

How vocabulary updates can affect individual OMOP instances

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INTRODUCTION:

- Vocabulary updates to the OMOP CDM are frequent including:
 - * Deprecations of concepts
 - * Additions of concepts
 - * Changes to:
 - CONCEPT_NAME
 - CONCEPT_CODE
 - DOMAIN_ID
- Such changes are often necessary to remain up-to-date for controlled vocabularies and relationships, but the downstream risk of data gaps and errors in individual OMOP instances (e.g., VA OMOP) can be significant .
- Here, we describe examples of the consequences of one scenario where CONCEPT_ID for a given concept is static but its attributes (DOMAIN_ID, CONCEPT_NAME) change across vocabulary updates

METHODS:

- Evaluate the frequency of vocabulary updates that occurred between a one-month period- March 1, 2021 and April 1, 2021- in the OMOP CDM and in the VA OMOP instance specifically.
- Evaluate the impact of updates on the VA OMOP instance.
- Discuss possible solutions for individual OMOP implementors and considerations for OHDSI.

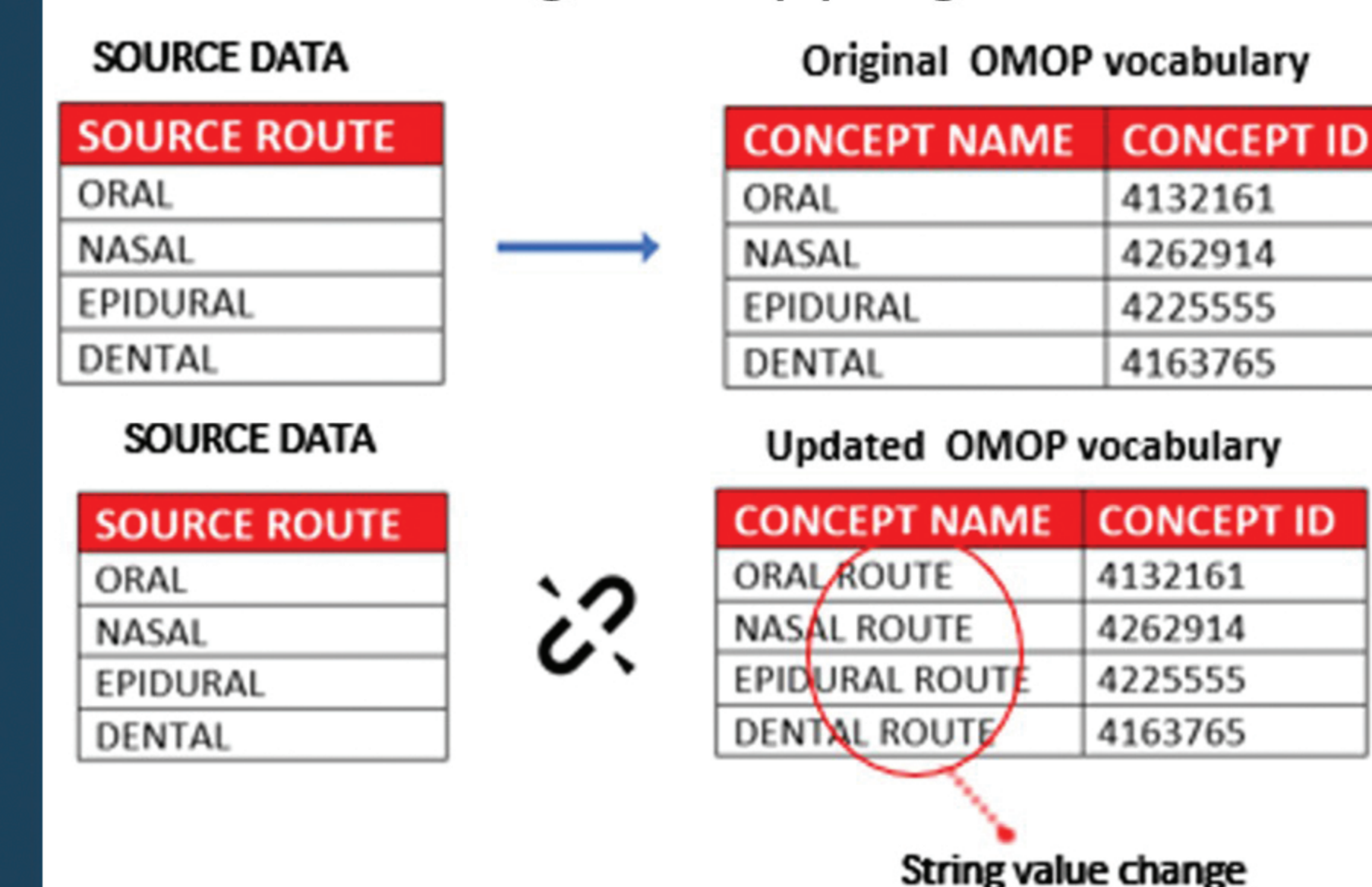
The downstream consequences of OMOP CDM vocabulary updates are **unintentional** yet can be **palpable**. Both OMOP implementors and OHDSI should be aware, and solutions should be sought.



