

Core Data Elements for IIS Functional Standards



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Introduction

The CDC Core Data Elements (CDE) for Functional Standards is designed to serve as a resource for Immunization Information System (IIS) managers and staff, as well as others in the IIS community. While the primary audience of this document are IIS staff, this document may also provide valuable insights to stakeholders, such as Electronic Health Record (EHR) vendors.

Building upon [the IIS Functional Guide, Volume 2: CDC Endorsed Data Elements](#), this resource provides comprehensive information on all CDC CDEs. It expands on the context and detailed descriptions to help the IIS community understand the role and significance of these elements in IIS operations and interoperability. IIS can use this information to ensure all CDEs are integrated into their systems, while IIS's data exchange partners can understand the baseline data elements available in IIS. This document does not provide detailed guidance on managing CDEs; for specific implementation guidance, refer to resources such as American Immunization Registry Association (AIRA) guidance documents or the Health Level Seven (HL7) v2.5.1 *Implementation Guide for Immunization Messaging*.

CDEs are essential to the functionality of IIS as they ensure the completeness of patient and vaccination records for each vaccination event. Each CDE must be supported by several key functions. The IIS must manage each CDE by facilitating input, processing, validation, updates, and deletion to maintain data accuracy and consistency throughout its lifecycle. Additionally, CDE data must be securely stored to guarantee accessibility and preservation for future use. The IIS may also need to generate or transform CDEs, such as creating unique identifiers or combining data. Finally, the system must be capable of delivering CDEs in formats that are ready for use and submitting them seamlessly to other systems to promote interoperability and collaboration.

While the CDEs are fundamental to the functionality of IIS, it is important to recognize that they are not the only data elements that an IIS may want to include. The CDEs serve as a baseline of essential data elements that should be incorporated into an IIS. They represent the basic structure of data to be contained within the system but are not prescriptive regarding naming conventions, the frequency of data element repetition, how the data is used, or other specific attributes.

To align the CDEs with national standards, they are organized in a hierarchical structure that groups data elements into classes, such as "Medications" and "Encounter Information," to highlight their interconnections. The CDEs represent the final level of this hierarchy and are presented in bold, uppercase font for emphasis. Each CDE includes key details, such as its name, definition, data type, and examples, ensuring clarity and consistency.

- **Description:** Definition of each CDE
- **Rationale for Inclusion:** This section explains the basis for each data element's classification as a CDE, derived from the IIS Functional Standards. It outlines the specific reasons that support the necessity and relevance of each data element within the context of IIS.

- **Functional Standards:** The functional standard(s) associated with each CDE
- **Repeat:** Specifies whether the data element itself can repeat. If a data element is marked as "Yes," it can appear multiple times independently within the record or message. For instance, the "Patient Name" data element may repeat to accommodate various name types, while a "Date of Birth" data element would not repeat as it is typically unique per patient.
- **Data Source:** An indication of where the data typically originates (e.g., Vital Records, EHRs or the IIS).
- **Standards Mapping:** Each CDE is mapped to corresponding data elements in the HL7 v2.5.1 *Implementation Guide for Immunization Messaging* and the United States Core Data for Interoperability (USCDI), demonstrating alignment with immunization and national interoperability standards.

For each CDE, a table shows the standard, data element name used by the standard, and, if applicable, usage specifications for the associated field, component, or resource in the standard. This mapping supports compliance requirements such as the Assistant Secretary for Technology Policy (ASTP)/Office of the National Coordinator (ONC) for Health Information Technology (IT) Certification Program, which requires EHRs to demonstrate USCDI conformance.

This resource is designed to guide the IIS community in confidently designing, implementing, and evaluating systems. It introduces a core data model that supports key operations, such as creating user interfaces for managing patient, vaccination, and vaccine lot information, and establishing HL7 and interoperability standards for data exchange. IIS staff can use this guide to identify gaps in current implementations, ensure conformance to functional standards, and align their work with broader data interoperability initiatives.

Allergies and Intolerances

Contraindications/Precautions

Description: A reason to consider not giving a patient a vaccine proposed for administration. See "Contraindications/Precautions Date" under Problems for the observation date.

Rationale for inclusion:

- Enhances immunization forecasting accuracy by incorporating contraindications and precautions into patient records, allowing the IIS to generate tailored vaccination schedules for pediatric, adolescent, and adult populations.
- Supports effective investigation and reporting of vaccine adverse events by providing critical information regarding contraindications and precautions that can help public health officials assess potential risks associated with vaccinations and improve safety monitoring efforts.

- Allows the system to provide clinically relevant alerts and recommendations when querying patient records, rather than just returning raw vaccination history.
- Improves reminder and recall activities by utilizing contraindication and precaution data to identify patients who may need alternative vaccination strategies or follow-up consultations, ensuring that outreach efforts are both safe and effective.

Functional Standard(s): 6.0, 10.0, 11.0, 13.0

Repeat: Yes

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	OBX-5 where OBX-3='30945-0'	R
USCDI V5		

Care Team Members

Administering Clinician

Description: The clinician delivering a dose of a vaccine to the patient. Also known as “Administering Provider.” Note: The administering clinician suffix must be captured if the IIS serves as the primary record for the vaccination event (e.g., during a mass vaccination clinic).

Rationale for inclusion: Enables verification that vaccines were given by authorized, credentialed providers at legitimate healthcare facilities.

Functional Standard(s): 4.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	RXA-10	RE
USCDI V5	Care Team Member Name	

Vaccine Ordering Clinician

Description: The identifier of the provider (person) ordering the immunization. Note: this "provider name" could include an actual name, or an ID and/or assigning authority. May also be referenced as the prescriber ordering provider Identifier.

Rationale for inclusion: Serves as a quality check to ensure that recorded vaccinations are from credible sources and can help identify data entry errors or potentially fraudulent vaccination records when the ordering provider doesn't match expected patterns for a given patient or facility.

Functional Standard(s): 4.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	ORC-12	C(RE/O)
USCDI V5	Care Team Member Name	

Facility Information

Administered at Location

Description: The facility name/identifier of the facility that administered the immunization. This information may not be available for a historical dose.

Rationale for inclusion: Tracks the location where vaccines are administered, ensuring accurate data for reporting and compliance.

Functional Standard(s): 4.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	RXA-11.4	C(RE/O)
USCDI V5	Facility Name/Facility Identifier	

Responsible Organization

Description: The identifier of the organization that originated and is accountable for the content of the record. It may be referred to as the IIS-AO ID, IIS-authorized organization, or the sending responsible organization.

Rationale for inclusion: Enables the IIS to assess data quality based on the source's reliability and apply appropriate validation rules for different submitter types. It also supports error resolution by identifying who to contact when data issues arise and helps prevent duplicates by tracking which organizations have reported data for the same patient.

Functional Standard(s): 4.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	MSH-22	RE
USCDI V5	Facility Identifier/Author Organization	

Sending Organization

Description: The identifier of the organization, or facility, that connects to the IIS and submits the record. The sending organization refers to the entity that owns or operates the application used to transmit data from the EHR to the IIS, which may be a health system encompassing multiple provider organizations or an EHR hub facilitating data flow from various independent

providers to the IIS.

Rationale for inclusion: Ensures accurate tracking of the sending organization for vaccine data exchange and record-keeping.

Functional Standard(s): 4.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	MSH-4	RE
USCDI V5	Facility Identifier	

Immunizations

Dose Level Program Eligibility and Funding Status

Description: The eligibility criteria determining program coverage for a vaccine and specifies the funding source used for the vaccine administered.

Rationale for inclusion:

- Supports vaccine inventory management by tracking eligibility and funding sources for vaccines.
- Assists in managing vaccine programs by ensuring vaccines are provided to eligible individuals according to funding guidelines.

