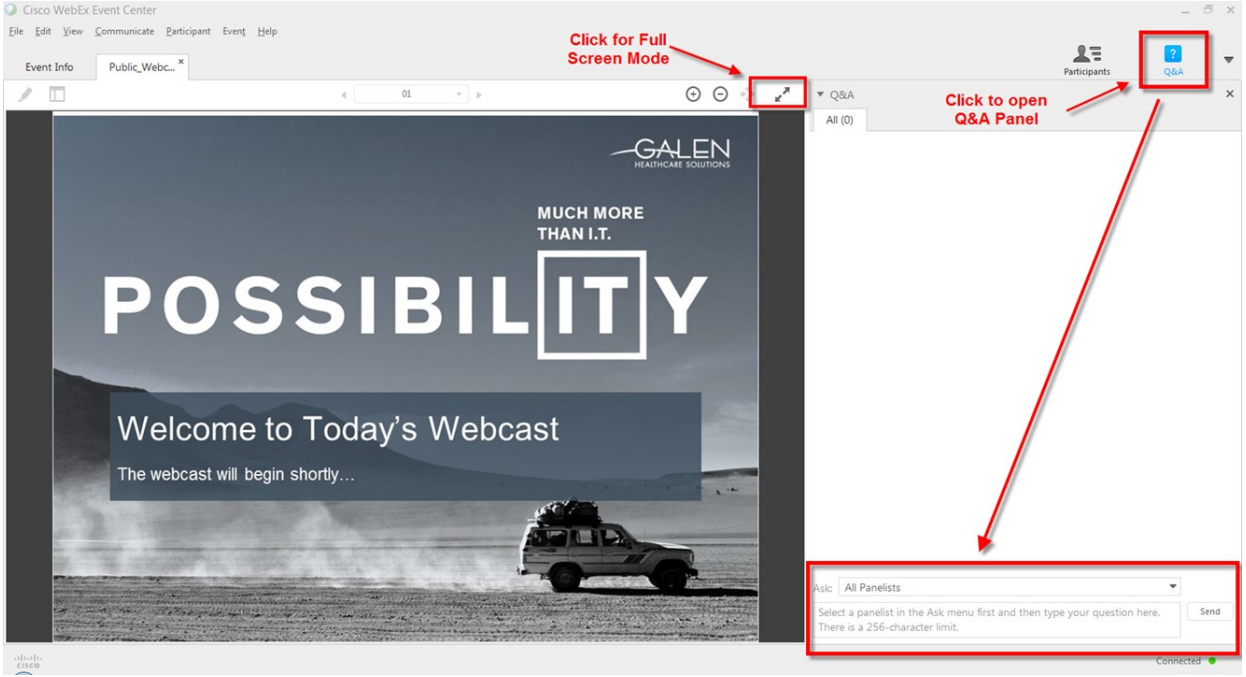
MUCH MORE
THAN I.T.

COMMUNITY

HIE Participant Onboarding: Best Practices

September 7, 2016

You have been automatically muted. Please use the Q&A panel to submit questions during the presentation



Confidential © 2016 Galen Healthcare Solutions

Agenda

- Introductions
- Background
- Understanding Sending & Receiving Systems
- Primary Data Exchange
- Secondary Services
- Maintenance and Scalability
- Establishing Roles
- Understanding Specifications
- Identifying Challenges
- Testing & Validation
- Helpful Tools
- Poll
- Questions

Confidential © 2016 Galen Healthcare Solutions

Background

- **Definition**
  - **Public vs Private**
    - **Funding**
    - **Geographic Reach**
    - **Enthusiasm**
    - **Scope of Services**
- **What value does an HIE provide?**
  - **Exchange of Consolidated Patient Record**
  - **Understand Population and Trends**
- **How does an HIE become valuable?**
  - **Quality data and the ability to share it**

