

Workflow Analysis

Andrew Sharpin
Deloitte Consulting

Workflow Analysis Overview

Workflow Analysis



Pre-Pilot Analysis

April-2012

13 Sites Evaluated



End-Pilot Analysis

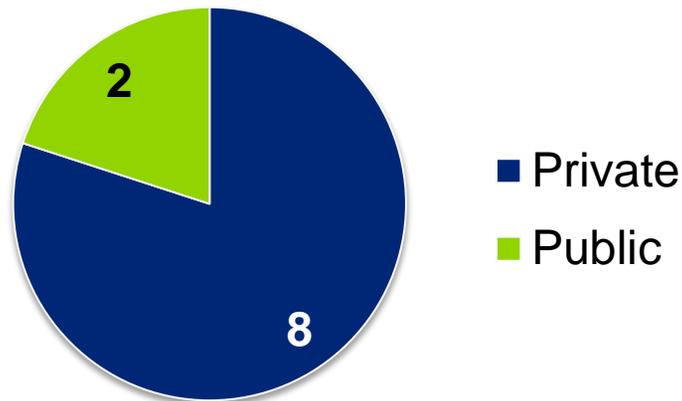
Feb-2013

10 Sites Evaluated

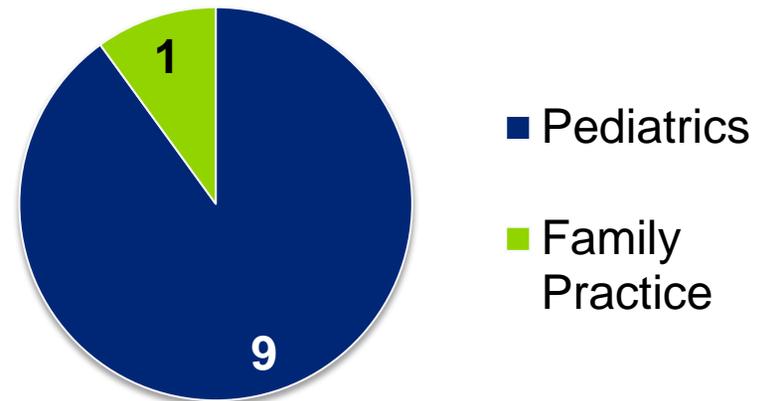
2D Barcode Scanning Impact

Immunizer Demographics

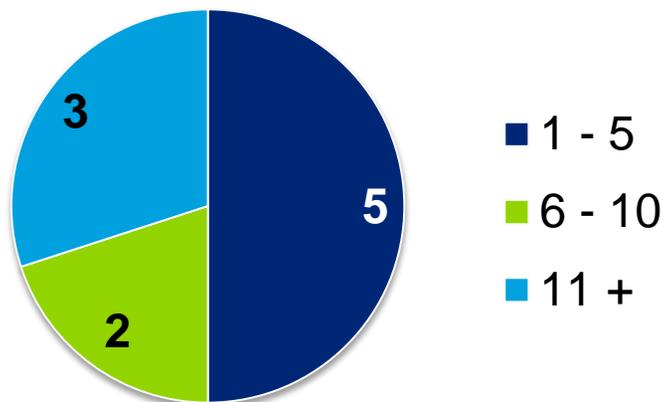
Practice Type



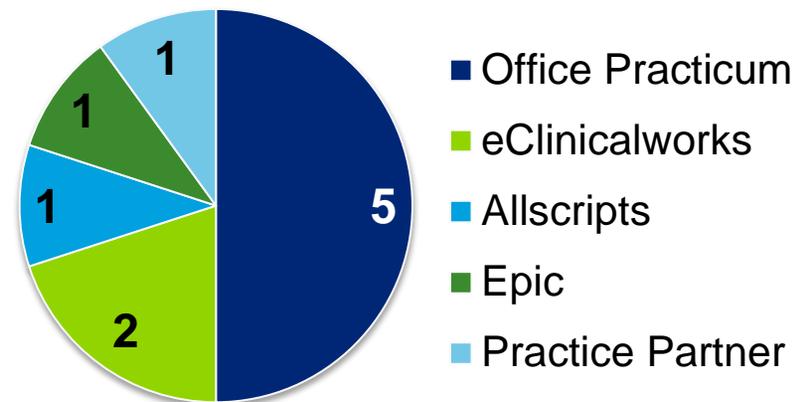
Specialty



Practice Size



EMR Vendor

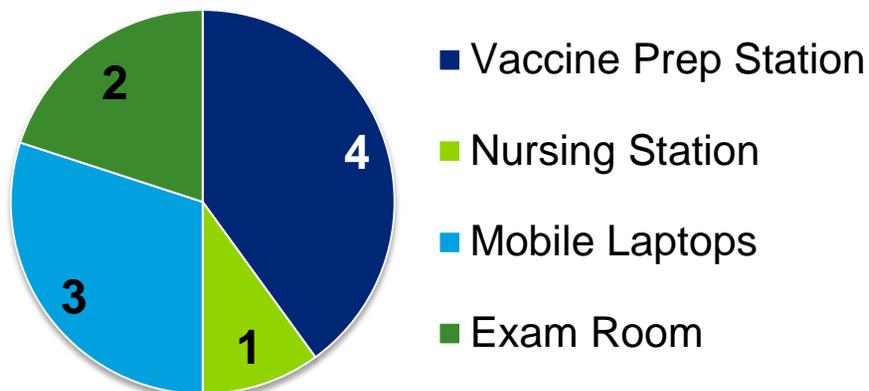


Process Observations

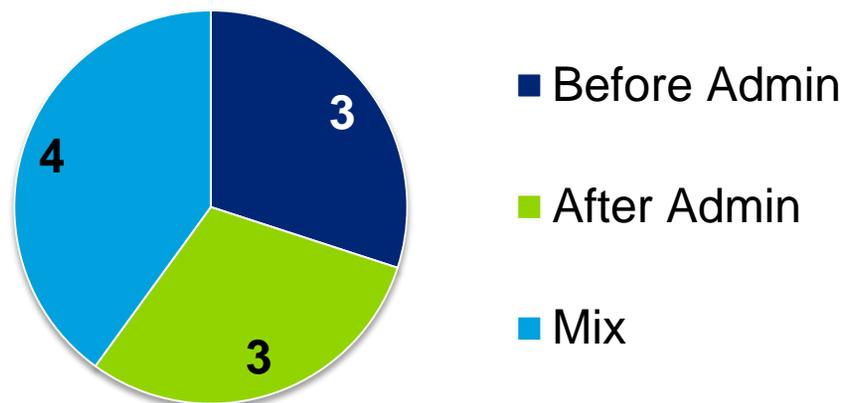
1. There is limited supply of 2D barcoded vaccines in the practices
2. Single doses are given less frequently than combination vaccines
3. The location of EMR data entry can impact user adoption
4. Delaying EMR data entry increases the possibility of entering incorrect information
5. EMR integration with 2D barcode scanning improves usability, which increases adoption
6. Adding NDC documentation when scanning can incentivize use
7. Adding 2D barcodes to the vaccine package/box allows for a more seamless transition
8. User product preference may influence technology acceptance

Vaccine Documentation Location & Timing

EMR Data Entry Location



EMR Data Entry Timing



Vaccine Prep Station

- Proximity to inventory fridge has minimal disruption on workflow
- Document during vaccine prep