Functional Standard(s): 14.0, 15.0

Repeat: Yes

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Dose-Level Program Eligibility

Description: The program responsible for payment of a specific vaccine dose based on patient eligibility criteria and vaccine type at the time of administration (e.g., Vaccines for Children (VFC)-eligible, state vaccine program, private pay).

Rationale for inclusion: Ensures appropriate vaccine administration by validating eligibility at the dose level, supporting inventory management.

Functional Standard(s): 15.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	OBX-5 where OBX-3='64994-7'	R	PHVS_FundingEligibilityObsMethod_IIS
USCDI V5			

Funding Source

Description: The funding source of the vaccine administered.

Rationale for inclusion:

- Tracks funding sources for vaccines administered, ensuring compliance with federal and jurisdictional guidelines.
- Supports inventory management, ensuring vaccines are allocated based on available funding.

Functional Standard(s): 14.0, 15.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	OBX-5 where OBX-3='30963-3'	R	PHVS_ImmunizationFundingSource_IIS
USCDI V5			

Exemption/Refusals

Description: Decisions made by patients to forgo receiving an immunization.

Rationale for inclusion:

- Ensures correct reporting of vaccine exemptions or refusals, linking reasons to individual patient records and supporting the transparency of the immunization process.
- Provides complete context about a patient's vaccination decisions, which can clarify whether an adverse event occurred after an actual vaccination versus a refused dose.
- Helps the IIS avoid sending inappropriate reminders to patients who have formally declined specific vaccines, reducing provider burden and patient frustration.
- Aids the IIS with generating accurate forecasts by excluding refused vaccines from recommendations while continuing to forecast for accepted vaccines.

Functional Standard(s): 6.0, 9.0, 11.0, 13.0

Repeat: Yes

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Exemption/Refusal Reason

Description: The reason for an exemption/refusal.

Rationale for inclusion:

- Ensures correct reporting of vaccine exemptions or refusals, linking reasons to individual patient records and supporting the transparency of the immunization process.
- Enables investigators to distinguish between adverse events following actual immunizations versus events unrelated to refused vaccines.
- Prevents the system from generating reminders for vaccines that patients have officially declined, minimizing unnecessary outreach and improving both provider efficiency and patient satisfaction.

Functional Standard(s): 9.0, 11.0, 13.0

Repeat: Yes

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	RXA-18 where RXA-20="RE"	C(R/X)	NIP002
USCDI V5			

Exemption/Refusal Date

Description: The date for an exemption/refusal.

Rationale for inclusion: Facilitates accurate immunization forecasting by using expiration date data to ensure that vaccination schedules for pediatric, adolescent, and adult populations align with the availability of effective vaccines as recommended by relevant guidelines.

Functional Standard(s): 6.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	RXA-3 where RXA-18 is populated	R
USCDI V5		

Lot Expiration Date

Description: The expiration date of the vaccine lot administered. Note: Based on local need, this may include immunoglobulin or other medical substances.

Rationale for inclusion: Enhances accurate immunization forecasting by leveraging expiration date data to verify that vaccination schedules for pediatric, adolescent, and adult populations align with the availability of effective vaccines as advised by relevant guidelines.

Functional Standard(s): 6.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	RXA-16	C(RE/O)
USCDI V5		

Lot Number

Description: The lot number of the vaccine administered. Note: Based on local need, this may include immunoglobulin or other medical substances.

Rationale for inclusion:

- Enhances validation of vaccination data by incorporating lot number information, which ensures accurate tracking of specific vaccine doses administered to patients within the IIS.
- Aids in the investigation and reporting of vaccine adverse events by providing critical details about specific vaccine lots associated with reported adverse reactions, enabling public health officials to assess potential safety concerns related to particular vaccine lots.
- Strengthens management and quality assurance functions for federal and jurisdictional vaccine programs by ensuring comprehensive lot number information is available for monitoring product effectiveness, safety, and compliance with regulatory requirements.
- Ensures accurate documentation of vaccine administration, facilitating timely responses during vaccine-preventable disease outbreaks and public health emergencies.
- Enables tracking of specific vaccine lot numbers used at each administration, supporting accurate inventory reconciliation and accountability for federally-supplied vaccines as required by programs like VFC.

Functional Standard(s): 4.0, 11.0, 14.0, 15.0, 17.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	RXA-15	C(R/O)
USCDI V5	Lot Number	

Manufacturer Name

Description: The manufacturer of the vaccine that was administered.

Rationale for inclusion:

- Facilitates efficient electronic data exchange and integration by managing interfaces that allow for the seamless transfer of vaccine manufacturer information between the IIS and other health information systems, in compliance with federal and jurisdictional standards.
- Enhances accurate immunization forecasting by using manufacturer name data to guide vaccination schedules for pediatric, adolescent, and adult populations in line with recommended guidelines.
- Aids in the investigation and reporting of vaccine adverse events by providing essential details about specific vaccines linked to their manufacturers, enabling public health officials to assess potential safety concerns associated with particular products.
- Strengthens management and quality assurance functions for federal and jurisdictional vaccine programs by ensuring comprehensive tracking of vaccine manufacturer information, which is critical for monitoring product effectiveness, safety, and regulatory compliance.
- Helps the IIS track specific vaccine products administered from inventory, enabling accurate reconciliation of doses used against doses received by lot number and manufacturer.

Functional Standard(s): 5.0, 6.0, 11.0, 14.0, 15.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	RXA-17	C(R/O)	MVX
USCDI V5			

Vaccination Event Record Type

Description: Indicates whether the vaccination event is based on a historical record or was given by the administered at location.

Rationale for inclusion: Ensures the proper validation of vaccination event data for appropriate record classification.

Functional Standard(s): 4.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	RXA-9	C(R/O)	NIP001
USCDI V5			

Vaccine Information Statement Group

Description: Information about the document that provides information about a vaccine type. Vaccine information statement (VIS) is expected to be captured if the IIS is used as the primary vaccination event record (e.g., a mass vaccination clinic).

Rationale for inclusion:

- Facilitates integration of vaccine information statement data to ensure accurate information is provided to patients.
- Assists in quality assurance functions and reporting for federal and jurisdictional vaccine programs.

Functional Standard(s): 5.0, 14.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Note: IIS may store VIS information if they are *not* the primary vaccination event record. However, when an IIS serves as the primary vaccination event record, such as during mass vaccinations, they are required to store VIS information.

Vaccine Information Statement

Description: Information about the VIS.

Rationale for inclusion: Assists in quality assurance functions and reporting for federal and jurisdictional vaccine programs.

Functional Standard(s): 14.0

Repeat: Yes

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	OBX-5 where OBX-3='69764-9' (preferred)/ OBX-5 where OBX-3='30956-7	R	PHVS_VISBarcodes_IIS
USCDI V5			

Note: IIS may store VIS information if they are *not* the primary vaccination event record. However, when an IIS serves as the primary vaccination event record, such as during mass vaccinations, they are required to store VIS information.

Vaccine Information Statement Given Date

Description: The date the VIS information was provided to the patient.

Rationale for inclusion:

- Supports the incorporation of vaccine information statement data to ensure patients receive correct and up-to-date information.
- Contributes to quality control processes and reporting for federal and jurisdictional immunization programs.

Functional Standard(s): 5.0, 14.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	OBX-5 where OBX-3=29769-7'	R
USCDI V5		

Note: IIS may store VIS information if they are *not* the primary vaccination event record. However, when an IIS serves as the primary vaccination event record, such as during mass vaccinations, they are required to store VIS information.

Vaccine Product

Description: The vaccine type for the immunization event, identified by Vaccine Administered (CVX) or National Drug Code (NDC) codes. IIS should support both code sets, preferring CVX, and may also receive additional codes such as Current Procedural Terminology (CPT). Note: based on local need, this may include immunoglobulin or other medical substances.

