Detailed Cancer Specific Analytics in the Remote OHDSI Network Settings

Observational Cancer Research is Challenging

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"What is the overall survival for patients with non-metastatic carcinoma of the neck of bladder in remission after first line of gemcitabine-containing chemotherapy?"

Concept	Category
Carcinoma	Histology
Neck of bladder	Anatomical site
Non-metastatic disease	Tumor attribute
Disease in remission	Condition Episode
First line treatment	Treatment Episode
Chemotherapy regimen	Regimen
Gemcitabine	Component of regimen

Oncology Module

1. **Cancer Disease Model**

   Cancer Diagnosis: Base Diagnosis + Diagnostic Modifiers

   (One-to-many connection between them)

2. **Cancer Treatment Model**

   Composite Level (Treatment Episodes) or Individual Level (standard OMOP)

3. **Cancer Episode Model**

   Continuous periods of disease or treatment with distinct clinical meaning

   Composed of multiple events

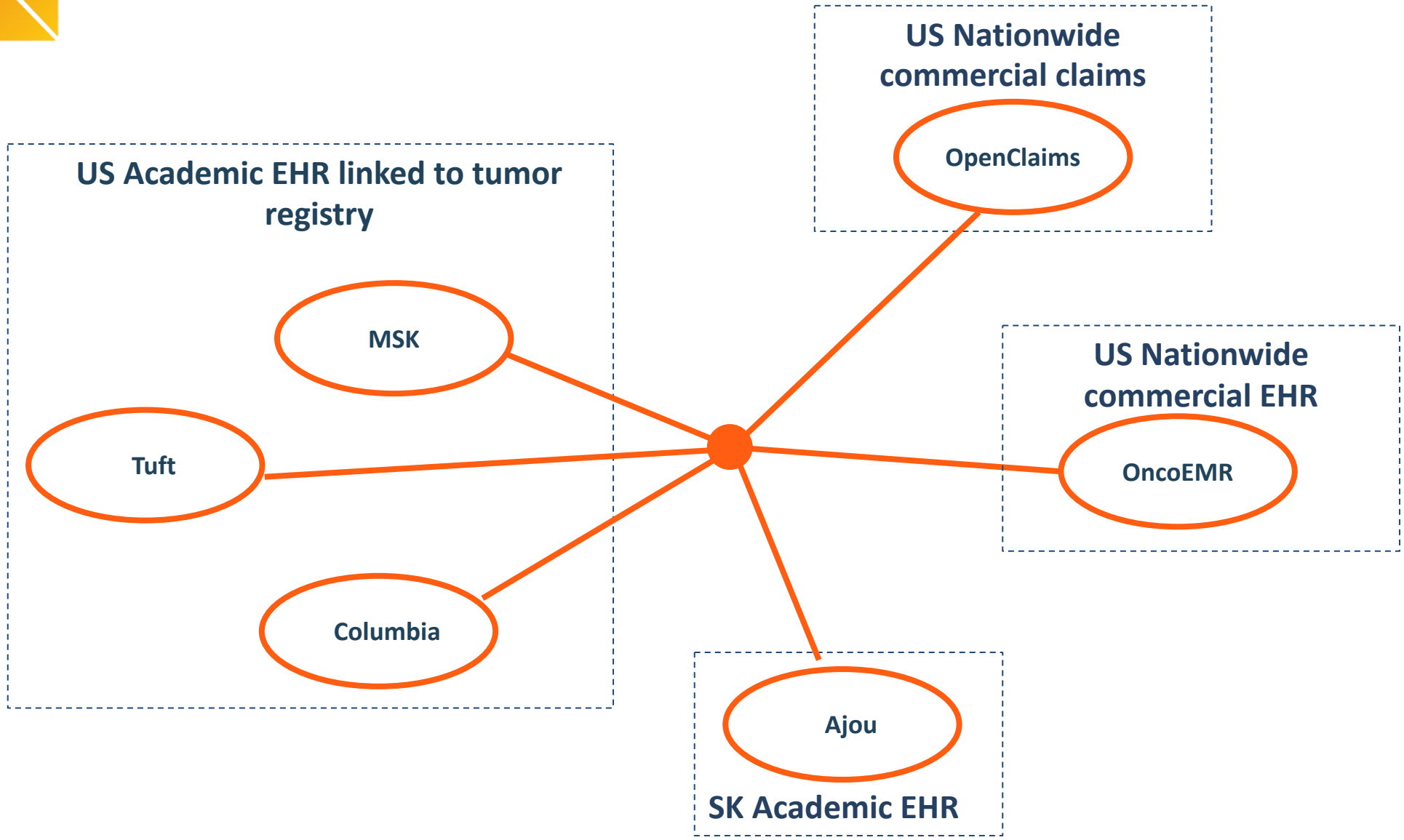
   Essential for conducting cancer research

