

2018 ANNUAL Participant Meeting

OCTOBER 24, 2018

Gaylord National Harbor, MD

Ace the Test

John Henry Downing, Zen Healthcare IT

Alan Vitale, Deloitte Consulting

Sandi Mitchell, JP Systems, Inc



Today's Speakers



Didi Davis

Vice President,
Informatics,
Conformance &
Interoperability
The Sequoia Project
(Moderator)



John Henry Downing

Senior Engineer,
Interoperability and
SME Services
Zen Healthcare IT



Alan Vitale

Specialist Leader
Deloitte Consulting,
LLP's Life Science
and Health Care
consulting practice



Sandi Mitchell

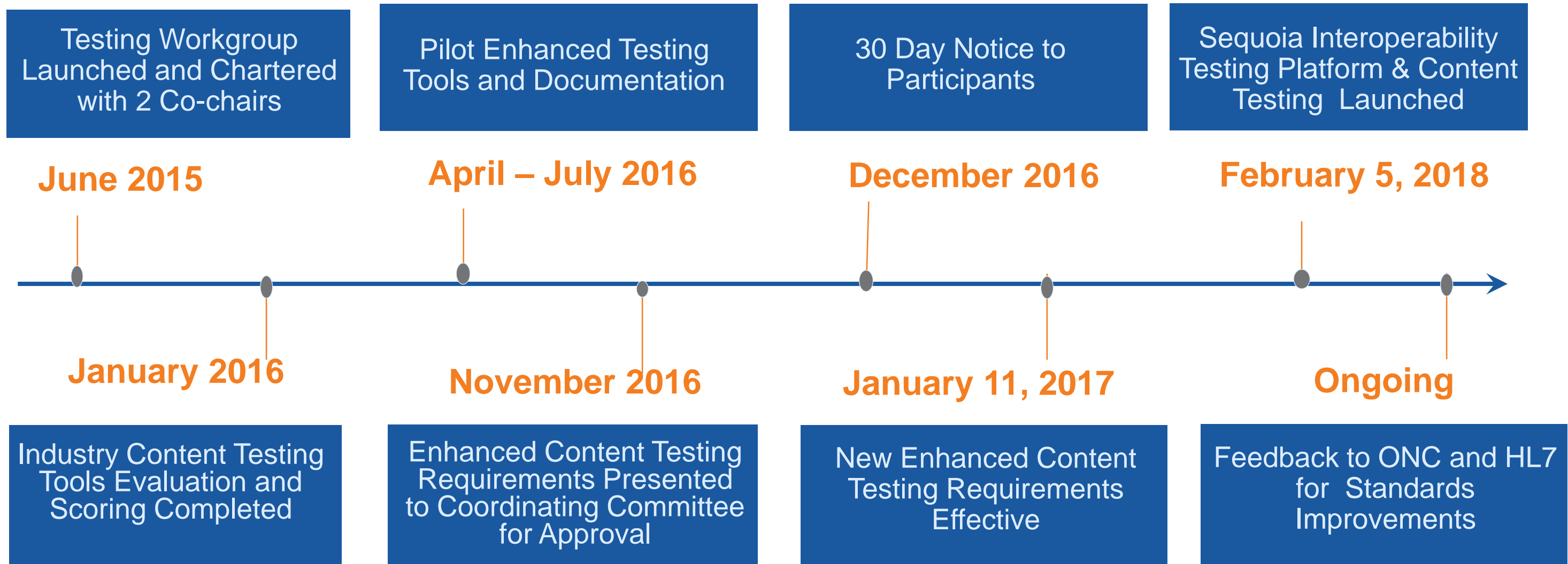
Sr Business Analyst,
Data Quality
JP Systems, Inc.
(VA Contractor) VHIE

Engage with eHealth Exchange to Increase ROI

Today's Agenda

- Overview of Content Testing Program
- Introductions to Speakers
 - Zen Healthcare IT
 - Deloitte Consulting
 - JP Systems/Veterans Health Administration
- Panel Lessons Learned to Ace the Test
- Discussion

Enhanced Content Testing – Timeline



Industry-wide Content Pain Points



Terminology:

Inconsistent terminology usage



Complexity:

The C-CDA standard is difficult to understand and consume and is lacking in clearly documented examples



Specification Ambiguity



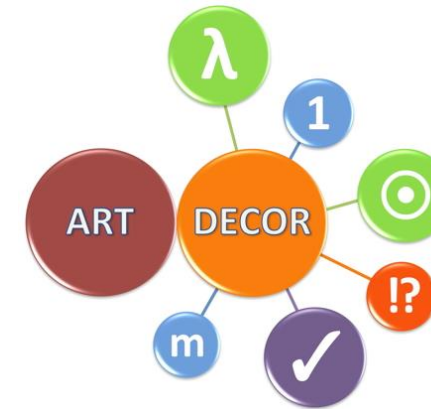
Optionality:

More than one way to do things and inconsistent implementations across vendors

Sequoia Interoperability Testing Platform (ITP) Content Testing Tooling

ART DÉCOR/GAZELLE OBJECTS CHECKER

- Launched February 5, 2018
- Covers only the HITSP C32/CCD, HL7 C-CDA CCD R1.1 and R2.1 versions and associated vocabulary requirements
- All Errata maintained for 1.1 and 2.1 including HL7 2.1 Errata package released May 2018
- Found to report on warnings and errors not found by other testing tooling



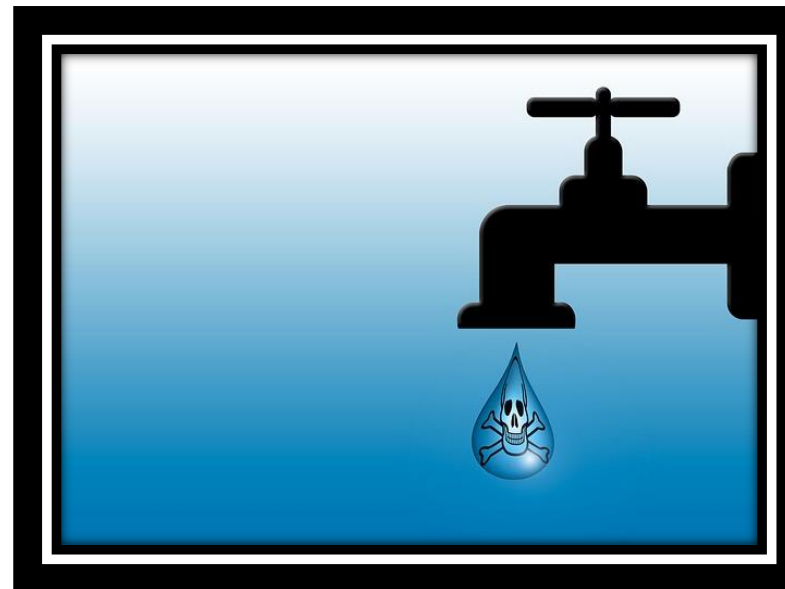
Content Testing Requirements/Status

- All Production Participants MUST Test by February 5, 2019
- New Participants Onboarding MUST Test Up front
- Validated Products MUST Test
 - NOT required to Pass
 - Will have 18 Months to REMEDIATE Issues
 - SME Assistance Provided as needed
- Three Organizations have PASSED
 - <https://ehealthexchange.org/participants/>
 - Manifest MedEx, Tiger Institute Health Alliance, Walgreens



Transport vs. Content

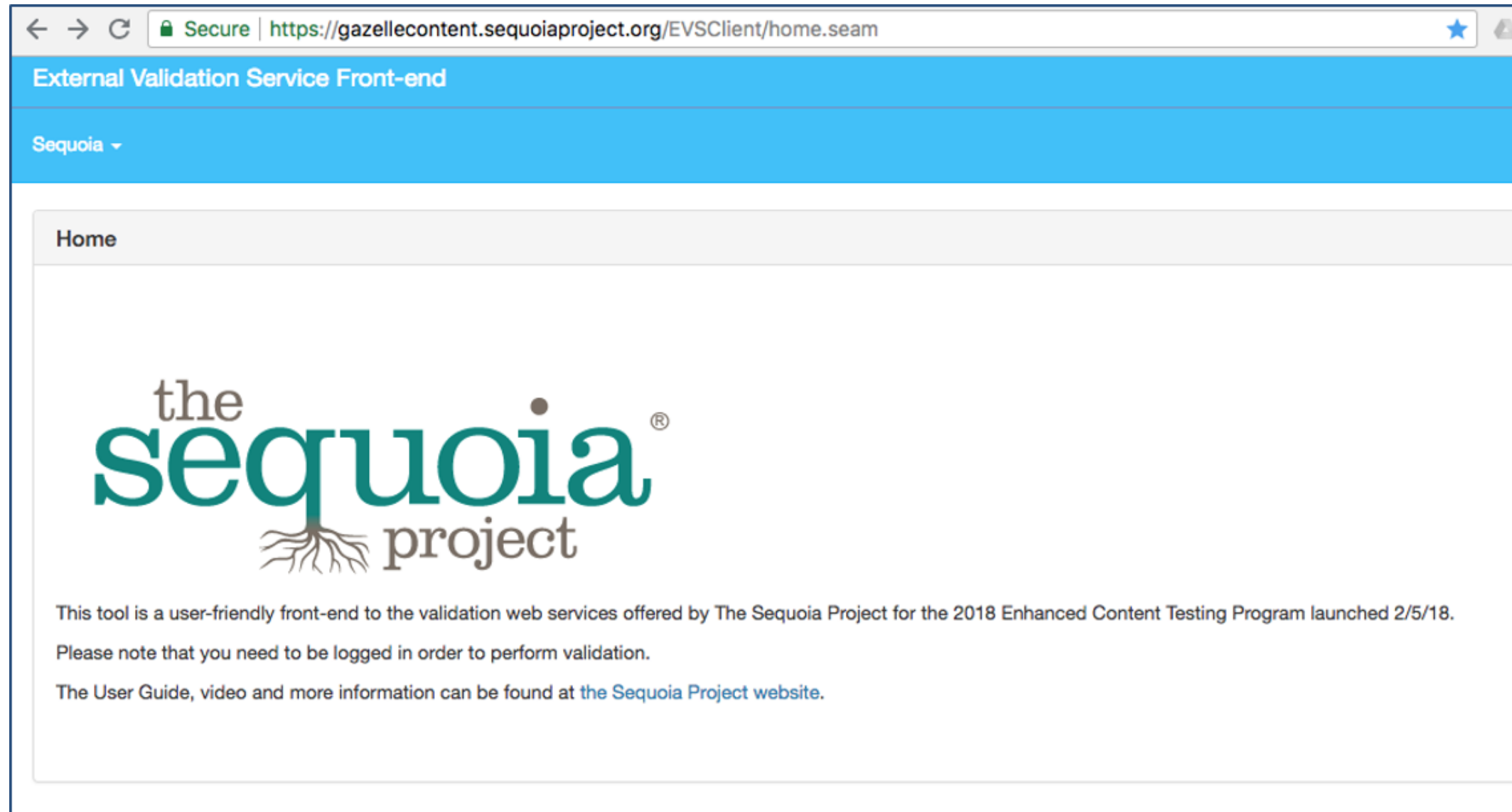
- Focus has been on transport
 - "laying pipes"
- Content was secondary
 - "water quality"
- Until now!



- **Terminology:**
 - “You’re sending local codes for your labs. My system doesn’t know what to do with these, we need SNOMED or LOINC!”
- **Ambiguity:**
 - “Which <id> element means what again?” (ex. Payer Section!)
- **Complexity:**
 - “What is the scopingEntity of your participant’s participantRole?”
- **Optionality:**
 - “Spec says there SHOULD be <insert element> here. Your system doesn’t create it. My system expects it and errors if it’s not there!”

- Let's look at the Sequoia ITP Content Testing Tool configured for eHealth Exchange Requirements
- The Content Testing Tool is web-based Upload C-CDAs and/or C32s one at a time
 - Once a document is uploaded, it can't be taken back (no PHI!)
 - **ONLY Sequoia Testing Staff can Delete Documents if PHI is loaded**
- Swat errors until you pass


Apply through eHX & log in with provided credentials



Pick a file, “tell” the validator the type of document

The screenshot shows a web browser window with the URL <https://gazellecontent.sequoiaproject.org/EVSCClient/cda/validator.seam?extension=C-CDA&standard>. The page title is "External Validation Service Front-end" and the breadcrumb is "Sequoia". The main heading is "Validate CDA documents".

Validation


File being validated : Sample_CCDA_R2.1__104_ERRORS.xml 

☐ Show Content

Select a validator:

schematron : Please select...
calls Gazelle web services for schematron validation

and / or:

Model Based Validation : HL7 - C-CDA R2.1 - Meaningful Use Stage 3 

Results are easy to share

Validation result

Information

File Name	Sample_CCDA_R2.1__104_ERRORS.xml 
OID :	1.3.6.1.4.1.12559.11.28.14052
Schematron :	N/A (Version N/A)
Schematron Validation ...	N/A
Validation Date :	7/31/18 10:36:32 PM (CEST GMT+0200)
Model Based Validator :	HL7 - C-CDA R2.1 - Meaningful Use Stage 3 (Version N/A)
Model Based Validation...	FAILED   
Permanent link :	https://gazellecontent.sequoiaproject.org/EVSCClient/detailedResult.seam?type=CDA&oid=1.3.6.1.4.1.12559.11.28.14052
Data Visibility :	Private - Owned By jhdowning / Zen

Make this result public

share this result

Validate again

Perform another validation

Checks Well-Formedness, Schema, & "Objects"

Validation Results

Model based validation

Scorecard

Well-formedness **PASSED**

The document you have validated is supposed to be a well-formed document. The validator has checked if it is well-formed, results of this validation are gathered in this section.

The document is well-formed

Schema Validation detailed Result **PASSED**

Your document has been validated with the appropriate schema, here is the detail of the validation outcome.

The document is valid regarding the schema

Checks Well-Formedness, Schema, & "Objects"

Gazelle Objects Checker validator results

FAILED

Summary of checks

102

54

2927

☒ Severity

Errors102

Warnings54

Infos0

Unknowns0

Reports200

☒ Type

Closed0

Mandatory40

Cardinality103

Vocabulary77

Datatype41

Context53

Fixed Value41

Reset filters

Test

Location

Description

Type

ccda212896

/ClinicalDocument/component/structuredBody/component[1]/section/entry[0]/act/entryRelationship[0]/observation

In Allergy - Intolerance Observation (V2), the code of /hl7:observation[hl7:templateId/@root='2.16.840.1.113883.10.20.22.4.7']/hl7:author/hl7:assignedAuthor/hl7:code SHALL be from the valueSet 2.16.840.1.114222.4.11.1066 (flexibility : 2018-02-01T00:00:00) (Item : CONF:1098-31671)[[Constraint...](#)] [[Assertion...](#)]

Vocabulary

Test

Location

Description

Type

ccda213162

/ClinicalDocument/component/structuredBody/component[1]/section/entry[0]/act/entryRelationship[0]/observation/entryRelationship[0]/observation

In Severity Observation (V2), the code of /hl7:observation[hl7:templateId/@root='2.16.840.1.113883.10.20.22.4.8']/hl7:value SHALL be from the valueSet 2.16.840.1.113883.3.88.12.3221.6.8 (flexibility : 2018-02-01T00:00:00) (Item : CONF:1098-7356)[[Constraint...](#)] [[Assertion...](#)]

Vocabulary

Test

Location

Description

Type

ccda212256

/ClinicalDocument/component/structuredBody/component[1]/section/entry[1]/act

In Allergy Concern Act (V3), the code of /hl7:act[hl7:templateId/@root='2.16.840.1.113883.10.20.22.4.30']/hl7:author/hl7:assignedAuthor/hl7:code SHALL be from the valueSet 2.16.840.1.114222.4.11.1066 (flexibility : 2018-02-01T00:00:00) (Item : CONF:1098-31671)[[Constraint...](#)] [[Assertion...](#)]

Vocabulary

Test

Location

Description

Type

ccda212896

/ClinicalDocument/component/structuredBody/component[1]/section/entry[1]/act/entryRelationship[0]/observation

In Allergy - Intolerance Observation (V2), the code of /hl7:observation[hl7:templateId/@root='2.16.840.1.113883.10.20.22.4.7']/hl7:author/hl7:assignedAuthor/hl7:code SHALL be from the valueSet 2.16.840.1.114222.4.11.1066 (flexibility : 2018-02-01T00:00:00) (Item : CONF:1098-31671)[[Constraint...](#)] [[Assertion...](#)]

Vocabulary

E - 1

E - 2

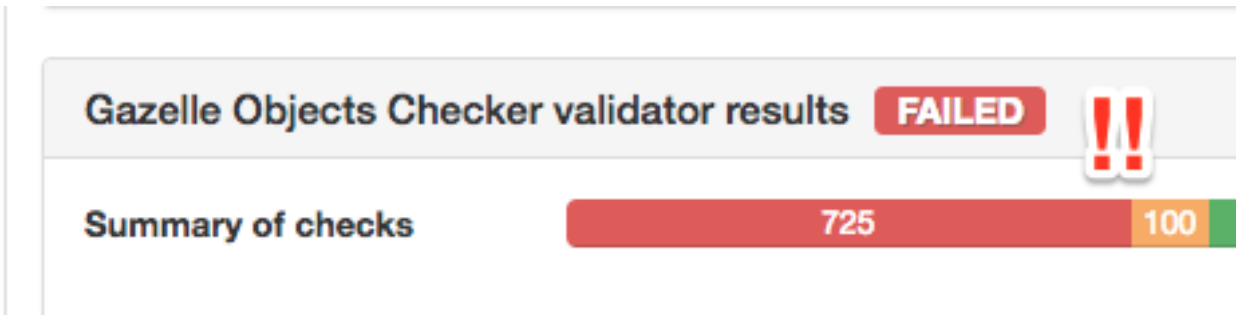
E - 3

E - 4

Introduction to the Process

- Observations:

- **Most CCDAs will fail the first time**
 - Bark worse than bite; Each instance of an error is separately reported
- **Tool has easy click-to-navigate UI**
- **Some possible bugs with code sets**
 - Zen has reported to eHealth Exchange team





Real World Problem

```
1 <tr ID="functionalNarrativeLink-40">
2   <td ID="functionalIdentifierLink-40">Eating: self-performance:</td>
3   <td ID="functionalValueLink-40">Supervision - oversight, encouragement or cueing</td>
4 </tr>
5 .....
6 <entry typeCode="DRIV">
7   <observation classCode="OBS" moodCode="EVN">
8     <templateId root="2.16.840.1.113883.10.20.22.4.67"/>
9     <id root="5e3cbb16-6782-49fe-a477-f8c31dde036b"/>
10    <code code="" codeSystem="" codeSystemName="" displayName=""/>
11    <statusCode code="completed"/>
12    <effectiveTime value="20180829"/>
13    <value codeSystem="2.16.840.1.113883.6.96" nullFlavor="OTH" xsi:type="CD">
14      <originalText>
15        <reference value="#functionalNarrativeLink-40"/>
16      </originalText>
17    </value>
18  </observation>
19 </entry>
20 </tr>
```

Diagram illustrating a real-world problem in XML parsing. The XML snippet shows a table with two columns: 'functionalIdentifierLink-40' (containing 'Eating: self-performance:') and 'functionalValueLink-40' (containing 'Supervision - oversight, encouragement or cueing'). A red line is drawn under the 'functionalValueLink-40' element. Two red arrows point from a '2' to the 'functionalIdentifierLink-40' and 'functionalValueLink-40' elements, indicating a parsing issue or a specific focus on these elements.

Real World Problem 1: CODE

Location	line 882, column 70
Description	cvc-pattern-valid: Value '' is not facet-valid with respect to pattern '^[^s]+' for type 'cs'.
Location	line 882, column 70
Description	cvc-attribute.3: The value '' of attribute 'code' on element 'code' is not valid with respect to its type, 'cs'.
Location	line 882, column 70
Description	cvc-datatype-valid.1.2.3: '' is not a valid value of union type 'uid'.

 (45/414)	Test	ccda112455	E - 45
	Location	/ClinicalDocument/component/structuredBody/component[1]/section/entry[36]/observation	
	Description	In Functional Status Result Observation, the code of /hl7:observation[hl7:templateId/@root='2.16.840.1.113883.10.20.22.4.67']/hl7:code SHALL have codeSystem='2.16.840.1.113883.6.1' (Item : conf-13908)[Constraint...] [Assertion...]	

```
<templateId root="2.16.840.1.113883.10.20.22.4.67"/>
<id root="5e3cbb16-6782-49fe-a477-f8c31dde036b"/>
<code code="" codeSystem="" codeSystemName="" displayName=""/>
<statusCode code="completed"/>
<effectiveTime value="20180829"/>
<value codeSystem="2.16.840.1.113883.6.96" nullFlavor="OTH" xsi:type="CD">
```


Real World Problem 1 & 2: CODE & VALUE

Table 173: Functional Status Problem Observation Constraints Overview

Name	XPath	Card.	Verb	Data Type	CONF#	Fixed Value
	observation[templateId/@root = '2.16.840.1.113883.10.20.22.4.68']					
	@classCode	1..1	SHALL		14282	2.16.840.1.113883.5.6 (HL7ActClass) = OBS
	@moodCode	1..1	SHALL		14283	2.16.840.1.113883.5.1001 (ActMood) = EVN
	@negationInd	0..1	MAY		14307	
	templateId	1..1	SHALL		14312	
	@root	1..1	SHALL		14313	2.16.840.1.113883.10.20.22.4.68
	id	1..*	SHALL		14284	
	code	1..1	SHALL		14314	
1	@code	0..1	SHOULD		14315	2.16.840.1.113883.6.96 (SNOMED-CT) = 248536006
	text	0..1	SHOULD		14304	
	reference	1..1	SHOULD		15552	
	@value	0..1	SHOULD		15553	
	statusCode	1..1	SHALL		14286	2.16.840.1.113883.5.14 (ActStatus) = completed
	effectiveTime	0..1	SHOULD	TS or IVL<T S>	14287	
2	value	1..1	SHALL	CD	14291	2.16.840.1.113883.3.88.12.3221.7 .4 (Problem)
	@nullFlavor	0..1	MAY		14292	
	methodCode	0..1	MAY		14316	
	entryRelationship	0..*	MAY		14294	

Real World Problem



https://vsac.nlm.nih.gov/valueset/2.16.840.1.113883.3.88.12.3221.7.4/expansion



Value Set Authority Center
U.S. National Library of Medicine

Welcome

Search Value Sets

Download

Search the NLM Value Set Repository.

Program:

All

Release:

Latest

Q Search

Refine by:

Steward

Code System

Query:

2.16.840.1.113883.3.88.12.3221.7.4



Clear

Real World Problem

Expanded Code List				
View Toggle Clear				
Page 1 of 5,973 20 View 1 - 20 of 119,456				
Code	Descriptor	Code System	Version	Code System OID
10000006	Radiating chest pain (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
10001005	Bacterial sepsis (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
10007009	Coffin-Siris syndrome (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
1001000119102	Pulmonary embolism with pulmonary infarction (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
1001000124104	Normal left ventricular systolic function (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
10017004	Occlusal wear of teeth (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
100191000119105	Asymmetry of prostate (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
100211000119106	Muscle spasm of thoracic back (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
100231000119101	Acquired pericardial cyst (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
10028000	Uncomplicated sedative, hypnotic AND/OR anxiolytic withdrawal (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
1003002	Religious discrimination (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
10033001	Ehlers-Danlos syndrome, non hydroxylysine deficient ocular type (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
10037000	Akatonoesis (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
10041001	Tracheal stenosis following tracheostomy (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
100451000119108	Pyogenic bacterial arthritis of shoulder (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
100461000119105	Pyogenic bacterial arthritis of hand (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
100491000119103	Myelopathy co-occurrent and due to spinal stenosis of lumbar region (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
10050004	Contusion of chest (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
10051000	Mitral facies (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
100511000119108	Myelopathy co-occurrent and due to spinal stenosis of thoracic region (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
View Page 1 of 5,973 20 View 1 - 20 of 119,456				

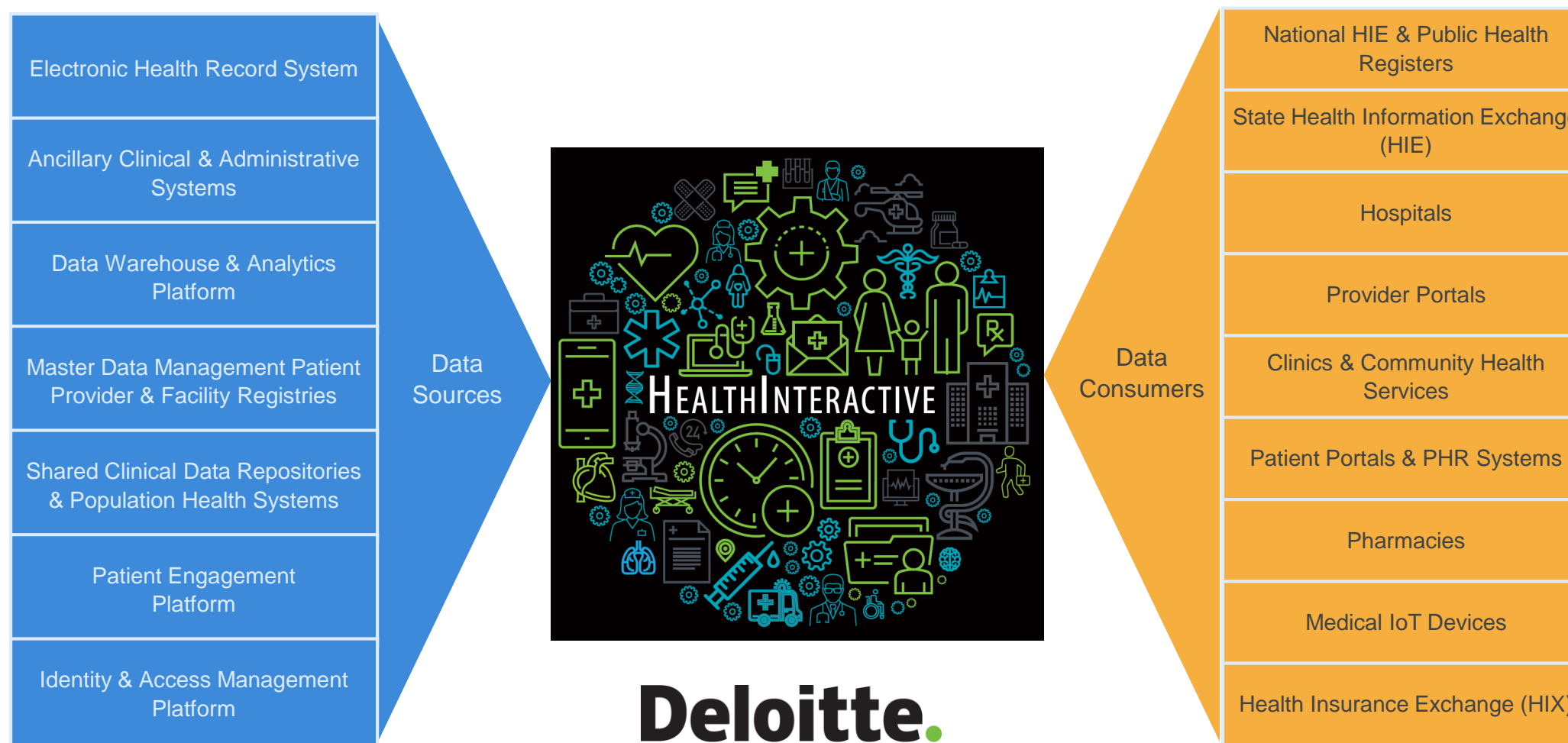
Real World Problem

Expanded Code List				
<div> <div>View</div> <div>Toggle</div> <div>Clear</div> <div> <div>Page 1 of 6</div> <div>20</div> <div>View 1 - 20 of 104</div> </div> </div>				
Code	Descriptor	Code System	Version	Code System OID
<input type="text" value="feeding"/>	<input type="text" value="feeding"/>	<input type="text" value=""/>	<input type="text" value=""/>	<input type="text" value=""/>
102609007	Feeding problem in child (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
109580003	Caries of infancy associated with breast feeding (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
109581004	Caries of infancy associated with bottle feeding (disorder)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
116336009	Eating / feeding / drinking finding (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
129033007	Feeding assisted (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
129903002	Ineffective infant feeding pattern (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
15721002	Protein supplementary feedings diet (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
161836003	Feeding problem symptom (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
161838002	Infant feeding problem (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
161839005	Elderly feeding problem (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
161840007	Feeding problem due to illness (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
165222009	Dependent for feeding (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
165223004	Needs help with feeding (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
165224005	Independent feeding (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
169641007	Feeding intention - not known (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
169642000	Feeding intention - unsure (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
169643005	Feeding intention - breast (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
169644004	Feeding intention - bottle (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
169743001	Breastfeeding with supplement (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
169745008	Breastfeeding started (finding)	SNOMEDCT	2018-09	2.16.840.1.113883.6.96
<div> <div>View</div> <div> <div>Page 1 of 6</div> <div>20</div> <div>View 1 - 20 of 104</div> </div> </div>				

- Modify messages “in-flight” to perform transport & content repairs
 - Fixable examples include security related issues and content that can be resolved via mapping or data transformations
- "Data Quality as a Service" Offerings
 - Content Analysis and Data Quality Scoring

Deloitte Consulting, LLP – HealthInteractive HIE Lessons Learned

Deloitte's HealthInteractive offers a robust healthcare interoperability platform for health information exchange that includes everything needed



Deloitte Consulting, LLP – HealthInteractive HIE Lessons Learned

Sequoia Product Certification

Staffing

- Resources
 - PM
 - Technical Advisor
 - Technical Resource
 - Testers
- Timeline

Planning

- Contracting
- Certification Type



Testing Requirements

- Required vs. Optional
- Exception vs. Failure
- Content Testing - CCDA

Testing Process

- Train the Tester
- Iterations
- Testing & Validation Tools

Support & Documentation

- Sequoia Support Model
- Security Documentation
 - RSA vs. X509

Deloitte.

Veterans Health Information Exchange (VHIE)

- Nationwide VHIE Data Quality Project
 - Years experience with analysis
 - Nationwide
 - Already working with multiple vendors
 - Not part of EHRM project
- Working with
 - Multiple vendors
 - Multiple Partners
 - eHealth Exchange to broaden to national scope and single voice
 - Carequality Commonwell workgroup
- Goals
 - Majority of Veterans also have external healthcare providers
 - Veteran patient care is improved with complete and high quality data available to the clinician and the patient
 - VHIE recognized the need for continuous data quality monitoring on production data
 - VHIE understands the interpretation of standards and adherence varies greatly
 - Communication and education about data quality observations key
 - VHIE understands the criticality of clinicians trust in the data and the data usability

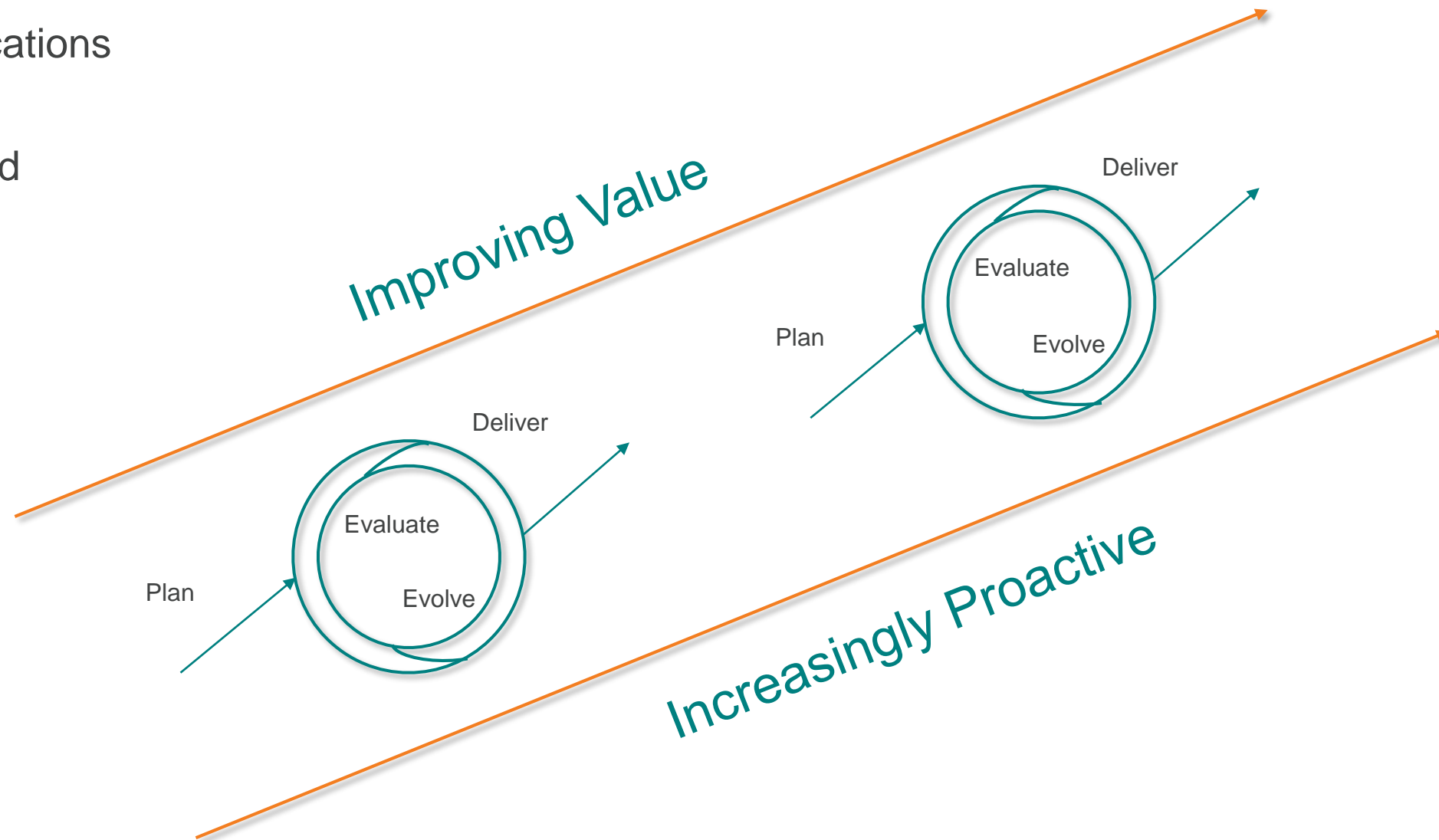
VHIE Data Quality Mandate

- Conduct continuous surveillance of production HL7 messages
- Utilize an array of advanced analytic tool sets
- Communicate observations to source
- Focus on successful patient engagement for clinicians with complete and high quality data
- Partner Support Goals / Objectives
 - Provide actionable data feedback
 - Discuss observations on HL7 messages provided to the VA
 - Provide ongoing support for researching during Next Steps
 - Provide observations, trends and feedback to partners soon after onboarding
 - Provide data usage with domain/data element metrics and transformation opportunities
 - Ongoing sustainment analysis schedule for all partners

Data Quality – Strategy Evolution

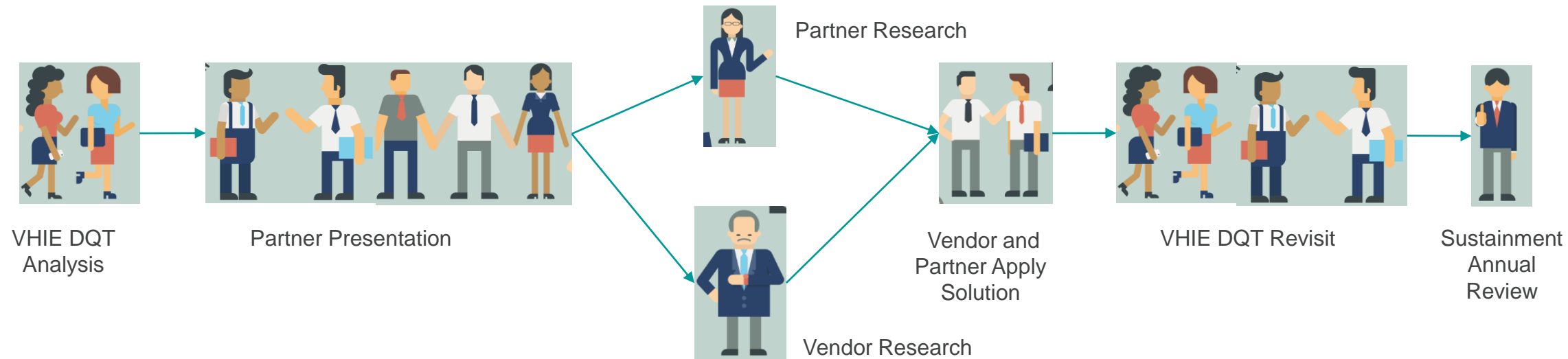
- Constant recalibrating of resource allocations
- Reprioritization at the speed of life
- Understand the concept of leverage and apply it at every moment

From “Leverage” by Tony Jeary

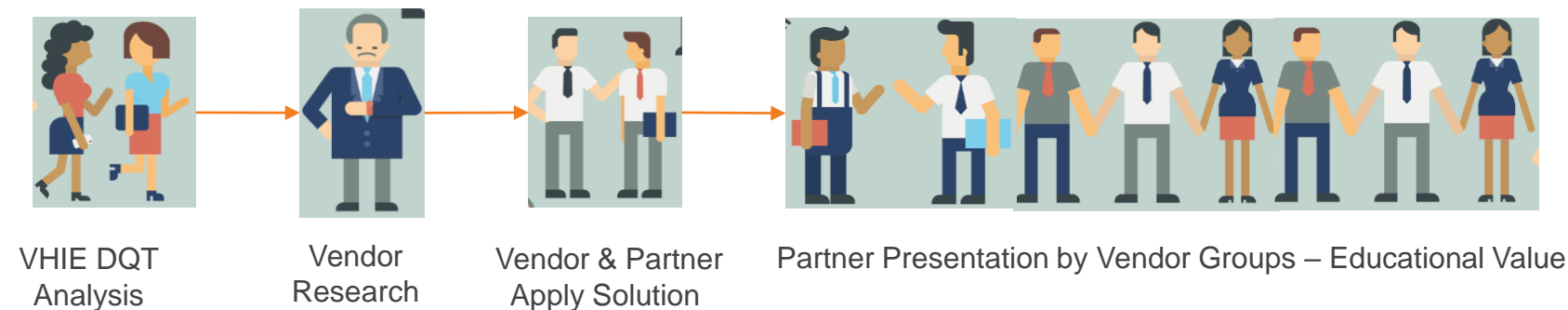


Lessons Learned – Impactful Strategy Focus

FY18 Strategy – Single Partner - Low Impact



FY19 Strategy – Vendor Level / Large Enterprises – High Impact across many Partners



Analytics Tools Strategy

- Model Driven Health Tool (MDHT) Enhancements
 - Workbook organized for Scoring – Preparation phase
 - Extended Clinical Domains available – for Document Type Deep Dives
- Altova
 - Deidentification of XMLs to prepare test XMLs
 - Expansion
- Excel
 - Use for basic scoring to replace the manual scoring of ten records
- Diameter Health – Automated scoring (Future)

Analytics Scoring Strategy Evolution

- Scoring
 - Manual - < 20 records
 - Excel – minimum of month of data of records for each Partner in analysis – e.g. 12,000 documents
 - Diameter Health (Automated scoring)
 - Batch
 - Continuous

VHIE Data Quality Team Focus

Demographics	Problems	Vital Signs	Allergies	Medications	Immunizations	Procedure
Document Level	Domain Level	Domain Level	Domain Level	Domain Level	Domain Level	Domain Level
Recipient Name	Problem Text	Panel ID	Allergy ID	ID	ID	ID
Recipient Organization	DisplayName	Date	Status	Medications Text	Immunization Text	Date
Order Id	Code	Panel Text	Verify Date	DisplayName	DisplayName	Procedure Text
	Code System	DisplayName	No Known Flag	Code	Code	DisplayName
	Code System Name	Code	Allergy Text	Code System	Code System	Code
	ID	Code System	DisplayName	Code System Name	Code System Name	Code System
	Date	Code System Name	Code	Status	Status	Code System Name
	Problem Text	Organization	Code System	Quantity	Quantity	Performer
	DisplayName	Author	Code System Name	Expiration	Expiration	Organization
	Code	Vital Sign ID	Substance Text	Prescription	Prescription	Section Title
	Code System	Date	DisplayName	Organization	Organization	File Name
	Code System Name	Vital Sign Text	Code	Author	Author	
	Organization	DisplayName	Code System	Section Title	Section Title	
	Author	Code	Code System Name	Narrative	File Name	
	Section Title	Code System	Reaction Text		Narrative	
	Narrative	Code System Name	DisplayName			
		Result	Code			
		Range	Code System			
		Section Title	Code System Name			
		Narrative	Severity Text			
			Code			
			Code System			
			Code System Name			
			Organization			
			Author			
			Section Title			
			Narrative			

Types of Errors

- Missing entries
 - Code System/Code System Names are blank on active medications and allergies
- Incorrect entry values
 - Vital Signs values with narrative
 - Functional status in Vital Signs domain
 - Inbound data has multiple code system names in VA domains
- Creative placement of data
 - Immunizations documented in Plan of Care, Medications and Procedures
 - Procedures documented in Problems
- Duplication of data in various domains

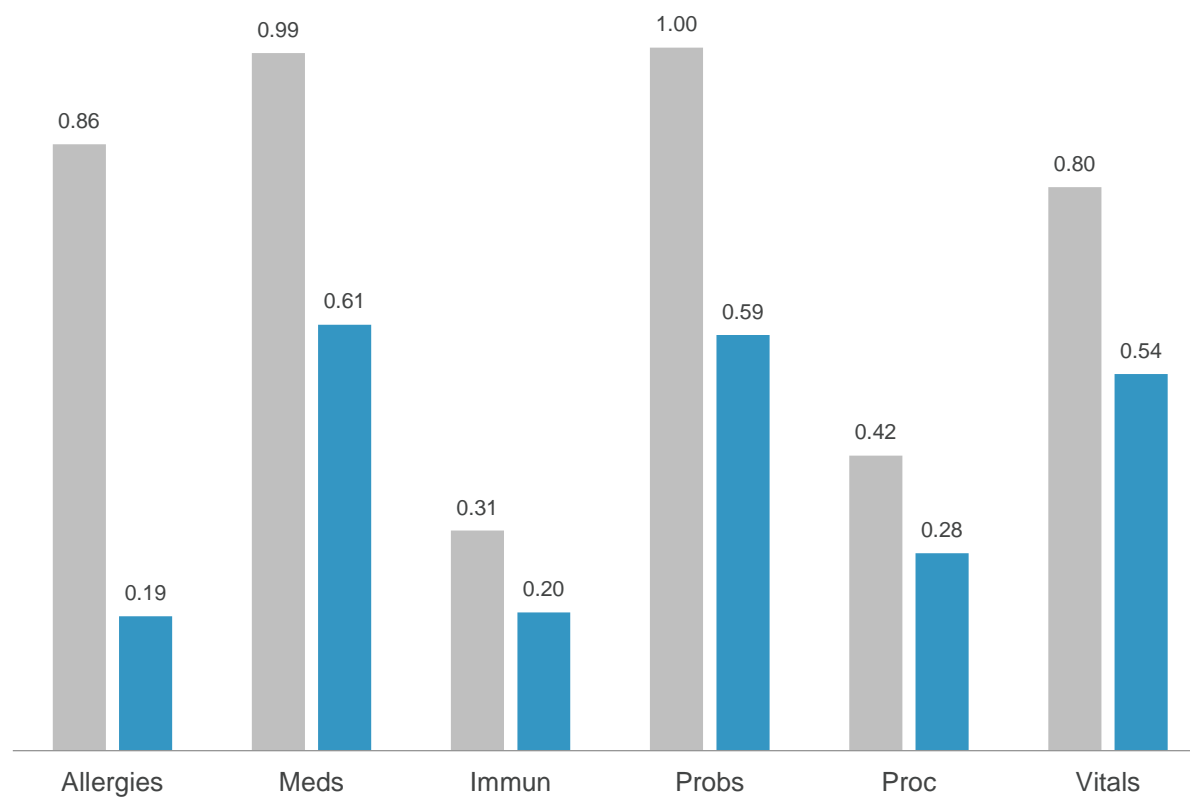
Opportunity

- Implementation Guide with Use Cases
- Content Implementation Guide with Use Cases
 - E.g. VHIE constraints defined for ingestion requirements
- Interoperability Strategy
 - Consequences of HL7 standard specifications not being met can include:
 - Scoring impact
 - Impact to reimbursement
 - Tracking and communication of actionable observations

Comparison Healthcare Systems and HIEs

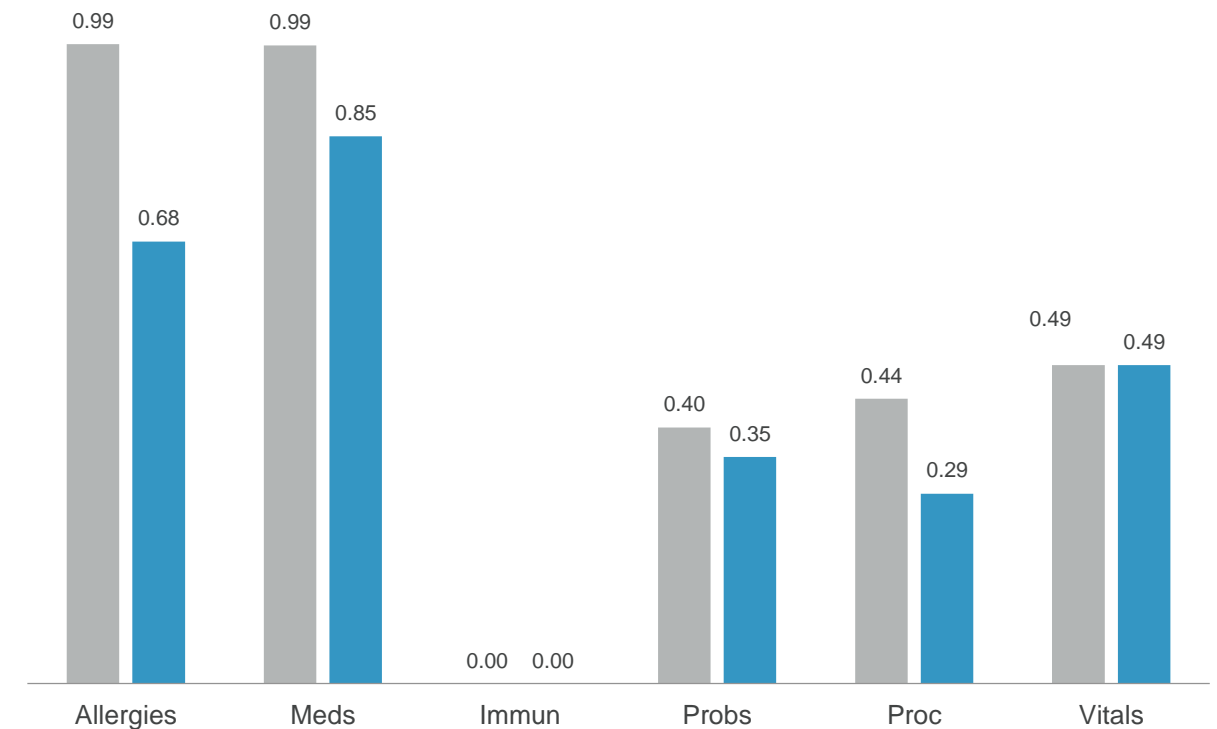
EHR

■ Completeness ■ Content



HIE

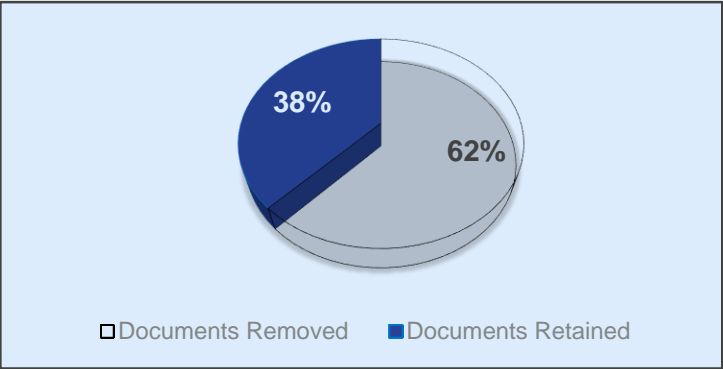
■ Completeness ■ Content



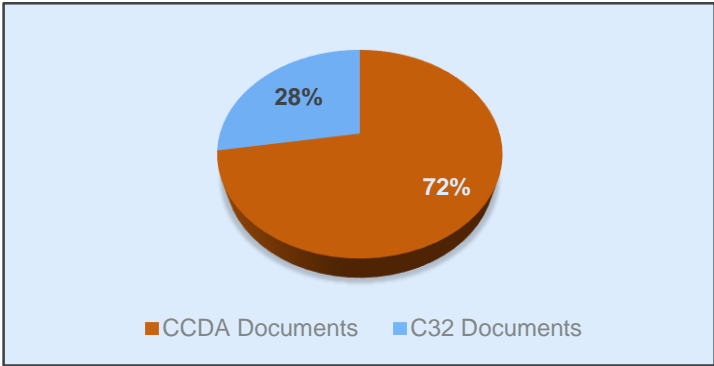
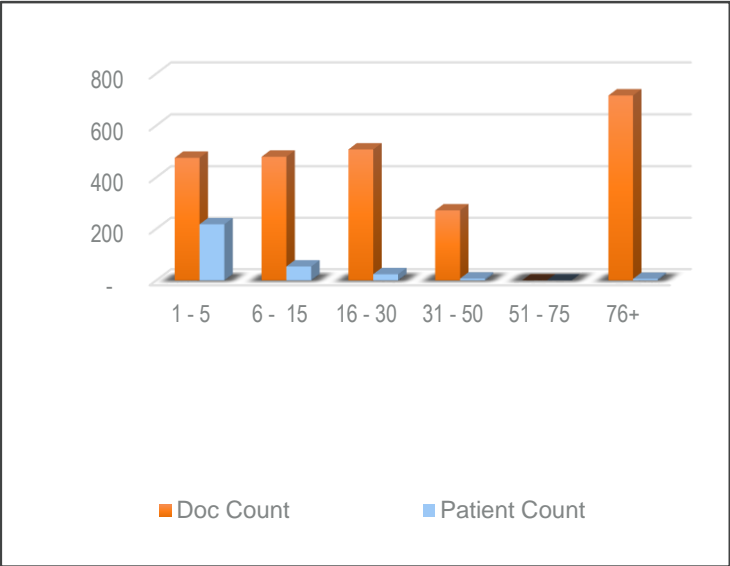
Data Quality Team – Vendor Review

Two Vendor Sites... Comparative Differences

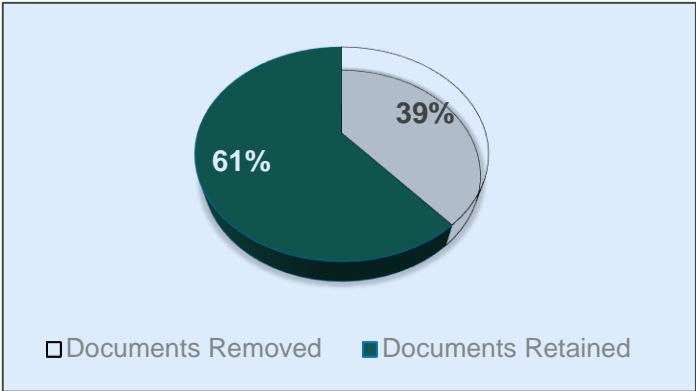
VAP – 07/01/18 – 09/30/18



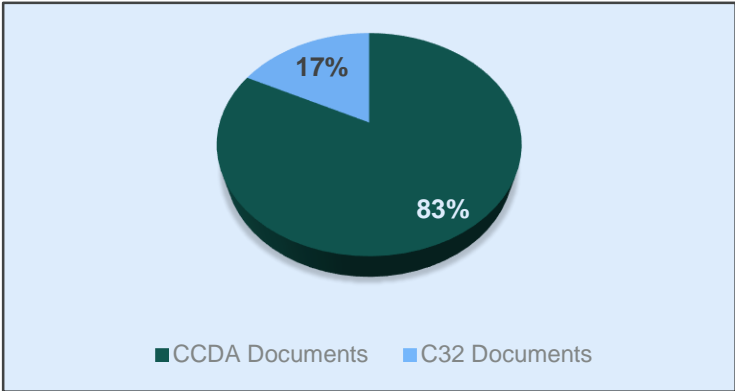
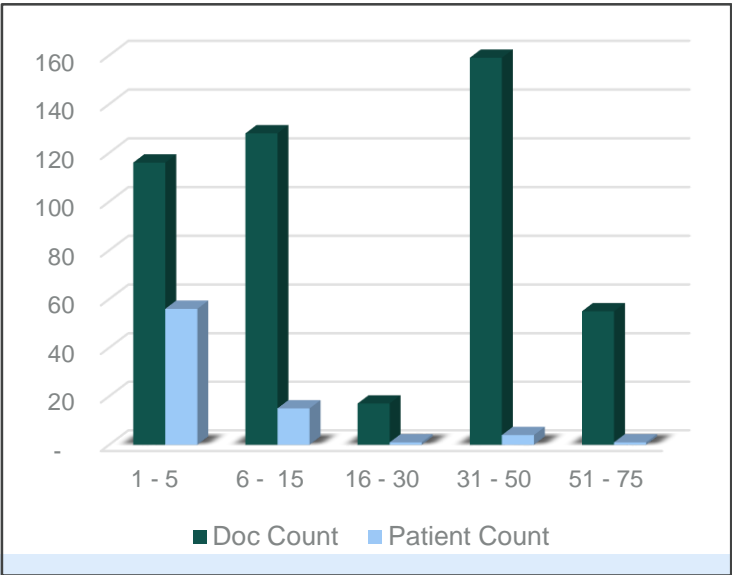
Total VAP Download Q4 FY18	6,482
Documents Removed	4,022
Documents Retained	2,452



Total Docs Retained	2,452
CCDA Documents	1,775
C32 Documents	677



Total VAP Download Q4 FY18	775
Documents Removed	300
Documents Retained	475



Total Docs Retained	475
CCDA Documents	392
C32 Documents	83

Consensus Development of Next Steps

Questions/Comments	Details/Response	Next Steps
Develop Data Quality Communication Strategy with Vendor		VA: Provide unique IDs for research Vendor: Research with stakeholders
General walk through of the analytic surveillance of Partner production data – metrics, analysis, graphs		
Observations across multiple vendor stakeholders – Develop and present trends		

Interoperability Challenges Identified

- On a national scale, healthcare interoperability needs to focus on completeness and high-quality data that meets HL7 standard specifications being exchanged between partners.
- Critical data quality barriers:
 1. Variability of adherence to standards
 2. Perceived low Return On Investment (ROI) for Data Quality initiatives
 3. Absence of Implementation Guide/Absence of Content Implementation Guide
 4. Absence of Data Risk Management Program

Problem

- Inconsistency of messages
- Lack of emphasis on data quality of message content at the data element level
- Conformance and customization to standard specifications varies by partner
- Current standards allow flexibility during implementation enabling variability in meaning, context, format
- Local internal codes impact data quality and are not ingestible by external partners and networks

Opportunity

- Provide Implementation Guide
- Provide Content Implementation Guide with use case examples
- Healthcare Failure Mode Effects Analysis (HFMEA) for the End-to-End interoperability process
- Include onboarding Probationary/Quarantine phase

Perceived Low Return on Investment

Problem

- Payload messages with data gaps, test files, and insufficient content may not be useful for clinicians at the point of care.
- Data quality improvements that impact ROI are often difficult to quantify due to the complexity of measuring outcomes.
- Data quality analytics often require significant resources to complete data validation and provide documentation and improve process data.

Opportunity

- Identify and define project and business needs succinctly.
- Quantify ROI for direct and indirect costs and benefits, identify revenue opportunities and risks, and perform sensitivity analysis.
- Establish multi-disciplinary outcome improvement teams and agree on ROI measures.
- Evaluate costs, revenue, and direct benefits: perform, review, and adjust ROI calculations.
- Data Quality team ROI efforts in process

Implementation Guide and Content Implementation Guide

Problem

- Need to provide stakeholders with a detailed implementation content guideline.
- The need for a specific content implementation guideline is evident in two specific areas:
 - Onboarding phase
 - Sustainment phase

Opportunity

Provide Implementation Guide
Provide a Content Implementation Guide
including:

- Set of questions addressed to network and/or stakeholders
- Application of DQ models to assess high quality of data
- Frequency of data content review – responses and fixes
- Level of impact
- Semantic interoperability and quality – are the sending and receiving intentions the same?

Problem

- Create Data Risk Management framework
- Poor data quality poses a risk to any organization
- Inclusion at an organizational level Risk Management Program

Opportunity

- DQ communications content strategy – scoring and dashboard to communicate conformance of targets
- Continuous DQ content improvement – internal and external benchmarks to measure progress
- Patient safety considerations
 - Quality Measures
- DQ Risk Mitigation planning

eHealth ExchangeTM

Discussion