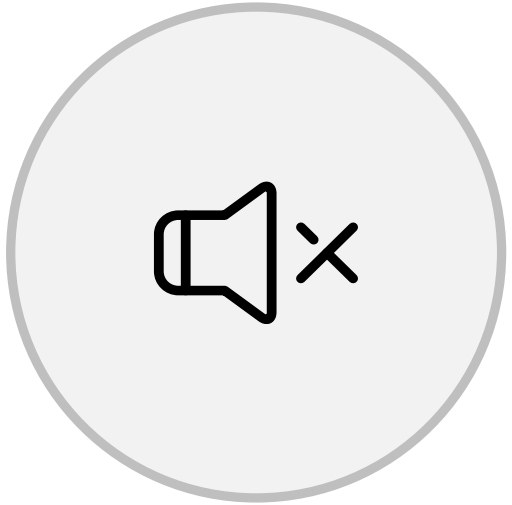
April 29, 2019
4pm ET

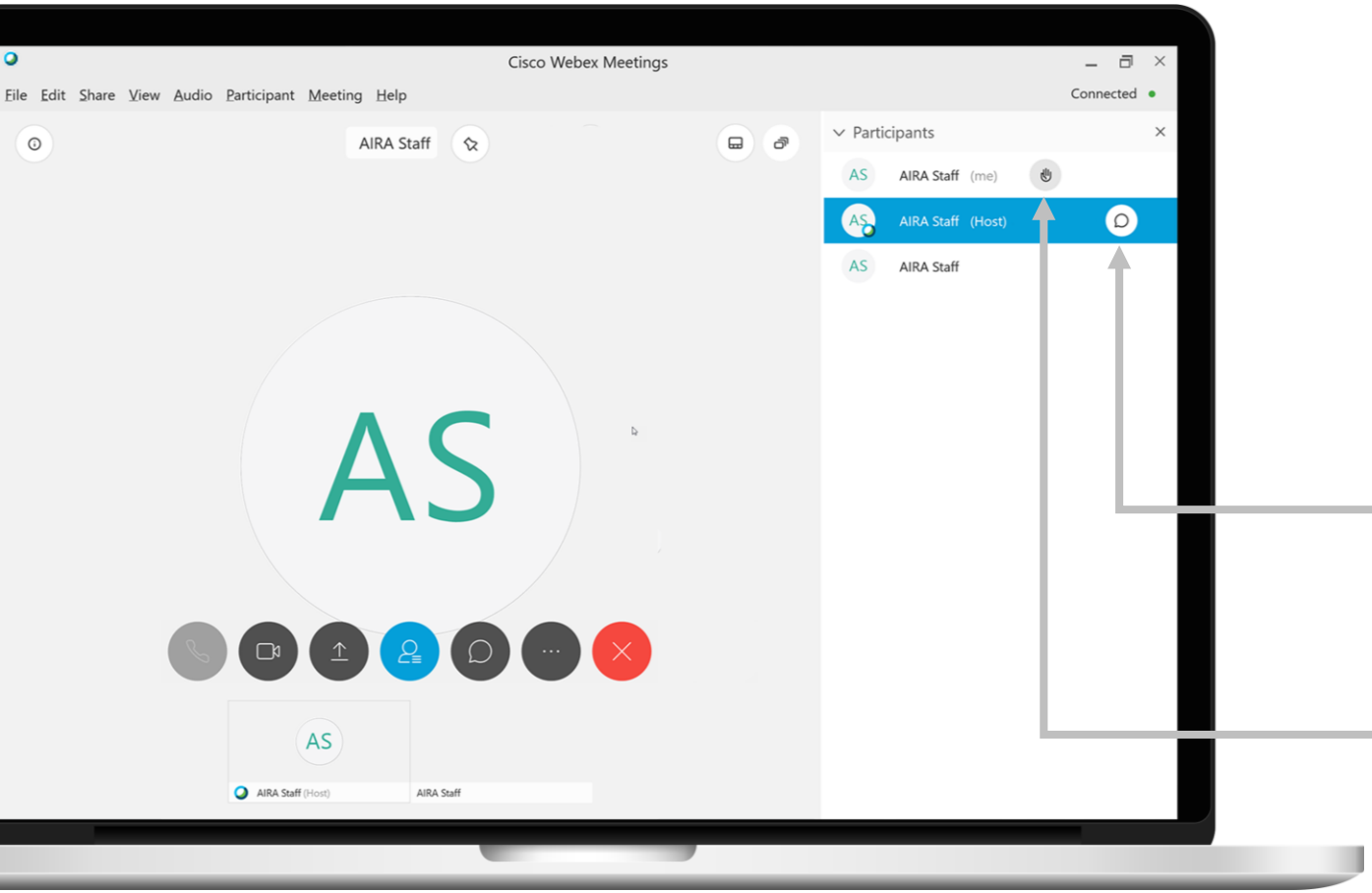
Welcome



All phone lines
are muted

This meeting is being recorded
and will be posted on the
AIRA repository

Welcome



How do I ask a question?

- There will be time allotted for Q&A following the presentation, to unmute your line press *6
- Via WebEx:

Select the chat icon next to the host and type question into the chat box.

