Integrating the Healthcare Enterprise

IHE Patient Care Coordination Technical Framework Supplement

360 Closed Loop Referral Exchange for SDOH Services (360X-SD)

For review and comment only.

DO NOT implement this public comment version.

Revision 1.0 – Draft for Public Comment

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Foreword

This is a supplement to the IHE Patient Care Coordination Technical Framework V11.0. Each supplement undergoes a process of public comment and trial implementation before being incorporated into the volumes of the Technical Frameworks.

This supplement is published on April 10, 2024 for Public Comment. Comments are invited and can be submitted at https://www.ihe.net/PCC_Public_Comments. In order to be considered in development of the Trial Implementation version of the supplement, comments must be received by May 10, 2024.

This supplement describes changes to the existing technical framework documents.

"Boxed" instructions like the sample below indicate to the Volume Editor how to integrate the relevant section(s) into the relevant Technical Framework volume.

Amend section X.X by the following:

Where the amendment adds text, make the added text **bold underline**. Where the amendment removes text, make the removed text ~~**bold strikethrough**~~. When entire new sections are added, introduce with editor's instructions to "add new text" or similar, which for readability are not bolded or underlined.

General information about IHE can be found at IHE.net.

Information about the IHE Patient Care Coordination domain can be found at IHE Domains.

Information about the organization of IHE Technical Frameworks and Supplements and the process used to create them can be found at Profiles and IHE Process.

The current version of the IHE Patient Care Coordination Technical Framework can be found at https://profiles.ihe.net/PCC.

CONTENTS

Introduction to this Supplement

This supplement describes a profile for managing referrals from a clinical setting for Social Determinants of Health (SDOH) services. Volume 1 describes the use cases and workflow for such referrals, Volume 2 describes the transactions involved in the use cases, and Volume 4 includes US-specific requirements for SDOH referrals.

Open Issues and Questions

None

Closed Issues

None

IHE Technical Frameworks General Introduction

The IHE Technical Framework General Introduction is shared by all of the IHE domain technical frameworks. Each technical framework volume contains links to this document where appropriate.

9 Copyright Licenses

IHE technical documents refer to, and make use of, a number of standards developed and published by several standards development organizations. Please refer to the IHE Technical Frameworks General Introduction, Section 9 - Copyright Licenses for copyright license information for frequently referenced base standards. Information pertaining to the use of IHE International copyrighted materials is also available there..

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IHE Technical Frameworks General Introduction Appendices

The IHE Technical Framework General Introduction Appendices are components shared by all of the IHE domain technical frameworks. Each technical framework volume contains links to these documents where appropriate.

*Update the following appendices to the General Introduction as indicated below. Note that these are **not** appendices to this domain's Technical Framework (TF-1, TF-2, TF-3 or TF-4) but rather, they are appendices to the IHE Technical Frameworks General Introduction located here.*

Appendix A – Actors

*Add the following **new or modified** actors to the IHE Technical Frameworks General Introduction Appendix A:*

New (or modified) Actor Name	Definition
No new actors	

Appendix B – Transactions

*Add the following **new or modified** transactions to the IHE Technical Frameworks General Introduction Appendix B:*

New (or modified) Transaction Name and Number	Definition
Limited Referral Request [PCC-Y1]	Sent from the Referral Initiator to the Referral Recipient. Initiates the referral request using the 360X transport mechanism, and contains no clinical information.
Service Enrollment Notice [PCC-Y2]	Sent from the Referral Recipient to the Referral Initiator. Informs of the enrollment status of the patient for a specific service.
Referral Outcome Notice [PCC-Y3]	Sent from the Referral Recipient to the Referral Initiator. Contains the notice of the outcome of the services performed according to the referral request, but not necessarily any documentation, clinical or otherwise.

New (or modified) Transaction Name and Number	Definition
Referral Interim Notice [PCC-Y4]	Sent from the Referral Recipient to the Referral Initiator. Contains the notice of some services being provided, not necessarily the specific service that was being requested. May or may not contain any documentation, clinical or otherwise.
Service Not Needed Notice [PCC-Y5]	Sent from the Referral Recipient to the Referral Initiator. Contains the notice that the patient does not need the service requested any more.

Appendix D – Glossary

255

*Add the following **new or modified** glossary terms to the IHE Technical Frameworks General Introduction Appendix D:*

New (or modified) Glossary Term	Definition	Synonyms	Acronym/ Abbreviation
No new terms			

260

Volume 1 – Profiles

Domain-specific additions

None

Add new Section X

X Closed Loop Referral Exchange for SDOH Services (360X-SD) Profile

Social Determinants of Health (SDOH) are increasingly recognized as essential ingredients for the health and well-being of patients. The need for electronic exchange of referrals to SDOH services, and for the ability to keep track of the status of such referrals, is becoming even more acute with the increased efforts to improve healthcare quality and equity.

SDOH referrals can occur in a variety of ways and different services may have different expectations. The goal of this profile is to enable healthcare providers to provide a referral information to SDOH service providers, and for SDOH service providers to inform the referring healthcare provider what services were provided for the patient.

X.1 360X-SD Actors, Transactions, and Content Modules

This section defines the actors, transactions, and/or content modules in this profile. General definitions of actors are given in the Technical Frameworks General Introduction Appendix A. IHE Transactions can be found in the Technical Frameworks General Introduction Appendix B. Both appendices are located at https://profiles.ihe.net/GeneralIntro/index.html.

Figure X.1-1 shows the actors directly involved in the 360X-SD Profile and the relevant transactions between them. If needed for context, other actors that may be indirectly involved due to their participation in other related profiles are shown in dotted lines. Actors which have a required grouping (if any), are shown in conjoined boxes (see Section X.3).

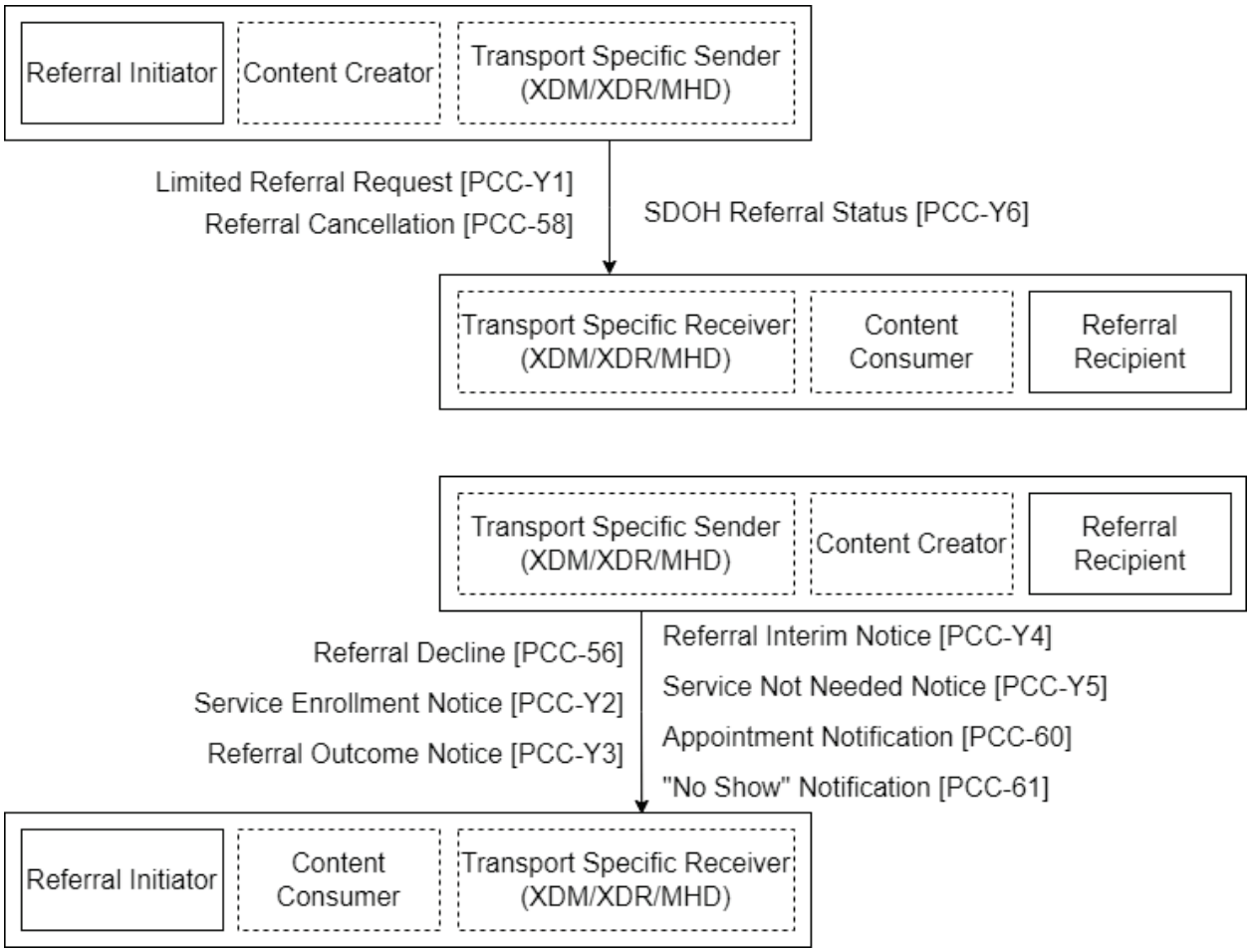

Figure X.1-1: 360X-SD Actor Diagram

Table X.1-1 lists the transactions for each actor directly involved in the 360X-SD Profile. To claim compliance with this profile, an actor SHALL support all required transactions (labeled "R") and may support the optional transactions (labeled "O").

Table X.1-1: 360X-SD Profile - Actors and Transactions

Actors	Transactions	Initiator or Responder	Actions	Optionality	Reference
Referral Initiator	Limited Referral Request [PCC-Y1]	Initiator / Responder	Send Referral Request / Receive Accept or Decline	R	PCC TF-2: 3.Y1
	Referral Decline [PCC-56]	Responder	Receive Decline of Referral Request	R (See Note 1)	PCC TF-2: 3.56

Actors	Transactions	Initiator or Responder	Actions	Optionality	Reference
	Service Enrollment Notice [PCC-Y2]	Responder	Receive Service Enrollment Notice	R (See Note 2)	PCC TF-2: 3.Y2
	Referral Outcome Notice [PCC-Y3]	Responder	Receive Referral Outcome	R (See Note 1)	PCC TF-2: 3.Y3
	Referral Cancellation [PCC-58]	Initiator / Responder	Send Request for Cancellation / Receive Cancellation Confirmation	O (See Note 4)	PCC TF-2: 3.58
	Referral Interim Notice [PCC-Y4]	Responder	Receive Interim Notice	O	PCC TF-2: 3.Y4
	Service Not Needed Notice [PCC-Y5]	Responder	Receive Service Not Needed Notice	R	PCC TF-2: 3.Y5
	SDOH Status [PCC-Y6]	Initiator	Send SDOH Status query	O	PCC TF-2-3.Y6
	Appointment Notification [PCC-60]	Responder	Receive Appointment Notification	O	PCC TF-2: 3.60
	No-Show Notification [PCC-61]	Responder	Receive “No Show” Notification	O	PCC TF-2: 3.61
Referral Recipient	Limited Referral Request [PCC-Y1]	Responder / Initiator	Receive Referral Request / Send Accept or Decline	R	PCC TF-2: 3.Y1
	Referral Decline [PCC-56]	Initiator	Send Decline of Referral Request	O (See Note 5)	PCC TF-2: 3.56
	Service Enrollment Notice [PCC-Y2]	Initiator	Send Service Enrollment Notice	O (See Note 2)	PCC TF-2: 3.Y2
	Referral Outcome Notice [PCC-Y3]	Initiator	Send Referral Outcome	O (See Note 3)	PCC TF-2: 3.Y3
	Referral Cancellation [PCC-58]	Responder / Initiator	Receive Request for Cancellation / Send Cancellation Confirmation	O (See Note 4)	PCC TF-2: 3.58
	Referral Interim Notice [PCC-Y4]	Initiator	Send Interim Notice	O	PCC TF-2: 3.Y4
	Service Not Needed Notice [PCC-Y5]	Initiator	Send Service Not Needed Notice	O	PCC TF-2: 3.Y5
	SDOH Status [PCC-Y6]	Responder	Respond to SDOH Status Query	O	PCC TF-2: 3.Y6

Actors	Transactions	Initiator or Responder	Actions	Optionality	Reference
	Appointment Notification [PCC-60]	Initiator	Send Appointment Notification	O	PCC TF-2: 3.60
	No-Show Notification [PCC-61]	Initiator	Send "No Show" Notification	O	PCC TF-2: 3.61

Note 1: When transaction [PCC-56] or [PCC-Y3] is received by the Referral Initiator, this signifies the end of the referral process, and it should be represented correspondingly in the initiator's system.

Note 2: In certain use cases, the patient/customer may be enrolled in a SDOH program, The initiator is required to support receiving the [PCC-Y2] transaction, while the recipient only needs to support it if the service provided has an enrollment process that is separate from providing the service.

Note 3: A Referral Initiator may not have a workflow where a cancellation of the referral request is needed; that is why transaction 58 is optional. If transaction 58 is supported, then the Referral Initiator must support receiving a Cancellation Confirmation message, which signifies the end of the referral process (see Note 1).

Note 4: A Referral Recipient must support sending a decline message as the initial response to a received referral request, if there is a reason that it cannot be accepted. Transaction 56 provides the optional ability of the Referral Recipient to send a decline message even after the referral request was initially accepted.

Note 5: A Referral Recipient may operate in a context where they cannot interrupt the referral process when they receive a request for cancellation message, and this is why receiving transaction 58 is optional. Even if in some circumstances the Referral Recipient can receive and process transaction 58, there is no requirement that a cancellation confirmation must always be sent, due to the timing of the cancellation request, for example.

As already described in Figure X.1-1, the actors from this profile are grouped with the Content Creator and Content Consumer Actors. The transactions described in section X.1.1 require HL7 Version 2 messages, and don't specify any clinical content. Specific SDOH services, or specific settings, however, may need additional content in some of the transactions. To ensure that information in each transaction is properly processed, the Referral Initiator and the Referral Recipient SHALL support the Display Option as a Content Consumer.

Figure X.1-2 shows the actors directly involved in the 360X-SD Profile and the direction that the content is exchanged.

