

Improving Performance on the Shot Clock

Sharing Responsibilities Between Providers and Immunization Registries



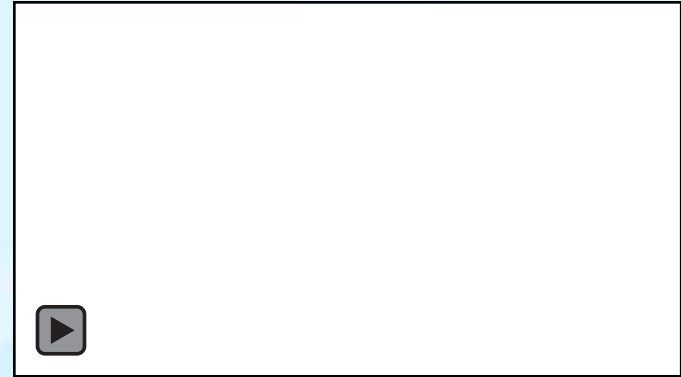
AIRA Annual Meeting
Breakout Session 2: 11:15 – 12:30 PM PDT
Tuesday, April 5, 2016
Seattle, WA

CNI Advantage, LLC.



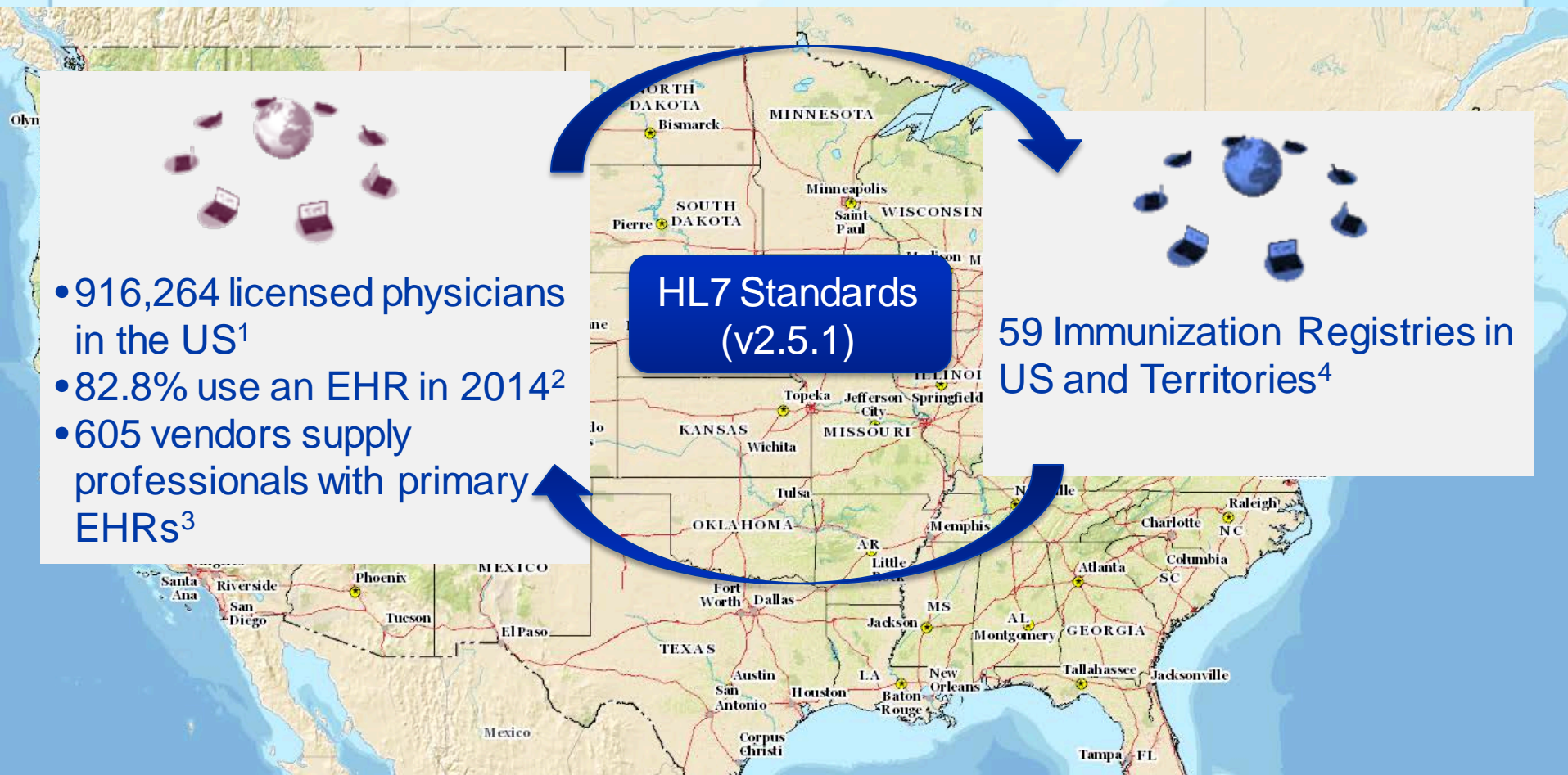
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CURRENT STATUS OF IMMUNIZATION WORKFLOW IN THE UNITED STATES

