Detailed Proposal Template

1. Proposed Profile: *Assessment Curation and Data Collection*

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**Summary**

*Encoding Assessment Instruments for interoperable exchange is not a process that scales easily as IHE and HL7 have demonstrated over many years. Building one-off assessment instruments doesn’t meet the need of provider organizations. This profile takes a new approach facilitating the exchange of assessment data.*

2. The Problem

Assessments are the principle means by which numerous forms of data regarding physical function, mental/cognitive status, social determinants of health, and patient reported outcomes are collected.

HL7 has established in FHIR the Questionnaire and QuestionairreResponse resources as a mechanism to report assessment results, as a logical outcome of the Structured Data Capture efforts of prior years.

The key challenge for provider organizations today is not in using Questionnaire or QuestionnaireResponse resources to capture assessment information. It is rather in being able to find implementable Questionnaire resources that can be used with their existing EHR systems.

IHE PCC developed four CDA templates for use in capturing assessment results as CDA documents in 2007, requiring extensive development. There are tens (perhaps even hundreds) of thousands of assessment instruments which can be used in providing care. It took easily eight months to put together these four templates, and thus our prior approach towards making these assessments available to providers in computable form will not scale in this environment.

Because this very small set of assessments did not address key needs of organizations, there has been very little uptake of these CDA templates. We could select other assessments in an effort to improve the update, but this would likely still not address the key needs of many organizations.

3. Key Use Case

There are two key uses cases for this profile. The first of these use cases addresses the availability of computable assessment instruments, the second deals with performing the assessment activities.

In the first use case, a care provider organization is seeking information about assessment instruments to address a specified condition or health concern. Their goal is to identify instruments and eventually acquire instruments which could be used to capture information essential to management of the care of patients having that condition.

In the second use case, the care provider organization wants to implement this assessment in their EHR system and be able to exchange the results of this assessment via the QuestionnaireResponse resource.

4. Standards & Systems

*FHIR Questionnaire, Questionnaire Response*

*FHIR Patient Reported Outcomes Implementation Guide*

*FHIR Structured Data Capture Implementation Guide*

5. Technical Approach

The technical approach uses the FHIR QuestionnaireResponse and ClinicalImpression resources to facilitate communication of assessment data, and the FHIR Questionnaire resource to facilitate communication of assessment instruments.

**Existing actors**

**Clinical Knowledge Resource Repository**

A Clinical Knowledge Resource Repository stores ~~documents~~ artifacts and metadata ~~providing~~ regarding computableclinical knowledge and enables access to that information to requesters ~~on demand~~.

**New actors**

**Artifact Consumer**

The artifact consumer is a user-oriented application component that allows an end user (e.g., clinician, informaticist, interface engineer, et cetera) to explore clinical knowledge resources available from a Clinical KnowledgeResourceRepository.

**Assessment Requestor**

The assessment requestor is an application component that needs assessment data and can request the capture of assessment information from an assessor.

**Assessor**

An assessor is a user-oriented application that allows a clinician, patient or other party to answer the questions associated with an assessment instrument and obtain a completed response.

**Existing transactions**

*N/A*

**New transactions (standards used)**

**Artifact Query**

In this transaction, the Assessment Consumer requests that a Clinical KnowledgeResourceRepository identity assessment instruments that meet certain criteria, e.g., by topic, coded concern, procedure, clinical area, et cetera, or by provenance. The Clinical KnowledgeResourceRepository returns the metadata essential to enable the consumer to determine if it wants to know more about the assessment instrument.

The returned result would list the metadata associated with the various Questionnaire resources available but need not contain complete data on items in the instrument.

**Request Artifact**

In this transaction, the Artifact Consumer requests the complete details of an Assessment Instrument in order to implement it for evaluation or production use.

**Execute Assessment**

In this transaction, the Assessment Requestor tells an assessor to collect the necessary data to complete a QuestionnaireResponse and any data resulting from the Questionnaire (e.g., ClinicalImpression)

Clinical Knowledge Resource Repository

Artifact Consumer

↓Artifact Query

↓Retrieve Artifact

↓Artifact Subscribe

↑Artifact Publish

Assessment Requestor

Assessor

↓Execute Assessment

Knowledge Executor

→Deploy

↓Execute Guideline

**Impact on existing integration profiles**

There may be grouping requirements on actors of the QEDm and similar profiles, and content consumer actors when grouped with actors of the ACDC profile to support data prepopulation.

Some updates to CMAP may be needed to align with ACDC FHIR Version.

**Breakdown of tasks that need to be accomplished**

6. Support & Resources

Audacious Inquiry

Others TBA

7. Risks

Coordination with HL7 Implementation Guides being developed by AHRQ and ONC (FHIR Patient Reported Outcomes)

ClinicalImpression is at FMM 0, we will need mitigations to address use of this resource

Overlap with Dynamic Care Planning (DCP) and Computable Clinical Guidance (CCG)

8. Open Issues

*How to integrate Questionnaire data with existing EHR data, e.g., what happens when the assessor is grouped with QEDm or XDS actors.*

*How to tie ClinicalImpression back to QuestionnaireResponse*

*Address Provenance to keep track of organizational and individual authors*

*LTPAC*

9. Tech Cmte Evaluation

1. Proposed Workitem:  *Assessments for Research (A4R) Whitepaper*

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2. The Problem

PCC is considering embarking on a profile (ACDC) to support publication of assessment instrument metadata and executable form as FHIR Questionnaire resources.

There is great value in being able to capture assessment data and impressions in clinical research, especially in the case of patient reported outcomes, a critical component associated with clinical research.

However, encoding assessment instruments into a computable form is a challenging endeavor. PCC developed 4 templates for assessment instruments in 2007 in the course of 8 months. There are, however, thousands of already developed and validated patient-reported outcomes instruments. It is fairly clear that manual encoding of these instruments by experts (e.g., clinical informaticists) simply wouldn’t scale across the available resources to enable their use in research programs.

i and to coordinate these encodings with clinical vocabularies such as LOINC® and SNOMED CT®, without significant delays in production.

3. Discussion

IHE is a good venue to discuss the ramifications of the solutions because it has members representing stakeholders in research, public health, and quality that can help inform developers trying to build a scalable process for encoding assessment instruments.