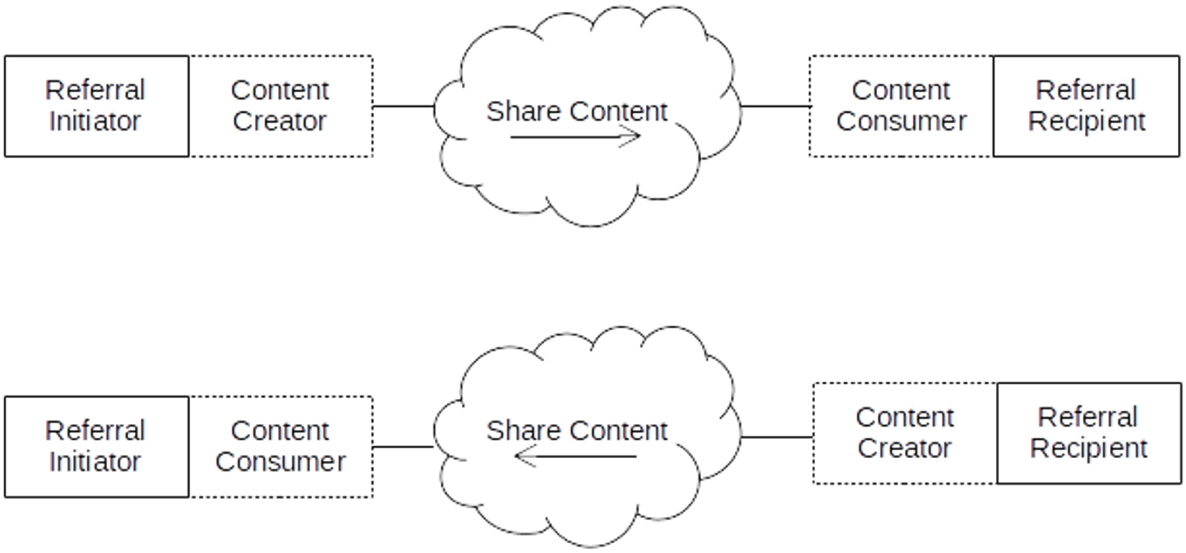

Figure X.1-2: 360X-SD Actor Diagram

X.1.1 Actor Descriptions and Actor Profile Requirements

Most requirements are documented in PCC TF-2: Transactions. This section documents any additional requirements on the 360X-SD Profile's actors.

X.1.1.1 Referral Initiator

The 360X-SD Referral Initiator starts the referral for SDOH services by sending a Limited Referral Request to the Referral Recipient. Note that there is no assumption whether the Referral Recipient is the actual service provider, or an intermediary of some kind that may provide any number of value-added services for SDOH service providers.

Once the referral request is sent, the Referral Initiator must be able to receive and process an acceptance or a decline. If the referral is accepted, the Referral Initiator must still be able to accept and process a subsequent decline.

If the Referral Initiator is able to send a Cancelation Request during any part of the workflow, it must be able to receive and process a Cancellation Confirmation, and it also must be able to proceed in a deterministic manner if the Referral Recipient sends a transaction different from a Cancellation Confirmation.

The Referral Initiator must be able to deal with not receiving a definitive "close the loop" transaction, as in some cases the service organizations may not be able to provide that information, or there may not be appropriate workflows to mark the referral as "complete". Dealing with a missing "close the loop" transaction SHOULD include, but is not limited to, a timeout alert or reporting functionality, which indicates that the referral is in an incomplete state.

The Referral Initiator SHALL provide a **unique patient identifier** with the initial referral request and must use the same patient identifier in any subsequent communications throughout a single referral information exchange. This identifier SHALL be present in the metadata for the XD* submission set and document entries, and in the PID segment of the HL7 V2 messages. The identifier SHOULD be present in the CDA document header, if there are additional documents sent as part of the referral request.

The Referral Initiator MUST use one of two options for the patient identifier:

1. a unique patient identifier known to the Referral Initiator, which may or may not be known to the Referral Recipient. In the XD* Metadata, this identifier SHALL be present in the sourcePatientId attribute of each and every document entry.
2. a unique patient identifier commonly known to both the Referral Initiator and the Referral Recipient. The method, by which this knowledge is obtained, is outside the scope of this implementation guide, and it may include communication with other parties, such as a regional HIE, an MPI, etc. In the XD* Metadata, this identifier SHALL be present in the patientId attribute of the submission set, and the patientId attribute of each and every document entry.

The Referral Initiator SHALL provide a **unique identifier for the referral** with the initial referral request and must use the same referral identifier in any subsequent communications throughout a single referral information exchange. This identifier SHALL be present in the metadata for the XDM submission set and document entries, and in the ORC and OBR segments of the HL7 V2 messages. The identifier SHOULD be present in the CDA referral section, if a CDA document with such a section is sent with the referral request.

X.1.1.2 Referral Recipient

The Referral Recipient must receive and process a Limited Referral Request, which is sent by a Referral Initiator, and the Referral Recipient must be able to respond with either an acceptance or a decline.

Once a referral request is accepted, the Referral Recipient must be able to create and send a Referral Outcome Notice. Note that in some situations, it may not be possible or appropriate to use a Referral Outcome Notice. To make sure that a wide variety of scenarios and services are covered, the Referral Recipient SHOULD support at least one of Service Enrollment Notice, Referral Interim Notice, or Service Not Needed Notice.

The Referral Recipient must be able to accept a Cancellation Request at any point of the workflow, and it must respond with either a Cancellation Confirmation, or with the next step of the workflow.

The following requirements apply to the Referral Recipient for all transactions:

- The Referral Recipient MUST use the **unique patient identifier** provided in the initial referral request in any subsequent communications with the Referral Initiator throughout

the information exchange for a specific referral. When sent by the Referral Recipient, this identifier SHALL be present in the patientId metadata attribute for the XDM submission set and the patientId attribute of each and every document entry, and in the PID segment of the HL7 V2 messages.

- The Referral Recipient MAY provide another unique patient identifier in any subsequent communications for the purpose of simplifying future communications between the two systems. Any further use of additional patient identifiers is outside the scope of this profile.
- The Referral Recipient SHALL use the **unique referral identifier** provided in the initial referral request in any subsequent communications with the Referral Initiator throughout a single referral information exchange. This identifier SHALL be present in the metadata for the XD submission set and document entries, and in the ORC segment of the HL7 V2 messages.

X.2 360X-SD Actor Options

X.2.1 360X-SD Actor Options

Options that may be selected for each actor in this profile, if any, are listed in the Table X.2.1-1. Dependencies between options, when applicable, are specified in notes.

Table X.2.1-1: 360X-SD – Actors and Options

Actor	Option Name	Reference
Referral Initiator	XDM Transport Option[1]	PCC TF-1: X.2.2.1
	XDR Transport Option[1]	PCC TF-1: X.2.2.2
	MHD Transport Option[1]	PCC TF-1: X.2.2.3
	Ongoing Updates Option	PCC TF-1: X.2.3.1
	360X Option	PCC TF-1: X.2.3.2
Referral Recipient	XDM Transport Option[1]	PCC TF-1: X.2.2.1
	XDR Transport Option[1]	PCC TF-1: X.2.2.2
	MHD Transport Option[1]	PCC TF-1: X.2.2.3
	Ongoing Updates Option	PCC TF-1: X.2.3.1
	360X Option	PCC TF-1: X.2.3.2

Note 1: The actor SHALL select at least one of the Transport options

X.2.2 360X-SD Transport Options

The 360X-SD Profile requires the use of one of the following transport mechanisms for exchanging the relevant information. Implementers of the profile may support more than one transport mechanisms.

X.2.2.1 XDM Option

The XDM Option groups the 360X actors and transactions with the corresponding XDM actors and transactions. See Section X.3.1.

X.2.2.2 XDR Option

The XDR Option replaces the ITI XDM actors and associated transaction with the corresponding XDR actors and associated transaction. See Section X.3.2.

X.2.2.3 MHD Option

The MHD Option replaces the ITI XDM actors and associated transaction with the corresponding MHD actors and associated transaction. See Section X.3.3.

X.2.3 360X-SD Additional Capabilities Options

The wide variety of services, organizations, and circumstances related to SDOH needs may require additional capabilities that only apply in certain cases. The following options allow for systems that cover such cases to support the exchanges as necessary.

X.2.3.1 Ongoing Updates Option

The ongoing updates option allows for interim updates to be obtained by the Referral Initiator.

A Referral Initiator that supports this option SHALL support the receipt of [PCC-Y4] Referral Interim Notice and SHALL support the issuing of [PCC-Y6] SDOH status query.

A Referral Recipient that supports this option SHALL support at least one of sending [PCC-Y4] Referral Interim Notice and the responding to [PCC-Y6] SDOH status query.

X.2.3.2 360X Option

The 360X-SD Profile describes interactions that in many cases need no clinical information, and the transactions correspondingly do not require any presence of clinical information. In some circumstances, however, Social Determinants of Health services may require the exchange of clinical information. For such cases the actors need to implement transactions from the 360X Profile.

A Referral Initiator that supports this option SHALL support the sending of clinical content as part of the referral request by implementing the [PCC-55] Referral Request transaction.

A Referral Recipient that supports this option SHALL support the sending of clinical content as part of a status update or outcome by implementing at least one of the [PCC-57] Referral Outcome or [PCC-59] Referral Interim Note transactions.

X.3 360X-SD Actor Groupings

The actor groupings represent the following requirement for implementing the 360X-SD Profile: all implementations must implement at least one among the XDM, XDR, or MHD optional actor groupings, and may implement two or more of the optional actor groupings.

X.3.1 Optional Actor Groupings – XDM Option

When supporting this option, the actors of this profile are grouped with both the XDM actors, and the generic Content Consumer and Content Creator Actors (as shown in Figure X.1-1, the 360X-SD Action Diagram).

An actor from this profile (Column 1) SHALL implement all of the required transactions and/or content modules in this profile ***in addition to*** all of the transactions required for the grouped actor (Column 2).

Section X.5 describes additional groupings that may be of interest for security considerations and Section X.6 describes some optional groupings in other related profiles.

Table X.3.1-1: 360X-SD - Required Actor Groupings

360X-SD Actor	Actor to be grouped with	Reference	Content Bindings Reference
Referral Initiator	ITI XDM Portable Media Creator with options: ZIP over Email ZIP Over Email Response	ITI TF-1: 16.1 ITI TF-1: 16.2.3 ITI TF-1: 16.2.4	
	ITI XDM Portable Media Importer with options: ZIP over Email ZIP Over Email Response	ITI TF-1: 16.1 ITI TF-1: 16.2.3 ITI TF-1: 16.2.4	
	Content Consumer with Document Import Option	PCC TF-2:3.1.2	See Note 1
Referral Recipient	ITI XDM Portable Media Importer with options: ZIP over Email ZIP Over Email Response	ITI TF-1: 16.1 ITI TF-1: 16.2.3 ITI TF-1: 16.2.4	
	ITI XDM Portable Media Creator with options: ZIP over Email ZIP Over Email Response	ITI TF-1: 16.1 ITI TF-1: 16.2.3 ITI TF-1: 16.2.4	
	Content Consumer with Document Import Option	PCC TF-2:3.1.2	See Note 1

Note 1: The Content Consumer requirements are for the CDA documents described as payload for some of the 360X transactions, and only apply in the case when a patient referral is accepted by the Referral Recipient

X.3.2 Optional Actor Groupings – XDR Option

The XDR Option for 360X-SD replaces the XDM actor grouping with the corresponding XDR actor grouping.

An actor from this profile (Column 1) claiming the XDR Option SHALL implement all of the required transactions and/or content modules in this profile ***in addition to*** all of the transactions required for the grouped actor (Column 2).

Section X.5 describes additional groupings that may be of interest for security considerations and Section X.6 describes some optional groupings in other related profiles.

Table X.3.2-1: 360X-SD – XDR Actor Groupings

360X-SD Actor	Actor to be grouped with	Reference	Content Bindings Reference
Referral Initiator	ITI XDR Document Source	ITI TF-1: 15.1	
	ITI XDR Document Recipient	ITI TF-1: 15.1	
	Content Consumer with Document Import Option	PCC TF-2:3.1.2	See Note 1
Referral Recipient	ITI XDR Document Recipient	ITI TF-1: 15.1	
	ITI XDR Document Source	ITI TF-1: 15.1	
	Content Consumer with Document Import Option	PCC TF-2:3.1.2	See Note 1

Note 1: The Content Consumer requirements are for the CDA documents described as payload for some of the 360X transactions, and only apply in the case when a patient referral is accepted by the Referral Recipient

X.3.3 Optional Actor Groupings – MHD Option

The MHD Option for 360X-SD replaces the XDM actor grouping with the corresponding MHD actor grouping.

An actor from this profile (Column 1) claiming the MHD Option SHALL implement all of the required transactions and/or content modules in this profile ***in addition to*** all of the transactions required for the grouped actor (Column 2).

Section X.5 describes additional groupings that may be of interest for security considerations and Section X.6 describes some optional groupings in other related profiles.

Table X.3.3-1: 360X-SD – MHD Actor Groupings

360X-SD Actor	Actor to be grouped with	Reference	Content Bindings Reference
Referral Initiator	ITI MHD Document Source	ITI TF-1: 33.1	See Note 1
	ITI MHD Document Recipient	ITI TF-1: 33.1	See Note 1
	Content Consumer with Document Import Option	PCC TF-2:3.1.2	See Note 2
Referral Recipient	ITI MHD Document Recipient	ITI TF-1: 33.1	See Note 1
	ITI MHD Document Source	ITI TF-1: 33.1	See Note 1
	Content Consumer with Document Import Option	PCC TF-2:3.1.2	See Note 2

Note 1: The MHD Profile supplement for trial implementation is available at IHE.net.

Note 2: The Content Consumer requirements are for the CDA documents described as payload for some of the 360X transactions, and only apply in the case when a patient referral is accepted by the Referral Recipient.

X.3.4 Optional Actor Groupings – 360X Option

The 360X Option for 360X-SD requires the grouping with the corresponding 360X actors.

An actor from this profile (Column 1) claiming the 360X Option SHALL implement all of the required transactions and/or content modules in this profile ***in addition to*** all of the transactions required for the grouped actor (Column 2).

Section X.5 describes additional groupings that may be of interest for security considerations and Section X.6 describes some optional groupings in other related profiles.

Table X.3.4-1: 360X-SD – 360X Actor Groupings

360X-SD Actor	Actor to be grouped with	Reference	Content Bindings Reference
Referral Initiator	PCC 360X Referral Initiator	PCC TF-1: X.1	See Note 1
Referral Recipient	PCC 360X Referral Recipient	PCC TF-1: X.1	See Note 1

Note 1: The 360X Profile supplement for trial implementation is available at IHE.net.

X.4 360X-SD Overview

X.4.1 Concepts

The 360X-SD Profile is closely related to the 360X Profile. The main differences between the two profiles are in the set of transactions, and the more limited content requirements for common use cases when enabling information exchange regarding referrals for SDOH services. The following sections describe various considerations that affect the implementation of SDOH Referrals.

X.4.1.1 Using a Service Hub

The varied nature of SDOH services is often reflected in the data management and data exchange capabilities of service providers. It is not realistic to expect that community-based organizations (CBOs) that provide SDOH services would have the full capabilities of a Referral Recipient.

At the same time, not all provider organizations or systems are able to manage and coordinate the patient's use of SDOH services. For example, a small primary care office may refer the patient for help with food insecurity but won't be able to direct them to a specific food bank.

For both of the above cases, the Referral Recipient is expected to be an entity called a Service Hub with 360X-SD functionality for the purposes of this profile. The Service Hub provides one or more of the following:

- Software and IT support for CBOs, including specific methods for communication and data gathering/exchange that are outside the scope of this profile
- Coordination of referrals for SDOH services (e.g., determining which CBO or service provider is best suited to serve a particular customer, or creating additional referrals for specific supplementary services)
- Assessment of particular SDOH needs for a given customer

From the point of view of the healthcare provider, the 360X-SD interactions are with a Referral Recipient, and that Referral Recipient can be a service provider with the expected capabilities of the actor, or a Service Hub that enhances the capabilities of service providers and CBOs.

X.4.1.2 Service Hubs, Cascading Referrals, and Care Coordination

One of the variations that exist in the provision of SDOH services is where care coordination is managed. In some cases, the initiator, or their organization, will have a social worker to manage the needs of the patient and determine the services they need. In such cases it is necessary to receive updates about the status of the different services for the patient, and it is expected that the initiator will support the Ongoing Updates Option.