Bladder Cancer Matters

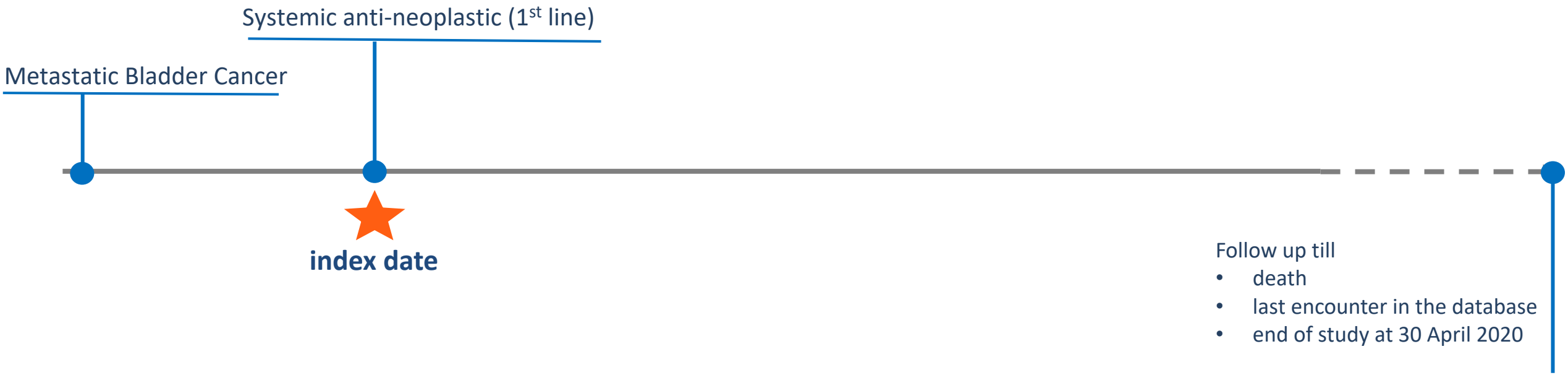
- Bladder cancer carries a large societal burden
- ~10% of bladder cancer present with metastatic disease with an associated 5-year survival rate of 5-30% and with limited treatment options.
- Data on the epidemiological characteristics, treatment patterns and outcomes in these patients with metastatic bladder cancer are limited

- Network study on the treatment pattern and outcomes of patients with metastatic bladder cancer using the Oncology Module

Setting


US Nationwide commercial claims
OpenClaims
US Academic EHR linked to tumor registry
MSK
Tuft
Columbia
US Nationwide commercial EHR
OncoEMR
Ajou
SK Academic EHR

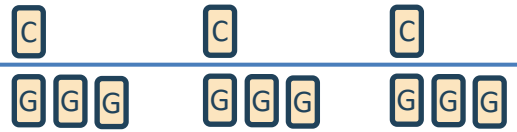
Adult patients with metastatic bladder cancer



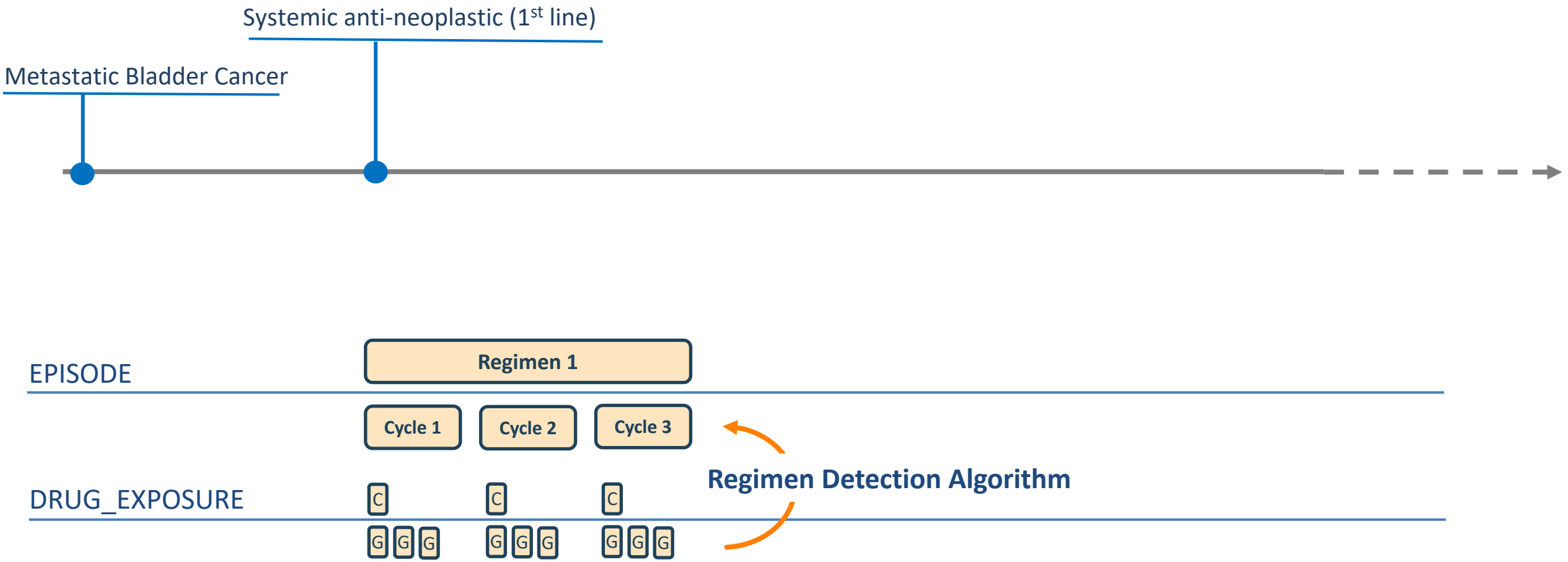
Adult patients with metastatic bladder cancer

