



**Use Case Title: Opioid Crisis, the Person & the Population**

**Short Description:** 38 year old Stella presents to the Emergency Department experiencing an Overdose. The Prescription Drug Monitoring Program (PDMP) is queried, confirming high risk behavior. The PDMP is able to identify her other providers, enabling care coordination. After she is stabilized, a clinician starts a telehealth session with a behavioral health provider to identify symptoms, diagnose and refer for further treatment. Stella is transferred to the behavioral health facility where she is admitted for Medication Assisted Treatment (MAT). Based on the information in the patient chart, an electronic Initial Case Report is sent to public health to initiate surveillance and intervention. This data is available for visualization/monitoring of population health impacts by providers and public health.

**Value:** Opioid Addiction Care: Access to a public health registry application with aggregated data collection from pharmacies allows for improved bi-directional communication with the Care Team. Interoperability drives real-time clinical decision making to ensure appropriate adherence to opioid treatment guidelines. Monitoring and Intervention: Leveraging data to prevent misuse and response to the opioid crisis. Ability for agencies to monitor and identify outliers from both the patient perspective and provider perspective as a means for follow-up and intervention. In this space, public health's role and value rests on making this information more readily accessible directly within the provider's and care coordinator's tool set.

**Public Health Reporting:** Sharing secure information via IHE Profiles with public health agencies allows for future treatment to be developed, improved communication and epidemics identified earlier. Interoperability drives STEPS to value through enhanced communication between provider, patient and public health agencies.

**Scheduled times:** This demonstration occurs 15 and 45 minutes past the hour.

**Logos:** AIMS, American Well, APHL, CareEvolution, CDC, Conduent, CSTE, Epic, FormFast, Michigan Department of Health and Human Services, Netsmart, National Consortium of Telehealth Resource Centers, Tennessee Department of Health, Utah Department of Health, Washington State Department of Health

Scenario – Part 1: Clinical Care	Vendor	Products	Standards
<p><b>Hospital</b></p> <p>Stella presents as a first-time patient to the hospital Emergency Department and is diagnosed with a drug overdose. Dr. Massoud retrieves the State Prescription Drug Monitoring Programs (PDMP) report. The state PDMP contains history of opioid dispensations from several urgent care settings. Once she is stabilized, having identified a history of opioid use, Dr. Massoud refers Stella for a telehealth visit to begin a referral to behavioral health for treatment.</p>	Epic		NCPDP 10.6 IHE XDR Transfer of care referral HL7 MDM
<p><b>Prescription Drug Monitoring Programs</b></p> <p>PDMPs, now available in all 50 states, are an important tool in addressing the opioid crisis. Dispensed medications are collected daily for Schedules II-V drugs from pharmacies and providers who dispense onsite or provide samples. Previously, this information could only be reviewed through a web portal that required clinicians to log in through a mechanism separate from their EHR workflow, and was rarely utilized. This demonstration shows how a standards-based API can be used to make this information accessible at the point of care through the provider’s normal prescribing workflow.</p> <p>The PDMP administrator reviews the query history and compliance report card and determines the provider has made queries against the patients. The administrator reviews compliance at the state level and then reviews compliance at the organization level. The administrator can then download the user compliance report to review the individual compliance rates for each of the prescribers within the organization.</p>	NIC	RxGov	NCPDP 10.6
<p><b>Forms Management</b></p> <p>Stella’s provider has placed an order for a behavioral telehealth consult to evaluate her potential opioid abuse. The next step is to discuss the process to her and gain her consent. Dr. Massoud or an ED nurse reviews the telehealth process with Stella. Once her questions are answered, she signs the consent on a mobile device. The nurse signs as a witness, as does Dr. Massoud. The form is automatically filed back to the EMR.</p>	FormFast		HL7 MDM (Medical Document Management)
<p><b>Telehealth</b></p> <ul style="list-style-type: none"> <li>The ED physician recommends that the patient, Stella, enter treatment for SUD (Substance Use Disorder) and requests they speak with a behavioral health specialist. Stella agrees and</li> </ul>	American Well	American Well Telemedicine Cart	Web Services

<p>the ED physician wheels the American Well Telemedicine Cart to the patient’s bedside. The ED physician uses the cart’s touch screen interface to enter the patient’s information, reason for visit, select the appropriate clinical specialty, and select from available specialists. API Web Services are used to interface between the American Well Telemedicine Cart and Netsmart to add the patient to the selected provider’s queue. Using Netsmart, the remote specialist receives a notification, accepts the case, reviews the record, and initiates a telehealth video encounter. The remote specialist and Stella meet face to face on a video call so that the specialist can evaluate Stella’s condition and recommend an informed treatment plan.</p>			
<p><b>Behavioral Health</b></p> <ul style="list-style-type: none"> <li>• Telehealth visit</li> <li>• Receive referral from Epic;</li> <li>• Inpatient treatment</li> <li>• Successful MAT program completed</li> <li>• Switch to outpatient treatment (can be outpatient Telehealth)</li> </ul>	Netsmart		XDR ITI-41 Transfer of care referral (CCDA) Web Services

