AAN AXON
Data Pull Method of Data Extraction
User Manual
Version 1
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1 Overview

There are two alternatives for submitting data for the Clinical Registry reporting.

- Data PULL
- Data PUSH

In the Data Pull scenario, the data mapping is handled by FIGmd analysts. This document covers the DATA PULL method of Data Extraction.

1.1 Data PULL

In the Data PULL Scenario, the Registry Practice Connector (RPC) Data Extraction Utility is installed at the participating Practice/group:

1. FIGmd will send an RPC install link via email to the participating Provider’s IT staff. The Provider’s authorized IT personnel will install the RPC in the Provider’s environment under their credentials.

2. The RPC is installed as an add-on service on the server selected by the IT personnel of the Practice/group.

3. The IT personnel also creates a read-only account to connect to its Electronic Health Record (EHR) database.

4. The RPC is then configured to extract data from the patient’s clinical documentation within the EHR.
   - The extracted data is stored in a file on the Practice server in an encrypted compressed format.
   - A second scheduled job then pushes the data to the FIGmd Registry database hosted on Amazon Web Services (AWS) cloud, which is outside the Practice IT system. The Data is then stored in the Registry Clinical Data Repository (CDR) Warehouse.

5. FIGmd mapping team then maps this data from the CDR into the Registry DataMart using the Registry Data Dictionary (DD). The participant may be asked to assist in the final mapping process.

**DISCLAIMER:** Depending on the data received from the EHR, FIGmd may need to integrate with the Practice Management System (PMS) for any missing data.
2 Data PULL Method

The Data Pull Environment is divided into the “Practice Environment” and “FIGmd Environment”.

2.1 Practice Environment

The Practice environment encompasses:

- RPC Connector
- Practice EHR Server

2.1.1 Registry Practice Connector

**Purpose**

- The RPC serves as a link between the Registry and the Practice.
- The RPC transmits data from the Practice EHR server to the Clinical Data Upload Server at FIGmd via a secure port.
- The RPC initiates data mapping immediately after the installation.
- The RPC performs a data pull on the EHR server once the required field mapping is completed.

**Technical Specifications**

- Microsoft Windows Operating System with Microsoft.Net 3.0 framework needs to be installed.
- A READ ONLY user account is needed to access the EHR database.

2.1.2 Practice EHR Server

The Practice EHR server stores the details of the patient data, which is typically raw, and unprocessed data.

**Technical Specifications**

The Practice EHR can be:

- EHR and/or a billing database (PM System).
- A computer system at the Practice level that stores the patients clinical encounter details.
Practice Environment Diagram

Practice Environment
2.2 FIGmd Environment

The FIGmd environment encompasses:

- RPC Management Server
- Clinical Data Upload Server
- Clinical Data Repository
- Data Marts
- Registry Dashboard

2.2.1 RPC Management Server

The Registry Practice Connector (RPC) Management Servers purpose:

**Purpose**

- The RPC provides a remote management path to the RPC in the EHR.
- The RPC acts as a communication link with the RPC Connector.
- Initiates session on this connection from the medical Practice side for extraction of data.

**Technical Specifications**

- After installation of the RPC, a connection is established to the RPC Management Server.
- It securely connects to the Port using a 256 bit Rijndael encryption key.

2.2.2 Clinical Data Upload Server (CDUS)

This server is accessible by the Practice RPC for transmitting all de-identified clinical data that will be reported to the Registry.

A scheduled job pushes the encrypted data from the Practice EHR to the CDUS hosted on the GOV cloud, which is outside of the Practice IT system.

The data is stored in a CCD compliant format in two file types:

- Demographic data file
- Clinical data file

The CDUS purpose in the FIGmd environment.

**Purpose**

- The CDUS Uploads/transmits all the data related to patient visit to the Clinical Data Repository.
- The CDUS upload session can only be initiated at the Practice level and not from the Registry Data Centre.
- The CDUS uploads the patient details into the Registry Data Centre.
**Technical Specifications**

- The “CDUS” is hosted on a cloud environment outside the Practice IT system.
- The upload takes place via https: port 443 using a 2048-bit RSA encryption key.

### 2.2.3 Clinical Data Repository (CDR)
The Clinical Data Repository stores data uploaded through the Clinical data upload server (CDU).

**Purpose**
- Transforms the structured data collected from the CDU into a database format.

**Technical Specifications**
- Requires a 128bit-Bit Locker Local 256 EBS Network Drive Encryption.

### 2.2.4 Data Marts
Data from the CDR is converted into the FIGmd specific Database format which is called Data Marts.

**Purpose**
- These data marts support requirements such as quality measure calculations.
- Data Marts are displayed on the Practice dashboard for review.

