

Two-Dimensional (2D) Vaccine Barcode Pilot: Lessons Learned

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Session Objectives

- Provide an overview and status of the 2D Vaccine Barcode Pilot project
- Share 2D Vaccine Barcode Pilot's preliminary results
- Discuss next steps

Pilot Overview

Pilot Objectives

1. Assess the effect of 2D barcodes on vaccine data
2. Evaluate the use of 2D barcodes
3. Implement 2D barcodes on Vaccine Information Statements (VIS)
4. Evaluate how 2D barcode application on vaccine secondary packaging will impact the vaccine supply chain
5. Compile - EMR & IIS 2D barcode scanning functionality

Pilot Information

History

- Oct 2010 - Preceding Study –Feasibility Study impact of a transition to 2D barcodes Findings: <http://www.cdc.gov/vaccines/programs/iis/activities/downloads/2d-barcode-trkg-rpt.pdf>
- Sept 2011 - 2D Barcode Pilot Initiated
- Aug 2012 – Apr 2013 – Implementation period

Participants

- 2 Vaccine Manufacturers
- 217 Immunizers
- 10 Immunization Information Systems

Vaccination Records Assessed – Implementation Period

	<u>EMR</u>	<u>IIS</u>
Total	916,000	1.1M
2D Barcoded	53,000	46,000

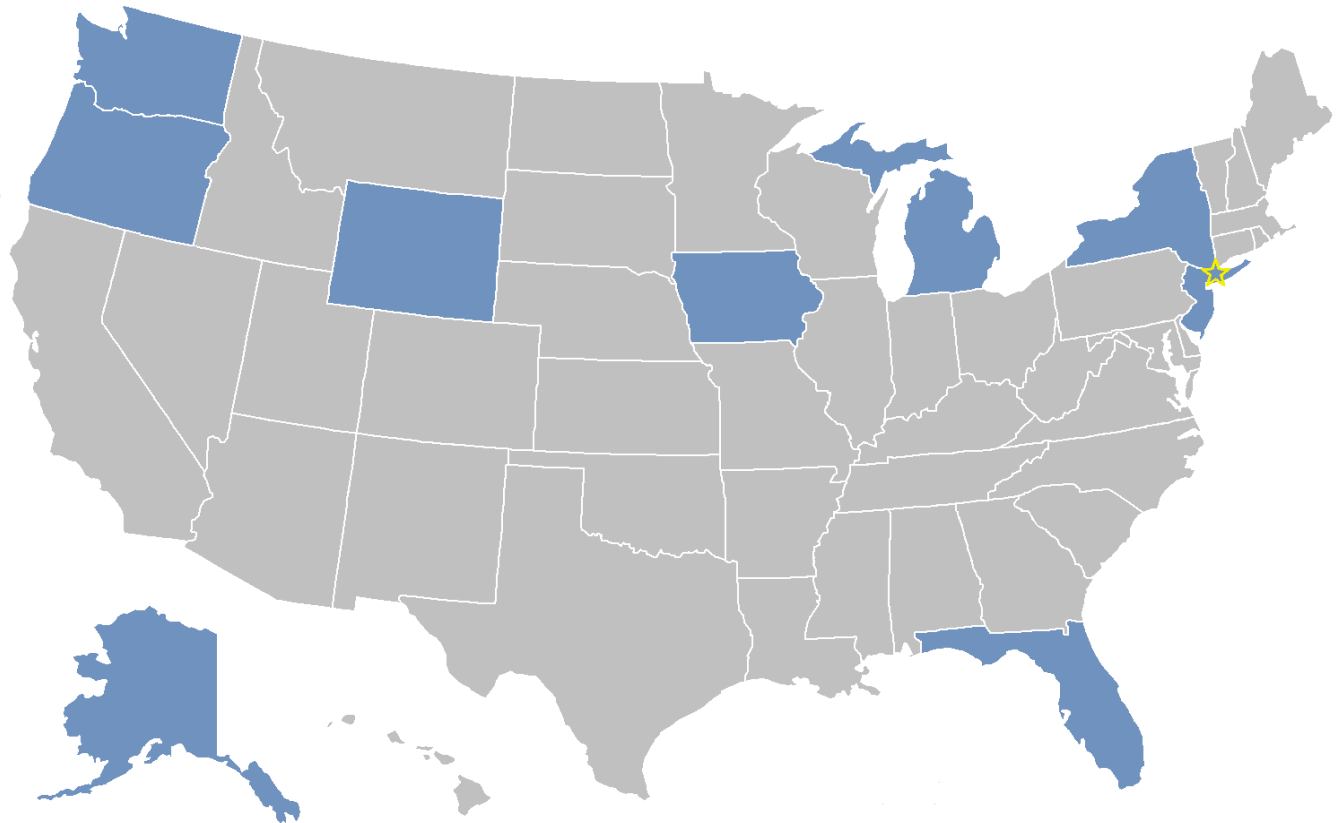
Pilot Participation

10 Immunization Awardees

- Alaska
- Florida
- Iowa
- Michigan
- New Jersey
- New York State
- New York City
- Oregon
- Washington
- Wyoming

2D Barcoded Vaccines

- Havrix Adult
- Menactra
- Pediatric DT
- Daptacel
- Adacel
- Tenivac
- Fluzone
- IPOL



Pilot Vaccine and Information Workflow

Manufacturer



Add 2D barcode to primary packaging :

- Data Matrix barcode containing
 - GTIN
 - Expiration date
 - Lot number
- Distribution to pilot participants via existing vaccine supply chain.

