

Electronic Case Reporting (eCR)

**Onboarding Guide for
Healthcare Organizations**

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Introduction

What is eCR? Electronic case reporting (eCR) is the automated generation and transmission of case reports from electronic health records (EHRs) to jurisdictional public health agencies (PHA) for review and action. Reporting diseases and conditions of interest to public health by healthcare is required by law in all U.S. states and territories. Automated case reporting reduces the burden placed on healthcare providers and minimizes follow-up investigation phone calls and paperwork. Automated case reporting also enables public health practitioners to share information with healthcare providers about an identified reportable condition—for example, notices of disease outbreaks, infection control information, and next step testing and patient management. eCR is a collaboration between the Centers for Disease Control and Prevention (CDC), the Council of State and Territorial Epidemiologists (CSTE), the Association of Public Health Laboratories (APHL), and PHAs.

eCR uses a standards-based, shared, scalable, and interoperable infrastructure that is hosted on the APHL Informatics Messaging Services (AIMS) platform. The **electronic initial case report (eICR)**¹ was created as an HL7 standard to support eCR. The eICR standard defines an all-condition, all-jurisdiction case report from EHRs to PHAs. For every eICR that is sent, the healthcare provider receives a **reportability response (RR)**² from the PHA. The RR standard is designed to return information back to the healthcare organization to confirm that reporting was accomplished, what condition(s) was reported, and to which PHA(s) the information was reported. The RR may also contain information from the PHA (for example, treatment guidelines or fact sheets), enabling the bidirectional exchange of information. The reportability response also includes (but does not display) information on eCR errors and warnings suitable for use by support staff who maintain and advance eCR.

This document is for healthcare organizations and outlines the steps required to complete technical onboarding to the AIMS platform and enable electronic reporting to public health agencies. To streamline this process, please work with your EHR contacts to ensure that all your eCR setup and configuration tasks are complete.

eCR Onboarding Team Contact

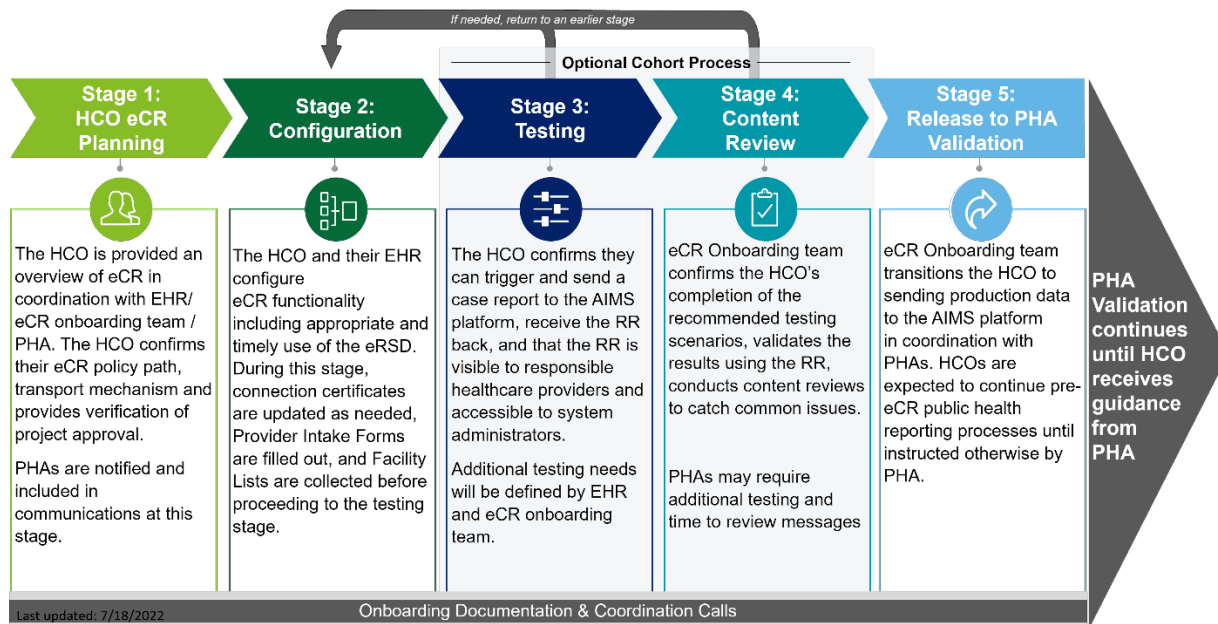
For assistance, please contact eCR@cdc.gov – Include “onboarding – [insert your healthcare organization name] – [insert your EHR product]” in the subject line to ensure proper triage and routing.