Rationale for inclusion:

- Enhances validation of vaccination data by incorporating detailed vaccine product information, ensuring accurate tracking and matching of vaccination records within the IIS.
- Facilitates accurate immunization forecasting by using vaccine product data to create customized vaccination schedules for pediatric, adolescent, and adult populations in accordance with recommended guidelines.
- Aids in the investigation and reporting of vaccine adverse events by providing critical details about specific vaccine products administered, enabling public health officials to assess potential correlations between vaccines and reported adverse reactions.
- Strengthens management and quality assurance functions for federal and jurisdictional vaccine programs by ensuring that comprehensive vaccine product information is available for monitoring program effectiveness and compliance with regulatory requirements.
- Enhances vaccine inventory management by providing essential data on vaccine products used, facilitating accurate reconciliation according to federal and jurisdictional program requirements as well as local provider business needs for tracking their own vaccine inventory.

Functional Standard(s): 4.0, 6.0, 11.0, 14.0, 15.0

Repeat: Yes

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

CVX

Description: The CVX code of the vaccine product.

Rationale for inclusion:

- Enhances validation of vaccination data by incorporating CVX codes, which provide standardized identifiers for vaccines administered, ensuring accurate tracking and matching of vaccination records within the IIS.
- Enhances accurate immunization forecasting by employing CVX codes to develop personalized vaccination schedules for pediatric, adolescent, and adult populations based on recommended guidelines.
- Aids in the investigation and reporting of vaccine adverse events by providing essential details linked to specific vaccines through their CVX codes, enabling public health officials to assess potential correlations between vaccines and reported adverse reactions.
- Strengthens management and quality assurance functions for federal and jurisdictional vaccine programs by ensuring comprehensive CVX code information is available for monitoring program effectiveness and compliance with regulatory requirements.
- Enhances vaccine inventory management by providing critical data associated with CVX codes, facilitating accurate reconciliation according to federal and jurisdictional program requirements.

Functional Standard(s): 4.0, 6.0, 11.0, 14.0, 15.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	RXA-5, OBX-5 where OBX-3='30956-7'	R	CVX
USCDI V5	Immunizations		

NDC

Description: The NDC of the vaccine product.

Rationale for inclusion:

- Enhances validation of patient demographic and vaccination data by incorporating NDC information, which ensures accurate identification and tracking of specific vaccine products administered to patients within the IIS.
- Aids in the investigation and reporting of vaccine adverse events by providing essential details about specific vaccines associated with their NDCs, enabling public health officials to analyze potential correlations between vaccines and reported adverse reactions.
- Strengthens management and quality assurance functions for federal and jurisdictional vaccine programs by ensuring comprehensive NDC information is available for monitoring program effectiveness, compliance, and safety.

Functional Standard(s): 4.0, 6.0, 11.0, 14.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	RXA-5	R	NDC Unit of Sale (UoS)/Unit of Use (UoU)
USCDI V5	Immunizations		

Medications

Body Route

Description: The path by which a drug is taken into the body. Also referred to as 'Route' in HL7 and other data standards.

Rationale for inclusion:

- Supports the investigation and reporting of vaccine adverse events by enabling analysis of potential links between the administration route and specific adverse reactions.
- Ensures that patients receive appropriate notifications based on the specific vaccines they need, including those that may require different administration routes.

Functional Standard(s): 11.0, 13.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	RXR-1	R	PHVS_RouteOfAdministration_IIS
USCDI V5	Route of Administration (Medications)		

Body Site

Description: The anatomical site where the vaccine was given. Also referred to as 'Site' in HL7 and other data standards.

Rationale for inclusion:

- Allows healthcare providers to analyze potential correlations between the administration site and specific adverse reactions, thereby enhancing the understanding of vaccine safety and informing future vaccination practices.
- Ensures that patients receive accurate notifications for upcoming vaccinations based on the specific sites where previous vaccines were administered. This information helps healthcare providers determine the appropriate vaccines and administration sites for future doses, improving the effectiveness of reminders and enhancing vaccination compliance.

Functional Standard(s): 11.0, 13.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	RXR-2	RE	HL70163
USCDI V5			

Dose Units

Description: The unit of measure of the dose (e.g., mL).

Rationale for inclusion:

- Facilitates effective electronic integration and data sharing by incorporating units information, which enables the smooth transfer of this essential data between the IIS and various health information systems while complying with federal and jurisdictional guidelines.
- Aligns immunization forecasts for pediatric, adolescent, and adult populations by confirming the correct dosage for each age group and vaccine type, thereby supporting accurate forecasting and compliance with vaccination guidelines.

Functional Standard(s): 5.0, 6.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	RXA-7	C(R/X)	PHVS_UnitsOfMeasure_CDC
USCDI V5	Dose Unit of Measure (Medications)		

Dose Volume

Description: The amount of vaccine administered (e.g., 0.5).

Rationale for inclusion:

- Facilitates effective electronic integration and information sharing by including dose volume details, which allows for the smooth transfer of this critical data between the IIS and various health information systems while meeting federal and jurisdictional requirements.
- Ensures that immunization forecasts for pediatric, adolescent, and adult populations are aligned by verifying the correct dosage for each age group and vaccine type, thereby supporting accurate forecasting and adherence to vaccination guidelines.

Functional Standard(s): 5.0, 6.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	RXA-6	R
USCDI V5	Dose (Medications)	

Orders

IIS Vaccination Event ID

Description: The unique identifier assigned by IIS to each vaccination event.

Rationale for inclusion:

- Enables seamless data exchange between the IIS and external systems via vaccination event ID integration.
- Supports immunization forecasting for pediatric, adolescent, and adult populations according to recommended guidelines.
- Enhances reminder and recall systems for effective vaccine management.

Functional Standard(s): 5.0, 6.0, 13.0

Repeat: No

Data Source: Generated by IIS

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	ORC-3	R
USCDI V5		

Vaccination Event ID

Description: The vaccination event's unique identifier assigned by the submitting system.

Rationale for inclusion: Supports electronic integration of vaccination event IDs across various information systems.

Functional Standard(s): 5.0, 6.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	ORC-3	R
USCDI V5		

Patient Demographics/Information

Biological Sex

Description: The patient's biological sex.

Rationale for inclusion:

- Requires the IIS to implement appropriate security controls, access restrictions, and encryption measures that safeguard all demographic data according to Health Insurance Portability and Accountability Act (HIPAA) and industry standards.
- Enhances demographic validation processes by adding biological sex information to the dataset, enabling more thorough matching of vaccination records to individuals and promoting effective data management practices.
- Ensures the IIS recommends the appropriate vaccines and schedules based on sex-specific guidance rather than providing irrelevant or incorrect vaccine forecasts.
- Allows IIS users to filter ad-hoc queries by sex, enabling targeted searches for specific populations such as females due for Human Papillomavirus (HPV) vaccine or analyzing vaccination patterns among males versus females.

Functional Standard(s): 1.0, 4.0, 6.0, 10.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	PID-8	R	HL70001
USCDI V5	Sex		

Birth Information

Description: Birth information identifies and matches patient records, reduces data duplication, and supports reliable data exchanges across health systems.

Rationale for inclusion:

- Requires the IIS to implement robust security measures including encryption, access controls, and audit trails that protect this highly sensitive Protected Health Information (PHI) according to HIPAA and industry standards.
- Validates birth information to ensure that immunization records are correctly associated with the right individual, supporting accurate data reporting.

Functional Standard(s): 4.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Birth Order

Description: When a patient was part of a multiple birth a number is defined in this element (e.g., 1, 2, 3). Typically received from Vital Records or birthing facility.

