

USCDI+ Maternal Health Information Session

September 23, 2025

1. Welcome and Opening Remarks

2. Introduction to USCDI and USCDI+

3. USCDI+ Maternal Health Domain

- Incorporating Prior Pilot Test and Public Feedback into the USCDI+ Dataset
- Postpartum Transition of Care Use Case Development
- Draft FHIR IG Development and Testing for Postpartum Transition of Care Use Case

4. Pilot Test Findings

5. Next Steps and Closing Remarks

ASTP/ONC Project Team



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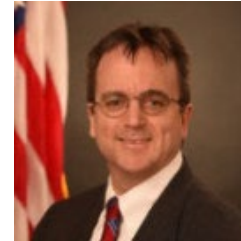
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US Core Data for Interoperability (USCDI)

The Minimum Dataset of the Health Care Delivery System

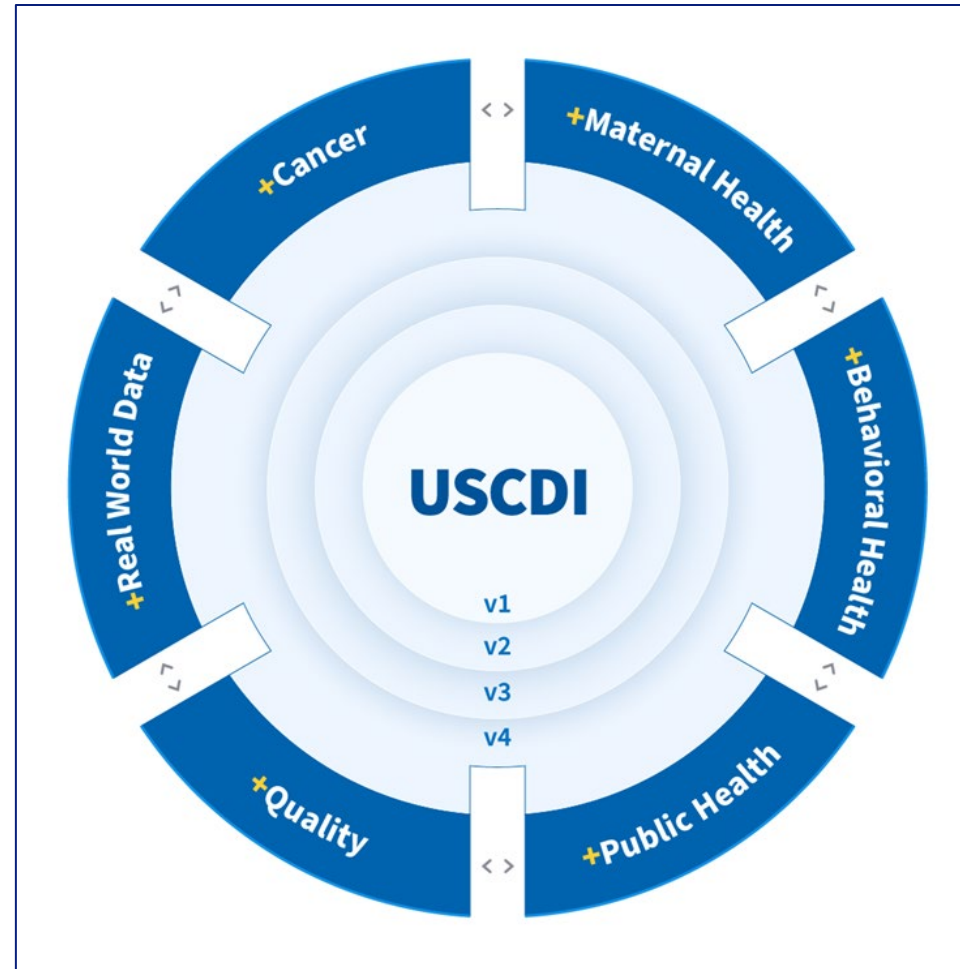
United States Core Data for Interoperability

Version 6 | July 2025

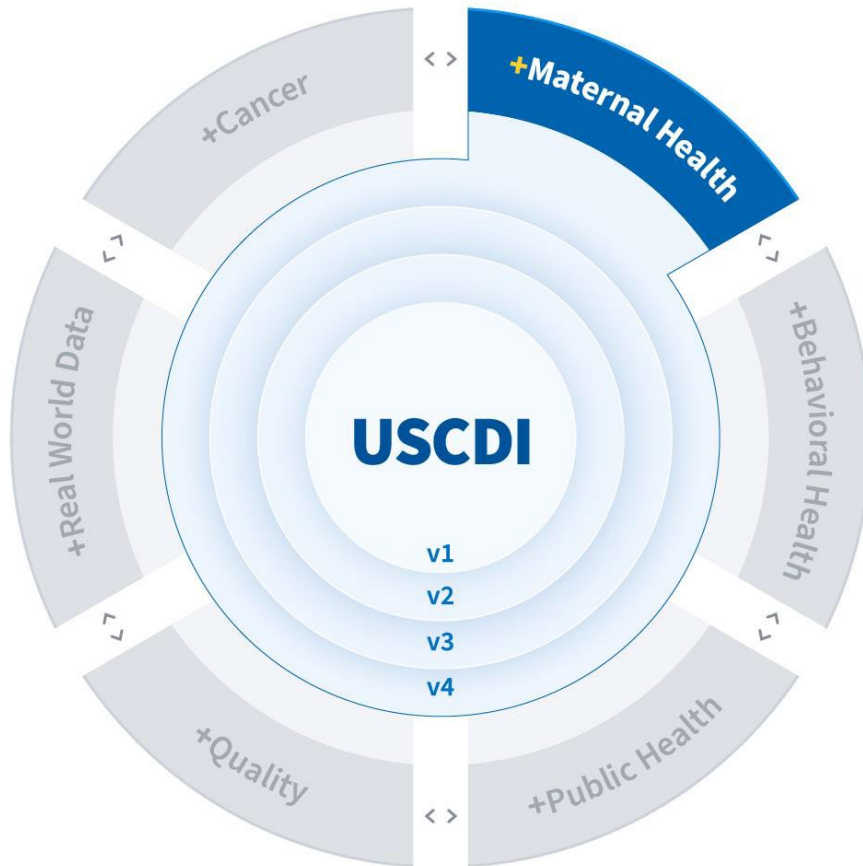
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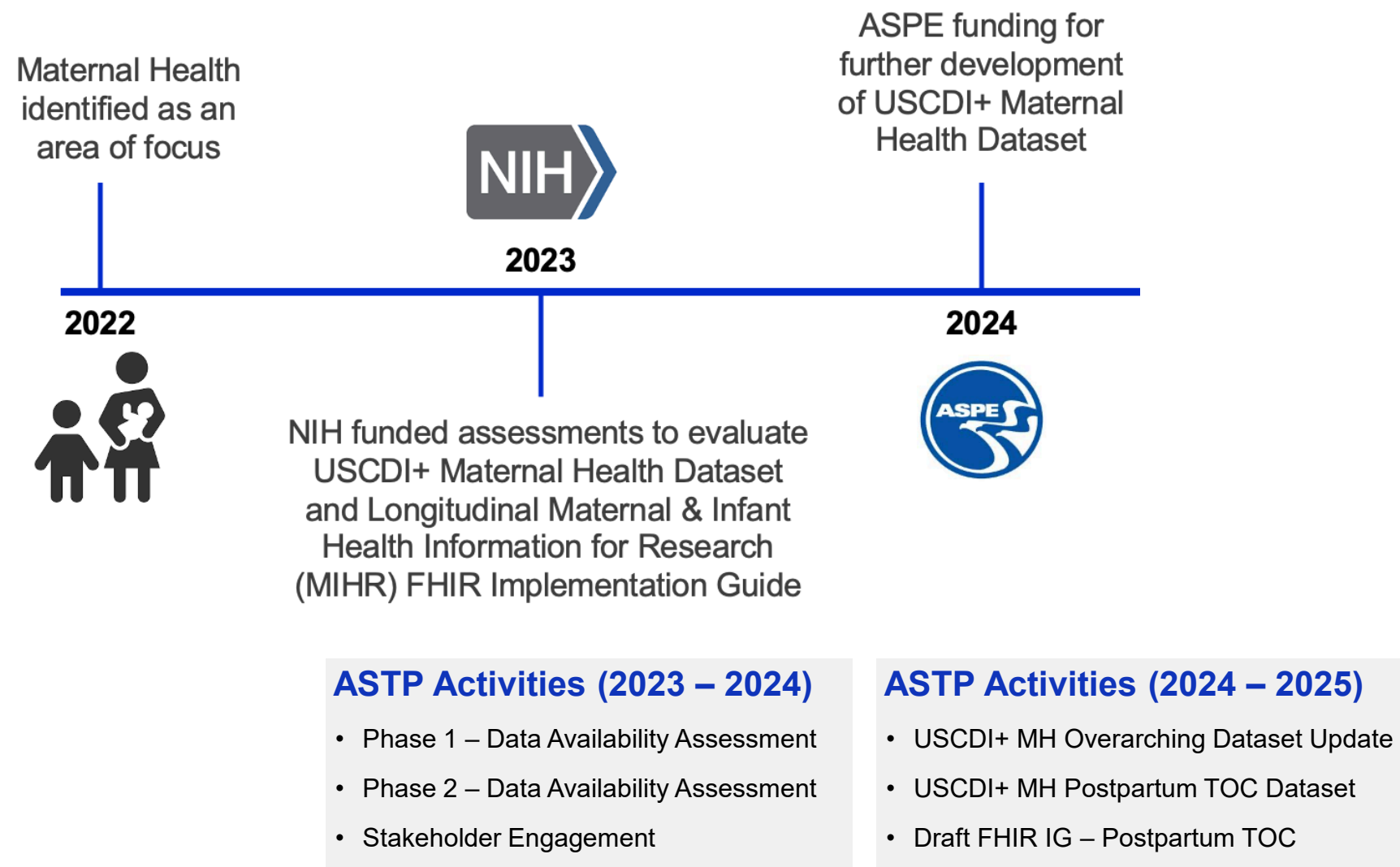
United States Core Data for Interoperability (USCDI and USCDI+)



