# Appendix B: Hospital Electronic Medical Record (EMR / EHR)

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 Inbound to EMR/EHR

The EMR/EHR receives and consumes from the HIE (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 EMR/EHR’s operation and workflows. It is not the intention of this specification to be prescriptive on how these messages will be consumed, only that they be received and used in a manner that fits with the EMR/EHR’s intended workflows.

| **Topic** | **Preferred Message & Trigger** | **Do you consume this message?** | | |
| --- | --- | --- | --- | --- |
| **YES, as shown (give version)** | **Message, Version, & Trigger?** | **If not now, when?** |
| A.1 Receive Patient Encounter, Person Maintenance, and Patient Merge ADT Messages | A.1.1 ADT^A04 Register Patient from Ambulatory or ED setting. |  |  |  |
| A.1.2 ADT^A08 Update Patient Info |  |  |  |
| A.1.3 ADT^A31 Person Update |  |  |  |
| A.1.4 ADT^A40 Merge Patient |  |  |  |
| A.1.5 ADT^A01 Other Hospital Admission |  |  |  |
| A.1.6 ADT^A03 Other Hospital Discharge |  |  |  |
| A.2 Receive HL7 Lab Results as Structured Data | A.2.1 ORU^R01 Store discrete value and text fields |  |  |  |
| A.2.2 Can consume LOINC test and analyte codes |  |  |  |
| A.2.3 Can use 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 Receive HL7 Radiology Report | A.3.1 ORU^R01 Receive Radiology Report as HL7 ORU or MDM and file into the proper place in the EMR/EHR. |  |  |  |
| A.4 Receive Corrected and Canceled HL7 Result Messages | A.4.1 Appropriately handle HL7 result correction messages (OBR Result Status = C) and order cancel messages received (OBR Result Status = X) and update the order status appropriately based on the message. |  |  |  |
| A.5 Receive HL7 Text Reports: (e.g. H&P, ECG, Discharge Summary, H&P, Visit Summary, Progress Notes, Consult Notes, Other Hospital Discharge Summary, etc.) | 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 receiving text reports (result status is in OBR) |  |  |  |
| A.6 Receive HL7 Referral Request (may be used for preadmit) | A.6.1 REF^I12 Delivered to Provider in-box (should be able to handle RF1, DG1, AL1, OBR, and OBX segments). ORM^O01 may be used as an alternative. | Indicate which message & trigger |  |  |
| A.7 Receive HL7 Referral Response | A.7.1 RRI^I12 Acknowledge Referral Request sent from an HIE (see HL7 Messages outbound) |  |  |  |
| A.8 Receive HL7 Request for Appointment (ancillary services) | A.8.1 SRM^S01 Request New Appointment (please note if message is routed to the in-box, or whether the EMR/EHR can auto-book and acknowledge with an SIU^S12. |  |  |  |
| A.9 Receive and Consume Summary of Care Document (CCD) | A.9.1 Receive and store 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 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. |  |  |  |
| A.9.3 Consume 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.9.4 Receive CCD via Direct Project standards |  |  |  |
| A.9.5 Receive CCD via IHE XDS.b standards as a Document Consumer |  |  |  |
| A.10 Receive Electronic Orders | A.10.1 ORM^O01 Receive from an HIE or other source a properly formatted HL7 order (lab, radiology, other ancillary services). |  |  |  |
| A.10.2 For laboratory orders, the California “ELINCS” specification is supported |  |  |  |
| A.10.3 The EMR/EHR supports an ORM message with 3 or more “Copy to” providers |  |  |  |
| A.11 Receive/ Consume HL7 Master File Updates for Providers and Locations | A.11.1 MFN^M02 Add/change/deactivate provider |  |  |  |
| A.11.2 MFN^M05 Update location |  |  |  |

## Section 2: HL7 Messages Outbound from EMR/EHR to HIE or Others

The EMR/EHR correctly generates and transmits to the HIE (or others) properly formatted HL7 ADT, MDM, MFN, ORM, ORU, 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 receiver, only that they be received and acknowledged in an appropriate manner, and that these messages can be managed by the receiver’s workflows.

