

HITSP Maternal and Child Health Requirements and Design

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1.0 INTRODUCTION

1.1 REQUIREMENTS AND DESIGN (RDSS) OVERVIEW

This Requirements and Design (RDSS) addresses the ability to exchange obstetric and pediatric patient information between Electronic Health Records (EHRs), the ability to incorporate pediatric assessment tools, guidelines and assessment schedules into EHRs, the ability to exchange standardized patient assessments for antenatal care, pre-natal care, labor and delivery and post-partum care between EHRs and the ability to incorporate assessment tools, guidelines and assessment schedules into EHRs for antenatal care, pre-natal care, labor and delivery and post-partum care, as well as the ability to exchange this information with appropriate Public Health programs.

Maternal and child health can be defined as multiple programs serving various populations of consumers. For the purposes of this Extension/Gap document, the period of time included in maternal and child health is from the determination of pregnancy for the mother-to-be continuing throughout early childhood.

Requirements for maternal and child health can be summarized as:

- The exchange of pregnancy, birth event, screening and immunization information between public or private healthcare facilities, EHRs, and information systems supporting public health programs and/or services
- The use of this information to aid in the integration of various public health programs and/or services in order to facilitate enrollment by consumers who would benefit from these services. While social or other services are not always appropriate, many maternal and child health public health programs serve broad catchments of at risk populations and the requisite information flows and screening. Similarly, related services and the populations they serve, benefit from broad awareness and consideration

There are four key elements on this timeline which address important information exchanges which include:

- Determination of pregnancy
- The birth event and incorporation of antepartum information
- Referral to and coordination of health related programs and registries such as Vital Records, Newborn Screening, Immunizations and Lead, Vision, Hearing, and other Developmental Screenings (although, Newborn Screening occurs within this time period and is an integral part of maternal and child health, the complexity and specific needs of that process led to the creation of a separate Use Case, the 2009 Newborn Screening Use Case)
- Referral to and enrollment in various public health programs and/or services

1.2 COPYRIGHT PERMISSIONS

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1.3 REFERENCE DOCUMENTS

This section provides a list of key reference documents and background material.

A list of key reference documents and background material is provided in the table below. These documents can be retrieved from www.hitsp.org.



Table 1-1 Reference Documents

Reference Document	Document Description
HITSP Acronyms List	Lists and defines the acronyms used in this document
HITSP Glossary	Provides definitions for relevant terms used by HITSP documents
National Center for Health Statistics	Provides information regarding Vital Health Statistics data requirements



2.0 REQUIREMENTS

2.1 SYNOPSIS OF REQUIREMENTS

This Use Case Extension/Gap is expressed as a single scenario. The Maternal and Child Health Extension/Gap addresses the ability to exchange obstetric and pediatric patient information between Electronic Health Records (EHRs), the ability to incorporate pediatric assessment tools, guidelines and assessment schedules into EHRs, the ability to exchange standardized patient assessments for antenatal care, pre-natal care, labor and delivery and post-partum care between EHRs and the ability to incorporate assessment tools, guidelines and assessment schedules into EHRs for antenatal care, pre-natal care, labor and delivery and post-partum care, as well as the ability to exchange this information with appropriate Public Health programs.

There are four key elements on this timeline which address important information exchanges which include:

- Determination of pregnancy
- The birth event and incorporation of antepartum information
- Referral to and coordination of health related programs and registries such as Vital Records, Newborn Screening, Immunizations and Lead, Vision, Hearing, and other Developmental Screenings. (Although Newborn Screening occurs within this time period and is an integral part of maternal and child health, the complexity and specific needs of that process led to the creation of a separate Use Case, the 2009 Newborn Screening Use Case)
- Referral to and enrollment in various public health programs and/or services

The scope of this Use Case is primarily focused on determining eligibility for services or programs that may be available to the mother during pregnancy and childbirth, as well as to the child from birth to age four. Examples of such programs are WIC, SCHIP and Early Periodic Screening, Diagnosis and Treatment (EPSDT). In addition, the focus of the pediatric component is limited to the delivery of routine care provided to children during this time frame. This Extension/Gap is not intended to encompass all information exchange that might be associated with the care of a seriously ill child. This document also addresses clinical care for the mother. Maternal care includes antepartum care as well as labor and delivery. The Use Case also covers communications to address vital records.

Table 2-1 Description of Scenarios

Scenario Name	Scenario Description
Maternal and Child Health	This document encompasses one scenario that is primarily focused on determining eligibility for services or programs that may be available to the mother during the period of time from the determination of pregnancy for the mother-to-be continuing through birth to age four of the child. This document also covers communications for vital records

2.2 MATERNAL AND CHILD HEALTH

Maternal and child health can be defined as multiple programs serving various populations of consumers. For the purposes of this Extension/Gap document, the period of time included is from the determination of pregnancy for the mother-to-be continuing through birth to age four of the child.

Requirements for maternal and child health can be summarized as:

- The exchange of pregnancy, birth event, screening and immunization information between public or private health facilities, EHRs, and information systems supporting public health programs and/or services. The use of this information to aid in the integration of various public health programs and/or services in order to facilitate enrollment by consumers who would benefit from these services. While social or other services are not always appropriate, many maternal and child health public health programs serve broad catchments of at risk populations and need to



support requisite information flows and screening. Similarly, related services and the populations they serve, both benefit from broad awareness and consideration

2.2.1 INFORMATION EXCHANGE REQUIREMENTS FOR MATERNAL AND CHILD HEALTH

The following Information Exchange Requirements Table summarizes the relationship between the Exchange Action, Exchange Content, and the Initiating and Responding Systems.

Table 2-2 Maternal and Child Health Information Exchange Requirements (IER)

IER Number	Exchange Action	Exchange Content	Initiating System	Responding System(s)	Exchange Attribute
IER1	Send	PEC-MCH9 Service Eligibility (may require supportive clinical information) (other aspects – shelter, safety)	EHR	Health Plan System	
IER3	Send	PEC-NBS7 – Antepartum Summary	EHR	EHR PHR	
IER4	Provide/Register	PEC-NBS7 – Antepartum Summary	EHR PHR	HIE	
IER5	Request & Response	PEC-NBS7 – Antepartum Summary	EHR PHR	HIE	
IER6	Send	EC36 Lab Result (used when constraint is 'message')	Lab EHR	EHR Payor Public Health	Data Requirements: <ul style="list-style-type: none"> • DR04 Personal genetic/genomic data • DR05 Family genetic/genomic information
IER7	Provide/Register	EC37 Lab Result (used when constraint is 'document')	Lab EHR	HIE	Data Requirements: <ul style="list-style-type: none"> • DR04 Personal genetic/genomic data • DR05 Family genetic/genomic information
IER8	Request & Response	EC37 Lab Result (used when constraint is 'document')	EHR Public Health	HIE	Data Requirements: <ul style="list-style-type: none"> • DR04 Personal genetic/genomic data • DR05 Family genetic/genomic information
IER10	Send	PEC-MCH5 Lab Orders	EHR	Lab	
IER11	Subscribe	PEC-NBS7 – Antepartum Summary	EHR	HIE	
IER12	Subscribe	EC37 Lab Result (used when constraint is 'document')	EHR Public Health	HIE	
IER13	Request & Response	PEC-MCH4 Guidelines	EHR	Public Health	



IER Number	Exchange Action	Exchange Content	Initiating System	Responding System(s)	Exchange Attribute
IER17	Send	PEC-MCH6 Vital Records- Birth Record	EHR	Public Health (Vital Records)	Mom/baby linkage Jurisdiction/policy may require mother's identity to be pseudonymized
IER18	Send	PEC-MCH7 Vital Records- Death Record	EHR	Public Health (Vital Records)	Mom/baby linkage Jurisdiction/policy may require mother's identity to be pseudonymized
IER19	Send	PEC-MCH8 Vital Records- Fetal Death Report	EHR	Public Health (Vital Records)	Mom/baby linkage Jurisdiction/policy may require mother's identity to be pseudonymized
IER20	Send	PEC-MCH1 Vital Statistics	Public Health (Vital Records Jurisdiction)	Public Health (National)	May need support for document sharing for vital records
IER21	Request & Response	PEC-MCH3 Vital Records Pre-Populate	EHR	Public Health (Vital Records)	
IER22	Send	PEC-NBS9 – Newborn Record	EHR	EHR	Jurisdiction/policy may require mother's identity to be pseudonymized
IER23	Provide/Register	PEC-NBS9 – Newborn Record	EHR	HIE	Mom/baby linkage Jurisdiction/policy may require mother's identity to be pseudonymized
IER24	Query/Respond	PEC-NBS9 – Newborn Record	EHR	HIE	Mom/baby linkage Jurisdiction/policy may require mother's identity to be pseudonymized
IER25	Subscribe	PEC-NBS9 – Newborn Record	EHR	HIE	Mom/baby linkage Jurisdiction/policy may require mother's identity to be pseudonymized
IER26	Send	PEC-MCH2 Hospital's Maternal Discharge Summary	EHR	EHR	Mom/baby linkage Jurisdiction/policy may require baby's identity to be pseudonymized
IER27	Provide/Register	PEC-MCH2 Hospital's Maternal Discharge Summary	EHR	HIE	Mom/baby linkage Jurisdiction/policy may require baby's identity to be pseudonymized
IER28	Query/Respond	PEC-MCH2 Hospital's Maternal Discharge Summary	EHR	HIE	Mom/baby linkage Jurisdiction/policy may require baby's identity to be pseudonymized
IER29	Subscribe	PEC-MCH2 Hospital's Maternal Discharge Summary	EHR	HIE	Mom/baby linkage Jurisdiction/policy may require baby's identity to be pseudonymized



IER Number	Exchange Action	Exchange Content	Initiating System	Responding System(s)	Exchange Attribute
IER30	Send	PEC-NBS4 – Birthing Summary	EHR	EHR	Mom/baby linkage Jurisdiction/policy may require mother's and baby's identity to be pseudonymized on the respective summaries
IER31	Provide/Register	PEC-NBS4 – Birthing Summary	EHR	HIE	Mom/baby linkage Jurisdiction/policy may require mother's and baby's identity to be pseudonymized on the respective summaries
IER32	Query/Respond	PEC-NBS4 – Birthing Summary	EHR	HIE	Mom/baby linkage Jurisdiction/policy may require mother's and baby's identity to be pseudonymized on the respective summaries
IER33	Subscribe	PEC-NBS4 – Birthing Summary	EHR	HIE	Mom/baby linkage Jurisdiction/policy may require mother's and baby's identity to be pseudonymized on the respective summaries
IER34	Send	EC68A Health Plan Request	EHR	Health Plan	
IER35	Send	EC68B Health Plan Response	Health Plan	EHR	
IER36	Provide/Register	EC30 Consent Document Component	EHR	HIE	Mom/baby Consent for information sharing NOTE: overlap to Newborn Screening
IER37	Request & Response	EC30 Consent Document Component	EHR	HIE	Mom/baby Consent for information sharing NOTE: overlap to Newborn Screening
IER38	Send	EC32 Summary of Care	EHR	EHR	Include support for Vision screening Results Developmental screening Mental health screening PDR-MCH5 Pediatric Demographics
IER39	Publish/Register	EC32 Summary of Care	EHR	HIE	Include support for Vision screening Results Developmental screening Mental health screening PDR-MCH5 Pediatric Demographics
IER40	Request & Response	EC32 Summary of Care	EHR	HIE	Include support for Vision screening Results Developmental screening Mental health screening DR-MCH5 Pediatric Demographics



IER Number	Exchange Action	Exchange Content	Initiating System	Responding System(s)	Exchange Attribute
IER41	Subscribe	EC32 Summary of Care	EHR	HIE	Include support for Vision screening Results Developmental screening Mental health screening DR-MCH5 Pediatric Demographics
IER42	Send	EC48 Encounter Summary (used when constraint is 'document')	EHR	EHR	Include support for Vision screening Results Developmental screening Mental health screening DR-MCH5 Pediatric Demographics
IER43	Publish/Register	EC48 Encounter Summary (used when constraint is 'document')	EHR	HIE	Include support for Vision screening Results Developmental screening Mental health screening DR-MCH5 Pediatric Demographics
IER44	Request & Response	EC48 Encounter Summary (used when constraint is 'document')	EHR	HIE	Include support for Vision screening Results Developmental screening Mental health screening DR-MCH5 Pediatric Demographics
IER45	Subscribe	EC48 Encounter Summary (used when constraint is 'document')	EHR	HIE	Include support for Vision screening Results Developmental screening Mental health screening DR-MCH5 Pediatric Demographics
IER46	Send	EC49 Medical Imaging Results	Diagnostic Imaging Information Systems	EHR	
IER47	Provide/Register	EC49 Medical Imaging Results	Diagnostic Imaging Information Systems	HIE	
IER48	Request & Response	EC49 Medical Imaging Results	EHR	HIE	
IER49	Subscribe	EC49 Medical Imaging Results	EHR	HIE	

2.3 SYSTEM DESCRIPTION

The following table lists Systems involved in the above listed scenario and identifies the stakeholders served by those involved systems.