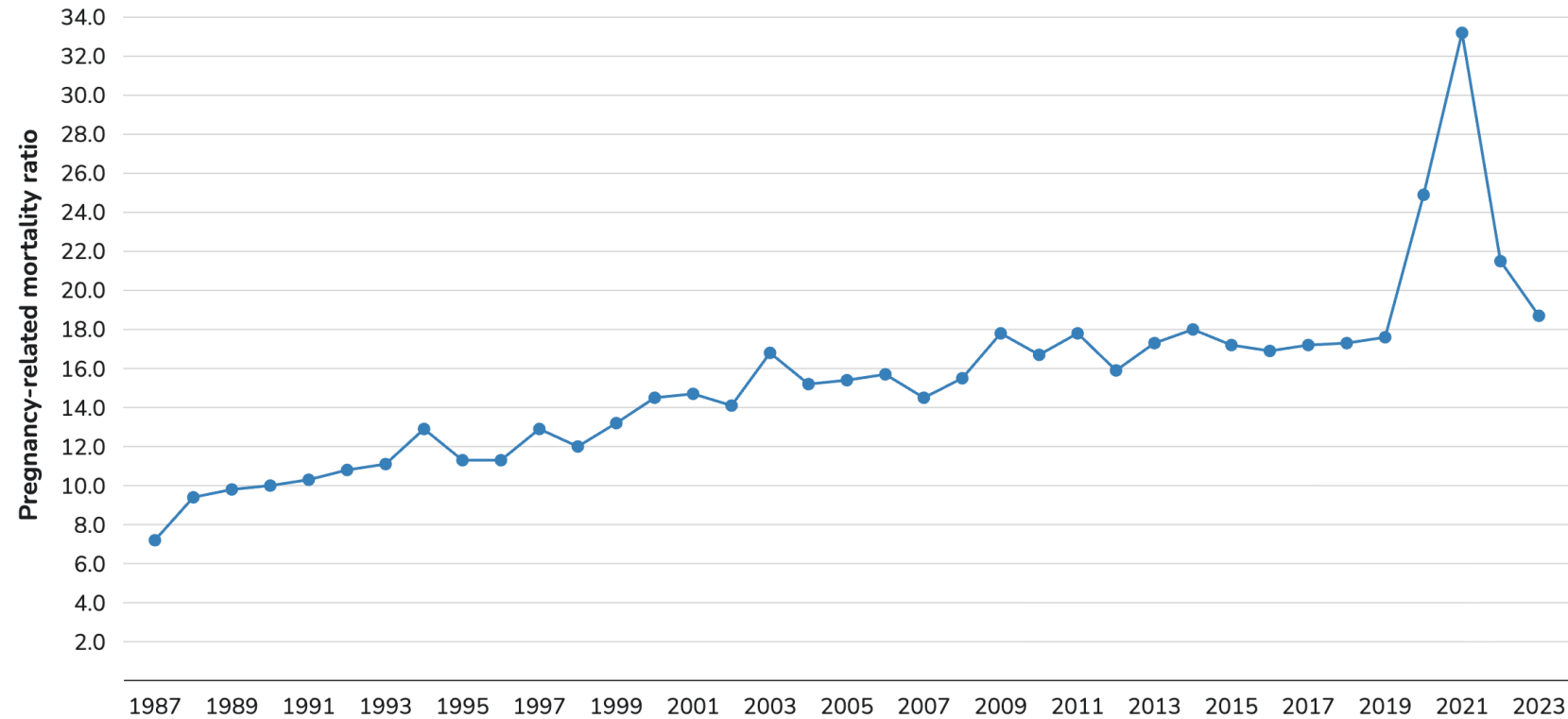
United States Core Data for Interoperability + Maternal Health (USCDI+ MH)



Funding to Advance Maternal Health Data Interoperability



Pregnancy-Related Deaths and Maternal Morbidity

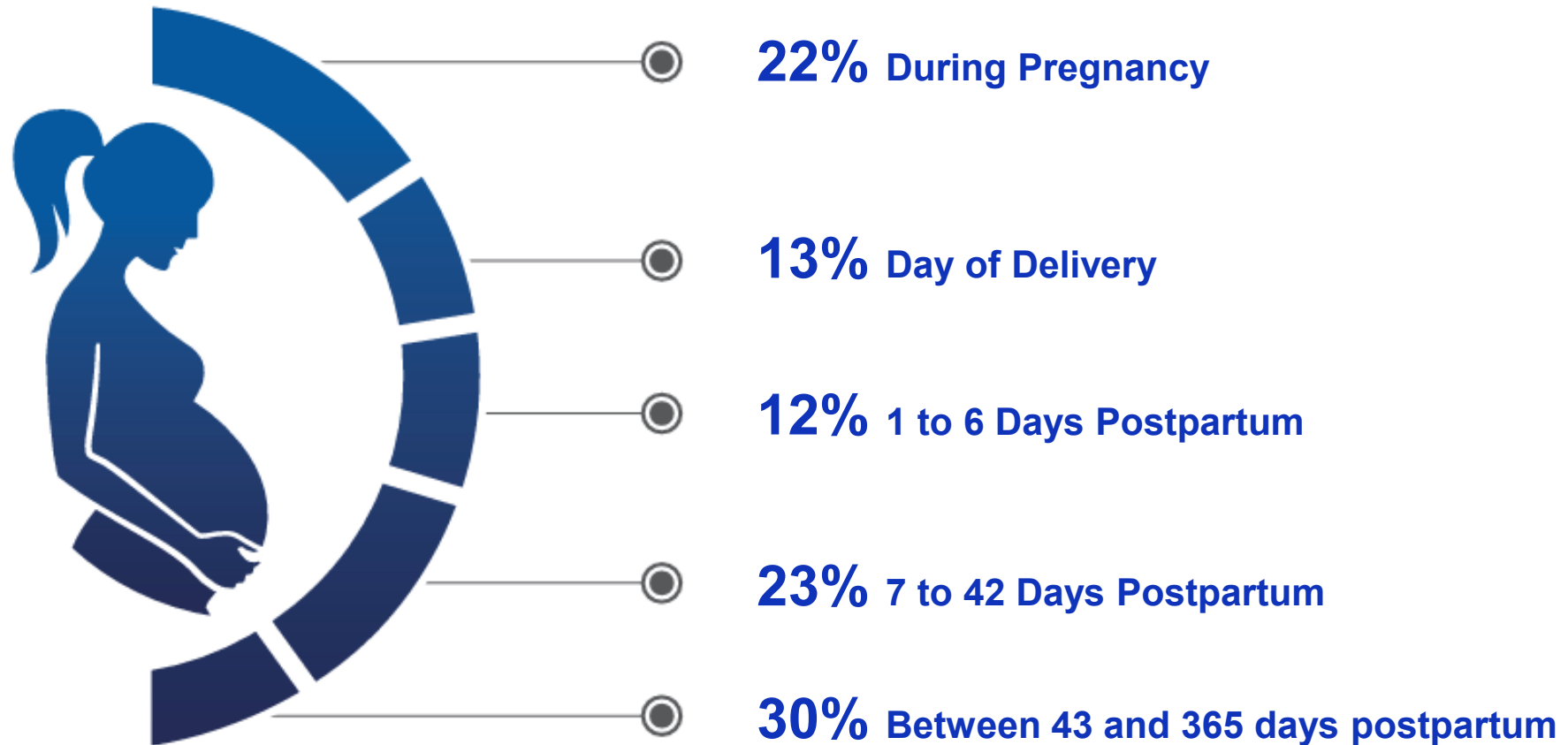


Source. [Pregnancy-related mortality ratio in the United States: 1987-2023](#)

- Hemorrhage
- Infection or sepsis
- Thrombotic pulmonary or other embolisms
- Other noncardiovascular medical conditions
- Other cardiovascular conditions
- Cardiomyopathy
- Hypertensive disorders of pregnancy
- Amniotic fluid embolism
- Cerebrovascular accidents