In other cases, the initiator will refer the patient to a service hub where the coordination of needs and services will occur, and the customer will receive an assessment and additional referrals to specific service providers. In such cases, there is no need to provide updates to the initiator about the details of the services that were assessed by the service hub (or any other social service coordinator). The initiator only needs the update on their initial referral, which in some cases may lead to an implicit closing of the loop as described in the next section. If the patient is seen by the initiator at a later time, the initiator can use the query part of the Ongoing Updates Option to obtain an up-to-date status of the patient's SDOH needs.

The determination of which type of referral situation is relevant for a particular referral is out of scope for this profile. It can be determined by configuration on the initiator's side, based on

multiple inputs and business rules. A recipient that provides a variety of services, or manages the social care coordination, may also need to apply specific business rules per integration partner.

X.4.1.3 Implicit Closing of the Loop

The nature of SDOH services also makes necessary the requirement for the Referral Initiator to deal with referrals that may never achieve deterministic completeness. While for clinical referrals, as supported by the 360X Profile, such cases are usually relatively rare exceptions, and can be dealt with as error conditions, many SDOH referrals need to be evaluated on whether any follow up may be necessary due to missing updates from the Referral Recipient.

Such evaluation will depend on the service that is supposed to be provided. For example, some services may require an enrollment step, and a status update that the enrollment was completed is expected. A subset of these services may not provide any other updates, since once enrolled, the customer is now in a process that is not aware of the original referral from the healthcare provider, and the service provider is accountable in other ways. A very smart Referral Initiator would be configured to mark such services as complete once the enrollment update is received, but all Referral Initiator system are expected to at least detect that no Service Complete transaction was received after a certain period of time and allow a user to evaluate whether a follow-up is necessary.

X.4.1.4 State Transitions

The following diagram shows the state transitions for SDOH referrals from the point of view of the Referral Initiator.

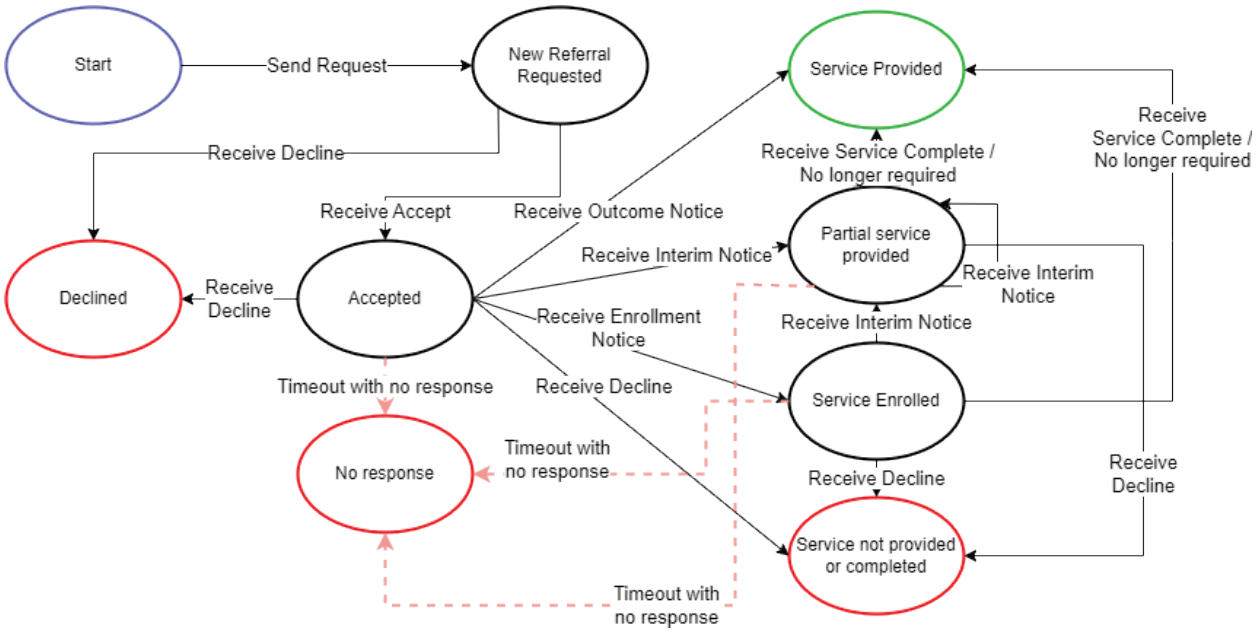

Figure X.4.1.4-1: State Transitions for SDOH Referrals

The end states are “Declined”, “Service Provided”, “Service not provided or completed”, and “No response”. The latter two are states that need follow-up, or automated processing depending on the type of service, as discussed in section X.4.1.3.

X.4.2 Use Cases

X.4.2.1 Use Case #1: Food Insecurity

Addressing food insecurity is among the most common and among the most effective interventions that can improve the health and well-being of patients in need of Social Determinants of Health services. At the same time, the nature of food insecurity related services leads to many cases of service providers who do not have sophisticated IT capabilities. The use case will show how a service hub can extend support for such service providers and take upon themselves to satisfy the requirements of 360X-SD.

X.4.2.1.1 Food Insecurity Use Case Description

Patient Philip Preston is seen for a regular office visit with his primary care provider, Dr. Daryl Davis, who is participating in a Patient Centered Medical Home (PCMH) program. During the discussion with the patient, it becomes clear that Mr. Preston is having problems securing proper nourishment. Dr. Davis orders a referral to a food pantry, which is near where Mr. Preston lives.

Before, there was no standard electronic way to notify the food pantry about a new customer, and there was no standard electronic way to request that the provider is notified when the patient receives a service.

With this profile, the referral will be sent electronically to a service hub that represents the food pantry. The service hub will store the request, and when Mr. Preston comes to the facility, the staff at the food pantry will have access to a web and mobile portal, provided by the service hub, with a list of expected customers. Clicking on a checkbox will trigger a notification that the patient was served, which is a status update for the 360X-SD referral. Future visits by Mr. Preston will also me marked via a checkbox. Dr. Davis will have the information available as he further plans the care for his patient.

After several visits to the food pantry, Mr. Preston starts a new job and can now obtain the necessary nourishment from a neighborhood grocery store. The lack of further notifications triggers a timeout in Dr. Davis's system, a staff member from the PCP office contacts Mr. Preston, and after learning of his new situation, marks the referral as complete.

X.4.2.1.2 Food Insecurity Process Flow

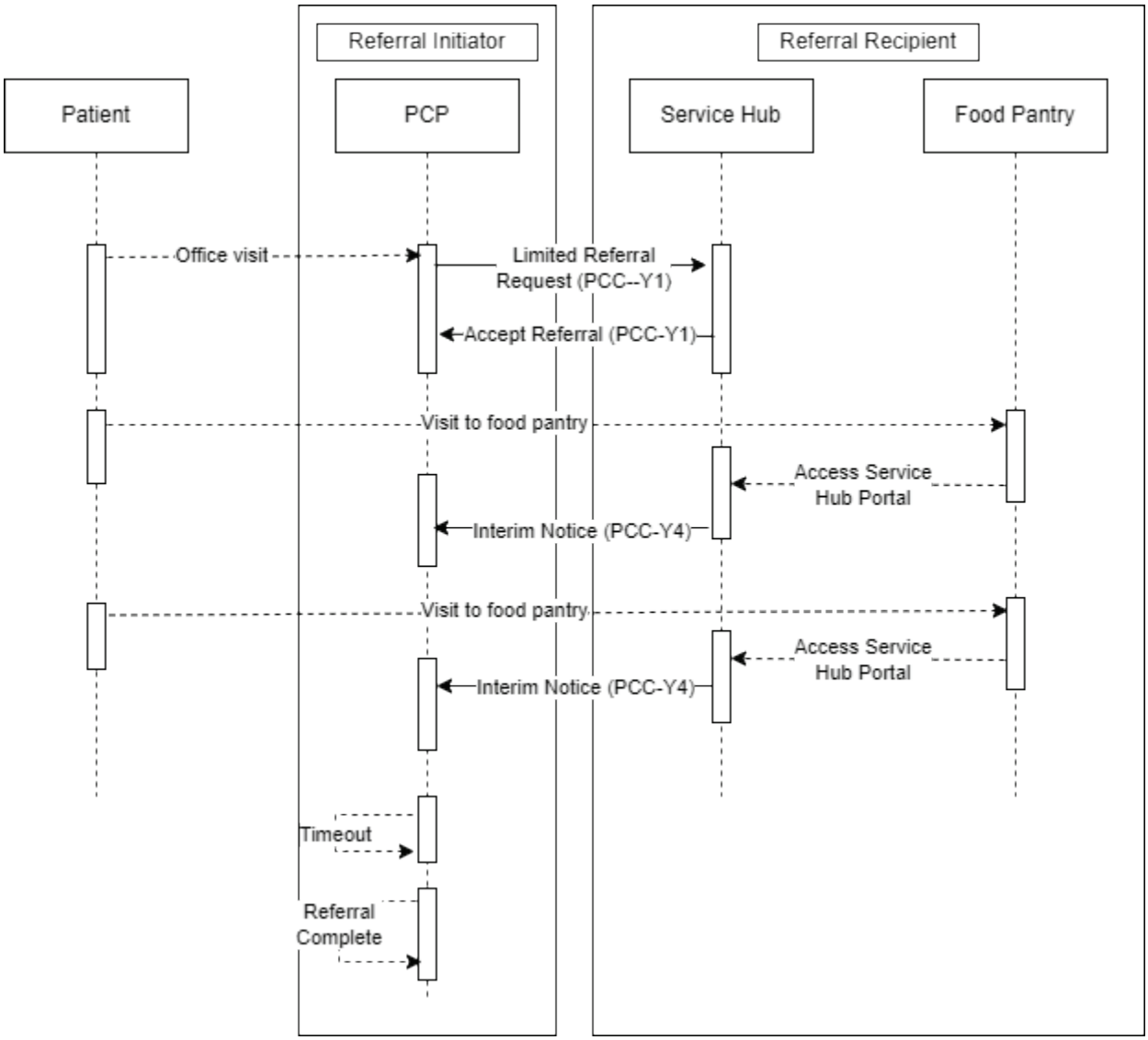

Figure X.4.2.1.2-1: Food Insecurity Process Flow in 360X-SD Profile

In this diagram, the dashed lines represent interactions that are out of scope of the profile, as they are either within the same system, or represent general actions where no predetermined data exchange takes place.

X.4.2.2 Use Case #2: Housing Insecurity

Resolving cases with housing insecurity is a process that usually takes a significant amount of time to resolve. The ability to track the multiple steps necessary for completing the process is one of the goals of this profile.

X.4.2.2.1 Housing Insecurity Use Case Description

Patient Paula Peters is admitted at Happy Health Hospital with Dr. Deborah Danforth as the attending provider. During the admission process it becomes clear that Ms. Peters had been evicted from her apartment and had spent the last several weeks without shelter. Dr. Danforth orders a referral to the local Transitional Housing community service organization. Ms. Peters is also assigned a case coordinator, Mr. Charles Crawley, who can manage her recovery and placement in an appropriate housing setting.

Before, there was no standard electronic way to communicate the referral to the community organization, and to monitor the progress of Ms. Peters towards a stable housing situation.

With this profile, the referral will be sent electronically to the community organization, where the request will be processed and accepted, and Ms. Peters will be enrolled in their program "The Way Home." As Ms. Peters is provided with transitional housing, and her case progresses towards a resolution, Mr. Crawley will be receiving updates and he can intervene and assist, as necessary. When Ms. Peters moves into her new studio apartment, the outcome is sent to the Happy Health Hospital, and the referral is completed.

X.4.2.2.2 Housing Insecurity Process Flow

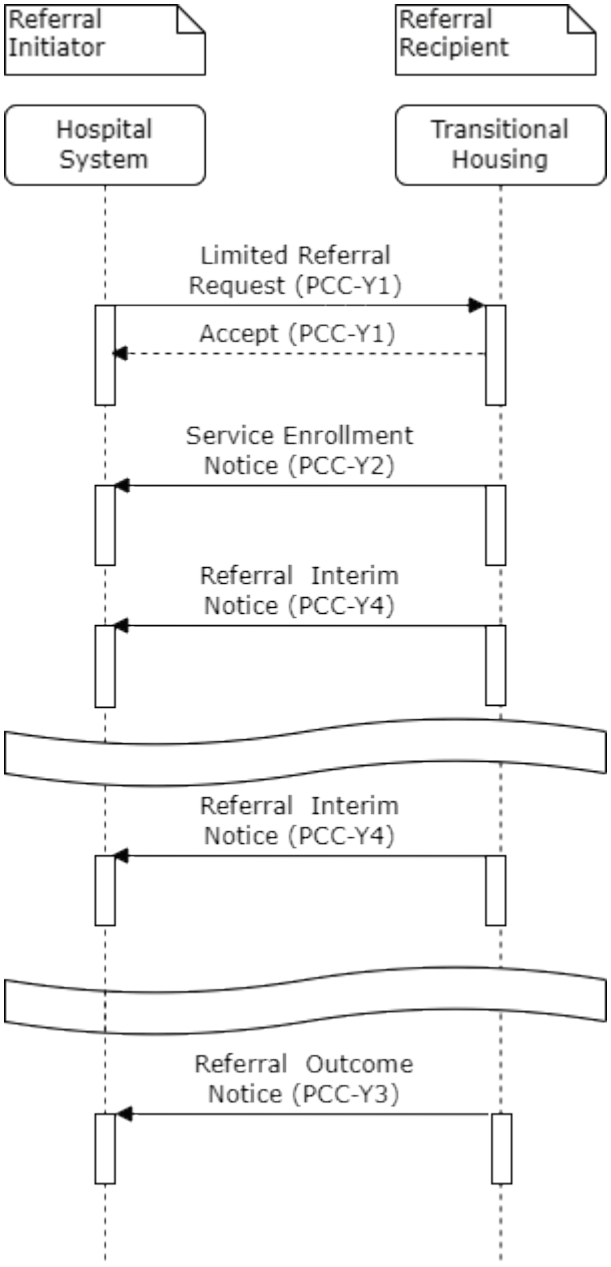

Figure X.4.2.2.2-1: Housing Insecurity Process Flow

X.4.2.3 Use Case #3: Food Insecurity and Job Placement Assistance

610 In this use case, the patient is referred to an SDOH services hub for a particular need. The subsequent assessment at the Hub discovers additional services needed.

X.4.2.3.1 Food Insecurity and Job Placement Assistance Description

Patient Peter Perry comes to a small stand-along urgent care clinic with complaints of low energy, feeling weak, and occasional loss of balance. Dr. Diana Dobson, in discussion with the patient, understands that he was laid off several weeks ago, and has had difficult time with obtaining sufficient nutrition. Dr. Dobson sends a referral for addressing food insecurity to the Helping Hand social care consortium (an SDOH hub) and arranges with Mr. Perry to visit a care coordinator there.

Mr. Perry visits the care coordinator at Helping Hand and fills out a comprehensive survey on his SDOH conditions. The care coordinator Clark Cole determines that in addition to providing the new customer with nutritional assistance from the in-house food pantry, Mr. Perry will benefit from an enrollment in a job assistance program, where he can get help in finding employment.

Since the stand-alone urgent care clinic is not a healthcare organization that provides continuous care for Mr. Perry, they don't need to receive ongoing updates on the social care services he is receiving. In this case, the Helping Hand consortium is managing the services for the customer.