Table 2-3 System Names and Descriptions

System Name	System Description	Stakeholders
Electronic Health Record (EHR) System	The Electronic Health Record (EHR) System is a secure, real-time, point-of-care, patient-centric information resource for clinicians	Clinicians (Mother's Clinician, Child's Clinician) Allied Health Providers Education EHR System Suppliers Emergency Medical Systems Health Record Bank System Suppliers
Laboratory Information Systems	Information system supporting the testing, analysis, and information management for laboratory organizations. Medical laboratories, in either in a hospital or ambulatory environment, which analyze specimens as ordered by clinicians to assess the health status of patients. Laboratories, depending on how they are affiliated with hospitals, can be part of either Individual Healthcare Facilities or Integrated Healthcare Data Suppliers. These systems are responsible for updating interface engine rules and triggers in response to Use Case modifications of requested data feeds	Testing Laboratories Laboratory System Suppliers Laboratory Organizations
Personal Health Record (PHR) Systems	A healthcare record system used to create, review, annotate and maintain records by the patient or the caregiver for a patient. The PHR may include any aspect(s) of the health condition, medications, medical problems, allergies, vaccination history, visit history or communications with healthcare providers	Health Record Bank System Suppliers Patients, Consumers
Health Information Exchange (HIE)	A Health Information Exchange (HIE) is a multi-stakeholder system that enables the exchange and use of health information, in a secure manner, for the purpose of promoting the improvement of health quality, safety and efficiency	Information Exchange Health Record Bank System Suppliers
Public Health Information System	An automated and integrated system used to document and address information of interest to public health. Local, state, and federal government organizations and personnel use these systems to help protect and improve the health of their respective constituents. A critical effort under this charge is collecting health information to monitor for the existence of emerging health threats appearing in the population and manage these threats once manifested. Staff of these agencies interacts with the public health information system to verify and validate system indications of public health threats, and to assert acknowledgements that may be required by system processes	Public Health Knowledge Suppliers Government Agencies Public Health System Suppliers Public Health -Vital Records (Vital Statistics) Public Health –Other ACOG
Health Plan System	Systems used by health plans that include administrative and financial functions associated with the coverage and financing of healthcare for the health plan's enrolled members. These functions include information regarding the individual's enrollment, eligibility, coverage and benefits, authorizations, claims, care coordination and other information related to the member	Healthcare Payors Government Agencies (SCHIP, WIC, Medicaid Management Information System (MMIS)) Services Insurance Employers



System Name	System Description	Stakeholders
Diagnostic Imaging Information Systems	A computerized system used by organizations that provide radiology and diagnostic imaging services to patients in various settings. The organizations perform and analyze the study as ordered by clinicians to assess the health status of patients. E.g.: Radiology Information Systems (RIS), or picture archiving and Picture Archiving and Communications Systems (PACS)	Clinicians (Mother's Clinician, Child's Clinician)

2.4 EXCHANGE CONTENT DESCRIPTIONS

The exchange content descriptions answer one or more data requirements, and map to existing or planned HITSP constructs.

Table 2-4 Exchange Content Descriptions

Exchange Content Identifier	Exchange Content Name	Exchange Content Definition	Data Requirements including Provisional Data
PEC-MCH1	Vital Statistics	Vital Statistics data communicated among public health vital statistics entities NOTE: requirement that some of the birth record information must be captured from the mother Issue that the source of the data needs to be captured. PHR as a source also needs to indicate that it is from the patient. This is needed to determine whether the information is objective or Subjective.	PDR-MCH6 Vital Records - Father PDR-MCH7 Vital Records - Mother PDR-MCH8 Vital Records – Delivery Detail PDR-MCH9 Vital Records – Pregnancy Detail PDR-MCH10 Vital Records Newborn Detail PDR-MCH11 Vital Records – Demographics PDR-MCH12 Vital Records - Fetus



Exchange Content Identifier	Exchange Content Name	Exchange Content Definition	Data Requirements including Provisional Data
PEC-MCH2	Hospital's Maternal Discharge Summary	This Component specifies the format and content for communication the Hospital's Maternal Discharge clinical record	PDR-MCH1 Maternal Clinical Data DR31 Problem List DR01 Admission Medications History DR15 Hospital Admission Diagnosis DR02 Advance Directives DR03 Allergies and Other Adverse Reactions DR08 Discharge Diagnosis DR38 Discharge Diet DR17 Hospital Discharge Medications DR07 Diagnostic Results DR11 Functional Status DR14 History of Present Illness DR16 Hospital Course DR22 Medical Equipment DR27 Personal Information DR28 Physical Examination DR29 Plan of Care DR13 History of Past Illness DR34 Review of Systems DR24 Medications Administered DR37 Vital Signs
PEC-MCH3	Vital records pre-populate	Supports pre-population of vital records documents from the clinical record (e.g. Birthing summary, Newborn record)	PDR-MCH6 Vital Records - Father PDR-MCH7 Vital Records - Mother PDR-MCH8 Vital Records – Delivery Detail PDR-MCH9 Vital Records – Pregnancy Detail PDR-MCH10 Vital Records Newborn Detail PDR-MCH11 Vital Records – Demographics PDR-MCH12 Vital Records – Fetus PDR-MCH13 Vital Records – Death
PEC-MCH4	Guidelines	Supports the representation of care guidelines for Maternal and Child Health. Data are provided, including (but not limited to):	PDR58 PDR-MCH2 Structured Guideline Data
PEC-MCH5	Lab Orders	Laboratory Orders for Maternal and Child Care	DR25 PDR-MCH3 Maternal Lab Orders



Exchange Content Identifier	Exchange Content Name	Exchange Content Definition	Data Requirements including Provisional Data
PEC-MCH6	Vital Records – Birth Record	<p>Birth Vital Records Registration Request Detail</p> <p>NOTE: requirements may vary by state for vital records</p> <p>NOTE: Vital records gets real birth info and seals the record in the case of adoption or other reasons through legal process</p> <p>NOTE: Sources of information captured may be Restricted by Jurisdiction/policy</p> <p>NOTE: Outstanding Issue: How are surrogate and donor details handled?</p> <p>NOTE: Requirement that some of the birth record information must be captured from the mother</p> <p>Issue that the source of the data needs to be captured. PHR as a source also needs to indicate that it is from the patient. This is needed to determine whether the information is objective or Subjective</p>	<p>PDR-MCH6 Vital Records - Father</p> <p>PDR-MCH7 Vital Records - Mother</p> <p>PDR-MCH8 Vital Records – Delivery Detail</p> <p>PDR-MCH9 Vital Records – Pregnancy Detail</p> <p>PDR-MCH10 Vital Records Newborn Detail</p> <p>PDR-MCH11 Vital Records – Demographics</p>
PEC-MCH7	Vital Records – Death Record	<p>Death Vital Records Registration Request Detail</p> <p>NOTE: Sources of information captured may be Restricted by Jurisdiction/policy</p> <p>NOTE: requirement that some of the birth record information must be captured from the mother</p> <p>Issue that the source of the data needs to be captured. PHR as a source also needs to indicate that it is from the patient. This is needed to determine whether the information is objective or Subjective</p>	PDR-MCH13 Vital Records – Death
PEC-MCH8	Vital Records – Fetal Death Report	<p>Still-Birth Vital Records Registration Request Detail</p> <p>NOTE: Sources of information captured may be Restricted by Jurisdiction/policy</p> <p>NOTE: requirement that some of the birth record information must be captured from the mother</p> <p>Issue that the source of the data needs to be captured. PHR as a source also needs to indicate that it is from the patient. This is needed to determine whether the information is objective or Subjective</p>	<p>PDR-MCH6 Vital Records - Father</p> <p>PDR-MCH7 Vital Records - Mother</p> <p>PDR-MCH8 Vital Records – Delivery Detail</p> <p>PDR-MCH9 Vital Records – Pregnancy Detail</p> <p>PDR-MCH11 Vital Records – Demographics</p> <p>PDR-MCH12 Vital Records - Fetus</p>
EC 36	Lab Result (used when constraint is 'message')	Defines the data necessary for transmission of 'message'-based complete, preliminary, final and updated laboratory results	<p>Message Header Content</p> <p>PDR50 Fully Coded Lab Result Content</p> <p>DR04 Personal Genetic/Genomic Data</p> <p>DR05 Family Genetic/Genomic Information</p> <p>PDR-MCH4 Maternal Lab Results</p>



