

# Evaluating Data Completeness



Shannon Coleman  
Michelle Middaugh  
Scientific Technologies  
Corporation



Data quality is a shared concern  
and a shared responsibility.

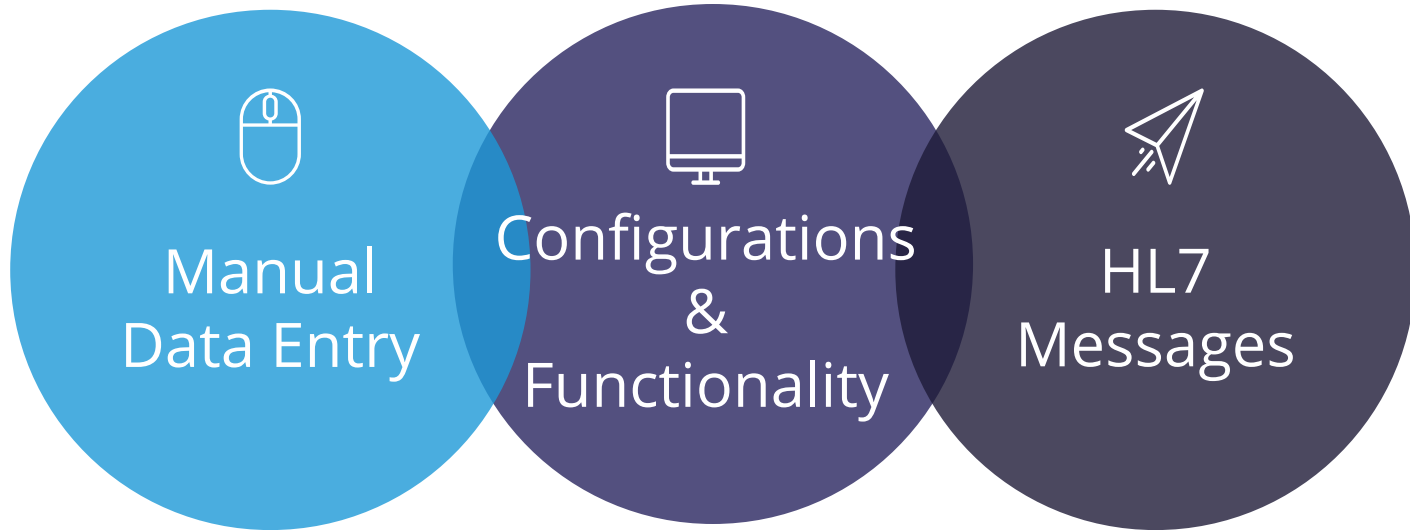


# Finding our baseline

- ❖ Self-evaluation as a vendor
- ❖ No client visibility to baseline completeness level
- ❖ First true end-to-end analysis from HL7 validation to production data for the entirety of the IIS



# Data Completeness Factors




# Getting in our own way

- ❖ Available configurations were not known or well understood
- ❖ Competing settings
- ❖ Import profile settings were often inconsistent, occasionally overwhelming