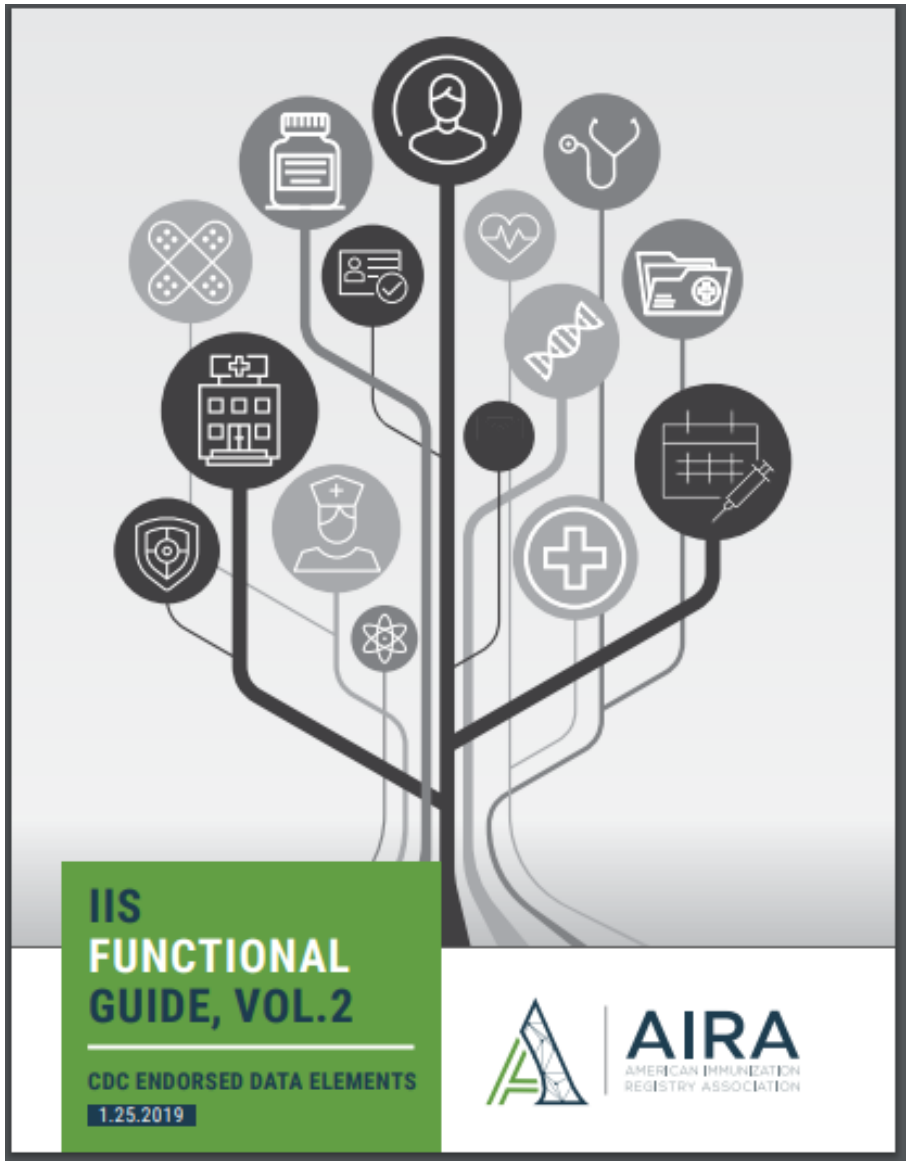
Select the hand icon next to your name and you will be called on.

Today's Topic

Functional Guide Volume 2

- CDC Endorsed Data Elements, v4.0
- Functional Guide on CDC Endorsed Data Elements – getting into the details
- Putting the Functional Guide to use within your IIS

- Questions, Comments, Discussion



Today's Speakers

- Jan Hicks-Thomson, Public Health Advisor, CDC IIS Support Branch
- Tracy Little, Technical Analyst, AIRA
- Michelle Campbell, IIS Data Quality Specialist, WA State Department of Health

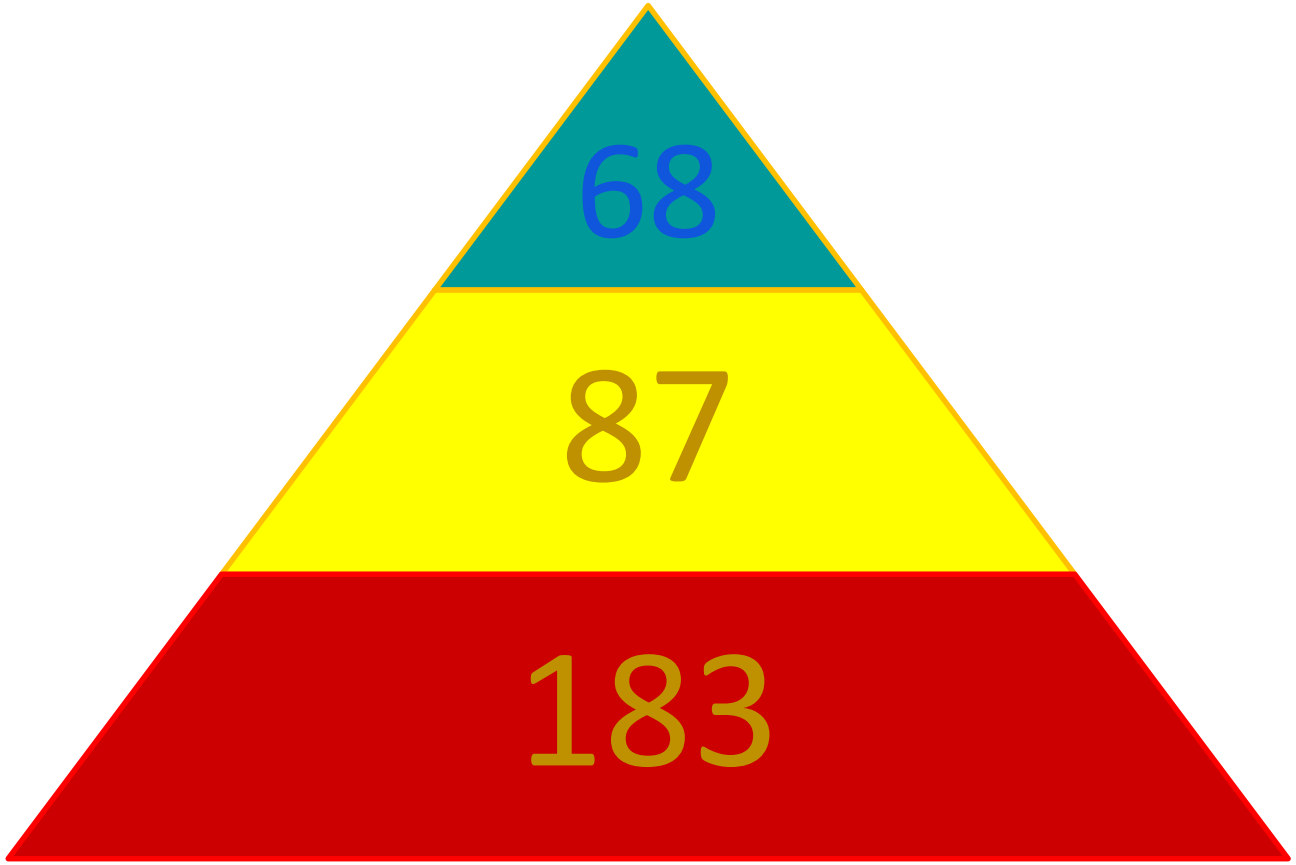
Jan Hicks-Thomson, MSW, MPA, A&W
Public Health Analyst
Immunization Information Systems Support Branch
Centers for Disease Control and Prevention

AIRA Discovery Session
April, 2019

Where did they come from?