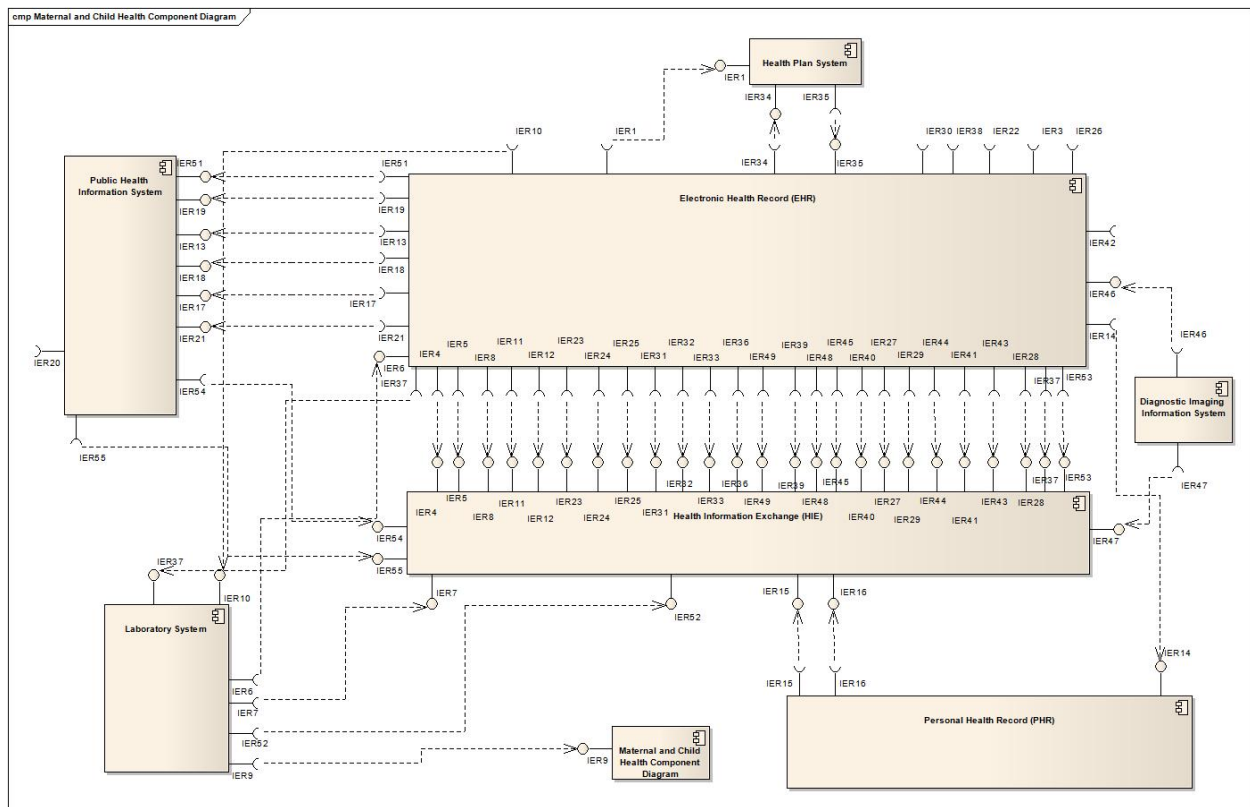
Exchange Content Identifier	Exchange Content Name	Exchange Content Definition	Data Requirements including Provisional Data
EC 37	Lab Result (used when constraint is 'document')	Defines the data necessary for transmission of 'document'-based complete, preliminary, final and updated laboratory results	Document Meta-data PDR50 Fully Coded Lab Result Content DR04 Personal Genetic/Genomic data DR05 Family Genetic/Genomic Information PDR-MCH4 Maternal Lab Results
PEC-NBS4	Birth Summary	Provides information regarding the labor and delivery supporting post-partum care for both mother and newborn	PDR-NBS4 Birthing Data PDR-MCH5 Pediatric Demographics
PEC-NBS7	Antepartum Summary	Provides a summary of pregnancy care	PDR-NBS7 Antepartum Data
PEC-NBS9	Newborn Record	Newborn's Discharge Summary	PDR-MCH5 Pediatric Demographics PDR-NBS9 Newborn Clinical Data DR31 Problem List DR01 Admission Medications History DR15 Hospital Admission Diagnosis DR02 Advance Directives DR03 Allergies and Other Adverse Reactions DR08 Discharge Diagnosis DR38 Discharge Diet DR17 Hospital Discharge Medications DR07 Diagnostic Results DR11 Functional Status DR14 History of Present Illness DR16 Hospital Course DR22 Medical Equipment DR27 Personal Information DR28 Physical Examination DR29 Plan of Care DR13 History of Past Illness DR34 Review of Systems DR24 Medications Administered DR37 Vital Signs
PEC-MCH8	Service Eligibility	Enrollment Information: Authorization for services request information needed for enrollment in services program (e.g. Early Periodic Screening, Diagnosis and Treatment (EPSDT) Program) , including (but not limited to):	PUBLIC COMMENT INPUT WELCOME
EC68A	Health Plan Request	Data to support a request for approval from a health plan to authorize certain healthcare services, when required by the patient's health plan contract	PDR63 Health Plan Request for Authorization of Service Content



Exchange Content Identifier	Exchange Content Name	Exchange Content Definition	Data Requirements including Provisional Data
EC68B	Health Plan Response	Data to support response to request for approval. The response from the health plan indicates that the health plan has determined that the particular service(s) will or will not be covered, and what is the level of coverage if that information is available from the health plan	PDR64 Health Plan Response to Request for Authorization of Service Content
EC30	Consent Document Component		
EC 32	Summary of Care	Describes the document content summarizing a consumer's registration, medication and health data information	DR02 Advance Directives DR03 Allergies and Other Adverse Reactions DR06 Comment DR31 Problem List DR09 Encounters DR12 Healthcare Providers DR18 Immunizations DR19 Information Source DR26 Payers DR20 Language Spoken DR23 Medications DR27 Personal Information DR29 Plan of Care DR30 Pregnancy DR32 Procedure DR36 Support DR37 Vital Signs
EC 48	Encounter Summary (used when constraint is 'document')	Document'-based patient encounter data (excluding laboratory, radiology)	DR05 Chief Complaint DR29 Plan of Care DR31 Problem List DR37 Vital Signs DR02 Advance Directive DR03 Allergy/Drug Sensitivity DR09 Encounter DR12 Healthcare Provider DR18 Immunization DR19 Information Source DR26 Insurance Provider DR20 Language Spoken DR23 Medication – Prescription and Non-Prescription DR27 Person Information DR30 Pregnancy DR32 Procedure DR36 Support DR37 Vital Sign DR24 Medications Administered DR04 Assessment and Plan
EC 49	Medical Imaging Results (constraint is 'document', also constrained on 'radiology result')	Medical imaging radiology result data in "document" form captured as part of the normal process of care performed by healthcare providers	Document meta-data radiology image link and/or report result



Figure 2-1 Component Data Flow Diagram



2.5 DATA REQUIREMENTS

The following data requirements support the exchange of data between electronic health records and clinical research systems.

Table 2-5 Data Requirements

Data Requirement Number (DR)	Description	Data
PDR-NBS4	Birth Data	Labor and Delivery Admission History and Physical Labor and Delivery Summary Maternal Discharge Summary Antepartum Information Delivery event Information Pediatric Clinician Encounter Date Patient Information (DOB, age, gender, resident zip code, state of residence) Date/Time of Last Record Update Linkage Between Mom/Baby Records
PDR-MCH2	Structured Guideline Data	GAP Presentation Preserving format Management and testing guidelines (e.g. prenatal screening guidelines, timing for testing, possibly guidelines for management of pregnancy complications)



Data Requirement Number (DR)	Description	Data
PDR-NBS7	Antepartum Data	Antepartum History and Physical Antepartum Laboratory Antepartum Education Pediatric Clinician Maternal Age Maternal Occupation Medical History Menstrual History Pregnancy History Genetic Screenings Risk Factors Office Visits Physical Exams General Medical History Infection History Antepartum Radiology VITAL RECORDS PRE-POP REQUIREMENTS Date of First Visit Pre-Pregnancy Weight, and Other Attributes Number of Visits
PDR-NBS9	Newborn Clinical Data	Newborn Birth Attributes NICU Attributes Prenatal Attributes Pediatric Clinician Encounter Date Patient Information (DOB, age, gender, resident zip code, state of residence) Date/Time of Last Record Update Linkage Between Mom/Baby Records
PDR-MCH6	Vital Records – Father	Father: <ul style="list-style-type: none"> • Father DOB • Father's Education • Father's Reported Age • Father's Ethnicity – Hispanic • Father's Race
PDR-MCH7	Vital Records – Mother	Mother: <ul style="list-style-type: none"> • Mother DOB • Residence of Mother (City, County, State, Country, Inside City Limits) • Mother Married – Ever • Mother Married – At conception, at birth, or any time in between • Mother's Education • Mother Ethnicity – Hispanic • Mother Race • Mother's Reported Age
PDR-MCH8	Vital Records – Delivery Detail	Delivery: <ul style="list-style-type: none"> • Obstetric Procedures • Onset of Labor • Characteristics of Labor and Delivery • Method of Delivery



Data Requirement Number (DR)	Description	Data
PDR-MCH9	Vital Records – Pregnancy Detail	Mother Pregnancy: <ul style="list-style-type: none"> • Mother's Height • Mother's Pre-Pregnancy Weight • Mother's Weight at Delivery • Mother WIC Status • Last Normal Menses Begin Date • Method of Delivery • Maternal Morbidity • Date of First Prenatal Care Visit • Date of Last Prenatal Care Visit • Total Number of Prenatal Care Visits • Mother Transferred • Previous Live Births now Living • Previous Live Births now Dead • Previous Other Pregnancy Outcomes • Date of Last Live Birth • Date of Last Other Pregnancy Outcome • Risk Factors - • Cigarettes 3 Months Pre-Pregnancy • Cigarettes First Trimester • Cigarettes Second Trimester • Cigarettes Third Trimester
PDR-MCH10	Vital Records Newborn Detail	Newborn: <ul style="list-style-type: none"> • Apgar Score (5 Min, 10 Min) • Abnormal Conditions of the Newborn • Infant Transferred within 24hrs of Delivery • Infant Living at time of Report • Infant Breastfed at Discharge • Infections present • Congenital Anomalies of Newborn • Attendant
PDR-MCH11	Vital Records – Demographics	Certificate Number Auxiliary State File Number Matching number Name Sex Plurality Set Order Number of Fetal Death Number of Liveborn Time of Delivery Date of Delivery Delivery Location (State, County, Place) Hospital of Birth Facility ID (NPI, State-Assigned) Birthplace State Birthplace Country



Data Requirement Number (DR)	Description	Data
PDR-MCH12	Vital Records – Fetus	Fetus: <ul style="list-style-type: none"> • Infections present • Congenital Anomalies of Fetus • Initiating Cause/Condition • Other Significant Cause/Condition • Obstetric Estimation of Gestation • Weight of Fetus • Estimated Time of Fetal Death • Autopsy Status • Histological Placental Exam Performed • Method to Determine Death
PDR-MCH13	Vital Records – Death	Certificate Number Auxiliary State File Number Date of Death Decedent Name Father's Surname Sex SSN Decedent Age/Units DOB Country of Birth State of Birth Decedent Residence Address (city, County, State, Country, Inside City Limits) Marital Status Place of Death Facility Name – County Method of Disposition Date/Time of Death Decedent's Education Decedent Ethnicity – Hispanic Decedent Race Occupation (Code, literal) Industry (Code, Literal) INFANT DEATH/BIRTH LINKING: Birth Certificate Number Year of Birth State of Birth
PDR-MCH3	Maternal Lab Orders: supports the communication of laboratory test orders. Test order data are provided, including (but not limited to):	Maternal Care Related Value Sets: <ul style="list-style-type: none"> • Pregnancy Testing • Hormonal Assays • Transabdominal or Transvaginal Ultrasound ... • Tuberculin Test • Blood/Lead Test Referral • Hgb/Hct (HRisk/WIC)
PDR-MCH4	Maternal Lab Results: supports the communication of laboratory test orders. data are provided, including (but not limited to):	Maternal Care Related Value Sets: <ul style="list-style-type: none"> • Pregnancy Testing • Hormonal Assays • Transabdominal or Transvaginal Ultrasound • Tuberculin Test • Blood/lead Test Referral • Hgb/Hct (HRisk/WIC)



Data Requirement Number (DR)	Description	Data
PDR-MCH5	Demographic Data with Pediatric and Maternal Linkage Support: The demographic data content to be exchanged to appropriately associate the patient data with clinical data maintained in another system and between mother and baby records. Data requirements include (but are not limited to):	Patient Name: First, Middle, Last Patient Alias Name: First, Middle, Last Patient Address Patient Phone Number Patient Identifier Patient Birth Date Patient Sex Patient Race Patient Ethnicity Patient Primary Language Patient Multiple Birth Indicator Patient Multiple Birth Order Patient Birth Registration Number Patient Birth State/Country Patient Birthing Facility Mother's Name: First, Middle, Last Mother's Maiden Name Mother's SSN Father's Name: First, Middle, Last Father's SSN Insurance Plan Insurance Company Immunization Services Funding Eligibility Next of Kin Relationship Next of Kin Address Next of Kin Telephone Next of Kin DOB Last Update Time/Date Last Update Facility
DRMCH4	Enrollment Information: Authorization for services request information needed for enrollment in services program (e.g. Early Periodic Screening, Diagnosis and Treatment (EPSDT) Program) , including (but not limited to): NOTE: Outstanding question – EPSDT – is this the same requirement? Can SCHIP leverage the same transaction	Nutritional Risk Requirement Verification of Pregnancy Housing Authentication Proof of Income Proof of Citizenship/Residency Status Patient Demographics (first name, last name, date of birth, health plan member ID) Limits and Exclusions Procedure or Services Coded Values
DR17	Pediatric Well-Care Summary: Secure patient data are provided, including (but not limited to):	Nutritional Screening Developmental Screening Dental Screening Physical Exam Weight, Height, Head Circumference Measurements Percentile Immunizations Provided



