

# Board Report: IHE PCC Domain

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## Sponsors

- Health Information Management Systems Society (HIMSS)
- American College of Physicians (ACP)

## Leadership

- Secretariats: Sarah Bell, HIMSS ([sarah.bell@himss.org](mailto:sarah.bell@himss.org)), TeRhonda McGee, RSNA ([tmcgee@rsna.org](mailto:tmcgee@rsna.org))
- Board Rep: Tone Southerland, Kno2 ([tsoutherland@kno2.com](mailto:tsoutherland@kno2.com))
- Co-chair: Andrea Forquet, eHealthSign ([afourquet@ehealthsign.com](mailto:afourquet@ehealthsign.com))
- Co-chair: Empty

## Membership Rosters

- Planning/Technical Committee:  
[https://docs.google.com/spreadsheets/d/1WlpJJElq5rKqziWueAc561OnJ\\_62tG2N9I7BVEbK2-w/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1WlpJJElq5rKqziWueAc561OnJ_62tG2N9I7BVEbK2-w/edit?usp=sharing)

## Vision and Mission Statements

- The Vision of PCC is to continually improve patient outcomes through the use of technology connecting patients and their care providers across healthcare disciplines and care paths.
- The Mission of PCC is to develop and maintain interoperability profiles to support coordination of care for patients where care crosses providers, patient conditions, and health concerns.

## Recent Activity

PCC continues to meet jointly with QRPH several times each year. A handful of new profiles are being developed as well as existing profiles being updated. Some maternal health work was moved forward this past year with inclusion of PCC maternal health templates in USCDI. Engagement between NEMESIS and PCC continues and is steadily expanding to include additional conversations and investigations around providing outcomes in support of value-based care initiatives. Additionally, PCC continues to improve and develop 360x closed loop referral profiles.

## New Profiles

### 360 Closed Loop Referral Exchange for SDOH Services (360X-SD) **Public Comment**

- This Profile, focused on managing referrals from a clinical setting to non-clinical services provided by Community Based Organizations or hubs for Social Determinants of Health (SDOH) services is based on the Gravity Project (US), and was proposed and accepted in Summer of 2023. It is currently in Public Comment Status.

### 360 Closed Loop Referral Exchange for Home Health Services (360X-HH) *In Development*

- This Profile, focused on managing referrals from a clinical setting to a home health agency for home health services, was proposed and accepted in summer of 2023. Volume 1 work is still in progress.

### Mobile Antepartum Summary (mAPS) *In Development*

- This profile adds FHIR capabilities in the form of a FHIR Document and other appropriate FHIR Resources to the existing APS Profile and revises the CDA implementation to incorporate social service assistance related to perinatal care. Additionally, it includes Occupational Data for Health components. Volume 1 and 2 are anticipated to move to Public Comment in the March/April 2024 timeframe.
- The overall scope of this Profile includes several of the Antepartum family of profiles including APS, APHP, APL, and APE; in addition, it will include BFDR and Family Planning components.

### 360 Closed Loop SNF to ED Transfer (360X-LE) *In Development*

- 360X-LE: The accepted profile proposal focused on the narrow use case of the transfer from a SNF or other LTC facility to ED. After the initial work on the use case, we got feedback that there is a wider use case of cross organizational transfers (acute to acute, acute to ED, LTC to ED, EMS to acute) that could likely benefit from a single profile. This wider work has been on hold until other 360X profiles are completed.

## **Updates to Existing Profiles**

### 360 Exchange Closed Loop Acute Care to SNF Transfer (360X-L) *Trial Implementation*

- This previously published Profile has two Change Proposals that have been approved (but not yet incorporated) to add a description about using the Profile in an XCA federated environment and addition of a capability to indicate the specialty for which the referral is being made.

### 360 Exchange Closed Loop Referral (360X) *Final Text*

- This base Profile of the 360X family was approved to move to Final Text status in July of 2023. Moving to Final Text is still in progress. Additionally, we are also in process of publishing this profile via profiles.ihe.net as an HTML version. This will be the first of the PCC Profiles to be published in HTML.
- Two Change Proposals have been processed that cover the additional role of a referral intermediary, enabling a single referral management system to be used in managing referral workflows.

