

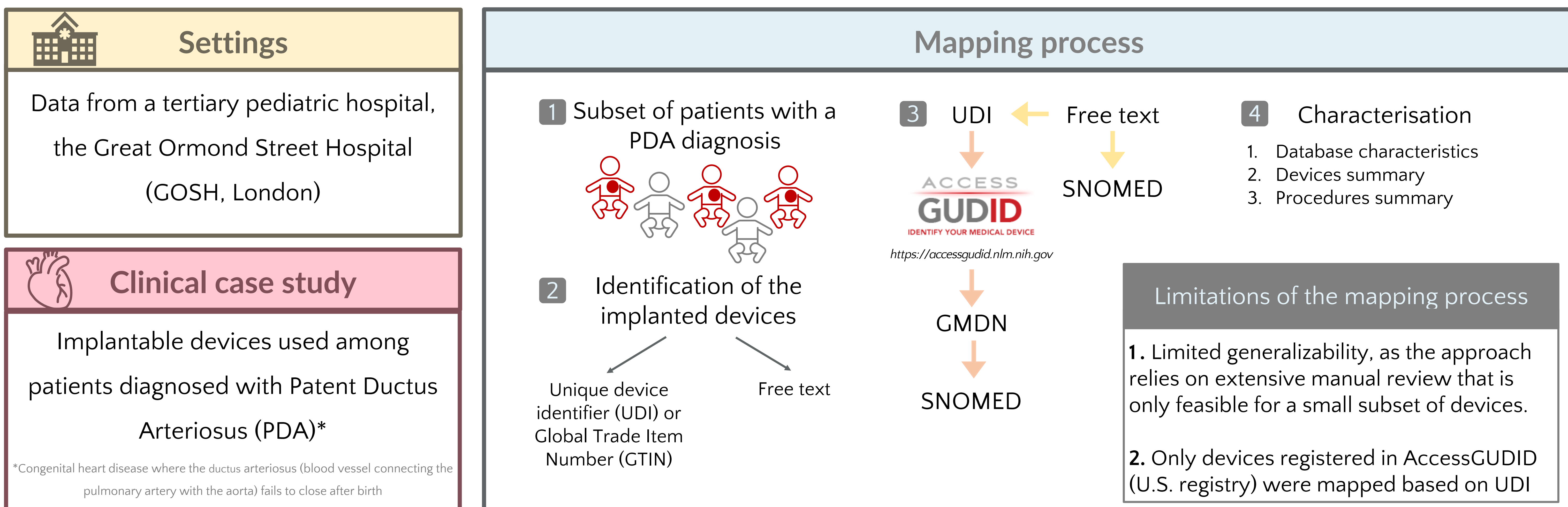
Preparing OMOP for Medical Device Research

Learnings from A Case Study Among Patients with Patent Ductus Arteriosus in the Great Ormond Street Hospital (GOSH), London.

Background: Although OMOP CDM has been established as a reference model, limited evidence has been generated using medical device data, mainly due to the complexity of the mapping process.

Objective: To illustrate how to characterise the *device_exposure* OMOP table in terms of quality checks, granularity and usability after being mapped.

