



# Event Lookup for Fact Tables

Frank DiMartini<sup>1,2</sup>, Mui Van Zandt<sup>1,2</sup>, Anthony Recakrd<sup>1,2</sup>  
<sup>1</sup>IQVIA, Plymouth Meeting, PA, <sup>2</sup>OHDSI, New York, NY

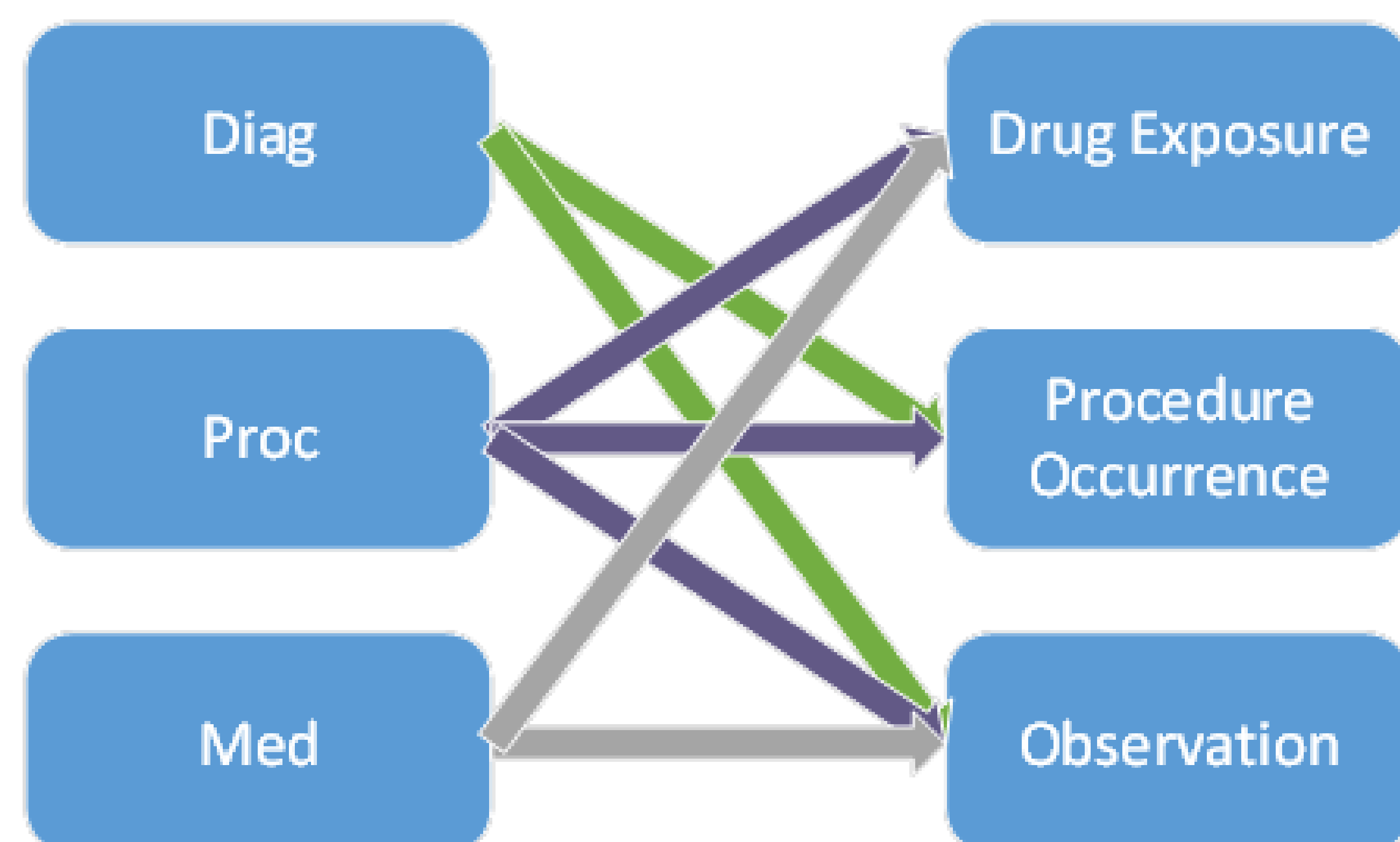
## Introduction

During the ETL process, focusing on each fact table as separate process can create duplication of efforts and a confusing workflow of data. A middle event lookup table will reduce duplication and simplify the process by relying on the concept\_relationship table to do the heavy lifting. This approach will make the analysis and development aligned in efforts and reduce troubleshooting the fact tables.

