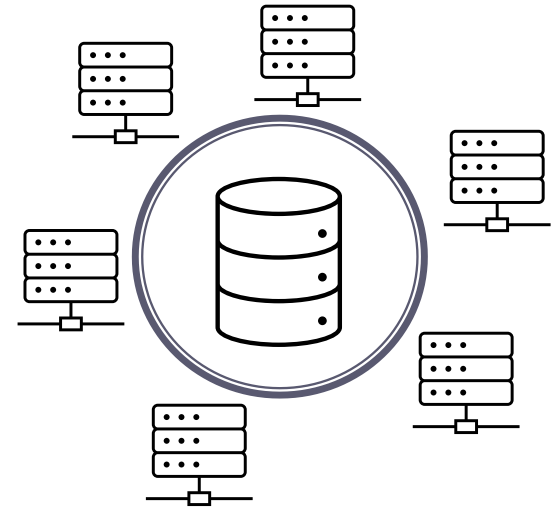




# Introduction to SHAARPEC

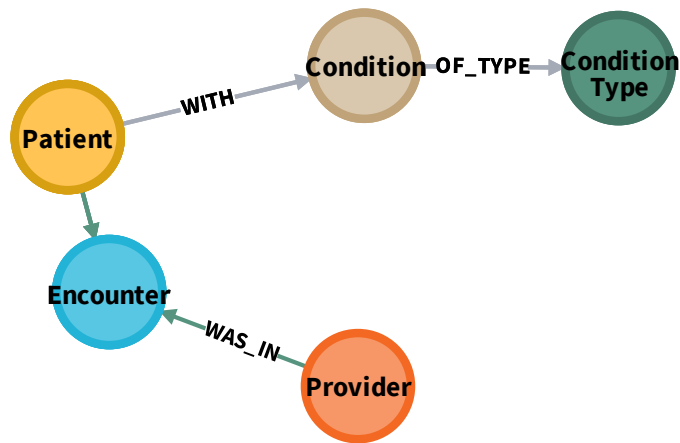
## **SHAARPEC:** FHIR-compliant model for deep integration of healthcare data (clinical, capacity, resource, financial)

- Scalable to large data sets
- Easy to find and compare patient flows
- Easy to work with machine learning/AI

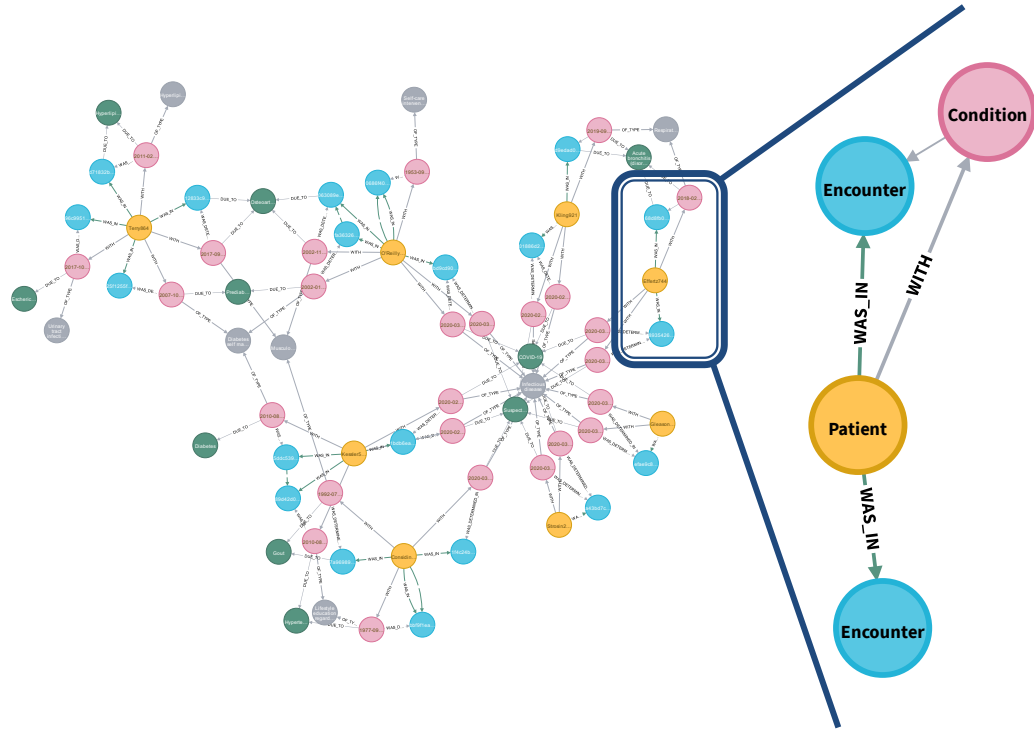


## Move from data tables to a labeled property graph (LPG)

- Nodes and edges with labels on equal footing
- The data is stored as key/value pairs on nodes/edges
- Cheap to traverse the graph and find local structures



# Connect the dots in the graph with patient encounters



## Define encounters:

Patient interactions with the healthcare system

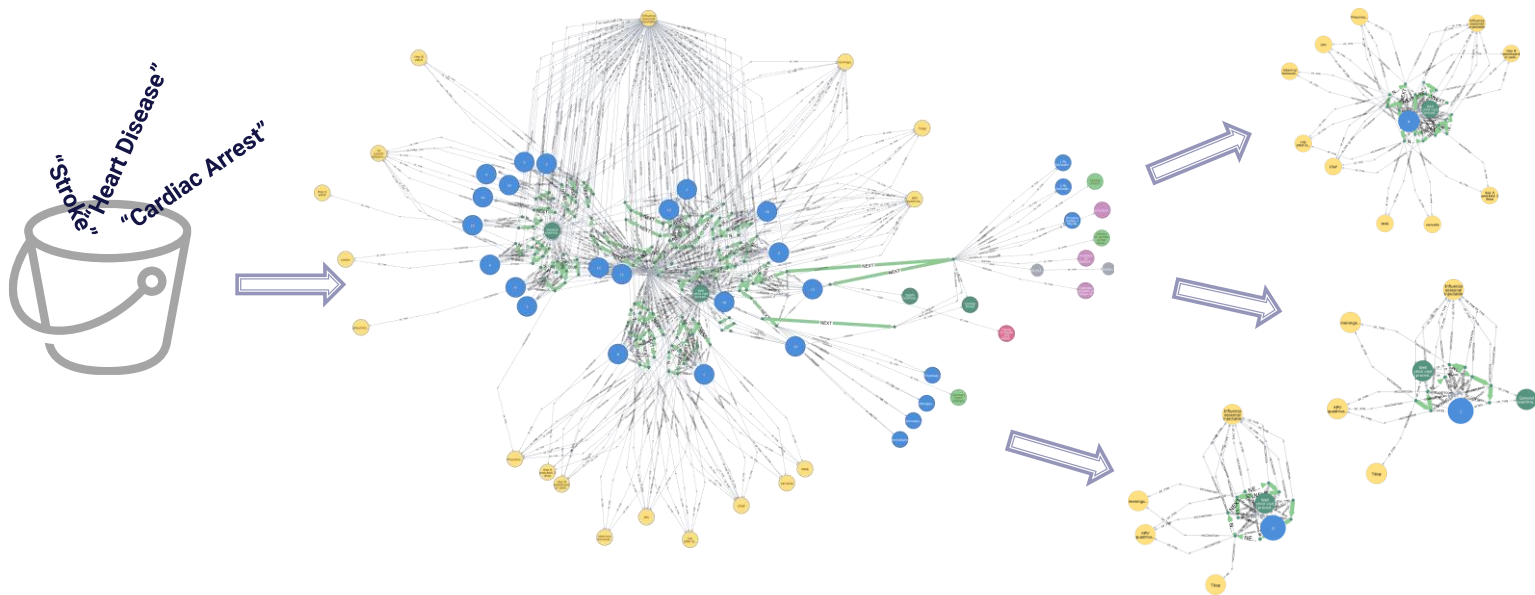
## Build the backbone:

Consecutive encounters as beads-on-string

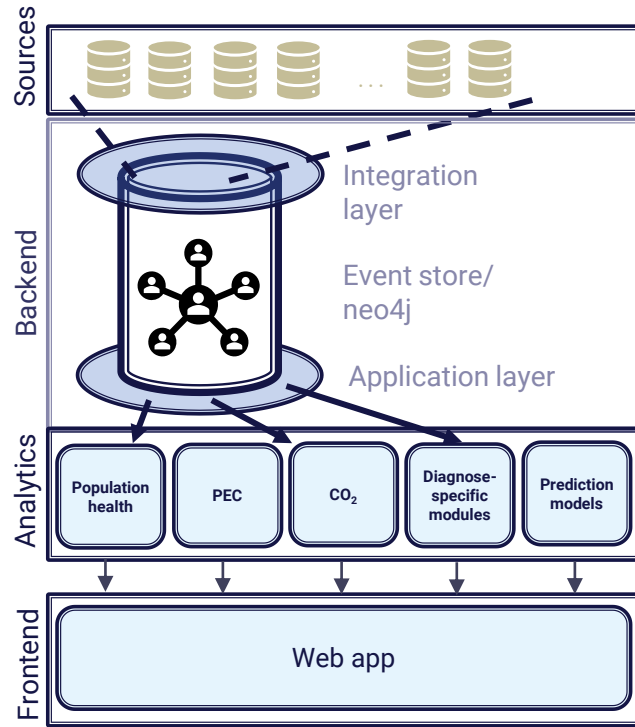
## Fill in the model:

Link conditions, procedures, meds, ..., to the encounters

## Extract patient trajectories from a common cohort



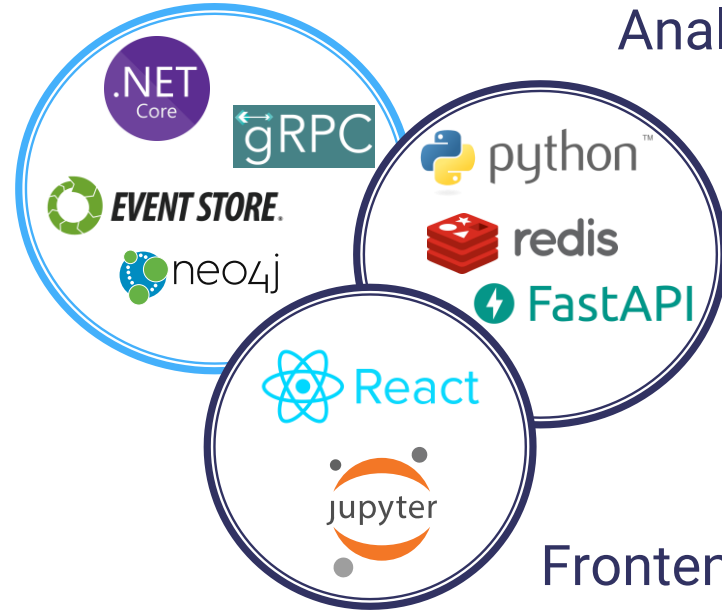
# A platform for deep integration of healthcare data



## Backend

Open-source stack

## Analytics



IEC 62304, IEC 82304 Produkt, IEC 62304 SW Lifecycle, ISO 14971 Risk

- As a management tool via the frontend
  - Predetermined cohort analyses presented in an interactive user interface (UI)
- As a data source to Business Intelligence (BI) tools via the analytics layer
  - Results of cohort analyses as structured text (via REST APIs)
- As a research platform via the backend
  - Python libraries for streaming from the backend