Building Interoperability: **Current State**



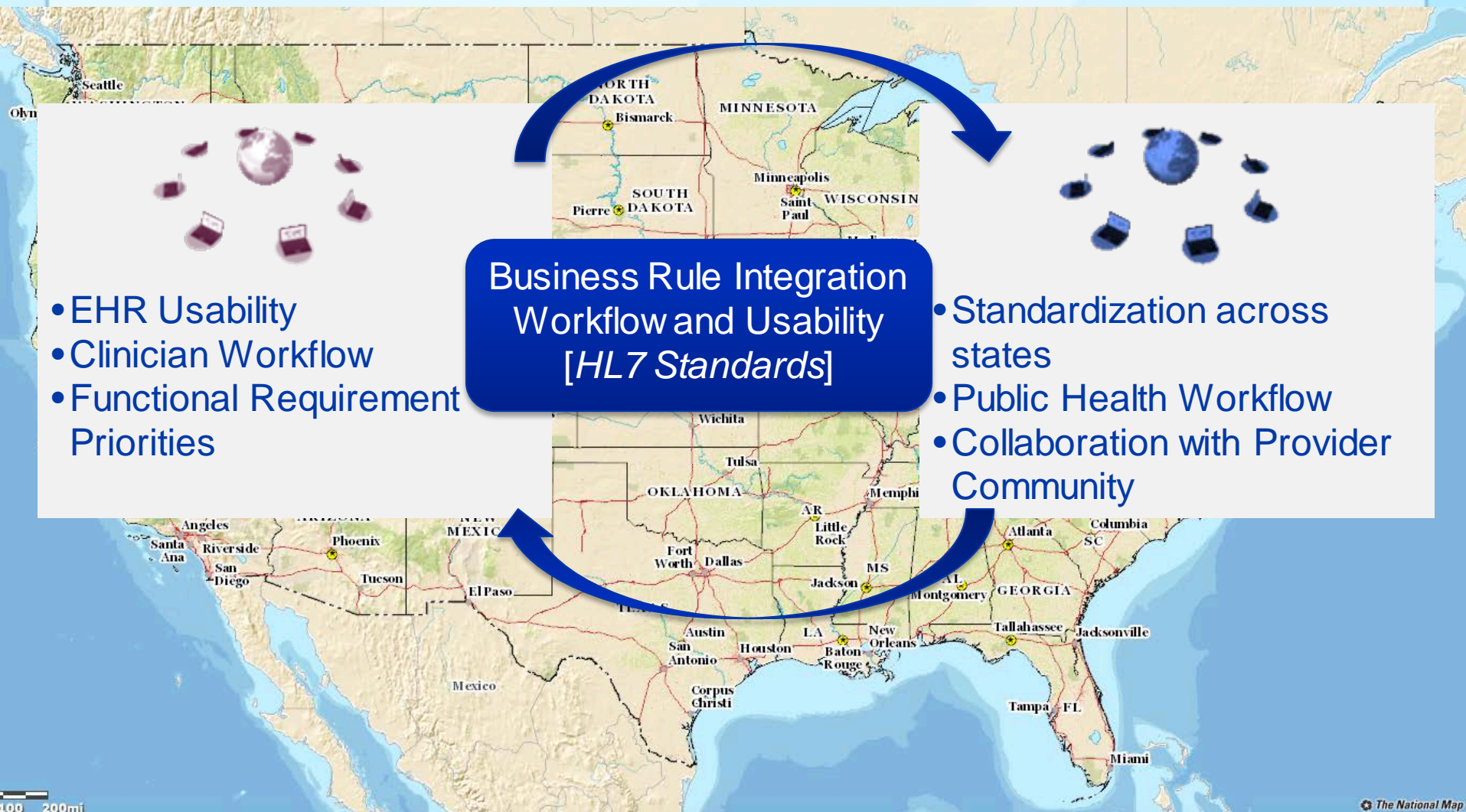
¹ <https://www.fsmb.org/Media/Default/PDF/Census/2014census.pdf>.

² <http://dashboard.healthit.gov/quickstats/pages/physician-ehr-adoption-trends.php>

³ <http://dashboard.healthit.gov/quickstats/pages/FIG-Vendors-of-EHRs-to-Participating-Professionals.php>

⁴ http://www.immregistries.org/resources/aira_pharmacy_iis_white_paper.pdf

Building Interoperability: Moving toward Future State Beyond Messaging Standards





EHR CERTIFICATION PROCESS PILOT OVERVIEW

EHR Certification Process Pilot



❑ Phases 1 & 2: 2013-2015

- Immunization-Related Capabilities for Clinical Software
- Immunization-Centric Guidance
- Immunization-Related Software Tests

❑ Phase 3: 2016 –

- Implementation of Phase 2 efforts working with the Health Information Management Systems Society (HIMSS) and International Computer Security Association (ICSA)

Published by HIMSS –

<http://www.himssinnovationcenter.org/immunizationhit>

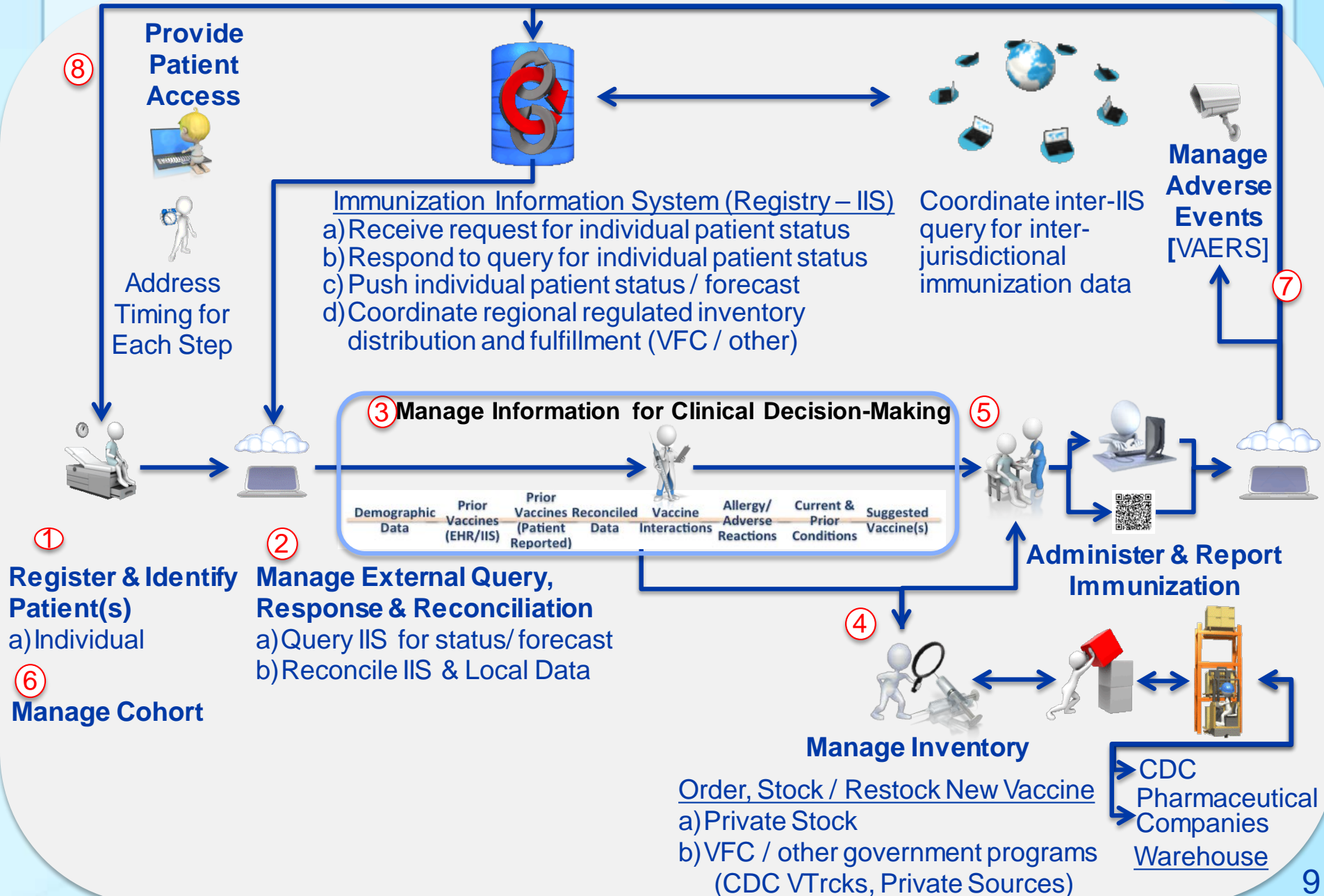
[Press Release –

<http://www.himss.org/News/NewsDetail.aspx?ItemNumber=47329>]