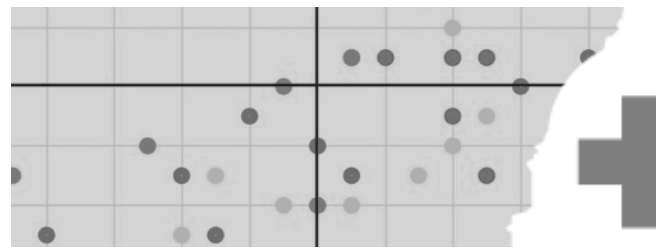
Source [Underlying causes of pregnancy-related deaths – Pregnancy Mortality Surveillance System, U.S., 2023](#)

Pregnancy-Related Deaths by Timing (2017 – 2019)



Source: [Munira Z. Gunja et al., Insights into the U.S. Maternal Mortality Crisis: An International Comparison \(Commonwealth Fund, June 2024\)](#)

53% of Pregnancy Related Deaths Occur 1 Week to 1 Year Postpartum



September 23, 2025

USCDI+ Maternal Health Domain

Information Session



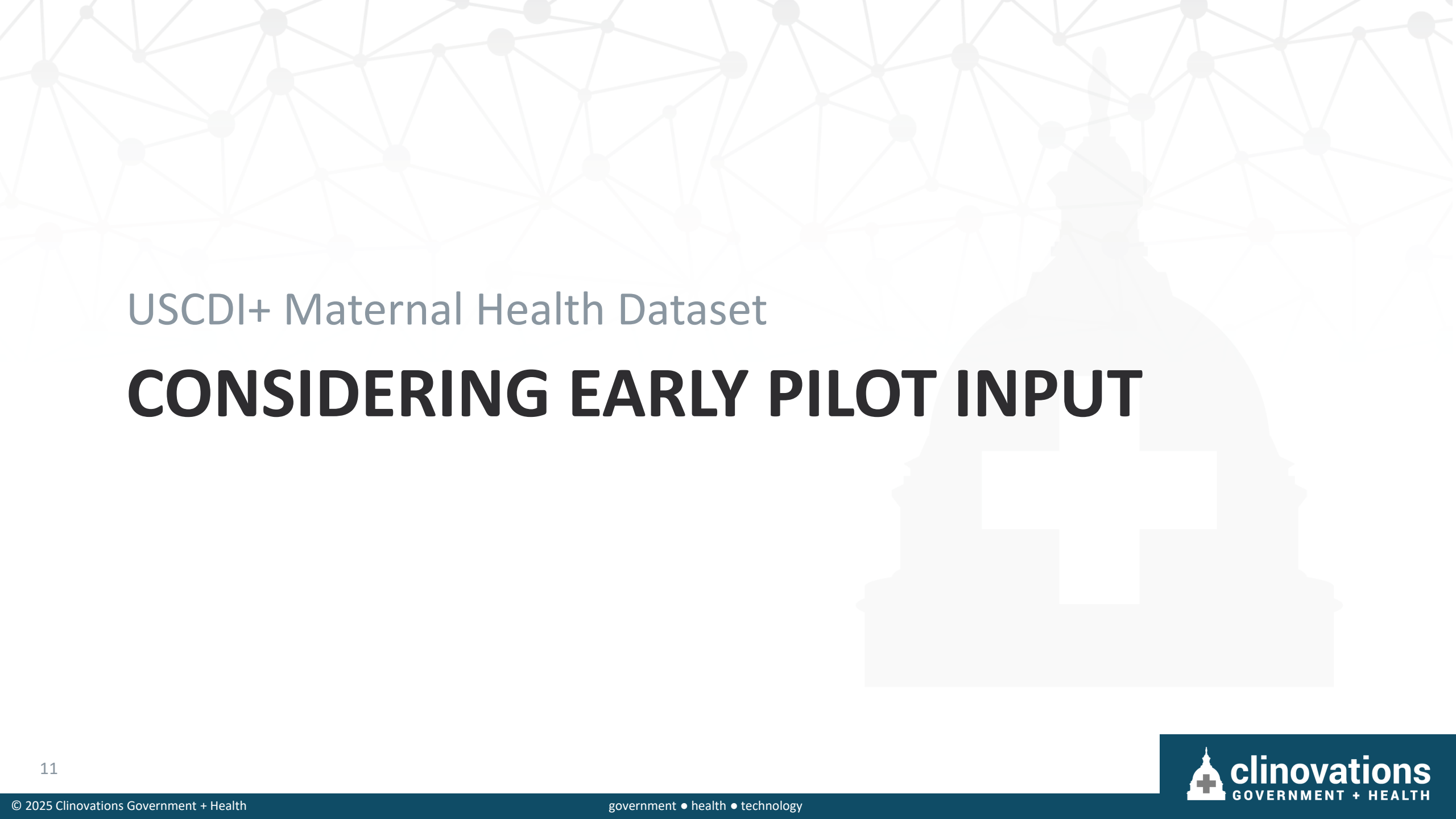
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USCDI+ Maternal Health Dataset

CONSIDERING EARLY PILOT INPUT

USCDI+ MH Data Availability: Phase 2 (2024)

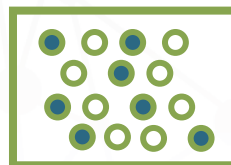
EHR Phase 2



66%

AVAILABLE

(75-100%)



16%

SOMETIMES

(25-75%)



18%

UNAVAILABLE

(<25%, Never, Unknown, Unclear)

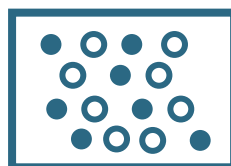
HIE Phase 2



24%

AVAILABLE

(75-100%)



9%

SOMETIMES

(25-75%)



67%

UNAVAILABLE

(<25%, Never, Unknown, Unclear)

Assessment Data Sources and Processing (2023 – 2024)

Attributes	Health Information Exchange (HIE)	Patient-Mediated Exchange	Electronic Health Record (EHR)
Data Sources (Received)			
HL7 (e.g., ADT, ORU)	✓	✗	✗
C-CDA (USCDiv1/v3)	✓	✓	✗
FHIR R4 for USCDI/US Core	✗	✓	✗
FHIR R4 - Other	✗	✗	✗
EHR Clinical Documentation	✗	✗	✓
Data Processing and Storage			
USCDiv1 Standards	✓	✓	✓
USCDiv3 Standards	✗	✓	✓
FHIR R4 for USCDI/US Core	✗	✓	✓
FHIR R4 - Other	✗	✗	✗
Sharing With Third-Parties			
Patients via FHIR	✓	✓	✓
Providers via FHIR	✗	✗	✗
HIEs, Registries via FHIR	✗	✗	✗

Overarching 2025 Dataset Update

Core set of data necessary for high quality care, outcomes, and research



222 Data Elements

222 data elements in original dataset

Data elements expansively supported healthcare ecosystem, with research focus



2024 Public Comment

May 31 – July 31, 2024 public comment

279 comments received from multiple organization types (Federal, State, Local Government Agencies, Academic Health Institutions, Health IT Developers, Researchers, and Others)



Disposition Rounds

5 rounds of disposition

Applied pilot site assessment of data availability, clinical informatics and women's health subject matter expertise, and USCDI and USCDI+ coordination



165 Data Elements

165 data elements in updated dataset

Applied insights from pilot site implementation of data elements with emphasis on care delivery focus

The background features a light gray network of interconnected nodes and lines. On the right side, there is a faint, light gray silhouette of a building with a large white cross on its front, resembling a hospital or government building.

USCDI+ Maternal Health Postpartum TOC Use Case

USE CASE SELECTION AND DATASET DEVELOPMENT

Methodology and Outputs

USE CASE
SELECTION

STANDARDS
HARMONIZATION

Inputs



Environmental Scans



Public Comment

SNOMED
ICD-10 LOINC
Terminology Standards



CDA



USCDI



'23/'24 Pilot Results

USCDI+

Public Comment



FHIR

USCDI+

USCDI+ MH

Validation



Federal Partner Agencies

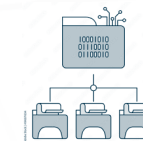


Providers



Developers

HL7
SDOs



Use Case
Selection



Standards
Identification



Standards
Mappings



USCDI+ Maternal Health Updates



Whitepapers



User Guides /
IG Content

Postpartum Transition of Care (TOC) Use Case

Challenge: Ensuring continuity of care for women who were pregnant is critical for improving maternal health outcomes. Data relevant to postpartum care is siloed across multiple prenatal encounter summaries and is either missing or captured as unstructured data from the hospital encounter.

- 65% of pregnancy-related deaths occur during postpartum
- Up to 40% of women who were pregnant do not attend a postpartum visit

Strategy: Develop implementation guidance to support and promote the standardized capture and exchange of maternal health data elements relevant for postpartum care.

- Identify data elements for a postpartum summary note
- Develop terminology and value sets guidance
- Consider interoperable exchange mechanisms across care settings and data platforms

Goal: Improve maternal health outcomes and decrease maternal mortality through interoperable data.

- Enhance provider identification of at-risk individuals
- Ensure timely exchange of accurate and complete datasets
- Support health IT technologies (e.g., electronic health records (EHRs), remote patient monitoring, third-party mobile apps, and CDS) to use data for effective postpartum care

Use Case Selection

Public Comment and SME
Reviews

Scan of Federal
Programs and
Measures

Use
Case

Postpartum Transitions of Care

Why?

