

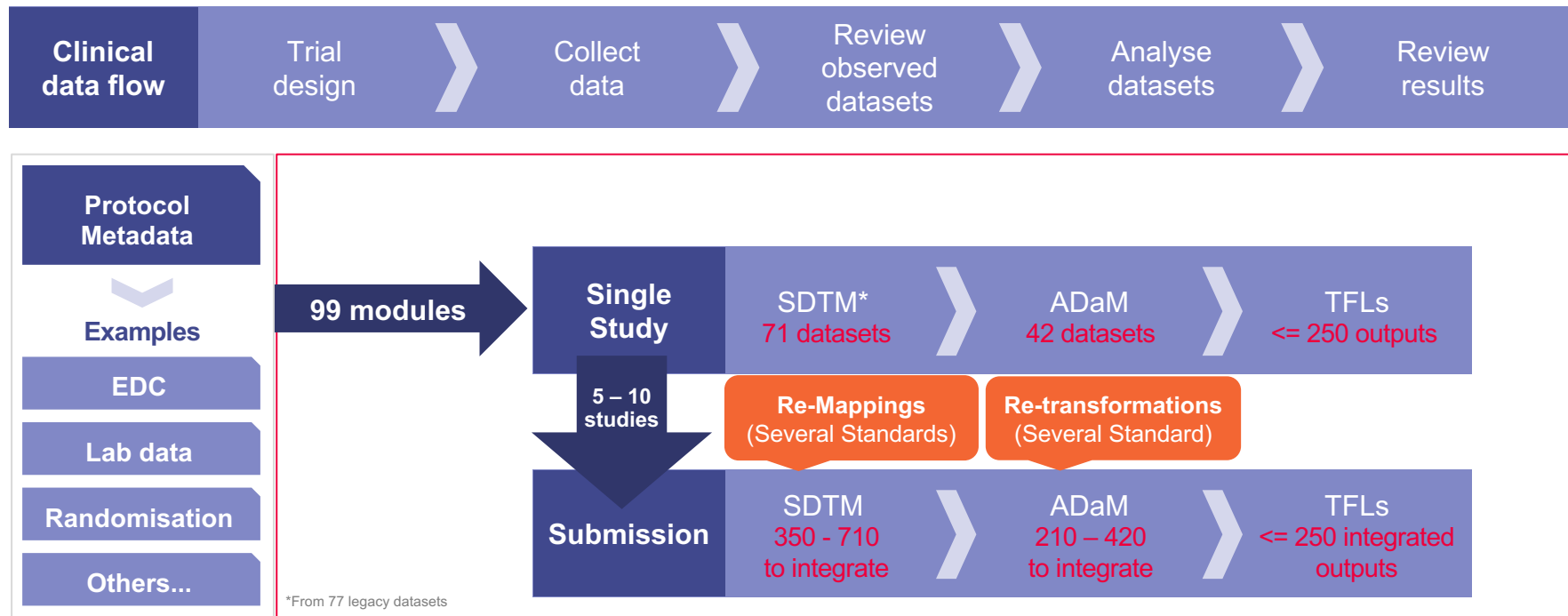


How will knowledge graphs improve clinical reporting workflows?

Presenters: Alexey Kuznetsov (alexey.k.kuznetsov@gsk.com) & Jorine Putter (jorine.8.putter@gsk.com)

Our Problem Statement

Tremendous Resource, Multiple Handoffs, Numerous Transformations



Imagine a world where anything is possible...