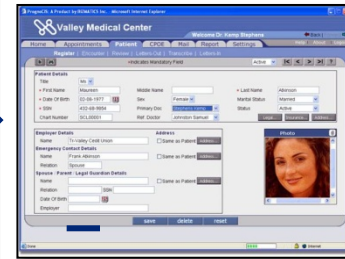
Immunizer



Scan vaccine data:

- Entering vaccine into inventory
- Administering vaccine

Record System



Record system types:

- Electronic medical records (EMR)
- Immunization Information Systems (IIS)
- Track GTIN, expiration date, and lot number

IIS

Receive data from the immunizers' record system:

- Acts as a source of evaluation for data accuracy and completeness

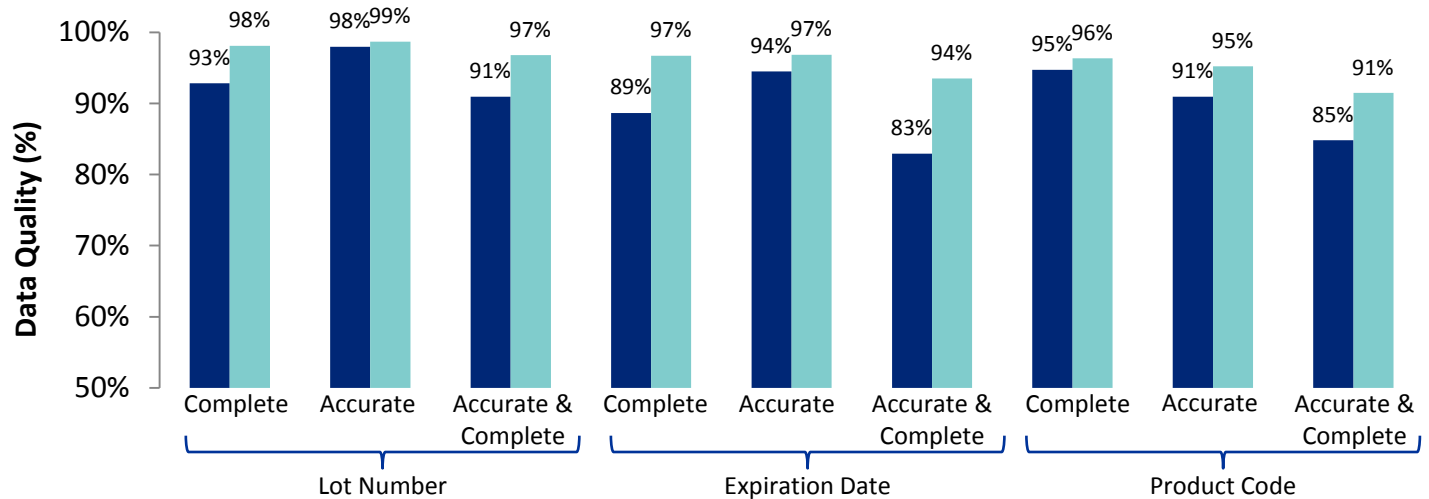
Preliminary Results

Key Findings

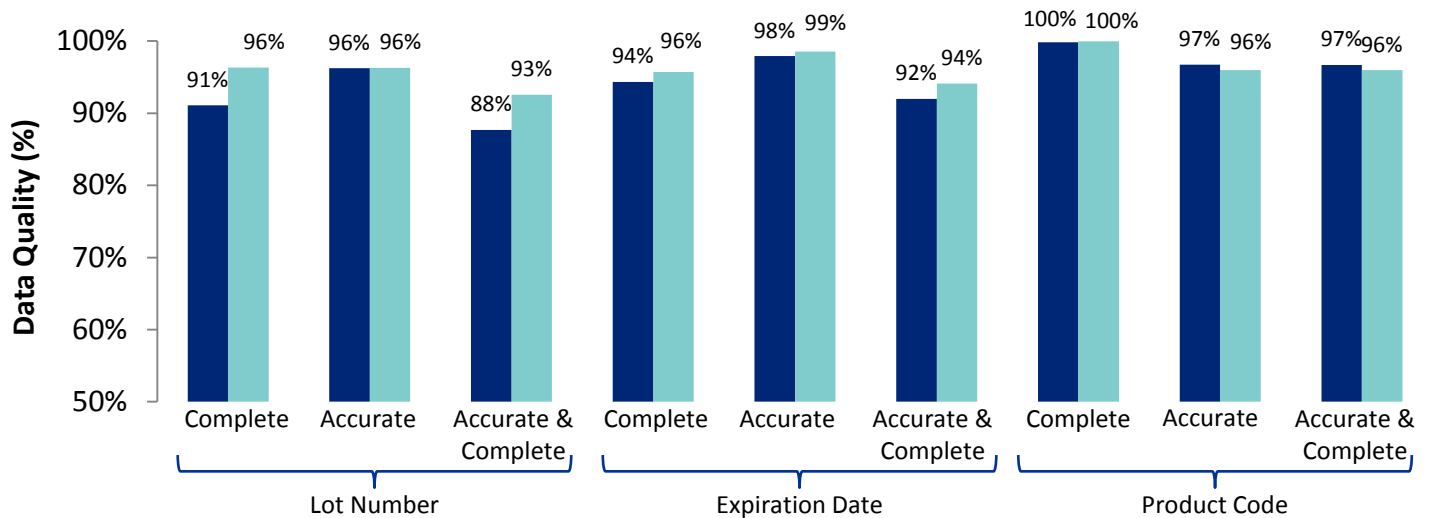
