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Electronic Case Reporting

Electronic Case Reporting (eCR) is the transmission of case reports from an electronic health record to public health for further investigation, review and action. eCR allows healthcare providers and facilities to report cases directly from their electronic health records, rather than manually reporting to meet Washington's regulatory requirements (WAC 246-101). The electronic case report captures critical clinical and demographic patient data typically not included in laboratory reports submitted to public health agencies.

How eCR Works

In this country reporting is a requirement for COVID-19 and many other conditions, but the specific laws or regulations vary by state. To address the complexity of reporting requirements, the Centers for Disease Control and Prevention (CDC), Council of State and Territorial Epidemiologists (CSTE), and the Association of Public Health Laboratories (APHL) have implemented shared eCR services on the APHL Informatics Messaging Services (AIMS) platform. The Washington State Department of Health eCR team is actively working with these services to receive eCR data from clinical disease reporters and to integrate it into the notifiable conditions surveillance systems.

The electronic health record vendor, healthcare organization, and public health agencies must fulfill their roles to trigger an eCR. The central platform that glues this all together is the Reportable Condition Knowledge Management System (RCKMS). This system is the centralized infrastructure for eCR. It is hosted on the AIMS Platform and enables the public health agency to author reportable condition specifications, provides decision support service for evaluation, and the Reportable Condition Trigger Codes (RCTC) used in the electronic health record system.

Scott Lindquist, MD, MPH
State Epidemiologist,
Communicable Disease

Marcia J. Goldoft, MD
Scientific Editor

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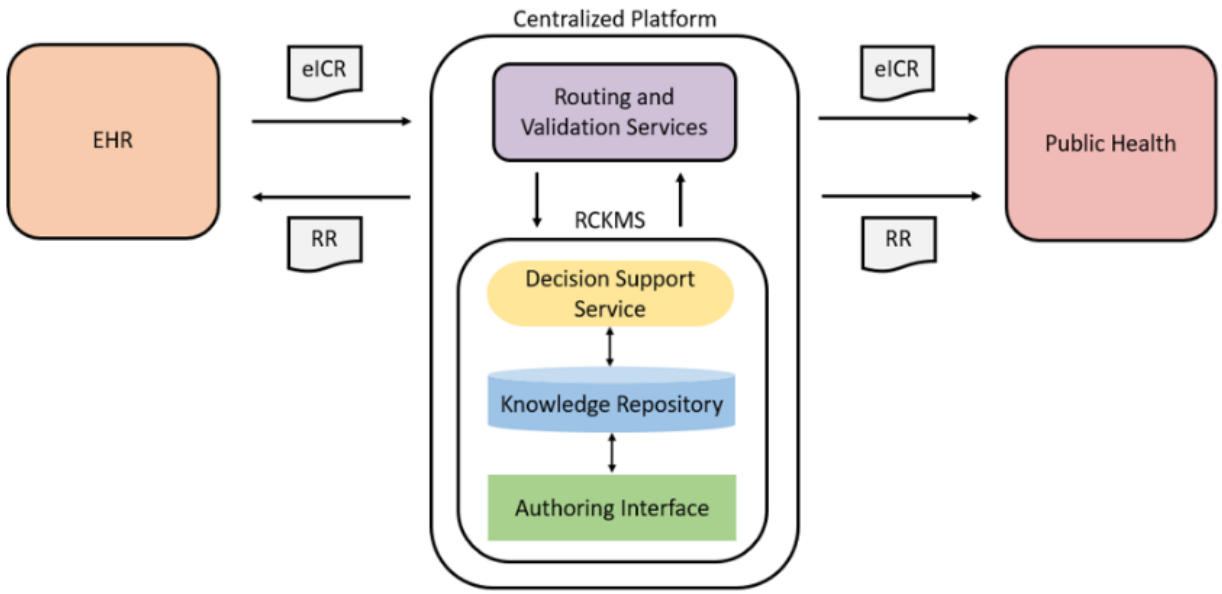
WA State Dept. of Health
Communicable Disease Epi
1610 NE 150th Street
Shoreline, WA 98155
206-418-5500

Triggering is the set of actions in the electronic health record that initiates the creation and transmission of an electronic initial case report to a public health agency. When certain data in the electronic health record are recorded or updated, those data are checked against the series of Reportable Condition Trigger Codes that have been distributed to the record. If a code matches, there is likely a reportable condition that needs to be processed by decision support for confirmation. If the timing parameters for reporting have been met, then the electronic initial case report is "triggered" and transmitted to the AIMS platform. This is all done automatically behind the scenes and without disrupting the healthcare providers' existing workflow.