Nursing Station

- Data entry hub

Mobile Laptops

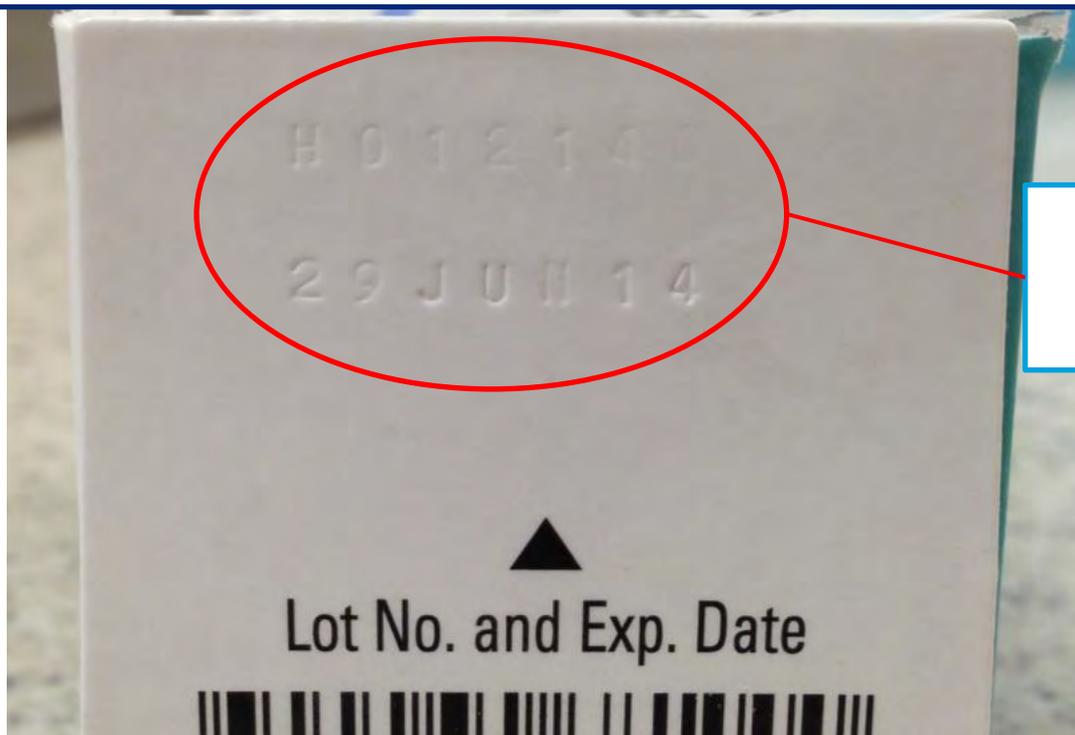
- Plug/ unplug scanner
- Scanner location dictates data entry location

Exam Room

- Physician practices
- Multi-dose vials returned to fridge
- Document after patient has left room