Data Requirement Number (DR)	Description	Data
PDR63	Health Plan Request for Authorization of Service Content	Functional Identifier Code Version/Release/Industry Identifier Code Transaction Set Purpose Code Code List Qualifier Code Procedures Procedure Code Entity Type Qualifier Information Source Name Identification Code Qualifier Information Source Name Identification Code Qualifier Requester Name Date Time Period Format Qualifier Date Time Period Subscriber Birth Date Name Last Subscriber Name Name First Identification Code Qualifier Description Identification Code Qualifier Service Provider Name
PDR64	Health Plan Response to Request for Authorization of Service Content	Functional Identifier Code Version/Release/Industry Identifier Code Transaction Set Purpose Code Procedures Code List Qualifier Code Procedures Procedure Code Entity Type Qualifier Information Source Name Identification Code Qualifier Information Source Name Identification Code Qualifier Requester Name Name Last Subscriber Name Name First Identification Code Qualifier Description Date Time Period Format Qualifier Date Time Period Subscriber Birth Date Identification Code Qualifier Service Provider Name
DR01	Admission Medications History: Contains information about the relevant medications of a patient prior to admission to a facility	2.2.1.13 Admission Medications Section
DR02	Advance Directives: Contains information that defines the patient's expectations and requests for care along with the locations of the documents	2.2.1.16 Advance Directives Section
DR03	Allergies and Other Adverse Reactions: Contains data on the substance intolerances and the associated adverse reactions suffered by the patient.	2.2.1.2 Allergies and Other Adverse Reactions Section
DR06	Comment: Contains a comment to be supplied for any other data requirement	2.2.2.11 Comment



Data Requirement Number (DR)	Description	Data
DR07	Diagnostic Results: Contains information about the results from diagnostic procedures the patient received	2.2.1.22 Diagnostic Results Section
DR08	Discharge Diagnosis: Contains information about the conditions identified during the hospital stay that either need to be monitored after discharge from the hospital and/or where resolved during the hospital course	2.2.1.11 Discharge Diagnosis Section
DR09	Encounters: Contains information describing the patient history of encounters. At a minimum, includes current and pertinent historical encounters, and may include a full encounter history	2.2.1.27 Encounters Section
DR10	Family History: Contains information about the genetic family members, to the extent that they are known, the diseases they suffered from, their ages at death, and other relevant genetic information	2.2.1.25 Family History
DR11	Functional Status: Provides information about the capability of the patient to perform acts of daily living	2.2.1.9 Functional Status Section
DR12	Healthcare Providers: Contains the healthcare providers involved in the current or pertinent historical care of the patient.	2.2.2.4 Healthcare Provider
DR13	History of Past Illness: Contains data about problems the patient suffered in the past	2.2.1.4 History of Past Illness Section
DR14	History of Present Illness: Contains information about the sequence of events preceding the patient's current complaints	2.2.1.7 History of Present Illness Section
DR15	Hospital Admission Diagnosis: Contains information about the primary reason for admission to a hospital facility	2.2.1.10 Hospital Admission Diagnosis Section
DR16	Hospital Course: Contains information about of the sequence of events from admission to discharge in a hospital facility	2.2.1.21 Hospital Course Section
DR17	Hospital Discharge Medications: Contains information about the relevant medications of the medications ordered for the patient for use after discharge from the hospital	2.2.1.14 Hospital Discharge Medications Section
DR18	Immunizations: Contains information describing the immunizations administered to the patient	2.2.1.17 Immunizations Section
DR19	Information Source: Contains information about the original author to be supplied and for a reference to the original document to be provided	2.2.2.10 Information Source
DR20	Language Spoken: Contains the primary and secondary languages of communication for the patient	2.2.2.2 Language Spoken
DR21	List of Surgeries: Provides a list of surgeries the patient has received	2.2.1.8 List of Surgeries Section
DR22	Medical Equipment: Contains information describing a patient's implanted and external medical devices and equipment that their health status depends on, as well as any pertinent equipment or device history	2.2.1.28 Medical Equipment Section
DR23	Medications: Description of the relevant medications for the patient, e.g.: an ambulatory prescription list	2.2.1.12 Medications Section
DR24	Medications Administered: Contains information about the relevant medications administered to a patient during the course of an encounter	2.2.1.15 Medications Administered Section



Data Requirement Number (DR)	Description	Data
DR25	Orders	
DR26	Payers: The Payers Section contains data on the patient's payers, whether a 'third party' insurance, self-pay, other payer or guarantor, or some combination - At a minimum, the patient's pertinent current payment sources should be listed	2.2.1.1 Payers Section
DR27	Personal Information: Contains the name, address, contact information, personal identification information, ethnic and racial affiliation and marital status of the subject person	2.2.2.1 Personal Information
DR28	Physical Examination: Contains information describing the physical findings	2.2.1.18 Physical Examination Section
DR29	Plan of Care: Contains information about the expectations for care to be provided including proposed interventions and goals for improving the condition of the patient A plan of care section varies from the assessment and plan data requirements in that it does not include a physician assessment of the patient condition	2.2.1.24 Plan of Care Section
DR30	Pregnancy: Contains a coded entry indicating whether the patient is currently pregnant	2.2.2.9 Pregnancy
DR31	Problem List: Contains data on the problems currently being monitored for the patient	2.2.1.3 Problem List Section? 2.2.2.7 Condition
DR32	Procedure: Contains a coded entry indicating a procedure performed on a patient	2.2.2.17 Procedure
DR33	Reason for Referral: Contains information about the reason that the patient is being referred	2.2.1.6 Reason for Referral Section
DR34	Review of Systems: Contains information describing patient responses to questions about the function of various body systems	2.2.1.20 Review of Systems Section
DR35	Social History: Contains information about the person's beliefs, home life, community life, work life, hobbies, and risky habits	2.2.1.26 Social History Section
DR36	Support: Contains the patient's sources of support, such as immediate family, relatives and guardian at the time as the summarization is generated. Support information also includes next of kin, caregivers and support organizations. At a minimum, key support contacts relative to healthcare decisions, including next of kin, should be included. Support providers may include providers of healthcare related services, such as a personally controlled health record, or registry of emergency contacts	2.2.2.3 Support
DR37	Vital Signs: Contains information documenting the patient vital signs	2.2.2.14 Vital Sign
DR38	Discharge Diet:	
DR58	Unstructured Data Content:	



Data Requirement Number (DR)	Description	Data
	Message Header Content	
PDR 50	Fully Coded Lab Result Content	

2.6 INFORMATION EXCHANGE REQUIREMENTS (IER) DESCRIPTIONS

The following table further describes the Information Exchange Requirements identified above.

Table 2-6 Description of Information Exchange Requirements

Information Exchange Requirement Number (IER)	Description
IER1	Send PEC-MCH9 – Service Eligibility from EHR to Health Plan System
IER3	Send PEC-NBS7 – Antepartum Summary from EHR to EHR
IER4	Provide/Register PEC-NBS7 – Antepartum Summary from EHR to HIE
IER5	Request & Response PEC-NBS7 – Antepartum Summary EHR HIE
IER6	Send EC36 Lab Result from Lab to EHR
IER7	Provide/Register EC37 Lab Result (used when constraint is 'document') from Lab to HIE
IER8	Request & Response EC37 Lab Result (used when constraint is 'document') from EHR to HIE
IER10	Send PEC-MCH5 – Lab Orders from EHR to Lab
IER11	Subscribe PEC-NBS7 – Antepartum Summary from EHR to HIE
IER12	Subscribe EC37 Lab Result (used when constraint is 'document') from EHR to HIE
IER13	Request & Response PEC-MCH4 Guidelines from EHR to Public Health
IER17	Send PEC-MCH6 Vital Records – Birth Record from EHR to Public Health (Vital Records)
IER18	Send PEC-MCH7 Vital Records – Death Record from EHR to Public Health (Vital Records)
IER19	Send PEC-MCH8 Vital Records – Fetal Death Report from EHR to Public Health (Vital Records)
IER20	Send PEC-MCH1 Vital Statistics from Public Health (Vital Records Jurisdiction) to Public Health (National)
IER21	Request & Response PEC-MCH3 Vital Records Pre-Populate from EHR to Public Health (Vital Records)
IER22	Send PEC-NBS9 – Newborn Record from EHR to EHR
IER23	Provide/Register PEC-NBS9 – Newborn Record from EHR to HIE
IER24	Query/Respond PEC-NBS9 – Newborn Record from EHR to HIE
IER25	Subscribe PEC-NBS9 – Newborn Record from EHR to HIE
IER26	Send PEC-MCH2 Hospital's Maternal Discharge Summary from EHR to EHR
IER27	Provide/Register PEC-MCH2 Hospital's Maternal Discharge Summary from EHR to HIE
IER28	Query/Respond PEC-MCH2 Hospital's Maternal Discharge Summary from EHR to HIE
IER29	Subscribe PEC-MCH2 Hospital's Maternal Discharge Summary from EHR to HIE
IER30	Send PEC-NBS4 – Birthing Summary from EHR to EHR
IER31	Provide/Register PEC-NBS4 – Birthing Summary from EHR to HIE
IER32	Query/Respond PEC-NBS4 – Birthing Summary from EHR to HIE
IER33	Subscribe PEC-NBS4 – Birthing Summary from EHR to HIE
IER34	Send EC68A Health Plan Request EHR Health Plan
IER35	Send EC68B Health Plan Response Health Plan EHR
IER36	Provide/Register EC30 Consent Document Component EHR HIE
IER37	Request & Response EC30 Consent Document Component EHR HIE
IER38	Send EC32 Summary of Care EHR EHR
IER39	Publish/Register EC32 Summary of Care EHR HIE
IER40	Request & Response EC32 Summary of Care EHR HIE
IER41	Subscribe EC32 Summary of Care EHR HIE
IER42	Send EC48 Encounter Summary (used when constraint is 'document') EHR HIE
IER43	Publish/Register EC48 Encounter Summary (used when constraint is 'document') EHR HIE
IER44	Request & Response EC48 Encounter Summary (used when constraint is 'document') EHR HIE
IER45	Subscribe EC48 Encounter Summary (used when constraint is 'document') EHR HIE



Information Exchange Requirement Number (IER)	Description
IER46	Send EC49 Medical Imaging Results Diagnostic Imaging Information Systems EHR
IER47	Provide/Register EC49 Medical Imaging Results Diagnostic Imaging Information Systems HIE
IER48	Request & Response EC49 Medical Imaging Results EHR HIE
IER49	Subscribe EC49 Medical Imaging Results EHR HIE
IER52	Provide/Register Lab HIE EC37 Lab Result (used when constraint is 'document')