High maternal mortality and morbidity rates

Interoperability focus promotes need for USCDI and USCDI+ data elements

Alignment with national initiatives, evidence-based best practices

Use Case Selection

Objective: Identify and select critical maternal health data needs



Environmental Scans



Identify existing needs and data standard support for maternal health data



- PubMed
- Google Scholar
- AIM Patient Bundles
 - Postpartum Discharge Transition
- Federal Measures



USCDI Public Comment

Review comments submitted during USCDI development cycle

- USCDI V1 – V6
- USCDI Level 0
- USCDI Level 1
- USCDI Level 2



Data Assessment Results (2023 and 2024)

Identify shared support and capabilities across user types

- Connie (2024)
- MedStar (2024)
- CareEvolution (2023)
- CRISP DC (2023)
- CyncHealth (2023)

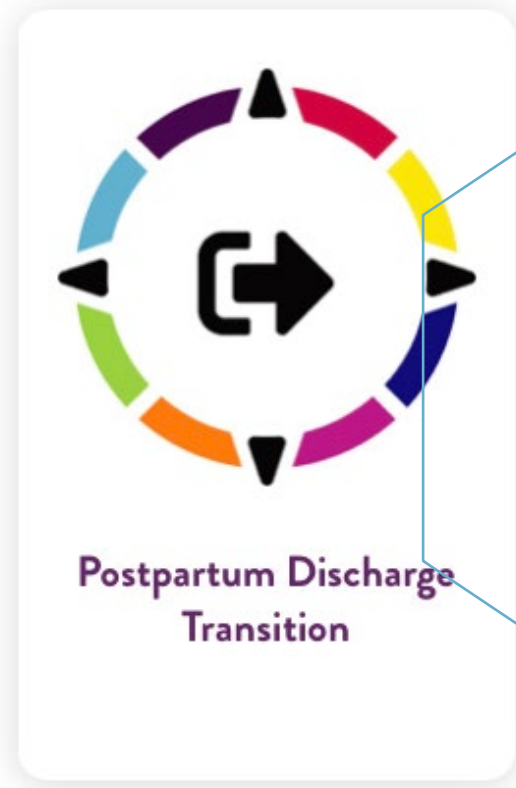
USCDI+

USCDI+ MH Public Comment (2024)

Incorporate comments submitted during USCDI+ public comment period (2024)

- USCDI+ Maternal Health Domain

AIM Patient Safety Bundles: Postpartum Discharge Transition



BUNDLE

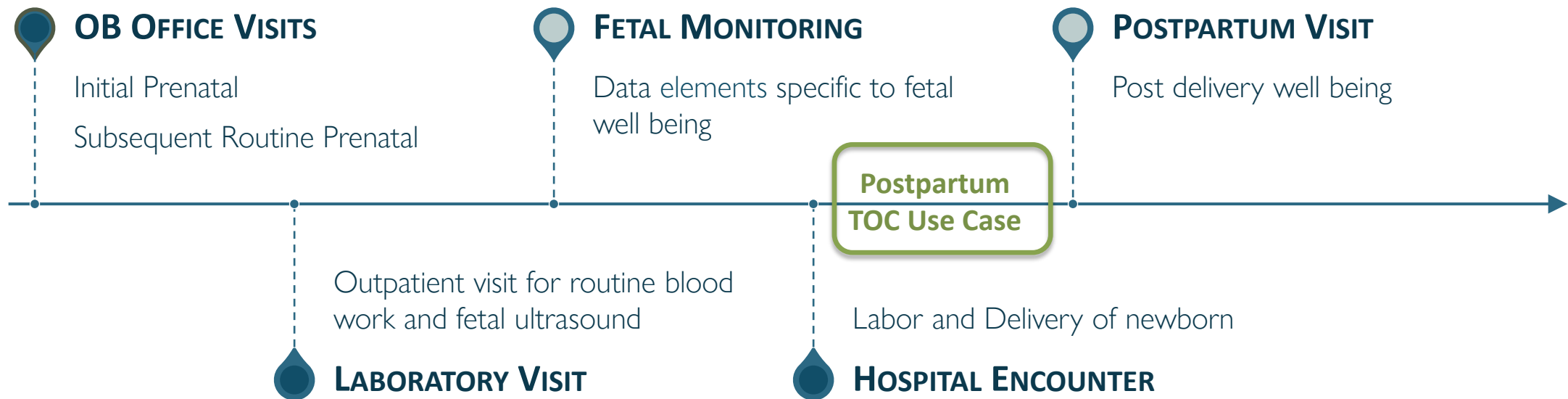
- Readiness (unit)
- Recognition & Prevention (patient)
- Response (event)
- Reporting and Systems Learning (unit)

RESOURCES

- Element Implementation Details
- Implementation Resources
- Data Collection Plan
- Change Package
- Learning Modules

Care Settings and Documentation

Accessibility of maternal data across health records from various sources and encounters is not always available or consistent, depending on health IT, HIE infrastructure, and workflows



EHR “Data Sources” – Maternal Health

- Prenatal Encounters
 - Labs, Measurements, Monitoring
 - After Visit Summary / Encounter Summary Note
 - C-CDA Document (US Core)
 - Patient Facing FHIR (US Core)
- ER Encounters
 - History and Physical (H&P)
 - After Visit Summary / Discharge Summary Note
 - C-CDA Document (US Core)
 - Patient Facing FHIR (US Core)
- Delivery Episode
 - History and Physical (H&P)
 - Maternal Assessment and Monitoring (Flowsheets)
 - Fetal Assessment and Monitoring (Flowsheets)
 - OB Nursing Notes (Flowsheets, Notes)
 - Lactation Notes
- Labor and Delivery Summary Note (LDS)
 - Discharge Summary Note
 - C-CDA Document (US Core)
 - Patient Facing FHIR (US Core)
- Postpartum Encounters
 - After Visit Summary / Encounter Summary Note
 - C-CDA Document (US Core)
 - Patient Facing FHIR (US Core)
 - Laboratory Results
- Newborn Pediatric Encounters
 - After Visit Summary / Encounter Summary Note
 - C-CDA Document (US Core)
 - Patient Facing FHIR (US Core)

Postpartum TOC: Current State

Standards do not Exist or are Not Adopted



- An antepartum summary note exists, but is not widely adopted (57055-6, LOINC)
 - Minimal data elements
- Postpartum summary note does not exist
- USCDI/US Core do not fully support antepartum or postpartum care scenarios

Unstructured, Free Text Data is Widespread



- High cognitive and time burden on staff to locate and use information
- Ease of pertinent information is key
- Not all HIEs parse unstructured, free text documents and data

Faxing is Still Commonplace



- Providers may not support alternative exchange mechanisms
- Alternative exchange mechanisms:
 - HIEs/National Networks
 - APIs
 - SFTP
 - Direct Edge Protocol

Underutilized Care



- Antepartum: 74.9% women seek care
- Postpartum: 60% women seek care

Complications

- Maternal Deaths: 22.3 per 100,000 live births
 - Healthy People 2030 Target: 15.7
- SMM during delivery: 88.2 per 10,000 deliveries
 - Healthy People 2030 Target: 64.4

Postpartum Information and Data Flow Current State

Postpartum Information and Data Flow Future State

Not HL7 FHIR-enabled

HL7 FHIR-enabled

Birthing Site
(e.g., Hospital)

Postpartum
Provider



1 Phone Call

2 Fax:
Postpartum Data

Birthing Site
(e.g., Hospital)

Postpartum
Provider



1 Query Request

2 HL7v2 / SFTP:
Postpartum Data

Birthing Site
(e.g., Hospital)

Postpartum
Provider



HIE

1 Send (Push):
Postpartum-
relevant Data

2 Query Request via
CRISP Portal

3 SFTP:
Postpartum Data

Birthing Site
(e.g., Hospital)

Postpartum
Provider



1 Query Request
(Pull)

2 Send (Pull):
Postpartum Data

Birthing Site
(e.g., Hospital)

Postpartum
Provider



HIE

1 Send (Push):
Postpartum-
relevant Data

2 Query Request
(Pull)

3 Send (Pull):
Postpartum Data

Validation Methods

Objective: Validate selected use cases and synthesized data mappings



Federal Partner Agencies



Does the dataset align with Federal vision?

Can this dataset support Federal programs?



- HHS
- DoD/Military
- Non-HHS



Providers

Is this dataset clinically relevant/align with clinical workflows?

Is implementation guidance aligned with the real world?

- OBGYN
- Midwives
- Doulas
- Ambulatory/Outpatient



Developers

Is implementation feasible?

What data elements do not current exist in EHR?

- Health IT developers
- Middleware developers
- Payers

HL7

Standards Development Organization

Are the data mappings valid?

Is the developed implementation guidance semantically correct?

What is the process for feedback?