### Paramedicine Care Summary (PCS) *In Development*

- This Profile was originally published several years ago and is being split into two profiles to better organize the use of FHIR and CDA.
- Paramedicine Summary (PS)
  - This is the original profile and will be updated to revert to using IHE Medical Summary (XDS-MS) from the IPS CDA due to concerns that the IPS CDA seems to be no longer well supported due to existing implementations of CDA-based exchange already entrenched in the market. Anticipated publication to Public Comment in Q2 2024 timeframe.
- Mobile Paramedicine Summary (mPS)
  - This new “mobile friendly” version of the Profile uses FHIR and IPS. There is some redesign happening as part of this work to support updated FHIR models as well as an improved inheritance model to simplify cross-SDO harmonization efforts with CEN/TC 215, SNOMED, and ISO/TC 215.
  - Publication to Public Comment status is expected to occur in Q3 2024

### CDA Occupational Data Options *In Development*

- There are changes to the CDA Occupational Data for Health in individual FHIR-based PCC and QRPH Profiles. These changes do not contain major Profile behavioral modifications. Rather, they focus on reorganization of resources, inclusion to FHIR CI builds, and cross-checking against all QRPH and PCC Profile usage.
- These changes will be published to Public Comment due to the broad (yet non-behavioral) impact to existing QRPH and PCC Profiles.

## Joint domain work

- PCC/QRPH/ITI are having ongoing discussions regarding how to better constrain and use HL7 FHIR resources specifically related to using the HL7 CI build processes. Current working projects involve US Core and this joint work is attempting to figure out the best approach to handle non-regional specific (i.e. international) Profiling.
- The ITI Domain modeled the PCC-1 Transaction for HTML publication. This, in addition to 360X, will be our first web-based HTML publications. Discussions and work are in progress.

## Most Significant Profiles

The Connectathon Results database contains test results for PCC profiles **only** from the **2022 Europe/North America Connectathon** and the **Europe 2023 Connectathon**. The Japan 2022 Connectathon did not contain any PCC profiles, the 2023 North America Connectathon is not available in the database, and there were no other 2022/2023 Connectathons listed.

PCC has a total of 12 Integration Statements listed in the IHE Product Registry from years 2010 - 2023, across 6 organizations. Only 2 organizations have Integration Statements from the past 2 years, indicating that use of the Product Registry is not broadly used. The reasoning for declined usage is not entirely clear.

	2022 EU/NA Connectathon		2023 EU Connectathon		
Title	# Vendor (Cthon)	# Product (Registry)	# Vendor (Cthon)	# Product (Registry)	Significance
<b>Consolidated CDA Profiles (CCDA 2.1)</b>  Content Profiles: includes a number of different CDA profiles based on the CCDA 2.1 specification including: Consultation Note, Unstructured Document, Referral Note, Operative Note, CCD, Progress Note, Care Plan, Discharge Summary, and History & Physical.	13	0	21	0	CCDA 2.1 arose from the Health Story Project which based many of its CDA templates on PCC templates. While these tests are US-specific, there is an international base using these IHE PCC templates. Additionally, there is testing of these profiles in the European Connectathon.

<b>Exchange of Personal Health Record (XPHR)</b>  Content Profile: describes the content and format of summary information extracted from a PHR system for import into an EHR system, and vice versa.	3	0	4	0	XPHR is a long-standing profile of PCC that still seems to have some testing being performed each cycle.
<b>360 Exchange Closed Loop Referral (360X)</b>  Content and Transaction Profile: describes the content and transports for a general closed loop referral use case.	3	0	4	0	360X is a more recently developed Profile that has several additional Profiles in the same “family” that address various referral use cases. 360X is the “parent” of these profiles in that it addresses the most general use case. Most (but not all!) of the test systems are representatives of organizations focusing on the US market, which is expected as this profile contains a US National Extension.
<b>Cross-Enterprise Sharing of Medical Summaries (XDS-MS)</b>  Content Profile: describes the content and format and discharge summaries and referral notes.	3	0	4	0	XDS-MS is a long-standing profile of PCC that still seems to have some testing being performed each cycle.
<b>Query for Existing Data for Mobile (QEDm)</b>  Supports dynamic queries for clinical data elements by making the information widely available to other systems within and across enterprises to support provision of better clinical care. It defines a transaction used to query a list of specific data elements, persisted as FHIR resources.	10	1	11	0	QEDm is a long-standing PCC profile that was adapted several years ago to include FHIR. This profile continues to be tested at Connectathons.
<b>International Patient Summary (IPS)</b>  This IPS Profile uses the HL7’s IPS Implementation Guides that realize the CEN EN 17269 IPS	0	0	0	1	IPS is a cross-SDO international initiative where PCC saw an opportunity to provide implementation guidance and harmonization around existing CDA templates and new FHIR templates.

dataset. Additional options pertaining to occupational data for health and section constraints for a complete IPS sections support are specified within this profile.					
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## Significant Deployment Activity

There are no known **new** deployments of PCC Profiles in production or pilot environments. Please refer to previous PCC Board Reports for deployments that may still be operational. Regular checking and follow up of such deployments is not currently occurring.