Table 2-7 Constraints¹

Constraint	Type of Constraint
Elective and spontaneous terminations are not 'births': assumption these events are not captured in the same way and are not considered birth events	Assumption
Birthing Summary, Mother's Record, and Child's Record are all produced within the first 48 hours of birth	Assumption
Assumption: Determination of pregnancy through early childhood – early childhood the age range is pre-kindergarten 0-3 years	Assumption
HITSP can define the process for interoperability for information to enable exchange of information and integration of services or programs. This can include dealing with (a) Newborn screening, (b) Immunizations, (c) Lead, (c) Vision, (d) Hearing, (e) Developmental screenings, (f) vital records. (Each could be a separate Use Case)	Assumption
If the information gets into an EHR System, then communication of the information can use existing methods for communication	Assumption
Clinical information systems may include "incorporate the clinical guideline" similar to that of Newborn Screening. Clinical guidelines for appropriate screening, management and testing. E.g., pre-natal screening guidelines, timing for testing, possibly guidelines for management of pregnancy complications? This step requires (similar to Newborn Screening and IRM and Quality) clinical decision support. AAP and ACOG are appropriate specialty organizations for such guidelines. Some may come directly from Public Health (E.g., CDC)	Assumption
Includes "other" elements, (e.g. vision, etc. may be part of Newborn Screening Use Case). Other elements may be specified by guidelines	Assumption
includes communications of clinical notes and birth event back to the mother's physician	Assumption
Stillbirth events are not captured in the same way and are not considered birth. Elective and spontaneous terminations are not 'births': events	Assumption
Clinical notes are communicated back to the mother's physician; even if mother's physician practices at hospital, the physician does not necessarily have access to the birth event record from the clinic	Assumption
For NICU, newborn record discharge summary may be long after the 48 hour window	Assumption
Practical workflow considerations at birthing facilities	Assumption
Data requirements for newborn record may be different from the medical summary	Assumption
Transfer of care is not applicable to the generation of the new record from fetus to newborn	Assumption
Assumes this is hospital clinician - nurses and NICU care team and staff to have team take on care until the selected pediatrician or pediatrician on staff	Assumption
There is Medical Home impact after discharge - establish the medical home by naming the pediatrician of choice for post-hospital visit	Assumption
Payload should be of interest for communication to Public Health	Assumption
Includes communication of birth event record to mother's clinician	Assumption
The birthing information would be returned to the mother's clinician's EHR (see previous comment)	Assumption
Clinical referrals are out of scope	Assumption
Additional data requirements for supplying clinical data are provided through other Use Cases	Assumption
Constrained to EPSDT	Assumption

¹ Section numbers in this table (e.g., 7.3.1.x) refer to the original Use Case events, which are described in Table 5-1 in the Appendix and provide context for those constraints.



Constraint	Type of Constraint
Pertains to clinical information – Education topics will be assumed out of scope: may need further clarification from ONC	Assumption
Case reporting is for positive results. Lab reporting is for positive and negative results	Assumption
Any pre-population of the form may be highly restrictive because some of the detail is required to be derived from a specified source (e.g. from the mother)	Assumption
Practical workflow considerations at birthing facilities	Assumption
For title 5, Medicaid - this is not a lab result or clinical result	Assumption
Due to IS constraints, that this event and associated action communication will be re-directed to the services perspective	Assumption
This is constrained to the context of Eligibility for government programs	Assumption
Some eligibility applications may not be initiated from a clinical system	Assumption
This should state: The mother's clinician confirms a pregnancy for eligibility of a service	Assumption
Many of the application will not initiate from clinical systems	Assumption
This Use Case is constrained to communications initiating from the clinical information systems	Assumption
Should reference instead before and/or after birth for mother's clinician involvement	Assumption
That these exchanges are constrained to social services communications and that this IS will not leverage the resulting constructs	Assumption
This IS will be constrained to these listed programs	Assumption
If constrained to these services, then the services component is public health	Assumption
Support the technical measures to ensure Security and Privacy of consumer/patient health information	Pre-Conditions
Authentication service to authenticate requestors and/or data submissions from various locations	Pre-Conditions
Security and Privacy policies, procedures and practices are commonly implemented to support acceptable levels of consumer/patient security and privacy.	Pre-Conditions
Legal and governance issues regarding data access authorizations, data ownership, and data use are in effect	Pre-Conditions
Support the following HITSP Security and Privacy constructs: <ul style="list-style-type: none"> • HITSP/C19 – Entity Identity Assertion • HITSP/T16 – Consistent Time • HITSP/T17 – Secured Communication Channel • HITSP/T15 – Collect and Communicate Security Audit Trail • HITSP/TP30 – Manage Consent Directives • HITSP/TP20 – Access Control 	Pre-Conditions



3.0 DESIGN

This Interoperability Specification covers clinical care and eligibility aspects of maternal and child care. This includes for the mother antepartum care, the birthing event. It includes for the child the birthing event, newborn care, and well child care for ages 0-3. There is overlap in the newborn and well child care aspects with other HITSP Interoperability Specifications. For these overlaps, this Interoperability Specification refers to these specifications and does not replicate content:

- Immunization and Response Management
- Public Health Case Reporting
Newborn Screening

While there is also overlap with the Consultations and Transfers of Care Use Case, the content is specialized to support the data required for pregnancy and newborn related care as distinguished by the exchange content in this Interoperability Specification. This new content will be added to the HITSP Capabilities used for sharing clinical information. This Interoperability Specification makes reference to communications of clinical guideline knowledge. The source of the guideline content may be provided by appropriate specialty organizations such as AAP or ACOG. Some of the guidelines may come directly from Public Health (e.g. CDC).

This Interoperability Specification also addresses eligibility requests for services for antepartum services and child care services. While there are multiple programs that are involved in the management of these services, this specification is scoped to focus on EPSDT eligibility.

3.1 CAPABILITIES USE IN MATERNAL AND CHILD HEALTH

The following Capabilities table summarizes the set of capabilities selected to support the Maternal and Child Health Use Case scenarios, along with the Information Exchange Requirements satisfied by that Capability.

Table 3-1 Capabilities Used

Capability	Capability Summary	IERs Satisfied
HITSP/CAP119 – Communicate Structured Document	<p>This Capability addresses interoperability requirements that support the communication of structured health data related to a patient in a context set by the source of the document who is attesting to its content. Several document content subsets, structured according to the HL7 CDA standard, are supported by this Capability. The following are examples of the type of structured data that may be used:</p> <ul style="list-style-type: none">• Continuity of Care Document (CCD)• Emergency Department Encounter Summary• Discharge Summary (In-patient encounter and/or episodes of care)• Referral Summary Ambulatory (encounter and/or episodes of care)• Consultation Notes• History and Physical• Personal Health Device Monitoring Document• Healthcare Associated Infection (HAI) Report Document <p>Document creators shall support a number of the HITSP specified coded terminologies as defined by specific content subsets specified in this Capability</p>	IER3, IER4, IER5, IER11, IER22, IER23, IER24, IER25, IER26, IER27, IER28, IER29, IER30, IER31, IER32, IER33, IER39, IER40, IER41, IER43, IER44, IER45



Capability	Capability Summary	IERs Satisfied
HITSP/CAP120 – Communicate Unstructured Document	This Capability addresses interoperability requirements that support the communication of a set of unstructured health data related to a patient in a context set by the source of the document who is attesting to its content. Two types of specific unstructured content are supported, both with a structured CDA header: <ul style="list-style-type: none"> • PDF-A supporting long-term archival UTF-8 text 	IER13
HITSP/CAP121 – Communicate Clinical Referral Request	This Capability addresses interoperability requirements that support provider-to-provider (clinical) referral request interaction. It allows the bundling of the referral request document with other relevant clinical documents of interest by referencing such documents as shared by other capabilities such as: <ul style="list-style-type: none"> • HITSP/CAP119 – Communicate Structured Document • HITSP/CAP120 – Communicate Unstructured Document • HITSP/CAP133 – Communicate Immunization Summary 	IER3, IER22, IER26, IER30, IER38, IER42
HITSP/CAP122 – Retrieve Medical Knowledge	This Capability addresses the requirements to retrieve medical knowledge that is not patient-specific based on context parameters. The actual content delivered is not constrained by this Capability; this Capability focuses on providing the mechanism to ask for (query) and receive the medical knowledge	IER13
HITSP/CAP124 – Establish Secure Web Access	This Capability is focused on providing a secured method to access information available from document repositories (e.g., Laboratory Report) in order to view them locally on a system. The chosen method for viewing the document content is through a web browser.	IER7, IER8, IER12
HITSP/CAP126 – Communicate Lab Results Message	This Capability addresses interoperability requirements that support the sending of a set of laboratory test results. Ordering Providers of Care receive results as a laboratory results message. The communication of the order is out of scope for this Capability The content of these test results may be either or both: General Laboratory Test Results; Microbiology Test Results This Capability may use content anonymization	IER6
HITSP/CAP127 – Communicate Lab Results Document	This Capability addresses interoperability requirements that support the communication of a set of structured laboratory results related to a patient in a context set by the source of the document who is attesting to its content. Non-ordering Providers of Care access historical laboratory results as documents and "copy-to" Providers of Care may receive document availability notifications to retrieve such lab report documents Lab Report content creators shall support HITSP specified coded terminologies as defined by specific content subsets specified in this Capability for: General Laboratory Test Results; Microbiology Test Results This Capability may use content anonymization	IER7, IER8, IER12, IER52
HITSP/CAP128 – Communicate Imaging Information	This Capability addresses interoperability requirements that support the communication of a set of imaging results (i.e., reports, image series from imaging studies) related to a patient in a context set. This is done by an Imaging System acting as the information source attesting to its content This Capability may use content anonymization	IER46, IER47, IER48, IER49



Capability	Capability Summary	IERs Satisfied
HITSP/CAP135 – Retrieve and Populate Form	<p>This Capability addresses interoperability requirements to support the upload of specific captured data (e.g. public health surveillance reportable conditions, healthcare associated infection reporting) to Public Health Monitoring Systems and Quality Organizations Systems. The forms presented may be pre-populated by information provided by the clinical or laboratory information systems to avoid manual re-entry. A number of supplemental information variables may be captured from within the user's clinical information system to improve the workflow and timeliness of required reporting. One or more types of form content may be supported:</p> <ul style="list-style-type: none"> • Pre-population for Public Health Case Reports from Structured Documents using CDA • Pre-population for Quality Data from Structured Documents using CDA • No pre-population content <p>Systems may optionally support the means to retrieve request for clarifications</p>	IER21
HITSP/CAP138 – Retrieve Pseudonym	<p>This Capability addresses interoperability requirements to support a particular type of anonymization that both removes the association with a data subject, and adds an association between a particular set of characteristics relating to the data subject and one or more pseudonyms. This enables a process of supplying an alternative identifier, which permits a patient to be referred to by a key that suppresses his/her actual identification information. The purpose of this Capability is to offer a pseudonymization framework for situations that require the use of specific data without disclosing the specific identity of patients or providers. Pseudo-identifiers are intended to allow accessibility to clinical information, while safeguarding any information that may compromise the privacy of the individual patient or provider. However, unlike anonymization, the alternative identifier key can be used to re-identify the individuals whose data was used</p>	IER20, IER22, IER23, IER26, IER27, IER30, IER31
HITSP/CAP140 – Communicate Benefits and Eligibility	<p>This Capability addresses interoperability requirements that support electronic inquiry and response from a patient's eligibility for health insurance benefits. The information exchanged includes the following:</p> <ul style="list-style-type: none"> • A patient's identification (i.e., name, date of birth, and the health plan's member identification number) • Communication of a member's status of coverage and benefit information and financial liability • Access to information about types of services, benefits and coverage for various medical care and medications <p>It provides clinicians with information about each member's health insurance coverage and benefits</p>	IER1
HITSP/CAP141 – Communicate Referral Authorization	<p>This Capability addresses interoperability requirements that support electronic inquiry and response to authorizing a patient (health plan member) to be referred for service by another provider or to receive a type of service or medication under the patient's health insurance benefits. The Capability supports the transmittal of a patient's name and insurance identification number with the request for the type of service. It also includes the following optional requirements:</p> <ul style="list-style-type: none"> • Identification of the type of service or medication requested for benefit coverage (does not guarantee payment by insurance provider) • Communication of a referral notification number or authorization number from the Payer System to the Provider System <p>It provides clinicians and pharmacists with information about each patient's medical insurance coverage and benefits. It may include information on referral or authorization permission</p>	IER34, IER35



Capability	Capability Summary	IERs Satisfied
HITSP/CAP143 – Manage Consumer Preference and Consents	This Capability addresses management of consumer preferences and consents as an acknowledgement of a privacy policy. This Capability is used to capture a patient or consumer agreement to one or more privacy policies; where examples of a privacy policy may represent a consent, dissent, authorization for data use, authorization for organizational access, or authorization for a specific clinical trial. This Capability also supports the recording of changes to prior privacy policies such as when a patient changes their level of participation or requests that data no-longer be made available because they have left the region	IER36, IER37
HITSP/CAP 99 – Communicate Laboratory Orders	This Capability satisfies the information exchange requirements for the sending and receiving of a set of laboratory order, control and status messages. Laboratory orders may be from an inpatient or outpatient (e.g., Clinic, ER, office, etc) environment	IER10
HITSP/CAPXXX – Communicate Vital Records	This Capability addresses interoperability requirements that enable electronic communication of vital records data between clinicians, and public health and between public health systems	IER17, IER18, IER19, IER20

3.2 CAPABILITY ORCHESTRATION

The table and below illustrates the data flow and information exchanges between the primary Systems engaged in the support of the requirements described in Section 2.0. Subsets of these Systems perform information exchanges according to one or more of the HITSP Capabilities identified in this Specification. The in-scope requirements are supported by Capabilities previously specified by HITSP.