Rationale for inclusion:

- Ensures accurate validation of birth order to distinguish between siblings in immunization records, supporting individualized vaccination tracking.
- Drives implementation of security safeguards including encryption, access restrictions, and audit trails to protect birth order information as protected health information under HIPAA regulations.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source: Vital Records

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-25	C(RE/O)
USCDI V5		

Multiple Birth Indicator

Description: Whether the patient was part of a multiple birth (yes/no). Typically received from Vital Records or birthing facility.

Rationale for inclusion:

- Necessitates the IIS to employ comprehensive security safeguards such as data encryption, role-based access restrictions, and activity monitoring in compliance with HIPAA and established security frameworks.
- Patient multiple birth indicator is used during the process to validate patient demographic data.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source: Vital Records

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	PID-24	RE	HL70136
USCDI V5			

Birth State

Description: State of the birthing facility location.

Rationale for inclusion:

- Information on the state of the patient's birth helps to validate patient records.
- Ensures adherence to federal security standards that safeguard this sensitive demographic identifier from unauthorized access or disclosure.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-11 where PID-11.7='BR'	RE
USCDI V5		

Current Address

Description: The patient's address.

Rationale for inclusion:

- Validates patient demographic and vaccination data by ensuring that address information is accurate, allowing for proper identification and follow-up of patients who may be due for

vaccinations or have received them.

- Supports the generation of coverage reports by utilizing address information to assess regional vaccine coverage and identify areas where vaccination rates may be low or require additional outreach.
- Aids in the reporting of vaccine adverse events by ensuring that individuals' address information is accurate for follow-up, enabling proper investigation and case management.
- Supports ad-hoc queries of vaccination status and demographic data, utilizing current address information to accurately identify and verify patients.
- Mandates the application of safeguards such as data encryption, role-based access, and activity monitoring to protect patient state information as PHI in accordance with HIPAA requirements.
- Supports proper jurisdictional reporting by identifying the applicable state's immunization program regulations and standards for each patient's vaccination records.
- Allows reminder/recall campaigns to align with state-specific requirements and deliver notifications to patients at their correct state location.
- Facilitates vaccine allocation, tracking, and reporting based on jurisdiction-specific program regulations, supporting accurate reconciliation of federally-supplied vaccines like VFC by determining which state program oversees vaccine management for each patient.
- Facilitates collaboration with the relevant state health department to implement jurisdiction-specific emergency protocols and coordinate vaccine distribution with partners and providers during outbreak response.

Functional Standard(s): 1.0, 4.0, 9.0, 10.0, 11.0, 12.0, 13.0, 15.0, 17.0

Repeat: Yes

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Street

Description: The street component of the patient's address.

Rationale for inclusion:

- Validates patient demographic and vaccination data by ensuring that street address information is up-to-date, preventing errors in vaccine tracking and facilitating accurate

follow-up.

- Supports the generation of coverage reports by incorporating street address data to track immunization coverage in specific regions, helping to identify geographic areas with lower vaccination rates.
- Assists in the reporting of vaccine adverse events by ensuring that accurate street address information is available for follow-up and investigation into adverse events.
- Supports ad-hoc queries to verify vaccination status and demographic data based on specific street address information, ensuring correct data association.

Functional Standard(s): 4.0, 10.0, 11.0, 12.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-11.1	RE
USCDI V5	Current Address	

City

Description: The city component of the patient's address.

Rationale for inclusion:

- Validates patient demographic and vaccination data by ensuring that city-level information is included and accurate, enabling more precise tracking of vaccination rates by location.
- Supports the generation of coverage reports by organizing data based on city information, helping to assess vaccine coverage and identify areas where additional resources or interventions may be needed.
- Aids in reporting of vaccine adverse events by ensuring that city-specific details are included for effective follow-up and investigation of reported adverse events.
- Enables ad-hoc queries of vaccination data and demographic information based on city,

helping health authorities monitor trends in vaccine uptake and assess whether there are any disparities.

- Mandates the application of appropriate security controls including data encryption, role-based access restrictions, and activity monitoring to protect patient city information as PHI under HIPAA regulations. Ensures compliance with federal privacy and security standards that safeguard patient address data from unauthorized viewing or breaches.
- Enables the IIS to aggregate and report vaccination coverage data by geographic area, allowing federal and jurisdictional immunization programs to identify coverage gaps and target interventions to specific cities or communities.
- Enables the IIS to generate geographically-targeted reminder/recall campaigns and ensures notifications are sent to patients at their correct city location.
- Supports targeted vaccine distribution and allocation by identifying patient populations and provider networks within cities experiencing disease outbreaks or requiring emergency immunization response.

Functional Standard(s): 1.0, 4.0, 9.0, 10.0, 11.0, 12.0, 13.0, 17.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-11.3	RE
USCDI V5	Current Address	

State

Description: The state component of the patient's address.

Rationale for inclusion:

- Validates patient demographic and vaccination data by confirming that state-level information is accurate, ensuring proper jurisdictional tracking of vaccination efforts and consistency across state boundaries.
- Supports the generation of coverage reports by enabling users to access state-specific

immunization data, making it easier to identify and address vaccination gaps and ensure alignment with state immunization goals.

- Aids in reporting of vaccine adverse events by providing accurate state-level data for follow-up, ensuring that any adverse events are properly investigated within the relevant jurisdiction.
- Supports ad-hoc queries to verify vaccination status and demographic data at the state level, allowing for detailed analysis and reporting of immunization data within specific states.
- Requires the IIS to implement security controls such as encryption, access restrictions, and audit logging to protect patient state information as PHI under HIPAA.
- Ensures accurate jurisdictional reporting and compliance with state-specific immunization program requirements by identifying which state's regulations and reporting standards apply to each patient record.
- Ensures reminder/recall notifications comply with state-specific regulations and are sent to patients at their correct state address.
- Allows vaccines to be allocated, tracked, and reported according to the correct state's program requirements and regulations, as vaccine inventory accountability often differs by jurisdiction. Supports proper reconciliation of federally-supplied vaccines like VFC by identifying which state program is responsible for managing and monitoring vaccine distribution for each patient.
- Enables the IIS to coordinate with the appropriate state health department and activate state-specific emergency response protocols when onboarding partners and managing vaccine distribution during outbreaks.

Functional Standard(s): 1.0, 4.0, 9.0, 10.0, 11.0, 12.0, 13.0, 15.0, 17.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-11.4	RE
USCDI V5	Current Address	

Zip code

Description: The zip code component of the patient's address.

Rationale for inclusion:

- Validates patient demographic and vaccination data by ensuring that zip code information is accurately associated with patients, enabling targeted outreach and ensuring that vaccination data is linked to specific geographic areas.
- Supports the generation of coverage reports by using zip code data to identify regional disparities in vaccine coverage and target areas where vaccine availability or uptake may need improvement.
- Aids in reporting of vaccine adverse events by ensuring that accurate zip code information is available, enabling appropriate geographic follow-up for any reported adverse events.
- Supports ad-hoc queries to verify vaccination status and demographic information by using zip code data to refine searches based on location and track vaccination trends within specific areas.
- Mandates implementation of appropriate safeguards including data encryption, role-based access controls, and activity monitoring to protect patient state information as PHI in compliance with HIPAA regulations.
- Supports accurate reporting to the correct jurisdiction by determining which state's immunization program regulations and standards apply to each patient's vaccination records.
- Facilitates compliant reminder/recall campaigns by ensuring notifications follow applicable state regulations and reach patients at their proper state location.
- Enables proper vaccine allocation, tracking, and reporting aligned with jurisdiction-specific program rules, supporting accurate accountability for federally-supplied vaccines such as VFC by identifying the responsible state program for each patient.
- Facilitates coordination with relevant state health authorities to implement jurisdiction-specific emergency protocols and manage vaccine distribution to partners and providers during disease outbreaks.