## Demonstrations and Other Events

### 2024 Demonstrations and Events

#### HIMSS 2024 Interoperability Showcase, Orlando, FL

- IPS with IHE ODH option was demonstrated

### 2023 Demonstrations and Events

#### HIMSS 2023 Interoperability Showcase, Chicago, IL

- 360X Closed Loop Referral
- XDS-MS Discharge Summary/C-CDA

#### IHE USA/HIMSS Path to Production - EMS – collab between IHE USA and NEMESIS (NEMESIS paid)

This collaboration between IHE USA and HIMSS focused on EMS use cases and showcasing and discussing, in round table fashion, the real world use of EMS-based profiles and real-world challenges that implementers and providers are facing. The forum was an online webinar, monthly, for 1 to 2 hour sessions over the course of a few months. More information can be found here: <https://www.iheusa.org/ems>

#### IHE USA/HIMSS Path to Production – Maternal Health

This collaboration between IHE USA and HIMSS focused on Maternal Health use cases, showcasing and discussing, in round table fashion, the real world use of Maternal Health-based profiles and real-world challenges that implementers and providers are facing. The forum was an online webinar, monthly, for 1 to 2 hour sessions over the course of a few months. More information can be found here:

<https://www.iheusa.org/MaternalandChildHealth>

An action item of importance that arose from these sessions was PCC and IHE USA formally submitting comments for proposed changes to USCDI Maternal Health observations. The proposed changes included an entirely new section for maternal health data elements. In total 20 data elements were presented (at different “Levels”) and all were accepted by USCDI. While USCDI is US country specific, it is a great example of the PCC Domain working with the IHE USA Regional Deployment domain to leverage existing data element profiling in a nationally-recognized implementation guidance program.

## 2022 Demonstrations and Events

### HIMSS 2022 Interoperability Showcase, Orlando, FL

- 360X Closed Loop Referral <https://www.youtube.com/watch?v=Ma3w2sbVrT4>
- EMS demonstration: <https://www.youtube.com/watch?v=OVGGN-MQTAo>

## Trends

- PCC participation has waned over the past several years. Our quorum has significantly dropped as a result of this. However, activity continues in the 360X Referrals, EMS Profiles, and Maternal health workflows.
- EMS industry engagement with PCC has been consistent over the past few years, building upon work completed in earlier years of PCC. ImageTrend, Zoll, Kno2, and NEMSIS have all been involved in both development and implementation of various EMS standards. We expect EMS related work, especially with recent NEMSIS engagement to continue to move forward with a greater focus on the end to end workflows across the EMS use cases, as opposed to point to point which has been the primary focus in previous development and implementation cycles. In addition, there are ongoing conversations with several US QHINs (TEFCA) regarding participation and support for EMS workflows.
- The IHE USA Path to Production webinar series focused on EMS was sponsored by NEMSIS and was initiated in early 2023 and ran for several months. The goals of these Path to Production series were to educate about standards and engage with stakeholders in the community in round table style discussions to explore new opportunities to improve the adoption of IHE-based interoperability standards in the market.
- A particular challenge in the EMS market space is adoption of standardized interoperability using IHE Profiles. In the US, the lack of federal incentivization programs means the market must drive the adoption. As EMS agencies fall under the management of the US Department of Transportation (DOT) and the Provider hospitals fall under the US Department of Health and Human Services (HHS) there is a gap, and also an opportunity. Informal conversations between US DOT and IHE committee leadership have been held, but no action to date has arisen from those conversations.

## Summary of Future Plans

- PCC will continue working on Closed Loop Referral, Maternal Health, and EMS Profiles, including the

addition of FHIR to the Labor and Delivery Summary (LDS) Profile and moving the Routine Interfacility Patient Transport (RIPT) Profile into the FHIR CI Build process.

- PCC is slowly moving toward conversion of Profiles from PDF publication to HTML publication. We would like this to happen more quickly, but lack of resources prevents this from happening.
- PCC is planning to publish a testable white paper based on findings from the Path to Production series on EMS. This white paper will focus primarily on how various EMS-based PCC Profiles interact with each other, US-based national HIEs, as well as other national regional deployment models.

<https://github.com/IHE/EMS>