VACCINE
Patient
RESPONSIBLE
ADDRESS
INDICATOR
date
PROVIDER
BIRTH
administering
Mother
STATUS
middle
ID
person
level
number
DOSE
ETHNICITY
HISTORY
disease
ORDERING
refusals
volume
COUNTY
STREET
SOURCE
residence
type
alias
RECALL
TITER
INFORMATION
MULTIPLE
JURISDICTION
PROTECTION
MAIDEN
EVENT
historical
country
telephone
IIS
FUNDING
city
mail
STATEMENT
LOCATION
PRIVATE
ELIGIBILITY
RACE
RECORD
PATIENT
code
expiration
MOTHER
SUFFIX
PRECAUTIONS
REASON
LANGUAGE
PRODUCT
DISEASE
Responsible
Contraindications
ADMINISTERING
zip
titer
SITE
EXEMPTIONS
ROUTE
GIVEN
STATE
LOT
PERSON
VACCINE

CDC Endorsed Data Elements



2018-2022 IIS Data Elements

CDC Endorsed Patient Demographic and Vaccination Event Data Elements

The CDC endorsed data elements represent the data elements that are needed by an IIS to record patient demographics and vaccination events to meet the IIS Functional Standards v4.0. An IIS should store the CDC endorsed data elements listed below if the elements are sent from an external information system and meet the IIS's data quality criteria. This list does not include all data elements external information systems such as EHRs, vital records, practice management or billing systems are expected to send to an IIS. The list may not include all data elements an IIS produces, stores or sends. Data elements may be derived and architectural solution may differ among IIS.

Patient Demographic Data Elements

- Date of history of vaccine preventable disease
- Ethnicity
- History of disease/titer
- Mother's name: first
- Mother's name: middle
- Mother's name: last
- Mother's name: maiden last
- Patient address: county of residence
- Patient address: city
- Patient address: country
- Patient address: state
- Patient address: street
- Patient address: zip code
- Patient alias name: first
- Patient alias name: middle
- Patient alias name: last
- Patient birth order
- Patient birth state
- Patient date of birth
- Patient e-mail address
- Patient gender
- Patient ID
- Patient ID: type
- IIS Patient ID
- Patient multiple birth indicator
- Patient name: first
- Patient name: middle
- Patient name: last
- Patient primary language
- Patient status indicator-provider level
- Patient status-jurisdiction level
- Patient telephone number
- Patient telephone number type
- Protection Indicator
- Protection indicator effective date
- Reminder recall status
- Reminder recall status effective date
- Race
- Responsible person name: first
- Responsible person name: middle
- Responsible person name: last
- Responsible person relationship to patient

Vaccination Event Data Elements

Vaccination Data Elements

- Contraindications/precautions
- Contraindications/precautions observation date
- Dose level eligibility[†]
- Exemptions/refusals date
- Exemptions/refusals reason
- Vaccination administration date
- Vaccine dose volume
- Vaccine dose volume units
- Vaccination event record type (administered/historical)
- Vaccine funding source (dose level public/private indicator)[††]
- Vaccine expiration date
- Vaccine lot number
- Vaccine manufacturer name
- Vaccine product
- Vaccine route of administration[1]
- Vaccine site of administration[1]
- IIS vaccination event ID
- Vaccination event ID
- Vaccine information statement[1]
- Vaccine information statement given date[1]

Provider Data Elements

- Vaccine ordering provider (person)
- Vaccine administering provider suffix
- Vaccine administering provider (person)

Facility Identifier Data Elements

- Administered at location
- Sending organization
- Responsible organization

Key

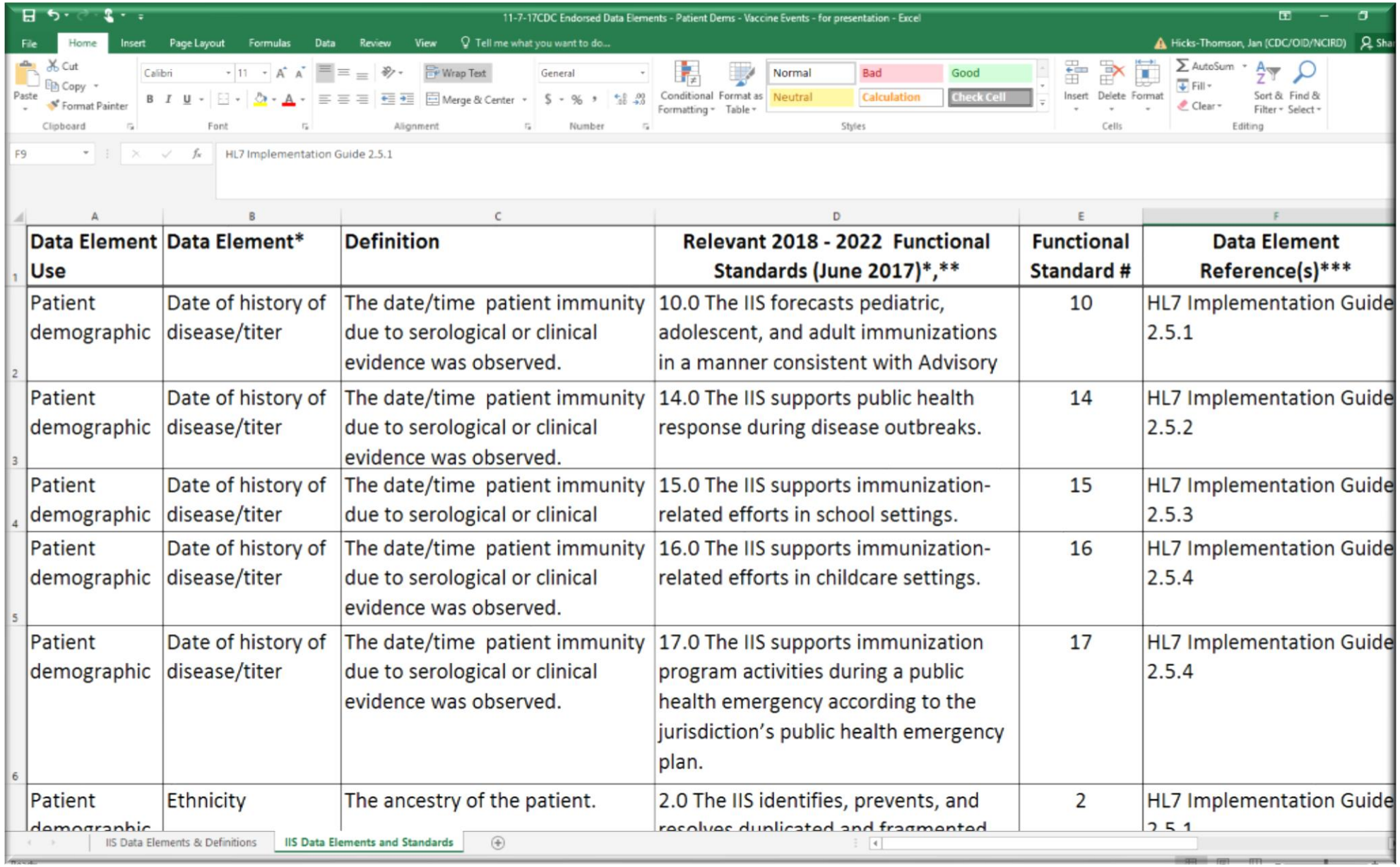
Yellow Data element is new for IIS Functional Standards v4.0.