True automation of
standard analyses



Ad-hoc requests
delivered on demand



Data visualisations
available in-stream



(Blinded) Analysis
results reviewed in
real-time



Manual effort of
results validation
virtually eliminated

GDPR and patient
consent



Risk-based
monitoring is
proactive



Google-like Q&A
system for our
trial data



Clinical
application of
preclinical AI
algorithms

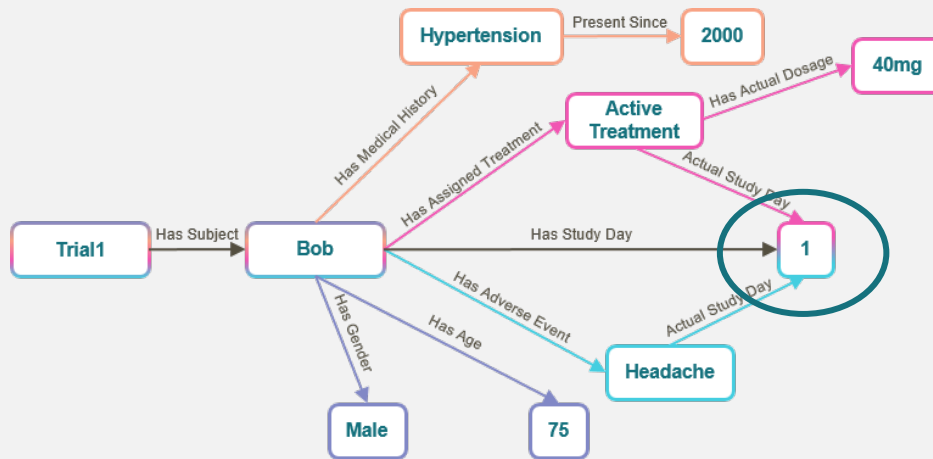


From Imagination to Reality

Clinical Knowledge Graph

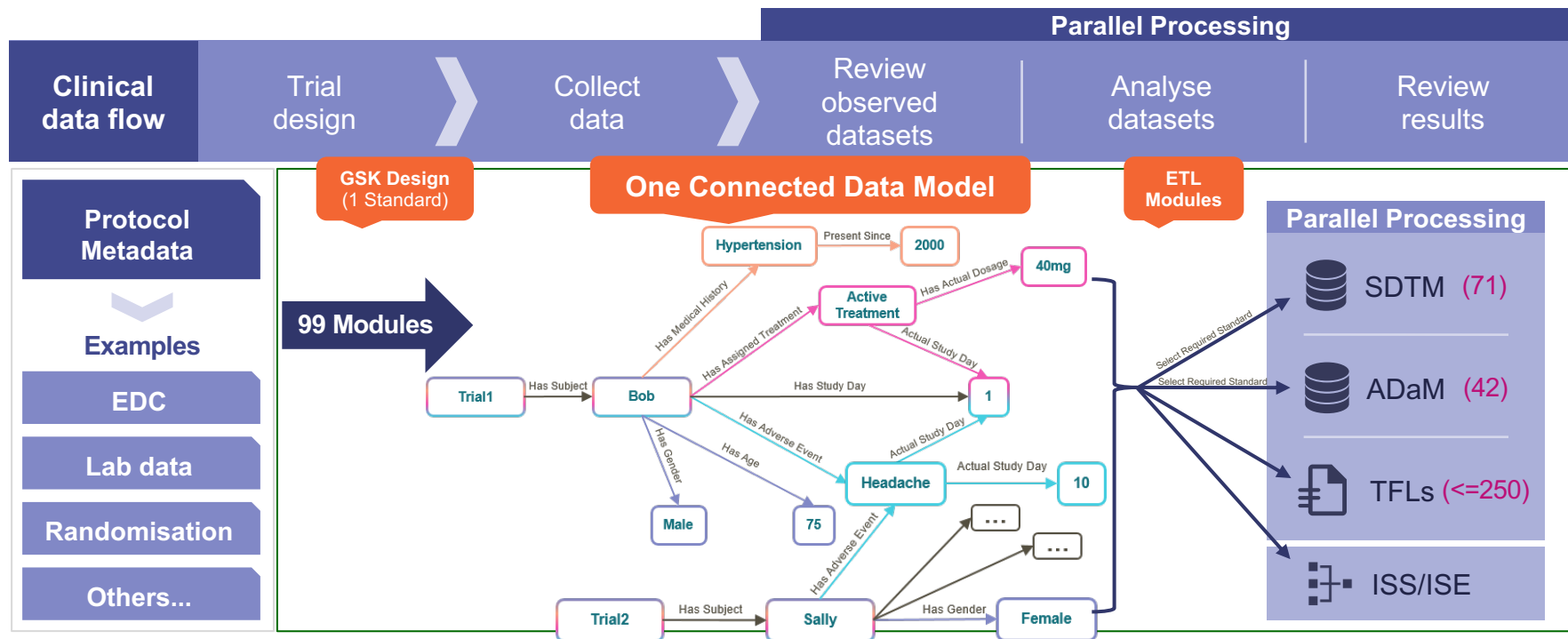
Let's ...to ONE contextualised Clinical Knowledge Graph

