Patient Care Coordination (PCC)
2018 Domain Update

Presented by:
Amit Popat, PCC Planning Co-chair
Today’s Presenters

Amit Popat
Planning Committee Co-Chair, IHE PCC
Epic
Learning Objectives

- Describe the history of IHE and the PCC Domain.
- Explain the vision, mission, and strategic goals of PCC and its relevance in IHE and the healthcare community.
- Describe the work accomplished by PCC over the most recent annual work cycle.
- Identify opportunities for your organization to participate in PCC domain activities and understand how to get engaged.
Today’s Agenda

• IHE Overview and History
  • PCC Overview and History

• PCC Vision and Mission

• Strategic Goals of PCC

• PCC Profiles and Technical Frameworks
  • Key Existing Profiles
  • New Profiles

• How to Participate

• Q & A
PCC History

- Formed in 2004

- Sponsors:
  - American College of Physicians (ACP)
  - Healthcare Information and Management Systems Society (HIMSS)
  - Cross-Enterprise Sharing of Medical Summaries (XDS-MS)
    - First PCC profile and IHE’s first content profile
    - Delivered in 2005 for Trial Implementation

- Profiles delivered since 2004
  - 23 content profiles
  - 9 workflow profiles
  - 7 integration profiles (including 4 FHIR-based profiles)
Vision:
To continually improve patient outcomes through the use of technology connecting across healthcare disciplines and care paths.

Mission:
To develop and maintain interoperability profiles to support coordination of care for patients where that care crosses providers, patient conditions and health concerns, or time.
PCC Scope

General Clinical Care Aspects:

- Clinician Perspective
- Patient Perspective
- Coordination with other IHE Domains
- Order Processing

Workflows and Integration Needs Common to Multiple Specialty Areas:

- Document Exchange
- Clinical Message Exchange
- Clinical Reconciliation
PCC Strategic Goals

• **Content:**
  • Coordinate with external standards development organizations (SDOs) to develop and promote the use of content templates
  • Develop strategies to support multi-level content template guidance to benefit the global community

• **Workflow:**
  • Develop new profiles by reaching outward to other IHE domains to coordinate workflows across care paths
  • Develop White Papers by researching new areas that could benefit from standards based interoperability guidance

• **Nursing**
  • Explore and understand the benefit of IHE profile work for the nursing community by partnering with nursing organizations and initiatives
  • Develop Profiles and White Papers to support and explore various nursing specific workflows

http://wiki.ihe.net/index.php/Patient_Care_Coordination
# PCC National and International Presence

[https://www.ihe.net/ihe_worldwide/](https://www.ihe.net/ihe_worldwide/)

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>Roles</th>
<th>Additional Information</th>
</tr>
</thead>
</table>
• Obstetric Use Cases, others |
| Italy    |         | Implementer Developer | • [http://www.consorzioarsenal.it/we/guest](http://www.consorzioarsenal.it/we/guest)  
• Workflow definition profiles (XDW-based) |
• [http://www.healthit.gov](http://www.healthit.gov)  
• Data Access Framework National Extension, MU |
| Canada  |         | Developer          |                                                                                       |
| Asia    | China   | Implementer       | • [https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3243277/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3243277/) |
| Middle East | Saudi Arabia | Implementer       | • Medication, Immunization, eReferral                                                  |
IHE | Integrating the Healthcare Enterprise

Profiles and Technical Frameworks

Early Content Profiles

• **Medical Summaries (XDS-MS)**
  • Discharge and Referral Summaries exchanged between providers
  • EHR, HIS, HIE
  • Transitions of care between inpatient and ambulatory settings

• **Emergency Department Referral (EDR)**
  • Enhances XDS-MS to support “Heads-up” call to ED
  • EHR, EDIS, HIS, HIE
  • Provides critical data needed in ED visits

• **Exchange of Personal Health Records (XPHR)**
  • Exchange clinical summary data between patients and providers
  • EHR, PHR, Patient Portal
  • Ensures patients have updated lists of healthcare providers, problems, medications, allergies, immunizations, lab results, procedures, and encounters
Profiles and Technical Frameworks

Existing Clinical Decision Support Profiles:

- **Query for Existing Data (QED)**
  - Access to clinical data
  - EHR, CDR, HIS, Registries
  - For use in quality measurement, reporting, clinical decision support, and research

- **Care Management (CM)**
  - Supports communication to specialized care delivery systems for disease management

