitioner, note: period and status may be out of sync).

```
{{url}}/Practitioner?qualification-period=eb2019-12-14
```

Scenario 9 - Membership

- Find all the organizations and providers that are members of the "State of Connecticut HMO" Network (id "plannet-network-HPID110000").

Organizations

```
{{url}}/OrganizationAffiliation?network=plannet-network-HPID110000&_include=OrganizationAffiliation:participating-organization
```

Providers

```
{{url}}/PractitionerRole?network=plannet-network-HPID110000&_include=PractitionerRole:practitioner
```

Scenario 10a - Find a Pharmacy Associated with a Particular Network Near a Location

- Find all the organizations and providers that are members of the "State of Connecticut HMO" Network (id "plannet-network-HPID110000").

Organizations

```
{{url}}/OrganizationAffiliation?network=plannet-network-HPID110000&_include=OrganizationAffiliation:participating-organization
```

Providers

```
{{url}}/PractitionerRole?network=plannet-network-HPID110000&_include=PractitionerRole:practitioner
```

Scenario 10b - Find a Specialist Practitioner Associated with a Particular Network Near a Location

- Find all the organizations and providers that are members of the "State of Connecticut HMO" Network (id "plannet-network-HPID110000").

Organizations

```
{{url}}/OrganizationAffiliation?network=plannet-network-HPID110000&_include=OrganizationAffiliation:participating-organization
```

Providers

```
{{url}}/PractitionerRole?network=plannet-network-HPID110000&_include=PractitionerRole:practitioner
```

TestScript(s)

Touchstone Tests are found at: [Touchstone_DaVinci_PDex_PlanNet_Scripts](#)

Please create a Touchstone user account (free) associated to the DaVinci organization if you have not already in order to run your systems through the test scripts.

Security and Privacy Considerations

No security or privacy considerations. Data is not patient-related.