### 2.2.5 Registry Dashboard
The dashboard displays measure specific data on the registry portal.

**Purpose**
- The Dashboard displays data elements that are necessary for performance trends and measure specific analysis that is defined by the Registry.
- The Dashboard provides an easy to access web portal for retrieving reports, performing an analysis, and reviewing measure specific data.
3 Data Flow Diagram for Data PULL

![Data Flow Diagram - Data PULL](image)

**Data Pull Scenario**

1. **Practice/Provider**

2. **Encryption for data in transit**
   - 256-bit Rijndael key
   - Port 3389
   - https / Port 443
   - 2048-bit RSA key

3. **RPC Management Server**

4. **Clinical Data Repository (CDR)**

5. **Microsoft Transparent Data Encryption (TDE)**

6. **Data Marts**

7. **Registry Quality Reporting**

Key Managed by Encryption Server Provider

Registry Practice Connector (RPC)

Clinical Data Upload Server

EHR, Claims, and/or Billing Database(s)

Authorized Practice User

Mapping Analyst

Registry in AWS

Clinical Data Repository (CDR)
4 Flow Chart for Data PULL Method

1. RPC Installation
RPC Installation initiated at the Practice Side

2. Practice EHR Server
EHR Mapping Analyst sends a Query to the Practice EHR Server
RPC generates two files (demographic & clinical) per Provider

3. RPC Management Server
Provides a remote management path to the RPC Connector

4. Clinical Data Upload Server
RPC Data gets transmitted to the CDUS at FIGmd via a secure port and the text file gets converted into database format

5. CDR
Data from the CDUS gets transferred to the CDR.
Filters out Providers belonging to the Registry

6. Data Mart
Data Marts are created in the FIGmd format.
Data Marts are represented as Dashboard for a Practice

7. Registry Dashboard
Registry Dashboard Displays Measure specific data for the Provider/Practice
5 FAQs
5.1 RPC

1. Who installs the RPC?
The participant practice/group admin installs the RPC under his/her credentials. FIGmd technical support may assist as required.

2. Where is the RPC hosted?
The RPC is hosted at the practice or group environment.

3. Who can access the RPC?
The RPC can be accessed only by practice/group IT admin & FIGmd for troubleshooting.

4. What are the incoming connections to the RPC?
RPC management server for initial setup and data extract management are the incoming connections.

5. What does the RPC connect with?
The RPC connects with the EHR database with read-only account.

6. Does the RPC have access to PHI?
Yes

7. Does the RPC store PHI?
Yes, a Provider sees only his/her data based on their assigned credentials in the dashboard portal.

8. What are the Outgoing Connections from the RPC?
AWS cloud to the Clinical Data Repository (CDR) database of the Registry.

9. What are the HW requirements for installation of the RPC?
The minimum specifications for the computer (or virtual machine) running the Registry Practice Connector (RPC) service are:
   - Microsoft Windows Operating System with Microsoft .NET Framework 3.0 installed
     - Server: Windows 2008 or above
     - Desktop: Windows 7 or above
   - 1 GHz CPU
   - 2 GB memory available during scheduled data extraction and upload
   - 1 GB of hard drive space available
   - Broadband Internet access

10. Which category or method of data extraction does the installation of RPC involve?
The RPC is installed at the Practice end and utilizes the (Data PULL) method of data extraction.
5.3 Registry Dashboard Portal

1. **Where is the Registry Dashboard Portal hosted?**
   The Registry Dashboard Portal is deployed at the Registry hosted on Amazon Web Services.

2. **Who deploys the Registry Dashboard Portal?**
   The FIGmd delivery team deploys the Registry Dashboard Portal as a web solution.

3. **Which category or method of data extraction does the Registry Dashboard Portal involve?**
   The Registry Dashboard Portal is provided as web solution.

4. **Who can access the Registry Dashboard Portal?**
   The Registry Dashboard Portal can be accessed by participants via the web browser. No direct access to the data is provided.

5. **What are the incoming connections to the Registry Dashboard Portal?**
   The incoming connections to the Registry Dashboard Portal is the **data load** from the RPC to the Registry CDR, and then to the Registry data mart.

6. **Does the Registry Dashboard Portal access PHI?**
   Yes

7. **Does the Registry Dashboard Portal store PHI?**
   Yes, a Provider sees only his/her data based on the role setup in dashboard portal.

8. **What are the outgoing connections from the Registry Dashboard Portal?**
   The only outgoing connection from the Registry Dashboard Portal is the browser access by the participating providers.

9. **What are the HW requirements for Registry Dashboard Portal deployment?**
   Any web browser.