- **Request for Clinical Guidance (RCG)**
  - Access to clinical decision support as a service
  - EHR, other HIT systems

- **Retrieve Clinical Knowledge (RCK)**
  - Interface for health IT systems, Personal Health Records, and HIEs to retrieve knowledge on a topic suitable for presentation to a clinician or patient
Profiles and Technical Frameworks

25 Content Profiles:

- Antepartum Education (APE)
- Antepartum History and Physical (APHP)
- Antepartum Laboratory (APL)
- Antepartum Summary (APS)
- Labor and Delivery History and Physical (LDHP)
- Labor and Delivery Summary (LDS)
- Maternal Discharge Summary (MDS)
- Newborn Discharge Summary (NDS)
- Postpartum Visit Summary (PVS)
- Immunization Content (IC)
- Interfacility Transport Summary (ITS)
- Multiple Content Views (MCV)

Profiles:
- Personal Health Record (XPHR)
- Cross-enterprise Sharing of Medical Summaries (XDS-MS)
- CDA Document Summary Sections (CDA-DSS)
- eNursing Summary (ENS)
- Nursing Note (NN)
- Patient Care Plan (PCP)
- Patient Plan of Care (PPoC)
- Triage Note (TN)
- Composite Triage Note and Nursing Note (CTNN)
- ED Physician Note (EDPN)
- Emergency Department Referral (EDR)
- EMS Transfer Summary (EMS)
- Para-medicine Care Summary (PCS)

Colors:
- Pink = Perinatal
- Green = Emergency Care
- Blue = Nursing and Care Coordination
Profiles and Technical Frameworks

13 Integration Profiles:

- Bed Management (BED)
- Clinical Mapping (CMAP)
- Guideline Appropriate Ordering (GAO)
- Query for Existing Data (QED)
- Query for Existing Data for Mobile (QEDm)
- Referral/Order Linking (ROL)
- Dynamic Care Planning (DCP)
- Dynamic Care Team Management (DCTM)
- Reconciliation of Clinical Content and Care Providers (RECON)
- Request for Clinical Guidance (RCG)
- Retrieve Clinical Knowledge (RCK)
- Point-of-care Medical Device Tracking (PMDT)
- Routine Interfacility Patient Transport (RIPT)

Pink= Perinatal, Green = Emergency Care, Blue= Nursing and Care Coordination
Profiles and Technical Frameworks

7 Workflow:

- **Cross-enterprise Basic eReferral Workflow Definition (XBeR-WD)**
- **Care Management (CM)**
- **Remote Patient Monitoring (RPM)**
- **Perinatal Workflow (PW)**
- **Cross-enterprise Tumor Board Workflow Definition (XTB-WD)**

- **Cross-Enterprise Cardiovascular Heart Team Workflow Definition (XCHT-WD)**
- **Cross-enterprise TeleHome Monitoring Workflow Definition (XTHM-WD)**

*Pink= Perinatal, Green = Emergency Care, Blue= Nursing and Care Coordination*
# Profiles and Technical Frameworks

## Existing Cross Domain Profiles*

<table>
<thead>
<tr>
<th>Profile</th>
<th>Domain</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote Patient Monitoring (RPM)</td>
<td>Patient Care Devices (PCD)</td>
<td>Standardizes measurements taken by personal healthcare devices in remote settings</td>
</tr>
<tr>
<td>Clinical Mapping (CMAP)</td>
<td>Patient Care Devices (PCD)</td>
<td>Manages nomenclature transformations mapping to and from clinical terminologies</td>
</tr>
<tr>
<td>Cardiovascular Heart Team Workflow Definition (XCHT-WD)</td>
<td>Cardiology (CARD)</td>
<td>Facilitates management of a dynamic Heart Team supporting decisions typically made in cardiology care</td>
</tr>
<tr>
<td>Perinatal Workflow (PW)</td>
<td>Radiology (RAD) Laboratory (LAB) Patient Care Devices (PCD) Quality, Research, and Public Health (QRPH)</td>
<td>Simplifies exchanges between various providers of perinatal care by utilizing profiles and transactions from several IHE domains to support the continuum of care of expectant mothers and newborns</td>
</tr>
<tr>
<td>Paramedicine Case Summary (PCS)</td>
<td>Quality, Research, and Public Health (QRPH)</td>
<td>Provides exchanges between pre-hospital emergency care providers and the hospital. Supports value sets for registries.</td>
</tr>
</tbody>
</table>