Clinical Knowledge Graph

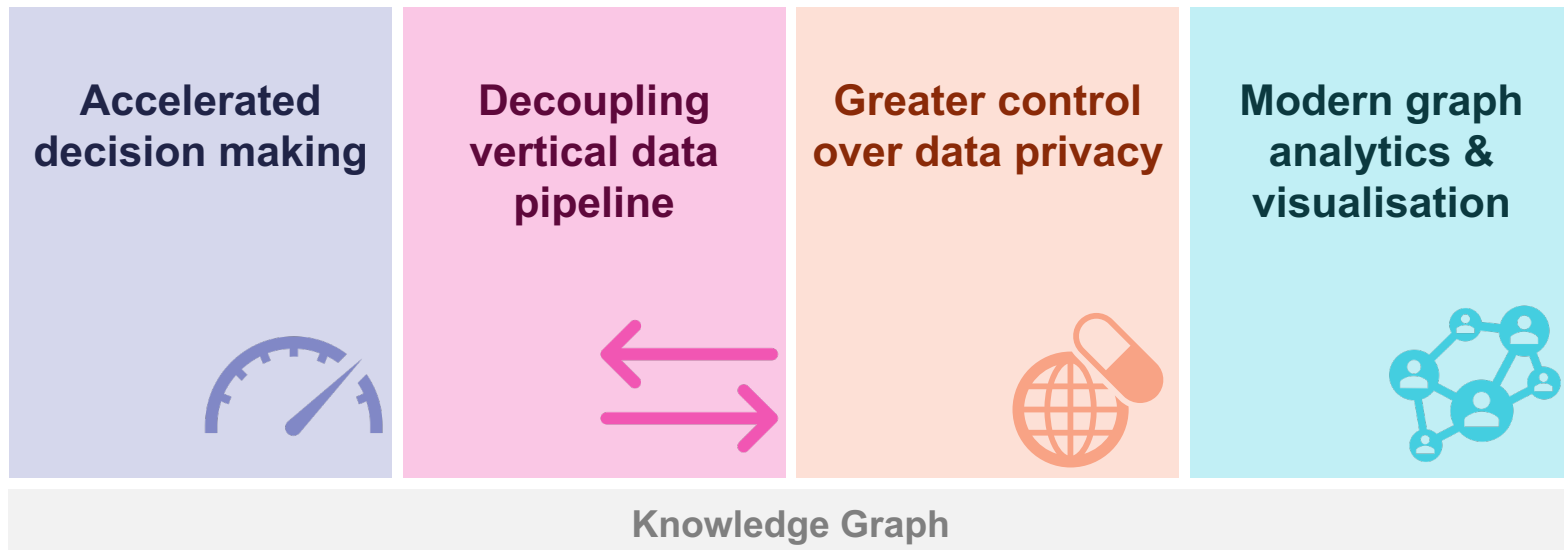


Our Idea

...the Google Translate for our clinical data – helping us translate our complex data landscape to answer important scientific questions