EPISODE

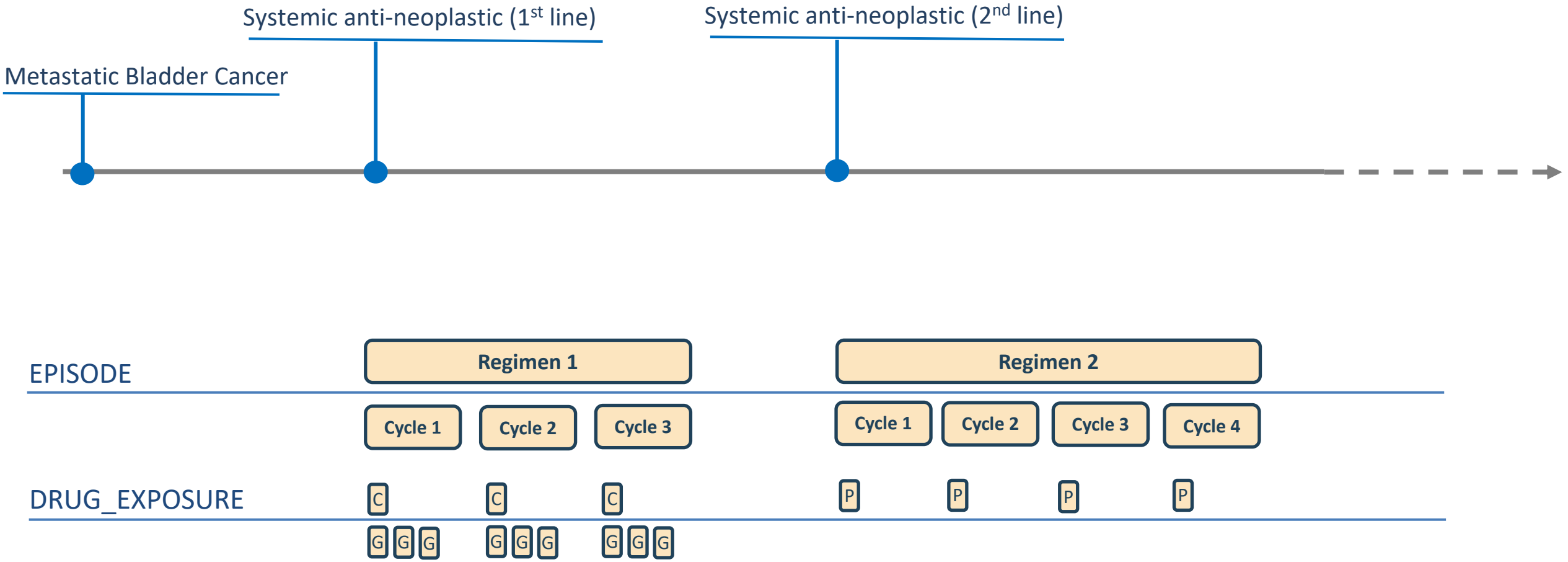
DRUG_EXPOSURE



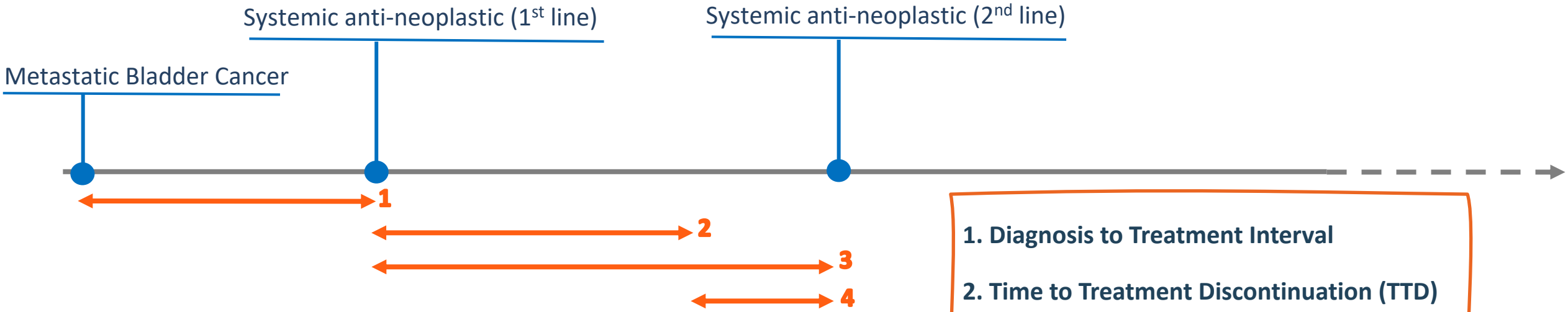
Adult patients with metastatic bladder cancer



