IHE Work Item Proposal (Short)

# Proposed Work Item: FHIR Federation

Proposal Editor: Joe Lamy

Work item Editor: Joe Lamy

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# The Problem

The concept of federation is relatively underspecified in FHIR at this time. The notion of “home community” is used by numerous IHE profiles to enable complex, large-scale heterogeneous networks. See [IHE ITI TF-1] E.9 “XCA Integration with XDS and non-XDS communities” for a number of examples of federated deployments enabled by XCA. FHIR does not have an explicit analog for home community. We would like to add this to the IHE FHIR-based profiles. This would support all-FHIR cases requiring federation (for example, crossing security boundaries) as well as bridging FHIR with non-FHIR mechanisms such as XCA. Our initial use cases address mCSD and MHD, but other profiles could be considered, as well as Appendix Z for common capabilities, such as a consistent encoding of HCID as a business identifier.

# Key Use Case

Use case: An mCSD Care Services Selective Consumer that is grouped with an MHD Document Source wishes to push documents to a specific partner. It searches in a directory by Home Community ID and finds the partner organization, however the organization contains no Endpoint resources. Its presence in the directory implies the organization is reachable via a parent organization. The Consumer traverses the directory until it finds a suitable parent organization with an Endpoint that supports the Provide Document Bundle [ITI-65] transaction. The Document Source sends the ITI-65 request, including the Home Community ID for the ultimate destination in the intendedRecipient extension. The Document Recipient makes use of the HCID to route the submission, which could involve a federated XDS, XDR or XCDR system.

Use case: An MHD Document Responder / Document Recipient provides a FHIR API to a large-scale federated network built on XCA and XCDR. Its clients know about the network and its participants explicitly, as the MHD system is their gateway to it. The Document Responder is grouped with an XCA Initiating Gateway. An MHD Document Consumer sends a Find Document References [ITI-67] request to the Responder, which triggers the XCA Initiating Gateway to make XCA Cross Gateway Query [ITI-38] requests to some number of XCA Responding Gateways. The MHD Document Responder aggregates all received XDS Document Entries and converts them to FHIR DocumentReferences to return to the MHD Document Consumer. While the XCA-based large network has the concept of home community, and the XDS Document Entries contain the HCID explicitly, there is no defined analog in DocumentReference, so the MHD Document Consumer cannot filter by community to decide which documents it wishes to retrieve.

# Standards & Systems

MHD profile

mCSD profile (for an analogous example)

Appendix Z, for common encoding of HCID in a business identifier

# Discussion

There are other ways federation could be implied/enabled besides an explicit home community ID. One example is the base URL of a resource, which could be used to infer the owning system and its place in the network. Another example is that Organization, Location, and HealthcareService resources hosted at one system could contain explicit Endpoint resources at a different system (i.e. their “home” system).

This work item should consider these alternate mechanisms and specify if and when they would be warranted vs. a HCID.