Table 3-2 Capability Orchestration

System	Capability	Optionality ²
Electronic Health Record (EHR) System	HITSP/CAP119 – Communicate Structured Document	R
	HITSP/CAP120 – Communicate Unstructured Document	O
	HITSP/CAP121 – Communicate Clinical Referral Request	C[105]
	HITSP/CAP122 – Retrieve Medical Knowledge	C[101]
	HITSP/CAP124 – Establish Secure Web Access	O
	HITSP/CAP126 – Communicate Lab Results Message	C[102]
	HITSP/CAP127 – Communicate Lab Results Document	C[102]
	HITSP/CAP128 – Communicate Imaging Information	O
	HITSP/CAP135 – Retrieve and Populate Form	C[103]
	HITSP/CAP138 – Retrieve Pseudonym	C[104]
	HITSP/CAP140 – Communicate Benefits and Eligibility	R
	HITSP/CAP141 – Communicate Referral Authorization	R
	HITSP/CAP143 – Manage Consumer Preference and Consents	R
	HITSP/CAP 99 – Communicate Laboratory Orders	O
	HITSP/CAPXXX – Communicate Vital Records	R
Laboratory Information Systems	HITSP/CAP126 – Communicate Lab Results Message	C[102]
	HITSP/CAP127 – Communicate Lab Results Document	C[102]
Personal Health Record (PHR) Systems	HITSP/CAP119 – Communicate Structured Document	R
	HITSP/CAP120 – Communicate Unstructured Document	O
	HITSP/CAP122 – Retrieve Medical Knowledge	O
	HITSP/CAP124 – Establish Secure Web Access	O

² Optionality = “R” for Required, “R2” for Required if Known or “O” for Optional, or “C” for Conditional



System	Capability	Optionality ²
	HITSP/CAP127 – Communicate Lab Results Document	O
	HITSP/CAP128 – Communicate Imaging Information	O
	HITSP/CAP135 – Retrieve and Populate Form	O
	HITSP/CAP138 – Retrieve Pseudonym	C[104]
	HITSP/CAP140 – Communicate Benefits and Eligibility	O
	HITSP/CAP141 – Communicate Referral Authorization	O
	HITSP/CAP143 – Manage Consumer Preference and Consents	R
	HITSP/CAPXXX – Communicate Vital Records	O
Health Information Exchange (HIE)	HITSP/CAP119 – Communicate Structured Document	R
	HITSP/CAP120 – Communicate Unstructured Document	O
	HITSP/CAP122 – Retrieve Medical Knowledge	O
	HITSP/CAP124 – Establish Secure Web Access	O
	HITSP/CAP126 – Communicate Lab Results Message	O
	HITSP/CAP127 – Communicate Lab Results Document	O
	HITSP/CAP128 – Communicate Imaging Information	O
	HITSP/CAP135 – Retrieve and Populate Form	O
	HITSP/CAP138 – Retrieve Pseudonym	C[104]
	HITSP/CAP143 – Manage Consumer Preference and Consents	R
	HITSP/CAPXXX – Communicate Vital Records	O
Public Health Information System	HITSP/CAP119 – Communicate Structured Document	O
	HITSP/CAP120 – Communicate Unstructured Document	O
	HITSP/CAP122 – Retrieve Medical Knowledge	O
	HITSP/CAP135 – Retrieve and Populate Form	O
	HITSP/CAPXXX – Communicate Vital Records	R
Health Plan System	HITSP/CAP140 – Communicate Benefits and Eligibility	R
	HITSP/CAP141 – Communicate Referral Authorization	R
Diagnostic Imaging Information Systems	HITSP/CAP128 – Communicate Imaging Information	R

Table 3-3 below lists the conditions applicable to the orchestration (see above table) of the capabilities engaged in this RDSS.

Table 3-3 Conditions

Condition Code	Condition Description
C[101]	Knowledge Consumer MAY be used to retrieve guideline and educational material. Email or Web-based retrieval alternatives may be use. At least one of these methods must be supported. Jurisdiction implementations MAY require the use of one or more methods
C[102]	SHALL support at least one of these capabilities
C[103]	Implementation environment MAY require support the pre-population of Vital Records
C[104]	SHALL be required where pseudonymization is required by the jurisdiction or information sharing agreements
C[105]	Implementation environment MAY require support for HITSP/CAP121 - Communicate Clinical Referral Request



3.2.1 ADDITIONAL CONSTRAINTS ON REQUIRED CAPABILITIES

This section describes the constraints that further limit the capabilities that are used.

Table 3-4 Additional Constraints on Capabilities

Capability	Constraint	Constraint Type	Purpose
HITSP/CAP119 – Communicate Structured Document	Require support for Publish/Subscribe	General	Enable clinicians and public health to subscribe to newborn related data
	Require Pediatric Option for Patient Identification (HITSP/TP22, HITSP/TP23, HITSP/T24)	General	Enable support for newborn identity resolution
HITSP/CAP121 – Communicate Clinical Referral Request			
HITSP/CAP122 – Retrieve Medical Knowledge	Support Maternal and Child Health Guidelines	General	Enable support for communication of clinical and administrative guidelines for maternal and child care
HITSP/CAP124 – Establish Secure Web Access			
HITSP/CAP126 – Communicate Lab Results Message	Support lab results value sets	General	Enable appropriate common list of values for Maternal Health results
HITSP/CAP127 – Communicate Lab Results Document	Support lab results value sets	General	Enable common list of values for Maternal Health results
HITSP/CAP128 – Communicate Imaging Information			
HITSP/CAP135 – Retrieve and Populate Form	Support for Vital Records Pre-Populate	General	Enable pre-population of Vital Records data from the clinical record
HITSP/CAP138 – Retrieve Pseudonym			
HITSP/CAP140 – Communicate Benefits and Eligibility	Support for EPSDT, SCHIP, and WIC	General	Enable application for Maternal and Child health support services
HITSP/CAP141 – Communicate Referral Authorization	Support for EPSDT, SCHIP, and WIC	General	Enable application for Maternal and Child health support services
HITSP/CAP143 – Manage Consumer Preference and Consents	Support for Mother/Baby Consent	General	Enable support for consent to share records to be provided by subject of care agent (parent/guardian)
HITSP/CAP 99 – Communicate Laboratory Orders	Support lab order value sets	General	Enable appropriate semantic expression for Maternal Health orders
HITSP/CAPXXX – Communicate Vital Records			

3.2.2 EXISTING HITSP CAPABILITIES

The table below provides a description of existing HITSP Capabilities that will be used for this Use Case solution. It also specifies whether the Capability requires modification to support the Maternal and Child Health.



Table 3-5 Capabilities and Required Modifications

HITSP Capability	Modification Required	Description
HITSP/CAP119 - Communicate Structured Document	<p>Additional support needed for:</p> <ul style="list-style-type: none"> • Birthing Summary • Antepartum Record • Newborn Record <p>Infrastructure support required for:</p> <ul style="list-style-type: none"> • Publish/Subscribe 	<p>This Capability addresses interoperability requirements that support the communication of structured health data related to a patient in a context set by the source of the document who is attesting to its content. Several document content subsets, structured according to the HL7 CDA standard, are supported by this Capability. The following are examples of the type of structured data that may be used:</p> <ul style="list-style-type: none"> • Continuity of Care Document (CCD) • Emergency Department Encounter Summary • Discharge Summary (In-patient encounter and/or episodes of care) • Referral Summary Ambulatory (encounter and/or episodes of care) • Consultation Notes • History and Physical • Personal Health Device Monitoring Document • Healthcare Associated Infection (HAI) Report Document <p>Document creators shall support a number of the HITSP specified coded terminologies as defined by specific content subsets specified in this Capability</p>
HITSP/CAP120 - Communicate Unstructured Document	<p>May need to add support for:</p> <ul style="list-style-type: none"> • Guidelines for Maternal Care during Pregnancy 	<p>This Capability addresses interoperability requirements that support the communication of a set of unstructured health data related to a patient in a context set by the source of the document who is attesting to its content.</p> <p>Two types of specific unstructured content are supported, both with a structured CDA header:</p> <ul style="list-style-type: none"> • PDF-A supporting long-term archival • UTF-8 text
HITSP/CAP121 - Communicate Clinical Referral Request		<p>Support provider-to-provider (clinical) referral request interaction. It allows the bundling of the referral request document with other relevant clinical documents of interest by referencing such documents as shared by other capabilities such as:</p> <ul style="list-style-type: none"> • HITSP/CAP119-Communicate Structured Document • HITSP/CAP120-Communicate Unstructured Document • HITSP/CAP133-Communicate Immunization Summary
HITSP/CAP122 - Retrieve Medical Knowledge	Consider specific support for infobutton request for Guidelines for Maternal and Child Health	<p>This Capability addresses the requirements to retrieve medical knowledge that is not patient-specific based on context parameters. The actual content delivered is not constrained by this Capability; this Capability focuses on providing the mechanism to ask for (query) and receive the medical knowledge</p>
HITSP/CAP124 - Establish Secure Web Access		<p>This Capability is focused on providing a secured method to access information available from document repositories (e.g., Laboratory Report) in order to view them locally on a system. The chosen method for viewing the document content is through a web browser</p>
HITSP/CAP125 - Retrieve Genomic Decision Support		<p>This Capability addresses interoperability requirements that support the communication of genetic and family history information and an assessment of genetic risk of disease for a patient</p>
HITSP/CAP126 - Communicate Lab Results Message	Support for Maternal and Child Health Value Sets	<p>This Capability addresses interoperability requirements that support the sending of a set of laboratory test results. Ordering Providers of Care receive results as a laboratory results message. The communication of the order is out of scope for this Capability. The content of these test results may be either or both: General Laboratory Test Results; Microbiology Test Results</p> <p>This Capability may use content anonymization</p>