## Background

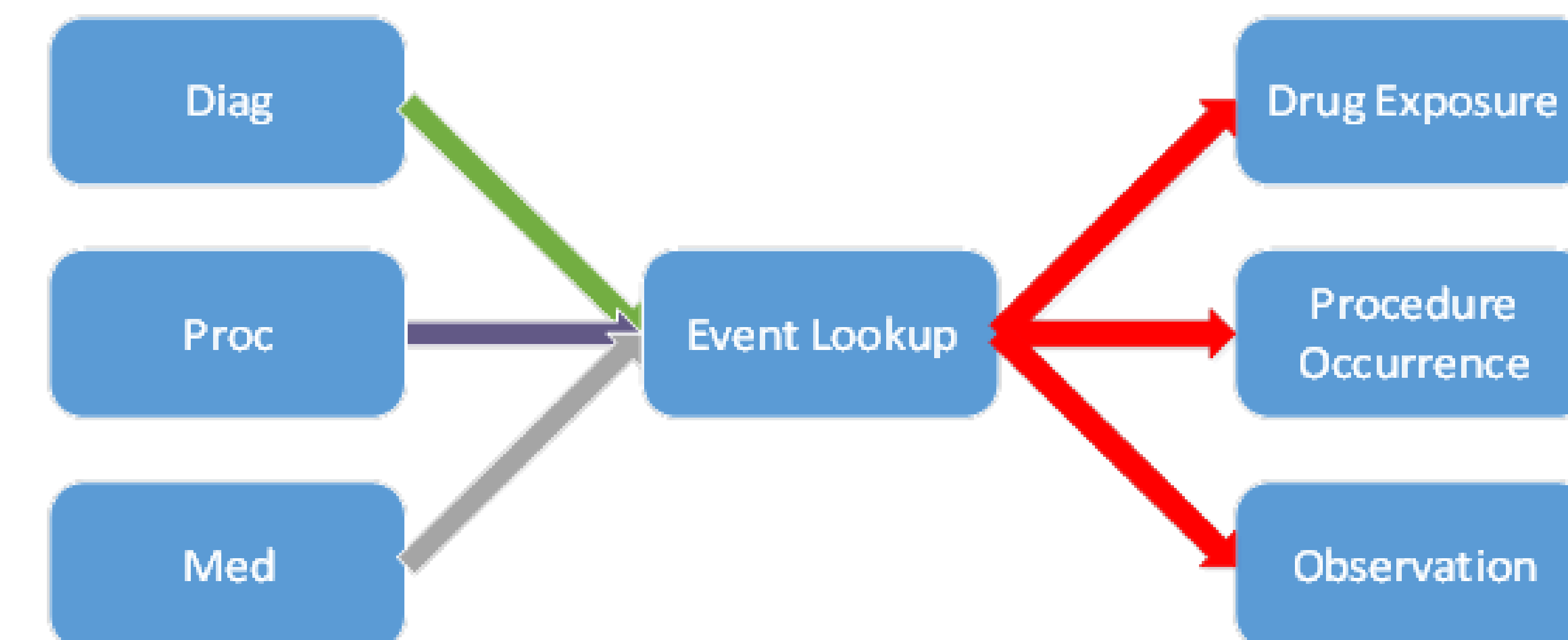
Analysis and development are often done on the target fact table individually. Using this approach, when looking at Drug Exposure the tables Proc and Med must be used (Figure 1). After Drug Exposure is complete work on Procedure Occurrence begins. Now Proc and Diag is used, and for Observation all three tables are used. Using this approach, analysis can look at the same field multiple times instead of doing a deep dive on the field once.

- Source data often overlaps with final fact tables
- Analyzing data will result in reviewing the same field multiple times
- Often each table is developed separately with duplication of effort
- Updates to fields have to be completed in multiple areas
- Tracing data to the fact tables can be unclear
- Can cause a general mess in ETL process



## Methods

- Fact tables contain many similar fields
- Most fields are used in at least two or more fact tables
- Using this table can capture all fact fields
- Each source field is used only once to populate one table
- All efforts are isolated and source code only exists in one place
- Concept and Concept\_Relationship table determine the domain\_id for the table
- Scripts from event lookup can be reused for multiple ETL processes
- Data can easily be traced to where it goes to and comes from
- Analysis can be done on event lookup to determine missing mappings
- Minimal data can be entered to see how fact tables will be populated



## Conclusions

- Event lookup captures all data for fact tables
- Makes it easier to analyze each field and table
- Development is for each field is isolated to one table
- Faster development due to less data needed
- Easier to maintain and trace for issues
- Less duplication of effort
- Custom ETL only needed for one table
- Standardization can be implemented for CDM ETL
- Reduced conversion time by 20%