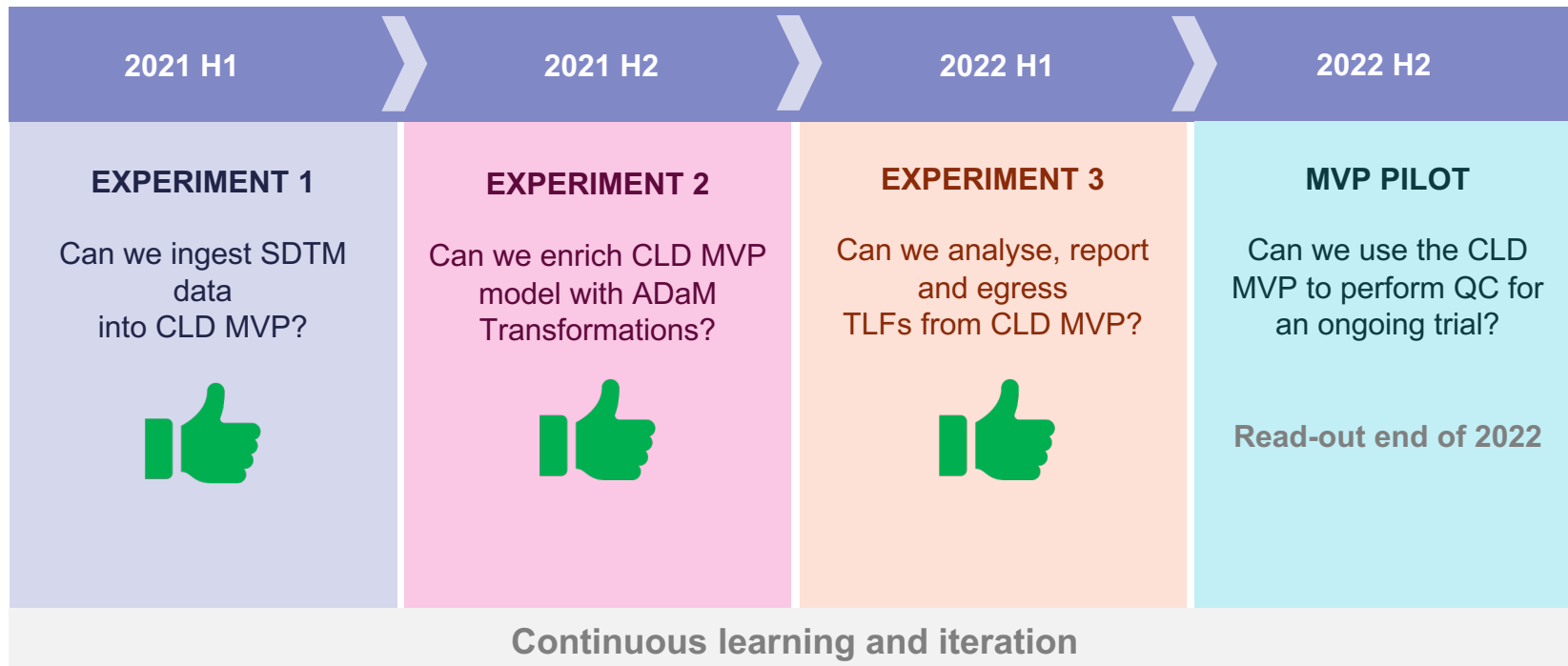


Unique Value



Goal: Test feasibility, desirability & sustainability of idea

