

eCR Now

A Webinar Describing the Effort to Scale Electronic Case Reporting (eCR) Nationwide for COVID-19

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April 28, 2020

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- How eCR works
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eCR Now: A Webinar Describing the Scaling of Electronic Case Reporting (eCR) Nationwide

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American Medical Informatics Association (AMIA) COVID-19 Webinar Series

April 28, 2020





cdc.gov/coronavirus

Introduction

- COVID-19 is now a reportable condition in all jurisdictions
- With widespread community transmission of the virus, SARS-CoV-2, reporting individual cases to public health is challenging
- Need for Health IT tools to
 - Decrease provider and healthcare facility burden in reporting
 - Improve case-based surveillance for state, regional, and federal situational awareness



What is Electronic Case Reporting (eCR)?



The automated generation and transmission of case reports from electronic health records (EHRs) to public health agencies for review and action

Value of Electronic Case Reporting (eCR)



Automatic, complete, accurate data in real-time



Diminishes healthcare provider burden and meets public health needs



Supports reporting and situational awareness, case management, contact tracking, connecting lab results, and coordinating isolation and other response actions



Healthcare receives information back from public health



eCR Incubated by Digital Bridge

- Digital Bridge is a collaborative of healthcare, public health and HIT industry partners to solve information exchange challenges
 - Goal: To ensure our nation's health through a bidirectional information flow between health care and public health
- An incubator, cultivating projects that meet the goal of effective information sharing
- First project: advance a nationally scalable, multi-jurisdictional approach to electronic case reporting (eCR)
 - Initial implementation successful at small number of sites
 - Transitioned for operations to CDC, APHL and CSTE in Summer 2019



Current Implementers



eCR for COVID-19

- Rapidly expanded to include COVID codes and use existing infrastructure used for routine public health reporting
- Over 142,000 case reports identified and sent from seven eCR implementations since January 27, 2020
- Confirmed cases have been identified from case reports
- Receipt of electronic case reports confirmed faster and more complete than manual reporting and Electronic Laboratory Reports





Electronic case reporting (eCR) The automated identification of reportable health events in electronic health records and their transmission to state and *local public health authorities* for review and action.

eCR - an Informatics Problem for the Ages

- 1. Public health "reporting burden"
- 2. "Public health is a black hole for data"
- 3. Variable state reporting laws and conditions
- 4. States will not accept data except as specified by law
- 5. EHRs want a single interface
- 6. Individual disease program funding lines
- 7. Connecting lab and epidemiologic data
- 8. Case definitions change during outbreaks
- 9. Public health agency roles change during public heath emergencies
- 10. Poor public heath funding interspersed with boluses that must be spent immediately



eICR - Electronic Initial Case Report CDA v1.1

RR - Reportability Response CDA v1.0

eCR Now

- Electronic case reporting (eCR) is a critical tool for COVID-19 and other outbreak management needs
 - Automated case reporting from EHRs to state and local public health agencies (PHAs)
 - Minimizes healthcare provider burden and meets core public health needs
 - Supports case management, contact tracing, situational awareness and reporting, connecting lab results, coordinating isolation and other response measures
 - Case reporting is a legally requirement in every state and territory
- eCR is operating well now for COVID-19, but there were a <u>limited number EHRs with eCR capabilities</u> when COVID-19 began
- We need more implementations of <u>eCR Now</u>

eCR Now Elements

- 1. Cohort-based COVID-19 rapid eCR implementations for provider sites that have eCR enabled EHRs
- 2. A new eCR Now FHIR app that non-eCR enabled EHRs can rapidly implement to automate COVID-19 eCR
- 3. Extension of the existing eHealth Exchange policy framework through a developing Carequality eCR implementation guide

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eCR Now -Element #1

Rapid Implementation Cohorts





- While some EHR vendors had implemented an eCR technical solution, eCR was just moving from Digital Bridge pilots to APHL/CSTE/CDC operational ramp-up when COVID-19 appeared.
- The eCR team worked with Epic to develop an accelerated implementation plan for COVID-19 case reporting. What had previously taken 2-3 months was reduced to 3-4 days.
- There now have been over 142,000 COVID-19 electronic case reports transmitted to public health agencies since the onset of the pandemic.
- We have completed two cohorts of health systems in California and are now moving out of California and to a third.
- Here is how we are doing it...

Approach



- Leveraged Epic interoperability Regional User Groups (RUGs)
 - History of successful collaboration
 - Trusting, non-competitive relationships
- Made the case for:
 - Doing the right thing for community/public health
 - Reducing clinician and staff burden
 - Replacing legally required paper-based reporting
 - Getting information / feedback from public health back into patient's chart
 - Saving lives
- Established cohorts of the (many) willing
- Challenged the participants to do eCR Now





- Built on the foundation of original four Digital Bridge pilots
- Developed a culture of cooperative collaboration
- Held daily stand-up meetings to address common progress and issues
- Herded cats, celebrated success, invited innovation
- Starting our third cohort now; a fourth is planned
- Established the Sutter Health Challenge a bottle of fine wine for any cohort participant that beats our implementation record!

Total case reports by date and new implementation milestones





COVID-19 eCR Reporting Metrics



- Intermountain, UT (since 1/27) 106, 069
- Houston Methodist, TX (since 1/27) 13,693
- UC Davis, CA (since 3/23) 347
- Institute for Family Health, NY (since 4/7) 140
- Sutter Health, CA (since 4/15) 8,377 8,149 were reportable
- OCHIN, 19 states (since 4/17) 8,200 5,530 were reportable
- Contra Costa Health Services, CA (since 4/17) 589

Reports sent to more than one Public Health Agency = 847

COVID-19 eCR Reporting @ Sutter Health



COVID-19 eCR Implementation Sites





Current implementation cohort members

- Washington Hospital Healthcare System (CA)
- UCLA (CA)

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- MemorialCare (CA)
- Community Medical Center (CA)
- University Of Utah
- Group Health Cooperative of South Central Wisconsin (WI)
- PeaceHealth (WA)
- Northwest Permanente, PC (WA, OR)
- Memorial Healthcare System (FL)
- Novant Health (GA, NC, SC, VA)

Future cohorts forming now







- Working with Epic to advance a nationwide approach to rapidly onboard all US healthcare organization customers
- Working with Carequality to finalize a new eCR Implementation Guide to allow participation by any provider organization that has signed on to utilize the national interoperability framework
- Encourage all EHR vendors to develop triggering and report generation capabilities based on the Digital Bridge standard
- Encourage all state and local health jurisdictions to accept eCR in lieu of manual case reporting
- Advance the future option of eCR via FHIR

eCR Now Elements

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eCR Now FHIR App – Element 2

- A FHIR app that can be rapidly implemented to automate COVID-19 eCR in otherwise non-enabled EHRs
- Connect COVID-19 electronic case reporting to existing infrastructure to confirm case reports and route to appropriate public health surveillance systems
- Immediately implement in as many EHRs as possible, based on API that is "in the wild" without waiting for EHR software releases
- Initial version of eCR Now app for COVID-19 and source code <u>will be</u> <u>available May 1</u> for EHR sandbox implemenation and testing
- Encourage EHR companies to test in HL7 FHIR Virtual Connectation May 13-15

eCR Now - FHIR Reporting App

| | eCR Now COVID-19 and full eCR option | Backend Services App | Reporting Services in FHIR API |
|-------------|--|---|---|
| Description | Expedited delivery of app to provide automated COVID-19 eCR for EHRs that don't have it. App can be used subsequently for full eCR. | Planned roll-out of app with fully automated launch, trust services, and other reporting functions | Advance FHIR Common Reporting Functions into FHR API – all EHRs must report |
| Timing | App / source code available May 1 | Projected for 2021 | Longer term objective |
| Output | HL7 CDA electronic Initial Case Report (eICR) Ver 1.1 | HL7 FHIR electronic Initial Case Report Version 1.0 and other FHIR payloads | Multiple FHIR payloads |
| Operations | Fully manages triggering with eRSD input Automated behind the scenes process "SMART on FHIR App launch" for patient and encounter context App launch by auto pages, CDS Hooks, etc. Followed by system access for triggering and elCR loading or refresh tokens Backend can be centrally hosted by EHR Direct or XDR transport | Full backend services app Trust services for chronic surveillance FHIR Subscription triggering CQL engine connection | Minimized app services Possible CQL engine services |
| Query Data | Argonaut 1.0.0 (R2) based on FHIR Version 1.0.2 USCore 2.0.0 (STU 2) based on FHIR Version 3.0.1 | FHIR Release 5USCore | • TBD |

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COVID-19 eCR evaluation opportunities

Acknowledgements:

Shan He, Intermountain Goldie MacDonald, CDC

Does the current eCR effort for COVID-19....

- meet healthcare system needs to: ٠
 - efficiently report needed data (avoid 'one-offs' & manual work)
 - receive guidance from public health (in reportability response)
 - access population level information to make clinical and business decisions
- meet public health needs to: ٠
 - efficiently receive and manage growing volume of data (avoid 'one-offs' & manual work)
 - efficiently provide reports to the community & governmental agencies •
 - daily updates: cases/hospitalizations/deaths/geographic
 - support public health investigation and control efforts:
 - Case management (isolation), contract tracing, outbreak management in high risk settings, etc.







... multiple components to evaluate





... accurate, timely, complete, cost effective



... efficient and effective for decision making





Bigger questions



- How can the processes implemented for COVID-19 support and enhance surveillance for other conditions and future waves of COVID-19?
 - COVID-19 is just one of over 60 conditions reportable in a given state or city.
 - We shouldn't be building just for COVID-19, but developing systems that support both routine and emergent infectious disease control needs
- How well does eCR support Information for Action:
 - the ongoing systematic collection, collation, analysis and interpretation of data;
 - **and** the dissemination of <u>information</u> (to those who need to know)
 - **in order** that action may be taken based on <u>knowledge</u>.



Leverage Digital Bridge Evaluation Plan & prior work* CDC Foundation & CDC working with stakeholders to:

- Refine evidence-informed logic model
 - Articulate eCR components/outcomes, update indicators
- Document eCR three-day implementation to:
 - Identify crucial components:
 - pre-work needed, steps in the process, maintenance activities
 - Consider health care organization, public health entity, & EHR vendor



- Multisite Evaluation Plan: https://digitalbridge.us/wp-content/uploads/2018/10/Digital-Bridge-eCR-Implementation-Evaluation-Plan-final-report.pdf
- Mulitsite Evaluation Report: <u>https://ecr.aimsplatform.org/cms/resources/blocks/digital-bridge-ecr-evaluation-report-12-32019.pdf</u>

How can you participate in these activities?



- Volunteer to review logic model and provide recommendations
- Participate in a stakeholder exercise to review and rate the indicators used previously to prepare for future evaluation that speaks to priority interests and needs

- Implement eCR and evaluate your eCR implementations using vetted indicators/metrics for comparison
- eCR-info@aimsplatform.org

Audience Q&A

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