IMMUNIZATION CLINICAL WORKFLOW CONCEPTUAL MODEL

Conceptual Model: General User Workflows





EHR CLINICAL SOFTWARE ASSESSMENT

EHR Clinical Software Assessment: Vendor Participants

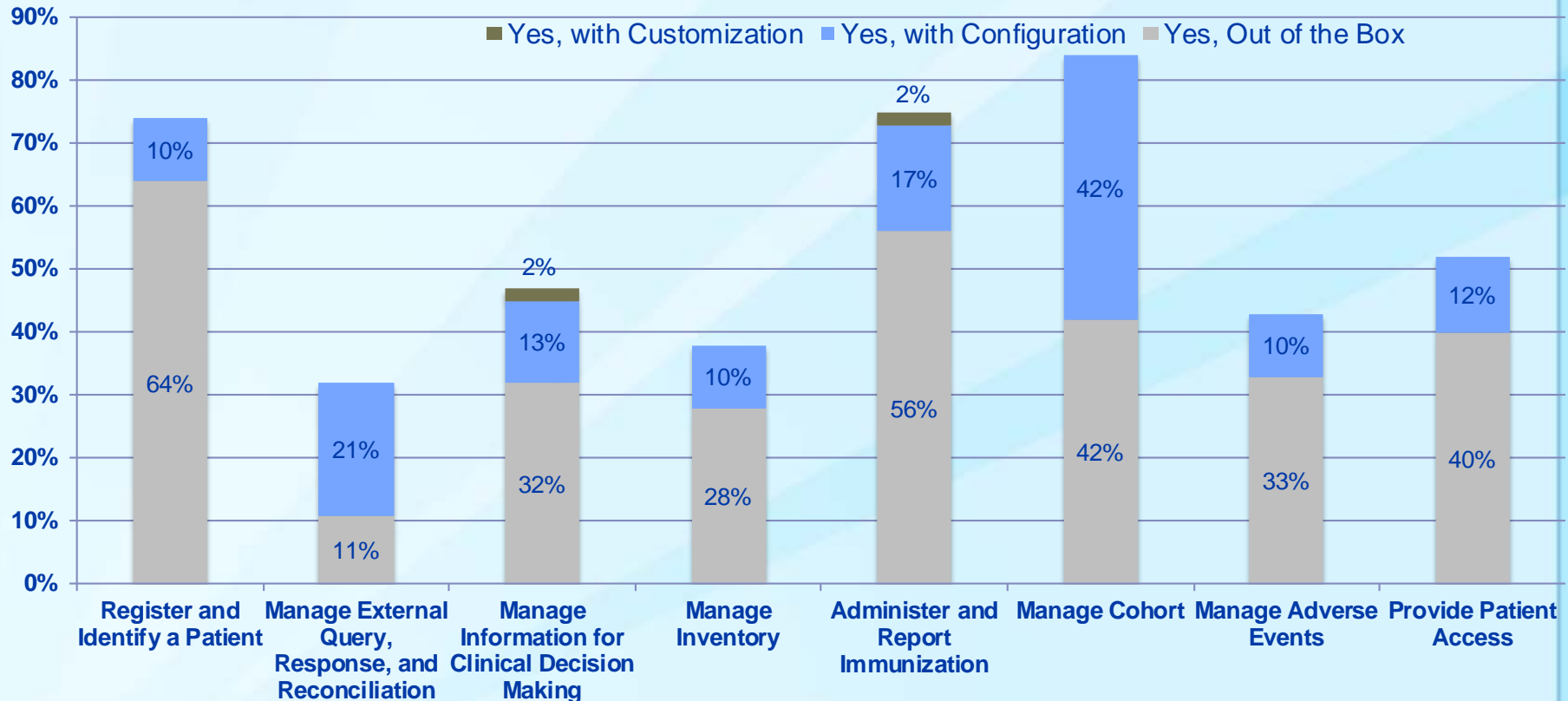


	Vendor	Date
1	Connexin (Office Practicum v14)	1-29-2015 ✓
2	eMDs (Solution Series, v8.0)	1-30-2015 ✓
3	NextGen (NextGen EHR v5.8.1)	2-2-2015 ✓
4	McKesson (Practice Choice v4.01)	2-3-2015 ✓
5	Greenway Health (PrimeSuite v17.10.7.HF2)	2-5-2015 ✓
6	Practice Fusion (Practice Fusion EHR v3.3)	2-6-2015 ✓
7	Cerner (Power Chart)	2-9-2015 ✓
8	Athenahealth (AthenaClinicalEHR v15.1)	2-17-2015 ✓
9	Allscripts (Touchworks v11.5.0)	2-24-2015 ✓
10	Epic (Epic Care Ambulatory 2015)	3-10-2015 ✓
11	PCC (v6.2.7)	3-11-2015 ✓
12	eClinicalWorks (v10)	3-16-2015 ✓

