



Use Case Title: Bundled Payments & Chronic Pain Management

Short Description: Mark, a retired patient with chronic knee pain, takes control of his healthcare journey as data are passed from a referral management platform directly to payer benefits validation in order to streamline care. Mark pulls his care plan and uses Blue Button 2.0 to determine his next steps to improve his health.

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

Participants: Allscripts, AHRQ, Cerner, Health Endeavors, Netsmart, NextGen, Orion Health, Virence Health

Scenario	Vendor	Products	Standards
<p>With the industry continuing its shift to Value Based Care, clinical and financial data are made available at every point of care through HL7 FHIR® and other standards. Through these standards and the use of Blue Button 2.0, Mark, a retired patient with chronic knee pain takes control of his healthcare journey as data are passed from recovery in an inpatient setting, directly to payer benefits validation, to streamline care as he moves through the continuum.</p> <p>Hospital: Mark has been hospitalized for a total knee replacement and, though surgery went well, his doctor recommends he spends a month in skilled nursing to support recovery. His hospital uses Netsmart as their referral management platform, which allows his hospital physician to notify his insurance company that he will be discharged, so his insurer can validate his benefits, and send care plan information to his primary care provider.</p>	Netsmart	Referral Management Platform to serve post acute skilled nursing market	XDR XDS - A03 XDS - CCD

<p>Payer Portal: Mark's insurance company reviews his health record to ensure his course of care is appropriate for his medical history. Once they validate the 30-day stay in a sub-acute care facility is warranted, the insurance company informs providers of the coverage by sending an ADT message to the local health information exchange (HIE).</p>	Cerner	HIE - Payer Portal	XDS CDS - C-CDA
<p>Mobile Patient App: After Mark is discharged from the skilled nursing facility, he is able to view his healthcare data on his phone and sync his Medicare Blue Button 2.0 health information, which includes 4 years of health history, with weekly updates. Data-driven intelligence auto-generates a text alert to Mark that he is due for his annual wellness visit, so he schedules one with his primary care provider (PCP).</p>	Health Endeavors	Get your Health Record Mobile App EHR Connector	FHIR EOB FHIR Direct Message C-CDA
<p>PCP: When Mark comes in for his annual visit, he complains that his knee pain is still keeping him from daily activities. His doctor recommends that he tracks his pain using the mobile application and recommends that he follows up with his orthopedic surgeon. The referral is made to his orthopedic surgeon, and the primary care physician sends the clinical visit summary.</p>	Virence	Ambulatory EHR	
<p>Home: When Mark returns home, he receives a text message from his PCP to schedule a follow-up with his orthopedic surgeon. Mark will be able to schedule an appointment by clicking a link in the text message. A week later, Mark receives another text message from the hospital to follow-up on his progress towards recovery. The text message contains a login link for Mark so Mark can answer a few questions on his recovery and pain symptoms. Patient responses are reviewed by a case manager at the hospital, who can follow-up with the patient and record notes.</p>	Allscripts	Follow My Health	XDS C-CDA 2.1

<p>Both the referral follow-up and care plan follow-up help ensure the care coordination that is critical to the bundled payments program. A Progress Note CCDA will be created that could be shared with the orthopedic surgeon via Orion.</p>			
<p>The Orion HIE aggregates all of Mark's clinical data from the various contributing source systems into a single standardized patient record that can easily be accessed by other systems. This enables downstream actors to quickly and reliably retrieve Mark's up-to-date clinical record in order to provide Mark with the most appropriate care.</p>	Orion	Amadeus (HIE)	XDS C-CDA R2.1
<p>Orthopedic Surgeons Office: Several weeks after visiting his PCP, Mark visits his Orthopedic Surgeon to evaluate his knee further. NextGen Enterprise EHR queries the Orion HIE to retrieve a C-CDA R2.1 document using the IHE XDS.b profile. The NextGen Enterprise EHR displays the C-CDA and allows easy one-click reconciliation of the clinical data into the patient's chart. To further evaluate Mark's pain management and make treatment decisions, NextGen Enterprise EHR launches the MITRE Clinical Decision Support (CDS) application using SMART on FHIR mechanisms. This will allow the MITRE application to connect to the NextGen FHIR server and retrieve the necessary patient information for further treatment of the patient.</p>	NextGen	Enterprise EHR	XDS C-CDA R2.1
<p>The orthopedic surgeon accesses the SMART-on-FHIR CDS application in NextGen's system to display a summary of data in the patient's record that can provide insight on how to better manage the patient's pain. The surgeon reviews the dashboard summary, which includes conditions associated with pain, pain treatments, and relevant factors related to pain management, and discusses potential treatment options moving forward. The surgeon and patient together decide to continue physical therapy, add deep tissue massage to reduce the patient's pain and scar tissue, discontinue opioid medications, and schedule a follow up appointment in 2 weeks. The Pain Management Summary CDS is one of many CDS artifacts freely available in AHRQ's CDS Connect repository. The surgeon's practice was able to review the CDS artifact and download its standards-based CQL representation before integrating the SMART-on-FHIR</p>	MITRE / AHRQ	CDS Connect Pain Management Summary	HL7 CQL SMART on FHIR