Reportable Condition Knowledge Management System determines the reportability of the electronic initial case report and generates a Reportability Response documenting if any condition(s) were found to be reportable and to which jurisdiction(s) the identified condition(s) should be reported. The Reportability Response includes additional information, such as contact information for the relevant public health agency. Reportable Condition Knowledge Management System uses current HL7 standards for eCR and aligns with other initiatives supporting interoperability including the Health Information Technology for Economic and Clinical Health (HITECH) Act, Office of the National Coordinator for Health Information Technology's Standards & Interoperability Framework and Meaningful Use Objectives (Figures 1 and 2).

Figure 1: RCKMS and Electronic Case Reporting



https://www.rckms.org/about-rckms/

Example of the eCR Process (Figure 2)

Patient is diagnosed with a reportable condition, such as COVID-19

Healthcare provider enters patient's information into the electronic health record (EHR)

Data in the EHR automatically triggers a case report that is validated and sent to the appropriate public health agencies if it meets reportability criteria

The public health agency receives the case report in real time and a response about reportability is sent back to the provider

State or local health department reaches out to patient for contact tracing, services, or other public health action

https://www.cdc.gov/ecr/how-does-ecr-work.html

Differences Between eCR and Traditional Case Reporting

With both eCR and traditional case reporting the patient is diagnosed with a reportable condition. For eCR the healthcare provider enters the information directly into the patient's electronic health record. If the report meets the reportability requirements, it automatically triggers a case report and sends it to the appropriate public health agency. The public health agency receives the case report real-time and a response about reportability is sent back to the provider including condition information and references. The report received via electronic data is more complete. The case is automatically processed into the surveillance system, ready for immediate use. The public health agency can rapidly reach out to patient for contact tracing, services and other public health action, saving time and completing the investigations more promptly

For traditional case reporting the healthcare provider must know the rules for reporting and manually complete case information. The provider sends the case report via phone, fax machine or direct secure message. The public health agency manually adds data into the surveillance system. If any patient information is missing the public health agency must follow up with the provider. Public health agency feedback is not available to healthcare provider in real-time.

Advantages of eCR for Public Health Agencies

- Provides more timely and complete data to support outbreak management and monitor disease trends
- Efficiently monitors the spread of reportable diseases like COVID-19 during outbreaks and public health emergencies
- Reduces response time with timely transmission of automated information
- Improves communication and collaboration with healthcare providers by enabling bidirectional data exchange
- Supports submission of anonymized case-based data to CDC from state and local public health agencies through the National Notifiable Diseases Surveillance System.

Advantages of eCR for Healthcare Providers

- Reduces the burden of reporting to public health by healthcare professionals, staff, and facilities without disrupting the clinical workflow
- Helps eliminate manual reporting
- Accommodates reporting across jurisdictions based on state or local regulations
- Receives information back from public health associated with the reportable condition
- Can fulfill legal reporting requirements
- Improves COVID-19 reporting immediately and allows expansion to all reportable conditions
- Connects in real time with public health agencies

Everyone involved in notifiable conditions case reporting benefits from eCR. It provides timely and more complete data and decreases the burden on both healthcare and public health staff.

Resources

AIMS platform: https://www.aphl.org/programs/informatics/pages/aims_platform.aspx

Washington Administrative Code: https://app.leg.wa.gov/wac/default.aspx?cite=246-101

CDC COVID-19 electronic case reporting: https://www.cdc.gov/coronavirus/2019-ncov/php/COVID-19-eCR-for-Public-Health.pdf

CDC eCR overview: https://www.cdc.gov/eCR/

CDC National Notifiable Diseases Surveillance System (NNDSS): https://wwwn.cdc.gov/nndss/

Centers for Medicare & Medicaid Services – Promoting Interoperability Programs: https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms

Washington State Department of Health eCR: https://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/HealthcareProfessionsandFacilities/PublicHealthMeaningfulUse/ElectronicCaseReporting

Health IT Standards & Interoperability Framework: https://www.healthit.gov/topic/interoperability/standards-interoperability-si-framework

Health IT legislation: https://www.healthit.gov/topic/laws-regulation-and-policy/health-it-legislation

HITECH - https://www.hhs.gov/hipaa/for-professionals/special-topics/hitech-act-enforcement-interim-final-rule/index.html

ONC and S&I: https://www.healthit.gov/sites/default/files/factsheets/onc-office-of-interoperability-and-standards.pdf

Reportable Conditions Knowledge Management System introduction: https://www.rckms.org/about-rckms/