EHR Clinical Software Assessment: Findings



Percent of Immunization-Centric Requirements Supported, by General User Workflow

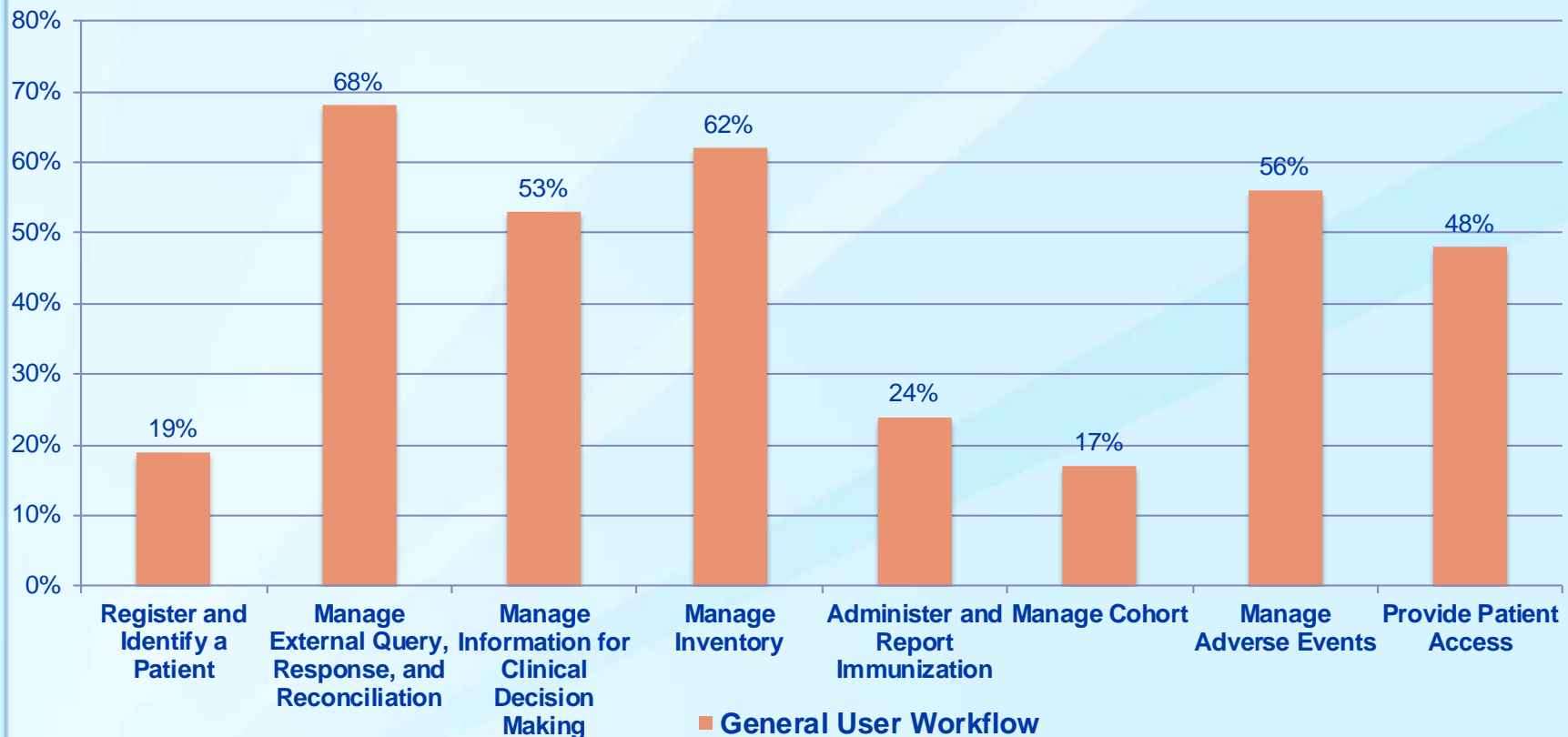


26 of the 48 requirements (54%) are supported by a majority (6 or more) of the 12 products observed.