*Does not represent ALL profiles with cross-domain dependencies*
2018 New Profiles
Patient Care Coordination

*Does not represent ALL profiles with cross-domain dependencies
Dynamic Care Planning - DCP (FHIR)
The Dynamic Care Planning (DCP) Profile provides the structures and transactions for care planning, creating, updating and sharing Care Plan Definitions (e.g. order sets, protocols, practice guidelines, etc.) and Care Plans by:

- Discovering Care Plan Definitions
- Creating/updating Care Plan Definitions
- Listing Care Plan Definitions
- Discovering Care Plans
- Creating/updating Care Plans
- Listing Care Plans
**DCP Details**

- Provides the structures and transactions for care plan definition and care plan creation, updates, management and sharing care planning information that meet the needs of many, such as providers, patients and payers.
- Depicts how information about multiple care plans and care plan definitions can be shared and used to provide care.
- Care plans and care plan definitions can be dynamically updated as the patient interacts with the healthcare system.
- A patient may be associated with multiple types of care plans at any given time.
- A provider is able to access, create/update care plan definitions as needed.
- Standards
  - HL7 FHIR CarePlan, PlanDefinition/ActivityDefinition and Subscription resources
  - HL7 Coordination of Care Services (CCS) Functional Model
DCP Actors and Transactions
Paramedicine Care Summary - PCS
Para-medicine Care Summary (PCS)

The Para-medicine Care Summary uses derivative of information available in CDA summary and FHIR resources to electronically communicate patient’s vital medical information between EHR and Para medicine transport systems.
PCS Details

• Decreases time gathering important patient information during handoff at receiving facility
• Provides receiving care team with information to make informed interventions when the patient arrives to the facility
• Provides the hospital the ability to have the patient’s paramedicine encounter quarriable within their system
  • Quality metrics
  • Potential registry participation
• Two approaches
  • CDA
  • FHIR
• Both approaches use the Document Sharing [PCC-1] transaction
CDA – Document Summary Sections
CDA-DSS

I just need the main ideas
CDA-Document Summary Sections

The CDA Document Summary Sections (CDA-DSS) Profile provides the ability to summarize content in the CDA document or to add summary content to a CDA document that is not already included in the document.
The CDA document summary sections can be created by summarizing pertinent information. The summary sections can be rendered for viewing. Content in some summary sections can be imported when possible.

- A received CDA document can be rendered showing sections summarizing information defined by the user. Note the receiver does not alter the received CDA document.
- A received CDA document can be rendered showing sections summarizing information defined by use cases provided by the CDA-DSS profile. Note the receiver does not alter the received CDA document.
- A CDA document can be created to include sections summarizing information defined by the user.
- A CDA document can be created to include sections summarizing information defined by summary section templates provided by the CDA-DSS profile.
CDA-DSS Actors and Transactions
PCC Participation

**IHE International Membership**

- Apply for IHE International Organizational Membership
  - Membership information: [http://ihe.net/join/](http://ihe.net/join/)
  - 180+ members: [http://ihe.net/Member_Organizations/](http://ihe.net/Member_Organizations/)
  - Modest annual fee

- Participate in IHE Domains and Committees
  - IHE Organizational members only
  - 12 clinical and operational domains [https://www.ihe.net/ihe_domains/](https://www.ihe.net/ihe_domains/)
  - Each domain has one Planning and one Technical Committee

- Non-members may participate in comment periods, implement IHE Technical Frameworks, and act as subject matter experts
PCC Participation

PCC Planning Responsibilities:

- Develops domain strategy and roadmap
- Identifies domain priorities and problems
- Recruiting new members
- Education
- Aligning industry initiatives
- Review and recommends IHE profile proposals

- ihe@himss.org
- Co-chair: Amit Popat
- Co-chair: Emma Jones
- pccplan@googlegroups.com
- Wiki page:
  - http://wiki.ihe.net/index.php/Patient_Care_Coordination_Planning_Committee
PCC Participation

PCC Technical Responsibilities:

- Development of IHE profiles
- Maintenance of IHE Profiles and Technical Framework
- Recruiting new members

- ihe@himss.org
- Co-chair: Denise Downing (outgoing)
- Co-chair: Gila Pyke
- pcctech@googlegroups.com
- Wiki page:
  http://wiki.ihe.net/index.php/Patient_Care_Coordination_Technical_Committee
PCC Participation

