Notes Regarding Provider Organization and IIS-Authorized Organization
July 18, 2019

Introduction
Below are notes regarding the terms "provider organization" (PO) and "IIS-authorized organization" (IIS-AO) that were prepared to support the Common Vocabulary Workgroup discussions regarding term definitions.

Part I. Term Definitions for PO and IIS-AO
For the purposes of the MIROW Common Vocabulary, the term for PO needs to be:
- Broad enough to cover various ways that term has been used in different guides
- Related to the term IIS-AO

PO definition: an organization that has any combination of the following characteristics:
- provides vaccination services
- responsible for an entity that provides vaccination services
- manages inventory for an entity that provides vaccination services

Comment:
- When authorized by IIS, a PO may be an IIS-AO.
- A PO may contain organizational units, such as clinics, facilities, sites, and departments. Each of these organizational units may have IIS-assigned IDs (IIS-AO IDs) that are different from IDs of the provider organization. See *MIROW Data Quality Assurance in IIS: Selected Aspects* for a detailed discussion.
- When referencing a PO in a MIROW guide, we are referring to an organization that is also an IIS-AO.

IIS-AO definition: an organization that has an agreement with an IIS that allows for the submittal and/or retrieval of IIS information

Part II. Relationship Between PO and IIS-AO
The challenging point is how to properly represent the situation that not every IIS-AO is a PO and, in turn, not every PO is an IIS-AO. This situation is common for relationships between concepts.

For example, in this illustration a similar relationship has been depicted for the terms of **epidemiologist** and **female** in a Venn diagram (two intersecting circles).

Not every IIS-AO is a PO, and not every PO is an IIS-AO.

Not every epidemiologist is a female, and not every female is an epidemiologist.

IIS-Authorized Organization (IIS-AO)
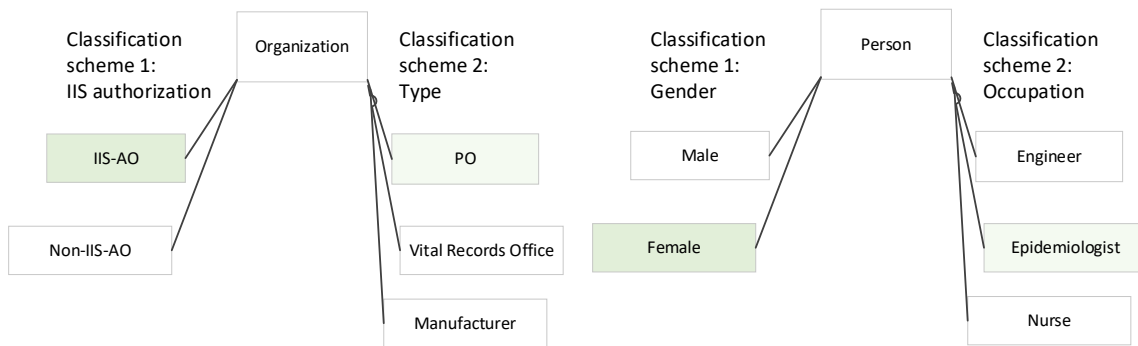
Provider Organization (PO)

Epidemiologist
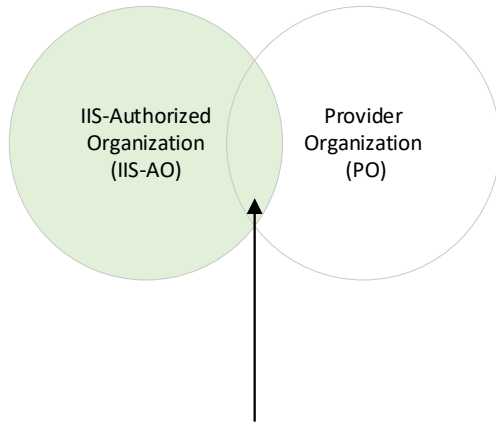
Female

This area represents IIS-AOs that are POs, and POs that are IIS-AOs.
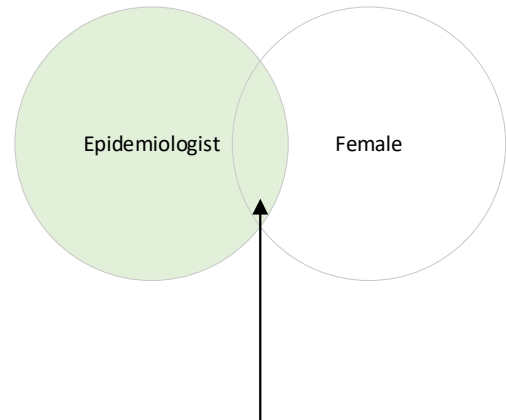
This area represents epidemiologists that are females, and females that are epidemiologists.

From the business analysis perspective, this situation arises when terms under discussion belong to different classification schemes of a common, more generic parent term. The sketch below illustrates that for the generic terms of **organization** and **person**.

Classification scheme 1: IIS authorization

Organization

Classification scheme 2: Type

IIS-AO

PO

Non-IIS-AO

Vital Records Office

Manufacturer

Classification scheme 1: Gender

Person

Classification scheme 2: Occupation

Male

Engineer

Female

Epidemiologist

Nurse

The term **female** belongs to the classification scheme that describes gender for a person, and the term **epidemiologist** belongs to the different classification scheme that describes the occupation of a person. These terms represent different aspects—different classifications—of a more generic term **person**.

Similarly, the term **IIS-AO** belongs to the classification scheme that describes IIS authorization for an organization, and the term **PO** belongs to the different classification scheme that describes the type of an organization. These terms represent different aspects—different classifications—of a more generic term **organization**.

In a domain diagram, these two classification schemes for the **organization** should be presented in the following way:
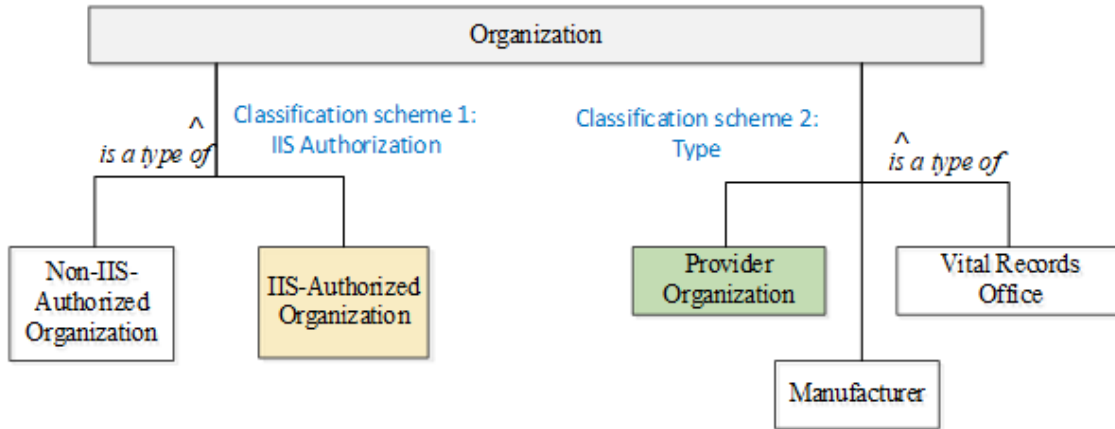
Added to this diagram is a depiction of the concept that there are IIS-AOs that are POs and there are POs that are IIS-AOs. There are also non-IIS-AOs that are POs, and there are POs that are non-IIS-AOs. That relationship is shown on the diagram below with the dotted line.
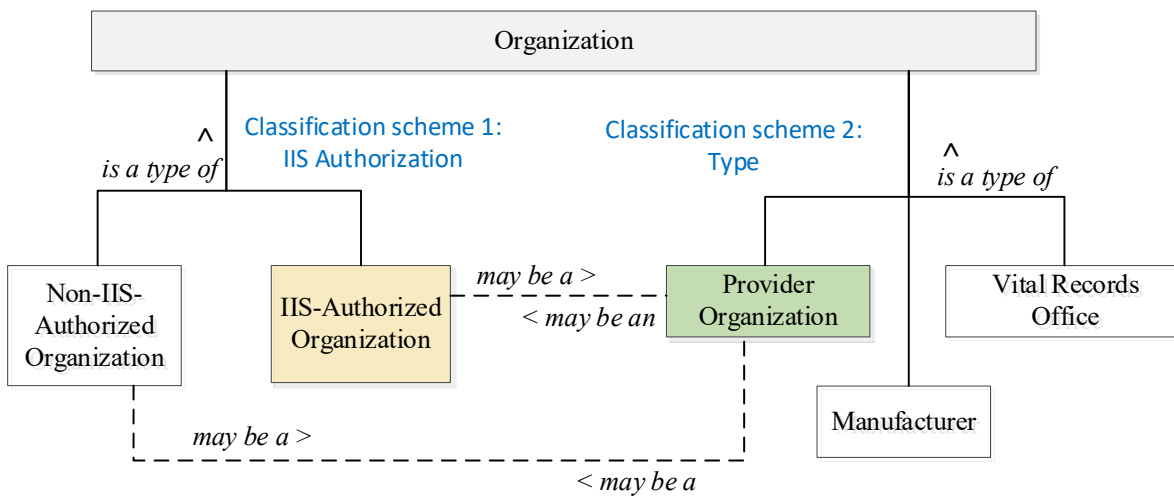
The same notion would apply to the relationship between IIS-AO and Vital Records Office (VRO) (the relationship is not shown on this diagram):