Adult patients with metastatic bladder cancer



Adult patients with metastatic bladder cancer



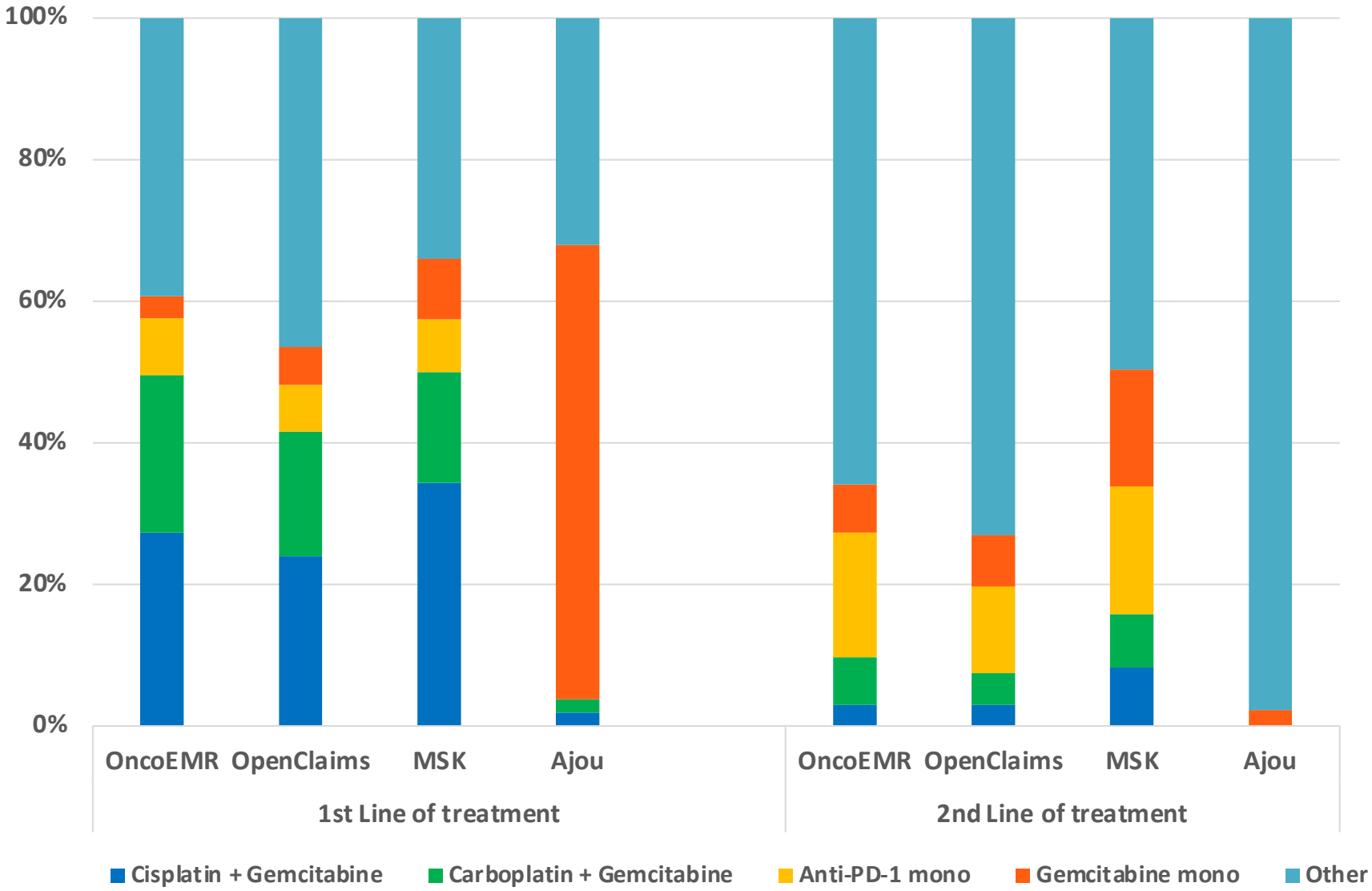
1. Diagnosis to Treatment Interval
2. Time to Treatment Discontinuation (TTD)
3. Time to Next Treatment (TTNT)
4. Treatment-free Interval

Results

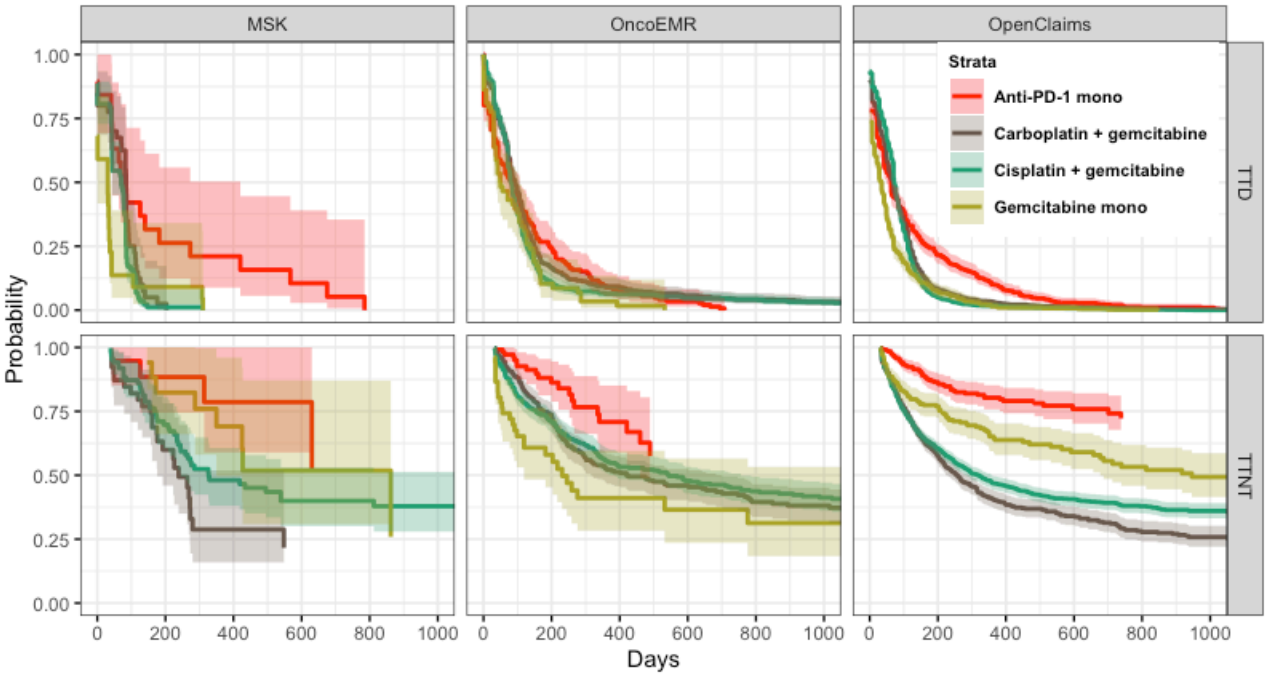
- 11,525 metastatic bladder cancer patients treated with systemic anti-neoplastic agents were identified
  - Age at the time of metastatic disease (median): 52 (OpenClaims)- 69 (Columbia)
  - 61%-84% of patients were men