1. Preliminary results confirm a positive effect on vaccine data accuracy and completeness
2. Vaccine manufacturers have demonstrated a commitment to the application of 2D barcodes on the unit-of-use
3. Most EMR and IIS systems require modification to process 2D barcodes
4. Providers are willing to adopt practices to incorporate 2D barcode vaccine use but not until the majority of vaccines are 2D barcoded
5. Pharmaceutical supply chain stakeholders have indicated 2D will be the data carrier of choice

Key Findings

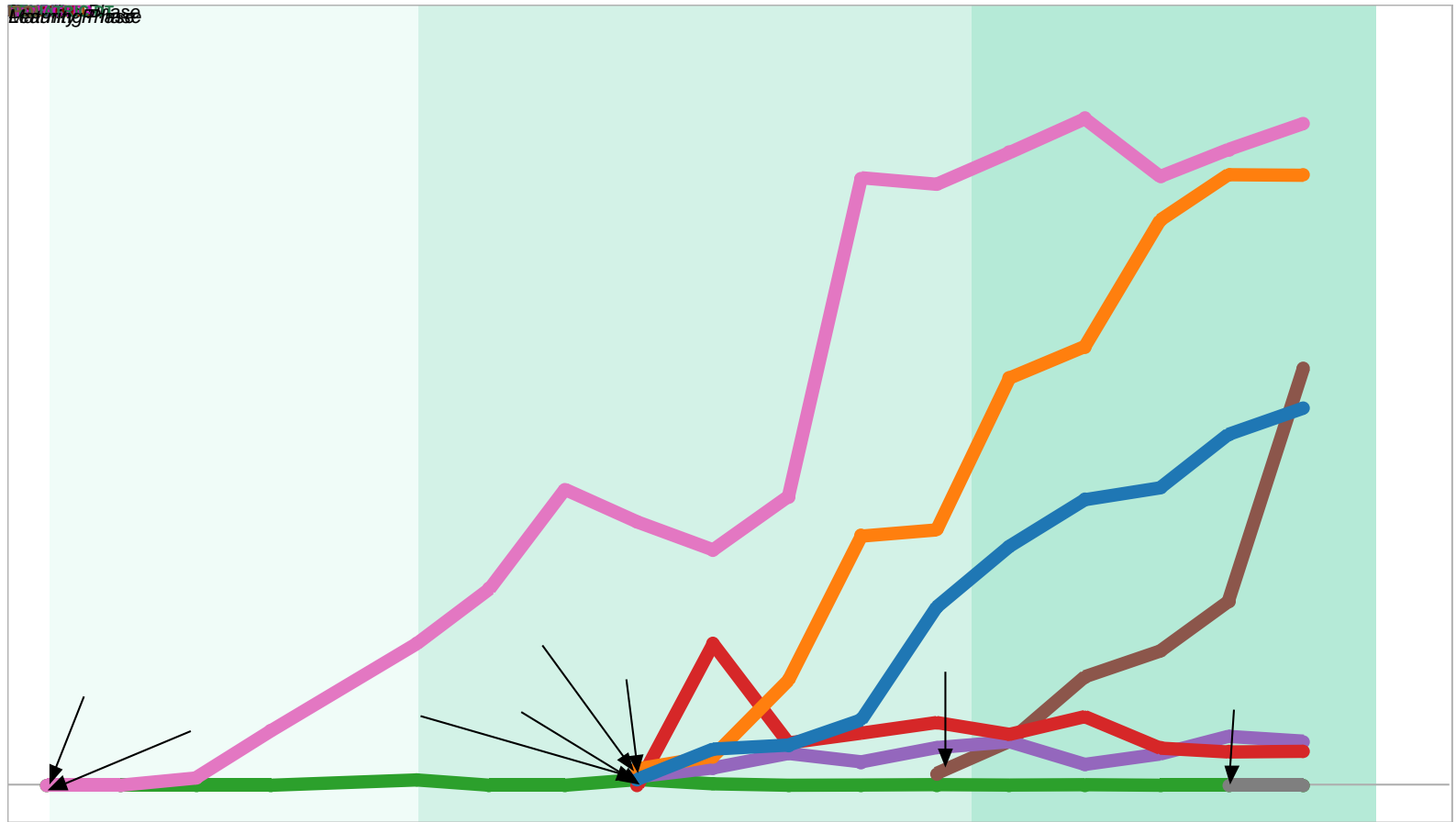
Average EMR/EHR Pre- and Post-Implementation Data Quality