Functional Standard(s): 1.0, 4.0, 9.0, 10.0, 11.0, 12.0, 13.0, 15.0, 17.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-11.5	RE
USCDI V5	Current Address	

County

Description: The county component of the patient's address.

Rationale for inclusion:

- Validates patient demographic and vaccination data by ensuring that county-level information is accurate, facilitating proper tracking of immunization efforts within individual counties and ensuring geographic-specific vaccine management.
- Supports the generation of coverage reports by using county data to assess vaccine coverage at a localized level, enabling focused interventions in areas with lower vaccination rates.
- Aids in reporting of vaccine adverse events by ensuring accurate county-level data for follow-up and investigation, helping to identify and manage adverse events on a localized scale.
- Supports ad-hoc queries of vaccination data and demographic information at the county level, allowing for targeted analysis and intervention within specific counties.
- Requires the IIS to implement security measures including encryption, access controls, and audit logging to protect patient county information as PHI under HIPAA regulations.
- Enables the IIS to conduct geographically-targeted reminder/recall campaigns at the county level, allowing immunization programs to coordinate with local health departments and community organizations.

Functional Standard(s): 1.0, 4.0, 10.0, 11.0, 12.0, 13.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)
- Generated by IIS

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-11.9	O
USCDI V5	Current Address	

Country

Description: The country component of the patient's address.

Rationale for inclusion:

- Validates patient demographic and vaccination data by ensuring that country-level information is included, enabling global reporting and consistency in vaccination tracking, especially for international health programs.
- Supports the generation of coverage reports by including country data to track immunization efforts across countries, helping to identify trends, gaps, and progress toward global immunization goals.
- Aids in the reporting of vaccine adverse events by ensuring that country information is linked to patient records for follow-up and investigation, particularly in multi-country vaccination programs.
- Supports ad-hoc queries to verify vaccination status and demographic data by utilizing country information, ensuring that vaccine tracking is consistent across borders for international reporting purposes.
- Mandates implementation of appropriate safeguards such as data encryption, role-based access controls, and activity monitoring to protect patient country information as PHI in compliance with HIPAA and relevant privacy laws.
- Facilitates accurate jurisdictional reporting by distinguishing between domestic and international addresses, ensuring vaccination data is properly categorized for CDC and state immunization program requirements.
- Enables the IIS to appropriately route or exclude reminder/recall notifications based on international addresses, preventing mailings to countries where the program doesn't operate or where notifications may not be deliverable.
- Supports identification of patient populations outside the United States who may require special vaccine distribution channels or coordination with foreign healthcare authorities during disease outbreaks or emergency vaccination campaigns.

Functional Standard(s): 1.0, 4.0, 9.0, 10.0, 11.0, 12.0, 13.0, 17.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-11.6	RE
USCDI V5	Current Address	

Date of Birth

Description: The patient's date of birth.

Rationale for inclusion:

- Enhances demographic validation processes by incorporating date of birth information, which is essential for accurately matching vaccination records to individuals and ensuring the integrity of patient data within the IIS.
- Facilitates investigation and reporting of vaccine adverse events by providing critical age-related context that helps public health officials assess potential correlations between age groups and reported adverse reactions, thereby improving safety monitoring efforts.
- Supports management and quality assurance functions for federal and jurisdictional vaccine programs by allowing for precise tracking of vaccination schedules based on age, ensuring compliance with immunization guidelines and enhancing program effectiveness.
- Necessitates compliance with federal and state privacy regulations, driving the implementation of security standards that protect all patient information stored in the IIS.
- Accurately links patient records across different health information systems, ensuring vaccination data is associated with the correct individual. Date of Birth is required by federal standards to enable reliable patient matching and prevent data integration errors during electronic information exchange.
- The IIS utilizes the date of birth to generate accurate forecasts that indicate which vaccines are due, overdue, or upcoming based on the patient's current age and vaccination history.
- Serves as a key verification element to authenticate a patient's identity when they or their authorized representatives request access to immunization records through patient

portals or public-facing systems. This demographic field helps ensure that only the correct individual can view their own vaccination history, protecting patient privacy while enabling legitimate access to official immunization records.

Functional Standard(s): 1.0, 4.0, 5.0, 6.0, 8.0, 11.0, 14.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-7	R
USCDI V5	Date of Birth	

Email Address

Description: The patient's email address.

Rationale for inclusion: Supports reminder/recall activities by allowing the system to send notifications to patients or guardians about upcoming or missed vaccinations.

Functional Standard(s): 13.0

Repeat: Yes

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-13.4 where PID-13.2='NET'	C(R/X)
USCDI V5	Email Address	

Identifiers

Description: The unique code or numbers assigned to a patient.

Rationale for inclusion:

- Enables validation and linkage of patient IDs with vaccination records to maintain accurate immunization tracking across the system.
- Facilitates accurate immunization forecasting and enables seamless data integration with external health information systems.
- Facilitates partner and provider onboarding and enables effective vaccine management during public health emergencies and disease outbreak responses.
- Supports compliance with federal and state immunization program reporting standards and requirements.
- Requires implementation of security measures including encryption, access controls, and audit logging to protect patient ID information as PHI under HIPAA regulations.

Functional Standard(s): 1.0, 4.0, 6.0, 9.0, 17.0

Repeat: Yes

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Patient ID

Description: Unique identifier assigned by the data source to the patient.

Rationale for inclusion:

- Enhances demographic validation efforts by integrating patient ID information into records, which helps ensure accurate linkage of vaccination data to individuals and improves the overall reliability of demographic information within the IIS.
- Requires implementation of appropriate safeguards such as data encryption, role-based access controls, and activity monitoring to protect patient ID information as PHI in compliance with HIPAA requirements.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-3.1	R
USCDI V5		

Patient ID Type

Description: The type of identifier (e.g., medical record number) assigned to the patient.

Rationale for inclusion:

- Improves demographic validation processes by incorporating various patient identifier types (such as Medical Record Number) into records, which aids in accurately linking vaccination data to individuals and enhances the overall integrity of demographic information within the IIS.
- Drives implementation of security measures including data encryption, access restrictions, and audit trails to protect patient ID information as PHI under HIPAA regulations.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	PID-3.5	R	HL70203
USCDI V5			

IIS Patient ID

Description: The unique identifier assigned by IIS to each patient.

Rationale for inclusion:

- Assists in validating patient IDs to link them with vaccination data, ensuring accurate immunization tracking.
- Facilitates accurate immunization forecasting and supports the integration of patient data with external systems.
- Supports partner onboarding and vaccine management during public health emergencies, such as vaccine-preventable disease outbreaks.
- Ensures compliance with federal and jurisdictional vaccine program reporting requirements.
- Necessitates the application of protective controls such as encryption, role-based access, and activity logging to secure patient ID information as PHI in accordance with HIPAA.

Functional Standard(s): 1.0, 4.0, 6.0, 9.0, 17.0

Repeat: No

Data Source: Generated by IIS

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-3.1 where PID-3.5='SR'	R
USCDI V5		

Mother's Name

Description: The patient's mother.

Rationale for inclusion:

- Validates patient demographic and vaccination data by linking the patient's information to their mother, which is particularly useful for pediatric vaccination records and family-based immunization data.
- Supports the reporting needs of federal and jurisdictional immunization programs by ensuring familial links are captured for vaccine reporting.

- Enables ad-hoc queries by linking mother-related data to vaccination history for more comprehensive analysis and follow-up.
- Requires the IIS to implement security controls including encryption, access restrictions, and audit logging to protect mother's name as PHI under HIPAA regulations.

Functional Standard(s): 1.0, 4.0, 9.0, 10.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Mother's Name: First

Description: The first name of the patient's mother.

