



Global Solutions from the World's Largest Data-Focused CRO

Real World Data Surprises

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Introduction

- Part of a multinational programming team working with Real World Data
- Experience: over 3 years
- Tools: Teradata SQL and SAS



Real World Data (RWD)

- De-identified data
- Observational longitudinal databases
 - Administrative Healthcare (claims)
 - Electronic Medical Records (EMR/EHR)

RWD problems with standard solutions



- Easy to handle
- Result of:
 - obvious data issues and/or
 - database structure
- Tips:
 - Know your data
 - ALWAYS carefully review each intermediate step
 - Update your code and list of standard solutions

Example: Date of birth

- Masking exact date of birth to avoid identification, e.g.:
 - Above 90 years → Flagged
 - Below 90 years → Only year of birth provided
- Multiple date of birth per patient ID
 - Multiple gender per patient ID

RWD problems with stories

- Hard to classify
- Result of:
 - data issues and/or
 - rare patient's characteristics/treatments
- Require project-specific approach

Example: Drugs - basic

- Not medications taken
 - Prescriptions written
 - Prescriptions filled
 - Exception: medications administered in medical facility
- Days covered by drug
 - Prescriptions
 - Days supplied
 - Quantity supplied + dosing
 - Imputed number of days
 - Administrations?
 - 1 day
 - Imputed number of days
 - Exclude

Example: Drugs – treatment patterns

- Multiple records on a single day: 
 - extending days covered 
 - increasing dose 
- Overlapping days covered: 
 - to be used after the current one runs out 
 - to be used instead of the current one 
 - to be used together with the current one 

Example: Inpatient visits

- Two type of records available:
 - summary record of entire visit
 - separate claims for each service
- To be decided: what if a patient:
 - changes a ward/level of care during the visit
 - is admitted through Emergency Room
 - is transferred to another facility
- Purpose of the study:
 - compare inpatient related variables between different databases
 - “normalised” inpatient stay definition
 - perform an in-depth analysis of patient’s hospital stays (readmissions, transfers etc.)
 - “tweaked” inpatient stay definition
 - calculate basic IP related numbers
 - vendor’s inpatient stay definition

Conclusion

- Most of the questions in our field do not have clear-cut answers
- Programmers, statisticians, database's vendors and study team need to cooperate closely

Questions?

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Thank you for listening.