Average IIS Pre- and Post-Implementation Data Quality

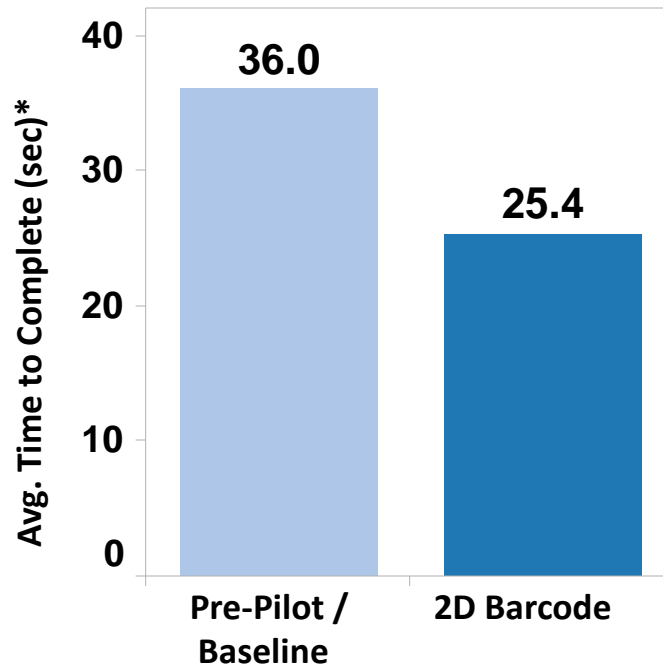


Early Pilot Findings: Pilot Supply Chain



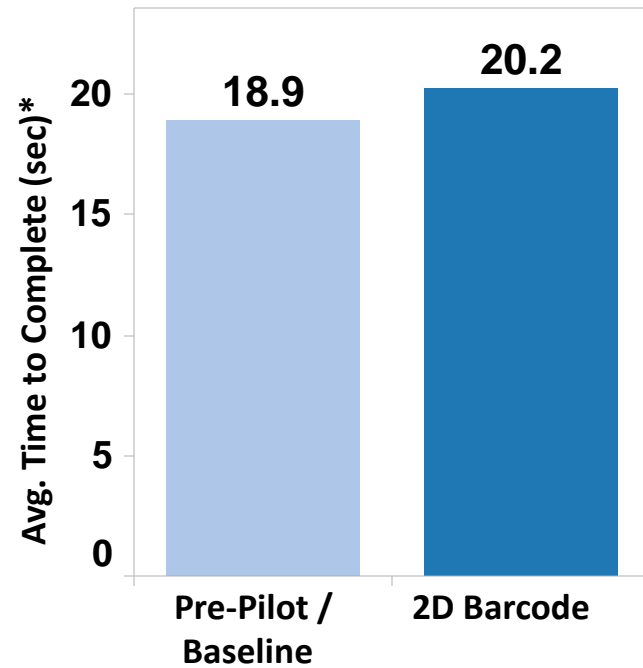
Workflow Analysis: Summary Efficiency Findings

Inventory Management



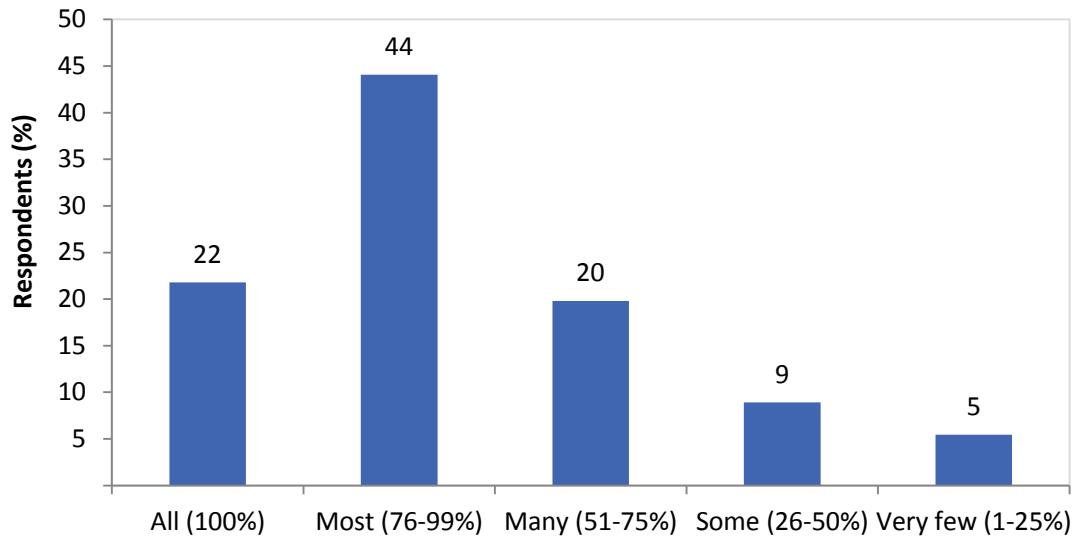
- Inventory is initial point of vaccine data entry
- Lot number and expiration date manual transcription eliminated