- Median follow up time from initiation of systemic antineoplastic agents: 340 days OpenClaims to 474 days days in Ajou

Distribution of Top Treatment Regimens



Selected KM analysis of TTD and TTNT in the 1st line



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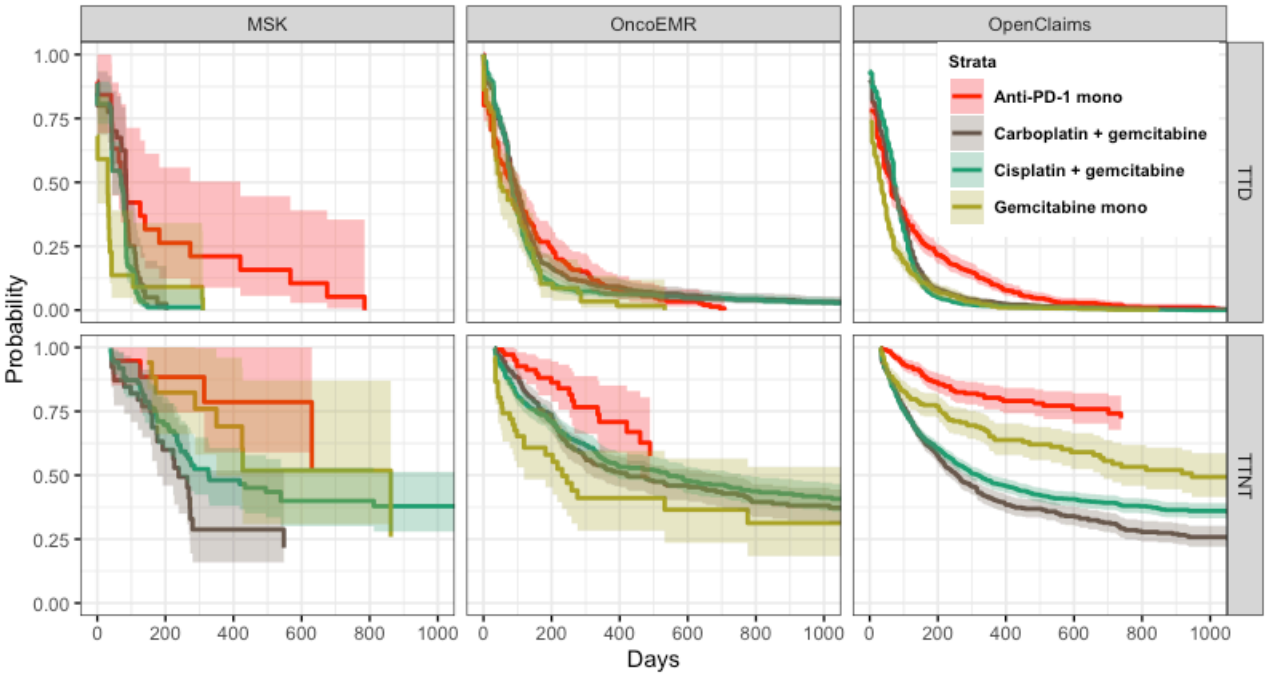