[1] Data element should be captured in the IIS if the IIS is used as the primary vaccination event record (e.g., mass vaccination clinic).

[†] Definition: the program that should pay for a given immunization, based on the characteristics of the patient and the type of vaccine administered. Eligibility is captured for each dose.

[††] Definition: the funding source of the vaccine administered. Identifies the administered vaccine as publically funded, privately funded, or with other jurisdiction specific funding.

Definitions, Relation to Functional Standards, Source



11-7-17CDC Endorsed Data Elements - Patient Dems - Vaccine Events - for presentation - Excel

F9 HL7 Implementation Guide 2.5.1

Data Element Use	Data Element*	Definition	Relevant 2018 - 2022 Functional Standards (June 2017)*,**	Functional Standard #	Data Element Reference(s)***
Patient demographic	Date of history of disease/titer	The date/time patient immunity due to serological or clinical evidence was observed.	10.0 The IIS forecasts pediatric, adolescent, and adult immunizations in a manner consistent with Advisory	10	HL7 Implementation Guide 2.5.1
Patient demographic	Date of history of disease/titer	The date/time patient immunity due to serological or clinical evidence was observed.	14.0 The IIS supports public health response during disease outbreaks.	14	HL7 Implementation Guide 2.5.2
Patient demographic	Date of history of disease/titer	The date/time patient immunity due to serological or clinical	15.0 The IIS supports immunization-related efforts in school settings.	15	HL7 Implementation Guide 2.5.3
Patient demographic	Date of history of disease/titer	The date/time patient immunity due to serological or clinical evidence was observed.	16.0 The IIS supports immunization-related efforts in childcare settings.	16	HL7 Implementation Guide 2.5.4
Patient demographic	Date of history of disease/titer	The date/time patient immunity due to serological or clinical evidence was observed.	17.0 The IIS supports immunization program activities during a public health emergency according to the jurisdiction's public health emergency plan.	17	HL7 Implementation Guide 2.5.4
Patient demographic	Ethnicity	The ancestry of the patient.	2.0 The IIS identifies, prevents, and resolves duplicated and fragmented	2	HL7 Implementation Guide 2.5.1

IIS Data Elements & Definitions | IIS Data Elements and Standards

How are the Data Elements Used?

- In the HL7 Implementation Guide, required to be sent to the IIS
- Support business processes and clinical decisions
  - Accurate forecasts
  - Coverage assessment
  - Reminder / recall
  - Inventory management
- Record completeness for specific data elements.

Data Elements Measured for Completeness - IISAR

- Vaccine Product Type Administered
- Vaccination Administration Date
- Vaccine Manufacturer Name
- Vaccine Lot Number
- VFC/Awardee Program Vaccine Eligibility at Dose Level
- Patient First Name
- Patient Last Name
- Patient Date of Birth
- Patient Gender
- Patient Telephone Number
- Address – Street
- Address – City
- Address – State
- Address – Zip
- Mother’s First Name
- Mother’s Last Name

Logic Guidance for IISAR Measures

Example:

FUNCTIONAL STANDARD 11: The IIS manages patient status at the provider organization and jurisdiction levels.

Data Elements – Patient Status Indicators

Logic Guidance: Data Elements – Patient Status Indicators

- **For individuals age 0–18 years with date of birth from January 1, 2000 through December 31, 2018.**
- **In this section:**

Use the table below to identify individuals to include in the assessment:

Individuals who are considered…	**Include**	**Exclude**
Active • Residence in **jurisdiction** is confirmed or • Received an immunization from a provider organization within the jurisdiction and address is unknown	X	
Inactive, outside jurisdiction • Does not reside in the **jurisdiction**		X
Unknown, no address – no vaccination • Address is unknown and IIS has never received vaccination information	X	

2017 IISAR Measures: Completeness

2017 IISAR Data - All IIS Reporting		
Field Present	Complete	Data Element
100%	100.0%	Vaccine Product Type Administered (0 - 6 years)
100%	100.0%	Vaccine Product Type Administered (0 - 18 years)
100%	99.8%	Vaccine Product Type Administered (All ages)
100%	100.0%	Vaccine Administration Date (0 - 6 years)
100%	100.0%	Vaccine Administration Date (0 - 18 years)
100%	100.0%	Vaccine Administration Date (All ages)
100%	83.8%	Vaccine Manufacturer Name (0 - 6 years)
100%	84.0%	Vaccine Manufacturer Name (0 - 18 years)
100%	79.5%	Vaccine Manufacturer Name (All ages)
100%	83.1%	Vaccine Lot Number (0 - 6 years)
100%	83.4%	Vaccine Lot Number (0 - 18 years)
100%	81.0%	Vaccine Lot Number (All ages)
94.4%	86.3%	VFC/Awardee Program Vaccine Eligibility at Dose Level
100.0%	99.3%	Patient First Name
100.0%	99.6%	Patient Last Name