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.”

Clinician Feedback

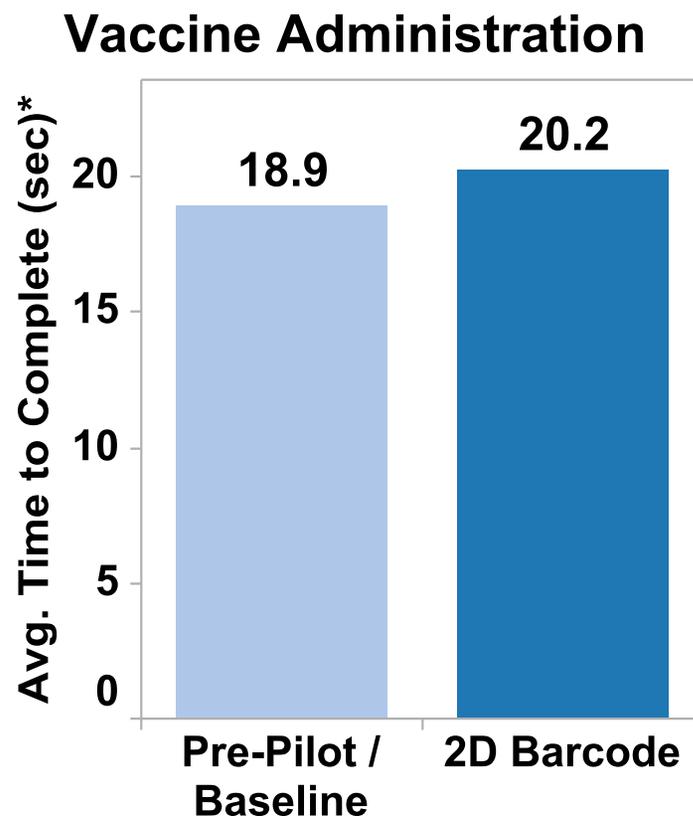
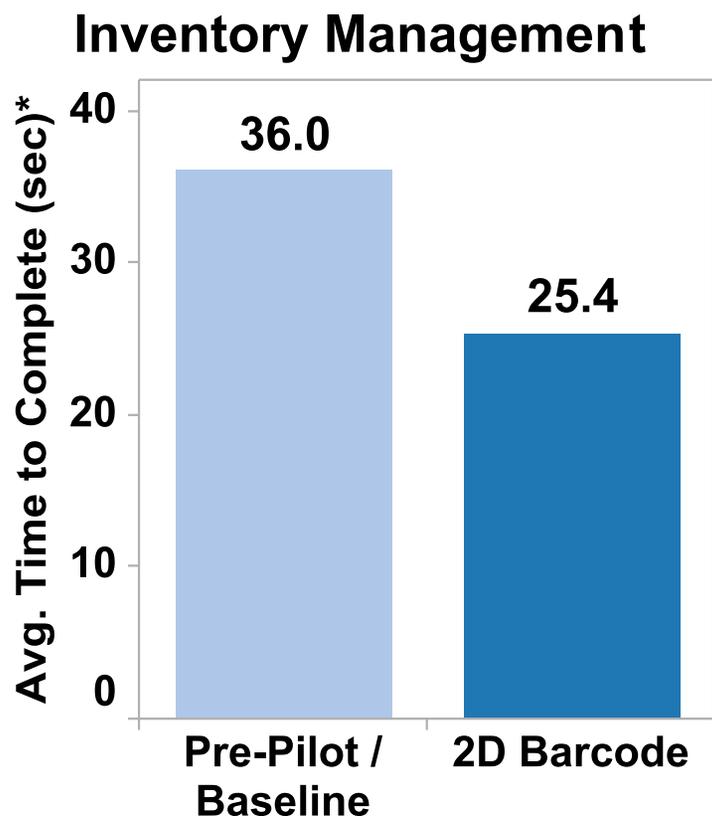
“Some of the vaccines are easier to scan than others... I think it might have to do with size or darkness of the 2D barcode”