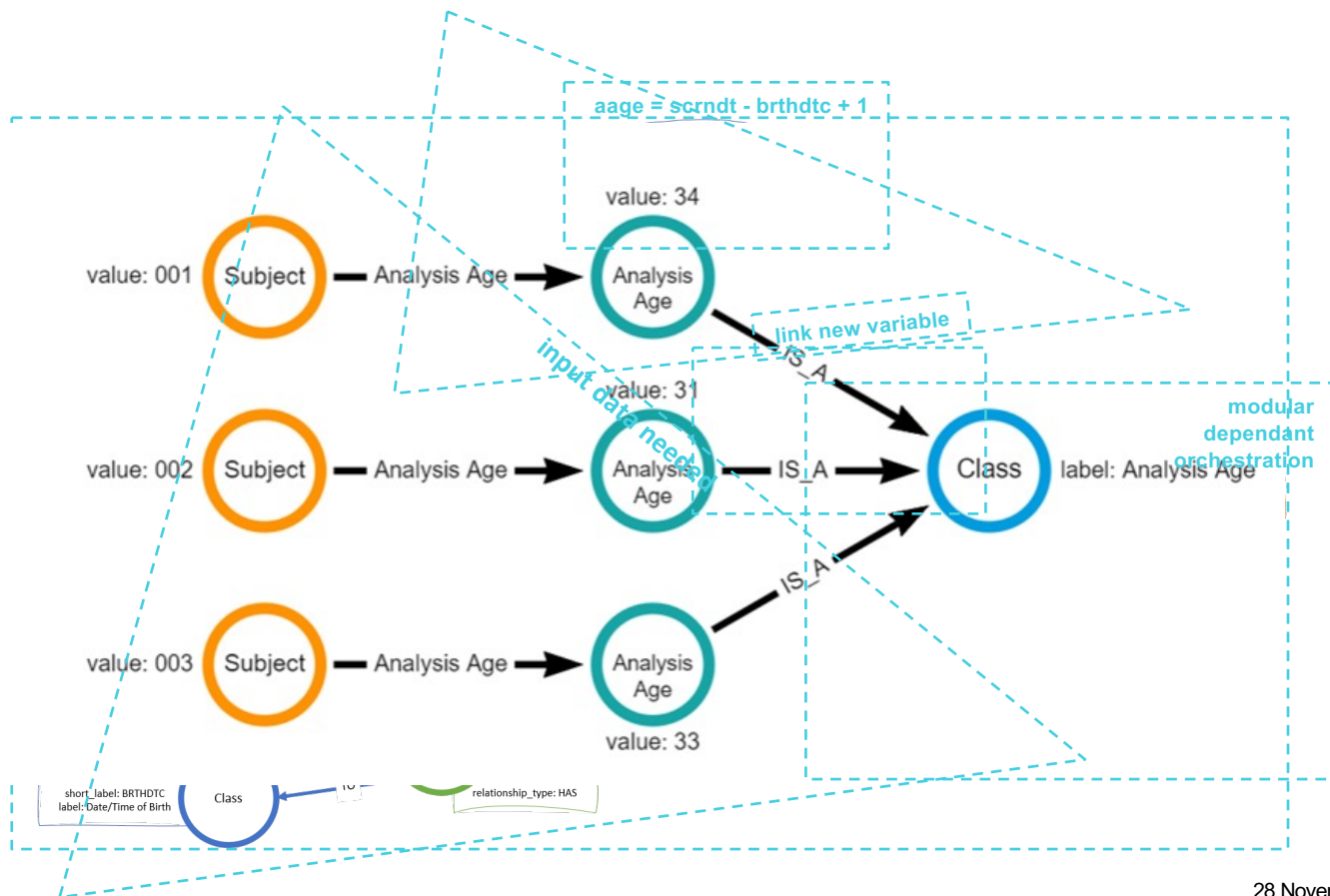
Phased agile & risk-based approach with predefined success criteria