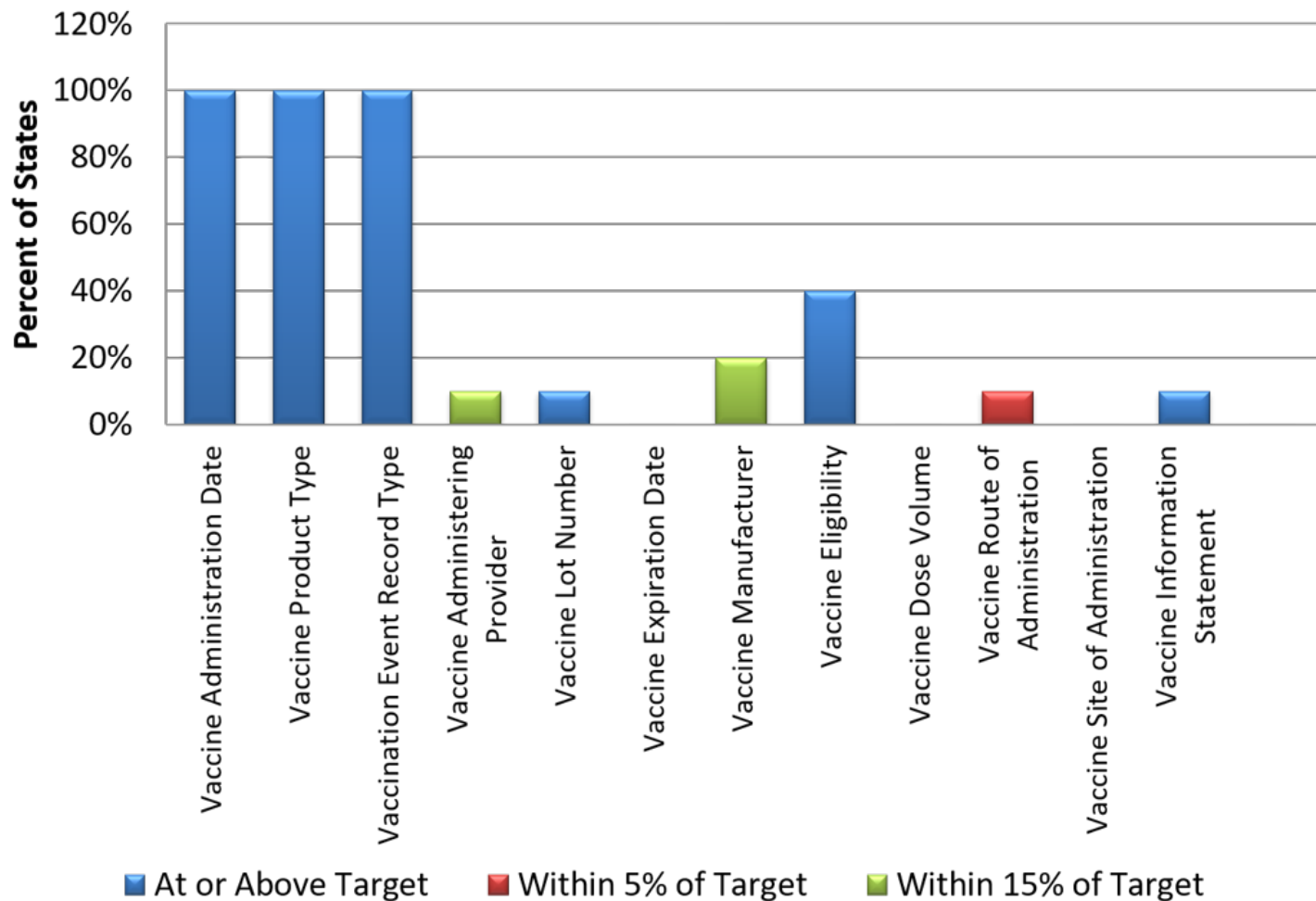
# Client Completeness Report Card

Data Element	Data at Rest Expectation	State Performance	Optimal IWeb Configuration	STC Recommendations
Mother's Name: Maiden Last	90%	34.91%		<u>IWeb</u> : Mark Patient Mother Maiden Name as required
Patient ID (from data source)	100%	100%		
Patient Gender	95-100%	97.74%		<u>IWeb</u> : Mark Patient Sex as a required field PHC Hub: Consider making this field required for inbound HL7 messages.
Race	95-100%	44.19%		<u>IWeb</u> : Mark Patient Race as a required field PHC Hub: Evaluate the split between Error and Ignore settings for race validations.

# HL7 Crosswalk

Data Element	Can be required	Marked as required	HL7 Field	CDC HL7 Guide	State HL7 Guide	PHC Hub Import Profile Settings
Patient Demographics						
Patient Name: First	Required by default	Y	PID-5	R	R	PHC Hub is considered to be set to Error if Patient First Name is missing.  The majority of your import profiles are set to Ignore invalid Patient First Name.
Patient Name: Middle			PID-5	RE		The majority of your import profiles is set to Ignore missing Patient Middle Name and is split between Ignore and Warn for invalid Patient Middle Name.
Patient Name: Last	Required by default	Y	PID-5	R	R	PHC Hub is considered to be set to Error if Patient Last Name is missing.  The majority of your import profiles are set to Ignore invalid Patient Last Name.
Patient Date of Birth	Required by default	Y	PID-7	R	R	PHC Hub is considered to be set to Error if Patient date of birth is missing, invalid or a date in the future.
Patient Address: Street	Y		PID-11	RE	RE	The majority of your import profiles are set to Error for missing Patient Street Address and to warn for invalid Patient Street Address.

## Meeting or Exceeding Vaccination Data Element Targets





# Other Realizations

- ❖ Fine line between various assessments: Focus is a Programmatic choice
- ❖ Impact of data quality on reports
- ❖ Reconciling “maturity” of IIS and evolution of standards/emphasis over time
- ❖ Balance between completeness and accuracy

# Client Completeness Report Card

Creation led to:

- ❖ Availability as self-serve report in PHC Hub
- ❖ Ability to compare across client base
- ❖ Stronger recommendation for use of template
- ❖ Readiness for future Data at Rest Assessment
- ❖ Use in AART Workgroup
- ❖ Ability to quantify use of obscure settings

# Programmatic Self-Reflection

- ❖ Recognition of factors affecting data quality, including external partners and policies
- ❖ Questioning the logic behind the decisions
- ❖ Choosing settings consciously

# Client Collaboration



- ❖ Data Quality Summit launched Report Cards
- ❖ Interoperability Consortium
- ❖ AART Workgroups
- ❖ Individual client meetings



# Outcomes

- ❖ No code changes to application
- ❖ Client setting changes
- ❖ Increased communication between states
- ❖ Increased awareness of settings/configurations
- ❖ Script made available to states to conduct data completeness assessments



# Collaboration with AIRA



THANK  
YOU

Shannon Coleman  
Michelle Middaugh

Scientific Technologies  
Corporation