“Right now, I can only scan one out of the five vaccines I’m entering. It’s a pain and hard to always remember. Once I can scan all five, it will save me a lot of time.”



Summary Results of Efficiency Findings



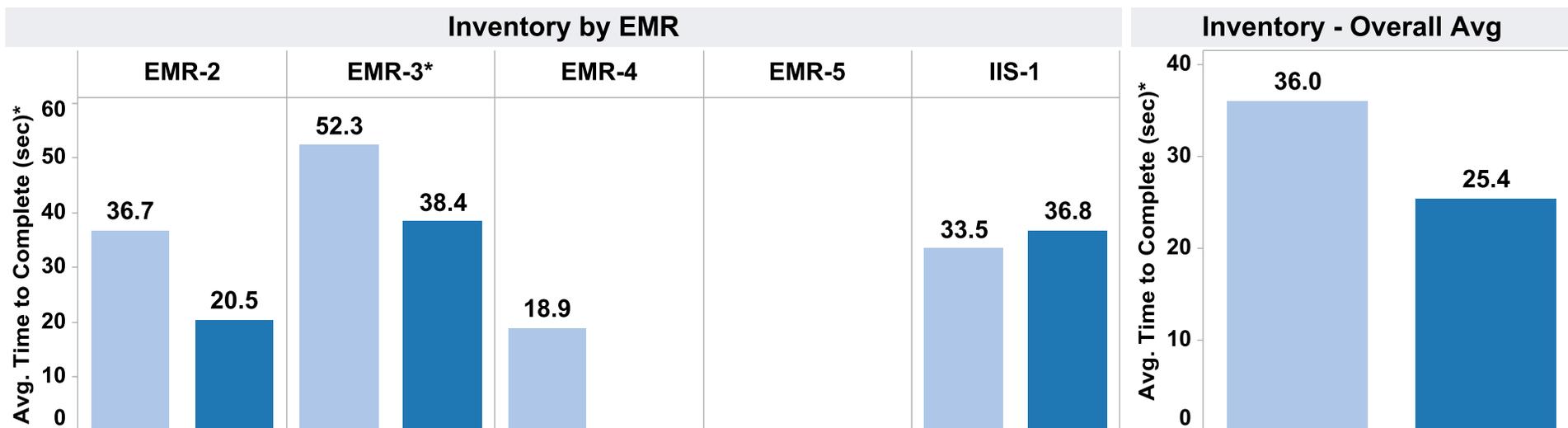
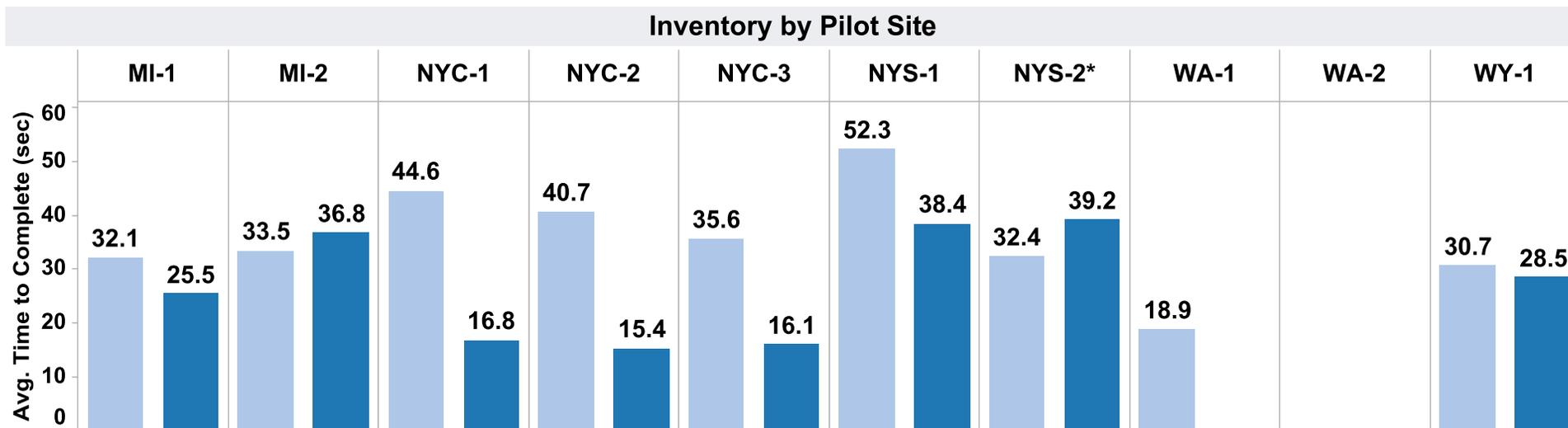
- Inventory is initial point of vaccine data entry
- Lot number and expiration date manual transcription eliminated
- Experienced user maximized baseline process efficiencies
- Scanning efficiency will improve as the number of vaccines scanned per patient increases

* Overall average based on 10 sites with data from pre-pilot and end-state workflow analysis; NYS-2 excluded due inconsistent data from new staff

Preliminary results

Inventory Management Efficiency Findings

Practices using their EMR system for inventory management all saw efficiency improvements when scanning 2D barcodes



Phase:

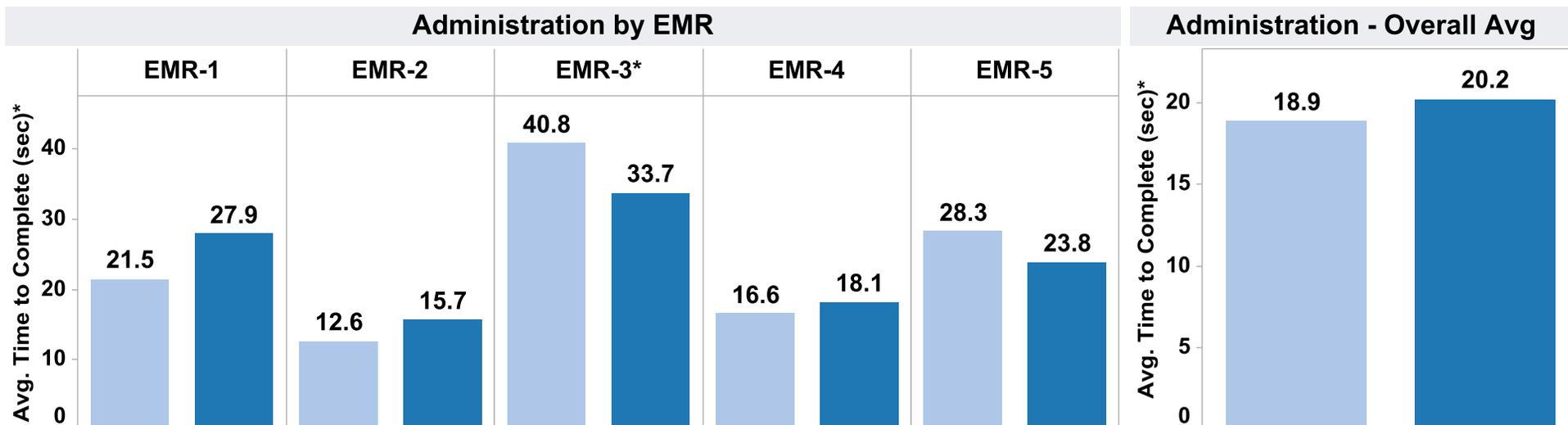
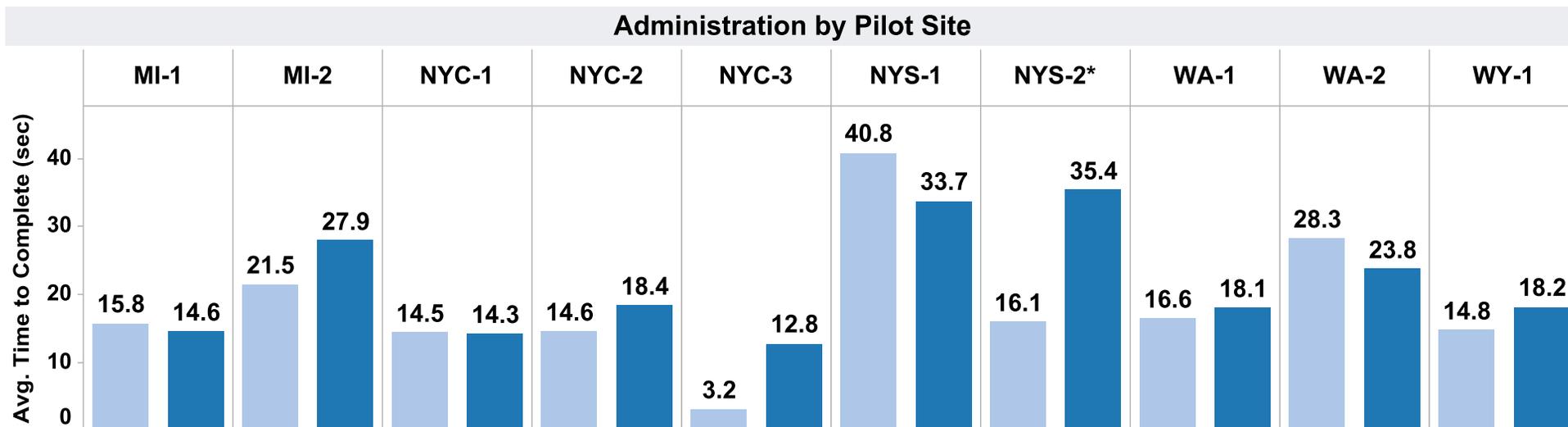
- Pre-Pilot / Baseline
- 2D Barcode

* Overall and EMR averages based on 10 sites with data from pre-pilot and end-state workflow analysis; NYS-2 excluded due inconsistent data from new staff

Preliminary results

Vaccine Administration Efficiency Findings

Improvements in vaccine administration efficiency were closely tied to a practice's experience scanning 2D barcoded vaccines



Phase:
■ Pre-Pilot / Baseline
■ 2D Barcode

* Overall and EMR averages based on 10 sites with data from pre-pilot and end-state workflow analysis; NYS-2 excluded due inconsistent data from new staff

Preliminary results

Enhancement Opportunities



EMRs

- Product identifying information
- Alerts
- Vaccine administration recognition
- Multi-level packaging barcode
- Data entry requirements



Scanners

- Scanner technology



Manufacturers

- Multi-level packaging barcode
- Label direction



Providers

- Data entry location
- Data entry timing

Key Study Findings

1. Increase industry adoption

- Number of 2D barcoded vaccines
- Practice awareness of vaccines with 2D barcodes

2. Increase data entry efficiency

- Quicker data entry
- Reduced error correction

3. Optimize practice workflow

- Office layout and scanner locations
- EMR software functionality

Questions?