app into NextGen. This CDS was instrumental in helping the surgeon and patient determine the best course of action for managing the patient's pain.

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HIMSS18 Interoperability Showcase Use Case

Data exchange standards:

Vendor	Product	Category	Protocol	Interop Body	Interop Profile	Interop Actor	Interop Message	Send or Receive	Transaction Description
Virence	Payer Connect		FHIR	HL7					<i>DSTU2 and DSTU3 w/ SMART on FHIR Standalone Launch</i>
			ebXML	IHE ITI	XDS / XCA	Document Source	ITI-41	Send	Provide and Register Document Set-b
			ebXML	IHE ITI	XDS / XCA	Document Consumer	ITI-18	Receive	Registry Stored Query
			C-CDA	HL7	N/A	Content Creator	N/A	N/A	Create Document
			C-CDA	HL7	N/A	Content Consumer	N/A	N/A	Incorporate Document

Vendor	Product	Category	Protocol	Interop Body	Interop Profile	Interop Actor	Interop Message	Send or Receive	Transaction Description
MITRE / AHRQ	PAIN Management Summary SMART on FHIR app	Shared Decision Making SMART on FHIR App	SMART	SMART Health IT	Launch OAuth2	Provider EHR		Receive	Respond to EHR launch with appropriate authorization sequence to launch SMART on FHIR app

									with READ access
			HL7 FHIR	HL7	FHIR DSTU2	Provider EHR		Receive	The Pain Management Summary app queries the EHR for Conditions, Encounters, Observations, Procedures, ProcedureRequests, ReferralRequests, MedicationOrders and MedicationStatements in order to display information relevant to making a decision about managing the patient's pain

Vendor	Product	Category	Protocol	Interop Body	Interop Profile	Interop Actor	Interop Message	Send or Receive	Transaction Description
Allscripts									

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Vendor	Product	Category	Protocol	Interop Body	Interop Profile	Interop Actor	Interop Message	Send or Receive	Transaction Description	
Cerner	Cerner HIE	HIE Payer Portal	Soap	IHE	XDS	Repository/ Consumer	ITI-41	Receive	<i>Receive plan of care via ITI-41.</i>	
			MLLP	HL7	HL7	Consumer/ Source	ADT	Receive/Send	Receive Discharge Notification and route notification to downstream	

Vendor	Product	Category	Protocol	Interop Body	Interop Profile	Interop Actor	Interop Message	Send or Receive	Transaction Description
Orion	Amadeus	HIE	REST (XML & JSON)	HL7	FHIR DSTU2	FHIR server	N/A	Receive	<i>Read access - more info on the Orion Health Developer Portal</i>
			REST (XML & JSON)	HL7	FHIR STU3	FHIR Server	N/A	Receive	<i>Read access - more info on the Orion Health Developer Portal</i>
			SOAP (ebXML)	IHE ITI	XDS	Document Registry / Repository	ITI-18, ITI-41, ITI-43	Send and Receive	

			CDA	HL7	C32	On-demand document repository	N/A	N/A	
			C-CDA	HL7	C32/CDA R2	Consumer Provider	N/A	Send and Receive	Documents are received, (optionally) parsed, and made available in document form or discrete data via FHIR and XDS

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Health Endeavors	Get Your Health Record Consumer Mobile App	Consumer Mobile Health App	C-CDA	HL7		Consumer Provider		Send and Receive	Consumer receives CCDAs from all certified EHRs using direct message, API or FHIR. Consumer may send all or selected CCDAs to provider's certified EHR using direct message.
			Direct Message	Direct Trust					
			FHIR	HL7		Consumer Provider		Send and Receive	Consumer syncs 4 years of health history from Medicare with weekly updates using FHIR EOB technology. Consumer sends entire FHIR EOB to all certified EHRs using direct message or API.
			FHIR EOB	HL7					
			Direct Message	Direct Trust					