Confidential © 2016 Galen Healthcare Solutions

Understanding Sending & Receiving Systems

- **What is your client base?**
  - Ambulatory
  - Inpatient
  - Long Term Care/Nursing Homes
- **Technical Capabilities of Participants**
  - Hosted vs OnPrem
  - Vendor vs In House resources
- **Ownership During Implementation**
- **Data Filtering**
  - Sensitive Data
  - Patient consent

Confidential © 2016 Galen Healthcare Solutions

Primary Data Exchange

- How is data shared?
  - Inbound
    - Portal Access
  - Bi-Directional
    - Alerts
    - Embedded into workflows

Confidential © 2016 Galen Healthcare Solutions

Primary Data Exchange

- **Provide and Register**
  - **XML based transaction containing CCDA**
  - **Occurs at the end of an Encounter**
- **Patient Identity Feed**
  - **V2 or XML based transaction to perform registration or query for EMPI**
- **Query Registry**
  - **XML based transactions to query for available documents**
- **Retrieve Document**
  - **XML based transaction to retrieve on demand or static CCDA**

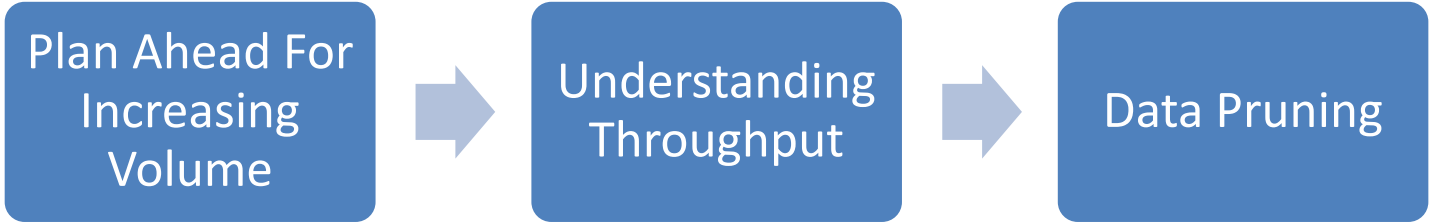
Confidential © 2016 Galen Healthcare Solutions

Secondary Services

- **What Secondary Services will you offer?**
  - **DSM**
  - **Communication with State/Federal Agencies**
    - **CDC**
    - **DPH**
    - **eHealth Exchange**
  - **Vendor Pipes**

Confidential © 2016 Galen Healthcare Solutions

Maintenance and Scalability



Confidential © 2016 Galen Healthcare Solutions

Establish Roles for Implementation

- Recruitment
- Network Resource
- Clinical Contact for Validation
- Implementation Consultant/IA
- Project Manager
- Trainer
  - Client
  - HIE

Confidential © 2016 Galen Healthcare Solutions

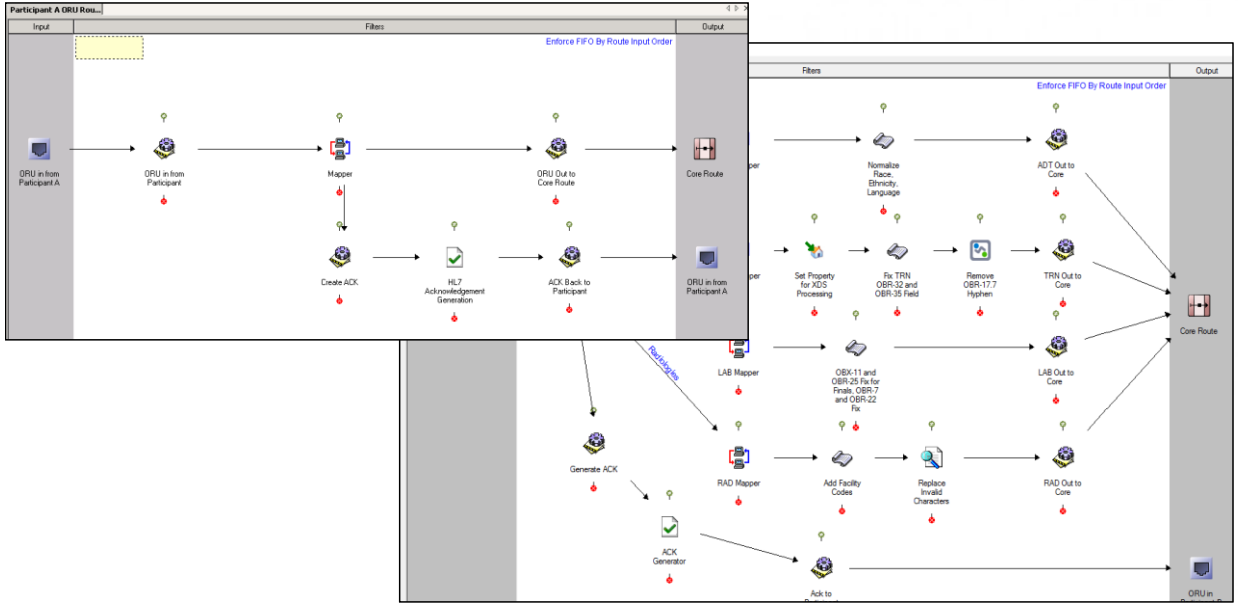
Understanding Specifications

- **Leverage Established Standards**
  - **CCD – IHE standards (PIX, XDS.b, etc…)**
    - **Integration Profiles –** https://www.ihe.net/Profiles/
    - **Technical Frameworks** – https://www.ihe.net/Technical_Frameworks/
  - **HL7**
    - http://www.hl7.org/implement/standards/

Confidential © 2016 Galen Healthcare Solutions

Identifying Potential Challenges

- **Interfaces and Dogs**
- **Leverage Past Implementations**



Confidential © 2016 Galen Healthcare Solutions

Understanding Specifications

- **Exchange Codesets**

ADT MESSAGES

PID-8 Sex (code set used in EMPI) *required*			
Interface Engine Value		**Data Source Value**	
Code	Description	Code	Description
F	FEMALE	FM	FEMALE
M	MALE	ML	MALE
O	OTHER	OTH	OTHER
U	UNKNOWN		

**PID-10.1 Race (code set used in EMPI) *Can be blank*			
Interface Engine Value		**Data Source Value**	
Code	Description	Code	Description
1002-5	American Indian or Alaska Native	AI	American Indian
2028-9	Asian	AS	Asian
2054-5	Black or African American	BL	African American
2076-8	Native Hawaiian or Other Pacific Islander	NA	Native Hawaiian or Other Pacific Islander
2106-3	White	WH	Caucasian
2131-1	Other Race	OT	Other

ORIGINAL MESSAGE FROM DATA SOURCE:

```
PID|1||123456789^^^^PI||TEST^TEST||1999090
9|FM||WH|1 NOT REAL
ROAD^^FAKETON^NC^28429||||||||
```

MAPPED TO ACCEPTED VALUES:

```
PID|1||123456789^^^^PI||TEST^TEST||1999090
9|F||2106-3|1 NOT REAL
ROAD^^FAKETON^NC^28429||||||||
```

Confidential © 2016 Galen Healthcare Solutions

Interface Specific Questions

- **What sort of data is being sent?**
  - **ORUs – Just Labs? Or will the there also be Radiology Results, Transcriptions?**
  - **If just LABs – Panel Labs?, Bloodbank?, Microbiology?, Pathology?**
- **What fields are required?**

Segment MSH

Structure | Properties | Advanced

		Field Name	H	Datatype	Alignment	R	Min	Max	Min Rpt	Max Rpt	Default	Validation Table
1		FieldSeparator	☐	ST	Left	☑	0	1	1	1		
2		EncodingCharacters	☐	ST	Left	☑	0	4	1	1		
3	⊞	SendingApplication *	☐	HD	Left	☐	0	180	0	1		
4	⊞	SendingFacility *	☐	HD	Left	☑	0	180	1	1		
5	⊞	ReceivingApplication *	☐	HD	Left	☐	0	180	0	1		
6	⊞	ReceivingFacility *	☐	HD	Left	☐	0	180	0	1		
7	⊞	DateTimeOfMessage	☐	TS	Left	☑	0	26	1	1		
8		Security	☐	ST	Left	☐	0	40	0	1		
9	⊞	MessageType *	☐	MSG	Left	☑	0	13	1	1		
10		MessageControlID	☐	ST	Left	☑	0	50	1	1		
11	⊞	ProcessingID	☐	PT	Left	☑	0	3	1	1		
12	⊞	VersionID	☐	VID	Left	☑	0	60	1	1		
13		SequenceNumber	☐	NM	Left	☐	0	15	0	1		

Confidential © 2016 Galen Healthcare Solutions

Interface Specific Questions

- **What optional fields will be provided?**
- **How will the data be used?**
  - **Discrete Parsing**
  - **Population Health**

Confidential © 2016 Galen Healthcare Solutions

Identifying Potential Challenges (cont.)

- **Fields That Require Uniqueness**
  - **User/Provider IDs (PV1-7, PV1-8, PV1-9, PV1-17, OBR-28)**

DUPLICATE CODE	UNIQUE CODE
WHITE^WHITE^TONY	WHITTONY^WHITE^TONY
WHITE^WHITE^SAMANTHA	WHITSAMA^WHITE^SAMANTHA

  - **Result Code/Descriptions (OBR-4, OBX-3)**

DUPLICATE CODE	UNIQUE CODE
PT^PROTHROMBIN TIME^L	PT_PROTHROMBIN TIME^PROTHROMBIN TIME^L
PT^PHYSICAL THERAPY^L	PT_PHYSICAL THERAPY^PHYSICAL THERAPY^L

Confidential © 2016 Galen Healthcare Solutions

Identifying Potential Challenges (cont.)

- **More Uniqueness Fields**
  - **Unique Message Identifiers (MSH-10)**
  - **Order Numbers (OBR-2, OBR-3, ORC-2, ORC-3)**
  - **Encounter Numbers (PV1-19)**

```
MSH|^~\&|HIE|SOURCE|||201506030927||ADT^A01|123456|P|2.4

MSH|^~\&|HIE|SOURCE|||201506031927||ADT^A01|123456|P|2.4
```

Not Null	5106	Unique	5106
Null	0	No MSH	0

MSH[1]-10[*]	Num	%	Len
229302_133610	1	0.02 %	13
253910_133894	1	0.02 %	13
244155_133935	1	0.02 %	13
256217_133508	1	0.02 %	13
254793_133733	1	0.02 %	13
232882_133913	1	0.02 %	13
234410_138716	1	0.02 %	13
239356_133929	1	0.02 %	13
236484_133569	1	0.02 %	13
251777_133935	1	0.02 %	13
234112_133861	1	0.02 %	13
256408_133935	1	0.02 %	13
241452_133935	1	0.02 %	13
232725_133577	1	0.02 %	13
244724_133929	1	0.02 %	13
223382_134067	1	0.02 %	13

Confidential © 2016 Galen Healthcare Solutions

Identifying Potential Challenges (cont.)

