

IHE Work Item Proposal (Detailed)

# Proposed Work Item: IHE Orders/Referral Matching

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Domain: Patient Care Coordination

**Summary**

There is no standard method to convey order or referral numbers during any of the XD\* transactions used to:

1. Place orders
2. Make Referrals
3. Respond to orders
4. Reply to referrals

This makes it difficult to manage inbound and outbound order or referral transactions for the same patient to and from the same providers exchanging information related to the order or referral.

Today, these transactions are manually managed.

XDS provides metadata, and CDA provides discrete elements when structured documents are used, that can be constrained for defining order and referral number locations.

The problem can be solved by documenting specific locations and perhaps formats, which will facilitate programmatic matching/linking of related outbound and inbound transactions for the same patient to/from the same provider.

The ability to match/link data together in order or referral communication has been called out as a gap by the US healthcare standardization bodies (S&I and 360x project), especially as regards Direct communications. This is certainly not limited to the US healthcare domain – the issue exists whenever XD\* is used for order and referral submissions.

IHE would be a good venue to solve this problem because it involves developing a profile across several existing standards. It has the necessary expertise in PCC to address content issues as well as functional workflow.

# The Problem

The exchange of clinical data between providers is needed to accomplish safe and effective patient care. Many such exchanges follow a referral request or an order request transaction for which response is needed. The majority of these types of request/response transactions are typically not a single transaction. Many times, it involves additional messages to complete the request/response transaction process. Currently, there is not a standard way to match together responses or additional documents to the initial transaction.

As patients move within and across healthcare settings, providers send and receive multiple referral/order transactions relating to the same referral/order. Today, these transactions are manually managed. The ability to electronically manage these transactions is needed

“Closing the loop” is an important concept in coordination of health care which refers to good communication between providers. Poor communication in healthcare causes increase healthcare cost due to poorly coordinated care and a fragmented healthcare delivery system. Inability to adequately link information together can lead to poor communication. Linking information such as the reason a referral was made, the clinical question being asked, ability to link relevant information and feedback responses ensures improved communication.

1. Referring system needs to know format and where to include referral id or number
2. Receiving system needs to know format and where to look for referral id or number
3. Receiving system, when making referral response, needs to know format and where to include referral id or number
4. Referring system needs to know how to identify a referral response, and link to an existing referral

All of the above needs to work regardless of:

1. Documents per submission set;
2. Format of content (structured or unstructured documents);
3. Original or subsequent export or receipt of content

Order and Referral Matching is the prequel to Workflow Management

# Use Cases

Use Case #1 (Referral)

***The problem*** - Anna Smith is in her PCP (Dr. Prince Primari, a family care provider) office complaining of exhaustion and slight mid-sternum tenderness which started after she fell off her bike two days ago. Dr. Primari documents the encounter in his EMR and generates a cardiology referral for evaluation of chest pain. He sends the referral message to Dr. Chester Payne (cardiologist). Dr. Primari orders routine labs and a chest CT scan for Anna. The day after Anna’s visit, Dr. Primari receives the lab results and forwards it to Dr. Payne. He also forwards a copy of Anna’s baseline EKG report. Two days later, he receives the CT scan results and forwards a copy to Dr. Payne. After reviewing the chest CT scan, Dr. Primari changes his reason for referral to rule out internal chest wall injury. He forwards an updated referral message to Dr. Payne. Each message sent to Dr. Payne from Dr. Primari results in a separate message transaction.

Anna is seen by Dr. Payne for her consultation visit. Dr. Payne documents the visit and schedules Anna an initial cardiac echo. His preliminary consultation report is sent to Dr. Primari making him aware that Anna is being followed by Dr. Payne. A follow-up consultation report is sent notifying Dr. Primari of Dr. Payne’s consultation findings and Anna’s plan of care. Anna is later seen for a follow-up visit with Dr. Payne. Dr. Payne schedules a follow-up cardiac echo and EKG. Both reports are forwarded to Dr. Primari. Each message sent to Dr. Primari from Dr. Payne results in a separate message transaction.