Vaccine Administration

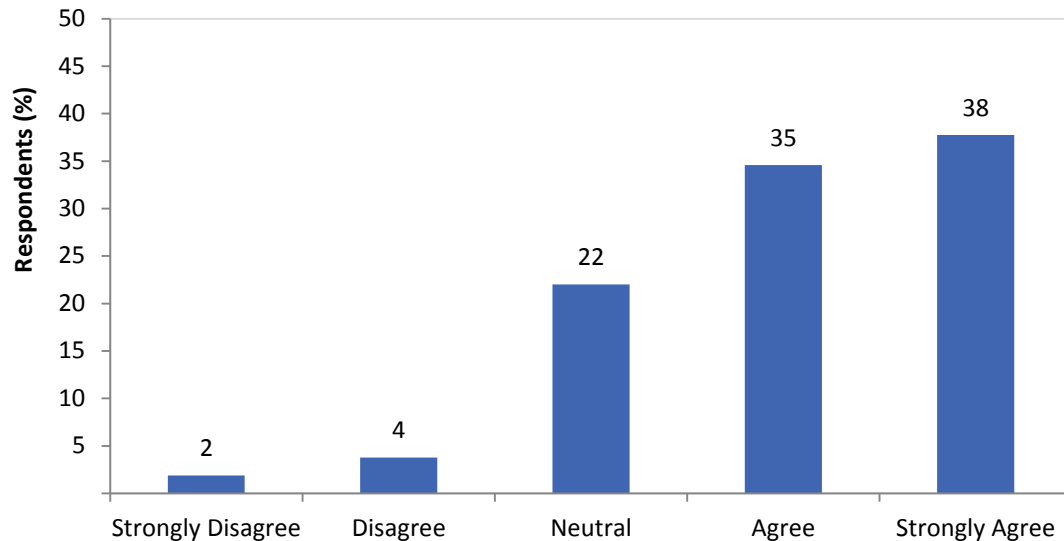


- Experienced users maximized process efficiencies
- Scanning efficiency will improve as the number of vaccines scanned per patient increases

User Experience Survey: Sustainability



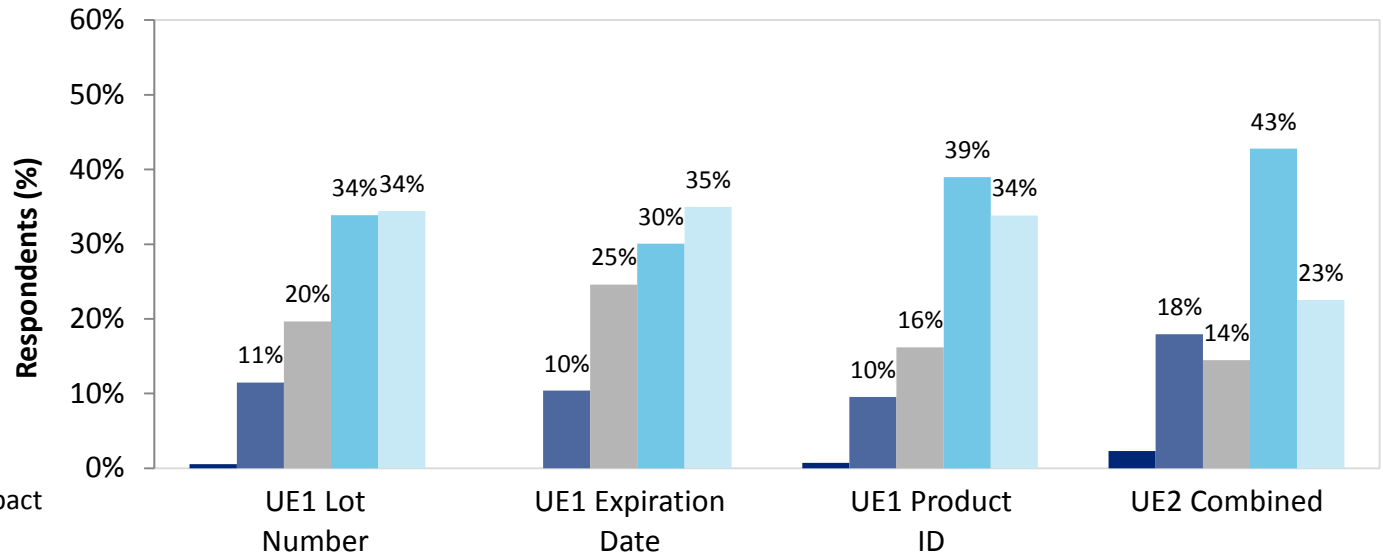
Percentage of vaccines that would need to have 2D barcodes on them to sustain the use of 2D barcode scanning in the respondent's practice



