



Use Case Title: Connecting Virtual Teams: Smart Care for HepC

Overview: Ricardo has severe HepC liver disease, lives in rural New Mexico without access to specialists. As his disease worsens, he ultimately requires a liver transplant. Most Americans live with siloed healthcare and missing data; Ricardo’s community moves information rather than people with Smart apps and open data standards. His virtual, connected team diagnoses and treats his Hepatitis C in his home town, coordinates with the transplant center in Texas, so his transplant is ready in time. Come share his journey.

Value: A focus on data sharing, virtual collaboration and provider education to enable smart care for HepC. The HIE component also increases data sharing and data reporting. Interoperability drives STEPS to value with the use of standards based processes and technologies that greatly increase satisfaction & communication among a team of caregivers.

Scenario	Vendor	Products	Standards
We are following the story of Ricardo, a 55-year-old Hispanic male who was seen initially in the office of his rural Primary Care Physician, Dr. Bailey, who is in a rural federally qualified clinic using a government system EMR. Ricardo’s first visit as a new patient results in a Hepatitis screening. Dr. Bailey notes that Ricardo’s screening test has come back positive for Hepatitis C. She uses Medal Print to send Ricardo’s visit notes and lab for a HCV case presentation to the ECHO hub.	Medal	Medal Print	FHIR API
Medal receives Ricardo’s documents into the Medal Platform to de-identify and summarize the data for presentation to the ECHO virtual clinic.	Medal	Medal Platform	SMART-FHIR (vocabularies) SNOMED LOINC RXNORM
Dr. Bailey participates in an ECHO project to educate physicians about the approaches for treatment. Project ECHO has provided the Medal software to Dr. Bailey. The ECHO experts and the participating providers at spoke locations view the summarized data through the Medal	Project Echo	Medal App	SMART-FHIR FHIR Questionnaire

<p>SMART on FHIR app as part of a de-identified case presentation. The ECHO spoke provider team makes notes of the treatment protocol recommended for Ricardo's case in their own EMR.</p>			<p>(vocabularies) SNOMED LOINC RXNORM</p>
<p>Ricardo is sent for further tests and labs by Dr. Bailey at the clinic who manages the patient using best practices. Because the local community has access to an HIE, Dr. Bailey is able to access all the test results from the HIE. As Ricardo's liver deteriorates, the HCV treatment protocol suggests an evaluation by a transplant center.</p> <p>Dr. Bailey requests a virtual consult from the transplant center in Philadelphia. When these come back abnormal, she refers Ricardo to the Transplant Center for evaluation. Because the HIE has records from across the community, the Transplant Center who is not a part of the HIE can view the records through the Cerner SMART on FHIR app.</p>	Cerner	Cerner HIE Cerner SMART App	<p>SMART-FHIR (vocabularies) SNOMED LOINC RXNORM</p>
<p>The Transplant Center in Philadelphia, that uses Allscripts Sunrise EHR, accesses the Cerner SMART app after logging into the Sunrise to review Ricardo's data.</p> <p>His consult documentation is made available via the Allscripts FHIR server back to the Medal platform</p>	Allscripts	Allscripts Sunrise EHR Cerner SMART App Medal SMART App	SMART-FHIR
<p>Dr. Bailey and the Transplant Center share documentation of the Ricardo progress and the results are available in the Medal cloud. As these notes are made available, Dr. Bailey has the ability to view the additional care that Ricardo has received in an easily searchable and summarized web based app. Powered by a Natural Language Processing (NLP) engine, Dr. Bailey has the ability to universally search any extracted clinical terminology and its medical synonyms.</p>	Medal	Medal SMART App	SMART-FHIR

Data exchange standards:

Vendor	Product	Category	Protocol	Interop Body	Interop Profile	Interop Actor	Interop Message	Send or Receive	Transaction Description
Medal	Medal Print	Windows Print Driver	HL7 SMART on FHIR	NA	Desktop App	Physician	CCD/PDF	Receive View	Share CCD/PDF documents using HL7 FHIR DocumentReference
Project ECHO	Medal App	SMART app	HL7 SMART on FHIR	NA	Telemedicine	ECHO Provider	NA	Receive View	Viewing Medal App HepC presentation view View Medal App Patient Summary
Cerner	Cerner HIE	SMART apps, HIE (Health information exchange)	HL7 SMART on FHIR	NA	SMART EHR Launch	Physician	CCD	Receive View	SMART EHR Launch profile http://www.hl7.org/fhir/smart-app-launch/
Allscripts	Allscripts Sunrise	EHR	HL7 SMART on FHIR	NA	SMART App Launch	Transplant Provider	NA	View	Launch Cerner and Medal's SMART on FHIR Apps