- HL7 FHIR Foundation
- FHIR Accelerators/Workgroups

- Allergies and Intolerances**
1. Drug Class Allergy Intolerance
 2. Medication Allergy Intolerance
 3. Non-Medication Allergy Intolerance

Care Team Member(s)

4. Care Team Member Name
5. Care Team Member Role

Clinical Notes

6. Antepartum Summary Note
7. Behavioral Health History
8. Consultation Note
9. Labor and Delivery Summary Note
10. Discharge Summary Note
11. History & Physical
12. Pregnancy History Note
13. Procedure Note
14. Progress Note

Clinical Test

15. Clinical Test
16. Clinical Test Result/Report

Diagnostic Imaging

17. Diagnostic Imaging Report
18. Diagnostic Imaging Test

Encounter Information

19. Encounter Diagnosis
20. Encounter Location
21. Encounter Type

Facility Information

22. Facility Name
23. Facility Type

Family Health History

24. Family Health History

Genomics

25. Genetic Screening
26. Teratology Counseling

Health Status Assessments

27. Alcohol Use
28. Clinical Risk Assessment Results
29. Mental/ Cognitive Status
30. Pregnancy Status
31. Smoking Status
32. Substance Use

Immunizations

33. Immunization Status
34. Immunizations
35. Reason Immunization Not Performed

Labor and Delivery

36. Delivery Type
37. Labor Type

Laboratory

38. Result Reference Range
39. Result Status
40. Specimen Identifier
41. Specimen Source Site
42. Specimen Type
43. Tests
44. Values/Results

Lactation

45. Breast Feeding Intention
46. Breast Feeding Status

Medications

47. Discharge Medications
48. Dose
49. Dose Unit of Measure
50. Medications

Newborn Delivery Information

51. APGAR Score
52. Birth Weight

Patient Demographics

53. Current Address
54. Date of Birth
55. Email Address
56. Ethnicity
57. First Name
58. Last Name
59. Middle Name (Including middle initial)
60. Multiple Birth Order
61. Name Suffix
62. Phone Number
63. Phone Number Type
64. Preferred Language
65. Previous Address
66. Previous Name
67. Race
68. Related Person's Name
69. Relationship Type
70. Tribal Affiliation

Patient Summary and Plan

71. Assessment and Plan of Treatment

Pregnancy Information

72. Delivery Date
73. Estimated Date of Delivery
74. Estimated Date of Delivery Determination Method
75. Gestational Age
76. Gestational Age at Delivery
77. Gestational Age Determination Date
78. Gestational Age Determination Method
79. Gravidity
80. Last Menstrual Period (LMP)
81. Multiple Gestation
82. Parity
83. Postpartum Status
84. Pregnancy Outcome
85. Pregnancy Status Determination Date
86. Pregnancy Status Determination Method

Problems

87. Date of Diagnosis
88. Date of Resolution
89. Hypertensive Disorders of Pregnancy
90. Indicators of Severe Maternal Morbidity
91. Problems
92. SDOH Problems/Health Concerns

Procedures

93. Education (Maternal Health)
94. Performance Time
95. Procedure Status
96. Procedures
97. Reason for Referral

Provenance

98. Author Organization
99. Author Time Stamp

Vital Signs

100. Average Blood Pressure
101. BMI
102. Body Height
103. Body Temperature
104. Body Weight
105. Diastolic Blood Pressure
106. Head Occipital-frontal Circumference Percentile (Birth - 36 Months)
107. Heart Rate
108. Inhaled Oxygen Concentration
109. Pulse Oximetry
110. Respiratory Rate
111. Systolic Blood Pressure
112. Weight-for-length Percentile (Birth - 36 Months)

Postpartum TOC Use Case

112 total Data Elements

Grouped into 23 USCDI+ Data Classes

Vetted by maternal health informatics subject matter experts and actively practicing clinicians

Reuses USCDI data elements with addition of new data classes for pregnancy-related data

Translated to FHIR resources for pilot implementation

Pregnancy Information

- 72. Delivery Date
- 73. Estimated Date of Delivery (EDD)
- 74. EDD Determination Method
- 75. Gestational Age
- 76. Gestational Age at Delivery
- 77. Gestational Age Determination Date
- 78. Gestational Age Determination Method
- 79. Gravidity
- 80. Last Menstrual Period
- 81. Multiple Gestation
- 82. Party
- 83. Postpartum Status
- 84. Pregnancy Outcome
- 85. Pregnancy Status Determination Date
- 86. Pregnancy status Determination Method



Postpartum Status

New data element introduced in use case

Important indicator throughout postpartum period (365 days post delivery),

Not generally documented as structured data, yet could be derived through coding

Finalized with flexible representation (Yes/No, or more detailed value set)

Allergies and Intolerances		
1. Drug Class Allergy/Intolerance	36. Delivery Type	Pregnancy Information
2. Medication Allergy/Intolerance	37. Labor Type	72. Delivery Date
3. Non-Medication Allergy/Intolerance		73. Estimated Date of Delivery
		74. Estimated Date of Delivery Determination Method
Care Team Member(s)		
4. Care Team Member Name	Laboratory	75. Gestational Age
5. Care Team Member Role	38. Result Reference Range	76. Gestational Age at Delivery
	39. Result Status	77. Gestational Age Determination Date
Clinical Notes		
6. Antepartum Summary Note	40. Specimen Identifier	78. Gestational Age Determination Method
7. Behavioral Health History	41. Specimen Source Site	79. Gravidity
8. Consultation Note	42. Specimen Type	80. Last Menstrual Period (LMP)
9. Labor and Delivery Summary Note	43. Tests	81. Multiple Gestation
10. Discharge Summary Note	44. Values/Results	82. Parity
11. History & Physical	Lactation	83. Postpartum Status
12. Preconception Visit Note	45. Breast Feeding Intention	84. Pregnancy Outcome
13. Prepartum Visit Note	46. Breast Feeding Status	85. Pregnancy Outcome Determination Date
14. Prepartum Visit Summary Note		86. Pregnancy Outcome Determination Method
Clinical Diagnoses		
15. Clinical Diagnosis		Pregnancy Concerns
16. Clinical Diagnosis		
Encounter		
17. Encounter		
18. Encounter		
Encounter		
19. Encounter		
20. Encounter		
21. Encounter		
Facility		
22. Facility Name	59. Middle Name (Including middle initial)	97. Reason for Referral
23. Facility Type	60. Multiple Birth Order	Provenance
Family Health History		
24. Family Health History	61. Name Suffix	98. Author Organization
	62. Phone Number	99. Author Time Stamp
	63. Phone Number Type	
Genomics		
25. Genetic Screening	64. Preferred Language	Vital Signs
26. Teratology Counseling	65. Previous Address	100. Average Blood Pressure
	66. Previous Name	101. BMI
	67. Race	102. Body Height
Health Status Assessments		
27. Alcohol Use	68. Related Person's Name	103. Body Temperature
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30. Pregnancy Status		106. Head Occipital-frontal Circumference Percentile (Birth - 36 Months)
31. Smoking Status	Patient Summary and Plan	
32. Substance Use	71. Assessment and Plan of Treatment	107. Heart Rate
Immunizations		
33. Immunization Status		108. Inhaled Oxygen Concentration
34. Immunizations		109. Pulse Oximetry
35. Reason Immunization Not Performed		110. Respiratory Rate
		111. Systolic Blood Pressure
		112. Weight-for-length Percentile (Birth - 36 Months)