***The solution*** – Provide the ability to link/match each transaction relating to Anna’s referral and response between Dr. Primari and Dr. Payne.

Use Case #2 (Order)

***The problem*** – Lillian Charles is discharged from the hospital post C-section with orders for home health services to evaluate and treat. Initial home health assessment includes a request to the provider of record (Dr. Woods) for approval of the initial home health plan of care. The plan of care includes an order for daily wet-to-dry dressing changes for a slow healing incision. Home health assessment and plan of care is documented in the home health system. A copy of the assessment and plan of care as well as the initial order request transaction is sent to Dr. Woods EMR. Approval of the plan of care is sent from Dr. Woods to the home health agency. Lillian’s incision worsens. The home health nurse sends an updated order request to increase dressing changes from daily to twice a day. She includes an image of the wound and scanned nursing notes describing the incision as well as wound measurements. Dr. Woods receives the information and decides to order wound vac therapy instead of wet to dry dressing changes. The order for wound vac therapy is forwarded to the home health nursing system. The home health nurse sends a message to Dr. Woods with a request for Dr. Woods to obtain pre-authorization from Lillian’s payer. This is needed prior to starting wound vac therapy. Dr. Woods obtains the pre-authorization and forwards the information to the home health nurse system. The home health nurse obtains the wound vac and initiates the ordered therapy. Each message sent between Dr. Woods and the home health nurse results in a separate message transaction.

***The solution*** – Provide the ability to link/match each transaction relating to Lillian’s order and response between Dr. Woods and the home health nurse.

Use Case #3 (EHDI)

**The problem** – information flows among providers (birthing facilities, pediatricians and specialists) and public health agencies concerning early hearing detection and intervention (EHDI) have been inconsistent and unreliable. Communicating hearing screening and follow-up information including important next steps for an infant is not done effectively leading to data errors, missed information and missed services.

Newborn hearing screening (NHS) is initiated based on public health (PH) guidelines. NHS commonly occurs during the birth admission (24-72 hours of age) or before 30 days of age. Children who do not pass the initial hearing screening have short term follow-up with care providers which includes audiologic diagnosis and early intervention up to the 3rd birthday. The Primary Care Provider performs further clinical surveillance which recognizes children at risk for delayed onset or progressive hearing loss.

At birth, the birthing center provider initiates the NHS so that the screening is performed. The screening result is submitted to the Public Health EHDI program which calculates the NHS outcomes. The NHS outcome is presented in the Early Hearing Care Plan (EHCP) including follow-up activity. The typical communication 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.
  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)
  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 gets HS and diagnostic evaluation surveillance reports and quality assessment reports from public health IS to EHRs

***The solution*** – Provide the ability to link/match each transaction relating to EHDI components that would result in a referral/order transaction between care providers.

# Standards & Systems

Systems

* Content Creators
* Content Consumers

Standards

* CDA – Structured Documents
* Consultation Note (for referral responses)
* XD\* Metadata

# Technical Approach

*Specify how order and referral numbers should be:*

1. *Identified in XDS Metadata*
2. *In CDA Structured documents (where appropriate)*

*Explore the following lines of research:*

1. *How order and referral IDs / numbers should be represented in CDA Structured Documents*
2. *whether or not new namespaces or templateIDs could be used to facilitate identification of Referral and Order content;*
3. *whether or not additional eventCodeList profiling could be used to facilitate identification of Referral and Order content*

**New actors**

*No new actors.*

**Existing actors**

*No modification to existing actors.*

**New transactions (standards used)**

*No new transactions.*

**Impact on existing integration profiles**

*None.*

**New integration profiles needed**

*None.*

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

*Review the Goals and Assumptions: Facilitate Referral and Order Matching for XD\* communications.*

*Review existing XD\* metadata elements and CDA R2 sections of structured document for list of candidate areas of focus*

*Coordinate with ITI to see where there is any overlap with any new ITI proposals.*

*Propose / discuss additional possible ideas: new templateID, IHE namespace for order/referral id/number, eventCodeList, …*

# Risks

*TBD*

# Open Issues

# Effort Estimates