Rationale for inclusion:

- Validates patient demographic and vaccination data by ensuring the patient's first name is accurately recorded.
- Supports the reporting needs of federal and jurisdictional immunization programs by linking the first name to vaccination records for accurate identification and reporting.
- Drives implementation of protective measures such as data encryption, role-based access controls, and activity monitoring to secure mother's first name as PHI in compliance with HIPAA requirements.

Functional Standard(s): 1.0, 4.0, 9.0, 10.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	NK1-2.2 where NK1-3='MTH'	R
USCDI V5	Related Person's Name	

Mother's Name: Middle

Description: The middle name of the patient's mother.

Rationale for inclusion:

- Ensures that the middle name is accurately recorded, aiding in the validation of patient demographic and vaccination data.
- Supports compliance with federal privacy and security standards that safeguard this sensitive demographic identifier from unauthorized access or disclosure.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	NK1-2.3 where NK1-3='MTH'	RE
USCDI V5	Related Person's Name	

Mother's Name: Last

Description: The last name of the patient's mother.

Rationale for inclusion:

- Helps validate patient demographic and vaccination data by accurately recording the last name, which is essential for ensuring the correct patient is associated with their

vaccination history.

- Supports the reporting needs of federal and jurisdictional immunization programs by ensuring the patient's last name is included in all reports.
- Requires application of security safeguards including encryption, access restrictions, and audit trails to protect mother's married name as protected health information under HIPAA regulations.

Functional Standard(s): 1.0, 4.0, 9.0, 10.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-6	RE
USCDI V5	Related Person's Name	

Mother's Name: Maiden Last

Description: The last name under which the mother was born (i.e., before marriage)

Rationale for Inclusion:

- Enhances demographic validation processes by incorporating mother's maiden name as an additional identifier, which helps to accurately match patient records and reduce the risk of misidentification within the IIS.
- Requires the IIS to implement appropriate security controls including encryption, access restrictions, and audit trails to safeguard this PHI under HIPAA regulations.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-6	RE
USCDI V5		

Patient Name

Description: The patient's name.

Rationale for inclusion:

- Enhances patient identification accuracy by consolidating all components of a patient's name (first, middle, last, and aliases), which helps to prevent misidentification and ensures that vaccination records are correctly linked to the appropriate individuals.
- Strengthens demographic validation processes by integrating comprehensive name data into the dataset, allowing for more effective cross-referencing and verification of vaccination records, thereby improving overall data integrity.
- Facilitates seamless collaboration among healthcare partners and providers by providing complete name information, which is essential for clear communication and coordination during vaccine management efforts in public health emergencies.
- Improves outreach effectiveness by enabling targeted reminder and recall campaigns that utilize full patient names, leading to more personalized engagement strategies that can enhance vaccination compliance across diverse populations.
- Contributes to generating accurate immunization forecasts by helping the IIS maintain distinct patient records and prevent merging of different patients' vaccination histories, which could lead to incorrect recommendations.
- Enables IIS users to query and retrieve patient records when performing ad-hoc searches, especially when combined with other demographics like last name or date of birth.
- Helps public health officials and healthcare providers track adverse event cases over time, distinguish between different patients, and ensure that adverse event reports are linked to the correct vaccination records and patient histories during safety surveillance activities.

Functional Standard(s): 1.0, 4.0, 5.0, 6.0, 9.0, 10.0, 11.0, 13.0, 17.0

Repeat: Yes

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Official Registry Name

Description: Formal name which corresponds to patient's legal name, as recorded on official documentation.

Rationale for inclusion:

- Supports electronic data exchange by facilitating precise record matching during system-to-system data transfers.
- Enhances immunization forecasts by improving accuracy when combined with other data for tailored vaccination schedules.
- Aids vaccine adverse event reporting, ensuring adverse documentation events is associated with the correct individual.
- Improves partner and provider onboarding processes by ensuring data consistency.
- Supports ad-hoc queries and reminder/recall activities, directing search results and outreach efforts to the right person and minimizing errors or confusion.
- Supports accurate immunization forecasting by ensuring each patient has a unique record in the IIS, preventing vaccination histories from being incorrectly combined across different individuals.
- Facilitates ad-hoc patient record searches and retrieval, particularly when used in combination with other identifying information such as date of birth or last name.
- Assists in adverse event surveillance by enabling proper patient identification, allowing healthcare providers and public health staff to accurately link safety reports to the correct vaccination records and monitor cases throughout the investigation process.

Functional Standard(s): 1.0, 4.0, 5.0, 6.0, 9.0, 10.0, 11.0, 13.0, 17.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Official Registry Name: *First*

Description: The patient's legal given name.

Rationale for inclusion:

- Supports partner onboarding and vaccine management during vaccine-preventable disease responses and public health emergencies by ensuring accurate data entry and record matching.
- Enables ad-hoc queries of patient demographic and vaccination data, assisting providers and public health officials in verifying patient records and immunization statuses.
- Facilitates reminder/recall activities by accurately identifying patients who are due or overdue for vaccinations, improving coverage rates.
- Validates patient demographic and vaccination data, reducing errors and enhancing data quality across systems.
- Helps maintain separate patient records in the IIS to ensure immunization forecasts reflect each individual's actual vaccination history rather than merged or confused data from multiple patients.
- Allows users to search for and locate patient information through ad-hoc queries, working together with other demographic fields like surname and birth date to identify specific records.
- Enables accurate tracking and investigation of vaccine adverse events by helping to correctly identify patients and connect safety reports to their corresponding immunization records during surveillance activities.

Functional Standard(s): 1.0, 4.0, 5.0, 6.0, 9.0, 10.0, 11.0, 13.0, 17.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-5.2	R
USCDI V5	First Name	

Official Registry Name: Middle

Description: The patient's legal middle name.

Rationale for inclusion:

- Improves the accuracy of patient identification by incorporating middle names, which helps minimize data duplication and misidentification within the IIS, thereby safeguarding the integrity of protected health information.
- Enhances demographic validation efforts by ensuring that vaccination records are accurately associated with individuals, thus improving the quality and reliability of data.
- Facilitates effective onboarding for partners and providers by offering comprehensive patient identifiers, which are vital during vaccine management activities in response to public health emergencies or disease outbreaks.
- Bolsters outreach initiatives by enabling more targeted reminder and recall campaigns based on complete patient demographics, ultimately increasing vaccination compliance rates among diverse populations.
- Prevents confusion between different patients' vaccination records, ensuring that recommended immunization schedules and forecasts are based on the correct individual's history.
- Serves as a key search field for locating patient records on demand, especially when paired with additional identifiers such as last name or date of birth.
- Supports vaccine safety monitoring by ensuring adverse event reports are accurately matched to the right patient and their immunization history during investigation and surveillance efforts.

Functional Standard(s): 1.0, 4.0, 5.0, 6.0, 9.0, 10.0, 11.0, 13.0, 17.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-5.3	RE
USCDI V5	Middle Name (including middle initial)	

Official Registry Name: Last

Description: The patient's legal surname.

Rationale for inclusion:

- Strengthens patient record accuracy by incorporating last names, which are essential for distinguishing between individuals with similar first names, thereby enhancing the reliability of health information within the IIS.
- Improves demographic data validation by ensuring that last names are part of the comprehensive dataset used to cross-reference and confirm vaccination records, thus supporting high-quality data management practices.
- Facilitates seamless partner and provider collaboration during vaccine distribution efforts by utilizing last names as key identifiers, which aids in maintaining clear and effective communication in public health initiatives.
- Enhances targeted public health outreach by allowing for more precise segmentation of patient populations based on complete demographic profiles, leading to more effective reminder and recall strategies that can boost vaccination rates.
- Ensures immunization forecasts are aligned by maintaining accurate individual patient records and preventing confusion between different patients' vaccination histories.
- Functions as a primary search criterion for retrieving patient information, particularly effective when combined with other demographic details like surname or birth date.
- Facilitates proper linkage of adverse event reports to the correct patient's vaccination records, supporting effective safety monitoring and investigation activities.