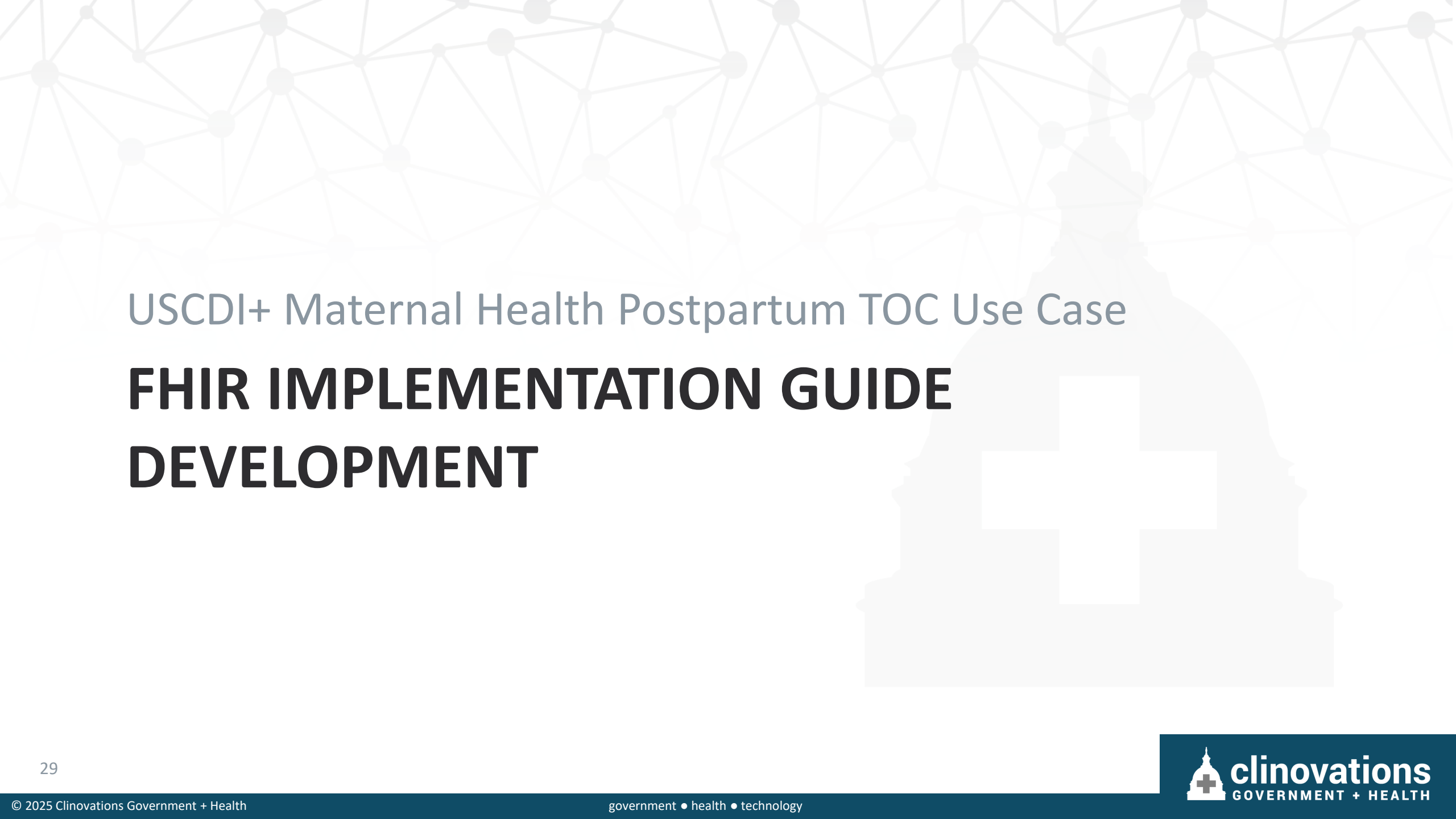
Problems

- 87. Date of Diagnosis
- 88. Date of Resolution
- 89. Hypertensive Disorders of Pregnancy
- 90. Indicators of Severe Maternal Morbidity
- 91. Problems
- 92. SDOH Problems/Health Concerns



Indicators of Severe Maternal Morbidity

- New data element introduced in use case
- Clinical concept present in quality measurement
- Clinical importance for postpartum care merited treatment as unique data element
- Represented by defined value sets in the IG



USCDI+ Maternal Health Postpartum TOC Use Case

FHIR IMPLEMENTATION GUIDE DEVELOPMENT

Draft FHIR IG Development

USCDI+ Maternal Health Postpartum Transitions of Care (TOC) Implementation Guide

0.1.0 - ci-build

HomeBackgroundSpecificationGuidanceFHIR Artifacts ▾ExamplesDownloadsChange Log

Table of Contents > Home

USCDI+ Maternal Health Postpartum Transitions of Care (TOC) Implementation Guide - Local Development build (v0.1.0) built by the FHIR (HL7® FHIR® Standard) Build Tools. See the [Directory of published versions](#) if

1 Home

Official URL: http://fhir.org/guides/astp/postpartum-toc/ImplementationGuide/fhir.astp.postpartum-toc	Version: 0.1.0
Draft as of 2025-09-15	Computable Name: PostpartumTOC

1.1 Purpose

The United States Core Data for Interoperability (USCDI) Plus Maternal Health (USCDI+ Maternal Health) is an extension of the USCDI, created to address crucial gaps in electronic health data standards supporting maternal and postpartum health. The USCDI+ Postpartum Transition of Care (TOC) aims to standardize and enhance electronic information exchange during the transition from delivery to postpartum care and primary care, addressing the fragmentation that commonly affects postpartum individuals as they transition between different providers and care settings. This FHIR IG aims to specify USCDI+ Postpartum Transition of Care (TOC) data elements in HL7 FHIR R4.

- Purpose
- Scope and Boundaries - Data Element Identification
- How to Read This Guide
- Relationships with Other FHIR IGs
- Intended Audience
- Authors and Contributors

1.2 Scope and Boundaries - Data Element Identification

During the development of the USCDI+ MH Postpartum TOC dataset, the following sources were reviewed to inform dataset curation:

- CDC Perinatal Quality Collaboratives [↗](#);
- CMS Electronic Clinical Quality Measures (eCQMs) [↗](#);
- CMS Healthcare Effectiveness Data and Information Set (HEDIS) [↗](#);
- CMS Transforming Maternal Health Model (TMaH) [↗](#);
- HRSA-funded Alliance For Innovation on Maternal Health (AIM) Bundles [↗](#); and
- HRSA Uniform Data System (UDS) [↗](#);
- HRSA Uniform Data System Plus (UDS+) [↗](#).

Through the completion of a federal measure scan white paper and in conversation with clinical and data informatics subject matter experts (SMEs), measures and data elements identified support a postpartum transition of care use case. This supports the objective of the USCDI+ Maternal Health domain, and USCDI+ program more broadly, to support existing Federal reporting programs and measures.

Developing use cases for the USCDI+ MH domain with these inputs described above will help to establish data standards for data elements that are readily available and captured.

USCDI+ Maternal Health Postpartum Transitions of Care (TOC) Implementation Guide

0.1.0 - ci-build

HomeBackgroundSpecificationGuidanceFHIR Artifacts ▾ExamplesDownloadsChange Log

Table of Contents > Background

USCDI+ Maternal Health Postpartum Transitions of Care (TOC) Implementation Guide - Local Development build (v0.1.0) built by the FHIR (HL7® FHIR® Standard) Build Tools. See the [Directory of published versions](#) if

2 Background

2.1 USCDI+ Maternal Health Domain Overview

With increasing rates of maternal mortality for pregnant women and new mothers, it is paramount that providers, across care settings, have access to reliable and accurate health data to inform their treatment and interventions. However, current gaps in standardized, interoperable data to exchange across health care settings can limit providers’ ability to access necessary health data to effectively manage and deliver high-quality care.

To promote standardized data capture and exchange, ASTP developed and maintains USCDI core data elements, organized by class, that are supported by certified health IT solutions. In addition, ASTP created USCDI+ domains to serve specific programmatic, clinical, research, public health, or other requirements. The USCDI+ MH domain extends the USCDI core dataset by establishing maternal health specific data elements for use in delivering care and conducting research on health outcomes for pregnant women.

- USCDI+ Maternal Health Domain Overview
- USCDI+ Maternal Health Use Case: Postpartum Transitions of Care
- Data Exchange: Current State
- Data Exchange: Future State and Proposed Vision
- USCDI+ Maternal Health Postpartum TOC Objective

2.2 USCDI+ Maternal Health Use Case: Postpartum Transitions of Care

A study of pregnancy-related deaths that occurred between 2017 and 2019 found that 12% occurred one to six days after delivery, 23% occurred between 7 to 42 days after delivery, and 30% occurred between 43 and 365 days after delivery. In 2022, the maternal mortality rate in the United States was 22.3 deaths per 100,000 live births, significantly higher than rates in other high-income countries. This elevated rate underscores the ongoing challenges in maternal health within the U.S. healthcare system.

In the United States, maternity care involves transitions across multiple healthcare settings, each with distinct providers and systems. Prenatal care typically occurs in outpatient clinics, where obstetricians, midwives, or family physicians monitor the pregnancy through regular visits. When labor begins, care shifts to a hospital or birthing center, where a different team manages the delivery. After childbirth, the mother returns to outpatient care for postpartum follow-up.

This fragmented system can hinder the seamless sharing of clinical information. For instance, outpatient providers may lack immediate access to detailed records from the hospital stay, such as delivery complications or interventions. The American College of Obstetricians and Gynecologists (ACOG) emphasizes the importance of coordinated care, advocating for a continuous individualized process rather than a single encounter. ACOG recommends that all women have contact with their obstetric care provider within the first three weeks postpartum, followed by a comprehensive visit no later than 12

0 Table of Contents

0 Table of Contents

1 Home

2 Background

3 Specification

4 Guidance

5 Examples

6 Profiles and Extensions

7 Search Parameters and Operations

8 Terminology

9 Downloads

10 Change Log

11 Artifacts Summary

11.1 SMMIndicatorCondition

11.2 SMMIndicatorProcedure

11.3 MH TOC Behavioral Health History

11.4 MH TOC Breastfeeding Intent Profile

11.5 MH TOC Breastfeeding Status

11.6 MH TOC Consult Note

11.7 MH TOC Delivery Date

11.8 MH TOC Diagnostic Imaging Report Profile

11.9 MH TOC Discharge Summary

11.10 MH TOC Education

11.11 MH TOC Estimated Date of Delivery

11.12 MH TOC Family Health History

11.13 MH TOC Gestational Age

11.14 MH TOC Gravidity Profile

11.15 MH TOC Labor and Delivery Summary

11.16 MH TOC Labor Type

11.17 MH TOC Parity

11.18 MH TOC Postpartum Summary

11.19 MH TOC Severe Maternal Morbidity Condition

Majority of Data Elements Re-use Existing FHIR IGs

77.7%

Group 1: US Core FHIR IG (87)

12.5%

Group 2: Non-US
Core FHIR IG (14)

9.8%

Group 3: Not in a
Current FHIR IG (11)