HITSP Capability	Modification Required	Description
HITSP/CAP127 – Communicate Lab Results Document	Support for Maternal and Child Health Value Sets	<p>This Capability addresses interoperability requirements that support the communication of a set of structured laboratory results related to a patient in a context set by the source of the document who is attesting to its content. Non-ordering Providers of Care access historical laboratory results as documents and "copy-to" Providers of Care may receive document availability notifications to retrieve such lab report documents.</p> <p>Lab Report content creators shall support HITSP specified coded terminologies as defined by specific content subsets specified in this Capability for: General Laboratory Test Results; Microbiology Test Results</p> <p>This Capability may use content anonymization</p>
HITSP/CAP128 – Communicate Imaging Information		<p>This Capability addresses interoperability requirements that support the communication of a set of imaging results (i.e., reports, image series from imaging studies) related to a patient in a context set. This is done by an Imaging System acting as the information source attesting to its content.</p> <p>This Capability may use content anonymization</p>
HITSP/CAP135 – Retrieve and Populate Form	May need additional support for querying for Vital Records attributes	This Capability supports queries for clinical data (e.g., common observations, vital signs, problems, medications, allergies, immunizations, diagnostic results, professional services, procedures and visit history)
HITSP/CAP138 – Retrieve Pseudonym	<p>Support to pseudonymize Mothers or Child's Identity</p> <p>Anonymization requirement: Age can be identifying (e.g. 43 year old mother), but this is relevant to the risks for the child - need-to-know - may need to unmask some of the 'anonymized data' not the whole mother identity; age-range may pertain; age of egg and age of uterus may be different (e.g. donors, surrogates)</p>	<p>This Capability addresses interoperability requirements to support a particular type of anonymization that both removes the association with a data subject, and adds an association between a particular set of characteristics relating to the data subject and one or more pseudonyms. This enables a process of supplying an alternative identifier, which permits a patient to be referred to by a key that suppresses his/her actual identification information. The purpose of this Capability is to offer a pseudonymization framework for situations that require the use of specific data without disclosing the specific identity of patients or providers. Pseudo-identifiers are intended to allow accessibility to clinical information, while safeguarding any information that may compromise the privacy of the individual patient or provider. However, unlike anonymization, the alternative identifier key can be used to re-identify the individuals whose data was used</p>
HITSP/CAP140 – Communicate Benefits and Eligibility		<p>This Capability addresses interoperability requirements that support electronic inquiry and response from a patient's eligibility for health insurance benefits. The information exchanged includes the following:</p> <ul style="list-style-type: none"> • A patient's identification (i.e., name, date of birth, and the health plan's member identification number) • Communication of a member's status of coverage and benefit information and financial liability • Access to information about types of services, benefits and coverage for various medical care and medications <p>It provides clinicians with information about each member's health insurance coverage and benefits</p>
HITSP/CAP141 – Communicate Referral Authorization		<p>This Capability addresses interoperability requirements that support electronic inquiry and response to authorizing a patient (health plan member) to be referred for service by another provider or to receive a type of service or medication under the patient's health insurance benefits.</p> <p>The Capability supports the transmittal of a patient's name and insurance identification number with the request for the type of service. It also includes the following optional requirements:</p> <ul style="list-style-type: none"> • Identification of the type of service or medication requested for



HITSP Capability	Modification Required	Description
		benefit coverage (does not guarantee payment by insurance provider) <ul style="list-style-type: none"> Communication of a referral notification number or authorization number from the Payer System to the Provider System It provides clinicians and pharmacists with information about each patient's medical insurance coverage and benefits. It may include information on referral or authorization permission
HITSP/CAP143 – Manage Consumer Preference and Consents		This Capability addresses management of consumer preferences and consents as an acknowledgement of a privacy policy. This Capability is used to capture a patient or consumer agreement to one or more privacy policies; where examples of a privacy policy may represent a consent, dissent, authorization for data use, authorization for organizational access, or authorization for a specific clinical trial. This Capability also supports the recording of changes to prior privacy policies such as when a patient changes their level of participation or requests that data no-longer be made available because they have left the region
HITSP/CAP 99 – Communicate Laboratory Orders		This Capability satisfies the information exchange requirements for the sending and receiving of a set of laboratory order, control and status messages. Laboratory orders may be from an inpatient or outpatient (E.g.: Clinic, ER, office, etc) environment

3.2.2.1 EXTENSIONS TO HITSP CONSTRUCTS

For the above listed HITSP Capabilities, the table below identifies any, Extensions that might be needed to existing HITSP Constructs to satisfy the Maternal and Child Health.

Table 3-6 Constructs and Required Extensions

HITSP Construct	Extension Required	Description
HITSP/C80 – Clinical Document and Message Terminology	Support for Newborn Screening Related vocabularies	Additional attributes supporting newborn screening are anticipated. HITSP/C80 will need updating to support related vocabularies for these additional attributes
HITSP/C154 – Data Dictionary	Support for Maternal and Child Health Related vocabularies	Additional attributes supporting newborn screening are anticipated. HITSP/C154 will need updating to support related vocabularies for these additional attributes
HITSP/C83 – CDA Content Modules	Support for Newborn Screening Related sections	Additional CDA sections supporting newborn related data are anticipated. HITSP/C83 will need updating to support related CDA sections for these
HITSP/T81 -- Retrieval of Medical Knowledge	Support for Guidelines	Consideration for specific content related to requests for Maternal and Child Health clinical and administrative Guidelines
HITSP/T24 – Pseudonymize	Modify to accommodate Newborn and Mother Identity pseudonymization	Pseudonymization of mother's id in situations of adoption may require pseudonymization of the parent identifiers
HITSP/T23 – Patient Demographics Query	Require Pediatric Option for Patient Identification	Support the identity resolution of newborn/pediatric patients
HITSP/TP22 – Patient ID Cross-Referencing	Require Pediatric Option for Patient Identification	Support the identity resolution of newborn/pediatric patients
HITSP/C32 – Summary Documents Using HL7 Continuity of Care Document (CCD)	Include Support for: <ul style="list-style-type: none"> Vision screening Results Developmental screening Mental health screening 	Include associated data where known supporting early childhood screening
HITSP/C48 – Encounter Document Using IHE Medical Summary (XDS-MS)	Include Support for: <ul style="list-style-type: none"> Vision screening Results Developmental screening Mental health screening 	Include associated data where known supporting early childhood screening
HITSP/T68 – Patient Health Plan Authorization Request and	Support for EPSDT, SCHIP, WIC	



HITSP Construct	Extension Required	Description
Response		

3.2.3 NEW HITSP CAPABILITIES

The table below provides a description of the new HITSP Capabilities that will be created for this Use Case.

Table 3-7 New Capabilities

New Capability	Capability Description	IER
HITSP/CAPXXX – Communicate Vital Records	This Capability addresses interoperability requirements that enable electronic communication of vital records data between clinicians, and public health and between public health systems	IER17, IER18, IER19, IER20

3.2.3.1 NEW HITSP CONSTRUCTS

The table below provides a description of the new HITSP Constructs needed for this Use Case.

Table 3-8 New Constructs

New Construct	Construct Description	IER
Antepartum Summary	This Component specifies the format and content for communication of antepartum data	IER3, IER4, IER5, IER11
Birthing Summaries	This Component specifies the format and content for communication of labor and delivery data	IER30, IER31, IER32, IER33
Newborn Record	This Component specifies the format and content for communication the newborn clinical record	IER22, IER23, IER24, IER25
Hospital's Maternal Discharge Summary	This Component specifies the format and content for communication the hospital's maternal discharge clinical record	IER26, IER27, IER28, IER29
Vital Records – Birth Record	Documents the birth of the infant for registration of the birth in vital records	IER17
Vital Records – Still-Birth Record	Documents the fetal death for registration of the fetal death in vital records	IER19
Vital Records – Death Record	Documents patient's death for registration of the death in vital records	IER18
Vital Records Summary	Documents vital record format and content for communication between public health entities	IER20
NBS, Vital Records Pre-populate from HITSP/C32, HITSP/C48, Labor & Delivery, or Newborn Record	Pre-populates the vital records registration from the clinical record	IER21
Eligibility for Services (e.g. EPSDT)	This component specifies the format and content for communication of data required for application for services	IER1



4.0 STANDARDS GAPS AND OVERLAPS

4.1 GAPS WHERE THERE ARE NO STANDARDS

The table below identifies the Scenario requirements and known associated gaps, along with the recommended resolutions.

Table 4-1 Use Case Requirements and Associated Standards Gaps

Requirement Number	Summary Description	Identified Gaps	Recommended Resolution
		Vital Registration	Follow activities in HL7 under way to develop these specifications: HL7 Vital Records Domain Analysis Model (VR DAM)
		State Recognized terminology for Social services data capture	Omaha system has standardized terminology for capture of social service data. There is not a specific State determined set of data elements, and there is no standard. Each state has invented its own
IER22	Request & Response Newborn Record EHR to EHR	GAP: Not currently profiled as a standard CDA document	Anticipate a construct to be delivered in 2010 from IHE PCC – Newborn Discharge Summary
IER23	Provide/Register PEC-NBS9 – Newborn Record from EHR to HIE	GAP: Not currently profiled as a standard CDA document	Anticipate a construct to be delivered in 2010 from IHE PCC – Newborn Discharge Summary
IER24	Query/Respond PEC-NBS9 – Newborn Record from EHR to HIE	GAP: Not currently profiled as a standard CDA document	Anticipate a construct to be delivered in 2010 from IHE PCC – Newborn Discharge Summary
IER25	Subscribe PEC-NBS9 – Newborn Record from EHR to HIE	GAP: Not currently profiled as a standard CDA document	Anticipate a construct to be delivered in 2010 from IHE PCC – Newborn Discharge Summary
IER30	Send PEC-NBS4 – Birthing Summary from EHR to EHR	GAP: Not currently profiled as a standard CDA document	Anticipate a construct to be delivered in 2010 from IHE PCC – Newborn Discharge Summary
IER31	Provide/Register PEC-NBS4 – Birthing Summary from EHR to HIE	GAP: Not currently profiled as a standard CDA document	Anticipate a construct to be delivered in 2010 from IHE PCC – Newborn Discharge Summary
IER32	Query/Respond PEC-NBS4 – Birthing Summary from EHR to HIE	GAP: Not currently profiled as a standard CDA document	Anticipate a construct to be delivered in 2010 from IHE PCC – Newborn Discharge Summary
IER33	Subscribe PEC-NBS4 – Birthing Summary from EHR to HIE	GAP: Not currently profiled as a standard CDA document	Anticipate a construct to be delivered in 2010 from IHE PCC – Newborn Discharge Summary
IER17	Send PEC-MCH6 Vital Records-Birth Record from EHR to Public Health (Vital Records)	No NCHS specific format for CDC/NCHS – Statistical analysis – NCHS uses a format, but national standard pending GAP	work with HL7 EHR developing the functional requirements; PHand Emergency response group – domain model for mid 2009 to use in developing a standard for capturing vital record information from the EHR Interjurisdiction exchange – IJE – for state-to-state communications

4.2 STANDARD OVERLAPS

The table below presents the identified overlaps and the respective resolution plans.

Table 4-2 Use Case Requirements and Associated Standard Overlaps

Requirement Number	Summary Description	Standard Overlap	Recommended Resolution
Not Applicable			



5.0 APPENDIX

The following sections include relevant materials referenced throughout this document.

5.1 USE CASE TO INFORMATION EXCHANGE AND DATA REQUIREMENTS

This section contains an extraction of systems, required interactions and conditions/scenarios from the Use Case into a matrix/table.