A few months later, at his new place of employment at a construction site, Peter Perry drops a box of supplies on his foot. He is driven to the stand-alone urgent care clinic where he was seen previously. At the time of check-in, the system detects the previous referral to Helping Hand. To provide Dr. Dobson with the complete picture of the care for the patient, the system gives the option for the check-in assistant to obtain the current status of the SDOH services managed by Helping Hand. Upon a successfully query, the patient record is updated with information about the nutritional assistance, and the job placement assistance program which led to Mr. Perry getting his current employment. When Dr. Dobson sees the patient, she has access to the history of social services the patient had received.

X.4.2.3.2 Food Insecurity and Job Placement Assistance Process Flow

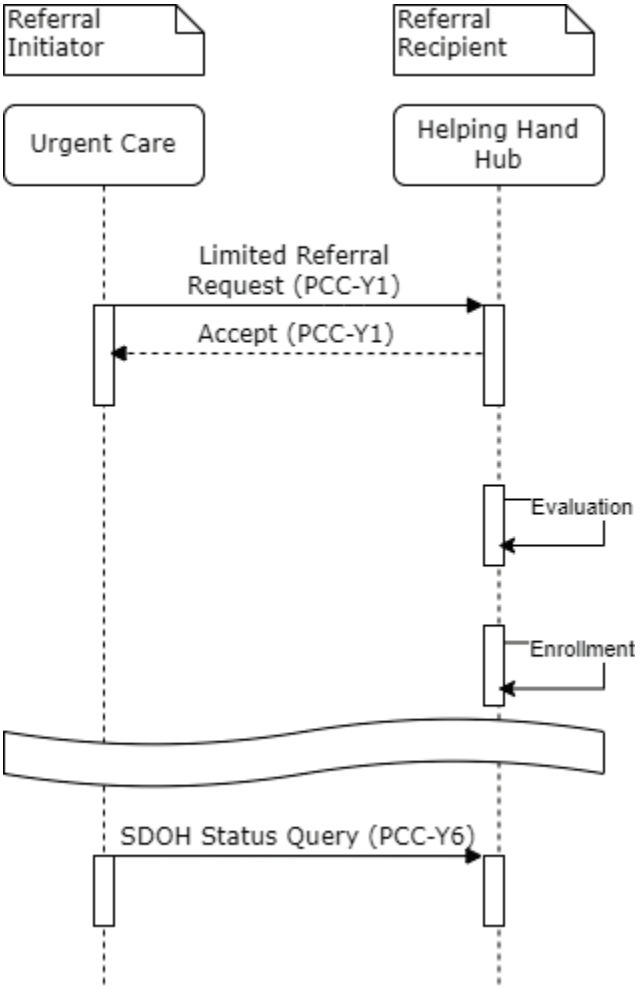

Figure X.4.2.3.2-1: Food Insecurity and Job Placement Assistance Process Flow

X.5 360X-SD Security Considerations

640 The security considerations for a content module are dependent upon the security provisions defined by the grouped actor(s).

X.6 360X-SD Cross Profile Considerations

Not applicable.

Appendices to Volume 1

None

Volume 2 – Transactions

Add Section 3.Y1

3.Y1 Limited Referral Request [PCC-Y1]

3.Y1.1 Scope

This transaction is used to initiate the referral workflow for use cases where clinical information is not needed or is not supposed to be sent to the recipient. It provides the referral workflow information know to the Referral Initiator.

3.Y1.2 Actor Roles

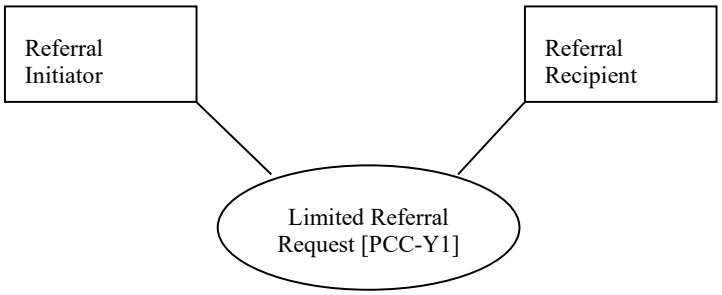

Figure 3.Y1.2-1: Use Case Diagram

Table 3.Y1.2-1: Actor Roles

Actor:	Referral Initiator
Role:	The provider who ordered the referral
Actor:	Referral Recipient
Role:	The service provider or hub who is acting on the referral

3.Y1.3 Referenced Standards

- HL7 Messaging standard, version 2.5.1 Chapters 2, 4
- HL7 Messaging standard, version 2.9 Chapter 4

3.Y1.4 Messages

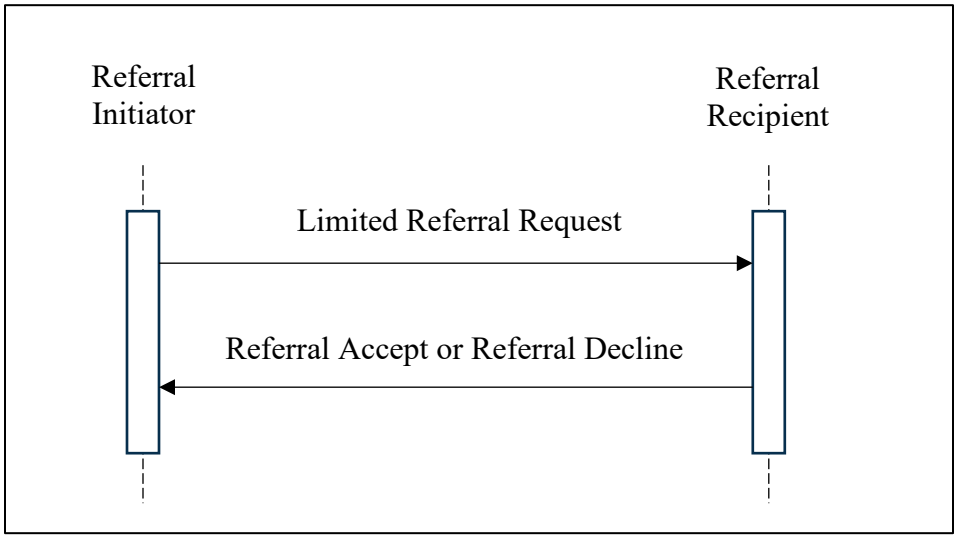

Figure 3.Y1.4-1: Interaction Diagram

3.Y1.4.1 Limited Referral Request Package

The Referral Request Package is sent by the Referral Initiator to the Referral Recipient to request a particular community-based service to be performed.

3.Y1.4.1.1 Trigger Events

A Referral Request Package is sent upon the ordering of the referral by the Referral Initiator. The exact event and timing can vary based on the practice-specific rules or regulations. For example, the Referral Request Package can be sent immediately as a result of the provider ordering the referral, or as a result of the provider closing the encounter which contains the referral order, or the referral may be further processed by the provider's staff and sent after an appropriate review and administrative actions (e.g., determining the appropriate service provider).

3.Y1.4.1.2 Message Semantics

The message semantics are described in terms of XDM. When this transaction is implemented using groupings with XDR or MHD, the rules that apply to the metadata in those profiles SHALL apply. This message is an XDM package constructed following the rules described in the XDM Profile, transaction [ITI-32], ITI TF-2: 3.32. The current transaction, [PCC-Y1], adds the following constraints:

- Only a single submission set SHALL be present in the XDM package (ITI TF-2: 3.32.4.1.2)
- Only "simple part" documents SHALL be allowed in the XDM package (ITI TF-2: 3.32.4.1.2.2).

The Referral Request XDM package contains one Document Entry – an HL7 V2 OMG^O19^OMG_O19 message and may contain additional Document Entries for supplemental information based on the specific service and context of request. If any supplemental information is in PDF format, it SHOULD be in the format described in the IHE ITI XDS-SD Profile.

In some cases, it may be important that the assessments performed to determine the need for SDOH are shared with the referral recipient. This information can be included as supplemental information in additional Document Entries, or it can use the "order-specific questions" mechanism within the OMG^O19^OMG_O19 HL7 V2 message using OBX segments to convey a codded question (e.g., TODO)

3.Y1.4.1.2.1 Message Content – Metadata

The metadata in the XDM package is constrained for the purposes of Closed Loop Referral for SDOH Services as described in the following sections for Submission Set and Document Entries.

3.Y1.4.1.2.1.1 Submission Set

The table contains all required (R) Submission Set attributes from the XD* Metadata Specification, as well as any "required if known" (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of a Document Entry. These specific constraints are indicated in the Requirement column as the "Source of requirement".

Table 3.Y1.4.1.2.1.1-1: 360X Submission Set Attributes

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
author	The entity which created the submission set, including the Referral Initiator's electronic address or endpoint	R (XDR and XDM for Direct Messaging)	The e-mail address of the Referral Initiator is placed in the authorTelecommunication slot of the author classification.
contentTypeCode	Defines the submission set as part of a referral.	R (360X)	LOINC Code 57164-6 is used to indicate that this Submission Set is part of a SDOH referral
entryUUID	The identifier used for referencing the Submission Set object within the metadata	R (IHE)	Assigned by the Referral Initiator when the Submission Set was created
intendedRecipient	The entity for which the Submission set is intended	R (XDR and XDM for Direct Messaging)	The Direct address of the Referral Recipient.

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
patientId	The patient ID known to the Referral Recipient. How the Referral Initiator obtains this information is out of scope for this profile. This value, if present, must be the same for the Submission Set, and the Document Entries within it.	R2 (XDR and XDM for Direct Messaging)	See PCC TF-1: X.1.3.1 for description on how patient identity is conveyed between the Referral Initiator and the Referral Recipient
sourceId	Globally unique identifier representing the entity which created the submission set. Usually an organizational identifier.	R (IHE)	An OID.
submissionTime	Represents the point in time at the creating entity when the Submission Set was created.	R (IHE)	Timestamp in UTC
uniqueId	Globally unique identifier assigned to the submission set by its creator.	R	An OID.
referenceIdList	The referenceIdList contains the referral ID, as described in PCC TF-1: X.1.3.1	R (360X)	This attribute is currently only defined by IHE for the Document Entry metadata. Since it is a Slot, however, it is not prohibited from being added to the Submission Set metadata. format: 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral

715 **3.Y1.4.1.2.1.2 Document Entry for Referral Order**

The table contains all required (R) Document Entry attributes from the XD* Metadata Specification, as well as any "required if known" (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of the Document Entry. These specific constraints are indicated in the Requirement column as the "Source of requirement".

720 **Table 3.Y1.4.1.2.1.2-1: 360X Document Entry Attributes for Referral Order**

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
author	If supplied, MUST indicate the clinician who is requesting the referral.	R2 (XDR and XDM for Direct Messaging)	Ordering Provider in ORC-12
classCode	Identifies the specific document type, in this case an HL7 V2 Order.	R (360X) (R2 XDR and XDM for Direct Messaging)	Message Type in MSH-9.1 value: OMG name: General clinical order message coding scheme: 2.16.840.1.113883.18.30
confidentialityCode	Identifies the confidentiality defined for the order. Implementations SHOULD NOT use codes that reveal the specific trigger causes of confidentiality (e.g., ETH, HIV, PSY, SDV)	R2 (XDR and XDM for Direct Messaging)	Confidentiality Code in ORC-28 Implementations SHOULD constrain to values that do not reflect the cause of confidentiality such as: V Very restricted R Restricted U Usual control
creationTime	Defines the creation time of the order message (as opposed to the order itself)	R2 (XDR and XDM for Direct Messaging)	Date/Time of Message in MSH-7. In the metadata the timestamp SHALL be in UTC time.
entryUUID	The identifier used for referencing the Document Entry object within the metadata	R (XDR and XDM for Direct Messaging)	N/A
formatCode	The specific format for the message	R (360X)	Based on MSH-9.1 and MSH-9.2 value: urn:ihe:pcc:360x:hl7:OMG:O19:2017 name: General clinical order coding scheme: 1.3.6.1.4.1.19376.1.2.3
hash	SHA-1 hash of the content	R (XDM)	N/A
healthcareFacilityTypeCode	See also practice setting type. This code represents the type of organizational setting of the clinical encounter during which the documented act occurred. Note that in context of 360X, this is the facility type of the Referral Request Initiator.	R2 (XDR and XDM for Direct Messaging)	May be derived from / mapped to the information in ORC-21 through 24

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
languageCode	Specifies the language of the document (order / referral request)	R2 (XDR and XDM for Direct Messaging)	Corresponds to Principal Language of Message in MSH-19
mimeType	The MIME type of the message, indicating that it is plain text (ASCII or utf-8), formatted according to the HL7 V2 rules.	R	x-application/hl7-v2+er7
patientId	The patient ID known to the Referral Recipient. How the Referral Initiator obtains this information is out of scope for this profile. This value, if present, must be the same for the Submission Set, and the other Document entries See PCC TF-1: X.1.3.1	R2 (360X) (R2 XDR and XDM for Direct Messaging)	PID-3
practiceSettingCode	Identifies the setting that created the order at a high granularity e.g., Cardiology, Family Practice. Should not create ambiguity as compared to healthcareFacilityTypeCode.	R2 (XDR and XDM for Direct)	May be derived from / mapped to the information in ORC-21 through 24
size	Size in bytes of the message as it exists in the file system when the contents of ZIP package are extracted	R (XDM)	N/A
sourcePatientId	The sourcePatientId is the ID as known by the Referral Initiator. See PCC TF-1: X.1.3.1	R (360X)	PID-3
sourcePatientInfo	Demographics information for the patient for whom the referral is made. The demographics information SHOULD be used by the Referral Recipient for patient identity matching and verification.	R2 (XDM)	The values from PID-5 (Patient Name), PID-7 (Patient DOB), PID-8 (Patient Sex), and PID-11 (Patient Address) SHOULD be used.
typeCode	Further refines classCode – in this case defines the specific HL7 V2 message structure, for this message it is OMG_O19	R (360X)	MSH-9.3 value: OMG_O19 name: General clinical order message structure coding system: 2.16.840.1.113883.18.214
uniqueId	Globally unique identifier assigned to the document by its creator.	R	N/A May be based on Message Control ID in MSH-10

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
URI	The file name in the ZIP file structure containing the order message	R (XDM)	N/A
referenceIdList	Contains the referral ID See PCC TF-1: X.1.3.1	R (360X)	Derived from ORC-2 (Placer Order Number). 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral
objectType	The object type distinguishes between stable and dynamic documents. Only stable documents are used in XDM, and therefore in 360X	R	N/A fixed to urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1

3.Y1.4.1.2.2 Message Content – Referral Order

The referral order is an HL7 Version 2 OMG^O19^OMG_O19 message. The complete message definition can be found in the 360X HL7 V2 Message Payload Definition (chapters 3 to 5). The Document Entry metadata for this message is described in Section 3.Y1.4.1.2.1.2.

A table containing only the required segments and fields can be found as part of the 360X project implementation Guide at https://oncprojectracking.healthit.gov/wiki/display/TechLab360X/360X+Implementation+Guide#id-360XImplementationGuide-6.3.2MessageOMG^O19_OMG_O19.

The following fields are further defined for the purposes of the Referral Request:

Table 3.Y1.4.1.2.2-1: 360X Referral Order fields

Data element	Message Field	Required?	Format and use
Order Control Code	ORC-1	R	The value of NW SHALL be used for the referral request
Referral ID	ORC-2 and OBR-2	R	<referral ID>^^<assigning authority OID>^ISO
Ordering provider	ORC-12 and OBR-16	R	The referring provider. Providers SHOULD be identified using their NPI. Matches the Submission Set author in the metadata of the referral request.
Service Duration	TQ1-6	O	The length of time for which a referral is valid. Note that the presence of a validity time period SHOULD not affect the timeliness of the accept or decline response.