¹ Health Level 7 International. 2022 Standards: Product Brief: HL7 CDA R2 implementation guide: Public health case report—The electronic initial case report (eICR) release 2, STU Release 3.1—US Realm. http://www.hl7.org/implement/standards/product_brief.cfm?product_id=436

² Health Level 7 International. HL7 CDA® R2 implementation guide: Reportability response, Release 1, STU Release 1.1—US Realm. Accessed January 25, 2022. http://www.hl7.org/implement/standards/product_brief.cfm?product_id=470

eCR Onboarding Process Overview

Healthcare organizations (HCOs) generally follow a 5-stage process to onboard for eCR. The process consists of planning, configuration of eCR interface, testing, content review of eICR messages, and release of production data to the public health agency for validation.



HCO: healthcare organization; eCR: electronic case reporting; EHR: electronic health record; eRSD: electronic reporting and surveillance distribution; PHA: public health agency; AIMS: APHL Informatics Messaging Services (platform); RR: reportability response

Stage 1: Healthcare Organization eCR Planning

Getting Started with eCR

To get started, please follow the steps below:

- Contact the eCR Onboarding Team at ecr@cdc.gov to express interest and receive onboarding materials (e.g., eCR Provider Intake Form, eCR Facility List Template)
- Connect with your appropriate PHA to register your intent
- Work with the eCR Onboarding Team to:
 - Confirm policy path/legal framework
 - Confirm technical connection pathway to AIMS
- Complete the [eCR Provider Intake Form](#)
- The eCR team will send you the facility list template via email. This list is used to compile your eCR Onboarding Facility List, which will include:
 - The name, address, and facility type for all physical locations where care is provided that will be submitting data using eCR from your organization's instance of your EHR.
 - Please indicate whether a facility is sharing another organization's EHR in the appropriate column, as well as its parent healthcare organization.

Register Your Intent with Your Public Health Agency

We recommend you contact your public health agency, or public health agencies (if you have facilities in more than one jurisdiction) to let them know that you plan to implement eCR.

Registration of intent is a step to complete public health reporting for CMS Promoting Interoperability Programs. You can implement eCR without registration if you are not attesting to eCR as part of the CMS requirements. CDC and APHL do not manage registration, and onboarding to AIMS is not a replacement for registration of intent for purposes of Promoting Interoperability Programs. To find information about your PHA, visit [Appendix IV - State and Local Public Health Readiness for Interoperability | Interoperability Standards Advisory \(ISA\) \(healthit.gov\)](#).

All 50 states and many local jurisdictions are connected to receive eICRs from AIMS and RCKMS. If the jurisdiction where your healthcare facilities are located has not yet declared readiness, you may not be able register your intent (just yet) but could take an exclusion for eCR in the current calendar year.

While the CDC onboarding team will always communicate your intention to onboard for eCR to the appropriate PHA(s), we also recommend that you establish communication directly. This will ensure a smoother transition from eCR onboarding to the PHA validation stage.

Confirm Policy Path

To help healthcare organizations report electronically, APHL needs to receive eICRs under the federal Health Insurance Portability and Accountability Act (HIPAA) business associate or comparable authorities to confirm that conditions are indeed reportable in each state or territory before sending them to the appropriate jurisdictions. In this way, the APHL is supporting HIPAA treatment, payment, and operations needs for public health reporting, and making a public health disclosure to the appropriate PHAs. The three policy path approach options are:

1. **eHealth Exchange** - A legal chain of trust to eCR may exist if the healthcare organization is an up-to-date member of eHealth Exchange, or is a member of an organization that is, such as a Health Information Exchange (HIE). The eHealth Exchange can operate under business associate authorities with participating organizations and those that are connected to them. In this case, if a healthcare organization is a member in good standing or is otherwise represented through the eHealth Exchange, no new agreements would be necessary.
2. **Carequality** - A legal chain of trust to eCR may exist if the healthcare organization or its EHR company is a current Carequality Implementer. In this case, the healthcare organization agrees to the Carequality connection terms with that EHR company, but no new agreements would be necessary.
3. **CommonWell** - CommonWell is a Carequality Implementer, so healthcare organizations whose EHR company is a member of CommonWell can also participate under CommonWell's membership terms and the Carequality Connection Terms without the need for new agreements to perform eCR.