- There are IIS-AOs that are VROs.
- There are VROs that are IIS-AOs.
- There are non-IIS-AOs that are VROs.

- There are VROs that are non-IIS-AOs.

The focus of MIROW efforts is on IIS-AOs, as they provide data to IIS and/or consume IIS data. These IIS-AOs include various types of organizations, such as POs, schools, VROs, and others. An IIS-AO will always have an IIS-AO ID assigned by the IIS. An IIS-AO ID is fundamental for identification of all types of IIS-AO organizations, including POs, schools, VROs, etc. The IIS-AO ID is shown on the sketch below:
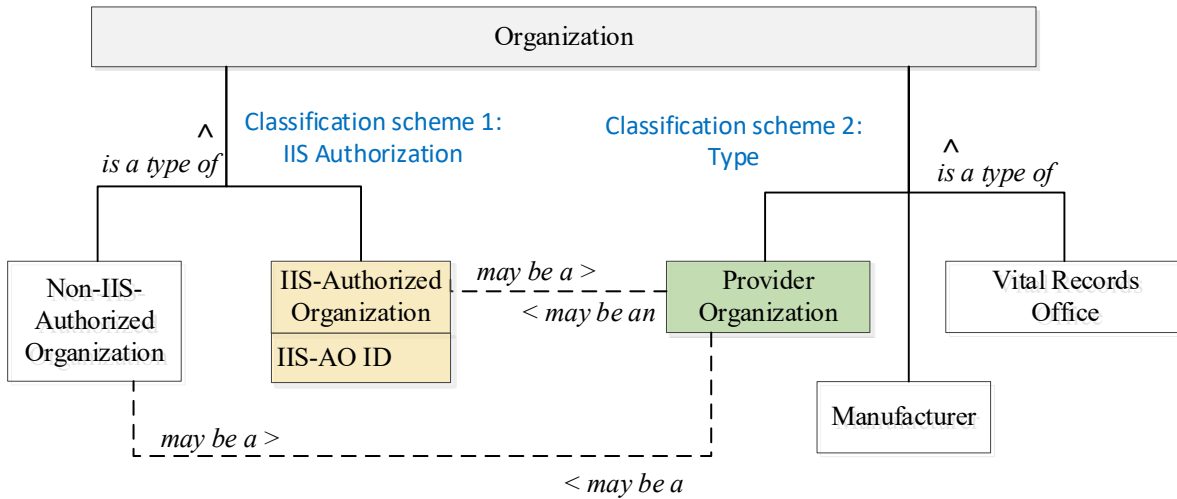
To summarize what is illustrated above:
- Organization has two distinct classification schemes.
- One scheme depicts IIS authorization, and the other scheme concerns the different types of organizations.
- An IIS-AO will have an IIS-ID. A non-IIS-AO will not.
- A PO may be an IIS-AO, in which case it will have an IIS-ID.
- A PO that is a non-IIS-AO will not have an IIS-ID.

From a PO perspective, there are POs that are IIS-AOs, and there are POs that are non-IIS-AOs.