Functional Standard(s): 1.0, 4.0, 5.0, 6.0, 9.0, 10.0, 11.0, 13.0, 17.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-5.1	R
USCDI V5	Last Name	

Alias Name

Description: The patient's alternate or also-known-as name.

Rationale for inclusion:

- Used to validate patient demographic and vaccination data by ensuring records with alternate names (e.g., nicknames or maiden names) are correctly matched and maintained in the IIS, reducing duplication and errors.
- Facilitates record linking across systems where different aliases might have been used, improving interoperability and ensuring comprehensive vaccination histories.

Functional Standard(s): 1.0, 4.0

Repeat: Yes

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Alias Name: First

Description: The patient's alternate or also-known-as-first name.

Rationale for inclusion:

- Enhances patient identification accuracy by allowing for the documentation of patient's alias first names, which helps distinguish individuals who may go by different names in various settings, thereby minimizing the risk of record mismatches.
- Strengthens demographic validation efforts by integrating patient's alias first names into the dataset, ensuring that vaccination records are correctly associated with individuals who may be known by multiple names, thus bolstering overall data quality.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-5.2 (with PID-5.7="A")	R
USCDI V5	Name/ Previous Name	

Alias Name: Middle

Description: The patient's alternate or also-known-as-middle name.

Rationale for inclusion:

- Improves patient identification precision by incorporating patient's alias middle names, which can help differentiate individuals with similar first and last names, thereby reducing the likelihood of record confusion.
- Enhances demographic validation capabilities by including patient's alias middle names in the dataset, ensuring that vaccination records are accurately matched to individuals who may use different names in various contexts, thus reinforcing data integrity.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-5.3 (with PID-5.7="A")	RE
USCDI V5	Name/ Previous Name	

Alias Name: Last

Description: The patient's alternate or also-known-as-surname.

Rationale for inclusion:

- Enhances patient identification accuracy by allowing for the inclusion of patient alias last names, which helps distinguish individuals who may share similar first names or have common surnames, thereby reducing potential record conflicts.
- Strengthens demographic validation processes by integrating patient alias last names into the dataset, ensuring that vaccination records are correctly associated with individuals who may be known by different surnames in various situations, thus improving overall data quality.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-5.1 (with PID-5.7="A")	R
USCDI V5	Name/ Previous Name	

Patient Status

Description: The current active/inactive status of the patient in relation to the provider organization and jurisdiction.

Rationale for inclusion:

- Supports reminder/recall activities and the generation of coverage reports.
- Enable the production of coverage reports focused on current patients, which enhances data accuracy and decreases reliance on IIS staff support.
- Enables the IIS to focus reminder/recall campaigns on active, current residents while excluding those who have relocated or disengaged from local care.

Functional Standard(s): 10.0, 12.0, 13.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Patient Status: Provider Level

Description: The current active/inactive status of the patient in relation to the provider organization.

Rationale for inclusion:

- Facilitates ad-hoc queries of patient demographic and vaccination data by incorporating the active/inactive status, allowing healthcare providers and public health officials to quickly filter and access relevant records based on patient engagement levels.
- Ensure the ability to generate coverage reports that are relevant to active patients, thereby improving the reliability of the data and reducing the need for assistance from IIS staff.

Functional Standard(s): 10.0, 12.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	PD1-16	RE	HL70441
USCDI V5			

Patient Status: Jurisdiction Level

Description: The current active/inactive status of the patient in relation to the jurisdiction.

Rationale for inclusion:

- Supports the ability to generate coverage reports by including jurisdiction data, which helps in tracking immunization status across different regions and meeting jurisdictional reporting requirements.
- Enables flexible searching of patient demographics and vaccination records by including active/inactive status, allowing providers and public health officials to efficiently filter results based on current patient engagement.
- Helps the IIS target reminder/recall activities to active patients within the jurisdiction's authority, avoiding outreach to patients who have moved away or are no longer engaged with local providers.

Functional Standard(s): 10.0, 12.0, 13.0

Repeat: No

Data Source: Generated by IIS

Standards Mapping:

Standard	Data Element	Usage
HL7 v2		
USCDI V5		

Phone Number Group

Description: The patient's phone number.

Rationale for inclusion: Supports reminder and recall activities by providing a direct means of communication with patients, enabling timely outreach for vaccination reminders and follow-up appointments, ultimately improving vaccination compliance rates.

Functional Standard(s): 13.0

Repeat: Yes

Phone Number

Description: The patient's phone number.

Rationale for inclusion: Facilitates reminder and recall initiatives by offering a direct line of communication with patients, allowing for timely outreach regarding vaccination reminders and follow-up appointments, thereby increasing vaccination compliance rates.

Functional Standard(s): 13.0

Repeat: No

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-13.6 and PID-13.7	RE
USCDI V5	Phone Number	

Phone Number Type

Description: The type of phone number (e.g., home) for each patient's telephone number.

Rationale for inclusion: Supports reminder and recall activities by allowing healthcare providers to tailor communication strategies based on the type of phone number provided, ensuring that outreach efforts are effective and reach patients through their preferred contact method.

Functional Standard(s): 13.0

Repeat: No

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	PID-13.2='PRN'	R	HL70201
USCDI V5	Phone Number Type		

Primary Language

Description: The patient's primary language.

Rationale for inclusion: Enhances patient communication and engagement by including primary language information, which ensures that healthcare providers can deliver vaccination messages and instructions in a language that patients understand, thereby improving overall patient experience.

Functional Standard(s): 13.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PID-15	O
USCDI V5	Preferred Language	

Protection Indicator Group

Description: Indicates whether a patient's information may be shared with others.

Rationale for inclusion:

- Enhances IIS security by flagging sensitive patient data requiring additional safeguards and implementing role-based access controls that limit authorized users to information relevant to their specific roles and permissions.
- Protects patient privacy through granular access management, ensuring healthcare providers can only view sensitive data necessary for their designated responsibilities.

Functional Standard(s): 1.0, 7.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Protection Indicator

Description: Indicates whether a patient's information may be shared with others.

Rationale for inclusion: Enhances the security of the IIS by identifying and flagging sensitive patient information that requires additional safeguards.

Functional Standard(s): 1.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	PD1-12	RE	HL70136
USCDI V5			

Protection Indicator Effective Date

Description: The effective date for the protection indicator.

Rationale for inclusion:

- Strengthens the security of the IIS by identifying and marking sensitive patient information that necessitates extra protections.
- Implements role-based access controls to ensure that authorized users can access only the sensitive information pertinent to their roles and permissions, thereby improving data security and safeguarding patient privacy.

Functional Standard(s): 1.0, 7.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PD1-13	C(RE/X)
USCDI V5		

Race/Ethnicity

Description: The patient’s race and ethnicity. Note: The race and ethnicity data elements are presented as combined in this document to align with the 2024 Office of Management and Budget (OMB) Statistical Policy Directive No. 15, which requires federal entities to collect this information as a single combined question by 2029. While existing data standards such as HL7 have not yet been updated to reflect this change and may not be revised, this document adopts the combined approach proactively to support IIS readiness for the federal requirement.

Rationale for inclusion:

- Supports management and quality assurance functions for vaccine programs by evaluating vaccine coverage and identifying disparities among different populations, aiding in targeted public health interventions.
- Enables ad-hoc queries, allowing public health officials to assess vaccination rates and outcomes within specific racial or ethnic groups to inform policy or program adjustments.

Functional Standard(s): 10.0, 14.0

Repeat: Yes

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
Race			
HL7 v2	PID-10	RE	FHIM_RaceCategory
USCDI V5	Race		
Ethnicity			
HL7 v2	PID-22	RE	PHVS_EthnicityGroup_CDC
USCDI V5	Ethnicity		

Reminder/Recall

Description: Indicates whether a person consents to being contacted for reminder or recall purposes.