Data element	Message Field	Required?	Format and use
Expected service provision time	TQ1-8	R2	When a referral request has an associated urgency, this date/time field SHALL reflect the date or time by which the referral SHALL be performed. Concepts like "Urgent", "ASAP", etc. have different meaning for different settings or specialties; therefore, the Referral Initiator's system SHALL convert such concepts to a date (and optionally a time) by which the requested service is expected to be performed, or in the cases of referrals where multiple visits may be required, the first visit is completed.
Total occurrences	TQ1-14	O	Optional information on the number of service units ordered as part of this referral.
Service identifier	OBR-4	R	If a specific service is not requested, or the determination of the service is left to the recipient, the default value is the 57164-6 LOINC code – Social worker referral note. When a specific service is requested (within the context of the reason for referral), the initiator SHOULD use the codes defined by the Gravity project and managed by the NIH VSAC, and contained in the values sets at https://confluence.hl7.org/display/GRAV/Social+Risk+Terminology+Value+Sets
Reason for Referral	OBR-31	R	This field is used to convey the reason(s) for the referral. For SDOH referral, use the ICD10 codes defined by the Gravity project and managed by the NIH VSAC, and contained in the values sets at https://confluence.hl7.org/display/GRAV/Social+Risk+Terminology+Value+Sets Multiple reasons for referral SHALL be conveyed as repetitions in this field. If the primary reason is free text then use only OBR-31.2
Order Specific Questions	OBX-3 OBX-5	R2	The OBX segment is used to convey any existing assessments that are in the form of questionnaires. OBX-3 contains the coded question, and OBX-5 contains the recorded response. OBX-3 SHOULD be using codes from the value sets defined by the Gravity Project, as described at https://confluence.hl7.org/display/GRAV/Social+Risk+Terminology+Value+Sets – the ones that contain questions.

3.Y1.4.1.3 Expected Actions

The message indicates the request for an SDOH referral. It is expected that a healthcare practitioner identifies some need for SDOH services, and that is reflected in the Reason for Referral (OBR-31) field of the HL7 v2 message. The user's system should assist in conveying the appropriate codes in both OBR-31 and OBR-4 (Service identifier) as described above, thus eliminating the cognitive load on the user searching for appropriate codes.

Upon receiving the message, the Referral Recipient's system is expected to either process the payload, or to extract it, and to provide the appropriate information about the request to the

person or persons who can determine whether the referral will be accepted or declined (for example, render the Direct message received as being of type Referral Request). Automatic responses may be produced based on the specific business requirements, business relationships, and/or additional cross-organizational agreements.

Within a reasonable time period (which is based on each organization's rules and operation requirements) the Referral Recipient SHALL respond with either an Accept or Decline message. If the Referral Initiator does not receive a response from the Referral Recipient within the expected time period, they SHALL take action to determine whether the referral can proceed as requested. The specific action is out of scope for this transaction, and may include a phone call, some other type of communication with the Referral Recipient, or cancelling the referral.

3.Y1.4.2 Referral Accept

This message is described in the [PCC-55] transaction in section 3.55.4.2. The following change must be made in the PCC-55 transaction definition:

Modify the row in the Table 3.55.4-6: 360X Submission Set Attributes as follows:

contentTypeCode	Defines the submission set as part of a referral.	R (360X **and 360X-SD**)	**360X:** LOINC Code 57133-1 is used to indicate that this Submission Set is part of a referral **360X-SD: LOINC Code 57164-6 is used to indicate that this Submission Set is part of an SDOH referral**

3.Y1.4.3 Referral Decline

This message is described in the [PCC-55] transaction in section 3.55.4.3. The following change must be made in the PCC-55 transaction definition:

Modify the row in the Table 3.55.4-9: 360X Submission Set Attributes as follows:

contentTypeCode	Defines the submission set as part of a referral.	R (360X **and 360X-SD**)	**360X:** LOINC Code 57133-1 is used to indicate that this Submission Set is part of a referral **360X-SD: LOINC Code 57164-6 is used to indicate that this Submission Set is part of an SDOH referral**

3.Y1.5 Protocol Requirements

NA

3.Y1.6 Security Considerations

The security requirements of the corresponding transport option apply to this transaction:

- security requirements for the XDM Profile, and the "ZIP over Email" and "Zip over Email 1010 Response" Options
- security requirements for the XDR Profile
- security requirements for the MDH Profile

3.Y1.6.1 Security Audit Considerations

NA

3.Y1.6.(z) <Actor> Specific Security Considerations

NA

Add Section 3.Y2

3.Y2 Service Enrollment Notice [PCC-Y2]

3.Y2.1 Scope

This transaction is used to communicate the enrollment of the patient in a particular SDOH service. It is sent from the Referral Recipient to the Referral Initiator.

3.Y2.2 Actor Roles

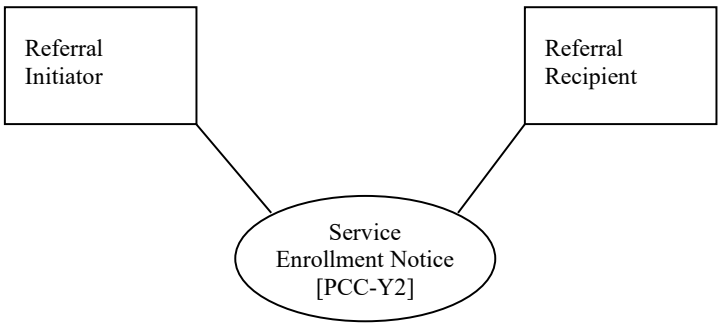

Figure 3.Y2.2-1: Use Case Diagram

Table 3.Y2.2-1: Actor Roles

Actor:	Referral Recipient
Role:	The service provider or hub who is acting on the referral
Actor:	Referral Initiator
Role:	The provider who ordered the referral

3.Y2.3 Referenced Standards

- HL7 Messaging standard, version 2.5.1 Chapters 2, 4
- HL7 Messaging standard, version 2.9 Chapter 4

3.Y2.4 Messages

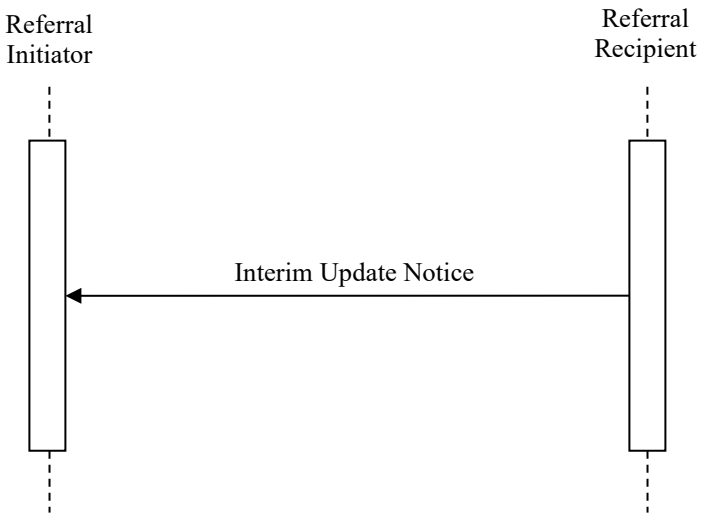

Figure 3.Y2.4-1: Interaction Diagram

3.Y2.4.1 Referral Interim Update Notice

The Referral Interim Update Notice is sent by the Referral Recipient to the Referral Initiator to indicate that the patient has been enrolled in a particular program related to an SDOH service they are receiving.

3.Y2.4.1.1 Trigger Events

he Referral Recipient sends a Referral Interim Update Notice Package in cases where there is an enrollment step for a service that is provided for the patient. The management of an enrollment process is out of scope of this profile. There are five statuses that can be conveyed with this transaction, although not all statuses will exist in all programs:

- Applied: the patient has applied for enrollment in the program or service
- Additional Information Requested: the program or service has requested additional information to determine if the patient can be enrolled
- Enrolled: the patient has been enrolled in the program or service, and is receiving help
- Wait-listed: the patient has been accepted and placed on a waiting list for the service
- Declined: the patient will not be enrolled in the program or service

The decision to send this message in the context for the Service Enrollment Notice transaction depends on the support for the notification option. As with all optional transactions, the receipt of this transaction by a Referral Initiator system that has no support for it is not an error condition.

3.Y2.4.1.2 Message Semantics

The message semantics are described in terms of XDM. When this transaction is implemented using groupings with XDR or MHD, the rules that apply to the metadata in those profiles SHALL apply. This message is an XDM package constructed following the rules described in the XDM Profile, transaction [ITI-32], ITI TF-2: 3.32. The current transaction, [PCC-Y2], adds the following constraints:

- Only a single submission set SHALL be present in the XDM package (ITI TF-2: 3.32.4.1.2)
- Only “simple part” documents SHALL be allowed in the XDM package (ITI TF-2: 3.32.4.1.2.2).

The Service Enrollment Notice XDM package contains one Document Entry – an HL7 V2 ORU^R01^ORU_R01 message and may contain additional Document Entries for supplemental information based on the specific service and context of the enrollment. If any supplemental information is in PDF format, it SHOULD be in the format described in the IHE ITI XDS-SD Profile.

3.Y2.4.1.2.1 Message Content – Metadata

The metadata in the XDM package is constrained for the purposes of Closed Loop Referral for SDOH Services as described in the following sections for Submission Set and Document Entries.

3.Y2.4.1.2.1.1 Submission Set

The table contains all required (R) Submission Set attributes from the XD* Metadata Specification, as well as any "required if known" (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of a Document Entry. These specific constraints are indicated in the Requirement column as the "Source of requirement".

Table 3.Y2.4.1.2.1.1-1: 360X-SD Submission Set Attributes

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
author	The entity which created the submission set, including the Referral Recipient's electronic address or endpoint	R (XDR and XDM for Direct Messaging)	The e-mail address of the Referral Recipient is placed in the authorTelecommunication slot of the author classification.
contentTypeCode	Defines the submission set as part of a referral.	R (360X)	LOINC Code 57164-6 is used to indicate that this Submission Set is part of a SDOH referral
entryUUID	The identifier used for referencing the Submission Set object within the metadata	R (IHE)	Assigned by the Referral Recipient when the Submission Set was created
intendedRecipient	The entity for which the Submission set is intended	R (XDR and XDM for Direct Messaging)	The Direct address of the Referral Initiator.
patientId	The patient ID known to the Referral Initiator, which was sent as part of the referral request. This value must be the same for the Submission Set, and the Document Entries within it.	R (360X)	See PCC TF-1: X.1.3.1 for description on how patient identity is conveyed between the Referral Initiator and the Referral Recipient
sourceId	Globally unique identifier representing the entity which created the submission set. Usually an organizational identifier.	R (IHE)	An OID.
submissionTime	Represents the point in time at the creating entity when the Submission Set was created.	R (IHE)	Timestamp in UTC
uniqueId	Globally unique identifier assigned to the submission set by its creator.	R	An OID.

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
referenceIdList	The referenceIdList contains the referral ID, as described in PCC TF-1: X.1.3.1	R (360X)	This attribute is currently only defined by IHE for the Document Entry metadata. Since it is a Slot, however, it is not prohibited from being added to the Submission Set metadata. format: 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral

3.Y2.4.1.2.1.2 Document Entry for Referral Update

The table contains all required (R) Document Entry attributes from the XD* Metadata Specification, as well as any "required if known" (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of the Document Entry. These specific constraints are indicated in the Requirement column as the "Source of requirement".

Table 3.Y2.4.1.2.1.2-1: 360X-SD Document Entry Attributes for Referral Update

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
author	If supplied, MUST indicate the person or system which is providing the update.	R2 (XDR and XDM for Direct Messaging)	
classCode	Identifies the specific document type, in this case an HL7 V2 Order.	R (360X) (R2 XDR and XDM for Direct Messaging)	Message Type in MSH-9.1 value: ORU name: General clinical order message coding scheme: 2.16.840.1.113883.18.30
confidentialityCode	Identifies the confidentiality defined for the order. Implementations SHOULD NOT use codes that reveal the specific trigger causes of confidentiality (e.g., ETH, HIV, PSY, SDV)	R2 (XDR and XDM for Direct Messaging)	Confidentiality Code in ORC-28 Implementations SHOULD constrain to values that do not reflect the cause of confidentiality such as: V Very restricted R Restricted U Usual control

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
creationTime	Defines the creation time of the order message (as opposed to the order itself)	R2 (XDR and XDM for Direct Messaging)	Date/Time of Message in MSH-7. In the metadata the timestamp SHALL be in UTC time.
entryUUID	The identifier used for referencing the Document Entry object within the metadata	R (XDR and XDM for Direct Messaging)	N/A
formatCode	The specific format for the message	R (360X)	Based on MSH-9.1 and MSH-9.2 value: urn:ihe:pcc:360x:hl7:ORU:R01:XXXX name: Unsolicited Observation Message coding scheme: 1.3.6.1.4.1.19376.1.2.3
hash	SHA-1 hash of the content	R (XDM)	N/A
healthcareFacilityTypeCode	See also practice setting type. This code represents the type of organizational setting of the clinical encounter during which the documented act occurred. Note that in context of 360X, this is the facility type of the Referral Request Initiator.	R2 (XDR and XDM for Direct Messaging)	May be derived from / mapped to the information in ORC-21 through 24
languageCode	Specifies the language of the document (order / referral request)	R2 (XDR and XDM for Direct Messaging)	Corresponds to Principal Language of Message in MSH-19
mimeType	The MIME type of the message, indicating that it is plain text (ASCII or utf-8), formatted according to the HL7 V2 rules.	R	x-application/hl7-v2+er7
patientId	The patient ID known to the Referral Initiator, which was sent as part of the referral request. This value must be the same for the Submission Set, and the Document Entries within it. See PCC TF-1: X.1.3.1	R (360X)	PID-3

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
practiceSettingCode	Identifies the setting that created the order at a high granularity e.g., Cardiology, Family Practice. Should not create ambiguity as compared to healthcareFacilityTypeCode.	R2 (XDR and XDM for Direct)	May be derived from / mapped to the information in ORC-21 through 24
Size	Size in bytes of the message as it exists in the file system when the contents of ZIP package are extracted	R (XDM)	N/A
sourcePatientId	The sourcePatientId is the ID as known by the Referral Recipient. See PCC TF-1: X.1.3.1	R2 (XDR and XDM for Direct)	PID-3
sourcePatientInfo	Demographics information for the patient for whom the referral was made.	R2 (XDM)	The values from PID-5 (Patient Name), PID-7 (Patient DOB), PID-8 (Patient Sex), and PID-11 (Patient Address) SHOULD be used.
typeCode	Further refines classCode – in this case defines the specific HL7 V2 message structure, for this message it is OMG_O19	R (360X)	MSH-9.3 value: ORU_R01 name: General clinical order message structure coding system: 2.16.840.1.113883.18.214
uniqueId	Globally unique identifier assigned to the document by its creator.	R	N/A May be based on Message Control ID in MSH-10
URI	The file name in the ZIP file structure containing the order message	R (XDM)	N/A
referenceIdList	Contains the referral ID See PCC TF-1: X.1.3.1	R (360X)	Derived from ORC-2 (Placer Order Number). 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral
objectType	The object type distinguishes between stable and dynamic documents. Only stable documents are used in XDM, and therefore in 360X	R	N/A fixed to urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1

3.Y2.4.1.2.2 Message Content – Referral Update

The referral update is an HL7 Version 2 ORU^R01^ORU_R01 message. The complete message definition can be found in the 360X HL7 V2 Message Payload Definition (chapters 3 to 5). The Document Entry metadata for this message is described in Section 3.Y2.4.1.2.1.2.