Reuse and Leverage of US Core and Existing IGs

USCDI+ MH TOC Data Elements and Specifications Bucket 1: References US Core 6.1.0 FHIR IG

Data Class	Postpartum TOC Data Element	FHIR Profile	Proposed FHIR Data Element
Allergies and Intolerances	Drug Class Allergy Intolerance	US Core AllergyIntolerance	AllergyIntolerance.category
Allergies and Intolerances	Medication Allergy Intolerance	US Core AllergyIntolerance	AllergyIntolerance.category
Allergies and Intolerances	Non-Medication Allergy Intolerance	US Core AllergyIntolerance	AllergyIntolerance.category
Care Team Member(s)	Care Team Member Name	US Core CareTeam	CareTeam.participant

Group 1: US Core FHIR IG (87)

USCDI+ MH TOC Data Elements and Specifications Bucket 2: References non-US Core 6.1.0 FHIR IGs

Data Class	Postpartum TOC Data Element	FHIR Profile	Proposed FHIR Data Element
Clinical Notes	Antepartum Summary Note	US Core DocumentReference	DocumentReference.type
Clinical Notes	Pregnancy History Note	US Core DocumentReference	DocumentReference.type
Labor and Delivery	Delivery Type	Birth and Fetal Death ProcedureFinalRouteMethodDelivery	Procedure.code
Pregnancy Information	Estimated Date of Delivery Determination Method	International Patient Summary Expected Delivery Observation - Pregnancy: EDD	Observation.code
Pregnancy Information	Gestational Age at Delivery	Birth and Fetal Death Observation - Gestational Age at Delivery	Obversation.code
Pregnancy Information	Gestational Age Determination Date	US Public Health Pregnancy Status Observation	Observation.extension:extensionPregnancyStatusDeterminationDate

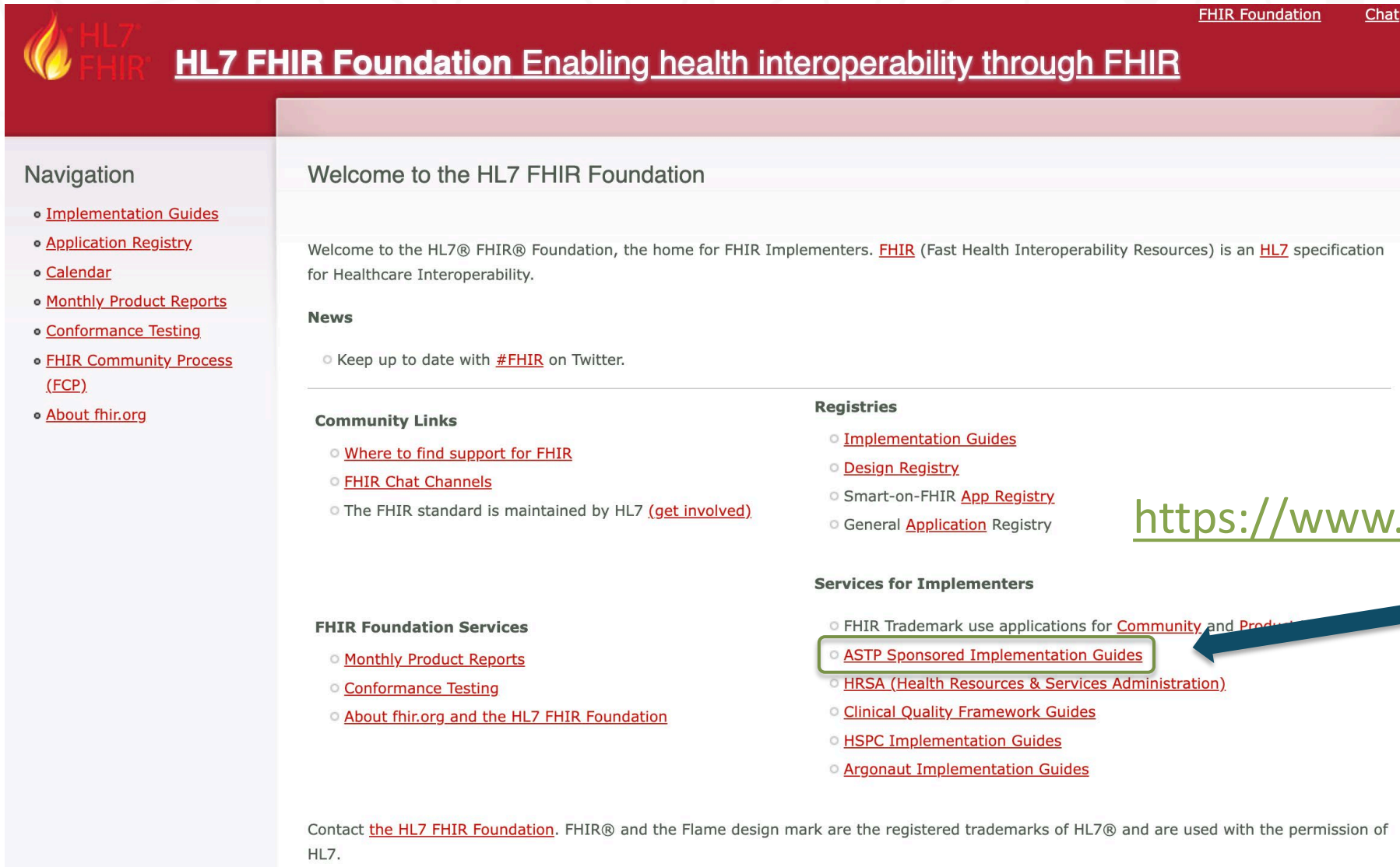
Group 2: Non-US Core FHIR IG (14)

USCDI+ MH TOC Data Elements and Specifications Bucket 3: Unique to USCDI+ MH Postpartum TOC FHIR IG

Data Class	Postpartum TOC Data Element	FHIR Profile	Proposed FHIR Data Element
Clinical Notes	Behavioral Health History	Behavioral Health History	DocumentReference.type
Clinical Notes	Labor and Delivery Summary Note	Labor and Delivery Summary	DocumentReference.type
Education	Perinatal Education	MH TOC Education	Procedure.code
Genomics	Genetic Screening	US Core Diagnostic Report Profile for Laboratory Results Reporting	DiagnosticReport.code

Group 3: Not in a Current FHIR IG (11)

Next Steps: Publish in HL7 FHIR Foundation



The screenshot shows the HL7 FHIR Foundation website. The header is red with the HL7 FHIR logo and the text "HL7 FHIR Foundation Enabling health interoperability through FHIR". The navigation menu on the left includes links to Implementation Guides, Application Registry, Calendar, Monthly Product Reports, Conformance Testing, FHIR Community Process (FCP), and About fhir.org. The main content area has a welcome message, a news section, and three columns of links: Community Links, Registries, and Services for Implementers. The "ASTP Sponsored Implementation Guides" link in the Services for Implementers section is highlighted with a green box and a blue arrow. A URL is also displayed on the right side of the page.

HL7 FHIR Foundation Enabling health interoperability through FHIR

Navigation

- [Implementation Guides](#)
- [Application Registry](#)
- [Calendar](#)
- [Monthly Product Reports](#)
- [Conformance Testing](#)
- [FHIR Community Process \(FCP\)](#)
- [About fhir.org](#)

Welcome to the HL7 FHIR Foundation

Welcome to the HL7® FHIR® Foundation, the home for FHIR Implementers. [FHIR](#) (Fast Health Interoperability Resources) is an [HL7](#) specification for Healthcare Interoperability.

News

- Keep up to date with [#FHIR](#) on Twitter.

Community Links

- [Where to find support for FHIR](#)
- [FHIR Chat Channels](#)
- The FHIR standard is maintained by HL7 ([get involved](#))