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RESULTS:

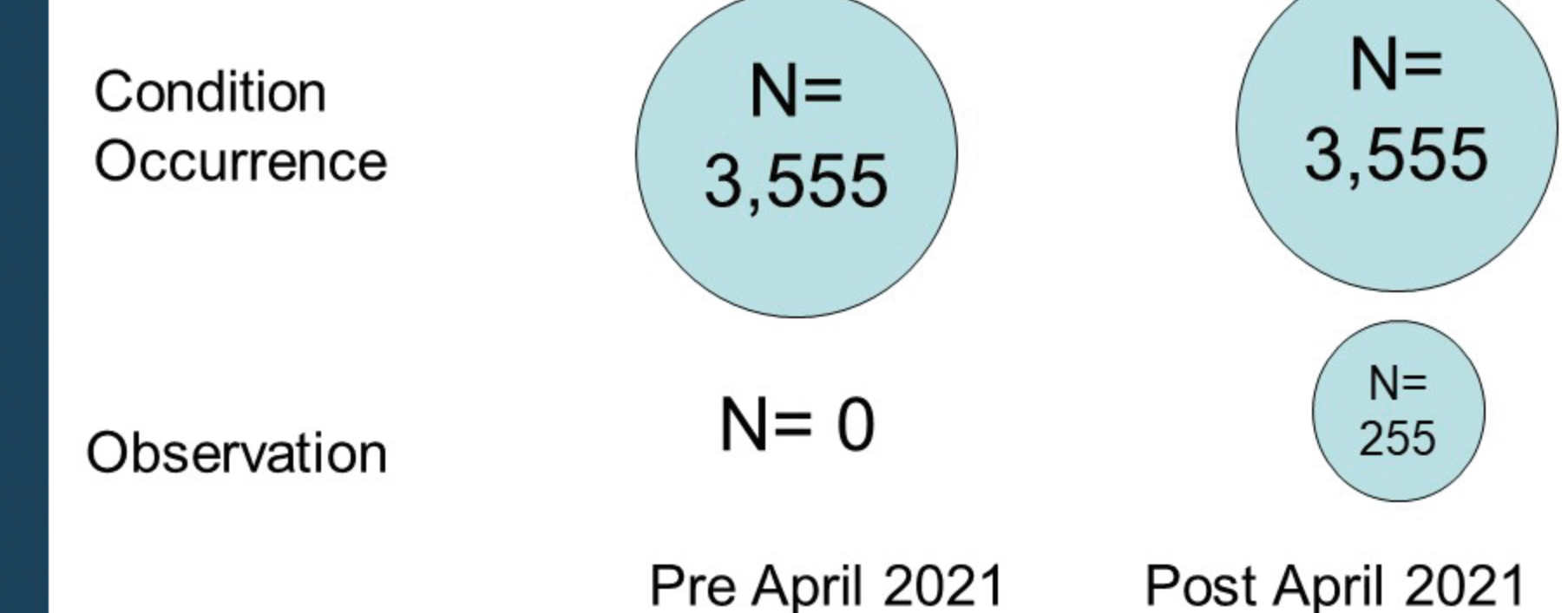
Figure 1. CONCEPT_NAME change for medication route breaks existing source –to–target mapping in VA



- ❖ 33 mapped route concepts decreased to 6 mapped route concepts after update
- ❖ Over 3 billion rows impacted
- ❖ 51% route mapping proportion decreased to 1.5% route mapping proportion

47,805 DOMAIN_ID changes can cause fragmented data representation across the CDM when incremental ETL is used

Example: ICD10 T38.3X6A went from Condition to Observation. Instances spread across two tables



SOLUTIONS:

OMOP implementors:

- Download -> evaluate -> integrate
- Download -> integrate -> evaluate

OHDSI

- Issue field advisories with each change
- Less frequent updates (e.g., annual)



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