From the IIS perspective

IIS-Authorized
Organization

IIS-AO ID

∧

is a type of

School	Provider Organization	Vital Records Office
IIS-AO ID	IIS-AO ID	IIS-AO ID
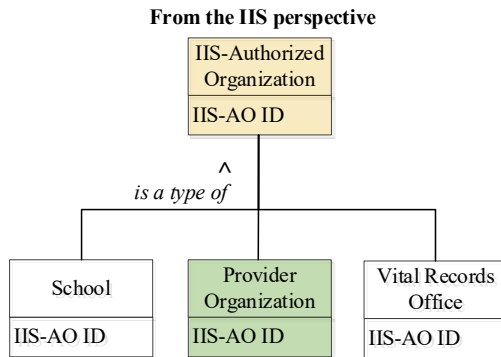
These are Authorized Organizations with IIS-AO IDs.

Note: there are a number of different organizations.

From the provider organization perspective

Provider
Organization

Non-IIS-Authorized Organization	IIS-Authorized Organization
	IIS-AO ID
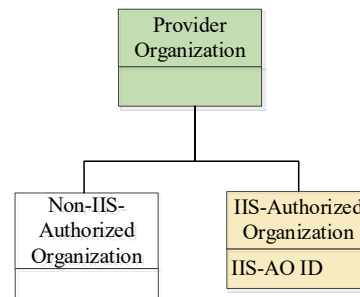
Part III. IIS-AO Hierarchy and IIS-AO IDs

The following discussion will focus on IIS-AOs and POs that have IIS-AO IDs. IIS-AOs, especially POs, in many cases have internal structures (i.e., organizational units like departments, facilities, sites, clinics). Some of these organizational units will have distinct IIS-AO IDs assigned to them (that are different from the IIS-AO ID of a "parent" organization), and some will not have IIS-AO IDs. Recommendations and rules for the assignment of IIS-AO ID to IIS-AOs and organizational units of these organizations are documented in *MIROW Data Quality Assurance in IIS: Selected Aspects*. Following is a brief summary regarding the essence of these recommendations:

- The structural hierarchy of an IIS-AO (or PO) in many cases can be more complex than a simple two-level organizational hierarchy of **organization** (e.g., PO) and **site/facility**. For example, it could be more than two levels of the organizational hierarchy; there could be an "affiliation" type or relationship, a "subsidiary" type of relationship, etc.
- There is a broad variety of ways that organizations are structured. PO-site/facility organization is just one type of such an organization.
- PO may include another PO(s), and IIS-AO may include IIS-AO(s). Such a recursive relationship can be explained with the following sketch:

IIS-Authorized Organization

may be a part of ^ IIS-AO ID

IIS-Authorized Organization

IIS-AO ID

is a part of ^

department *affiliate* *site/facility*

IIS-Authorized Organization 1 (department, site, facility, ...)

IIS-AO ID-1

IIS-Authorized Organization 2 (department, site, facility, ...)

IIS-AO ID-2

IIS-Authorized Organization 3 (department, site, facility, ...)

IIS-AO ID-3

is a part of ^

site/facility *clinic*

IIS-Authorized Organization 4 (department, site, facility, ...)

IIS-AO ID-4

IIS-Authorized Organization 5 (department, site, facility, ...)

IIS-AO ID-5

- Instead of focusing on organizational structure, the subject matter expert (SME) panel for *MIROW Data Quality Assurance in IIS: Selected Aspects* decided to focus on the functional structure of IIS-AOs reporting to IIS, as well as roles that IIS-AOs play in that reporting: recorder, vaccinator, submitter.
- One IIS-AO may play a role of submitter for another IIS-AO.
- The IIS needs to know all IIS-AOs in the chain of submission. In other words, any organization that participates in a submission chain must have an IIS-AO ID.
- The SMEs used the following example to discuss and illustrate the organizational and functional relationships between an IIS-AO and its organizational units. In this example, some of the organizational units only vaccinate, other units only submit, and other units don't participate in the submission chain (this final group does not have an IIS-AO ID).

