Query patient-level clinical data workflow

Overview

Description: The transaction queries for previously stored clinical data for a specific patient. The following sequence diagram shows the steps involved in this transaction.

Sponsor: Ryan Crichton (with the IL and SHR communities)

Status: In Progress

Referenced Standards and APIs:

- XDS.b with the on-demand document option
- CDA documents profiled by IHE PCC
- CSD - Find matching services - ITI-73
- PIX Query - ITI-9
- Optionally, the MHD profile can be supported to enable PoC systems to query clinical content using a simpler and more modern approach. This option may be supported in two ways:
  - The SHR itself may support the required MHD transactions.
  - (Recommended) The IL can provide an adapter to convert incoming MHD transactions to XDS.b transactions for the SHR to process as normal.

Assumptions and prerequisites

- The PoS system must ensure the patient they are querying clinical information about already exists. It can do this by querying for the patient (Query patients workflow).
- The PoS system is a trusted application known by the HIE and it is registered with the interoperability layer to be able to send and receive data securely (Common message security workflow).
- The SHR MUST be able to generate on-demand documents in the XDS-MS format using the data it store in the save clinical data workflow. Optionally, any other sections that have been discretely imported and are deemed useful may be added to the generated XDS-MS document.

Actors

- PoS - The point of care system that captures a patient's clinical encounter, it is responsible for sending clinical data on to the HIE.
- IL - Mediates the transactions between the PoS system and the infrastructure services to facilitate easier interoperability.
- CR - The source of truth for patient demographic and identifier detail. It is able to be queried using an identifier to find the enterprise identifier for a particular person.
- FR - The source of truth for facility information. It is able to be queried for details about a particular facility by ID.
- SHR - Stored patients clinical information. It is able to receive and store a patient clinical documents.
**Technical details**

<table>
<thead>
<tr>
<th>Ref</th>
<th>Interaction</th>
<th>Endpoint</th>
<th>Data</th>
<th>Transaction Specification</th>
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</thead>
</table>
| 1   | Query for clinical documents by patient ID and/or date | Option 1 (must be supported): XDS.b Registry Stored Query (ITI-18) - Find Documents query OR Option 2 (may additionally choose to support): MHD Find document references (ITI-67) - RESTful query | XDS.b/MHD metadata | IHE IT Infrastructure  
  - Vol. 1 - Section 10, Appendix E, J, K  
  - Vol. 2a - Sections 3.18  
  - Vol. 2b - Sections 3.41, 3.42, 3.43  
  - Vol. 2x - Appendix A, B, K, L, M, N, V, W  
  - Vol. 3 - Section 4.1, 4.2, 4.3  
  If supporting the MHD Option: MHD profile supplement |
| 2   | Resolve client identifier | PIX Query (ITI-9) | HL7 QBP*Q23 message | IHE IT Infrastructure  
  - Vol. 1 - Section 5  
  - Vol. 2 - Sections 3.9 |
<p>| 3   | Return person record | none | HL7 RSP*K23 message | * |
| 4   | Extract ECID and enrich message with ECID | none | none | * |</p>
<table>
<thead>
<tr>
<th></th>
<th>Query for clinical documents by ECID</th>
<th>XDS.b Registry Stored Query (ITI-18) - Find Documents query and optionally (only if SHR support MHD directly) MHD Find document references (ITI-67) - RESTful query</th>
<th>XDS.b/MHD metadata</th>
<th>IHE IT Infrastructure</th>
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<tbody>
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<td>5</td>
<td>Return list of document IDs</td>
<td>XDS.b Registry Stored Query response - list of document IDs or optionally (only if SHR support MHD directly) MHD Find document references response - list of document IDs</td>
<td></td>
<td>MHD: MHD profile supplement</td>
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<tr>
<td>6</td>
<td>Request the content of the document by document ID</td>
<td>XDS.b Retrieve Document Set (ITI-43) and optionally MHD Retrieve document (ITI-68)</td>
<td>XDS.b/MHD metadata</td>
<td>IHE IT Infrastructure</td>
</tr>
<tr>
<td>8</td>
<td>Return list of document IDs</td>
<td>XDS.b Registry Stored Query response - list of document IDs or optionally MHD Find document references response - list of document IDs</td>
<td></td>
<td>Vol. 1 - Section 10, Appendix E, J, K Vol. 2a - Sections 3.18 Vol. 2b - Sections 3.41, 3.42, 3.43 Vol. 2x - Appendix A, B, K, L, M, N, V, W Vol. 3 - Section 4.1, 4.2, 4.3</td>
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<tr>
<td>9</td>
<td>Request the content of the document by document ID</td>
<td>XDS.b Retrieve Document Set (ITI-43) and optionally (only if SHR support MHD directly) MHD Retrieve document (ITI-68)</td>
<td>XDS.b/MHD metadata</td>
<td>&quot;</td>
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<tr>
<td>10</td>
<td>If this document is a static document retrieve it else if it is an on-demand document generate it</td>
<td>Internal operation</td>
<td>XDS.b/MHD response - with CDA document content</td>
<td>For ODD: XDS-MS Specification</td>
</tr>
<tr>
<td>11</td>
<td>Return clinical document</td>
<td>XDS.b/MHD response - with CDA document content</td>
<td>XDS.b/MHD response - with CDA document content</td>
<td>&quot;</td>
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