Methods



Devices summary

Figure 1. Most common implantable devices among people with a PDA diagnosis

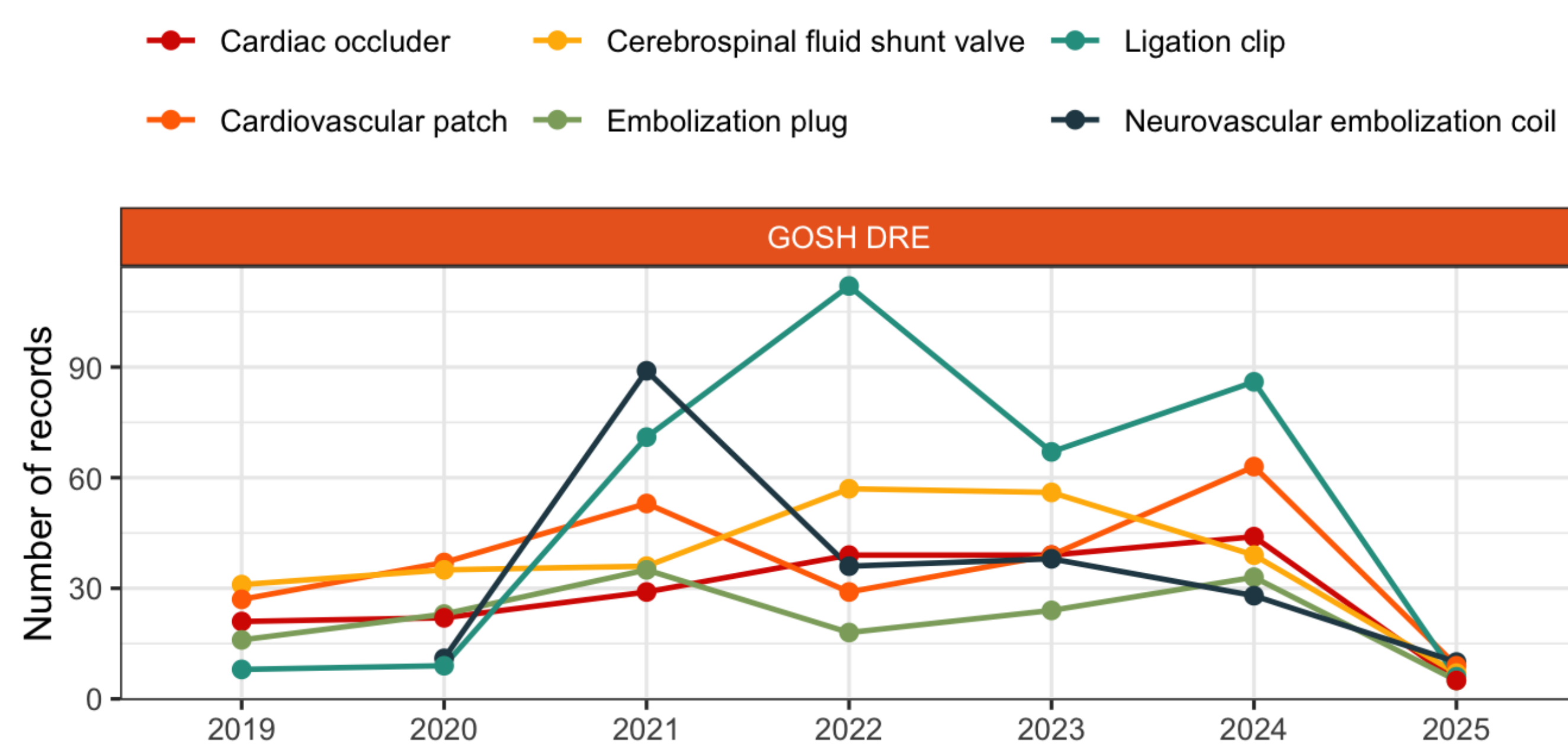
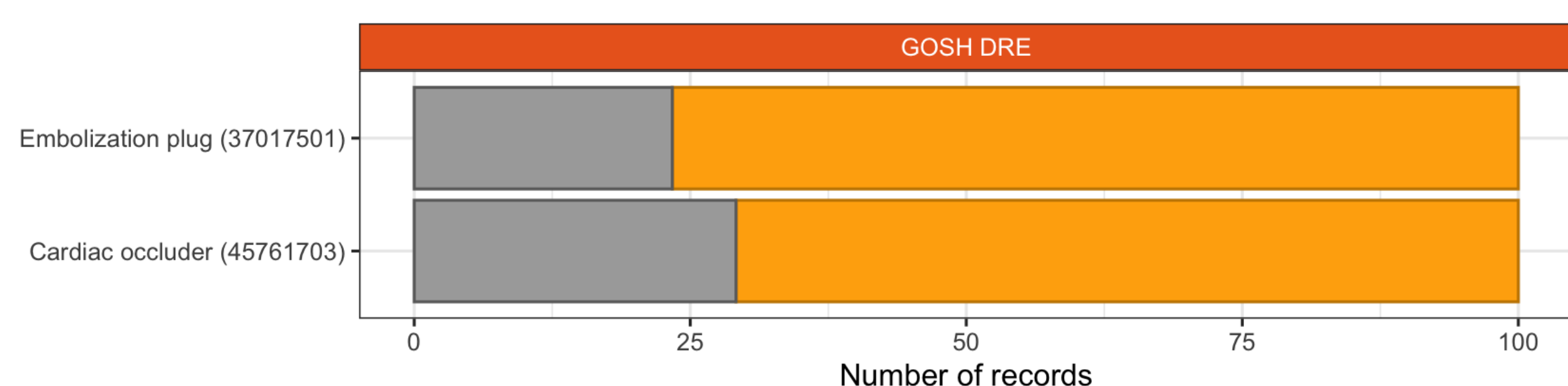