Rationale for inclusion: Supports reminder/recall activities by automating the process of notifying patients or guardians about upcoming or overdue vaccinations, improving immunization rates.

Functional Standard(s): 13.0

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Reminder/Recall Status

Description: Indicates whether a person consents to being contacted for reminder or recall purposes.

Rationale for inclusion: Tracks the status of reminder/recall activities, ensuring that notifications are properly sent and followed up on, improving vaccination compliance.

Functional Standard(s): 13.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	PD1-11	RE	HL70215
USCDI V5			

Reminder/Recall Effective Date

Description: The effective date for the patient’s reminder/recall status.

Rationale for inclusion: Specifies the date when a reminder or recall becomes effective, ensuring timely notification for vaccination follow-ups.

Functional Standard(s): 13.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	PD1-18	C(RE/X)
USCDI V5		

Responsible Person’s Name

Description: The person responsible for the patient. The responsible person may be a parent, guardian, next of kin, caseworker, or guarantor.

Rationale for inclusion:

- Validates data for an additional responsible person to support accurate vaccine tracking and recordkeeping for patients who may not have a primary caregiver.
- Requires implementation of security controls including encryption, access restrictions, and audit logging to protect responsible person name information as protected health

information (PHI) under HIPAA regulations.

Functional Standard(s): 1.0, 4.0

Repeat: Yes

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Responsible Person's First Name

Description: The first name of the person responsible for the patient.

Rationale for inclusion:

- Validates patient demographic and vaccination data by associating the patient with a responsible person's first name, ensuring accurate tracking and identification of guardians or caregivers.
- Drives application of protective measures such as data encryption, role-based access controls, and activity monitoring to secure responsible person name information as PHI in compliance with HIPAA requirements.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	NK1-2.2	R
USCDI V5	Related Person's Name	

Responsible Person's Middle Name

Description: The middle name of the person responsible for the patient.

Rationale for inclusion:

- Ensures that middle names of responsible persons are recorded for validation purposes, linking accurate demographic and vaccination data.
- Supports compliance with federal privacy and security standards that prevent unauthorized users from accessing or disclosing this sensitive contact data.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	NK1-2.3	RE
USCDI V5	Related Person's Name	

Responsible Person's Last Name

Description: The last name of the person responsible for the patient.

Rationale for inclusion:

- Supports the validation of patient data by ensuring the last name of the responsible person is correctly recorded, aiding in accurate tracking of vaccination data and ensuring proper identification for reporting.
- Ensures adherence to federal security standards that safeguard this sensitive contact identifier from unauthorized access or disclosure.

Functional Standard(s): 1.0, 4.0

Repeat: No

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	NK1-2.1	R
USCDI V5	Related Person's Name	

Responsible Person's Relationship Type

Description: The personal relationship that the responsible person has to the patient.

Rationale for inclusion:

- Validates patient demographic and vaccination data by categorizing the relationship type between the patient and their responsible person (e.g., mother, father, guarantor), ensuring the data reflects the correct familial link.
- Drives implementation of security safeguards including encryption, access restrictions, and audit trails to protect responsible person relationship type information as protected health information under HIPAA regulations.

Functional Standard(s): 1.0, 4.0

Repeat: Yes

Data Source:

- Vital Records
- Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage	Value Set
HL7 v2	NK1-3	R	HL70063
USCDI V5	Relationship Type		

Problems

Contraindications/Precautions Date

Description: The date/time the patient contraindication or precaution was observed. See "Contraindications/Precautions" under Allergies and Intolerances for vaccination contraindications/ precautions.

Rationale for inclusion:

- Enhances immunization forecasting accuracy by incorporating dates related to contraindications and precautions into patient records, allowing the IIS to generate personalized vaccination schedules for pediatric, adolescent, and adult populations in accordance with recommended guidelines.
- Facilitates effective investigation and reporting of vaccine adverse events by providing essential date information regarding when contraindications or precautions were identified, helping public health officials assess potential risks associated with vaccinations and improve safety monitoring efforts.
- Strengthens reminder and recall activities by utilizing contraindication and precaution dates to identify patients who may require alternative vaccination strategies or follow-up consultations based on their medical history, ensuring that outreach efforts are both safe and effective.
- Enables IIS users to query and identify patients with specific contraindications or precautions, allowing targeted searches for individuals who should not receive certain vaccines or require special considerations.

Functional Standard(s): 6.0, 10.0, 11.0, 13.0

Repeat: Yes

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	OBX-5 where OBX-3='30946-8'	R
USCDI V5		

Date of Immunity Evidence

Description: The date/time of patient immunity due to serological or clinical evidence was

observed.

Rationale for inclusion:

- Enhances immunization forecasting accuracy by incorporating the dates of vaccine-preventable diseases, which allows the IIS to assess individual patient risk and tailor vaccination schedules.
- Supports comprehensive reporting needs by providing critical data on the occurrence of vaccine-preventable diseases, enabling federal and jurisdictional immunization programs to monitor trends, outbreaks, and vaccination effectiveness effectively.
- Facilitates partner and provider onboarding by equipping healthcare professionals with essential information regarding past occurrences of vaccine-preventable diseases during vaccine management efforts, particularly in public health emergencies or outbreak responses.

Functional Standard(s): 6.0, 9.0, 17.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	OBX-14 where OBX-3=59784-9	RE
USCDI V5	Date of Diagnosis	

Evidence of Immunity

Description: The disease the patient is expected to be immune to on the basis of serological or clinical evidence.

Rationale for inclusion:

- Improves immunization forecasting precision by integrating titer results related to vaccine-preventable diseases, enabling the IIS to evaluate immunity levels and customize vaccination schedules.
- Enhances reporting capabilities by supplying vital data on titer levels for vaccine-preventable diseases, allowing federal and jurisdictional immunization programs to track population immunity and identify areas that may require focused interventions.
- Aids partner and provider onboarding by providing healthcare professionals with crucial

information about patients' titer histories during vaccine management efforts, especially in response to outbreaks of vaccine-preventable diseases or public health emergencies.

Functional Standard(s): 6.0, 9.0, 17.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	OBX-5 where OBX-3= 75505-8	RE
USCDI V5	Problems	

Procedures

Administration Date

Description: The date the vaccination event occurred.

Rationale for inclusion:

- Enables seamless electronic integration and data sharing by including vaccination administration date information, which allows for the smooth transfer of this essential data between the IIS and various health information systems while adhering to federal and jurisdictional standards.
- Supports accurate determination of which vaccines are due, overdue, or upcoming by tracking the timing of previous doses and applying recommended guidelines and spacing requirements.
- Provides the essential timeline information needed to report adverse events to Vaccine Adverse Event Reporting System (VAERS) and determine the temporal relationship between vaccination and the onset of symptoms or reactions.
- Provides documentation of the date each dose was used, allowing programs to verify proper vaccine storage, usage within expiration dates, and compliance with inventory management requirements.

Functional Standard(s): 4.0, 5.0, 6.0, 11.0, 15.0

Repeat: No

Data Source: Vaccination Event (for example, reported by an EHR of a hospital system)

Standards Mapping:

Standard	Data Element	Usage
HL7 v2	RXA-3	R
USCDI V5	Performance Time	

For More Information

U.S. Centers for Disease Control and Prevention

National Center for Immunization and Respiratory Diseases

Immunization and Data Analytics Branch

Email: iisinfo@cdc.gov

CDC-Info

Web: <https://www.cdc.gov/cdc-info/>

Telephone: 1-800-CDC-INFO (232-4636); TTY: 1-888-232-6348

Email Form: <https://wwwn.cdc.gov/dcs/ContactUs/Form>