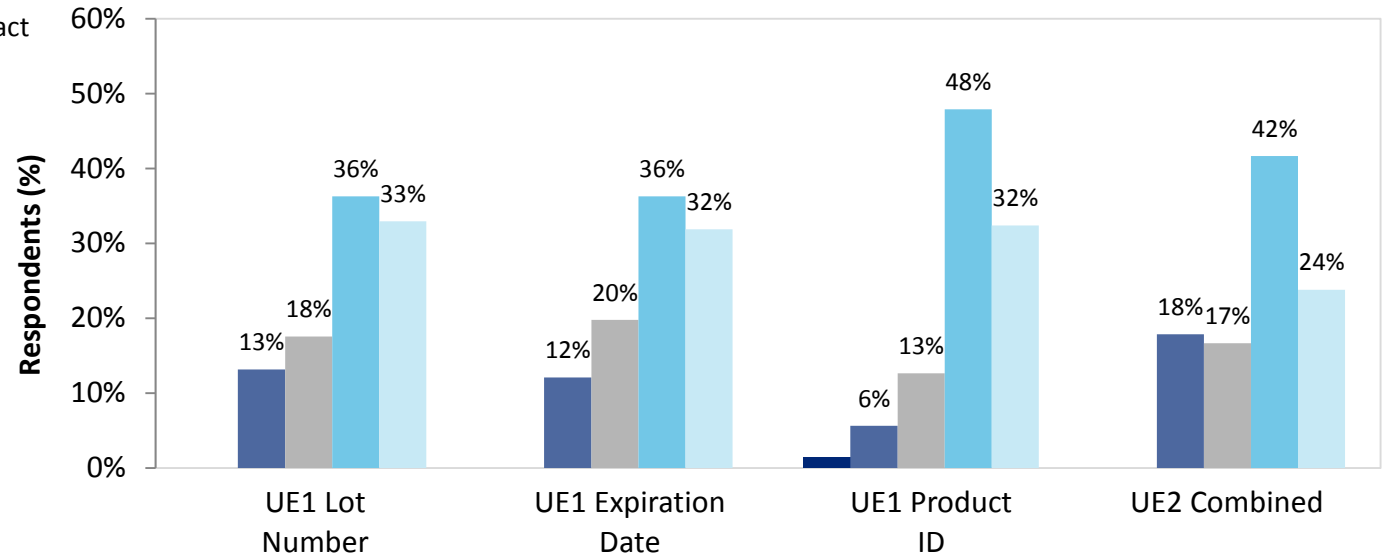
Level of agreement/disagreement with the statement "When available on most vaccines, 2D barcode scanning should be used consistently to record vaccines administered in my clinic"