A table containing only the required segments and fields can be found as part of the 360X project implementation Guide at https://oncprojectracking.healthit.gov/wiki/display/TechLab360X/360X+Implementation+Guide#id-360XImplementationGuide-6.3.2MessageORU^R01_ORU_R01.

The following fields are further defined for the purposes of the Referral Request:

Table 3.Y2.4.1.2.2-1: 360X-SD Referral Update fields

Data element	Message Field	Req?	Format and use
Order Control Code	ORC-1	R	The value of SC SHALL be used for the referral update
Referral ID	ORC-2 and OBR-2	R	<referral ID>^^<assigning authority OID>^ISO
Order Status	ORC-5	R	The value of IP SHALL be used for the referral update
Ordering provider	ORC-12 and OBR-16	X	The referring provider SHALL NOT be echoed back in the status update message. This field must be empty.
Enrollment status reason	ORC 16	R2	Required if enrollment is declined to the patient.
Service identifier	OBR-4	R	The specific service for which the enrollment status update is sent. The recipient SHOULD use the codes defined by the Gravity project and managed by the NIH VSAC, and contained in the values sets at https://confluence.hl7.org/display/GRAV/Social+Risk+Terminology+Value+Sets
Reason for Referral	OBR-31	X	The Reason for Referral SHALL NOT be echoed back in the status update message. This field must be empty.
Enrollment status	OBX-3 OBX-5	R	The OBX segment is used to convey the actual enrollment status. OBX-3 contains the value XZXZX indicating enrollment status, and OBX-5 contains the actual status code. OBX-5 SHOULD be using codes from the value set defined by YYYY (TODO)

3.Y2.4.1.3 Expected Actions

The message indicates that the service indicated in the OBR segment (OBR-4) has an enrollment step, and the status of the enrollment. Upon receiving the message, the Referral Initiator's system

may update the patient's record with the new information if appropriate. Systems which do not support the notification option may ignore the enrollment notification.

3.Y2.5 Protocol Requirements

NA

3.Y2.6 Security Considerations

The security requirements of the corresponding transport option apply to this transaction:

- security requirements for the XDM Profile, and the "ZIP over Email" and "Zip over Email 1010 Response" Options
- security requirements for the XDR Profile
- security requirements for the MDH Profile

3.Y2.6.1 Security Audit Considerations

NA

3.Y2.6.(z) <Actor> Specific Security Considerations

NA

Add Section 3.Y3

3.Y3 Referral Outcome Notice [PCC-Y3]

3.Y3.1 Scope

This transaction is used to communicate the completion of the service for the patient. It is sent from the Referral Recipient to the Referral Initiator.

3.Y3.2 Actor Roles

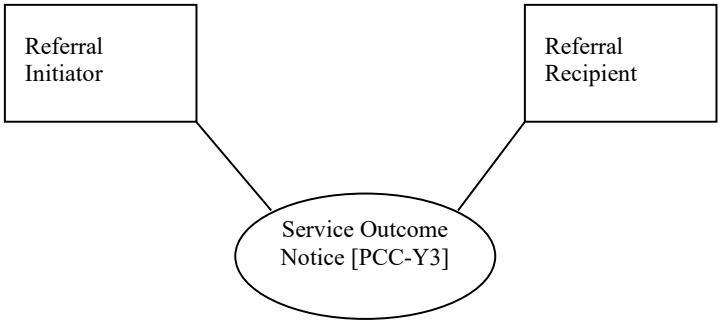

Figure 3.Y3.2-1: Use Case Diagram

Table 3.Y3.2-1: Actor Roles

Actor:	Referral Recipient
Role:	The service provider or hub who is acting on the referral
Actor:	Referral Initiator
Role:	The provider who ordered the referral

3.Y3.3 Referenced Standards

- HL7 Messaging standard, version 2.5.1 Chapters 2, 4
- HL7 Messaging standard, version 2.9 Chapter 4

3.Y3.4 Messages

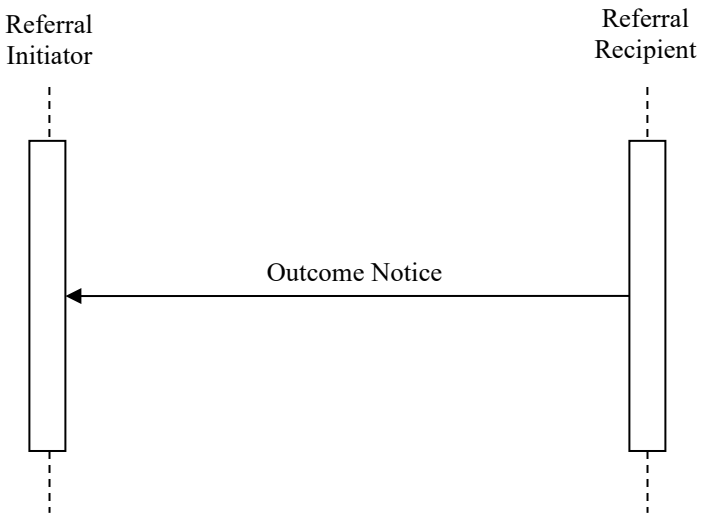

Figure 3.Y3.4-1: Interaction Diagram

3.Y3.4.1 Referral Outcome Notice

The Referral Outcome Notice is sent by the Referral Recipient to the Referral Initiator to indicate that the SDOH services that the patient has been receiving have been completed.

3.Y3.4.1.1 Trigger Events

The Referral Recipient sends a Referral Outcome Notice Package when the service for which the patient was referred has been completed. Note that the initial request may not have indicated a specific service to be provided, and in such case an outcome notice is not expected. If the request was general, and if based on that request more specific services have been provided and completed, the completion notification SHOULD be communicated as Update Notices or as a response to the Referral Status Query, not as an Outcome Notice.

The receipt of this message by a Referral Initiator system, even when it is not expected, is not an error condition.

3.Y3.4.1.2 Message Semantics

The message semantics are described in terms of XDM. When this transaction is implemented using groupings with XDR or MHD, the rules that apply to the metadata in those profiles SHALL apply. This message is an XDM package constructed following the rules described in the XDM Profile, transaction [ITI-32], ITI TF-2: 3.32. The current transaction, [PCC-Y3], adds the following constraints:

- Only a single submission set SHALL be present in the XDM package (ITI TF-2: 3.32.4.1.2)

- Only “simple part” documents SHALL be allowed in the XDM package (ITI TF-2: 3.32.4.1.2.2).

The Referral Outcome Notice XDM package contains one Document Entry – an HL7 V2 ORU^R01^ORU_R01 message and may contain additional Document Entries for supplemental information based on the specific service and context of the outcome. If any supplemental information is in PDF format, it SHOULD be in the format described in the IHE ITI XDS-SD Profile.

3.Y3.4.1.2.1 Message Content – Metadata

The metadata in the XDM package is constrained for the purposes of Closed Loop Referral for SDOH Services as described in the following sections for Submission Set and Document Entries.

3.Y3.4.1.2.1.1 Submission Set

The table contains all required (R) Submission Set attributes from the XD* Metadata Specification, as well as any “required if known” (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of a Document Entry. These specific constraints are indicated in the Requirement column as the “Source of requirement”.

Table 3.Y3.4.1.2.1.1-1: 360X Submission Set Attributes

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
author	The entity which created the submission set, including the Referral Recipient’s electronic address or endpoint	R (XDR and XDM for Direct Messaging)	The e-mail address of the Referral Recipient is placed in the authorTelecommunication slot of the author classification.
contentTypeCode	Defines the submission set as part of a referral.	R (360X)	LOINC Code 57164-6 is used to indicate that this Submission Set is part of a SDOH referral
entryUUID	The identifier used for referencing the Submission Set object within the metadata	R (IHE)	Assigned by the Referral Recipient when the Submission Set was created
intendedRecipient	The person or entity for which the Submission set is intended	R (XDR and XDM for Direct Messaging)	The Direct address of the Referral Initiator.

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
patientId	The patient ID known to the Referral Initiator, which was sent as part of the referral request. This value must be the same for the Submission Set, and the Document Entries within it.	R (360X)	See PCC TF-1: X.1.3.1 for description on how patient identity is conveyed between the Referral Initiator and the Referral Recipient
sourceId	Globally unique identifier representing the entity which created the submission set. Usually an organizational identifier.	R (IHE)	An OID.
submissionTime	Represents the point in time at the creating entity when the Submission Set was created.	R (IHE)	Timestamp in UTC
uniqueId	Globally unique identifier assigned to the submission set by its creator.	R	An OID.
referenceIdList	The referenceIdList contains the referral ID, as described in PCC TF-1: X.1.3.1	R (360X)	This attribute is currently only defined by IHE for the Document Entry metadata. Since it is a Slot, however, it is not prohibited from being added to the Submission Set metadata. format: 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral

3.Y3.4.1.2.1.2 Document Entry for Referral Update

The table contains all required (R) Document Entry attributes from the XD* Metadata Specification, as well as any "required if known" (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of the Document Entry. These specific constraints are indicated in the Requirement column as the "Source of requirement".

Table 3.Y3.4.1.2.1.2-1: 360X Document Entry Attributes for Referral Update

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
author	If supplied, MUST indicate the person or system which is providing the outcome notice.	R2 (XDR and XDM for Direct Messaging)	

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
classCode	Identifies the specific document type, in this case an HL7 V2 Order.	R (360X) (R2 XDR and XDM for Direct Messaging)	Message Type in MSH-9.1 value: ORU name: General clinical order message coding scheme: 2.16.840.1.113883.18.30
confidentialityCode	Identifies the confidentiality defined for the order. Implementations SHOULD NOT use codes that reveal the specific trigger causes of confidentiality (e.g., ETH, HIV, PSY, SDV)	R2 (XDR and XDM for Direct Messaging)	Confidentiality Code in ORC-28 Implementations SHOULD constrain to values that do not reflect the cause of confidentiality such as: V Very restricted R Restricted U Usual control
creationTime	Defines the creation time of the order message (as opposed to the order itself)	R2 (XDR and XDM for Direct Messaging)	Date/Time of Message in MSH-7. In the metadata the timestamp SHALL be in UTC time.
entryUUID	The identifier used for referencing the Document Entry object within the metadata	R (XDR and XDM for Direct Messaging)	N/A
formatCode	The specific format for the message	R (360X)	Based on MSH-9.1 and MSH-9.2 value: urn:ihe:pcc:360x:hl7:ORU:R01:XXXX name: Unsolicited Observation Message coding scheme: 1.3.6.1.4.1.19376.1.2.3
Hash	SHA-1 hash of the content	R (XDM)	N/A
healthcareFacilityTypeCode	See also practice setting type. This code represents the type of organizational setting of the clinical encounter during which the documented act occurred. Note that in context of 360X, this is the facility type of the Referral Request Initiator.	R2 (XDR and XDM for Direct Messaging)	May be derived from / mapped to the information in ORC-21 through 24
languageCode	Specifies the language of the document (order / referral request)	R2 (XDR and XDM for Direct Messaging)	Corresponds to Principal Language of Message in MSH-19

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
mimeType	The MIME type of the message, indicating that it is plain text (ASCII or utf-8), formatted according to the HL7 V2 rules.	R	x-application/hl7-v2+er7
patientId	The patient ID known to the Referral Initiator, which was sent as part of the referral request. This value must be the same for the Submission Set, and the Document Entries within it. See PCC TF-1: X.1.3.1	R (360X)	PID-3
practiceSettingCode	Identifies the setting that created the order at a high granularity e.g., Cardiology, Family Practice. Should not create ambiguity as compared to healthcareFacilityTypeCode.	R2 (XDR and XDM for Direct)	May be derived from / mapped to the information in ORC-21 through 24
Size	Size in bytes of the message as it exists in the file system when the contents of ZIP package are extracted	R (XDM)	N/A
sourcePatientId	The sourcePatientId is the ID as known by the Referral Recipient. See PCC TF-1: X.1.3.1	R2 (XDR and XDM for Direct Messaging)	PID-3
sourcePatientInfo	Demographics information for the patient for whom the referral was made.	R2 (XDM)	The values from PID-5 (Patient Name), PID-7 (Patient DOB), PID-8 (Patient Sex), and PID-11 (Patient Address) SHOULD be used.
typeCode	Further refines classCode – in this case defines the specific HL7 V2 message structure, for this message it is OMG_O19	R (360X)	MSH-9.3 value: ORU_R01 name: General clinical order message structure coding system: 2.16.840.1.113883.18.214
uniqueId	Globally unique identifier assigned to the document by its creator.	R	N/A May be based on Message Control ID in MSH-10
URI	The file name in the ZIP file structure containing the order message	R (XDM)	N/A

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
referenceIdList	Contains the referral ID See PCC TF-1: X.1.3.1	R (360X)	Derived from ORC-2 (Placer Order Number). 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral
objectType	The object type distinguishes between stable and dynamic documents. Only stable documents are used in XDM, and therefore in 360X	R	N/A fixed to urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1

3.Y3.4.1.2.2 Message Content – Referral Outcome Notice

The referral order is an HL7 Version 2 ORU^R01^ORU_R01 message. The complete message definition can be found in the 360X HL7 V2 Message Payload Definition (chapters 3 to 5). The Document Entry metadata for this message is described in Section 3.Y2.4.1.2.1.2.

A table containing only the required segments and fields can be found as part of the 360X project implementation Guide at https://oncprojectracking.healthit.gov/wiki/display/TechLab360X/360X+Implementation+Guide#id-360XImplementationGuide-6.3.2MessageOMG^O19_OMG_O19.

The following fields are further defined for the purposes of the Referral Outcome Notice:

Table 3.Y3.4.1.2.2-1: 360X Referral Outcome Notice fields

Data element	Message Field	Req?	Format and use
Order Control Code	ORC-1	R	The value of SC SHALL be used for the referral outcome notice
Referral ID	ORC-2 and OBR-2	R	<referral ID>^^<assigning authority OID>^ISO
Order Status	ORC-5	R	The value of CM SHALL be used for the referral outcome notice
Ordering provider	ORC-12 and OBR-16	X	The referring provider SHALL NOT be echoed back in the outcome notice message. This field must be empty.
Service identifier	OBR-4	R	The specific service for which the enrollment status update is sent. The recipient SHOULD use the codes defined by the Gravity project and managed by the NIH VSAC, and contained in the values sets at https://confluence.hl7.org/display/GRAV/Social+Risk+Terminology+Value+Sets
Reason for Referral	OBR-31	X	The Reason for Referral SHALL NOT be echoed back in the outcome notice message.

Data element	Message Field	Req?	Format and use
Outcome details	OBX-3 OBX-5	O	The OBX segments are used to convey any details about the referral outcome. OBX-3 contains a code indicating generally an outcome type, and OBX-5 contains the actual outcome code. This type codes and outcome types are not defined by this specification.

3.Y3.4.1.3 Expected Actions

The message indicates that the service indicated in the OBR segment (OBR-4) was completed. Additional details about the outcome may be conveyed in OBX segments following the OBR segment, and/or in additional DocumentEntry content. Upon receiving the message, the Referral Initiator's system SHALL update the patient's record with the added information if appropriate.

