

IHE Work Item Proposal (Detailed)

# Proposed Work Item: *Patient Focused Care Plan Workflow Definition*

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Date: December 3, 2012

Version: Version 1 Draft 3

Domain: IHE PCC Committee

**Summary**

HL7 and IHE have in the past produced standards for the interchange of documents that are care plans or contain care plans. This effort will produce a model for a dynamic and shared “organizing care plan” which will facilitate *virtual* consolidation of plans of care and treatment plans without violating the autonomies of the specialty care plans and planners.

From an *informational* perspective, the profile will produce the conceptual Care Plan model that is unified (through cross-pollinated meeting participation) with that of the HL7 Care Plan Domain Access Model (CP DAM), IHE, and other stakeholders. Perhaps we can call this the **Joint Care Plan Domain Access Model (JCPDAM)**. It will be rich enough to comprehend those aspects of the disjoint plan fragments that *must* be organized for reconciliation. In order to complete the profile in a useful time frame, we will produce a “minimalist” first version.

From a *computational* Service Oriented Architecture (SOA) perspective, the Joint CP DAM will become the information payload for the Care Coordination Service (CCS), to be jointly developed under the auspices of the Health Services Specification Project (HSSP). This standard will not only define the SOA interface to the shared dynamic plan (via publish-subscribe), but will also provide the operation set for or collaborative review and controlled change of the CP.

# The Problem

Care plans have many different meanings to many different people. Each discipline has its own definition of what a care plan is and what it contains. This profile will use the term care plan for the framework created to solve the problems identified in the bulleted list below. We know that many bodies of work are ongoing related to this topic. Intentions are to build from that work and also to contribute.

As identified in the Nursing White Paper to Advocate the Uptake of Patient Plan of Care and eNursing Summary Profiles July 2012, each clinical discipline’s plan of care or treatment plan should be incorporated into one Care Plan for the patient. The issue we are trying to solve is to develop a Care Plan profile that will support one overarching care plan for the patient. It also identified that future work within the PPOC should expand the care plan from only being nursing focused to an interdisciplinary plan of care where all disciplines that care for the patient are able to communicate their plan of care, treatment plan, problems, interventions and goals/outcomes, for the patient.

The new profile will address many of the needs not met in the PPOC profile due to being nursing focused such as:

* A centralize care plan that meets the needs of many stakeholders (providers and patients);
* A method to consolidate the many care plans that can be attached to a patient;
* Providing a framework for the centralized patient focused care plan.

Globally, the healthcare system is highly fragmented. Fragmentation can increase the number of hospital re-admissions. According to claims data reported for the Medicare beneficiaries in 2003-2004, 19.6% of re-hospitalizations occur within 30 days after discharge. This translated into $17.4 billion dollars in hospital payments from Medicare in 2004.[[1]](#footnote-1)

The numbers of service delivery encounters required by individuals, as well as, the failure to deliver and coordinate needed services, are significant sources of frustration and errors, and are drivers of health care expenditures. Providing person-centered care is particularly important for medically-complex and/or functionally impaired individuals given the complexity, range, and on-going and evolving nature of their health status and the services needed. Effective, collaborative partnerships between service providers and individuals are necessary to ensure that individuals have the ability to participate in planning their care and that their wants, needs, and preferences are respected in health care decision making.

The ability to target appropriate services and to coordinate care over time, across multiple clinicians and sites of service, with the engagement of the individual (i.e. longitudinal coordination of care) is essential to alleviating fragmented, duplicative and costly care for these medically-complex and/or functionally impaired persons.

# Use Cases

* **Early Hearing Detection and Intervention (EHDI)** -

Early detection, documentation of and intervention for hearing loss in infants born with congenital and delayed onset hearing issues ensures effective care for all children, especially those with special needs. To provide better care, pediatric providers need to share screening results as well as a Care Plan for each infant which includes next steps such as who requires additional screening or direct referral for audiologic diagnosis; who requires ongoing developmentally appropriate hearing screening because of risk factors for delayed or progressive hearing loss; and who should be referred to early intervention services. Use of a Care Plan such as the Early Hearing Care Plan (EHCP) enables multiple care providers engaged in the early care and intervention for hearing to better manage the ongoing care plan actions. This would support communication between participants of care to reduce the likelihood of procedural failures at birthing facilities, primary care settings, public health EHDI programs, and families with children with hearing loss thus advancing public health’s ability to assure that all newborns receive recommended care.