<b>Scenario – Part 2: Population Health</b>	<b>Vendor</b>	<b>Products</b>	<b>Standards</b>
<p><b>Emergency Department</b></p> <p>Stella presents to the Emergency Department with an opioid overdose. The diagnosis of <i>T40.2X1a</i> (Poisoning by other Opioids), matches the RCTC code and automatically triggers an eICR from the provider’s EMR system.</p>	Epic		HL7 eICR IHE XDR
<p><b>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 engine hosted on AIMS platform manages, reportability requirements for numerous jurisdictions. Once determined as reportable by RCKMS, AIMS forwards eICR to the</p>	AIMS Platform		PHIN-MS IHE XDR Direct (SMTP) HL7 eICR HL7 Reportability Response

jurisdiction. AIMS generates a reportability response and sends it to the jurisdiction and back to the provider system.			
<p><b>Hospital</b></p> <p>A clinical provider in the hospital is working a queue of reportable conditions. They have received the inbound message from the jurisdiction and need to fill out subsequent data. Stella is stabilized, and referred to an inpatient program for treatment.</p>	Epic		HL7 Reportability Response IHE RFD
<p><b>Jurisdiction Public Health (Epidemiology)</b></p> <p>The state epidemiologist monitors incidence reports of reportable overdose cases. They use the new eICR, RR and supplemental data as part of an effort to identify an outbreak.</p>	WA DOH : Conduent /	Maven /	IHE XDR eICR IHE RFD
	TN DOH Alternating	NEDSS Based System	PHIN-MS eICR
<p><b>Jurisdiction Vital Records</b></p> <p>Stella’s successful intervention was informed by the results of public health monitoring of the community. The opioid crisis has resulted in a significant increase in opioid-related deaths. Interoperability between Electronic Death Reporting System (EDRS) and electronic health records available through the Health Information Exchange (HIE) enables improved determination of death causal information. The physician from the community hospital certifies an opioid-related death using the EDRS to retrieve the information related to the recent episode and health history from the HIE to help give the certifier a complete picture of the conditions that may have led up to the patient’s death (FHIR).</p> <p>The EDRS system then reports the death information to the National Center for Health Statistics (NCHS), using HL7v2.6, to obtain a coded cause of death, allowing for monitoring of the opioid related deaths within the jurisdiction.</p>	Utah DOH (CDC) /	EDEN	IHE VRDR (FHIR, HL7 V2.6)
	Michigan DOH (CDC) Alternating	EDRS	IHE VRDR (FHIR, HL7 V2.6)
<p><b>National Statistics Agency</b></p> <p>NCHS receives the death report and compiles national statistics including those for opioid related deaths, which has resulted in a drop in the US life expectancy. The coded cause of death and the race and ethnicity are coded for national statistics, and returned to the jurisdiction supporting consistent metrics.</p>	NCHS/CDC	NA	IHE VRDR (FHIR, HL7 V2.6)

<p><b>Hospital</b></p> <p>In part 1 of this use case, When a new patient shows up to the provider with drug seeking behavior, public health interventions allow for a PDMP to be queried at the point of care to help identify the issue. Overdose and opioid-related death reports are available for review, which can support proactive outreach.</p>	Epic		HL7 Reportability Response IHE RFD NCPDP 10.6
<p><b>Infrastructure</b></p> <p>The Health Information Exchange (HIE) serves as a resource for the patient medical history to inform the cause of death. The HIE also is able to facilitate the transfer of the supplemental Case Reporting forms data to public health.</p>	CareEvolution		IHE RFD IHE VRDR (FHIR) IHE XDR

HIMSS19 Interoperability Showcase Use Case

Data exchange standards:

Vendor	Product	Category	Protocol	Interop Body	Interop Profile	Interop Actor	Interop Message	Send or Receive	Transaction Description
Epic		Hospital	NCPDP	NCPDP	N/A	N/A	NCPDP 10.6	Query	Opioid Registry Query
			WS	IHE	XDR	IHE ITI		Receive	Document send
NIC			NCPDP	NCPDP	N/A	N/A	NCPDP 10.6	Query Response	Opioid Registry Response
FormFast			HL7 v2.x	HL7	MDM	N/A	MDM	Receive	Medical Document Management
American Well			WS	WC3	NA	NA	NA	NA	Telehealth session
Netsmart		Behavioral Health	WS	IHE	XDR	IHE ITI	ITI-41 - Provide and Register Document Set-b	Receive	Document send
			HL7 CDA	HL7	C-CDA	Content Consumer	NA	Consume	Consume Transfer of care referral
			WS	WC3	NA	NA	NA	NA	Telehealth session
APHL/CSTE /RCKMS (CDC)	APHL Informatics Messaging Services platform	Public Health Platform	HL7 CDA	HL7	eICR	NA	Content Consumer	Consume	Consume Electronic Initial Case Report
			HL7 CDA	HL7	RR	NA	Content Creator	Create	Create Reportability response
			CDA	HL7	NA			Consumer	Care Summary

	(AIMS), CSTE Reportable Condition Knowledge Management System (RCKMS)		WS	IHE	XDR	IHE ITI	ITI-41 - Provide and Register Documen t Set-b	Send	Document send (RR)
			WS	IHE	XDR	IHE ITI	ITI-41 - Provide and Register Documen t Set-b	Receive	Receive Document (eICR)
Utah DOH	EDEN	Electronic Death Registration System	FHIR	IHE QRPH	VRDR	Data Consumer	VRDRQuer y (QRPH- 47)	Get	FHIR Get Vital Records Death Reporting Data
			HL7 V2.6	IHE QRPH	VRDR	Information Recipient	VRDRFeed (QRPH-38) CCOD	Receive	Vital Records Death Reporting Coded Cause of Death
			HL7 V2.6	IHE QRPH	VRDR	Information Recipient	VRDRFeed (QRPH-38) CRE	Receive	Vital Records Death Reporting Coded Race and Ethnicity
			HL7 V2.6	IHE QRPH	VRDR	Information Source	VRDRFeed (QRPH-38) JDI	Send	Vital Records Death Reporting Jurisdiction Death Information
MI DHHS	EDEN	Electronic Death Registration System	FHIR	IHE QRPH	VRDR	Data Consumer	VRDRQuer y (QRPH- 47)	Get	FHIR Get Vital Records Death Reporting Data
			HL7 V2.6	IHE QRPH	VRDR	Information Recipient	VRDRFeed (QRPH-38) CCOD	Receive	Vital Records Death Reporting Coded Cause of Death
			HL7 V2.6	IHE QRPH	VRDR	Information Recipient	VRDRFeed (QRPH-38) CRE	Receive	Vital Records Death Reporting Coded Race and Ethnicity

			HL7 V2.6	IHE QRPH	VRDR	Information Source	VRDRFeed (QRPH-38) JDI	Send	Vital Records Death Reporting Jurisdiction Death Information
WA DOH	Conduent	Public Health Surveillance System	HL7 CDA	HL7	eICR	Content Consumer	NA	Consume	Consume Electronic Initial Case Report
			HL7 CDA	HL7	RR	Content Creator	NA	Create	Create Reportability response
			WS	IHE	XDR	IHE ITI	NA	Receive	Document send
TN DOH	NEDSS-Based System	Public Health Surveillance System	HL7 CDA	HL7	eICR	Content Consumer	NA	Consume	Consume Electronic Initial Case Report
			HL7 CDA	HL7	RR	Content Creator	NA	Create	Create Reportability response
			CDC	US/CDC	PHIN-MS	NA	NA	Receive	Public Health information Network Messaging System
CDC NCHS	NA	National Statistics Agency	HL7 V2.6	IHE-QRPH	VRDR	Information Recipient	VRDRFeed (QRPH-38) JDI	Receive	Vital Records Death Reporting Jurisdiction Death Information
			HL7 V2.6	IHE-QRPH	VRDR	Information Source	VRDRFeed (QRPH-38) CCOD	Send	Vital Records Death Reporting Coded Cause of Death
			HL7 V2.6	IHE-QRPH	VRDR	Information Source	VRDRFeed (QRPH-38) CRE	Send	Vital Records Death Reporting Coded Race and Ethnicity
CareEvolu tion		Infrastructure	HTML Forms	IHE-ITI	IHE RFD	Form Filler	ITI-35	Receive	Receive Form
			WS	IHE	XDR	IHE ITI	NA	Receive	Document receive
			FHIR	IHE QRPH	VRDR	Data Consumer	VRDRQuery (QRPH-47)	Resource	FHIR Vital Records Death Reporting Data Resource

**References:**

- NCPDP (Online at <http://ncdp.org>)



- IHE (Online at <http://ihe.net>)
- HL7 (Online at <http://hl7.org>)