| **Topic** | **Preferred Message & Trigger** | **Do You Produce this Message?** | | |
| --- | --- | --- | --- | --- |
| **YES, as Shown (give version)** | **Message, Version, & Trigger?** | **If not now, when?** |
| B.1 Send ADT Messages | B.1.1 ADT^A01 Hospital Admission |  |  |  |
| B.2.1 ADT^A03 Hospital Discharge |  |  |  |
| B.1.3 ADT^A04 Emergency Registration |  |  |  |
| B.1.4 ADT^A08 Demographic Update |  |  |  |
| B.1.5 ADT^A40 Patient Merge |  |  |  |
| B.1.6 ADT^A04 Outpatient Visit Registration |  |  |  |
| B.1.7 ADT^A31 Person Update |  |  |  |
| B.2 Create and Send Order | B.2.1 ORM^O01 Transmit a properly formatted HL7 order (lab, radiology, other ancillary services). |  |  |  |
| B.2.2 For laboratory orders the California “ELINCS” specification is supported |  |  |  |
| B.2.3 The ORM message allows a minimum of 3 “Copy to” providers |  |  |  |
| B.3 Create and Send 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.5 Create and Send Referral Request | B.5.1 REF^I12, or ORM^O01 as an alternative. | Indicate which message & trigger |  |  |
| B.6 Create and Send Referral Response | B.6.1 RRI^I12 Acknowledge Referral Request received from others |  |  |  |
| B.7 Create and Send HL7 Lab Results as Structured Data | B.7.1 ORU^R01 Sends discrete value and text fields |  |  |  |
| B.7.2 Can send LOINC test and analyte codes (required for Public Health MU reporting) |  |  |  |
| B.7.3 Supports SNOMED-encoded results |  |  |  |
| B.7.4 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). |  |  |  |
| B.8 Send HL7 Text Reports: (e.g. H&P, ECG, Discharge Summary, Colonoscopy Report, Progress Notes, etc.) | 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 sending text reports (result status is in OBR) |  |  |  |
| B.9 Create & Send Immunization Messages | B.9.1 Transmit a VXU^V04 (2.3.1 or 2.5.1 required for MU) Code Set CVX - Vaccines Administered, July 30, 2009 version |  |  |  |
| B.10 Automatically Trigger Creation of the CCD | B.10.1 Provide a configurable ability to automatically create and transmit the CCD. For details on the CCD, see specification above. |  | List which events can trigger production of the CCD. |  |
| B.11 Single Sign-on (SSO) with HIE | B.11.1 EMR/EHR produces a SAML 2.0 authentication token certifying the user when calling out to the HIE. |  |  |  |
| B.11.2 EMR/EHR provides authorization criteria as required by California within the SAML token. |  |  |  |
| B.12 Transfer Context and Control to HIE within EMR/EHR | B.12.1 EMR/EHR provides the ability to view content from an external web-based source such as an HIE within the framework of the EMR/EHR (e.g. a window inside the EMR/EHR), and will transfer the context of viewing to the external source through the URL as defined by the external source. |  | Provide specifics of capabilities including context objects transferred. |  |
| B.13 Generate and Send Summary of Care Document (CCD) | B.10.1 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. |  |
| B.10.2 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. |  |  |  |
| B.10.3 Send the CCD via Direct Project standards |  |  |  |
| B.10.4 Send the CCD via IHE XDS.b standards as a Document Source or Integrated Document Source Repository |  |  |  |
| B.14 Providing Electronic Summary to Patients | B.12.1 If via a CCD (see above), the EMR/EHR provides a viewer or style sheet so that the patient can read the contents of the electronic file provided. If not a CCD, please note what standard and format is used (e.g. CCR, Blue Button, text-only, etc.). |  |  |  |
| B.15 Send HL7 Radiology Report | B.15.1 ORU^R01 Send Radiology Report as HL7 ORU or MDM. |  |  |  |
| B.16 Send Corrected and Canceled HL7 Result Messages | B.16.1 Send HL7 result correction messages (OBR Result Status = C) and send order cancel messages (OBR Result Status = X). |  |  |  |

## Section 3: Approach to Interfaces & Interoperability

|  |  |
| --- | --- |
| **Interfaces and Hosting** | **Yes / No** |
| Interface is integral to the EHR software. No additional hardware, software, or hosting components required. |  |
| Interface is a separate software component. Software costs are included in the interface cost, but additional hardware may be required. |  |
| Interface is a separate appliance. Hardware and software costs are included in the interface cost. |  |
| Interface is a separate hosted service. Software and hosting services are included in the interface cost. |  |
| Interface is a separate hosted service. Software is included in the interface cost however a hosting company MAY charge extra. |  |

**EMR/EHR Vendor Name:**

**Interface & Interoperability Point of Contact:**

**Name: Phone: e-mail:**

**Pricing Details:**

**EMR/EHR Vendor Catalog Orderable Kit Price per instance in California for any client on maintenance with EMR/EHR Vendor and on the currently supported product version for above items in the “YES – As Shown” Column:**

**Annual Maintenance cost to the client:**