EHR Clinical Software Assessment: Findings



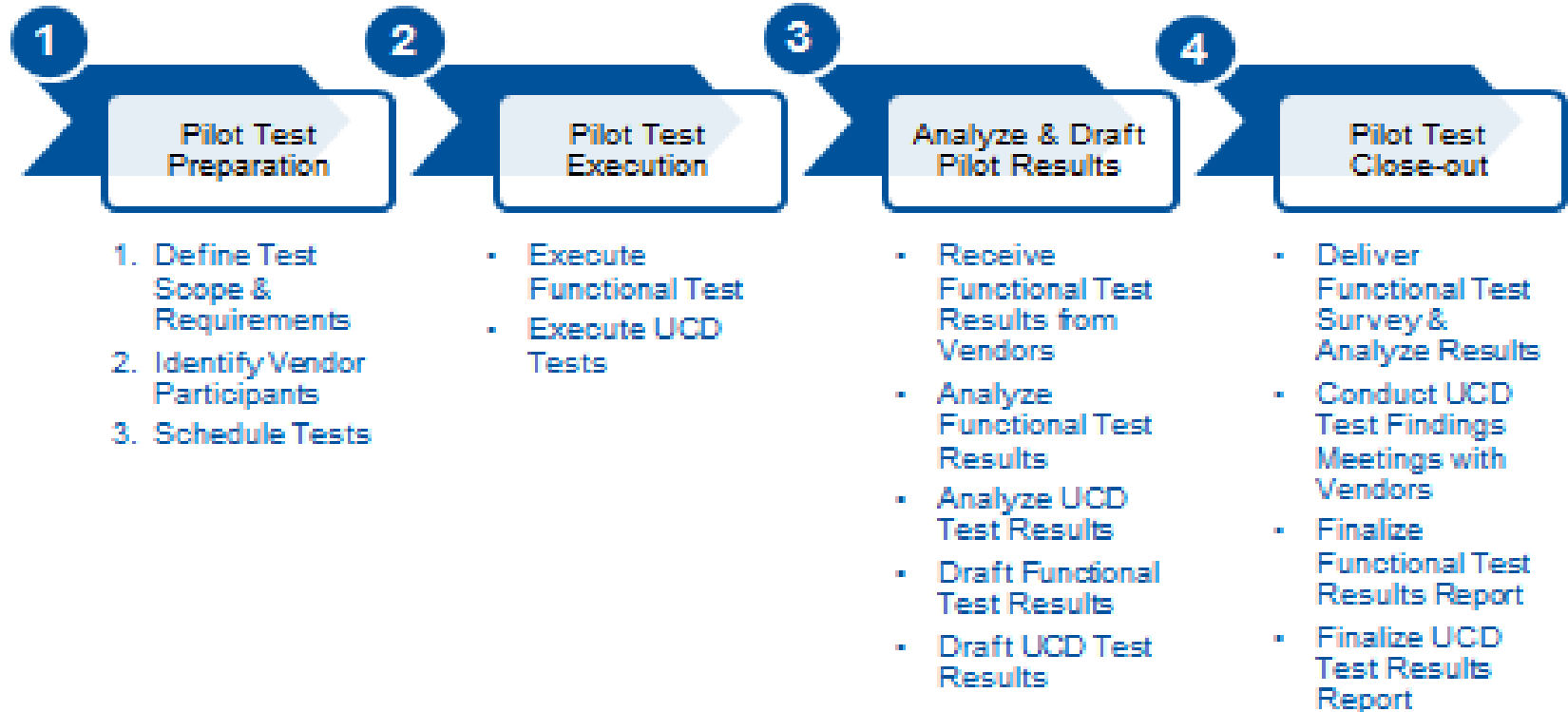
Percent of Immunization-Centric Requirements NOT Supported, by Workflow



22 of the 48 requirements (46%) are NOT supported by more than half of the 12 products observed.