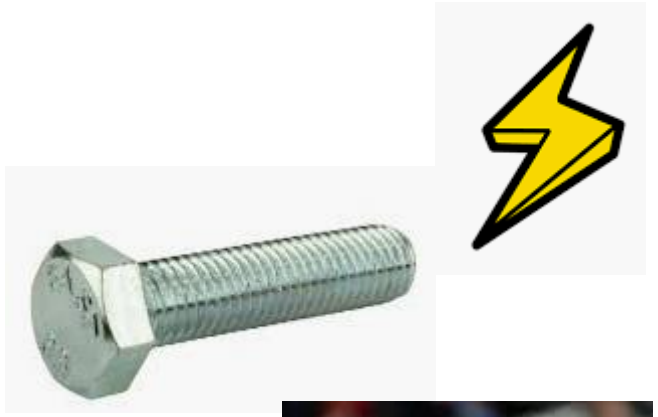
Functional Guide Vol. 2: CDC Endorsed Data Elements

Tracy Little, Technical Analyst, AIRA

Functional Guide Purpose

- A functional guide focuses on the capabilities and requirements a system will need in order to enable business functions needed by their end users.
- Functional guides do not dictate that a system **must** provide certain capability, but rather, it defines the requirements **if** a system chooses to supply certain capability.
- Drive forward the information found in the foundational, visionary, and best practice documents to ensure consistent implementation.

CDC Endorsed Data Elements



- It is important that data elements used across multiple systems carry the same meaning.
- There are inconsistencies across systems in how data is submitted, collected, and used even where data element definitions seem obvious.
- These inconsistencies can lead to data quality issues and/or misinterpretations of outcomes.

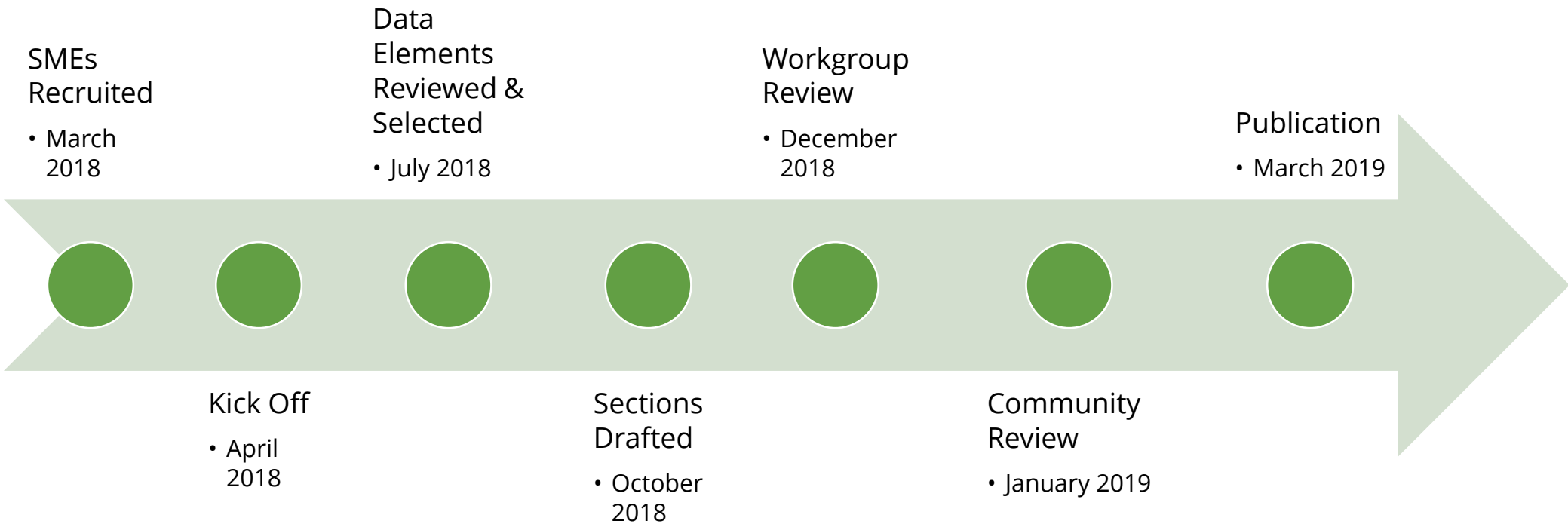
Scope

- Focus on a select set of data elements.
- Resolve inconsistencies in definitions and clarify usage.
- Not a replacement for technical (HL7) documentation or best practice guidance.

"If sending and receiving systems are not developed and configured to adhere to a common and consistent set of vocabularies, code sets and value sets, the users of those systems will have difficulty with interoperability."

—Connecting Health and Care for the Nation: A Shared Nationwide Interoperability Roadmap

Project Plan & Timeline



SME Workgroup

- Alexandra Hayes, Spokane Regional Health District
- Ashley McDonald, STC
- Craig Newman, Northrup Grumman
- Danny Wise, Allscripts
- Jan Hicks-Thomson, CDC
- Jenna Jaxheimer, Philadelphia Department of Public Health
- Katie Reed, DXC
- Lucia Lapaz, Envision Technology Partners
- Michelle Campbell, WA State Department of Health
- Monmi Buragohain, Merck
- Noora Majid, New York City CIR
- Rex Larson, Oregon Immunization Program
- Stephanie Sanchez, Michigan Division of Immunization

Selection of Data Elements

- Is the definition clear?
- Is the data element used differently between trading partners, such as EHRs and IIS?
- Does the data element cause confusion among trading partners?
- Are there known data quality issues related to the data element?
- Which data elements require frequent explanation to data end users and trading partners?