			HL7 Messaging	HL7		Consumer		Send	Consumer sends all or a portion of the FHIR EOB to all certified EHRs using HL7 messaging.
			Direct Message	Direct Trust		Consumer Provider		Send and Receive	Consumer shares CCDA or FHIR EOB using direct message to any provider using a certified EHR. Provider shares CCDA using direct message, API or FHIR.
Health Endeavors	Get Your Health Record mobile app	Medical Text Alerts	SMS	N/A		Consumer		Receive	After patient syncs Medicare FHIR EOB or CCDA, data-driven intelligence auto-generates quality, disease, wellness and medication care gaps
Health Endeavors	EHR Connector	Patient Match	Patient Match	N/A		Consumer Provider		Send	Quality, Utilization, Benchmarking, Risk Stratification and Cost data from Medicare FHIR EOB or commercial plan analyzed and displayed to the provider at the EHR point of care. Every Medicare ACO provider is

									alerted at point of care when a patient has exceeded their benchmark.
Health Endeavors	Get Your Health Record mobile app	Remote Evaluation (image)		N/A		Consumer Provider		Send	Consumer may upload an image such as surgical site or mole for remote evaluation by a provider.
Health Endeavors	Get Your Health Record mobile app	Virtual Check-in	websocket protocol	N/A		Consumer Provider		Send and Receive	Consumer may conduct a virtual check-in appointment with their provider.
Health Endeavors	Get Your Health Record mobile app	Remote patient identity proofing	Patient identity proof	NIST 800-63-2 LOA 3		Consumer		N/A	Consumer proofs their identity to enable granting of a direct message to the consumer to send/receive CCDA or FHIR EOB
Health Endeavors	EHR Connector	Medicare GPRO	Medicare GPRO Web Interface API						Providers that send and consumers that sync their EHR data via direct or FHIR may have their quality measures reported for the ACO GPRO or MIPS using Health Endeavors Medicare Qualified Registry. Includes provider and facility performance scoring using Medicare scoring methodology and optimal gaps

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NextGen HealthCare	NextGen Enterprise PM & EHR		ebXML	IHE ITI	PIX HL7v2	PAT_IDENTITY_X_REF_MGR	ITI-9	Send	PIX Query
NextGen HealthCare	NextGen Enterprise PM & EHR		ebXML	IHE ITI	PDQ HL7v2	PDC	ITI-21	Send	Patient Demographic Query
NextGen HealthCare	NextGen Enterprise PM & EHR		ebXML	IHE ITI	PIX HL7v3	PAT_IDENTITY_X_REF_MGR	ITI-45	Send	PIX V3 Query
NextGen HealthCare	NextGen Enterprise PM & EHR		ebXML	IHE ITI	PDQ HL7v3	PDC	ITI-47	Send	Patient Demographic Query V3
NextGen HealthCare	NextGen Enterprise PM & EHR		ebXML	IHE ITI	XDS	Document Source	ITI-41	Send	Provide and Register Document Set-b
NextGen HealthCare	NextGen Enterprise PM & EHR		ebXML	IHE ITI	XDS	Document Consumer	ITI-18	Send	Registry Stored Query
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NextGen HealthCare	NextGen Enterprise PM & EHR		ebXML	IHE ITI	XDR	Document Consumer	ITI-41	Receive	Provide and Register Document Set-b
NextGen HealthCare	NextGen Enterprise PM & EHR		FHIR	HL7	N/A	Content Creator	N/A	Receive	Receive Requests via FHIR for Common Clinical Data Set
NextGen HealthCare	NextGen Enterprise PM & EHR		FHIR	HL7	N/A	SMART on FHIR	N/A	Launch	SMART on FHIR Application Launch
NextGen HealthCare	NextGen Enterprise PM & EHR		CDA	HL7	C-CDA R2.1	Content Creator	N/A	N/A	Generate C-CDA R2.1
NextGen HealthCare	NextGen Enterprise PM & EHR		CDA	HL7	C-CDA R1.1	Content Consumer	N/A	N/A	Generate C-CDA R1.1
NextGen HealthCare	NextGen Enterprise PM & EHR		CDA	HL7	CDA Wrapped PDF	Content Creator	N/A	N/A	Generate CDA Wrapped PDF or CDA Wrapped Text

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References:

