

EHR-IIS Interoperability: Progress to Date and Preliminary Outcomes

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EHR-IIS Interoperability Progress to Date and Preliminary Outcomes

□ ARRA-HITECH Overview

- Activities
- Accomplishments
- Challenges
- Lessons Learned

□ Preliminary Outcomes

- Grantees nearing project completion of closeout
- 3 Measurable Outcomes

EHR-IIS Interoperability Project

❑ ARRA HITECH Act

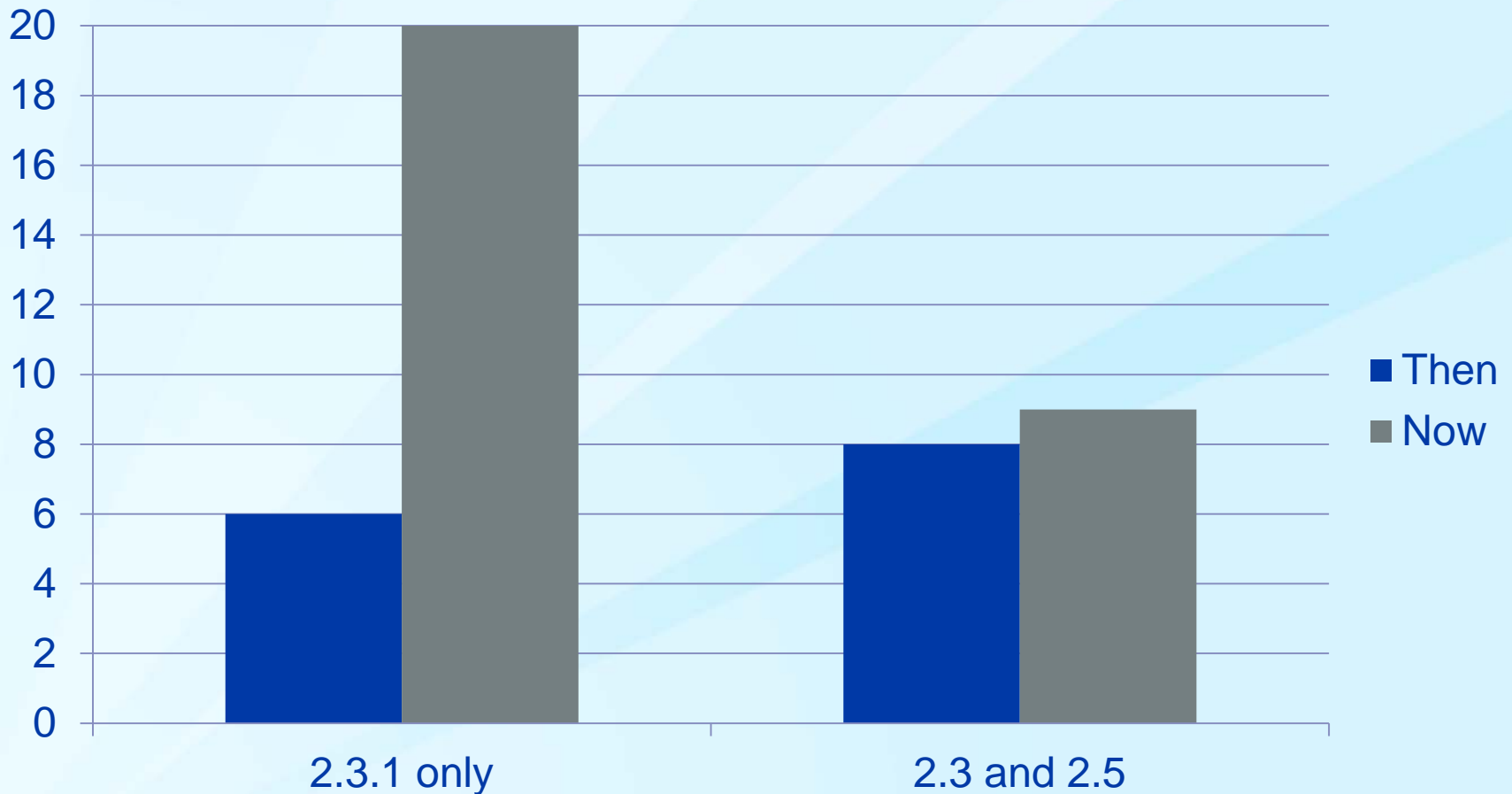
❑ EHR-IIS Interoperability Project

- To support enhanced interoperability of Electronic Health Records with Immunization Information Systems using a standard HL7 message
- 20 grantees awarded ARRA HITECH funds
 - Expert Panels formed*
 - Transport Layer Workgroup (SOAP web services)
 - HL7 2.5.1 guide
 - Patient De-duplication

IIS Baseline Data ARRA HITECH Grantees (20)

# Overall Practice Sites Identified in Grantees' Geographic Area	28,995
# Children aged 4m to 6 y in identified practice sites	5,948,527
# Practice Sites Identified for Enhancement	3,020 / (10.4%)
# Children aged 4m to 6 y in practice sites selected for enhancement	2,350,289 / (39.5%)

IIS HL7 Capability by Version ARRA HITECH Grantees (20) -Then and Now-



Most Frequently Reported Enhancement Types

ARRA HITECH Grantees (20)

Type of Enhancement	# Enhancements	% Total Enhancements
Flat file to HL7 2.3 batch unidirectional	654	36%
Flat file to HL7 2.3 real time bidirectional	283	18%
Flat file to HL7 2.5 batch unidirectional	332	16%
Flat file to HL7 2.3 real time unidirectional	136	7%
Direct Data Entry to HL7 2.3 batch unidirectional	95	5%
No submission to HL7 2.3 batch unidirectional	73	4%
All Other Types	248	14%
TOTAL	1,821	100%

20 ARRA HITECH Grantee-reported data as of July 31, 2012

Enhanced Provider Sites by EHR Vendor ARRA HITECH Grantees (20)

EHR Vendor	# Provider Sites	# Grantees Impacted
Epic Systems	909	8
EMC Corporation	308	1
eClinicalWorks	87	5
Allscripts	58	3
Office Practicum	36	4
Athena Health	34	5
Centricity	28	2
NextGen	27	5
RPMS	27	3
Other	152	
Unknown	155	
TOTAL	1,821	

Grantee-reported as of July 31, 2012

Provider Sites Enhanced to IIS/EHR

Bidirectional Data Exchange

Reported as of July 31, 2012

Bidirectional Enhancement Type	EHR Vendor(s)	# Sites
No submission to HL7 2.3 batch bidirectional	EPIC, RPMS	8
DDE to HL7 2.3 batch bidirectional	RPMS	18
DDE to HL7 2.3 RT bidirectional	EPIC, E-Addabbo	7
HL7 2.3 real-time unidirectional to HL7 2.3 RT bidirectional	EPIC	28
HL7 2.3 batch bidirectional to HL7 2.3 RT bidirectional	EPIC	2
HL7 2.3 batch unidirectional to HL7 2.3 RT bidirectional	Connexion	3
Flat file to HL7 2.3 RT bidirectional	EPIC, OP, GE Centricity	283
DDE to HL7 2.5 RT bidirectional	EPIC, Webchart	31
TOTAL		380

ARRA-HITECH

Challenges and Lessons Learned

❑ Challenges

- Readiness (EHR, Provider, IIS)
- EHR vendor support to providers
- Competing priorities (MU, VTrckS, bar coding, HIEs)
- Data quality

❑ Lessons Learned

- Establish onboarding process early
- Benchmarking resources

ARRA-HITECH EHR-IIS Interoperability Preliminary Outcomes

- ❑ Briefly review Measurable Outcomes, data collection and calculation methods
- ❑ Share preliminary outcome results
 - Analysis of grantee status for 3 Measurable Outcomes
 - # of Enhancements
 - # of HL7 Transactions
 - Increase in Timeliness

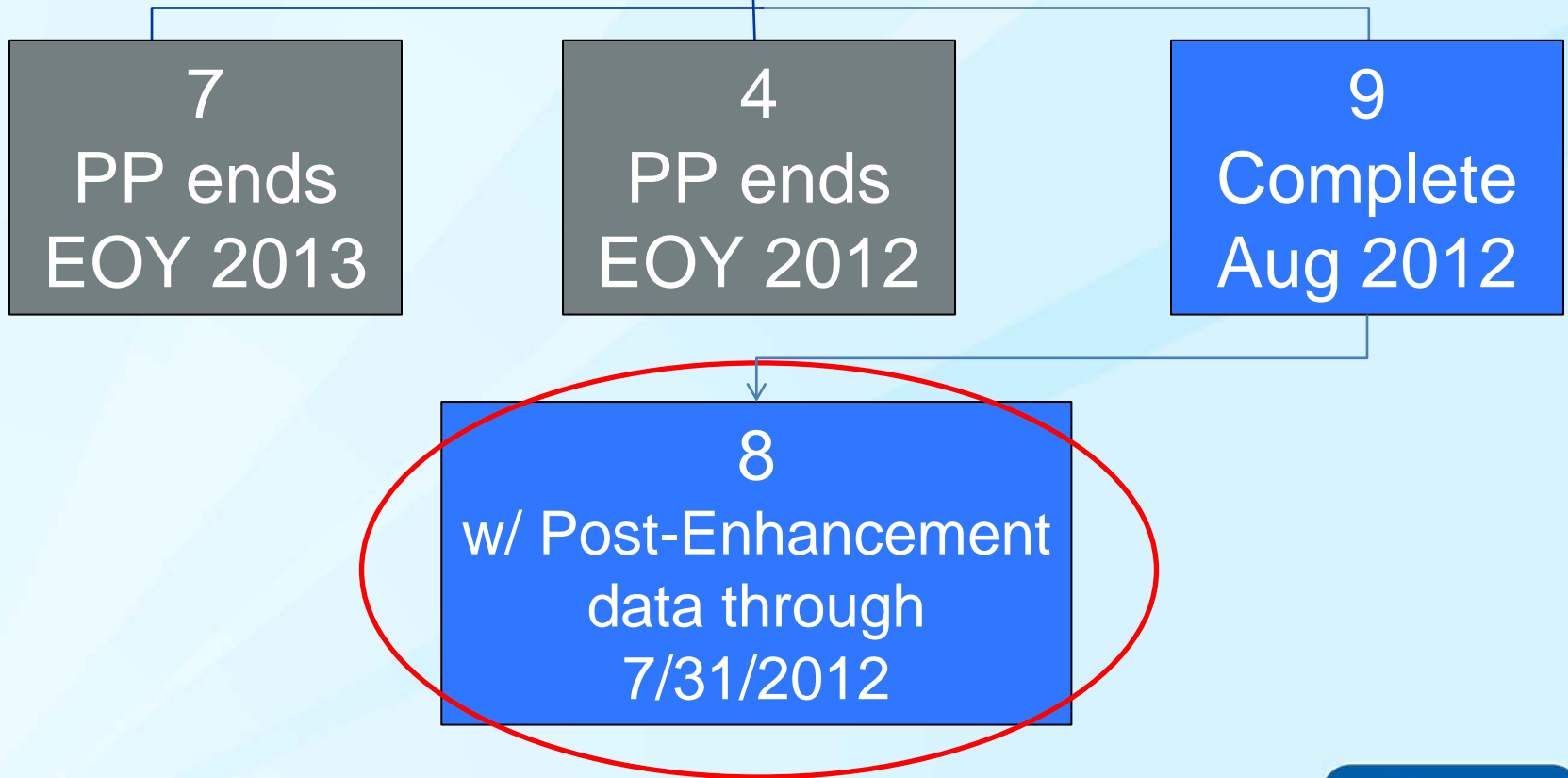


Measurable Outcomes Data Collection

- ❑ **Grantee-reported Benchmark Data**
 - Pre-Enhancement
 - Post-Enhancement, 90-day intervals
- ❑ **Logic Guidance document**
- ❑ **EHR-IIS Interoperability Evaluation Online Tool**
- ❑ **Online Tool User Guide**



20 ARRA-HITECH GRANTEES



Outcome Measure 1

Number of enhanced sites

“Increase the number of enhanced EHR-IIS practice-based electronic interfaces available by 45%”



Outcome Measure 1: *Number of Enhanced Sites*

Grantee	# Enhanced Sites (baseline)	# Sites Needed (45% of baseline)	# Sites w/ Post-Enhancement Data	# Children 4m – 6y @ Enhanced Sites	Met OM1?
A	72	32	26	14,389	-
B	0	1	2	339	Y
C	8	4	3	433	-
D	117	53	42	47,650	-
E	64	29	56	57,345	Y
G	34	15	25	66,902	Y
H	0	1	181	178,271	Y
I	4	2	2	833	Y
	299	138	337	366,162	

Source: Data reported to EHR-IIS Evaluation Online Tool as of July 31, 2012.



Outcome Measure 2

Number of HL7 Transactions

“Increase the number of practice-based electronic immunization transactions reported/timeframe (week/month) to the IIS by 10%”

Outcome Measure 2

Number of HL7 Transactions

	Sites w/ Prior HL7 Interfaces			Sites w/o Prior HL7 Interfaces			
	Weekly Avg Pre	Weekly Avg Post	% Increase	Weekly Avg Pre	Weekly Avg Post	# Increase	Met OM2?
A	-	-	-	0	6,441	6,441	Y
B	-	-	-	0	958	958	Y
C	-	-	-	0	50	50	Y
D	109	173	58.7%	0	3,719	3,719	Y
E	428	1277	198.4%	0	9,044	9,044	Y
F	-	-	-	0	3,823	3,823	Y
G	-	-	-	0	9,966	9,966	Y
H	-	-	-	0	17	17	Y
TOTAL	594	2,764	365%	0	32,704	32,704	

Source: Data reported to EHR-IIS Evaluation Online Tool as of July 31, 2012.



Outcome Measure 3

Timeliness

“Increase the number/proportion of practice-based immunization data received and recorded in the IIS within 30 days or less by 25%”

Online Tool Screen Shot - Timeliness

H) FOA Outcome measure 3:

Number of vaccinations for kids at least 4 months of age and under six years of age received by the IIS within days of administration by each provider site (*provide timeliness data for each category*) [Guidance](#)

						Proportion of Total Vx Received	
<hr/>							
a) less than or equal to 1 day	Administered:	<input type="text"/>	Historical:	<input type="text"/>	Total:	<input type="text"/>	<input type="text"/> %
b) greater than 1 day - equal to or less than 7 days	Administered:	<input type="text"/>	Historical:	<input type="text"/>	Total:	<input type="text"/>	<input type="text"/> %
c) greater than 7 days - equal to or less than 14 days	Administered:	<input type="text"/>	Historical:	<input type="text"/>	Total:	<input type="text"/>	<input type="text"/> %
d) greater than 14 days - equal to or less than 30 days	Administered:	<input type="text"/>	Historical:	<input type="text"/>	Total:	<input type="text"/>	<input type="text"/> %
e) greater than 30 days	Administered:	<input type="text"/>	Historical:	<input type="text"/>	Total:	<input type="text"/>	<input type="text"/> %
<hr/>							
Totals	Administered:	<input type="text"/>	Historical:	<input type="text"/>	Total:	<input type="text"/>	<input type="text"/> %

Outcome Measure 3

Timeliness – Administered Vx Only

Grantee	Vx <30d Pre-Enh	Vx <30d Post-Enh	Absolute % Point Change
A	100%	100%	0%
B	99.4%	99.0%	-0.4%
C	-	90.3%	-
D	98.7%	93.2%	-5.5%
E	43.8%	33.9%	-9.9%
F	87.6%	99.2%	11.6%
G	93.1%	60.3%	-32.8%
H	22.2%	57.8%	35.6%

Source: Data reported to EHR-IIS Evaluation Online Tool as of July 31, 2012.



Outcome Measure 3

Timeliness – Administered Vx Only

Grantee	Vx <30d Pre-Enh	Vx <30d Post-Enh	% Change in Raw #
A	72,686	82,238	13.1%
B	2,502	1,013	-59.5%
C	0	569	-
D	1,004	69,003	6772.8%
E	22,332	50,877	127.8%
F	59,834	93,643	56.5%
G	277,907	181,074	-34.8%
H	20	1,804	8920%

Source: Data reported to EHR-IIS Evaluation Online Tool as of July 31, 2012.



Outcome Measure 3

Timeliness – Administered Vx Only

Grantee	Vx <30d Pre-Enh		Absolute % Point Change	% Change in Raw #	Met OM3?
	%	#			
A	100%	72,686	0%	13.1%	N
B	99.4%	2,502	-0.4%	-59.5%	N
C	-	-	-	-	-
D	98.7%	1,004	-5.5%	6772.8%	Y
E	43.8%	22,332	-9.9%	127.8%	Y
F	87.6%	59,834	11.6%	56.5%	Y
G	93.1%	277,907	-32.8%	-34.8%	N
H	22.2%	20	35.6%	8920%	Y

Source: Data reported to EHR-IIS Evaluation Online Tool as of July 31, 2012.



***What do these preliminary results tell us
about EHR-IIS interoperability?***



Next Steps

- ❑ **Continue data collection**
- ❑ **Collaborate with grantees**
- ❑ **Additional analyses**
- ❑ **Sustainability**

Acknowledgements

***Thank you* to all ARRA-HITECH Grantees:**

- ☐ Arizona
- ☐ Colorado
- ☐ District of Columbia
- ☐ Idaho
- ☐ Michigan
- ☐ Minnesota
- ☐ Mississippi
- ☐ Montana
- ☐ New Mexico
- ☐ New York City
- ☐ North Dakota
- ☐ Oregon
- ☐ Philadelphia
- ☐ Rhode Island
- ☐ South Dakota
- ☐ Texas
- ☐ Utah
- ☐ Washington
- ☐ Wisconsin
- ☐ Wyoming



Thank you

**For more information please contact Centers for Disease Control and
Prevention
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