Selected Data Elements

- Patient Gender
- Race
- Ethnicity
- Mother's Name: Maiden Last
- Patient Birth Order

- Patient ID
- Patient ID: Type
- IIS Patient ID

- Patient Address: County of Residence
- Patient Birth State
- Patient Telephone Number
- Patient Telephone Number Type
- Responsible Person Name
  - First
  - Middle
  - Last
- Responsible Person Relationship to Patient

- Patient Status Indicator – Jurisdiction Level
- Patient Status Indicator – Provider Level
- Protection Indicator
- Protection Indicator Effective Date

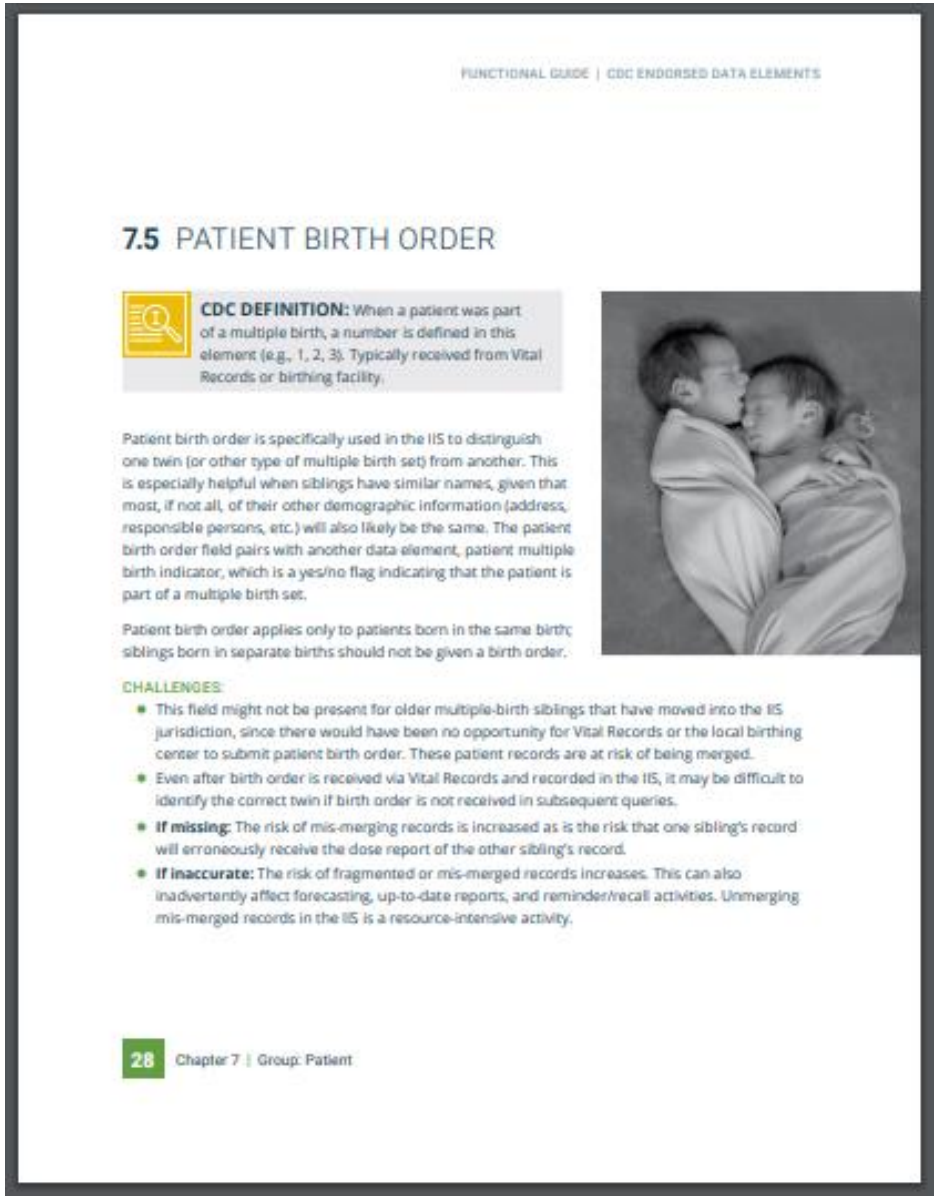
- Vaccine Product
- Vaccination Event Record Type
- Vaccine Manufacturer Name
- Vaccine Lot Number
- Vaccine Route of Administration
- Vaccine Site of Administration
- Dose Level Eligibility
- Vaccine Funding Source
- Vaccine Information Statement
- Vaccine Information Statement Given Date
- Contraindications/Precautions
- Exemptions/Refusals Reason

- Administered at Location
- Responsible Organization
- Sending Organization

What's in the Guide

For the 35 data elements:

- CDC Title/Definition
- Background/Usage
- Challenges
- Expectations of trading partners
- IIS Functional Standards Supported



FUNCTIONAL GUIDE | CDC ENDORSED DATA ELEMENTS

7.5 PATIENT BIRTH ORDER

CDC DEFINITION: When a patient was part of a multiple birth, a number is defined in this element (e.g., 1, 2, 3). Typically received from Vital Records or birthing facility.

Patient birth order is specifically used in the IIS to distinguish one twin (or other type of multiple birth set) from another. This is especially helpful when siblings have similar names, given that most, if not all, of their other demographic information (address, responsible persons, etc.) will also likely be the same. The patient birth order field pairs with another data element, patient multiple birth indicator, which is a yes/no flag indicating that the patient is part of a multiple birth set.

Patient birth order applies only to patients born in the same birth; siblings born in separate births should not be given a birth order.

CHALLENGES:

- This field might not be present for older multiple-birth siblings that have moved into the IIS jurisdiction, since there would have been no opportunity for Vital Records or the local birthing center to submit patient birth order. These patient records are at risk of being merged.
- Even after birth order is received via Vital Records and recorded in the IIS, it may be difficult to identify the correct twin if birth order is not received in subsequent queries.
- **If missing:** The risk of mis-merging records is increased as is the risk that one sibling's record will erroneously receive the dose report of the other sibling's record.
- **If inaccurate:** The risk of fragmented or mis-merged records increases. This can also inadvertently affect forecasting, up-to-date reports, and reminder/recall activities. Unmerging mis-merged records in the IIS is a resource-intensive activity.

28 Chapter 7 | Group: Patient

9.5 RESPONSIBLE PERSON NAME: FIRST, MIDDLE, LAST

CDC DEFINITION: The first (middle, last) name of the person responsible for the patient. Multiple names for the same person are allowed.

Responsible person name (first, middle, last) is used in a variety of ways in IIS. It is useful in matching and/or resolution of possible duplicate patient records. It may be leveraged for reminder/recall activities and for outreach to parents and guardians of patients who are past due for immunizations.