3.Y3.5 Protocol Requirements

NA

3.Y3.6 Security Considerations

The security requirements of the corresponding transport option apply to this transaction:

- security requirements for the XDM Profile, and the "ZIP over Email" and "Zip over Email Response" Options
- security requirements for the XDR Profile
- security requirements for the MDH Profile

3.Y3.6.1 Security Audit Considerations

NA

3.Y3.6.(z) <Actor> Specific Security Considerations

NA

Add Section 3.Y4

3.Y4 Referral Interim Notice [PCC-Y4]

3.Y4.1 Scope

This transaction is used to communicate an update about the service for the patient. the completion of some part the service for the patient, while the patient continues to receive the service. It is sent from the Referral Recipient to the Referral Initiator.

3.Y4.2 Actor Roles

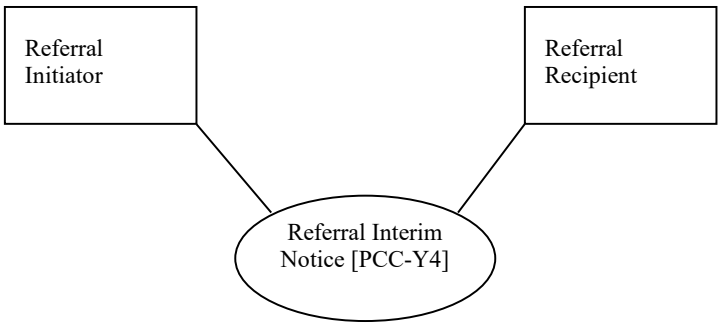

Figure 3.Y4.2-1: Use Case Diagram

Table 3.Y4.2-1: Actor Roles

Actor:	Referral Recipient
Role:	The service provider or hub who is acting on the referral
Actor:	Referral Initiator
Role:	The provider who ordered the referral

3.Y4.3 Referenced Standards

- HL7 Messaging standard, version 2.5.1 Chapters 2, 4
- HL7 Messaging standard, version 2.9 Chapter 4

3.Y4.4 Messages

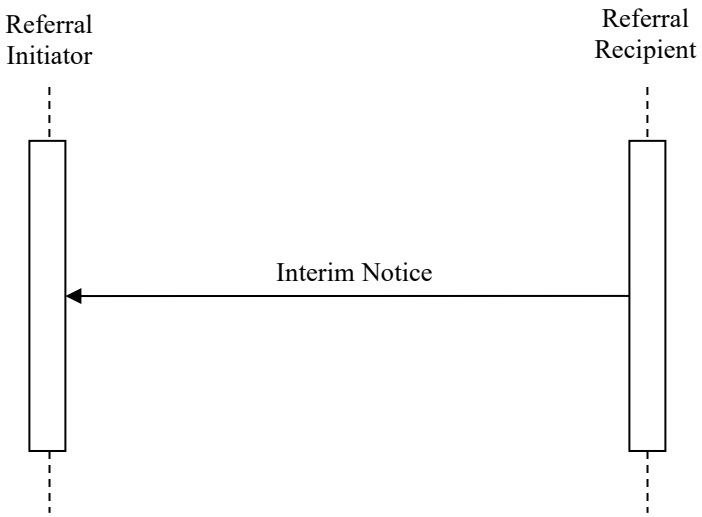

Figure 3.Y4.4-1: Interaction Diagram

3.Y4.4.1 Referral Interim Notice

The Referral Interim Notice is sent by the Referral Recipient to the Referral Initiator to indicate that there has been a change in the state of the SDOH services that the patient has been receiving. Among the changes communicated with this transaction are:

- interim outcomes of the services,
- changes in the status (other than "Service no longer needed" or related to enrollment, which are communicated via [PCC-Y5] or [PCC-Y2] respectively),
- identifying additional needs for the patient.

This optional transaction SHOULD only be sent if the Referral Initiator has declared support for the Update Notification Option.

3.Y4.4.1.1 Trigger Events

The Referral Recipient sends a Referral Interim Notice Package when the service for which the patient was referred has been partially completed, or it has some change in status, while the patient is still receiving the service. Note that the initial request may not have indicated a specific service to be provided, and in such case an Interim Notice SHOULD be used if, based on the initial request, more specific services have been provided and completed, and the recipient has declared the Ongoing Updates Option.

The receipt of this message by a Referral Initiator system, even when it is not expected, is not an error condition.

3.Y4.4.1.2 Message Semantics

The message semantics are described in terms of XDM. When this transaction is implemented using groupings with XDR or MHD, the rules that apply to the metadata in those profiles SHALL apply. This message is an XDM package constructed following the rules described in the XDM Profile, transaction [ITI-32], ITI TF-2: 3.32. The current transaction, [PCC-Y4], adds the following constraints:

- Only a single submission set SHALL be present in the XDM package (ITI TF-2: 3.32.4.1.2)
- Only "simple part" documents SHALL be allowed in the XDM package (ITI TF-2: 3.32.4.1.2.2).

The Referral Outcome Notice XDM package contains one Document Entry – an HL7 V2 ORU^R01^ORU_R01 message and may contain additional Document Entries for supplemental information based on the specific service and context of the outcome. If any supplemental information is in PDF format, it SHOULD be in the format described in the IHE ITI XDS-SD Profile.

3.Y4.4.1.2.1 Message Content – Metadata

The metadata in the XDM package is constrained for the purposes of Closed Loop Referral for SDOH Services as described in the following sections for Submission Set and Document Entries.

3.Y4.4.1.2.1.1 Submission Set

The table contains all required (R) Submission Set attributes from the XD* Metadata Specification, as well as any "required if known" (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of a Document Entry. These specific constraints are indicated in the Requirement column as the "Source of requirement".

Table 3.Y4.4.1.2.1.1-1: 360X Submission Set Attributes

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
author	The entity which created the submission set, including the Referral Recipient's electronic address or endpoint	R (XDR and XDM for Direct Messaging)	The e-mail address of the Referral Recipient is placed in the authorTelecommunication slot of the author classification.
contentTypeCode	Defines the submission set as part of a referral.	R (360X)	LOINC Code 57164-6 is used to indicate that this Submission Set is part of a SDOH referral

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
entryUUID	The identifier used for referencing the Submission Set object within the metadata	R (IHE)	Assigned by the Referral Recipient when the Submission Set was created
intendedRecipient	The entity for which the Submission set is intended	R (XDR and XDM for Direct Messaging)	The Direct address of the Referral Initiator.
patientId	The patient ID known to the Referral Initiator, which was sent as part of the referral request. This value must be the same for the Submission Set, and the Document Entries included with it.	R (360X)	See PCC TF-1: X.1.3.1 for description on how patient identity is conveyed between the Referral Initiator and the Referral Recipient
sourceId	Globally unique identifier representing the entity which created the submission set. Usually an organizational identifier.	R (IHE)	An OID.
submissionTime	Represents the point in time at the creating entity when the Submission Set was created.	R (IHE)	Timestamp in UTC
uniqueId	Globally unique identifier assigned to the submission set by its creator.	R	An OID.
referenceIdList	The referenceIdList contains the referral ID, as described in PCC TF-1: X.1.3.1	R (360X)	This attribute is currently only defined by IHE for the Document Entry metadata. Since it is a Slot, however, it is not prohibited from being added to the Submission Set metadata. format: 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral

1025 **3.Y4.4.1.2.1.2 Document Entry for Referral Interim Notice**

The table contains all required (R) Document Entry attributes from the XD* Metadata Specification, as well as any "required if known" (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of the Document Entry. These specific constraints are indicated in the Requirement column as the "Source of requirement".

1030 **Table 3.Y4.4.1.2.1.2-1: 360X Document Entry Attributes for Referral Interim Notice**

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
author	If supplied, MUST indicate the person or system which is providing the interim notice.	R2 (XDR and XDM for Direct Messaging)	
classCode	Identifies the specific document type, in this case an HL7 V2 Order.	R (360X) (R2 XDR and XDM for Direct Messaging)	Message Type in MSH-9.1 value: ORU name: General clinical order message coding scheme: 2.16.840.1.113883.18.30
confidentialityCode	Identifies the confidentiality defined for the order. Implementations SHOULD NOT use codes that reveal the specific trigger causes of confidentiality (e.g., ETH, HIV, PSY, SDV)	R2 (XDR and XDM for Direct Messaging)	Confidentiality Code in ORC-28 Implementations SHOULD constrain to values that do not reflect the cause of confidentiality such as: V Very restricted R Restricted U Usual control
creationTime	Defines the creation time of the order message (as opposed to the order itself)	R2 (XDR and XDM for Direct Messaging)	Date/Time of Message in MSH-7. In the metadata the timestamp SHALL be in UTC time.
entryUUID	The identifier used for referencing the Document Entry object within the metadata	R (XDR and XDM for Direct Messaging)	N/A
formatCode	The specific format for the message	R (360X)	Based on MSH-9.1 and MSH-9.2 value: urn:ihe:pcc:360x:hl7:ORU:R01:XXXX name: Unsolicited Observation Message coding scheme: 1.3.6.1.4.1.19376.1.2.3
Hash	SHA-1 hash of the content	R (XDM)	N/A
healthcareFacilityTypeCode	See also practice setting type. This code represents the type of organizational setting of the clinical encounter during which the documented act occurred. Note that in context of 360X, this is the facility type of the Referral Request Initiator.	R2 (XDR and XDM for Direct Messaging)	May be derived from / mapped to the information in ORC-21 through 24

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
languageCode	Specifies the language of the document (order / referral request)	R2 (XDR and XDM for Direct Messaging)	Corresponds to Principal Language of Message in MSH-19
mimeType	The MIME type of the message, indicating that it is plain text (ASCII or utf-8), formatted according to the HL7 V2 rules.	R	x-application/hl7-v2+er7
patientId	The patient ID known to the Referral Initiator, which was sent as part of the referral request. This value must be the same for the Submission Set, and the Document Entries within it. See PCC TF-1: X.1.3.1	R (360X)	PID-3
practiceSettingCode	Identifies the setting that created the order at a high granularity e.g., Cardiology, Family Practice. Should not create ambiguity as compared to healthcareFacilityTypeCode.	R2 (XDR and XDM for Direct)	May be derived from / mapped to the information in ORC-21 through 24
Size	Size in bytes of the message as it exists in the file system when the contents of ZIP package are extracted	R (XDM)	N/A
sourcePatientId	The sourcePatientId is the ID as known by the Referral Recipient. See PCC TF-1: X.1.3.1	R2 (XDR and XDM for Direct Messaging)	PID-3
sourcePatientInfo	Demographics information for the patient for whom the referral was made.	R2 (XDM)	The values from PID-5 (Patient Name), PID-7 (Patient DOB), PID-8 (Patient Sex), and PID-11 (Patient Address) SHOULD be used.
typeCode	Further refines classCode – in this case defines the specific HL7 V2 message structure, for this message it is OMG_O19	R (360X)	MSH-9.3 value: ORU_R01 name: General clinical order message structure coding system: 2.16.840.1.113883.18.214
uniqueId	Globally unique identifier assigned to the document by its creator.	R	N/A May be based on Message Control ID in MSH-10

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
URI	The file name in the ZIP file structure containing the order message	R (XDM)	N/A
referenceIdList	Contains the referral ID See PCC TF-1: X.1.3.1	R (360X)	Derived from ORC-2 (Placer Order Number). 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral
objectType	The object type distinguishes between stable and dynamic documents. Only stable documents are used in XDM, and therefore in 360X	R	N/A fixed to urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1

3.Y4.4.1.2.2 Message Content – Referral Interim Notice

The referral order is an HL7 Version 2 ORU^R01^ORU_R01 message. The complete message definition can be found in the 360X HL7 V2 Message Payload Definition (chapters 3 to 5). The Document Entry metadata for this message is described in Section 3.Y4.4.1.2.1.2.

A table containing only the required segments and fields can be found as part of the 360X project implementation Guide at https://oncprojectracking.healthit.gov/wiki/display/TechLab360X/360X+Implementation+Guide#id-360XImplementationGuide-6.3.2MessageOMG^O19_OMG_O19.

The following fields are further defined for the purposes of the Referral Request:

Table 3.Y4.4.1.2.2-1: 360X Referral Interim Notice fields

Data element	Message Field	Req?	Format and use
Order Control Code	ORC-1	R	The value of SC SHALL be used for the referral Interim Notice
Referral ID	ORC-2 and OBR-2	R	<referral ID>^^<assigning authority OID>^ISO
Order Status	ORC-5	R	The value of A SHALL be used for the referral Interim Notice
Ordering provider	ORC-12 and OBR-16	X	The referring provider SHALL NOT be echoed back in the outcome notice message. This field must be empty.

Data element	Message Field	Req?	Format and use
Service identifier	OBR-4	R	The specific service for which the enrollment Interim notice is sent. The recipient SHOULD use the codes defined by the Gravity project and managed by the NIH VSAC, and contained in the values sets at https://confluence.hl7.org/display/GRAV/Social+Risk+Terminology+Value+Sets
Reason for Referral	OBR-31	X	The Reason for Referral SHALL NOT be echoed back in the outcome notice message.
Outcome details	OBX-3 OBX-5	O	The OBX segments are used to convey any details about the referral Interim Notice. OBX-3 contains a code indicating generally an outcome type, and OBX-5 contains the actual outcome code. This type codes and outcome types are not defined by this specification.

3.Y4.4.1.3 Expected Actions

The message indicates that the service indicated in the OBR segment (OBR-4) has some updates, most commonly if part of the service has been completed, or if subsequently determined service needs have been met and completed. Additional details about the outcome may be conveyed in OBX segments following the OBR segment, and/or in additional DocumentEntry content. Upon receiving the message, the Referral Initiator's system SHOULD update the patient's record with the added information if appropriate, however, the system SHOULD not notify the referral initiator, unless the Ongoing Updates Option is in place for that actor.

3.Y4.5 Protocol Requirements

NA

3.Y4.6 Security Considerations

The security requirements of the corresponding transport option apply to this transaction:

- security requirements for the XDM Profile, and the "ZIP over Email" and "Zip over Email 1010 Response" Options
- security requirements for the XDR Profile
- security requirements for the MDH Profile

3.Y4.6.1 Security Audit Considerations

NA

3.Y4.6.(z) <Actor> Specific Security Considerations

NA

Add Section 3.Y5

3.Y5 Service Not Needed Notice [PCC-Y5]

3.Y5.1 Scope

This transaction is used to communicate a specific subset of a referral outcome, indicating that the service for the patient is not necessary any longer. It is sent from the Referral Recipient to the Referral Initiator.

3.Y5.2 Actor Roles

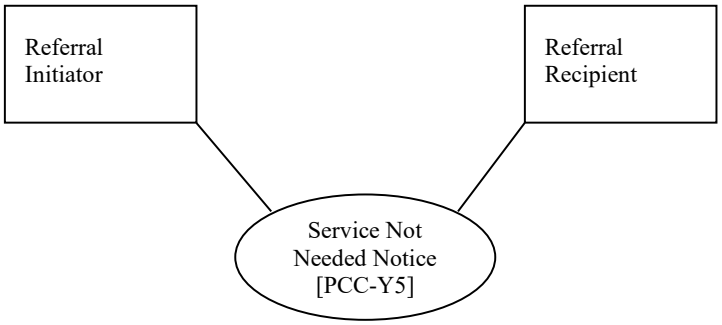

Figure 3.Y5.2-1: Use Case Diagram

Table 3.Y5.2-1: Actor Roles

Actor:	Referral Recipient
Role:	The service provider or hub who is acting on the referral
Actor:	Referral Initiator
Role:	The provider who ordered the referral

3.Y5.3 Referenced Standards

- HL7 Messaging standard, version 2.5.1 Chapters 2, 4
- HL7 Messaging standard, version 2.9 Chapter 4

3.Y5.4 Messages

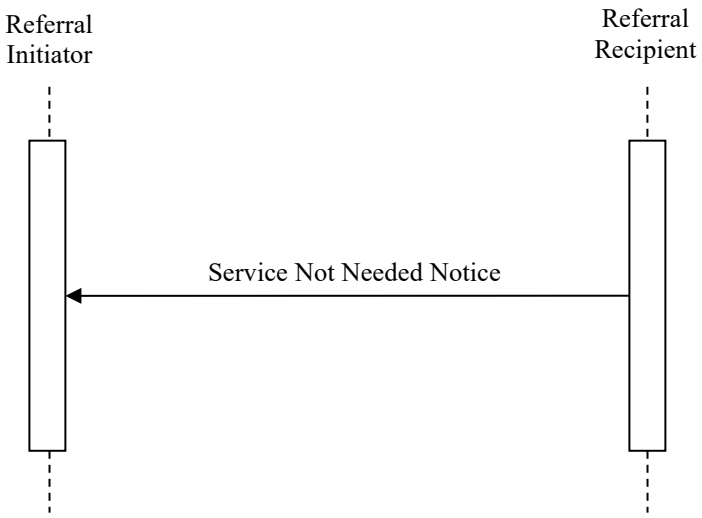

Figure 3.Y5.4-1: Interaction Diagram

3.Y5.4.1 Referral Service Not Needed Notice

The Referral Service Not Needed Notice is sent by the Referral Recipient to the Referral Initiator to indicate that there is no need to provide the SDOH services that the patient has been receiving. This is a narrow, but very common subset of closing the loop for SDOH referrals.

This optional transaction SHOULD only be sent if the Referral Initiator has declared support for the Update Notification Option.

3.Y5.4.1.1 Trigger Events

The Referral Recipient sends a Referral Service Not Needed Notice Package when the service for which the patient was referred is no longer needed, but there is not necessarily a specific outcome. Note that the initial request may not have indicated a specific service to be provided, and in such case an Interim Notice SHOULD be used if, based on the initial request, more specific services have been provided and completed, and the recipient has declared the Ongoing Updates Option.

The receipt of this message by a Referral Initiator system, even when it is not expected, is not an error condition.

3.Y5.4.1.2 Message Semantics

The message semantics are described in terms of XDM. When this transaction is implemented using groupings with XDR or MHD, the rules that apply to the metadata in those profiles SHALL apply. This message is an XDM package constructed following the rules described in

the XDM Profile, transaction [ITI-32], ITI TF-2: 3.32. The current transaction, [PCC-Y4], adds the following constraints:

- Only a single submission set SHALL be present in the XDM package (ITI TF-2: 3.32.4.1.2)
- Only "simple part" documents SHALL be allowed in the XDM package (ITI TF-2: 3.32.4.1.2.2).

The Referral Outcome Notice XDM package contains one Document Entry – an HL7 V2 ORU^R01^ORU_R01 message and may contain additional Document Entries for supplemental information based on the specific service and context of the outcome. If any supplemental information is in PDF format, it SHOULD be in the format described in the IHE ITI XDS-SD Profile.

3.Y5.4.1.2.1 Message Content – Metadata

The metadata in the XDM package is constrained for the purposes of Closed Loop Referral for SDOH Services as described in the following sections for Submission Set and Document Entries.

3.Y5.4.1.2.1.1 Submission Set

The table contains all required (R) Submission Set attributes from the XD* Metadata Specification, as well as any "required if known" (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of a Document Entry. These specific constraints are indicated in the Requirement column as the "Source of requirement".

Table 3.Y5.4.1.2.1.1-1: 360X Submission Set Attributes

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
author	The entity which created the submission set, including the Referral Recipient's electronic address or endpoint	R (XDR and XDM for Direct Messaging)	The e-mail address of the Referral Recipient is placed in the authorTelecommunication slot of the author classification.
contentTypeCode	Defines the submission set as part of a referral.	R (360X)	LOINC Code 57164-6 is used to indicate that this Submission Set is part of a SDOH referral
entryUUID	The identifier used for referencing the Submission Set object within the metadata	R (IHE)	Assigned by the Referral Recipient when the Submission Set was created
intendedRecipient	The entity for which the Submission set is intended	R (XDR and XDM for Direct Messaging)	The Direct address of the Referral Initiator.

Attribute	Purpose within 360X	Requirement (Source of requirement)	Value and Source
patientId	The patient ID known to the Referral Initiator, which was sent as part of the referral request. This value must be the same for the Submission Set, and the Document Entries included with it.	R (360X)	See PCC TF-1: X.1.3.1 for description on how patient identity is conveyed between the Referral Initiator and the Referral Recipient
sourceId	Globally unique identifier representing the entity which created the submission set. Usually an organizational identifier.	R (IHE)	An OID.
submissionTime	Represents the point in time at the creating entity when the Submission Set was created.	R (IHE)	Timestamp in UTC
uniqueId	Globally unique identifier assigned to the submission set by its creator.	R	An OID.
referenceIdList	The referenceIdList contains the referral ID, as described in PCC TF-1: X.1.3.1	R (360X)	This attribute is currently only defined by IHE for the Document Entry metadata. Since it is a Slot, however, it is not prohibited from being added to the Submission Set metadata. format: 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral

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3.Y5.4.1.2.1.2 Document Entry for Referral Service Not Needed Notice

The table contains all required (R) Document Entry attributes from the XD* Metadata Specification, as well as any "required if known" (R2) or optional (O) attributes, where 360X imposes a specific constraint or connection to the content of the Document Entry. These specific
1125 constraints are indicated in the Requirement column as the "Source of requirement".

Table 3.Y5.4.1.2.1.2-1: 360X Document Entry Attributes for Referral Service Not Needed Notice

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
author	If supplied, MUST indicate the person or system which is providing the interim notice.	R2 (XDR and XDM for Direct Messaging)	
classCode	Identifies the specific document type, in this case an HL7 V2 Order.	R (360X) (R2 XDR and XDM for Direct Messaging)	Message Type in MSH-9.1 value: ORU name: General clinical order message coding scheme: 2.16.840.1.113883.18.30
confidentialityCode	Identifies the confidentiality defined for the order. Implementations SHOULD NOT use codes that reveal the specific trigger causes of confidentiality (e.g., ETH, HIV, PSY, SDV)	R2 (XDR and XDM for Direct Messaging)	Confidentiality Code in ORC-28 Implementations SHOULD constrain to values that do not reflect the cause of confidentiality such as: V Very restricted R Restricted U Usual control
creationTime	Defines the creation time of the order message (as opposed to the order itself)	R2 (XDR and XDM for Direct Messaging)	Date/Time of Message in MSH-7. In the metadata the timestamp SHALL be in UTC time.
entryUUID	The identifier used for referencing the Document Entry object within the metadata	R (XDR and XDM for Direct Messaging)	N/A
formatCode	The specific format for the message	R (360X)	Based on MSH-9.1 and MSH-9.2 value: urn:ihe:pcc:360x:hl7:ORU:R01:XXXX name: Unsolicited Observation Message coding scheme: 1.3.6.1.4.1.19376.1.2.3
Hash	SHA-1 hash of the content	R (XDM)	N/A
healthcareFacilityTypeCode	See also practice setting type. This code represents the type of organizational setting of the clinical encounter during which the documented act occurred. Note that in context of 360X, this is the facility type of the Referral Request Initiator.	R2 (XDR and XDM for Direct Messaging)	May be derived from / mapped to the information in ORC-21 through 24

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
languageCode	Specifies the language of the document (order / referral request)	R2 (XDR and XDM for Direct Messaging)	Corresponds to Principal Language of Message in MSH-19
mimeType	The MIME type of the message, indicating that it is plain text (ASCII or utf-8), formatted according to the HL7 V2 rules.	R	x-application/hl7-v2+er7
patientId	The patient ID known to the Referral Initiator, which was sent as part of the referral request. This value must be the same for the Submission Set, and the Document Entries within it. See PCC TF-1: X.1.3.1	R (360X)	PID-3
practiceSettingCode	Identifies the setting that created the order at a high granularity e.g., Cardiology, Family Practice. Should not create ambiguity as compared to healthcareFacilityTypeCode.	R2 (XDR and XDM for Direct)	May be derived from / mapped to the information in ORC-21 through 24
Size	Size in bytes of the message as it exists in the file system when the contents of ZIP package are extracted	R (XDM)	N/A
sourcePatientId	The sourcePatientId is the ID as known by the Referral Recipient. See PCC TF-1: X.1.3.1	R2 (XDR and XDM for Direct Messaging)	PID-3
sourcePatientInfo	Demographics information for the patient for whom the referral was made.	R2 (XDM)	The values from PID-5 (Patient Name), PID-7 (Patient DOB), PID-8 (Patient Sex), and PID-11 (Patient Address) SHOULD be used.
typeCode	Further refines classCode – in this case defines the specific HL7 V2 message structure, for this message it is OMG_O19	R (360X)	MSH-9.3 value: ORU_R01 name: General clinical order message structure coding system: 2.16.840.1.113883.18.214
uniqueId	Globally unique identifier assigned to the document by its creator.	R	N/A May be based on Message Control ID in MSH-10

Attribute	Purpose within 360X	Requirement (Source of requirement)	Corresponding HL7 Field/Component/Subcomponent
URI	The file name in the ZIP file structure containing the order message	R (XDM)	N/A
referenceIdList	Contains the referral ID See PCC TF-1: X.1.3.1	R (360X)	Derived from ORC-2 (Placer Order Number). 134467653^^^&1.2.3.4.5.42.1&ISO^urn:ihe:iti:xds:2013:referral
objectType	The object type distinguishes between stable and dynamic documents. Only stable documents are used in XDM, and therefore in 360X	R	N/A fixed to urn:uuid:7edca82f-054d-47f2-a032-9b2a5b5186c1

3.Y5.4.1.2.2 Message Content – Referral Service Not Needed Notice

The referral order is an HL7 Version 2 ORU^R01^ORU_R01 message. The complete message definition can be found in the 360X HL7 V2 Message Payload Definition (chapters 3 to 5). The Document Entry metadata for this message is described in Section 3.Y5.4.1.2.1.2.

A table containing only the required segments and fields can be found as part of the 360X project implementation Guide at https://oncprojectracking.healthit.gov/wiki/display/TechLab360X/360X+Implementation+Guide#id-360XImplementationGuide-6.3.2MessageOMG^O19_OMG_O19.

The following fields are further defined for the purposes of the Referral Request:

Table 3.Y5.4.1.2.2-1: 360X Referral Service Not Needed Notice fields

Data element	Message Field	Req?	Format and use
Order Control Code	ORC-1	R	The value of SC SHALL be used for the Referral Service Not Needed Notice
Referral ID	ORC-2 and OBR-2	R	<referral ID>^^<assigning authority OID>^ISO
Order Status	ORC-5	R	The value of CM SHALL be used for the Referral Service Not Needed Notice
Ordering provider	ORC-12 and OBR-16	X	The referring provider SHALL NOT be echoed back in the outcome notice message. This field must be empty.

Data element	Message Field	Req?	Format and use
Reason why service is not needed	ORC 16	O	Optional reason explaining why the service is no longer needed
Service identifier	OBR-4	R	The specific service for which the enrollment Interim notice is sent. The recipient SHOULD use the codes defined by the Gravity project and managed by the NIH VSAC, and contained in the values sets at https://confluence.hl7.org/display/GRAV/Social+Risk+Terminology+Value+Sets
Reason for Referral	OBR-31	X	The Reason for Referral SHALL NOT be echoed back in the outcome notice message.
Service Not Needed indicator	OBX-3 OBX-5	R	A single OBX segment is used to convey that this message indicates that there is no further need to provide the service indicated OBR-4. OBX-3 contains the code "service-not-needed", and OBX-5 contains the code "true".

3.Y5.4.1.3 Expected Actions

The message indicates that the service indicated in the OBR segment (OBR-4) no longer needs to be provided, which indicates closing of the loop. Additional details about the outcome may be conveyed in additional DocumentEntry content if necessary. Upon receiving the message, the Referral Initiator's system SHOULD update the patient's record with the information that they are not receiving the particular service if appropriate, however, the system SHOULD not notify the referral initiator, unless the Ongoing Updates Option is in place for that actor.

3.Y4.5 Protocol Requirements

NA

3.Y4.6 Security Considerations

The security requirements of the corresponding transport option apply to this transaction:

- security requirements for the XDM Profile, and the "ZIP over Email" and "Zip over Email 1010 Response" Options
- security requirements for the XDR Profile
- security requirements for the MDH Profile

3.Y4.6.1 Security Audit Considerations

NA

3.Y4.6.(z) <Actor> Specific Security Considerations

NA

Appendices to Volume 2

None

Namespace Additions for Volume 2

The Patient Care Coordination registry of OIDs is located at
1165 https://wiki.ihe.net/index.php/PCC_Vocabulary_Registry_and_Data_Dictionary.

Volume 2 additions to the Patient Care Coordination OID Registry are:

No new

Volume 3 – Content Modules

5 IHE Namespaces, Concept Domains and Vocabularies

Add to Section 5 IHE Namespaces, Concept Domains and Vocabularies

5.1 IHE Patient Care Coordination Namespaces

The Patient Care Coordination registry of OIDs is located at https://wiki.ihe.net/index.php/PCC_Vocabulary_Registry_and_Data_Dictionary

Additions to the Patient Care Coordination OID Registry are:

No new OIDs

5.2 IHE Patient Care Coordination Concept Domains

For a listing of the Patient Care Coordination Concept Domains see *<enter location of the domains Concept Domains or NA if none>*

conceptDomain	conceptDomainName	Description
No new concepts		

5.3 IHE Patient Care Coordination Format Codes and Vocabularies

5.3.1 IHE Format Codes

*List in the table below any **new** format codes to be added to the IHE Format Codes wiki page at http://wiki.ihe.net/index.php/IHE_Format_Codes. For public comment, the additions must be listed in the table below. The domain technical committee must ensure any new codes are also added to the wiki page prior to publication for trial implementation.*

Profile	Format Code	Media Type	Template ID
No new codes			

5.3.2 IHEActCode Vocabulary

*List in the table below, any **new** additions to the IHEActCode Vocabulary wiki page at http://wiki.ihe.net/index.php/IHEActCode_Vocabulary. For public comment, the additions must be listed in the table below. The domain technical committee must ensure any new codes are also added to the wiki page prior to publication for trial implementation.*

Code	Description
No new codes	

5.3.3 IHERoleCode Vocabulary

*List in the table below any **new** additions to the IHERoleCode Vocabulary wiki page at http://wiki.ihe.net/index.php/IHERoleCode_Vocabulary. For public comment, the additions must be listed in the table below. The domain technical committee must ensure any new codes are also added to the wiki page prior to publication for trial implementation.*

Code	Description
No new codes	

Appendices to Volume 3

None

Volume 4 – National Extensions

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4.I.3 360 Closed Loop Referral Exchange for SDOH Services (360X-SD)

The US national extension for the 360 Closed Loop Referral Exchange for SDOH Services follows the additional requirements for 4.I.2 Closed Loop Referral (360X) in the following two areas:

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- Using Direct for the underlying protocol
- HL7 V2 MSH and PID segment requirements for the HL7 v2 messages in all transactions.

