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BACKGROUND

- ER +ve HER2 –ve metastatic breast cancer presents a complex treatment landscape with the option os endocrine therapies, chemotherapy and targeted agents how available.
- Understanding the value of new medicines in the context of high variation in treatment sequencing presents a challenge.
- Real world data has been suggested as a means of better understanding practice, casemix and the position of a new therapeutics within a complex pathway.
- Published real world data studies to date have typically relied on manual case note review or physician surveys.
- Digital health records may now be sufficiently comprehensive be able to provide real world data describing sequential treatment pathways.
- One treatment sequences are defined using routine data, patient casemix and outcomes from sequential lines of therapy can be studied
- Treatment sequences are particularly challenging to describe in metastatic breast cancer, where prescribing is by a mixture of primary and secondary care services
- Scottish routine health records are unique in providing routine datasets that include both primary and secondary care prescribing information that is linkable to secondary care healthcare records and the National Cancer Registry

METHODS

A complete description of the methods is available on the project wiki: <https://www.wiki.ed.ac.uk/display/CAN>

The Scottish CHI number is a unique patient identifier used across public sector services to identify patients in Scotland. CHI formed the basis of linkage between morethan six individual healthcare datasets.

The patient cohort for this analysis was ascertained from the Secondary Breast Cancer Service database: It included 277 patients diagnosed between 2015 and 2017 inclusive.

AIMS

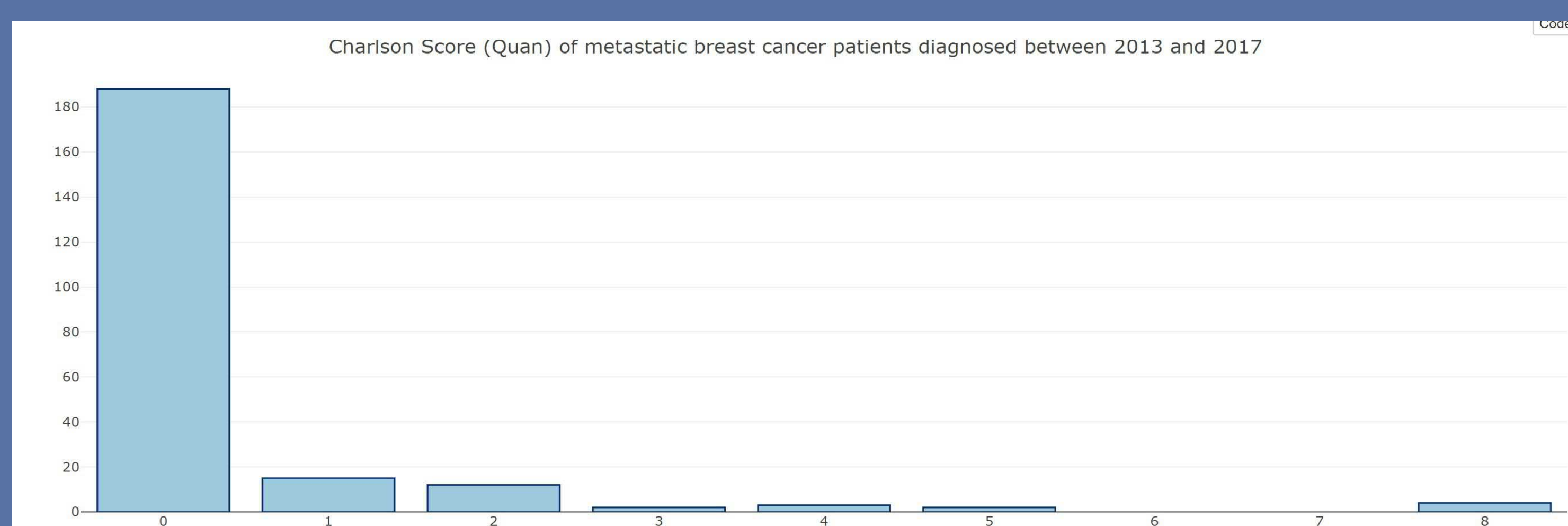
This **Lothian Cancer Data Intelligence [LCDI]** project worked example aimed to:



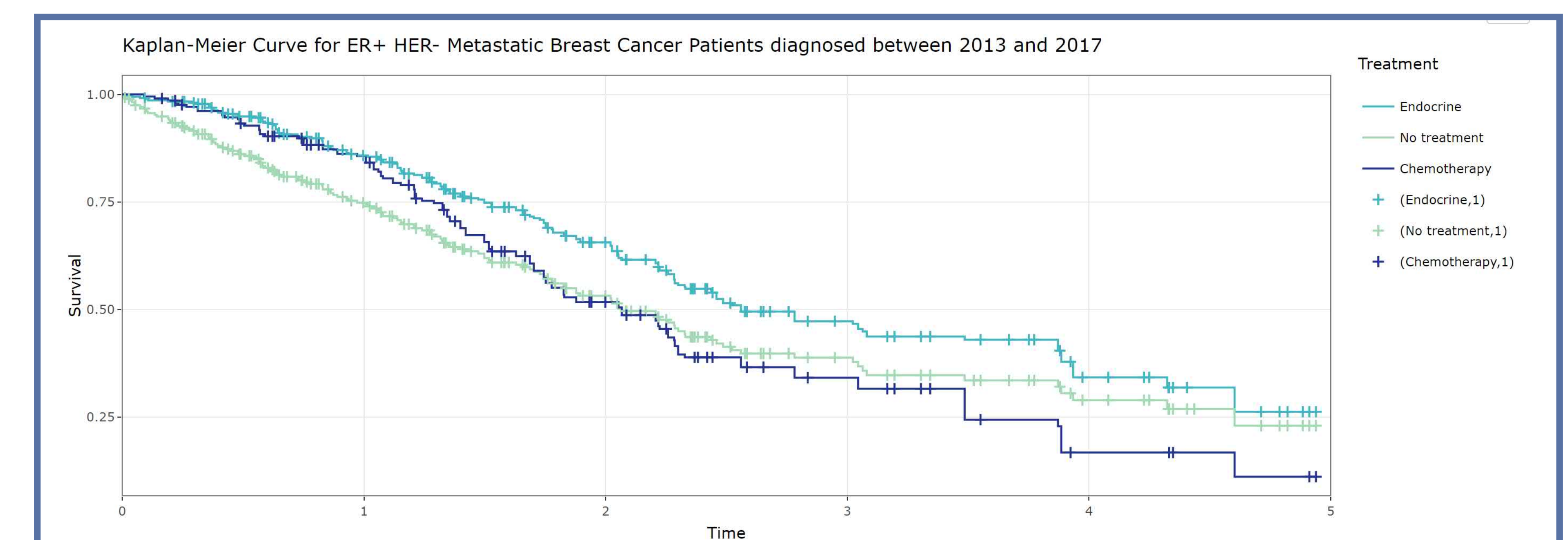
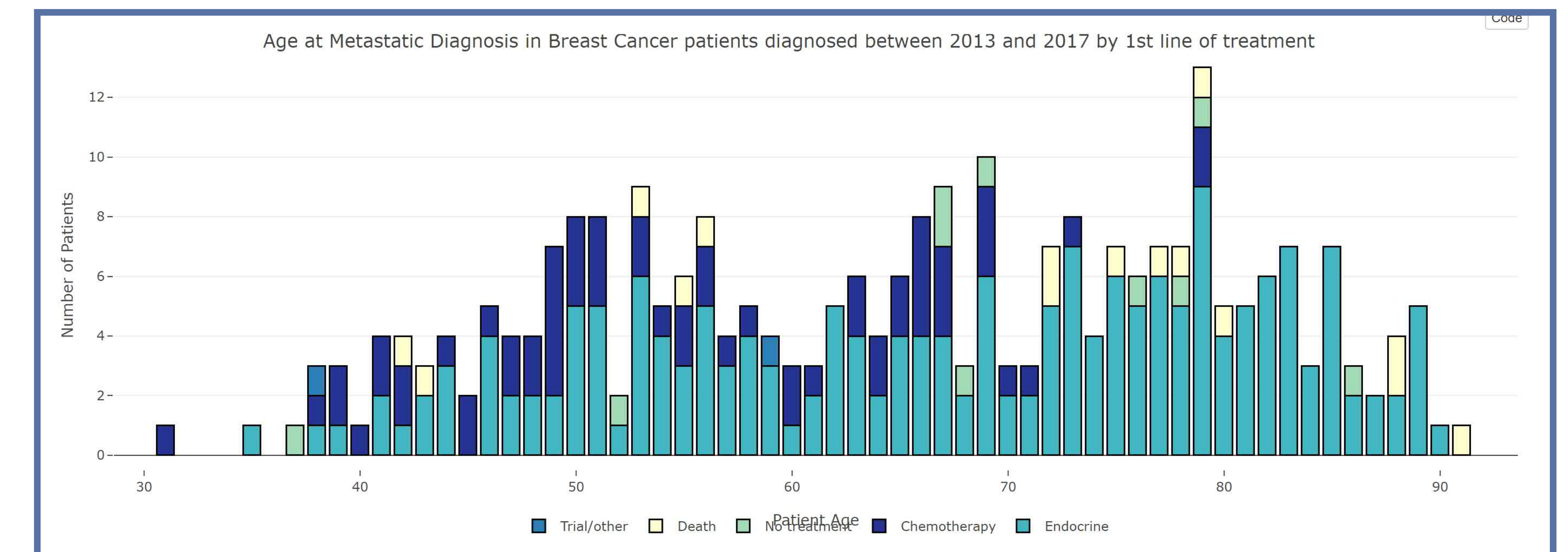
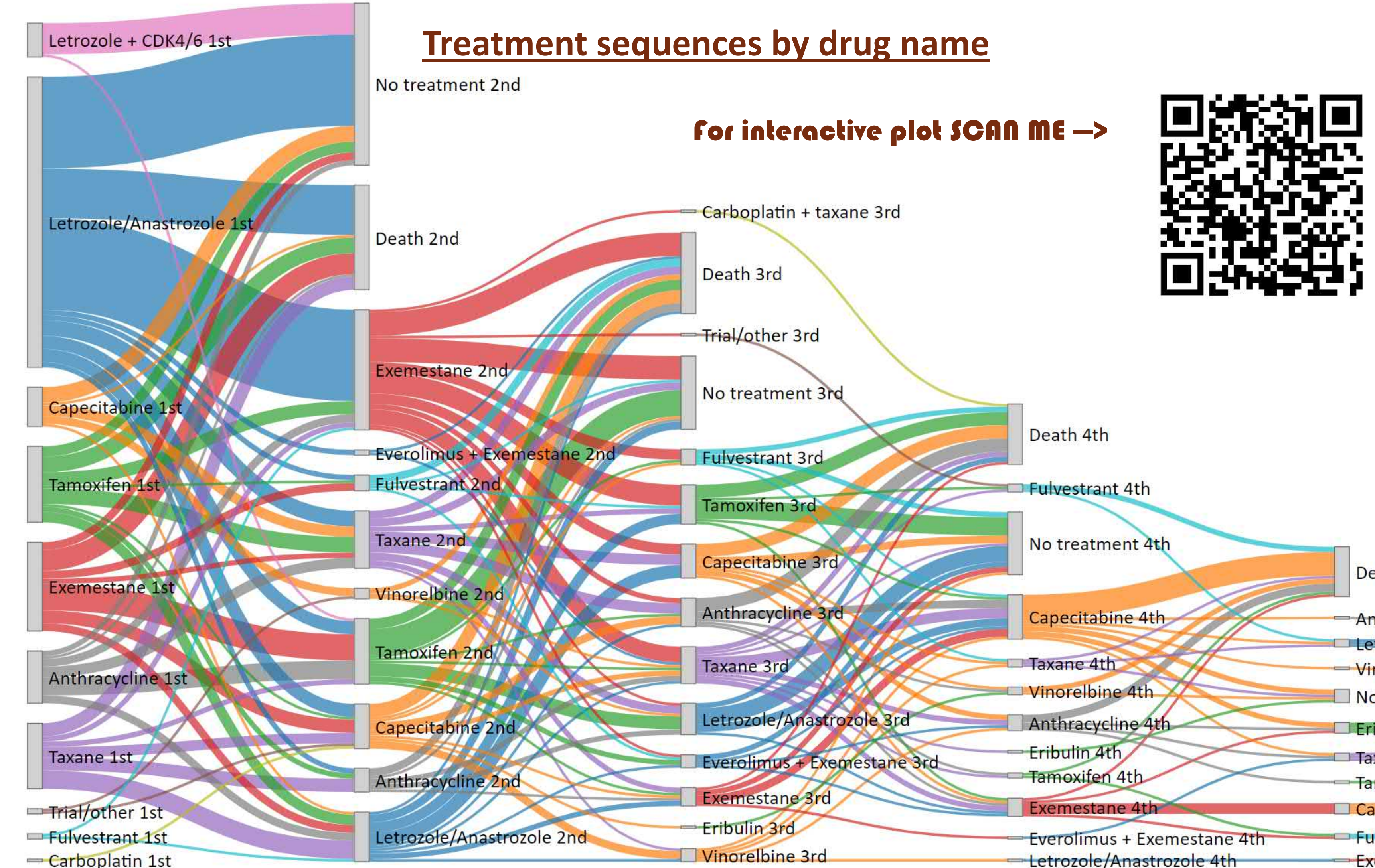
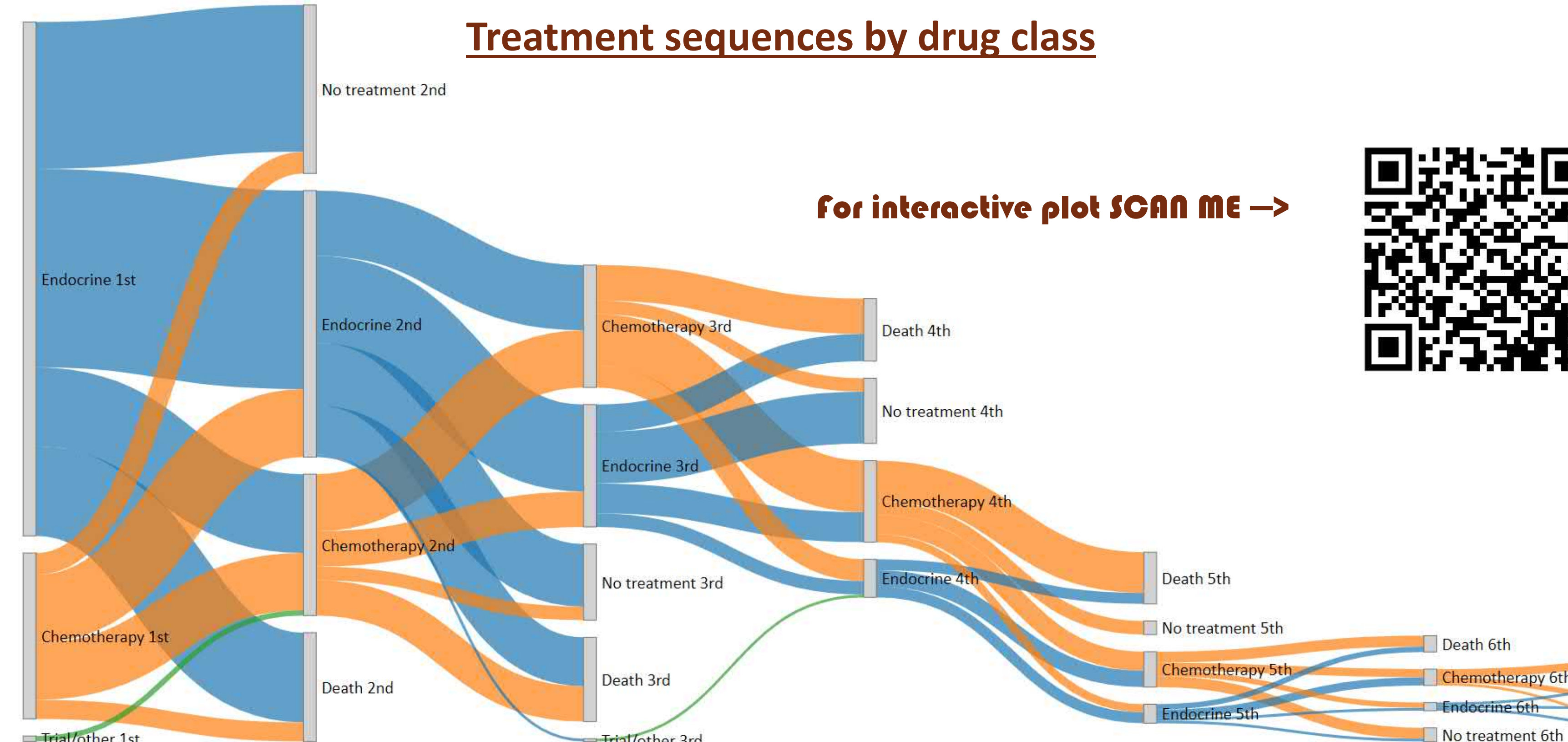
- 1.Describe sequential treatment patterns in metastatic breast cancer within a regional cancer service using data derived only from routine electronic health records.
- 2.
- 3.For each treatment type, at each line of treatment describe:
 - Patient casemix and baseline chartacteristics
 - Clinical outcomes in terms of:
 - Overall survival
 - Time to treatment discontinuation
 - Healthcare utilisation

Datasets

- The **Scottish Morbidity Record (SMR)**
 - SMR06 is the Scottish Cancer Registry
 - SMR01 details inpatient activity
 - SMR00 details outpatient activity
- The **Prescribing Information System (PIS)** details community prescribing
- The **Scottish National Cancer Audit** dataset details diagnostic, staging and initial treatment information
- The **Edinburgh Cancer Centre Secondary Breast Cancer Service database** identified patients with metastatic breast cancer
- ChemoCARE** is the chemotherapy prescribing system
- The **South and East Scotland Cancer Database** is a comprehensive regional treatment and outcomes database which commenced in 1971



RESULTS



Time to treatment discontinuation and Healthcare utilisation are detailed on the project webpage

View complete project description

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CONCLUSIONS

- It is now possible to describe complex treatment sequencing in Scotland using a combined secondary and primary care prescribing data sources.
- Visualisation is a challenge and is best achieved by interactive online plots
- Real world data is now a realistic means of better understanding practice, casemix and the position of a new therapeutics within a complex pathway.