

# Immunizations - CeRx

## Standards Selection Guide

### Standards Selection Guide

Represents a collection of the recommended Standards, Resources, Implementation Guides created to satisfy a specific set of Clinical Requirement *at a moment in time*, following the discovery process presented in the guidance section of this site.

### Table of Contents

- [Standards Selection Guide](#)
- [Key Contributors](#)
- [Purpose](#)
- [Business Context](#)
- [Typical Use Cases](#)
- [Evaluated Standards](#)
- [Recommended Standards](#)
- [Implementation Resources](#)
- [Existing Implementations](#)

### Maturity Level

- Under Development
- Pilot
- Draft For Use
- Normative**
- Superseded (by MR)**
- Retired

### Market Guidance

PAN-CANADIAN STANDARD

### Guide Status:

- Draft
- Published**

|              |                       |
|--------------|-----------------------|
| Maturity     | Normative, Superseded |
| Status       | Published             |
| Standards    | HL7® v3               |
| Domain       | Public Health         |
| Jurisdiction | National              |

### Effective Date

December, 2013

## Key Contributors

The following individuals/organizations contributed to the creation of this resource:

| Name | Title | Organization |
|------|-------|--------------|
|      |       |              |

## Purpose

This document provides an overview of available standards and a recommended approach to support the requirements identified below. The intent is to simplify standards selection decisions in future projects and, in turn, to promote standardization of solutions across projects by providing useful information to support decision making in a readily consumable format.

Content in this guide was generated through a document review of immunization related messaging in different versions of the pan-Canadian messaging specifications and HL7 v2 to provide an accessible overview of the standards considered and selected to support the immunization related requirements. Detailed requirements and discussion of standards localization decisions can be found on InfoCentral.

## Business Context

This guide relates to standards used to track and manage of immunizations records for public health purposes. Given the various settings where immunizations can be administered, the migration of people between jurisdictions and certain public health needs, immunization data is often collected retrospectively and may be collected or used outside of traditional care settings such as hospitals or physicians' offices.

## Typical Use Cases

The use cases outlined below are intended to provide additional context and frame the needs that the candidate standards must meet. The use cases here are summarized and excerpted from a discussion document of the HL7 v3 pan-Canadian Messaging Standards Implementation Guide (Volume 10 – Immunization).

The use cases identify different activities related to immunization events and access to an immunization record:

## Table of Contents

- [UC-1 Record an Immunization Event](#)
- [UC-2 Query an Immunization Repository](#)
- [UC-3 Update an Immunization Record](#)
- [UC-4 Retract an Immunization Record](#)

### UC-1 Record an Immunization Event

The purpose of this use case is to describe the activities involved in recording an immunization event.

Trigger: Immunization has been administered

- A healthcare provider administers a vaccine to a patient.
- The healthcare provider records the vaccination event in the local EMR System
- The EMR sends a request to add the immunization event details to the repository.
- The event is recorded in the repository and the message is acknowledged.

(The above flow represents a successful transaction, alternate flows exist.)

### UC-2 Query an Immunization Repository

The purpose of this use case is to describe the activities involved in retrieving immunization records for a patient from a repository.

Trigger: Immunization information for a patient needs to be retrieved from an immunization repository.

- A user of an EMR (or other client system) requests detailed information about a patient's immunization history, potentially filtered by:
  - time-range of the immunization,
  - time-range the immunization was last updated, and/or
  - type of immunization.
- The EMR sends the query to the repository.
- The repository returns the requested list of past immunization events.

(The above flow represents a successful transaction, alternate flows exist.)

### UC-3 Update an Immunization Record

The purpose of this use case is to describe the activities involved in updating an immunization event.

Trigger: A healthcare provider needs to add additional information related to an immunization event to a record.

- Healthcare provider wishes to update information related to a vaccination event:
  - additional information in the textual comment,
  - add/change the vaccine dose number, and/or
  - mark the immunization course as complete.
- The healthcare provider records the vaccination event in the local EMR System
- The EMR sends a request to update the immunization event details in the repository.
- The update is recorded in the repository and the message is acknowledged.

