Title: edenceHealth RxNorm Builder

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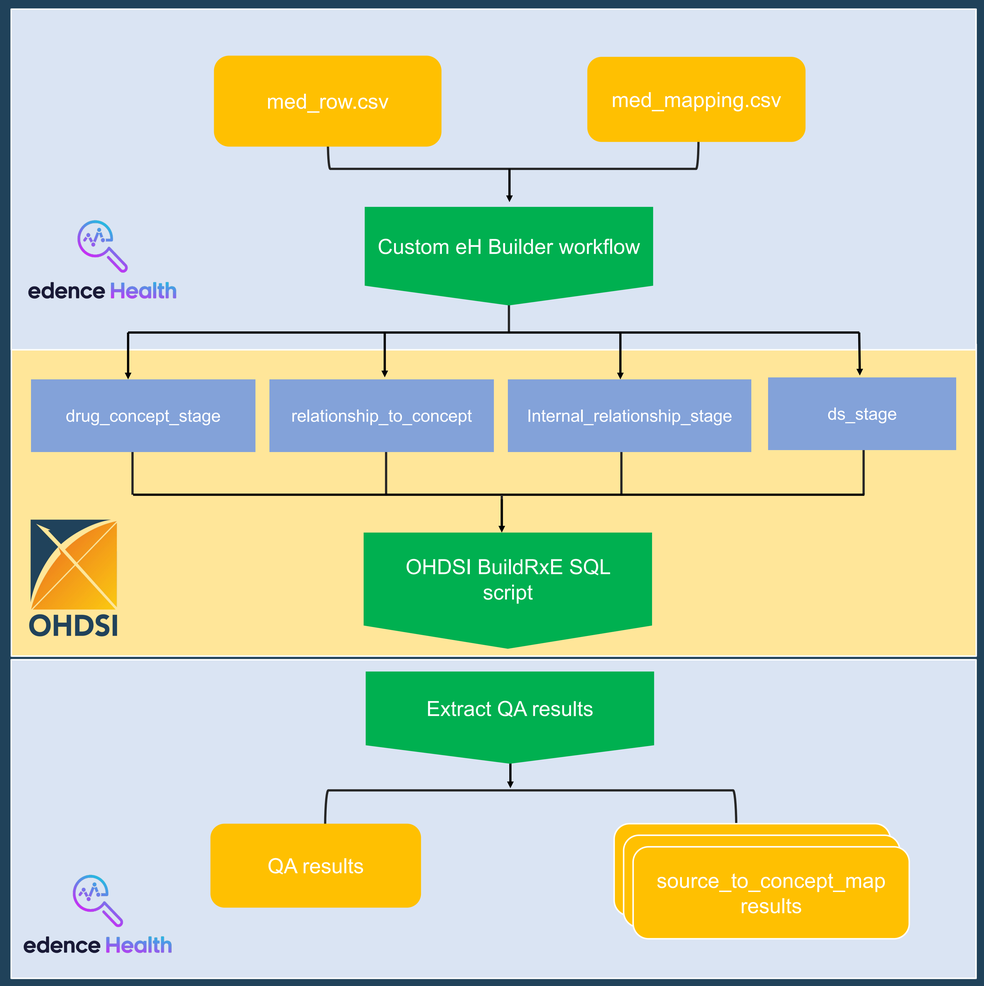
A Framework for International Drug Mapping in Healthcare Data using OHDSI's BuildRxE Script

BACKGROUND:
Standardized drug vocabularies are crucial for harmonizing healthcare data across diverse sources. RxNorm, developed by the U.S. National Library of Medicine, supports interoperability within the U.S. by providing a structured terminology for clinical drugs. However, its focus on U.S.-approved medications limits its global applicability. To bridge this gap, OHDSI introduced the RxNorm Extension, expanding coverage to include international drug vocabularies. Supporting this effort, the OHDSI BuildRxE SQL script generates new concepts when none exist in the OHDSI Vocabularies. In the RxNorm Builder, BuildRxE functions as a mapping engine, aligning source drug data with RxNorm concepts based on ingredients, strengths, dose forms, and related attributes. This ensures consistent drug mapping, enabling accurate analysis and cross-national research on medication use and outcomes.

METHODS
The RxNorm Builder is a tool for creating precise and standardized drug mappings by integrating detailed source information—such as ingredients, dose forms, strengths, routes, and units—into the OMOP Common Data Model.



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METHODS cont.
It operates using two main input files: **med_row**, which contains individual drug records with structured attributes, and **med_mapping**, which links each component to standard RxNorm or RxNorm Extension concepts. The Builder processes these inputs using a **custom eH Builder workflow** and the OHDSI **BuildRxE SQL script** to identify or generate appropriate concept IDs. When standard RxNorm concepts are unavailable, it utilizes the RxNorm Extension to fill gaps, particularly for non-U.S. drugs and custom formulations.

RESULTS:
The RxNorm Builder allowed us to generate multiple output files depending on the user desire, providing different mapping levels (all mappings, direct mappings, first-level, and second-level mappings) using the qa_result table. These outputs enabled our Data Analysts to review and validate mappings efficiently, ensuring accurate drug standardization. By utilizing these structured outputs, we could propose the most appropriate mappings to our Data Partners, improving consistency and interoperability across sites.

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