User Experience Survey: Pilot Participant Efficiency Perceptions

Administration

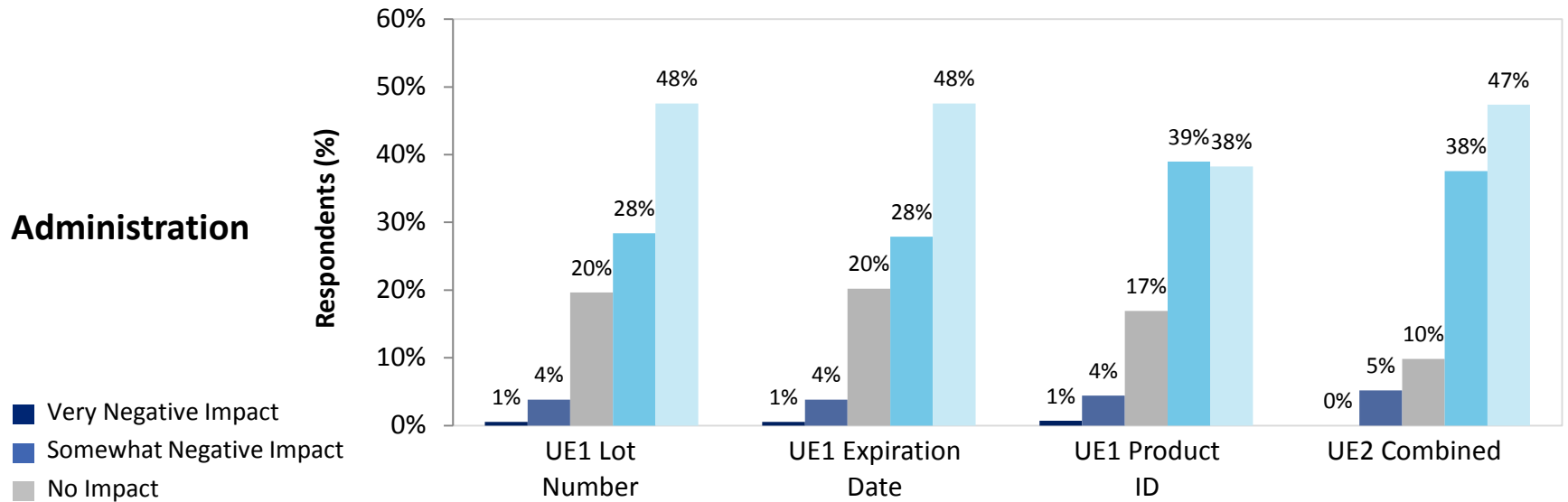


Inventory

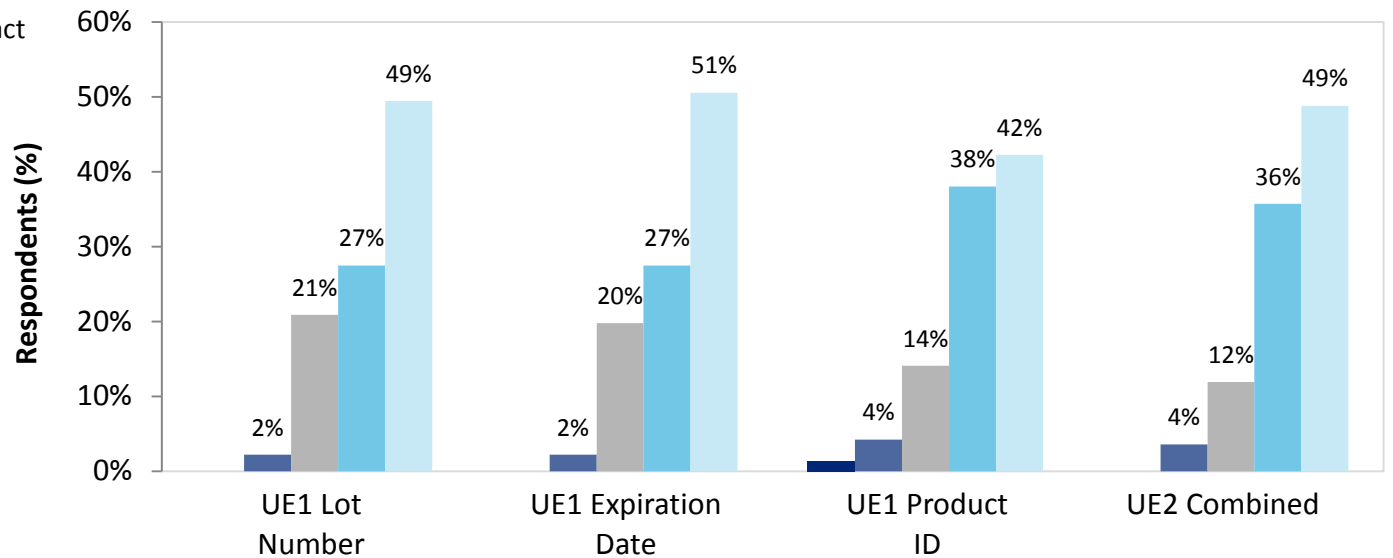


User Experience Survey: Pilot Participant Accuracy Perceptions

Administration

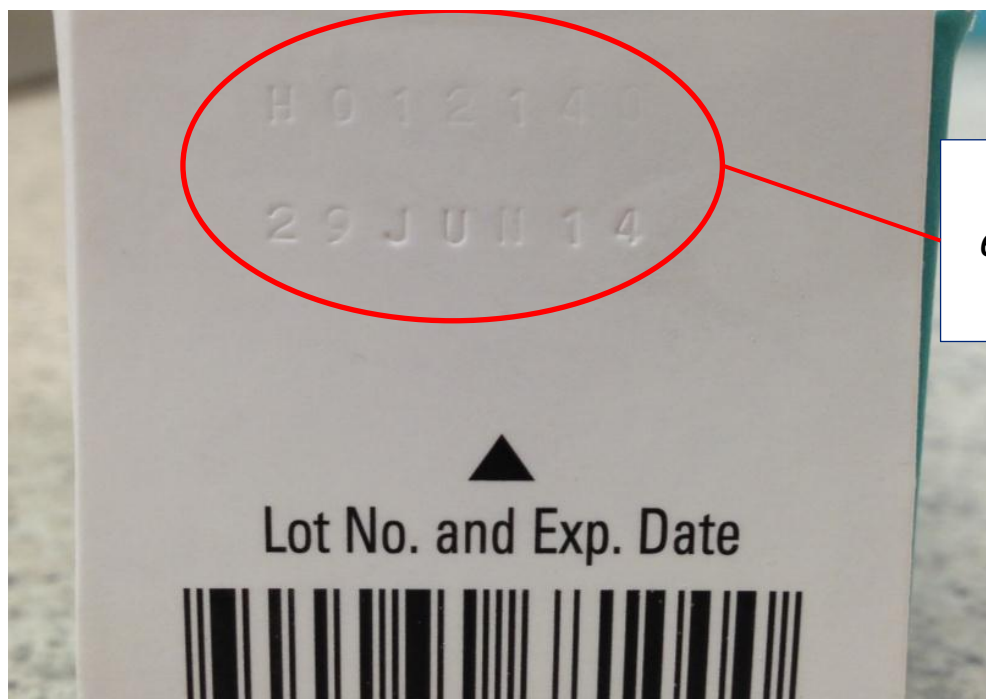


Inventory



Workflow Analysis: Clinician Feedback

“The lot number and expiration date are hard to read on some of the vaccines we get. When those vaccines get barcodes we can scan, it will be a huge help.”