(The above flow represents a successful transaction, alternate flows exist.)

### UC-4 Retract an Immunization Record

The purpose of this use case is to describe the activities involved in retracting an erroneous immunization event.

Trigger: A healthcare provider identifies an erroneous immunization record.

- Healthcare provider wishes to remove an erroneous immunization event from the patient's record.
- The erroneous information is removed (or flagged as removed) in the local EMR system.
- The EMR sends a request to remove the immunization event from the repository.
- The record is removed (or flagged as removed) in the repository and the message is acknowledged.

(The above flow represents a successful transaction, alternate flows exist.)

## Evaluated Standards

This guide focuses on the selection of messaging standards to support the in scope use cases.

## Messaging

The following standards were considered to communicate vaccination events and to query immunization repositories.

| Standard   | Fit for Purpose   |                                    |                | Stewardship  |                | Quality    |                   |                               |
|--|-------------------|------------------------------------|----------------|--|----------------|------------|-------------------|-------------------------------|
|  | Fits Requirements | Implementation Type                | Vendor Support | Canadian Steward   | SDO Maintained | Complexity | Standard Maturity | Training, Support and Tooling |
| CeRx HL7 V3.0 - Immunizations  |                   | Production in Canada               |                | Yes  | Yes            |            | High              |                               |
| HLv2   |                   | No known implementations in Canada |                | No   | Yes            |            | High              |                               |
| <b>Architectural Constraints and Considerations</b>  |                   |                                    |                | <b>Secondary Benefits</b>  |                |            |                   |                               |
| The Canadian HL7 V3 CeRx specification was designed to support the in scope use cases in a manner consistent with the design principles of Canada's digital health blueprint.<br>The CeRx specification is widely adopted for drug domain messaging. |                   |                                    |                | Version 3 uses rigorous analytic and message building techniques and eliminates areas of optionality that could negatively impact semantic interoperability. |                |            |                   |                               |
| <b>Recommendation</b>  |                   |                                    |                | <b>Supporting Rationale</b>  |                |            |                   |                               |
| CeRx implementers may use the latest CeRx specification for immunization messaging. (Note that the newer HL7 v3 public health messaging supports a broader range of transactions.)   |                   |                                    |                | The specification was designed to meet the in-scope use cases and conforms with the architectural design of Canada's digital health blueprint.               |                |            |                   |                               |

## Recommended Standards

The following standards and related specifications were identified as the recommended approach to support the in-scope requirements. The table lists the summary with the rationale.

| Standardization Requirement | Options                       | Choice | Rationale  |
|-----------------------------|-------------------------------|--------|--|
| <b>Messaging</b>            | CeRx HL7 V3.0 - Immunizations | X      | The specification was designed to meet the in-scope use cases and conforms with the architectural design of Canada's digital health blueprint. |
|                             | HL7 v2                        |        | Inconsistent with Canada's blueprint. Not known implementations in Canada.   |

## Implementation Resources

### Community Pages

Matters related to Immunization messaging in Canada are handled through a active Communities on InfoCentral.

| InfoCentral - Community Page                            |
|---|
| Public Health Surveillance - Community Site             |
| Health Level Seven International (HL7) - Community Site |

### Clinical Requirements

Material from the Canadian Public Health community can be found on the Public Health Surveillance community site on InfoCentral.

### Implementation Guides

The latest Implementation Guide can be found on InfoCentral.

### Technical Resources

The Infoway Message Builder allows developers to focus on their business problem by providing APIs that foster quick and easy creation, population and access to HL7 v3 requests and responses and CDA documents.

For further technical support please contact project teams listed in the header section or seek support through the community site.

## Existing Implementations

The following Canadian jurisdictions have implemented HL7 v3 CeRx - Immunizations.

| Implementing Jurisdiction | Notes      |
|---------------------------|------------|
| Prince Edward Island      | CeRx 4.2   |
| Newfoundland and Labrador | CeRx 4.3-3 |