UMC Corporation Provider Organization (PO) – IIS ID		Core Business (Units)				
		UMC Ambulatory PO – IIS ID		UMC <Acute> Hospital PO – IIS ID		
		UMC Pediatric Office *PO – Vaccinator IIS ID*	UMC Family Practice *PO – Vaccinator IIS ID*	UMCH ER *PO – Vaccinator IIS ID*	UMCH NICU *PO – Vaccinator IIS ID*	UMCH Employee Health *PO – Vaccinator IIS ID*
Cross-Core Functional Services	Payroll					
	HR					
	Food Services					
	IT — Vaccination Event Submittal (Usually performed by IT)	<Submittal services provided by IT> UMC Corp is the Submitter IIS ID				
	IT — Other IT					
	UMCH Employee Health *PO – Vaccinator – IIS ID*			<Submittal services provided by UMCH Employee Health> UMCH Employee Health is the Submitter IIS ID		

Previous definitions for PO:
- PO is an organization that provides vaccination services or is "responsible" for an entity that provides vaccination services.[1]
- PO is an organization that administers immunizations and/or is responsible for vaccine inventory.[2]

Domain diagram from *MIROW Data Quality Assurance in IIS: Selected Aspects*:

[1] MIROW Data Quality Assurance in IIS: Selected Aspects (https://repository.immregistries.org/resource/data-quality-assurance-in-immunization-information-systems-selected-aspects/)

[2] Immunization Information System Inventory Management Operations (https://repository.immregistries.org/resource/immunization-information-system-inventory-management-operations/)

(12) IIS

consolidates
provides
collects
communicates through

(8) Immunization History

contains

Note:
See the table of terms and definitions for a description of entities and attributes shown on this diagram.

(13) Electronic Data Exchange

(14) IIS Direct User Interface

may be a part of
+parent
utilizes

(9) Vaccination Forecast

is based on
is produced for

has

(7) Patient

7.1 Patient ID
7.2 Date Of Birth
7.3 Date of Death
7.4 Name (First, Last)
7.5 Gender
7.6 Address
7.7 Responsible Party
7.8 Contraindications
7.9 Birth Certificate Number
7.10 Birth Facility

(1) IIS-Authorized Organization

1.1 IIS-AO ID
1.2 IIS-AO Legal Name
1.3 IIS-AO Common Name
1.4 Vaccinator Indicator
1.5 Recorder Indicator
1.6 Submitter Indicator
1.7 Data Consumer Indicator
1.8 Type/Sub-Type
1.9 Public/Private Sector Indicator
1.10 Location/Address
1.11 Organizational Group/Family ID
1.12 Reporting Group/Family ID

receives
references
+Vaccinator
+Vaccine Adminsitrator
performed by
+Vaccine Prescriber
ordered by
works for
+Vaccinator
conducts
+Recorder
enters
+UI User or EDE User
works for

+subsidiary/ child
+Vaccinator (Recorder) or Submiter
+Submitter
may submit for
+Submitter
submits

(2) Provider

2.1 Provider Identifier

(3) Data Enterer

3.1 Data Enterer Identifier

+UI User or EDE User
enters

(4) Vaccination Event

4.1 Amount/Dosage
4.2 Dose Condition
4.3 Site
4.4 Route
4.5 Adverse Reaction
4.6 Patient Eligibility Status

vaccinated at

n
1

(15) Vaccination Encounter

15.1 Date

administered at
describes

(11) Combined Submission

11.1 Submission Date

contains

(16) Demographic-only Submission

16.1 Status
16.2 Status Date
16.3 Demographic-only Submission Error(s)
16.4 Recorder IIS-AO ID <organization>
16.5 Submitter(s) IIS-AO ID <organization>
16.6 UI or EDE User - Data Enterer ID <person>
16.7 <relevant demographic (patient) info>

describes

(10) Vaccination Event Submission

10.1 Status
10.2 Status Date
10.3 Vaccination Event Submission Error(s)
10.4 Administered/Historical Indicator
10.5 Documentation Source Type
10.6 Vaccinator IIS-AO ID <organization>
10.7 Recorder IIS-AO ID <organization>
10.8 Submitter(s) IIS-AO ID <organization>
10.9 Vaccine Administrator - Provider ID <person>
10.10 Vaccine Prescriber - Provider ID <person>
10.11 UI or EDE User - Data Enterer ID <person>
10.12 <relevant vaccination info>
10.13 <relevant demographic (patient) info>

(5) Vaccine

5.1 Lot Number
5.2 Lot Number Expiration Date
5.3 Public/Private Inventory Indicator

is an instance of

(6) Vaccine Product Type

6.1 NDC
6.2 Vaccine Type
6.3 CVX code
6.4 CPT code
6.5 Trade Name
6.6 Manufacturer/MVX code
6.7 Product License Begin Date
6.8 Product License End Date