Newborn hearing screening (NHS) is initiated based on public health (PH) guidelines. At birth, the birthing center provider initiates the NHS so that the screening is performed. The screening result is submitted to the Public Health Early Hearing and Detection Intervention (EHDI) program which calculates the NHS outcomes. The NHS outcome is presented in the EHCP including follow-up activity. The typical collaboration flow is as follows:

* 1. PH notifies Birthing Center of NHS guidelines (generates notification/order)
  2. Birthing center notifies PH and PCP of new birth demographic information
  3. NHS performed at birth and result is reported to PH EHDI program of which the NHS outcome is calculated and presented in EHCP. If normal results, HS and EHCP is shared with PCP. PCP communicates EHCP to Guardian and provides information /education about follow-up care
  4. If abnormal results, HS and EHCP is shared with PCP and specialist (e.g. audiologist) (generates referral)
     1. PCP and PH receives audiologist evaluation (generates referral response)
     2. Audiologist communicates HS Results, EHCP, educational materials and instructions to Guardian
  5. PCP is notified for appropriate follow-ups (generates notification/orders)
  6. If the risk assessment is positive, the PCP has to perform follow-up hearing screening risk assessments as recommended with appropriate action to follow by 1 mo, 2 mo, 4 mo, 6 mo, 9 mo, 12 mo, 15 mo, 18 mo, 24 mo, 30 mo, and 3 years and “to be performed” at 4 years of age
  7. PCP communicates HS Results, EHCP, educational materials and instructions to Guardian
  8. PCP gets HS and diagnostic evaluation surveillance reports and quality assessment reports from public health IS to EHRs
* **Discharge from Acute Care to Post Acute Care:**

Provider to Provider Transitions of Care focus on the sharing of patient information between multi-disciplinary teams of Providers across acute and post-acute care sites to support care coordination, management, and service delivery by ensuring that needed clinical information is received (when authorized) by the multiple Providers involved in a patient’s care and supports safe and effective transitions in care from one care environment to another. This Use Case includes referrals for the purpose of consultation.

* **Home care to Provider:**

The focus is on the sharing of electronic clinical information between Home Health Agencies and the Physician signing orders for the patient. This represents a frequent data interchange between HHA and Physician, including the signing and authorization of the plan, in a circumstance where the patient lives at home.

* **Acute and Long Term Post-Acute Care (LTPAC) Provider to Patient:**

The focus is on the sharing of electronic clinical information from Acute Care Hospitals and LTPAC Providers to their patients, including the data interchange required to support the needs of a patient during transitions of care, and/or to keep the patient/consumer/ delegate (e.g., family member) informed of the patient’s status. In this scenario, the patient has the ability to access and incorporate their available clinical information into their PHR.

* **Emergency Department (ED) to Inpatient Care (including surgery):**

A 55 year old male with mild obesity, hypertension, and diabetes mellitus arrives in the Emergency Department (ED) with chest pain after his Thanksgiving dinner. His pain is at a 9 on a 1-10 pain scale and only slightly relieved with rest. Upon completing the patient’s history and physical the pain radiates to his jaw without any other symptoms. He is given 80mg Aspirin po, an IV 18 gauge catheter of NS .9% is started in his right hand, labs are drawn, and a 12 Lead EKG is performed which shows mild ST elevation. He is sent to a hybrid OR for a cardiac catheterization which reveals 5 myocardium arterial blocks. A 5 vessel coronary artery by-pass graft (CABG) is performed using a saphenous vein from his right leg. After surgery he is sent to the Cardiac Intensive Care Unit (CICU) with an endotracheal tube, 2 chest tubes, a Foley catheter, and medial stenial pacer wires. He will stay in the CICU for 2 days then be transitioned to a Cardiac Step-down Unit where he will be discharged home with his wife of 35 years for follow-up care at an outpatient cardiac rehabilitation center. All the care providers within the different care areas need access to the patient’s clinical information in order to provide safe, quality care.