- **Field Length Limitations**
  - **The Problem:** AL1-5 has a maximum value of 50 characters in an HIE
  - **The Solution:** Truncate the message to a 50 character maximum
  - **Example:**
    - `AL1|1|DA|2599^CLONIDINE^RXNORM|MO^MODERATE|Dry mouth has been reported by the patient when using this medication|20160901`
  - **Solution**
    - `AL1|1|DA|2599^CLONIDINE^RXNORM|MO^MODERATE|Dry mouth has been reported by the patient when us|20160901`

Source: Orion Health

Confidential © 2016 Galen Healthcare Solutions

Identifying Potential Challenges

- **Invalid Special Characters**
  - **The Problem:** Some Interface Engines have trouble processing special characters
  - **The Solution:** Identify problem characters by testing large volumes of messages. Replace them with equivalent word descriptions of value
  - **Examples:**
    - 20°
    - Ricardo Peña
    - Sjögren's
  - **Solutions:**
    - 20 degrees
    - Ricardo Pena
    - Sjogren's

Source: Orion Health

Confidential © 2016 Galen Healthcare Solutions

Identifying Potential Challenges (cont.)

- **Properly Handling Sensitive Information**
- **Managing Invalid Values**
- **Event Types**
- **Message Order**
- **Result Statuses (OBR-25/OBX-11)**
  - **Once a LAB is in Corrected status, that same lab can only be saved as Corrected or Cancelled.**

Code	Maps to
A	F P A C R X
C	C X
F	F C X
I	F P A R X I
O	S O X I
P	F P R C X
R	F C R X
S	F P A S R X I
X	X
Y	Y
Z	Z

Confidential © 2016 Galen Healthcare Solutions

Testing

- Building A Test Plan
- Fringe Cases Matter
- Issue Tracking
- Using Live Data Is Better
- Leverage Useful Tools

Confidential © 2016 Galen Healthcare Solutions

Sanity Checks

- Schedule unit testing in production
- Go-live checklist
- Monitor feed
- Configure alerts
- Receive final sign-off from participant

Confidential © 2016 Galen Healthcare Solutions

Now What

- **Take time to document lessons learned from each new implementation**
- **Encourage buy-in/feedback from participant about how to improve the process**
- **Look for ways to improve**

Confidential © 2016 Galen Healthcare Solutions

Helpful Development Tools

- **HL7Spy ($299 - 399)**
  - Useful for validating field lengths, field values, uniqueness, anonymizing data, analyzing large sets of data, instantly pushing data natively from HL7Spy, HL7 SQL, and more…
- **Notepad++ (Free)**
  - Great for editing/reading HL7, XML
  - Pretty Printing XML
  - Difference Checking
- **SoapUI (Free)**
  - REST and SOAP Testing Tool
- **HL7 Analyst (Free)**
  - Great for quickly validating values and field positions of HL7 messages

Confidential © 2016 Galen Healthcare Solutions

Poll Question

Confidential © 2016 Galen Healthcare Solutions

Q&A

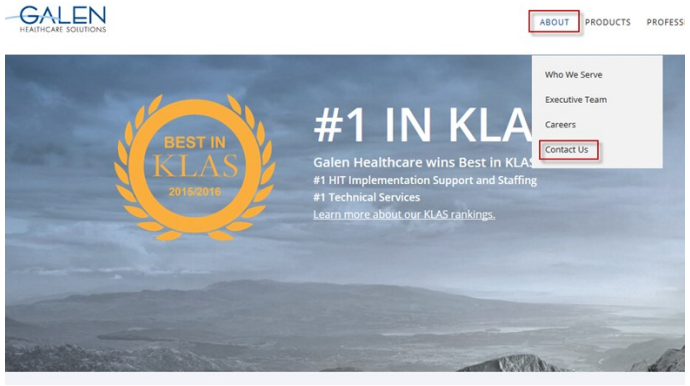
Confidential © 2016 Galen Healthcare Solutions

Thank you for joining us today.
To access the slides from today's presentation, please visit:

http://wiki.galenhealthcare.com/Category:Webcasts

For additional assistance or to request information about our many services and products, please contact us through our website:

www.galenhealthcare.com



Confidential © 2016 Galen Healthcare Solutions

MUCH MORE THAN I.T.

SOLVING FOR TODAY.
PREPARING FOR TOMORROW.

GALENHEALTHCARE.COM