Registries

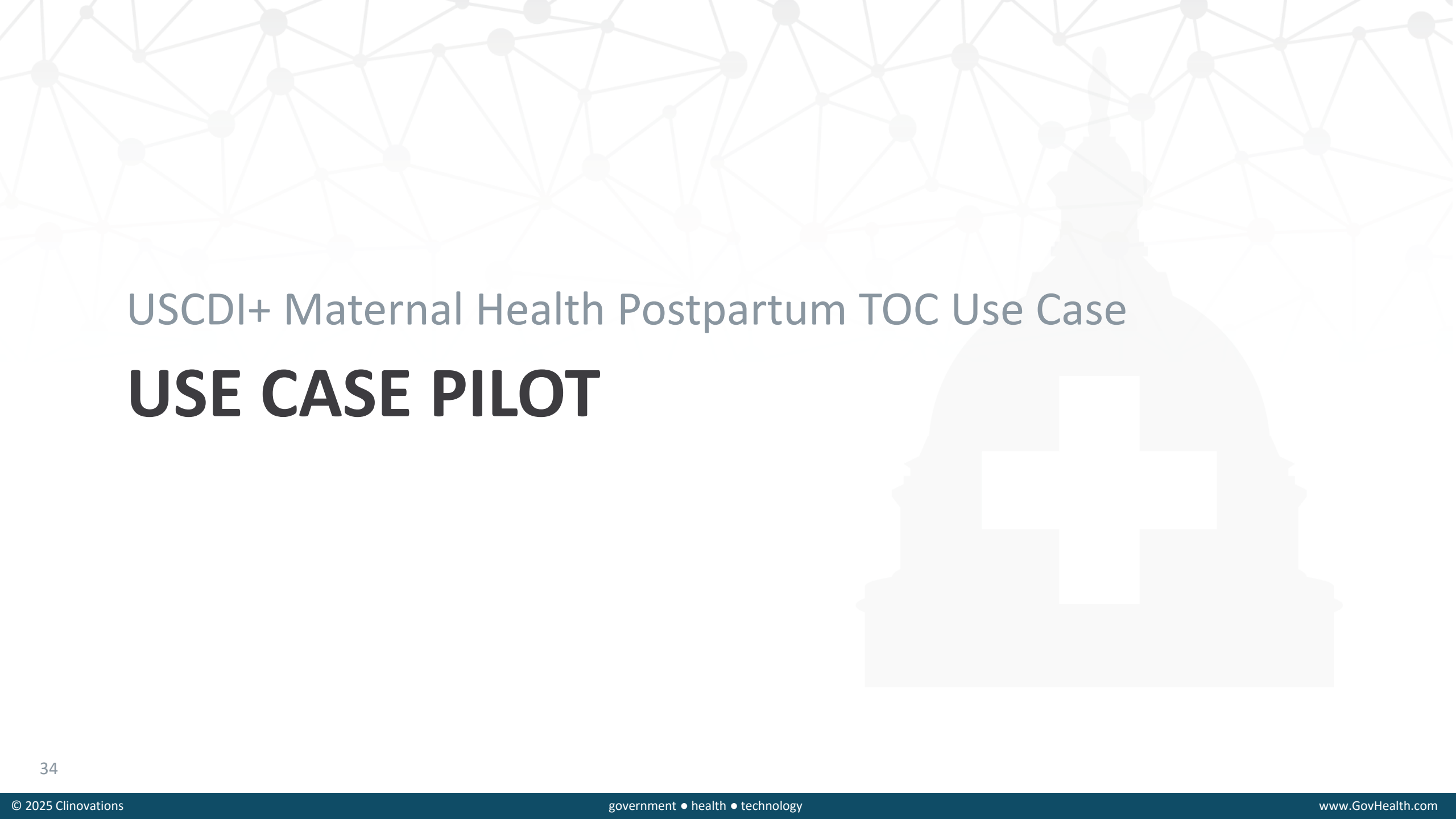
- [Implementation Guides](#)
- [Design Registry](#)
- Smart-on-FHIR [App Registry](#)
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Services for Implementers

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<https://www.fhir.org/guides/astp/>

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USCDI+ Maternal Health Postpartum TOC Use Case

USE CASE PILOT

Pilot Evaluation and Activities Overview

Pilot Test the Draft Postpartum TOC FHIR IG

Overview: Test a draft Postpartum TOC FHIR IG and validate the value sets

- Data elements supported by FHIR R4 endpoints
 - Data availability, relevance, completeness, and gaps
 - Available FHIR resources
 - Feedback and support for value set refinement
 - Summary of approach and methodology
-
- Establish a project specific custom FHIR server and FHIR endpoints
 - Validate standards and data mapping to update custom FHIR server
 - Analysis of draft FHIR IG and custom endpoints

Test AI Capabilities for Unstructured Notes

Overview: Pilot test use of AI to augment quality and completeness with data from unstructured fields

- Determine which data elements are commonly captured in unstructured data fields
- Develop a data-element specific LLM to understand missingness of data and gaps
- Manual chart review to validate LLM accuracy

Part 2: Test Implementation of Data Element LLM

- LLM review and analysis of clinical notes for priority data elements
- Gaps in data availability
- Unstructured data into coded data
- Documentation of analysis and recommendations

Highlights and Findings

- Multiple Structured Items
 - A single FHIR resource may have representations across diagnoses, procedures, diagnostic testing which all representing the same finding
- Diverse Modalities
 - Same data element described in different modalities
 - Mapped
 - Structured but not mapped
 - Unstructured
- Clinical Variability in Data Capture
 - A single organizations may have variability in processes and policies across sites that leads to diversity in how data is captured

Use Case 1 - Multiple Structured Items

- Multiple Structured Items

- A single FHIR resource may have representations across diagnoses, procedures, diagnostic testing which all representing the same finding
-

- Postpartum Status

- Diagnoses
- Screening
- Laboratory testing
- Temporal association with index delivery

Use Case 2 - Different Modalities

- Diverse Modalities

- Same data element described in different modalities
 - Mapped
 - Structured but not mapped
 - Unstructured
-

- Genetic Screening

- Verbal screening recorded in a structured table diagnosis vs familial relationship
- Diagnostic testing
- Unstructured note "negative for genetic familial conditions"

Use Case 3 – Data Capture Variation

- Clinical Variability in Data Capture

- A single organizations may have variability in processes and policies across sites that leads to diversity in how data is captured.
-

- Screening Questionnaires

- Pilot program addressing postpartum depression at specific clinic/department
- National program requiring more detailed data elements
- Quality initiative with screening questions

AI Use Cases in Postpartum TOC Pilot

Postpartum Contraception

- Important predictor for maternal health during postpartum period
- Frequently a conversation and documented in the unstructured text
- May include educational material provided at time of discharge and prescription for medications or scheduled procedure
- Previous pilots attempting to capture structured data at time of discharge saw inconsistent results

Breastfeeding Documentation

- Documentation typically spread across nursing documentation, prenatal period and lactation consultant notes, provider notes, and discharge instructions
- Focus may be on the mother in the maternal notes and on the child in the pediatric record
- LLM review of all note types across both maternal and infant records can provide a summary of all the key features including:
 - **Exclusive Breastfeeding vs. Bottle vs. Expressed Milk vs. Mixed**

Future Directions: AI/LLM Hybrid Approach

- Use LLM to supplement existing structured documentation
 - e.g., existing provider documentation may demonstrate 60% coverage while LLM may include and additional 20%
- Flag provenance of the data
 - e.g., was human or AI extraction the original source?
- Include details on tools and potential level of certainty regarding the coded concept
- Plan on safeguards to monitor accuracy

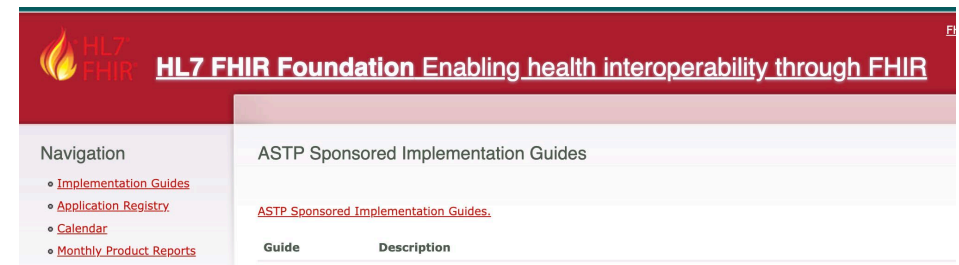
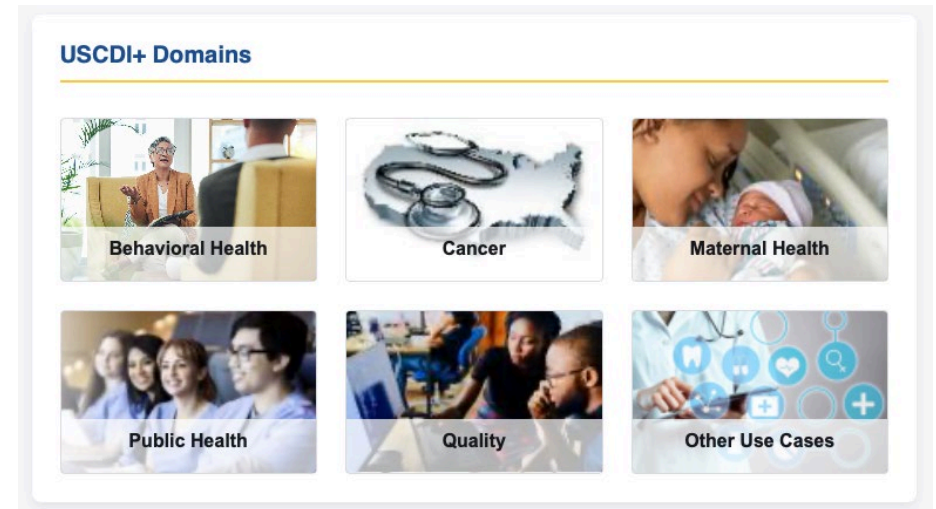
Questions and Answers

Please enter questions in question pod or request to unmute line

Closing Remarks

Next Steps: Publish USCDI+ Maternal Health Materials

- The updated USCDI+ MH Overarching Dataset and new Postpartum TOC Dataset will be posted to the ASTP/ONC Webpage for USCDI+ Domains
 - <https://uscdiplus.healthit.gov/uscdiplus>
- The draft Postpartum TOC FHIR Implementation Guide will be published to HL7 FHIR Foundation
 - <https://www.fhir.org/guides/astp/>





Reach out via email or web



USCDI.Plus@hhs.gov



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