* **Chronic Disease Management:** (HL7 has a good one)

# Standards & Systems

* HL7
* S&I
* IHE (other domains)
* OMG Case Management Model and Notation (CMMN) portions deemed useful

# Technical Approach

* **Conceptual**:

Model the Joint CP DAM strictly at the *conceptual* level, with no regard for backward compatibility with prior message formats or document formats. According to HL7 policy, the “message models” are derived “later”.

* **Coordinating Framework:**

Understand the CP DAM as a model framework into which other CPs and fragments can be displayed and sorted as an interleaved “deck” of CP parts for collaborative review. While it “could” be used for physical consolidation, it is not a “takeover” of its distributed fragments.

* **Minimalist First Version:**

Seek consensus on the structure of “key” classes such as problems, goals, interventions actions, and barriers; plus interrelationships among these. Then let the Care Coordination Service (CCS) SOA project incorporate these classes as its care plan “parts” that are the focus of online reconciliation conferences.

**New actors**

Content Actors or Technical Actors here?

Actors include the care team members as commonly understood in prior work (including the patient or substitute decision maker).

**Existing actors**

Content Actors or Technical Actors here?

Actors include the care team members as commonly understood in prior work (including the patient or substitute decision maker).

**New transactions (standards used)**

Not applicable. This is a conceptual model development; there are no notions of transactions.

**Impact on existing integration profiles**

As a coordinating framework, the Joint CP DAM could inform the care plan structures of future profiles and could be mapped to preexisting profiles such as the Patient Plan of Care (PPOC). It could be leveraged relative to any other profile that includes care plans, plans of care, treatment plans, or instructions.

**New integration profiles needed**

As described in the introduction, the CP DAM will be used to inform the payload design for the HL7/OMG Care Coordination Service (CCS) project that is underway.

Even though no new IHE integration profiles are anticipated, the OMG will define operations that support the collaborations of distributed care teams around disjointed plan fragments. The CCS “compliance profiles” will roughly correspond to the IHE integration profiles:

* The simplest profile will likely simply provide for a dynamically updated read-only view of multiple or distributed plan fragments
* The most complex profile will provide for collaborative care plan reconciliation in which goals, interventions, etc. are updated under a collaborative but controlled process.

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

* **CP DAM Baseline**: HL7 CP DAM project team should declare the readiness of its model for IHE harmonization. At the time of this writing it is stabilizing, but there are still a few known issues to be worked before release to the JCPDAM project.
* **Orientation:** The IHE team should receive a presentation of the HL7 CP DAM and the CCS concept for a shared dynamic CP. This will also “prime” the participants to participate in the difficult tradeoff decisions we will all have to make (to keep it simple yet powerful).
* **Gather existing models:** The IHE project team should gather its existing conceptual models (not its messaging models!) that pertain to CP variants such as care plans, plans of care, and treatment plans. Include the core content of models from the OMG CMMN and the ONC LCC projects.
* **Harmonize existing models against the CP DAM to produce the Joint CP DAM:** For each model, harmonize its core constructs against the CP DAM. These activities would produce change proposals to the HL7 CP DAM group that meets in teleconference every two weeks.

A note as regards to timing - the Joint CP DAM modeling can proceed concurrently with the CCS project’s development of its collaboration operations.

# Risks

Scope creep and maintaining alignment with HL7 work.

(we have spoken with the LCC group and HL7 group who both agree and support this work because they realize that other groups, such as the IHE QRPH groups, will develop a framework if one is not available to use)

**Political Risk:**

The Joint CP DAM will be a coordinating framework that enables consolidation but does not invite unsolicited updates into the CP fragment of any participant. If IHE project participants do not understand this nonintrusive collaboration then they may be inordinately concerned about getting their entire data models into the Joint CP DAM or they may be hesitant to participate at all!

**Technical Risk:**

Modeling too deeply in the first version would cause costly and unnecessary delays. Implementers need to be start building version 1 solutions in 2013.

# Open Issues

1. Our proposed solution, will it fit with the IHE Technical Framework.

# Effort Estimates

A medium-large work effort will be needed for the collecting, reviewing, analyzing, and selecting existing standards and work that will be used to describe the framework for the Care Plan.

1. Coleman, MD. MPH, Eric A. "Preparing Patients and Caregivers to Participate in Care Delivered Across Settings: The Care Transitions Intervention." *Journal of the American Geriatric Society* 52, (2004): 1817-1825. [↑](#footnote-ref-1)