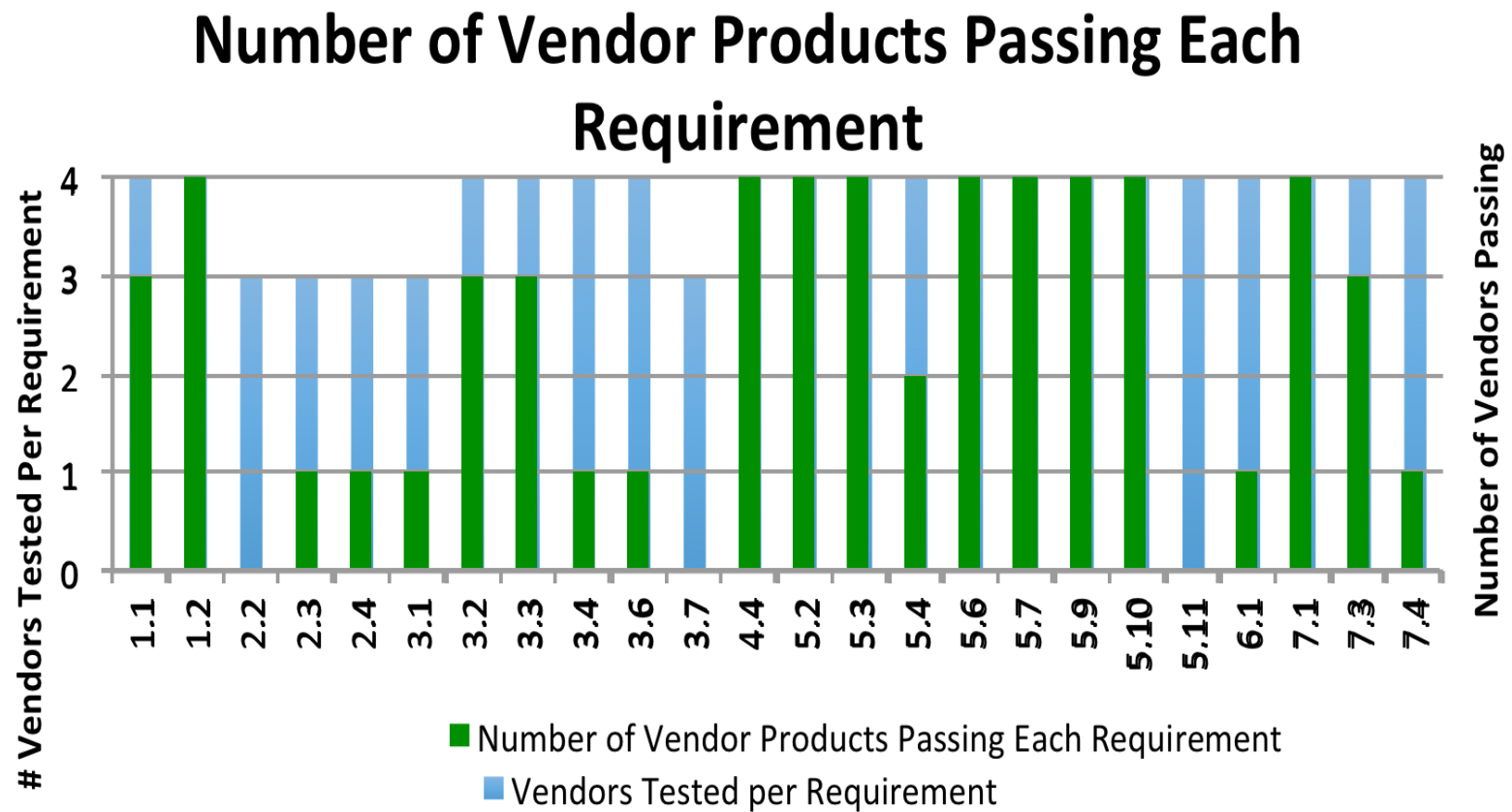


Pilot EHR Testing and Workflow Evaluation





Pilot EHR Functional Testing





CURRENT STATUS – EHR FUNCTIONAL CHALLENGES REGARDING IMMUNIZATIONS

“It ain’t what you don’t know that gets you into trouble, it’s what you know for sure that just ain’t so.”

Mark Twain (per “The Big Short” 2016)

Josh Billings (1874)

Leo Tolstoy (1897)





Current Status: EHR Immunization Capability – Challenges

❑ Manage External Query, Response and Reconciliation

Reported Challenge	Outcome
Some IIS' accept updated information only from the provider that administered the vaccine	A registry may refuse an update from another provider who recognizes an error in the registry data by comparing it with a copy of historical record received from the administering provider
Patients provide evidence of historical vaccines with inexact dates	Registries do not accept information without an exact date
CVX codes recorded by providers for vaccines they administer do not match the CVX code recorded by the registry (e.g., the registry using a more generic CVX code)	Registries may not accept the update with the correct code and the discrepancy shows up for reconciliation with each new query to the registry



Current Status: EHR Immunization Capability – Challenges

❑ Manage Information for Clinical Decision Support

Some vendors provide their own forecasting using third party forecasting service or internally-developed logic

Reported Challenge	Outcome
Vendors/providers question the value of displaying a pre-reconciliation forecast from the registry and the EHR-provided post-reconciliation forecast	Providers consider the post-reconciliation forecast more accurate and immunize patients accordingly
Forecasting engines vary with respect to earliest and latest dates to immunize	“Valid” doses in the EHR may be considered invalid by the registry
Most EHRs can provide feedback to a provider regarding immunization allergy or adverse event history	IIS histories may not include adverse events important to physician decision-making
Few EHRs can present conflicts between current/historical conditions that might modify vaccine recommendations.	IIS histories do not include vaccine-diagnosis conflicts important to physician decision-making



Current Status: EHR Immunization Capability – Challenges

❑ Manage Inventory

Reported Challenge	Outcome
<ul style="list-style-type: none">• 40% of vendor products have some inventory function• External Information Systems (ExIS) into which providers manually enter inventory information and orders, allowing reporting of all vaccine doses the guarantee programs that are used, wasted, expired and returned.• There is no interface between ExIS systems and current EHRs.• Some IIS' allow providers to track (but not order) private vaccine in the IIS.	<ul style="list-style-type: none">• For many practices, inventory tracking is a manual effort• Coordination with IIS inventory function causes duplicate effort for providers