HIMSS Value STEPS Framework:

Step	Description	Point of View	Point of View	Point of View
S: Satisfaction	This type of value focuses on people, process and technology use cases that increases stakeholders' satisfaction with the delivery of care. Satisfaction includes types of value such as: Patient satisfaction Provider satisfaction Staff satisfaction Other satisfaction	This approach to collaborating is a tremendous leap forward for patient satisfaction. Patients in rural areas, especially those with severe illness, struggle to travel to various sites for medical care. Providing support to the primary care provider through virtual consultations also increases satisfaction for rural providers.	Provider-Patient engagement and outcomes are greatly improved by this type of interoperability. The newest technology is being leveraged to ensure the care team has all clinical data needed to evaluate and treat the patient. This particularly important where connectivity and interoperability are not as widely adopted, rural	The ability to remotely consult and treat a patient when medically appropriate can reduce the stress of moving a patient and the overall well being of a patient who would normally be forced to travel long distances for medical care. Clinicians also benefit by having access to second opinions through remote shared spaces to

			vs. non.	collaborate on differential diagnosis and treatment plans.
T: Treatment/ Clinical	This type of value focuses on effective and improved treatment of patients, reduction in medical errors, inappropriate/duplicate care, increase in safety, quality of care and overall clinical efficiencies. Treatment/Clinical includes types of value such as: Efficiencies Quality of Care Safety Other treatment/clinical	Collaboration through ECHO improves efficiency for the provider and the patient by eliminating travel and appointments. It appears that the collaboration is asynchronous, which would help with scheduling between clinicians. Collaboration with experts in liver disease also improves quality of care.	ECHO, Medal and FHIR make the treatment for the patient in this use case much more efficient and produces higher quality. All care providers, via FHIR API can access the needed treatment information very quickly. This provides data for quicker and more accurate diagnosis, referral prospects and access to the PCP who can then make decisions with respect to follow up, transplant, medications, etc.	Collaboration with a network of sites to provide assistance and medical information improves efficiency.
E: Electronic Secure Data	This type of value focuses on improved data capture, data sharing, reporting, use of evidence-based medicine, and improved communication by and between physicians, staff and patients. Electronic Secure Data includes types of value such as: Privacy & Security Data sharing Data reporting Enhanced communication	ECHO focuses on data sharing, especially for collaboration and provider education. The HIE component also increases data sharing and data reporting. These tools greatly increase communication among a team of caregivers.	The technology used to share and communicate data electronically benefits greatly from the use of ECHO, HIE connections and the FHIR API. OAuth2 provides security and because this use case is PCMH the SMART on FHIR Apps are designed to make sharing, reporting and communications less complex and more efficient.	Data sharing within this use case is clear and direct through a cooperation of medical facilities using ECHO.
P: Patient Engagement	This type of value focuses on improved population health and reduction in	Hepatitis C is a communicable disease and as such, tools to	Population Health Management only increases when a patient is	Gaining more information on a communicable disease helps to

<p>& Population Management</p>	<p>disease due to improved surveillance/screening, immunizations and increased patient engagement due to improved patient education and access to information. Patient Engagement & Population Management includes type of value such as: Patient education Patient engagement Prevention Population Health</p>	<p>better diagnose and treat these patients improve population health.</p>	<p>educated and engaged in their treatment. Access to information is greatly important and improved by the use of new standards such as FHIR.</p>	<p>track and prevent it.</p>
<p>S: Savings</p>	<p>This type of value focuses on documented financial, operational and efficiency savings resulting from factors such as improved charge capture, use of staff resources and workflow and increased patient volume and more efficient use of space .</p>	<p>Virtual collaboration and sharing of information through ECHO and the HIE reduce costs of care by reducing travel, appointment times, and scheduling challenges. Access to lab reports through the HIE reduces the potential for duplication of tests and delays in accessing information.</p>	<p>Value (savings) and outcomes are improved through the efficient use of interoperability and engaging the patient as well as the providers within the care team. This collaboration and seamlessness in a patient's care works to decrease medical errors, duplicate tests, and improves the time line within which a patient is best treated.</p>	<p>Insurance aside, patients will see reduced costs as repeated tests and imaging are no longer needed. However, it could be argued that the medical facility may lose revenue by not doing these tests.</p>