

**Demonstration Title:** Healthcare Surveillance for Pandemic Response

**Short Description:** The ability to respond rapidly to a pandemic requires effective and efficient data sharing between healthcare and public health agencies. This demonstration, about an essential worker who has contracted COVID-19, highlights how critical information can flow seamlessly between clinical care and public health to respond to a crisis.

**Logos:** CDC, Cerner, Epic, InductiveHealth Informatics

**Demographics:**

- Name: Dwayne Caldwell
- Race: Black
- Age: 58
- Gender: Male
- Occupation: Store Cashier
- Industry: Grocery Store
- Employer: Fresh Acres Market

Scenario	Vendor	Products	Standards
<p><b>1a Ambulatory Provider</b></p> <p>The patient, Dwayne, presents at an ambulatory healthcare provider with mild COVID-19 symptoms. A COVID-19 rapid test (PCR) is performed at the on-site lab while the patient is present, and the test returns positive. COVID-19 is added to the patient's problem list, which triggers the sending of an Electronic Case Report (HL7 eICR) to public health with information about the patient's race/ethnicity, occupation, and medical history.</p>	Epic		HL7 eICR  IHE: DirectXDR
<p><b>1b - Acute Care ED Provider</b></p>	Cerner		HL7 eICR

<p><b><i>(Alternate start)</i></b> A patient with more severe symptoms seeks care at the Emergency Department. The patient is admitted, and the providers use the eCR FHIR® app to send an HL7 eICR to public health. The patient's symptoms abate, and an appointment is scheduled to administer the vaccination.</p>			<p>IHE: DirectXDR</p>
<p><b>2 - Public Health Platform</b></p> <p>The eICR is received and validated by AIMS and then sent to the Reportable Condition Knowledge Management System (RCKMS) for decision making, the RCKMS decision support service processes the eICR using reporting requirements for public health agencies (PHAs) and determines reportability. Once determined as reportable by RCKMS, AIMS forwards eICR to the appropriate PHA(s). AIMS generates a Reportability Response (RR) and sends it back to the provider system for use and to the PHA(s).</p>	<p>CDC (AIMS/RCKMS )</p>		<p>IHE: DirectXDR</p> <p>HL7: HL7 CDA eICR,</p> <p>HL7 CDA Reportability Response</p>
<p><b>3a - Ambulatory provider</b></p> <p>The provider system receives the reportability response from public health and attaches it to the patient's chart. The provider reviews the information in the RR to confirm reporting and additional information about the condition available from public health.</p>	<p>Epic</p>		<p>HL7 CDA Reportability Response</p>
<p><b>3b - Acute Care ED Provider</b></p> <p>The provider system receives the reportability response from public health and attaches it to the patient's chart. The provider reviews the information in the RR to confirm reporting and additional information about the condition available from public health.</p>	<p>Cerner</p>		<p>HL7 CDA Reportability Response</p>

<p><b>4a - State Public Health Agency</b></p> <p>The PHA surveillance epidemiologist monitors reports of COVID-19 cases. They use the eICR and RR to populate and manage cases in their disease surveillance system to help with public health investigation and case management.</p> <p>The PHA will emphasize the value of having the Occupation/industry data for COVID-19 monitoring, as well as the linkages to COVID-19 information systems such as contact tracing, exposure notification, patient monitoring, and/or case investigation.</p>	<p>CDC (Washington State Dept Of Health, InductiveHealth Informatics)</p>		<p>HL7: HL7 CDA eICR, HL7 CDA Reportability Response</p>
<p><b>4b - State Public Health Agency</b></p> <p>The PHA surveillance epidemiologist monitors reports of COVID-19 cases. They use the eICR and RR to populate and manage cases in their disease surveillance system to help with public health investigation and case management.</p> <p>The PHA will emphasize the value of having the Occupation/industry data for COVID-19 monitoring, as well as the linkages to COVID-19 information systems such as contact tracing, exposure notification, patient monitoring, and/or case investigation.</p>	<p>CDC (Florida Dept Of Health)</p>		<p>HL7: HL7 CDA eICR, HL7 CDA Reportability Response</p>

Data exchange standards:

Vendor	Product	Category	Protocol	Interop Body	Interop Profile	Interop Actor	Interop Message	Send or Receive	Transaction Description
Cerner	eCR Now FHIR app integrated with Millennium	ED Provider	FHIR query/ CDA output	HL7	Electronic Initial Case Report	Content Creator		Send	Create Electronic Initial Case Report Document
			CDA	HL7	Reportability Response	Receiver		Receive	Receive Reportability Response
Epic		Ambulatory Provider	CDA	HL7	Electronic Initial Case Report	Content Creator	NA	Send	Create Electronic Initial Case Report Document
			ebXML	IHE-ITI	XDR	Document Source	ITI-41	Send	Send (Direct) Provide and Register Document Set.b
			CDA	HL7	Reportability Response	Receiver		Receive	Receive Reportability Response
CDC		Public Health Platform	CDA	HL7	Electronic Initial Case Report	Receiver		Receive Send	Receive Electronic Initial Case Report; Send Electronic Initial Case Report
			CDA	HL7	Reportability Response	Content Creator		Send	Create Reportability Response
CDC		State Public Health Agency	CDA	HL7	Electronic Initial Case Report	Receiver		Receive	Receive Electronic Initial Case Report
			CDA	HL7	Reportability Response	Receiver		Receive	Receive Reportability Response

		(WA and FL)							
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**References:**

eICR - [https://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=436](https://www.hl7.org/implement/standards/product_brief.cfm?product_id=436)

RR - [https://www.hl7.org/implement/standards/product\\_brief.cfm?product\\_id=470](https://www.hl7.org/implement/standards/product_brief.cfm?product_id=470)