If a healthcare organization is unable to use one of the three above options, APHL offers a terms of service eCR Participation Agreement that EHR companies (preferred) or healthcare organizations can sign that will enable reporting. This agreement authorizes APHL and the AIMS platform to receive patient information to carry out reporting.

For more information, please visit: <https://ecr.aimsplatform.org/healthcare/confirm-policy-path>.

Stage 2: Configuration

Complete EHR Specific Configurations

- Verify delivery of eCR interface into your appropriate environment (if applicable)
- Review your EHR's eCR setup documentation
- Complete eCR build and required mappings (this may require support from your EHR)

Establish AIMS Connectivity

Once all EHR setup and configuration tasks are complete, including the ability to trigger a test eICR, you can now test your connectivity with the AIMS platform.

APHL supports two secure technical connection options to connect to the AIMS platform for eCR. Note that the connection options available to a *particular* healthcare organization may be constrained based on EHR functionality and support, and the CDC eCR onboarding team can help you understand your specific next steps:

- 1. Direct SMTP** – Direct Simple Mail Transfer Protocol (SMTP) provides secure transport for the sending and receiving of encrypted health information. During this process, you may need to work with your Health Information Service Provider (HISP).
- 2. Nationwide Health Information Network (NwHIN) Cross Enterprise Document Reliable Interchange (XDR) using the eHealth Exchange HUB** – Integrating the Healthcare Enterprise (IHE), XDR is the other common industry specification for “push” information exchange. During this process, you may need to work with your eHealth Exchange representative.

How to establish a connection with Direct SMTP

Step 1. Contact your HISP: Reach out to your HISP to confirm that you have the latest certificates within your test environment, and determine whether the Direct Address you will be using for testing is on the Interoperability Testing Bundle or the Production Accredited Trust Bundle.

Step 2. Send test message: Trigger and send a test eICR using a test patient with fully populated demographic information.

Please refer to your EHR's eCR setup documentation to use the appropriate Direct Address(es).

Only send test data during this step. Do not include Personally Identifiable Information (PII).

Step 3. Confirm Reportability Response (RR) Receipt: Once you send the test eICR, the AIMS platform will automatically send a RR message back to the sending Direct address upon receipt. Also refer to your EHR’s eCR setup documentation for RR-related tasks.

If you do not receive a Reportability Response, confirm your configuration to rule out the most common issues found below:

- Confirm the eICR was generated and sent.
- Confirm the eICR made it to your HISP.
- Confirm the eICR was attached to a Direct Message.
- Confirm you received a successful Message Disposition Notification (MDN) response from AIMS.
- Confirm your patient-matching configurations allow for matching the RR to an existing patient.

How to establish an NwHIN XDR connection with the eHealth Exchange Hub

Step 1. Send an email to eCR@cdc.gov with the subject line: “eCR - [insert your healthcare organization name] – eCR eHealth Exchange Hub Connection Request.” If you have already established communications with the eCR Onboarding Team, please respond to an existing communication.

Step 2. Receive and complete an eHealth Exchange checklist that we will provide to you, which will include the following information:

- Technical point(s) of contact information
- Health Level 7 International (HL7) Object Identifier (OID) for both your production and testing environments
- NwHIN XDR endpoint URL for both your production and testing environments

Step 3. You will be contacted by the eCR Onboarding Team with further instructions. Please also refer to your EHR’s eCR setup documentation, which will detail actual build instructions.

Triggering and Use of eRSD

Your EHR’s eCR setup documentation will outline how to implement Electronic Reporting and Surveillance Distribution (eRSD) trigger codes within your EHR. You should also ensure prompt and consistent eRSD implementation and updates by signing up for eRSD email notifications. You can register for an account at the following link: [Electronic Reporting and Surveillance Distribution](#).

Stage 3: Testing

To streamline the eCR testing process, please follow the testing scenarios included in your EHR’s eCR setup documentation and/ or provided by the eCR Onboard Team. The eCR Onboarding team will work with your EHR to determine which testing scenarios are applicable for you. The output of these test scenarios will be reviewed by the eCR testing team and/ or your PHA.

Please do not send actual patient data to the test address.

Stage 4: Content Review

Your organization should complete the steps outlined below to validate the data contained within your electronic initial case reports (eICRs).

