# Appendix B: Health Information Exchange Organization (HIO)

The preferred version of HL7 that California is focused on supporting is version 2.5.1. We recognize that not all HIO’s currently support this version, so we are also accepting, at this time, interfaces which conform to the HL7 version 2.3.1 specification. In the right-hand columns we are asking the vendor to list:

* **YES - as Shown (Give Version)** If you produce or consume the message with the trigger shown, please indicate which HL7 version.
* **Message, Version, & Trigger?** If youproduce or consume a message that performs the same or similar function as the message and trigger shown, please note the message, trigger, and HL7 version.
* **If not now, when?** If you do not currently produce or consume the message and trigger indicated in either of the previous columns, please note when you expect to accommodate the message indicated. NO PLAN (to do this) is an acceptable answer.

## Section 1: HL7 Messages Outbound from HIO

The HIO sends to the EHR (or others) properly formatted HL7 ADT, MDM, ORU, REF, RRI, and SRM messages of version 2.3.1, 2.5.1, or 3.1 as noted. Messages may be consumed in different ways depending on the recipient systems’ operation and workflows. It is not the intention of this specification to be prescriptive on how these messages will be consumed by the recipient, only that they be sent.

| **Topic** | **Preferred Message & Trigger** | **Do You Send this Message?** |
| --- | --- | --- |
| **YES, as Shown (give version)** | **Message, Version, & Trigger?** | **If not now, when?** |
| A.1 Send ADT Messages | A.1.1 ADT^A01 Hospital Admission  |  |  |  |
| A.2.1 ADT^A03 Hospital Discharge |  |  |  |
| A.1.3 ADT^A04 Emergency Registration |  |  |  |
| A.1.4 ADT^A08 Demographic Update |  |  |  |
| A.1.5 ADT^A40 Patient Merge |  |  |  |
| A.1.6 ADT^A04 Ambulatory Visit Registration |  |  |  |
| A.1.7 ADT^A31 Person Update |  |  |  |
| A.2 Send HL7 Lab Results as Structured Data  | A.2.1 ORU^R01 Sends discrete value and text fields |  |  |  |
| A.2.2 Can send LOINC test and analyte codes (required for Public Health MU reporting) |  |  |  |
| A.2.3 Supports SNOMED-encoded results |  |  |  |
| A.2.4 Appropriately handle HL7 “no growth” and “preliminary” result messages and update the order status appropriately (OBR Result Status = I, S, A, P – and, depending upon usage, R). |  |  |  |
| A.3 Send HL7 Radiology Report | A.3.1 ORU^R01 Send Radiology Report as HL7 ORU or MDM.  |  |  |  |
| A.4 Send Corrected and Canceled HL7 Result Messages | A.4.1 Appropriately forward HL7 result correction messages (OBR Result Status = C) and send order cancel messages (OBR Result Status = X). |  |  |  |
| A.5 Send HL7 Text Reports: (e.g. H&P, ECG, Discharge Summary, Colonoscopy Report, Progress Notes) | A.5.1 MDM^T02: Original + content |  |  |  |
| A.5.2 MDM^T04: Status change + content |  |  |  |
| A.5.3 MDM^T06: Addendum + content |  |  |  |
| A.5.4 MDM^T08: Edit + content |  |  |  |
| A.5.5 MDM^T10: Replace + content |  |  |  |
| A.5.6 ORU^R01: Alternative method for sending text reports (result status is in OBR) |  |  |  |
| A.6 Send HL7 Referral Request | A.6.1 REF^I12, or ORM^O01 as an alternative. | Indicate which message & trigger |  |  |
| A.7 Send HL7 Referral Response  | A.7.1 RRI^I12 Acknowledge Referral Request sent from the EHR (see HL7 Messages outbound) |  |  |  |
| A.8 Send HL7 Request for Appointment | A.8.1 SRM^S01 Request New Appointment |  |  |  |
| A.9 Generate and Send Summary of Care Document (CCD) | A.9.1 Generate and Send the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification. |  | List the C32 sections supported. |  |
| A.9.2 Generate and Send the discrete and textual sections of the CCD as detailed in the CCD specification available at <http://www.interopwg.org/documents/request.html> including current medications. |  |  |  |
| A.9.3 Send the CCD via Direct Project standards |  |  |  |
| A.9.4 Send the CCD via IHE XDS.b standards as a Document Source or Integrated Document Source Repository |  |  |  |
| A.9.5 Forward a CCD received from an EHR or other system to a designated recipient. |  |  |  |
| A.10 Send Immunization Reports to Registry | A.10.1 VXU^V04 (2.3.1 or 2.5.1 required for MU) [Code Set CVX - Vaccines Administered, July 30, 2009 version] |  |  |  |
| A.10.2 Forward properly formatted immunization messages received from an EHR or other system to appropriate immunization registry. |  |  |  |
| A.10.3 The capability to accumulate numerous immunization records and submit them to immunization registry in batch format. |  |  |  |
| A.11 Create and Send or Forward Order | A.11.1 ORM^O01 Forward a properly formatted HL7 order received from an EHR or other system (lab, radiology, other ancillary services). |  |  |  |
| A.11.2 ORM^O01 Generate from HIE services a properly formatted HL7 order (lab, radiology, other ancillary services). |  |  |  |
| A.11.3 For laboratory orders generated from HIE services, the California “ELINCS” specification is supported. |  |  |  |
| A.11.4 For orders generated from HIE services, the ORM message allows a minimum of 3 “Copy to” providers. |  |  |  |