Figure 2. Percentage of devices with UDI

*only those used for PDA closure are presented

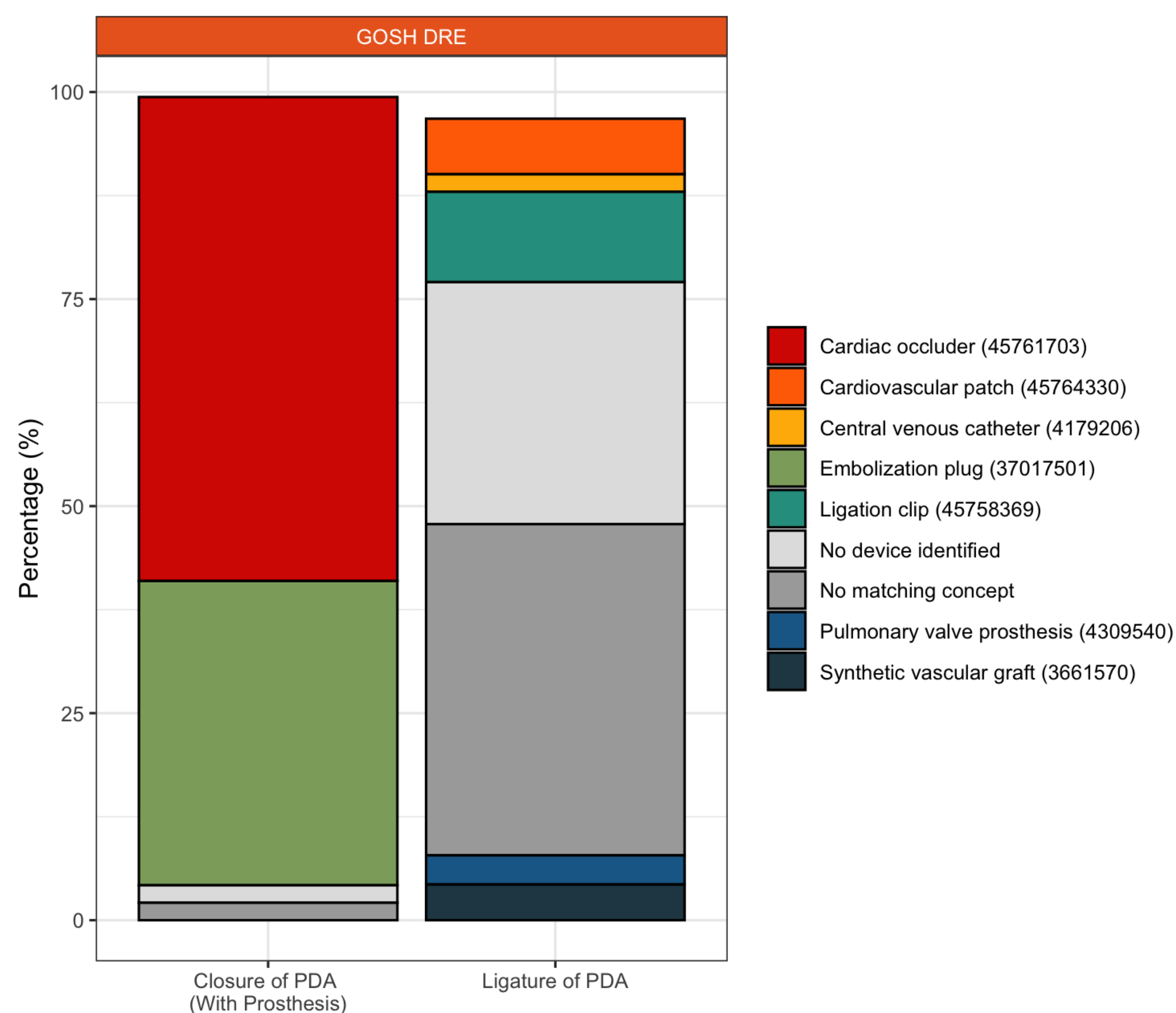
Legend: UDI available (orange), UDI not available (grey)



Procedures summary

Figure 3. Devices implanted on the procedure day

*"No device identified" = no device recorded that day; "no matching concept" = device not mapped to SNOMED
**Devices with <5 counts are not plotted



Conclusions:

- This clinical-case example demonstrates the possibility of incorporating device data into the OMOP CDM.
- Device data add information beyond what can be inferred solely from procedure codes.

Limitations:

- SNOMED vocabulary may be too generic for some use cases linked to device research. Retaining product name, brand, model, and UDI might be necessary for regulatory use cases.



https://dpa-pde-xford.shinyapps.io/PDA_Devices/

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