Current Status: EHR Immunization Capability – Challenges

❑ Administer and Record Immunization

Reported Challenge	Outcome
<ul style="list-style-type: none">• CDC makes VIS form updates available but requires vendor/provider vigilance to check for updates, a direct API is not available	<ul style="list-style-type: none">• Providers generally manage VIS forms manually; EHRs can provide minimal, if any, assistance
<ul style="list-style-type: none">• All vendors allow deferrals of immunizations (temporary or permanent, AND clinician or patient determined)	<ul style="list-style-type: none">• Local clinical decision support manages temporary deferrals (e.g., due to illness at the time of the visit) but these are not reported to the IIS. “Permanent” deferrals are reported to the IIS.
<ul style="list-style-type: none">• All vendors allow entry of patient-reported immunizations	<ul style="list-style-type: none">• IIS’ do not accept patient-reported immunizations without exact dates



Current Status: EHR Immunization Capability – Challenges

❑ Administer and Record Immunization – VFC Eligibility

Reported Challenge	Outcome
<ul style="list-style-type: none">• Vendors support VFC eligibility documentation in two ways:<ul style="list-style-type: none">• Expect providers to evaluate each patient's VFC eligibility at each visit and update the status in the patient's demographics rather than requiring a check box with each vaccine• Expect the provider to select the VFC eligibility reason when documenting each vaccine administered.	<ul style="list-style-type: none">• Challenges for EHR vendors to find rules and remain current for:<ul style="list-style-type: none">• Multiple state programs• Variable timing for changes



Current Status: EHR Immunization Capability – Challenges

❑ Administer and Record Immunization

Reported Challenge	Outcome
<ul style="list-style-type: none">• Vaccine reports to IIS' may contain inaccuracies due to data quality issues; reasons for poor quality are not always clear• Some products allow local configuration (e.g., limit administration site and route based on vaccine product, standardized refusal reasons)	<ul style="list-style-type: none">• Data Quality may be variable



Current Status: EHR Immunization Capability – Challenges

❑ Administer and Record Immunization

- 2 Use Cases – 2 Perspectives

	Uncertain Quantity (e.g., Child pulled away)	Incorrect Refrigerator Temperature or Recall
Ultimate Outcome	Vaccine re-administered	Vaccine re-administered
IIS Perspective	Inadequate vaccine administered	Inadequate vaccine administered
Provider Perspective	Vaccine doesn't count – administer new dose or reschedule – may document as wasted vaccine	Vaccine administered successfully but was invalid and scheduled for repeat administration

- Communication between IIS' and EHR vendors and users may help resolve the discrepancy.



Current Status: EHR Immunization Capability – Challenges

❑ Manage Adverse Reactions

▪ Update IIS with Adverse Reactions

Adverse Reactions	
Ultimate Outcome	Information the registry shares with providers includes vaccines administered, vaccines due (forecast) and vaccines for which reactions have occurred to assist clinical decision making.
IIS Perspective	Vaccine reactions are limited to a specific value set of reportable events.*
Provider Perspective	<ul style="list-style-type: none">• Providers document actual and suspected reactions to assist with decision making when the patient is seen again.• Providers prefer the same complete information in vaccine history from the IIS and they document in EHRs.

* PHIN-VADS: Vaccination Reaction and Adverse Event (IIS):

<http://phinvads.cdc.gov/vads/ViewValueSet.action?oid=2.16.840.1.114222.4.11.3289>



Current Status: EHR Immunization Capability – Challenges

□ Provide Patient Access

- Most vendors provide access to immunization data for patients on a portal
 - Some portals include immunization sections
 - Most portals mix immunization data with other health maintenance information
 - Few vendors provide future immunization recommendations and none include the vaccine information statement (VIS) form in advance of patient visits
- Few vendors allow patients to directly enter immunizations on the portal for direct review by providers
- Most vendors allow patients to enter comments on the portal



Improving EHR Function and Usability for Immunizations - References

- ❑ Immunization-Related Functional Requirements
- ❑ Immunization-Related Functional Test Scripts
 - For EHRs performing bi-directional exchange
 - For EHRs not performing bi-directional exchange
- ❑ Immunization-Related Guidance for EHR Vendors and Users
- ❑ User Centered Design Primer
- ❑ Model UCD Process and Documentation for Immunization Forecasting and Immunization Documentation-Related Data Quality

Published by HIMSS –

<http://www.himssinnovationcenter.org/immunizationhit>

[Press Release –

<http://www.himss.org/News/NewsDetail.aspx?ItemNumber=47329>]

Discussion

□ Next Steps

- Ideas for moving forward
- Collaboration among public health, EHR vendors and providers

- QUESTIONS?



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Thank you!

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