



Conversion of National Veterans Affairs Health Cost Data into the OMOP CDM: Preliminary Transformation

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Background

The Veterans Health Administration (VA) Managerial Cost Accounting Office (MCA) produces cost data for inpatient and outpatient services using activity-based cost accounting rules. The VA Corporate Data Warehouse (CDW) and the MCA use different business rules and CDW and OMOP use different granularity in defining clinical events. As OMOP represents clinical events linked to an anchor visit event, we developed logic to adapt MCA cost to the CDW OMOP visit level.

Methods

1. Data Sources: MCA inpatient cost and CDW OMOP
 - October 1999 to May 2020
2. MCA and CDW records linked using scrambled SSN.
3. The event identification linked to MCA inpatient cost are the CDW OMOP visit primary key, with visit concepts representing inpatient care, long term care, and inpatient observation.
4. Cost distribution logic developed to unify the different MCA and CDW business rules for the following observed mappings:
 - a. ≥ 1 MCA encounter: 1 OMOP visit \rightarrow MCA total cost to one OMOP visit.
 - b. ≥ 1 MCA encounter: >1 OMOP visit \rightarrow Calculate OMOP visit eras. The cost for each visit is calculated based on the length of hospital stay.



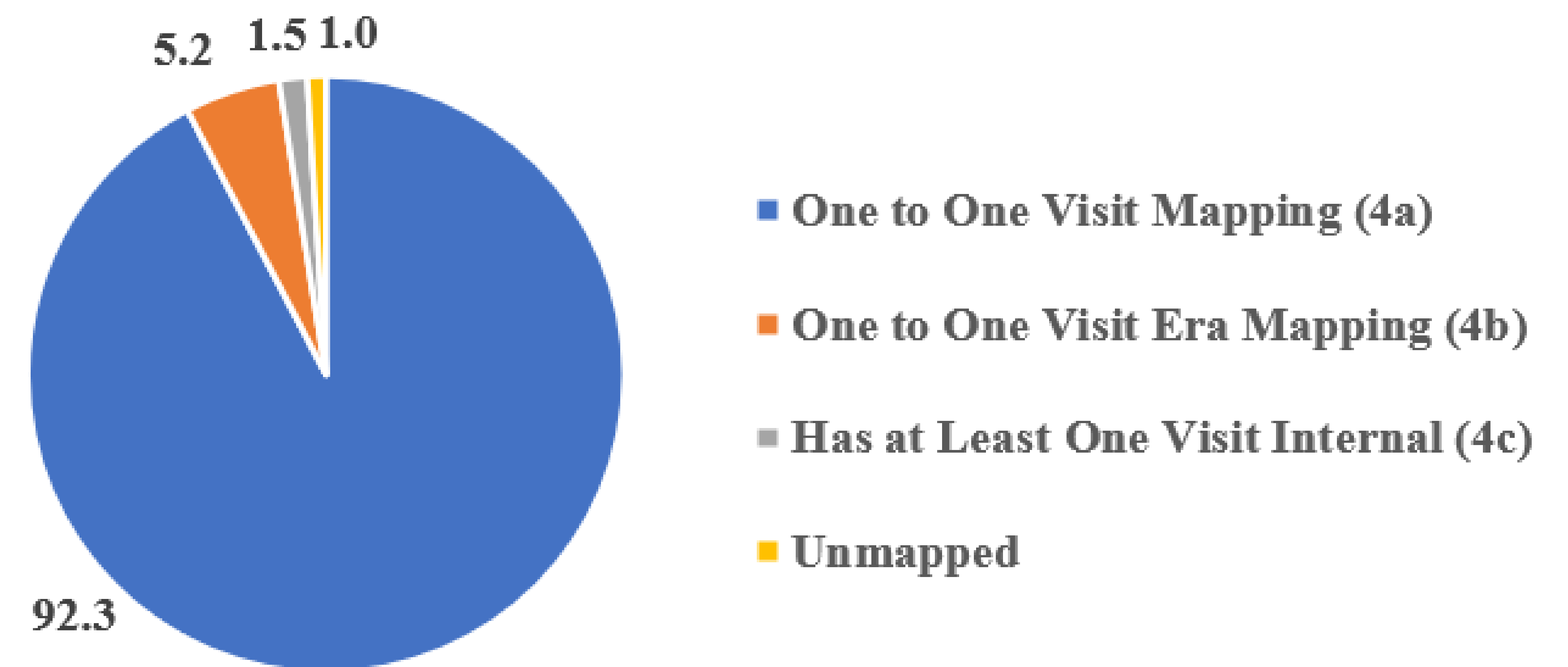
- c. OMOP visits within MCA cost period but OMOP visit era is discontinuous. The total MCA cost was evenly distributed across total OMOP visit length of stay



Results

These rules improved our ability to match MCA and CDW OMOP encounters.

1. More than 9 million inpatient MCA cost records mapped directly to CDW OMOP (4a).
2. For the cost records that did not have a 1:1 matched hospital stay in CDW OMOP, calculation of OMOP visit era (4b) resulted in 0.5 million cost records distributed to more than 1.2 million CDW OMOP clinical visits.
3. After incorporating discontinuous OMOP visits eras (4c), an additional 0.1 million cost records could be linked to 0.4 million CDW OMOP visits.



MCA Cost Encounter Mapped to OMOP Visit (Percentage)

Conclusions

The MCA inpatient cost data can be successfully transformed into OMOP CDM COST with events identified from CDW OMOP based on the logic we developed. The next step is to map outpatient costs and encounters.



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