*Lot number and
expiration date stamped
on M-M-R package*

“I often see transcription errors where eight (8) and “B” or zero (0) and “O” have been mixed up. Scanning will fix these issues and reduce the number of times I can’t find the lot I’m looking for in our inventory.”

Pilot Investigation Reports

Impact of 2D Barcodes on Vaccine Secondary Packaging

- Evaluates how the introduction of 2D barcodes onto unit of sale (package) will impact participants in the vaccine supply chain

EHR-IIS 2D Barcode Functional Capabilities Report

- Provides a best practices approach of 2D scanning functionality based on EMR-IIS interviews

Evaluation of the Impact of 2D Barcodes on Vaccine Secondary Packaging

Prepared for
National Center for Immunization and Respiratory Disease Immunization
Division
Centers for Disease Control and Prevention
1600 Clifton Road Atlanta, GA 30333

Prepared by
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Dilemma Consulting LLP

May 2013

EHR-IIS 2D Barcode Functional Capabilities Report Version 1.0

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
Next Steps

Next Steps

- Finalize 2D Barcode Pilot Report
- Continue work with Prevention and Public Health Fund (PPHF) Awardees to implement 2D barcode vaccine scanning in immunization registries
- Monitor 2D Barcoded Vaccines – in the supply chain
- Adoption Strategies for 2D Barcodes – Pilot
 - 2014 – 2015 flu season
 - Pharmacies, community vaccinators, public, and private immunizers
 - Work flow analysis

CDC 2D Barcode Website

CDC Home



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2D Vaccine Barcodes

About 2D Barcoding

For Manufacturers

For Providers

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IIS Policy and Legislation

IPOM IIS Requirements

IIS Annual Report (IISAR)

IIS Training

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Vaccines Home > Programs > IIS Homepage

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Two-Dimensional (2D) Vaccine Barcodes

Since 2011, CDC and its immunization partners have been exploring the potential of two-dimensional (2D) barcoding to streamline immunization practices.

On these pages you will find information about 2D barcodes for vaccines:

- [About 2D Vaccine Barcodes](#)
Find background information about the need for 2D barcoding, details on the pilot study, and diagram of the pilot vaccine and information flow
- [For Vaccine Manufacturers](#)
Find resources on guidance for industry, along with presentations and summary documents from the vaccine manufacturer's forum
- [For Vaccine Providers](#)
Find training documents and videos, plus AAP guidance

Vaccines Shipping with 2D Barcodes

2D barcoded vaccines currently being shipped by vaccine manufacturers are listed in the table below. This list will be updated when additional 2D barcoded vaccines become available.

Note:

If you are aware of a 2D barcoded vaccine currently shipping that is not on this list, please send a brief email containing the name of the manufacturer, brand of vaccine, presentation (vial type or syringe) and vaccine name to the CDC [IIS Technical Assistance Team](#) (or use [IIS mailing address](#)).

2D Barcoded Vaccines Currently Shipping Table

Manufacturer	Brand	Presentation	Vaccine
Sanofi Pasteur	Adacel	single dose vial	Tdap
Sanofi Pasteur	Fluzone	single dose vial	Influenza
Sanofi Pasteur	Menactra	single dose vial	Meningococcal
Sanofi Pasteur	IPOL	multi dose vial	Polio
Sanofi Pasteur	Daptacel	single dose vial	DTaP
Sanofi Pasteur	Pediatric DT	single dose vial	Diphtheria-Tetanus
Sanofi Pasteur	Tenivac	single dose vial	Diphtheria-Tetanus
Sanofi Pasteur	Pentacel	single dose vial	DTaP-IPV/Hib
GlaxoSmithKline	Havrix Adult	single dose vial	Hepatitis A
GlaxoSmithKline	FLUARIX Quadrivalent	pre-loaded syringe	Influenza
GlaxoSmithKline	FLUARIX Trivalent	pre-loaded syringe	Influenza

Email page link

Print page

Contact IIS:

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Centers for Disease Control and Prevention

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Atlanta, GA 30333

iisinfo@cdc.gov

Contact Us:

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800-CDC-INFO

(800-232-4636)

TTY:

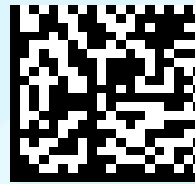
(888) 232-6348

[Contact CDC-INFO](#)

<http://www.cdc.gov/vaccines/programs/iis/2d-vaccine-barcode/>

Questions

Thank You & A Special Thanks to the Pilot Participants!



For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333

Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

National Center for Immunization and Respiratory Diseases
Immunization Services Division