Note the following:

- Actions and numbering are not intended to be sequential and can be iterative and should not be interpreted as a sequence diagram. Actions may not occur sequentially

Table 5-1 Mapping of Use Case Actions to Information Exchange Requirements

Event	Action	IER	Initiating System	Responding System	Information Exchange	Comments
7.1.1 Determination of Pregnancy	7.1.1.1 Clinician determines pregnancy.	IER1 Send	EHR	Health Plan System	PEC-MCH9 Service Eligibility (may require supportive clinical information) (other aspects – shelter, safety)	
						See Consultations and Transfers of care for requirements
7.1.2 Pregnancy Management and Testing	7.1.2.1 Mother's clinician manages the pregnancy	IER3 Send	EHR	EHR PHR	PEC-NBS7 – Antepartum Summary	
		IER4 Provide/Register	EHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER5 Request & Response	EHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER6 Send	Lab EHR	EHR Payer Public Health	EC36 Lab Result (used when constraint is 'message')	
		IER7 Provide/Register	Lab EHR	HIE	EC37 Lab Result (used when constraint is 'document')	
		IER8 Request & Response	EHR Public Health	HIE	EC37 Lab Result (used when constraint is 'document')	



Event	Action	IER	Initiating System	Responding System	Information Exchange	Comments
		IER10 Send	EHR	Lab	PEC-MCH5 Lab Orders	
		IER11 Subscribe	EHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER12 Subscribe	EHR Public Health	HIE	lab results	
		IER13 Request & Response	EHR	Public Health	PEC-MCH4 Guidelines	
		IER34 Send	EHR	Health Plan	EC68A Health Plan Request	
		IER35 Send	Health Plan	EHR	EC68B Health Plan Response	
		IER46 Send	Diagnostic Imaging Information Systems	EHR	EC49 Medical Imaging Results	
		IER47 Provide/Register	Diagnostic Imaging Information Systems	HIE	EC49 Medical Imaging Results	
		IER48 Request & Response	EHR	HIE	EC49 Medical Imaging Results	
		IER49 Subscribe	EHR	HIE	EC49 Medical Imaging Results	
	7.1.2.2 Assessment of risks	IER3 Send	EHR	EHR	PEC-NBS7 – Antepartum Summary	
		IER4 Provide/Register	EHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER5 Request & Response	EHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER6 Send	Lab EHR	EHR Payer Public Health	EC36 Lab Result (used when constraint is 'message')	



Event	Action	IER	Initiating System	Responding System	Information Exchange	Comments
		IER7 Provide/Register	Lab EHR	HIE	EC37 Lab Result (used when constraint is 'document')	
		IER8 Request & Response	EHR Public Health	HIE	EC37 Lab Result (used when constraint is 'document')	
		IER12 Request & Response	EHR	Public Health	PEC-MCH4 Guidelines	
	7.1.2.3 Documentation of antepartum information	IER3 Send	EHR	EHR PHR	PEC-NBS7 – Antepartum Summary	
		IER4 Provide/register	EHR PHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER5 Request & Response	EHR PHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER11 Subscribe	EHR	HIE	PEC-NBS7 – Antepartum Summary	
	7.1.2.4 Antepartum information shared with birthing facility	IER3 Send	EHR	EHR PHR	PEC-NBS7 – Antepartum Summary	
		IER4 Provide/Register	EHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER4 Provide/Register	EHR PHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER5 Request & Response	EHR PHR	HIE	PEC-NBS7 – Antepartum Summary	
		IER11 Subscribe	EHR	HIE	PEC-NBS7 – Antepartum Summary	



Event	Action	IER	Initiating System	Responding System	Information Exchange	Comments
7.1.3 Consideration of Services	7.1.3.1 Mother's clinician makes recommendations for social or other services, if appropriate	IER1 Send	EHR	Health Plan System	PEC-MCH9 Service Eligibility (may require supportive clinical information) (other aspects – shelter, safety)	
7.1.4 Birth Event	7.1.4.1 Birth information is communicated to Vital Records/Vital Statistics	IER17 Send	EHR	Public Health (Vital Records)	PEC-MCH6 Vital Records – Birth Record	
		IER18 Send	EHR	Public Health (Vital Records)	PEC-MCH7 Vital Records – Death Record	
		IER19 Send	EHR	Public Health (Vital Records)	PEC-MCH8 Vital Records – Fetal Death Report	There is a scope consideration for what can be included
		IER20 Send	Public Health (Vital Records Jurisdiction)	Public Health (National)	PEC-MCH1 Vital Statistics	May need document sharing requirements
		IER21 Request & Response	EHR	Public Health (Vital Records)	PEC-MCH3 Vital Records Pre-Populate	
7.1.5 Document Newborn Information	7.1.5.1 Mother's clinician documents birth and newborn information	IER22 Send	EHR	EHR	PEC-NBS9 – Newborn Record	
		IER23 Provide/Register	EHR	HIE	PEC-NBS9 – Newborn Record	
		IER24 Query/Respond	EHR	HIE	PEC-NBS9 – Newborn Record	
		IER25 Subscribe	EHR	HIE	PEC-NBS9 – Newborn Record	
		IER26 Send	EHR	EHR	PEC-MCH2 Hospital's Maternal Discharge Summary	



Event	Action	IER	Initiating System	Responding System	Information Exchange	Comments
		IER27 Provide/Register	EHR	HIE	PEC-MCH2 Hospital's Maternal Discharge Summary	
		IER28 Query/Respond	EHR	HIE	PEC-MCH2 Hospital's Maternal Discharge Summary	
		IER29 Subscribe	EHR	HIE	PEC-MCH2 Hospital's Maternal Discharge Summary	
		IER30 Send	EHR	EHR	PEC-NBS4 – Birthing Summary	
		IER31 Provide/Register	EHR	HIE	PEC-NBS4 – Birthing Summary	
		IER32 Query/Respond	EHR	HIE	PEC-NBS4 – Birthing Summary	
		IER33 Subscribe	EHR	HIE	PEC-NBS4 – Birthing Summary	
7.2.1 Receive and Manage Newborn	7.2.1.1 Child's clinician begins to handle medical management of infant	IER34 Send	EHR	Health Plan	EC68A Health Plan Request	
		IER35 Send	Health Plan	EHR	EC68B Health Plan Response	
		IER22 Send	EHR	EHR	PEC-NBS9 – Newborn Record	Pseudonymization by policy Mom/baby linkage
		IER23 Publish/Register	EHR	HIE	PEC-NBS9 – Newborn Record	Pseudonymization by policy Mom/baby linkage
		IER24 Request & Response	EHR	HIE	PEC-NBS9 – Newborn Record	Pseudonymization by policy Mom/baby linkage
		IER25 Subscribe	EHR	HIE	PEC-NBS9 – Newborn Record	Pseudonymization by policy Mom/baby linkage



Event	Action	IER	Initiating System	Responding System	Information Exchange	Comments
		IER26 Send	EHR	EHR	PEC-MCH2 Hospital's Maternal Discharge Summary	
		IER27 Publish/Register	EHR	HIE	PEC-MCH2 Hospital's Maternal Discharge Summary	Pseudonymization by policy Mom/baby linkage
		IER28 Request & Response	EHR	HIE	PEC-MCH2 Hospital's Maternal Discharge Summary	Pseudonymization by policy Mom/baby linkage
		IER29 Subscribe	EHR	HIE	PEC-MCH2 Hospital's Maternal Discharge Summary	Pseudonymization by policy Mom/baby linkage
		IER30 Send	EHR	EHR	PEC-NBS4 - Birthing Summary	Pseudonymization by policy Mom/baby linkage
		IER31 Publish/Register	EHR	HIE	PEC-NBS4 - Birthing Summary	Pseudonymization by policy Mom/baby linkage
		IER32 Request & Response	EHR	HIE	PEC-NBS4 - Birthing Summary	Pseudonymization by policy Mom/baby linkage
		IER33 Subscribe	EHR	HIE	PEC-NBS4 - Birthing Summary	Pseudonymization by policy Mom/baby linkage
		IER36 Provide/Register	EHR	HIE	EC30 Consent Document Component	Mom/baby Consent for information sharing NOTE overlap to Newborn Screening
		IER37 Request & Response	EHR	HIE	EC30 Consent Document Component	Mom/baby Consent for information sharing NOTE overlap to Newborn Screening
		IER13 Request & Response	EHR	Public Health	PEC-MCH4 Guidelines	



Event	Action	IER	Initiating System	Responding System	Information Exchange	Comments
7.2.2 Consideration of Services	7.2.2.1 Child's clinician makes additional recommendations for social or other services, if appropriate	IER1 Send	EHR	Health Plan System	PEC-MCH9 Service Eligibility (may require supportive clinical information) (other aspects – shelter, safety)	
7.2.3 Complete & Communicate Newborn Screening.	7.2.3.1 The child's clinician manages newborn screening and the results are communicated	All requirements should refer to the HITSP/IS92-NEWBORN SCREENING			All requirements should refer to the HITSP/IS92-NEWBORN SCREENING	
7.2.4 Complete & Communicate Immunizations	7.2.4.1 The child's clinician manages the immunization process	All requirements should refer to HITSP/IS10-Immunizations and Response Management			All requirements should refer to HITSP/IS10-Immunizations and Response Management	
7.2.5 Complete & Communicate Well Child Visits	7.2.5.1 Child's clinician manages well visits through childhood	IER1 Send	EHR	Health Plan System	PEC-MCH9 Service Eligibility (may require supportive clinical information) (other aspects – shelter, safety)	
		IER38 Send	EHR	EHR	EC32 Summary of Care	
		IER39 Publish/Register	EHR	HIE	EC32 Summary of Care	
		IER40 Request & Response	EHR	HIE	EC32 Summary of Care	
		IER41 Subscribe	EHR	HIE	EC32 Summary of Care	
		IER42 Send	EHR	EHR	EC48 Encounter Summary (used when constraint is 'document')	
		IER43 Publish/Register	EHR	HIE	EC48 Encounter Summary (used when constraint is 'document')	



Event	Action	IER	Initiating System	Responding System	Information Exchange	Comments
		IER44 Request & Response	EHR	HIE	EC48 Encounter Summary (used when constraint is 'document')	
		IER45 Subscribe	EHR	HIE	EC48 Encounter Summary (used when constraint is 'document')	
7.2.6 Complete & Communicate Lead Screening	7.2.6.1 Child's clinician carries out blood lead screening during early childhood	Case reporting requirements should refer to HITSP/IS11- Public Health Case Reporting			Case reporting requirements should refer to event reporting requirements	
		IER6 Send	Lab EHR	EHR Payer Public Health	EC36 Lab Result (used when constraint is 'message')	
		IER7 Provide/Register	Lab EHR	HIE	EC37 Lab Result (used when constraint is 'document')	
		IER8 Request & Response	EHR Public Health	HIE	EC37 Lab Result (used when constraint is 'document')	
		IER12 Subscribe	EHR Public Health	HIE	lab results	
7.3.1 Receive Birth Communications	7.3.1.1 Vital Records receives information about the birth	IER17 Send	EHR	Public Health (Vital Records)	PEC-MCH6 vital records- birth record	
		IER18 Send	EHR	Public Health (Vital Records)	PEC-MCH7 vital records- death record	
		IER19 Send	EHR	Public Health (Vital Records)	PEC-MCH8 vital records- fetal death report	
		IER20 Send	Public Health (Vital Records Jurisdiction)	Public Health (National)	PEC-MCH1 vital statistics	May need support for document sharing for vital records
		IER21 Request & Response	EHR	Public Health (Vital Records)	PEC-MCH3 Vital records pre-populate	



Event	Action	IER	Initiating System	Responding System	Information Exchange	Comments
7.4.1 Receive Notification of Pregnancy	7.4.1.1 Pregnancy information is sent to public health	IER1 Send	EHR	Health Plan System	PEC-MCH9 Service Eligibility (may require supportive clinical information) (other aspects – shelter, safety)	
7.5.1 Receive Information Supporting Enrollment in Services	7.5.1.1 Services receive information regarding enrollment into services	IER1 Send	EHR	Health Plan System	PEC-MCH9 Service Eligibility (may require supportive clinical information) (other aspects – shelter, safety)	
7.5.2 Receive Child Wellness Information	7.5.2.1 Services receive wellness information via EPSDT	IER1 Send	EHR	Health Plan System	PEC-MCH9 Service Eligibility (may require supportive clinical information) (other aspects – shelter, safety)	