IHE Profile Development Cycle

- Eighteen (18) month cycle
  - Profile Proposals
    - https://www.ihe.net/call_for_proposals/
  - Profile Development
  - Public Comment
  - Trial Implementation and Profile Testing
  - Feedback and Adjustment from Testing

- Domains have Independent Schedules

- Opportunity for Members and Non-members to Participate
  - Profile Development
  - Public Comment https://www.ihe.net/PCC_Public_Comments/
  - Testing and Implementation
  - Change Proposals http://wiki.ihe.net/index.php/Category:CPs

- Overview of the IHE Cycle (next slide) →
IHE Profiles Drafted & Revised

IHE Technical Framework Developed

Profile Selection by Committees

IHE Call for Proposals Opens

months 1-5

months 6-13

months 14-18

Publish in IHE’s Product Registry

Demonstrate at a HIMSS Interoperability Showcase

Install Interoperable products in Clinical Settings worldwide

IHE Improves, Safety, Quality and Efficiency in Clinical Settings
## PCC Participation

### PCC Profile Development Schedule

<table>
<thead>
<tr>
<th>IHE Profile Stage</th>
<th>Open Date</th>
<th>Close Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Call for Proposals</strong></td>
<td>Aug 2, 2018</td>
<td>Sep 21, 2018</td>
</tr>
<tr>
<td><strong>Profile Proposal Review and Selection</strong></td>
<td>Oct 10-11, 2018</td>
<td>Nov 14-15, 2018</td>
</tr>
<tr>
<td><strong>Profiles Drafted in Technical Committee</strong></td>
<td>Nov 2018</td>
<td>May 2019</td>
</tr>
<tr>
<td><strong>Public Comment</strong></td>
<td>May 2019</td>
<td>June 2019</td>
</tr>
<tr>
<td><strong>2019-2020 Cycle Trial Implementation Published</strong></td>
<td></td>
<td>Early Fall 2019</td>
</tr>
<tr>
<td><strong>2018-2019 Cycle IHE Connectathon Registration</strong></td>
<td></td>
<td>Sep 10, 2018</td>
</tr>
<tr>
<td><strong>2018-2019 IHE Connectathon Testing</strong></td>
<td></td>
<td>Jan 21-25, 2019</td>
</tr>
</tbody>
</table>

PCC Participation

IHE Connectathons are...

- Held around the world
- An unparalleled testing opportunity
- Open for all to participate in
- Held in Cleveland, OH for North America

IHE North America Connect-a-thon registration opens in September!

- [https://www.iheusa.org/ihe-connectathon-registration](https://www.iheusa.org/ihe-connectathon-registration)
# PCC Participation - Links & Resources

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<th>Resource</th>
<th>Url</th>
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<tr>
<td>IHE.net</td>
<td><a href="https://www.ihe.net/ihe_domains/patient_care_coordination/">https://www.ihe.net/ihe_domains/patient_care Coordination</a></td>
</tr>
<tr>
<td>Webinar series posted online</td>
<td><a href="https://www.ihe.net/resources/webinars/">https://www.ihe.net/resources/webinars/</a></td>
</tr>
<tr>
<td>Sign up for IHE International News</td>
<td><a href="https://www.ihe.net/monthly-newsletters/">https://www.ihe.net/monthly-newsletters/</a></td>
</tr>
<tr>
<td>General PCC Questions</td>
<td>Email <a href="mailto:pcc@ihe.net">pcc@ihe.net</a></td>
</tr>
<tr>
<td>Google Groups (members only)</td>
<td><a href="https://groups.google.com/forum/#!forum/pcctech">https://groups.google.com/forum/#!forum/pcctech</a></td>
</tr>
<tr>
<td></td>
<td><a href="https://groups.google.com/forum/#!forum/pccplan">https://groups.google.com/forum/#!forum/pccplan</a></td>
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<td>Apply for IHE International Membership</td>
<td><a href="https://www.ihe.net/participate/join_ihe/">https://www.ihe.net/participate/join_ihe/</a></td>
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<td>IHE Technical Frameworks</td>
<td><a href="https://www.ihe.net/resources/technical_frameworks/#pcc">https://www.ihe.net/resources/technical_frameworks/#pcc</a></td>
</tr>
<tr>
<td>IHE PCC Profiles (wiki)</td>
<td><a href="http://wiki.ihe.net/index.php/Profiles#IHE_Patient_Care_Coordination_Profiles">http://wiki.ihe.net/index.php/Profiles#IHE_Patient_Care_Coordination_Profiles</a></td>
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Questions?