CMS Connectathon
Track Highlights

PACIO Advance Directive
Interoperability

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PACIO Project: Background

Established February 2019, the PACIO Project is a collaborative effort between industry, government and other stakeholders, with the goal of establishing a framework for the development FHIR implementation guides to facilitate health information exchange.
PACIO Project:
Advance Directive Interoperability

Problem Statement:

This Advance Directive Interoperability (ADI) FHIR implementation guide (IG) is used for explaining how to represent, exchange, and verify a person’s goals, preferences, and priorities for treatments and interventions regarding future medical care if the patient is unable to communicate.
USE CASE
Meet Betsy

• Retired, 72 year-old white female
• Moved from Texas to Michigan
• Widow who lives alone, and has 2 children; her son in Michigan assists with her healthcare decisions

Medical History
- Hypertension
- Depression
- Hyperlipidemia
- Cataracts
- Stage III Chronic Kidney Disease
- Osteoarthritis
- Ischemic Heart Disease
- Type II Diabetes

Medications
- Lisinopril 40mg twice a day
- Atorvastatin 40mg nightly
- Calcium 500mg daily
- Sertraline 25mg nightly
- Metformin 500mg daily
- Vitamin D 800IU daily
- Tylenol 650mg every 6 hours or as needed
- Furosemide 20mg daily
- Ferrous Sulfate 325mg three times a day prior to meals
## ADI Document Types

<table>
<thead>
<tr>
<th>Advance Directive Documents</th>
<th>Format</th>
<th>LOINC Document ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living Will (Texas)</td>
<td>Scanned paper</td>
<td>86533-7</td>
</tr>
<tr>
<td>Healthcare Power of Attorney (POA)</td>
<td>N/A</td>
<td>64298-3</td>
</tr>
<tr>
<td>Personal Advance Care Plan (PACP)</td>
<td>Structured (digital)</td>
<td>81334-5</td>
</tr>
<tr>
<td>Living Will + Power of Attorney (Michigan LW+POA)</td>
<td>Scanned paper</td>
<td>92664-2</td>
</tr>
<tr>
<td>Portable Medical Order (example: POLST)</td>
<td>Scanned paper</td>
<td>93037-0</td>
</tr>
</tbody>
</table>
### Events

- Create Texas Living Will (paper) **LOINC 86533-7**
- Scan/share Texas Living Will with AD document repository

- Create PACP (structured data) **LOINC 81334-5**
- Share PACP with son via AD document repository

- Share Texas Living Will and PACP with Michigan HIE (access from AD document repository)

- Create Michigan Living Will+POA (paper) **LOINC 92664-2**

- Michigan LW+POA integrated with AD document repository

- AD from document repository sends Michigan LW+POA to Michigan HIE

- HCA/Family members can access a copy of the Michigan LW+POA document
Scene 1: Create Portable Medical Order

Events

- PCP reviews the existing Michigan LW+POA and PACP
- PCP creates Portable Medical Order with Betsy in a clinician facing app
- Portable Medical Order is imported to AD Repository Server
- Copy of Portable Medical Order sent to Michigan HIE for broader access
Scene 2: Updating PACP and Michigan POA+LW

Events

- Betsy updates her PACP in a patient-facing app
- PACP is imported to AD Repository Server
- Copy of updated PACP sent to state of Michigan's HIE for broader access
- Betsy updates her Michigan Advance Directive (LW+POA) document
- (LW+POA) is imported to AD Repository Server
- Copy of updated (LW+POA) sent to state of Michigan’s HIE for broader access
Scene 3 Overview: Retrieval of AD Information

Events

- Betsy and her designated HCAs confirm access to her updated advance care documents

- PCP views updated Betsy's PACP, Michigan Advance Directive (LW+POA), and confirms alignment with Portable Medical Order

- Home Health RN accesses Betsy's PACP, Michigan Advance Directive (LW+POA), and Portable Medical Order
Implementers & Contributors

- ADVault
- MaxMD
- MITRE
- MyDirectives
- MyDirectives for Clinicians
- Patient Centric Solutions
Key Takeaways

• Patient Centric Solutions:
  – “We are very interested in the PACIO IG Advance Directive. This is a great example of a patient-authored document that both reflects the patient’s person goals and wishes and informs providers about her care, particularly during emergency or crisis situations. This is extremely important to both clinicians and patients and is recognized as such.”

• Eliminates a source of friction for patients and providers; avoids redoing manual effort of filling out paper forms
Key Takeaways

• Store digital data in a repository to avoid using paper copies that may be outdated

• Automatically flag the old document as superseded when a client app sends a new version of an AD document to the receiver

• Be clear about when to write a new document (post) vs. update (put) to avoid duplicate data
Key Takeaways

• The source of truth for the date the document was signed MUST be the JSON Web Signature (JWS.) The date in the DocumentReference SHOULD be the date the document was digitally signed.

• Make a list of endpoints available through a national directory so that providers know where to find AD Information
Key Takeaways

• Displaying instances of FHIR resources in user-facing applications highlights interoperability. FHIR provides the ability to select the data to display and to style it in a patient-friendly presentation.

• The harmonization required for Connectathon moves us closer to the standardization required to share data across jurisdictions.

• The jurisdiction (example: Texas living will) is not currently included in the IG. Determine if jurisdiction should be added.
Resources

• **ADI Weekly Use Case Meetings:** Wednesdays 12.00-1:00 pm ET dial in & zoom link available on Confluence: [https://confluence.hl7.org/display/PC/PACIO+Project+Advance+Directive+Interoperability+%28ADI%29+in+FHIR](https://confluence.hl7.org/display/PC/PACIO+Project+Advance+Directive+Interoperability+%28ADI%29+in+FHIR)

• **Zulip:** [https://chat.fhir.org/#narrow/stream/282785-Advance-Directives](https://chat.fhir.org/#narrow/stream/282785-Advance-Directives)

• **Implementation Guide – Balloted version**

• **Reference Implementation Client (Apache 2.0):** [https://github.com/paciowg/pseudo-ehr](https://github.com/paciowg/pseudo-ehr)

• **Sample Data:** [https://paciowg.github.io/advance-directives-ig/downloads.html](https://paciowg.github.io/advance-directives-ig/downloads.html)

• **Test Scripts (Apache 2.0):** [https://github.com/paciowg/adi-inferno](https://github.com/paciowg/adi-inferno)
Thank You Testers!