Healthcare Organization Content Review Completed during Onboarding to eCR

1. Conduct Schema/Schematron Validation using APHL's online [AIMS Validator](#) that verifies whether a healthcare organization's eICRs comply with [Release 1.1 of the CDA R2 Implementation Guide](#):
 - a. Schema Violations, Schematron Errors, Schematron Severe Warnings: Must be reviewed and resolved
 - b. Schematron Warnings: Allowed
2. Verify that Race Category (excluding nulls) is populated correctly and includes ONLY 1 of 5 possible values per page 36, Table 10, of the [Release 1.1 of the CDA R2 Implementation Guide](#):
 - Value Set Source: [Value Set Authority Center](#)
 - 1002-5 American Indian or Alaska Native
 - 2028-9 Asian
 - 2054-5 Black or African American
 - 2076-8 Native Hawaiian or Other Pacific Islander
 - 2106-3 White
3. Verify that Ethnicity Category (excluding nulls) is populated correctly and includes ONLY 1 of 2 possible values per page 37, Table 11, of the [Release 1.1 of the CDA R2 Implementation Guide](#):
 - Value Set Source: [Value Set Authority Center](#)
 - 2135-2 Hispanic or Latino
 - 2186-5 Not Hispanic or Latino
4. Verify the Encompassing Encounter is present
5. Verify that the latest trigger code set version is present and in the correct naming convention [YYYY-MM-DD]
6. Verify that Diagnosis code or Problem List trigger code is present, **(or)**
Verify that Laboratory Results include positive value and Abnormal Indicator

After completing your internal validation steps, please email the eCR Onboarding Team two eICRs for review: one triggered on a COVID-19 problem or encounter diagnosis and the other on a positive laboratory result.

After the eCR Onboarding Team (and your PHA, if applicable) receives your two test eICRs, a review using the testing steps above will be completed and you will receive feedback. Additional guidance will be provided to conduct a "soft go-live" with a content review of production data to begin identification and resolution of production message issues. **Additional testing may be needed based on any issues found during the testing or soft go-live process.**

Stage 5: Release to PHA Validation

Enabling Production Data

After testing review is complete for the eICRs and any issues resolved, the eCR Onboarding Team will work with you and your PHA(s) to establish a date to enable your production feed to your PHA(s). Your organization can now begin sending production data to AIMS. During this process, you may need to work with your HISP or eHealth Exchange to troubleshoot.

1. **(HCO)** On the agreed upon date and time, you will enable eICR triggering in production. Refer to your EHR's eCR setup documentation to ensure all production eICRs are sent to the appropriate production Direct address or eHealth Exchange environment.
2. **(AIMS)** Enable a healthcare organization to gain the ability to send production data.
3. **(HCO)** Send an email to the onboarding team at eCR@cdc.gov confirming production data has been enabled.
4. **(AIMS)** Confirm receipt of eICRs and respond with an email.
5. **(HCO)** Confirm receipt of RRs and respond with an email.
6. **(AIMS)** Confirm delivery of eICRs and RRs to your public health jurisdiction.

Note: Production connection troubleshooting will occur through the existing onboarding communication and emails with eCR@cdc.gov as needed.

At the end of Stage 5, the eCR Onboarding process is concluded and you will continue to work with PHAs thru the Validation Process.

For post-production technical support, contact the eCR Support Team at eCR-info@aimsplatform.org -- Include "eCR Production Support – [insert your healthcare organization name] – [insert your EHR product]" in the subject line and a detailed summary of the issue, steps you have taken to troubleshoot, and relevant eICR document IDs to ensure proper triage and routing. Please do not include PII/PHI.

PHA Validation Process

Your organization has now started sending production data to AIMS that will be used by PHAs to validate production messages. Your organization **should not stop existing reporting methods** (paper, manual, etc.) currently being done. The PHA will work with you to review data quality within your eICRs and other factors. The PHA will communicate when manual reporting may be discontinued.

Resources and Links

- **eCR on AIMS Platform:** <https://ecr.aimsplatform.org/>
- **AIMS Online Validator:** <https://validator.aimsplatform.org/>
- **CDC eCR Page:** <https://www.cdc.gov/ecr/>
- **Electronic Reporting and Surveillance Distribution (eRSD) for triggering:**
<https://ersd.aimsplatform.org/#/home>

We look forward to working with you!

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