A patient record in the IIS may have one or more responsible person contacts. Multiple responsible persons can be submitted in a single data exchange message.

CHALLENGES:

- A responsible person could be one of many different people who are stored within an EHR system: a parent, guardian, other next of kin, guarantor, caseworker, emergency contact, etc.
- The HL7 IG supports sending patient's next of kin, which might or might not also be the responsible person. IIS may treat all patient contacts submitted as a responsible person or may treat only the most recently submitted contact(s) as responsible.
- If responsible person does not have a corresponding code indicating relationship type, the data element's value is limited.
- **If missing:** It will not be available for patient matching. It could also be difficult to conduct reminder/recall activities where a responsible person contact for patients under age 19 is needed.
- **If inaccurate:** The opportunity to use this data element in patient matching and deduplication is limited. Inaccurate data in this field could result in a security violation if a patient history was inadvertently sent to the wrong responsible person or address.

EXPECTATIONS:

- IIS shall store the corresponding relationship-to-patient type code to responsible person name.
- IIS may derive mother's name from responsible person data where responsible person relationship type is mother.
- IIS shall not derive mother's maiden name from responsible person data where responsible person relationship type is mother.
- EHR systems shall submit responsible person name if known.
- EHR systems shall submit all responsible person data where relationship type is mother, father, or guardian. Data for relationship types of mother, father, or guardian take priority over other types, though other types may also be submitted.
- Vital Records systems shall submit responsible person type of mother if known.

EHR Systems
SHALL SUBMIT if known
Vital Records Systems
SHALL SUBMIT if known

IIS FUNCTIONAL STANDARD SUPPORTED:

- **2.0** The IIS identifies, prevents, and resolves duplicated and fragmented patient records using an automated process.

9.5 RESPONSIBLE PERSON NAME: FIRST, MIDDLE, LAST

CDC DEFINITION: The first (middle, last) name of the person responsible for the patient. Multiple names for the same person are allowed.

CDC Data Element Name and Definition

What functions and activities is it used for?

Responsible person name (first, middle, last) is used in a variety of ways in IIS. It is useful in matching and/or resolution of possible duplicate patient records. It may be leveraged for reminder/recall activities and for outreach to parents and guardians of patients who are past due for immunizations.

A patient record in the IIS may have one or more responsible person contacts. Multiple responsible persons can be submitted in a single data exchange message.

Common challenges and data quality issues.

CHALLENGES:

- A responsible person could be one of many different people who are stored within an EHR system: a parent, guardian, other next of kin, guarantor, caseworker, emergency contact, etc.
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- Vital Records systems shall submit responsible person type of mother if known.

EHR Systems
SHALL SUBMIT if known
Vital Records Systems
SHALL SUBMIT if known

Who shall or should submit?

Conditions of submission?

Which Functional Standards are supported?

IIS FUNCTIONAL STANDARD SUPPORTED:

- **2.0** The IIS identifies, prevents, and resolves duplicated and fragmented patient records using an automated process.

This guide is best used as a reference, providing clarity and aligning technical specifications to best practices guidance.

Wherever possible, the guide reuses terms and definitions from existing resources rather than creating new terms for the same concepts.

Putting the Guide to Use

Michelle Campbell, IIS Data Quality Specialist, Washington State Department of Health

How can you use the guide?

- Clarify definitions, where ambiguity exists
- Resolve questions around data element usage and submission expectations
- Share with EHR and other data exchange partners
- Inform onboarding activities

WAIIS Guide Integration

- Update documentation with any data element definitions that are unclear
- Use in combination with Functional Standards, IISAR results, and the IIS Dashboard to plan and prioritize program goals.
- Identify areas where providers may need additional guidance on data elements and their importance to data quality