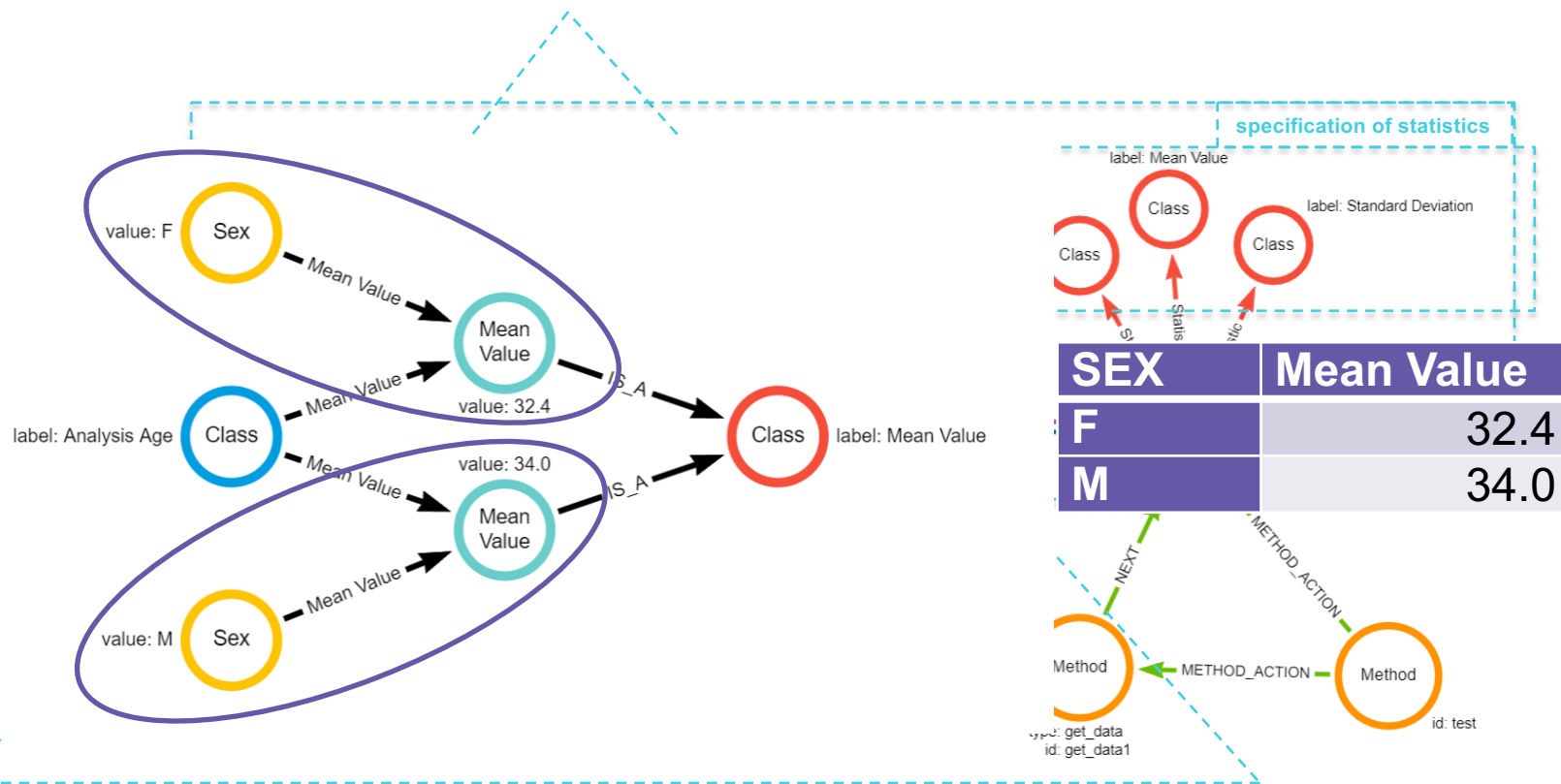
How do we load tables into graph

USUBJID	SEX	BRTHTDTC	RFICDTC
001	M	15-08-1988	05-02-2022
002	F	25-02-1991	05-02-2022
003	F	01-03-1989	10-04-2022

How do we store machine readable derivation metadata as graph



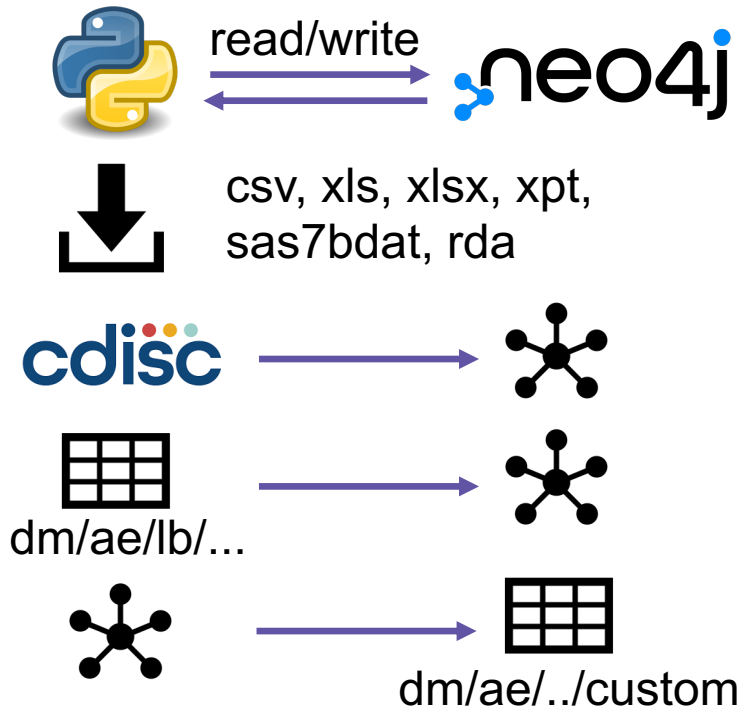
How do we store machine readable summary statistics as graph



Open source assets released

GSK-Biostatistics/neointerface:
NeoInterface - Neo4j made easy for
Python programmers! (github.com)

- tab2neo
- neo4cdisc



Learnings that helped us accelerate our idea



Focused innovation challenge can **greatly** help test **disruptive ideas**



Understand **pain points** & test ideas to **drive informed innovation**



Prioritise 1 idea, test it, refine it, test it, refine it...

Pre-defined success criteria critical in quick decision making



Timeboxed **focused sprints** are great to **inform the path ahead**



Special thanks to...

Michael Rimler
Samantha Warden
Kirsten Langendorf
Johannes Ulander
Dave Iberson-Hurst
Eleanor Sparling
Rachel Ren
James Sefton
William McDermott
Jonathan Deacon
Benjamin Grinsted
Julian West



It takes a village
to raise an idea...

GSK