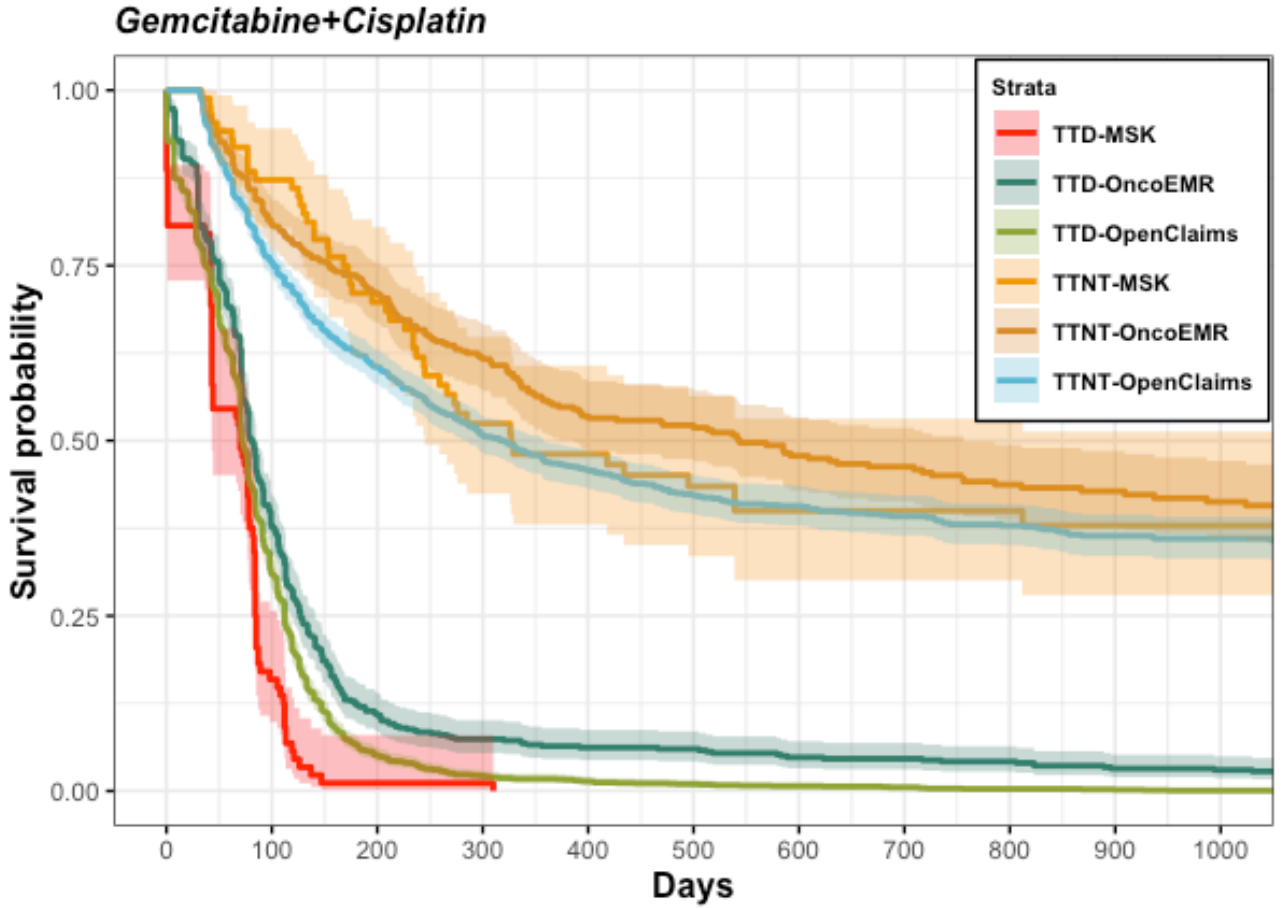

We are ready

- Oncology module enables observational cancer study in a network setting
- Provides the details and foundation to answer series of questions in cancer:
  1. Cancer burden (e.g., relative 5-year survival, incidence and mortality)
  2. Characteristics of patients
  3. Treatment pattern, dosing, regimens and sequence
  4. Treatment administration
  5. Benchmarking
  6. Real world outcomes

- **Bring your interesting questions and let's get going**

Thank you!

For more information visit:
https://github.com/OHDSI/OncologyWG/wiki