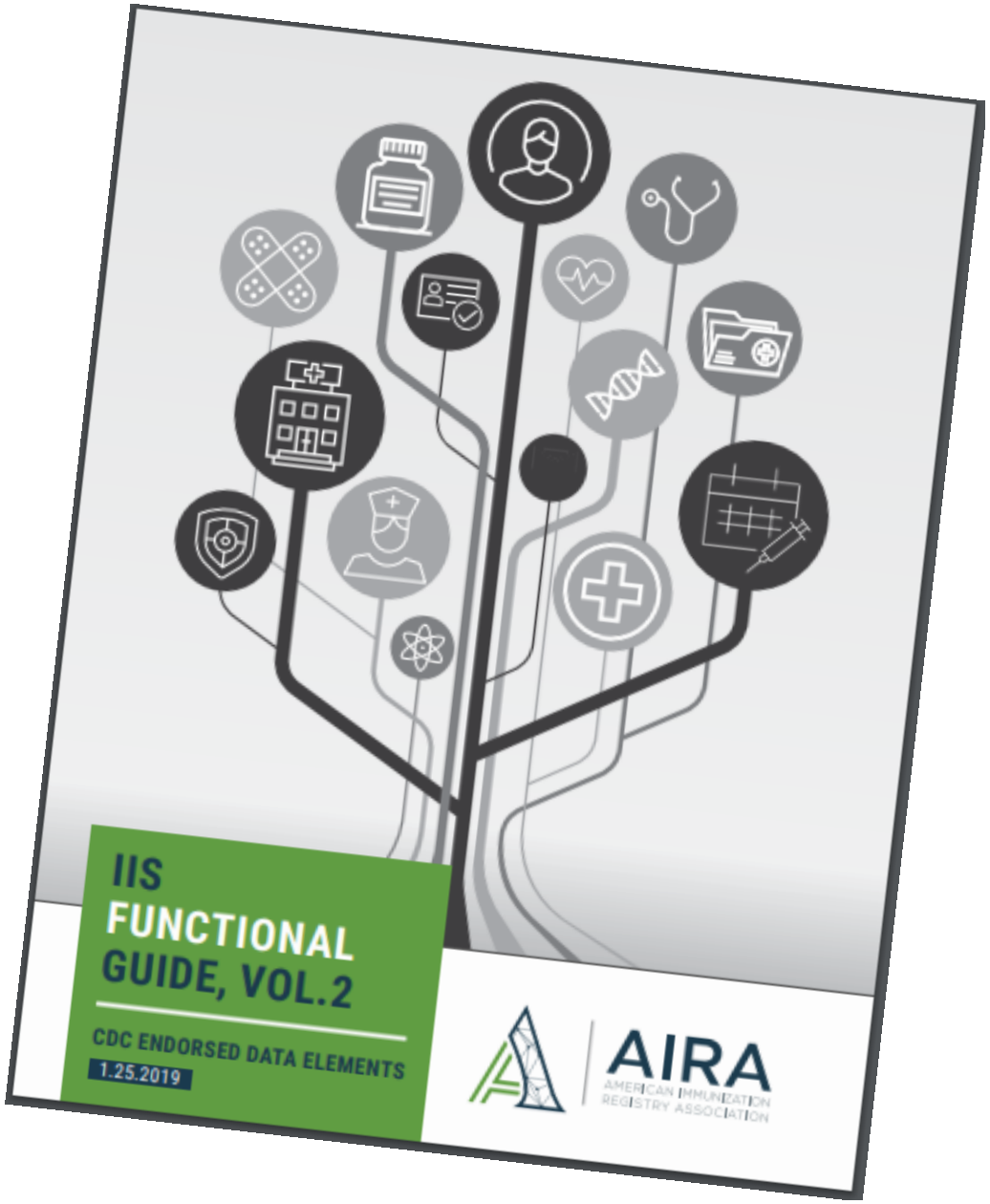
Potential Next Steps

- Remaining data elements could be reviewed in an expanded version of the guide.
- Some concepts and/or data elements need further exploration where the utility of the data element differs depending on the trading partner.
- Further exploration of the utility for some data elements, e.g., telephone number and which type(s) are preferred by IIS.
- Other work and projects, such as patient active status guidance, could inform updates to this guide.

Where to find it:

On the AIRA Repository:

- https://repository.immregistries.org/files/resources/5a83216a1d369/aira_functional_guide_vol2_final.pdf
- Search “functional guide” on the repository.

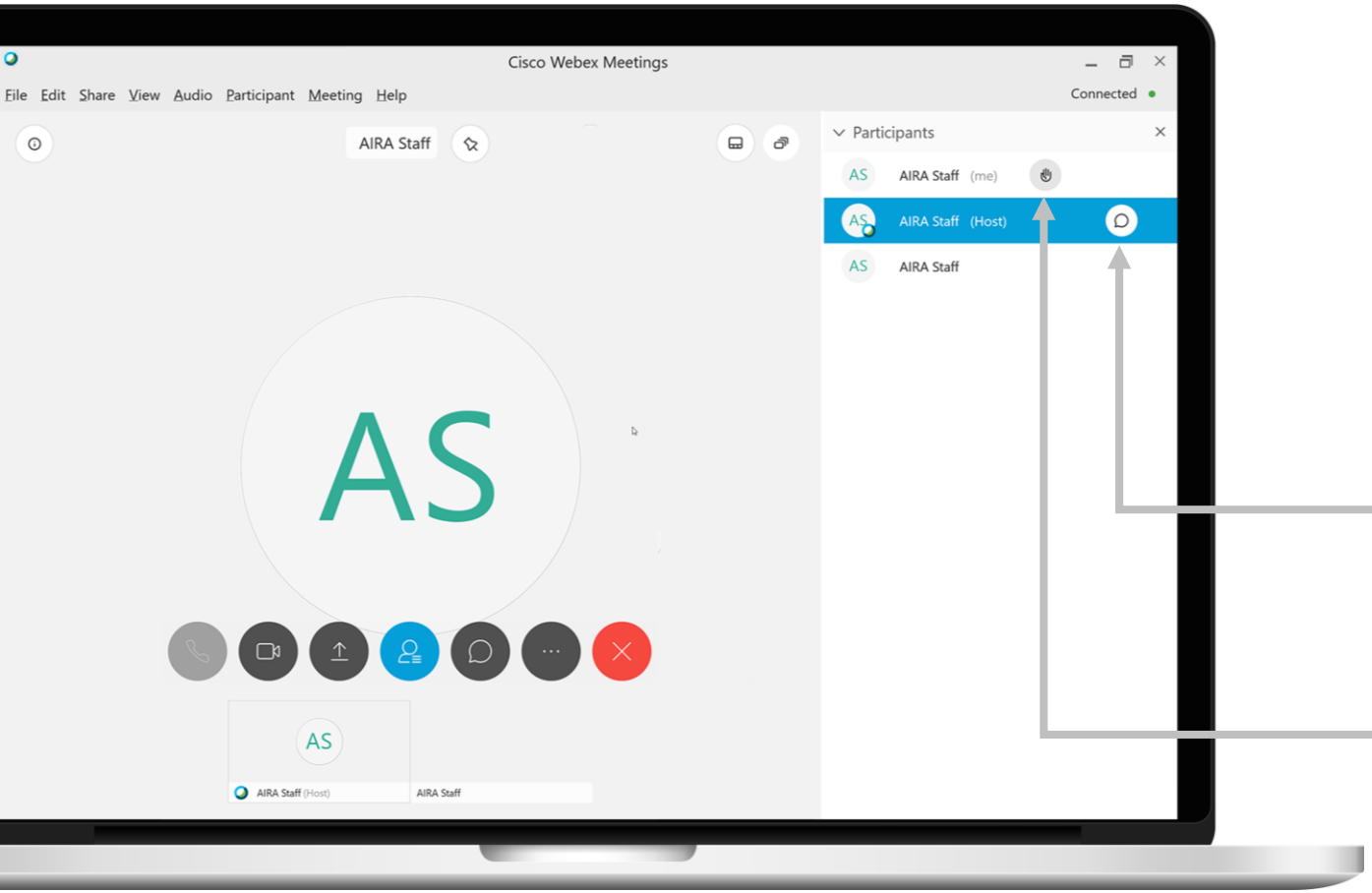


Thank you!

- Tracy Little: tlittle@immregistries.org
- Jan Hicks-Thomson: hbv8@cdc.gov
- Michelle Campbell: michelle.campbell@doh.wa.gov

Questions, Comments, Discussion?

Questions, Comments, Discussion?



How do I ask a question?

- To unmute your line press *6
- Via WebEx:

Select the chat icon next to the host and type question into the chat box.

Select the hand icon next to your name and you will be called on.

Thank you to our presenters, and thanks to all of you for joining us!