# How to customize your OMOP CDM to meet internal needs while staying true to OHDSI's mission

**Authors:** Melanie Philofsky, RN, MS1; Ufuoma Olakpe, MS, MBA 2
1Odysseus Data Services; 2 Health Data Compass, University of Colorado

## *Title: Implementing & Adopting a Customized OMOP Common Data Model*

PRESENTER: **Melanie Philofsky**

### INTRODUCTION:

For the University of Colorado (CU), one of the main challenges in converting source data to the Observational Medical Outcomes Partnership (OMOP) common data model (CDM) has been the inconsistency between the mission of CU and the mission of Observational Health Data Sciences and Informatics (OHDSI).

### WHY IS IT IMPORTANT?

A customized CDM is needed to meet the needs of CU's internal customers while at the same time adhering to OMOP standards to allow data to be used in network research.

### METHODS

Two methods of customization are used.

1. Extension columns
    - Privacy flags
    - Source table identifiers
    - Frequently requested source fields only used for internal customers
2. Custom vocabulary
    - Custom, non-standard concept_ids used in *_source_concept_id fields

### RESULTS

1. Common Data Model retains it's shared universality
2. Atlas and other OHDSI tools run without error
3. Concept_ids pass DQD checks
4. Internal requirements are met
    - Easily enable privacy filtering
    - Direct link to source
    - Frequently used internal data elements are conveniently available
    - Retain most granular representation of source data elements

### WARNINGS AND CAUTIONS

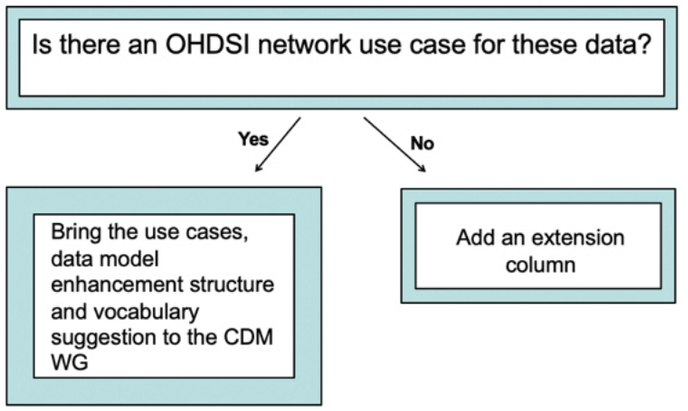
1. Data in extension columns are not available for use in Atlas or other OHDSI tools OR network queries
2. Don't repurpose standard OMOP fields
    - Ambiguity confuses end users
    - Quality checks will fail
    - Unusable for network research
3. Extension tables for additional attributes
    - Increases query compute time and resources
    - More efficient to add extension columns for a relevant domain

### EXAMPLES

***Extension columns***

- Privacy flags
- PHI for internal use
- Links to source for data quality checks & chart reviews

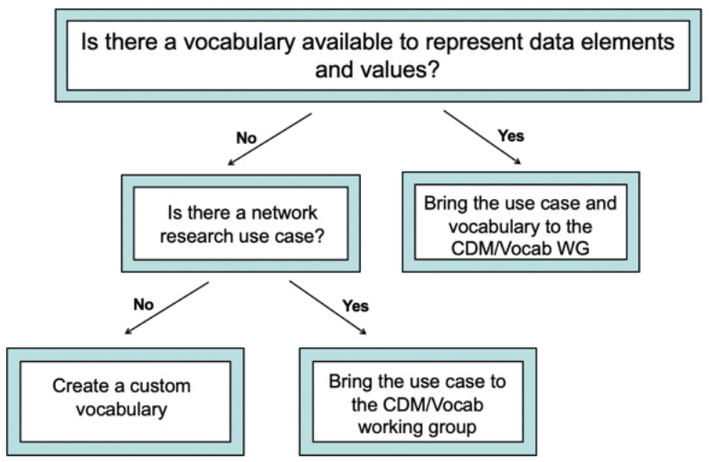
Extension column vs incorporation to the CDM




***Custom vocabulary***

- Various tobacco usage values
    - Passive tobacco use maps to standard concept_id = second hand cigarette smoke
- Various custom, source pain scales maps to standard concept_id = pain severity score

Custom vocabulary vs addition to OHDSI vocabulary




### CONCLUSION

1. Do bring network use cases to the CDM WG
2. Do create extension columns for non-network use cases
3. Do create custom vocabulary for custom source values
4. Do remember extension columns are not available for network queries
5. Don't
    - Repurpose existing fields
    - Create new fields for data already represented in the CDM