## Section 2: HL7 Messages Inbound from EHRs and Other Data Suppliers to HIO

The HIO will receive, store, and forward, as appropriate to the particular use case and workflow, properly formatted HL7 ORU, ORM, MDM, MFN, ADT, , VXU and SIU messages of version 2.3.1, 2.5.1, or 3.1 as noted. It is not the intention of this specification to be prescriptive on how these messages will be consumed or otherwise dealt with by the receiving HIO, only that they be received and acknowledged by the HIO in an appropriate manner, and that these messages can be managed by the HIO’s workflows.

| **Topic** | **Preferred Message & Trigger** | **Do you use/consume this Message?** |
| --- | --- | --- |
| **YES - As shown: give version:** | **Message, Version, & Trigger?** | **If not now, when?** |
| B.1 Receive Patient Encounter, Person Maintenance, and Patient Merge ADT Messages | B.1.1 ADT^A04 Register Patient from Ambulatory setting. |  |  |  |
| B.1.2 ADT^A04 (additional detail) HIO to correctly support a visit marked as “protected” in the PV1 segment. |  |  |  |
| B.1.3 ADT^A08 Update Patient Info |  |  |  |
| B.1.4 ADT^A31 Person Update |  |  |  |
| B.1.5 ADT^A40 Merge Patient |  |  |  |
| B.1.6 ADT^A01 Hospital Admission |  |  |  |
| B.1.7 ADT^A03 Hospital Discharge |  |  |  |
| B.2 Receive Orders  | B.2.1 ORM^O01 Receive from an EHR a properly formatted HL7 order (lab, radiology, other ancillary services). |  |  |  |
| B.2.2 For laboratory orders, the California “ELINCS” specification is supported |  |  |  |
| B.3 Consume HL7 Master File Updates for Providers and Locations | B.3.1 MFN^M02 Add/change/deactivate provider |  |  |  |
| B.3.2 MFN^M05 Update location |  |  |  |
| B.4 Receive Appointment Notification | B.4.1 SIU^S12 (May be used to determine if the patient referenced in the appointment has information in the HIE) |  |  |  |
| B.5 Receive Referral Request | B.5.1 REF^I12 Referral message. ORM^O01 also accepted at this time. | Indicate which message & trigger |  |  |
| B.6 Receive Referral Response | B.6.1 RRI^I12 Acknowledge Referral Request |  |  |  |
| B.7 Receive/ Consume HL7 Result Records  | B.7.1 ORU^R01 Laboratory |  |  |  |
| B.7.2 ORU^R01 Radiology / Ultrasound |  |  |  |
| B.7.3 MDM ^T02 Transcription |  |  |  |
| B.8 Receive/ Consume Text Reports (e.g. H&P, visit summary, progress notes, chart notes, consult notes) | B.8.1 MDM^T02: Original + content |  |  |  |
| B.8.2 MDM^T04: Status change + content |  |  |  |
| B.8.3 MDM^T06: Addendum + content |  |  |  |
| B.8.4 MDM^T08: Edit + content |  |  |  |
| B.8.5 MDM^T10: Replace + content |  |  |  |
| B.8.6 ORU^R01: Alternative method for receiving text reports (result status is in OBR) |  |  |  |
| B.9 Receive/ Consume Immunization Messages | B.9.1 VXU^V04 (2.3.1 or 2.5.1 required for MU) Code Set CVX - Vaccines Administered, July 30, 2009 version  |  |  |  |
| B.11 Single Sign-on (SSO) with HIE | B.11.1 HIO supports SAML 2.0 authentication for authorized users |  |  |  |
| B.11.2 HIO consume authorization criteria as required by California within the SAML token. |  |  |  |
| B.12 Transfer Context to HIO from EHR | B.12.1 HIO provides the ability to receive portal control from the EHR via a specific API or URL with context (provider, patient, subject) and will automatically query and display the requested subject. |  | Provide specifics of capabilities including context objects transferred. |  |
| B.13 Receive and Consume CCD | B.13.1 Receive and store a CCD C32 document as specified in the CCD Release 2.1 as further refined by HITSP in its component specification. |  | List the C32 sections supported. |  |
| B.13.2 Consume the discrete and textual sections of a CCD C32 document as specified in the CDA Release 2.1 as further refined by HITSP in its component specification. |  |  |  |
| B.13.3 Consume a properly formatted CCD based on the CCD specification at <http://www.interopwg.org/documents/request.html> |  |  |  |
| B.13.4 Receive the CCD via Direct Project standards |  |  |  |
| B.13.5 Request and receive the CCD via IHE XDS.b standards as a Document Consumer |  |  |  |

## Section 3: Approach to Interfaces & Interoperability and Business Relationship

### Basic HIO Information

HIO Name:

HIE Tool Vendor Name:

### Points of Contact

Interface & Interoperability Point of Contact (for vendors):

Name: Phone: e-mail:

Executive Director Point of Contact:

Name: Phone: e-mail:

Business Development Director (or other contact for establishing a business relationship with the HIO):

Name: Phone: e-mail:

### HIO Demographics

Geographic Coverage:

Number of providers within the geographic region:

Number of hospitals within the geographic region:

### Onboarding & Pricing (fill out or provide link or attachment as appropriate)

Link or contact information for an ambulatory EHR user wishing to establish a business relationship to exchange data with the HIO:

Interface Fee charged by the HIO to implement and test an ambulatory EHR to the base level in Exhibit A: $

Ongoing interface fee structure, if any: $

Description/definition of interface fee structure: