Study Report

P4-C1-012

DARWIN EU® - Characterisation of systemic treatments for the management of ovarian cancer

30/04/2026

Version 3.0

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Public

CONTENTS

Study title	DARWIN EU® - Characterisation of systemic treatments for the management of ovarian cancer
Study report version	V3.0
Date	30/04/2026
EUPAS number	EUPAS1000000815
Active substance	Alkylating agents: Altretamine, Chlorambucil, Cyclophosphamide, Ifosfamide, Lomustine, Melphalan, Thiotepa, Treosulfan Anthracycline: Doxorubicin, Epirubicin, Mitoxantrone Antimetabolites: Fluorouracil, Gemcitabine, Methotrexate DNA agents: Trabectedin Hormonal agents: Dexamethasone, Medroxyprogesterone Monoclonal antibodies: Bevacizumab, mirvetuximab soravtansine PARP inhibitors: Niraparib, Olaparib, Rucaparib Platinum-based: Carboplatin, Cisplatin Taxanes: Docetaxel, Paclitaxel Topoisomerase inhibitors: Etoposide, Topotecan Vinca Alkaloid: Vinblastine
Medicinal product	None
Research question and objectives	Research question: What systemic treatments are used for the management of ovarian cancer? The specific objectives of this study were: 1. To describe demographic and pre-specified characteristics of patients newly diagnosed with ovarian cancer, overall and by age. 2. To describe the number of patients treated with systemic treatments, by ingredient and treatment class (i.e. alkylating agents, anthracyclines, antimetabolites, DNA agents, platinum-based chemotherapy, taxanes, topoisomerase inhibitors, vinca alkaloid, PARP inhibitors, monoclonal antibodies, hormonal agents), overall and by age, study period and where possible, cancer stage. 3. To describe sequences of treatments and treatment combinations for ovarian cancer, overall and stratified by age, and where possible, cancer stage.
Countries of study	Denmark, France, the Netherlands, and Norway.
Authors	Anum Zahra (a.zahra@darwin-eu.org); Berta Raventós (b.raventos@darwin-eu.org); Talita Duarte-Salles (t.duarte@darwin-eu.org); Anton Barchuk (a.barchuk@darwin-eu.org); Cesar Barboza (c.barboza@darwin-eu.org); Maarten van Kessel (m.vankessel@darwin-eu.org)

LIST OF ABBREVIATIONS

Acronyms/term	Description
ATC	Anatomical Therapeutic Chemical
ANCR	Association of Nordic Cancer Registries
BRCA	Breast cancer gene
CC	Coordination centre
CDM	Common Data Model
CDW Bordeaux	Clinical Data Warehouse of Bordeaux University Hospital.
CRN	Cancer registry Norway
DARWIN EU®	Data Analysis and Real-World Interrogation Network
DOI	Declaration of Interests
DQD	Data Quality Dashboard
DRE	Digital Research Environment
DK-DHR	Danish Data Health Registries
DTZ	Data Transfer Zone
ECOG	Eastern Cooperative Oncology Group
ED	Emergency Department
EHR	Electronic Health Records
EMA	European Medicines Agency
ENCePP	European Network of Centres for Pharmacoepidemiology and Pharmacovigilance
EOC	Epithelial ovarian cancer
ESMO	European Society for Medical Oncology
EU	European Union
EUPAS	EU Post-Authorisation Studies Register
FIGO	International Federation of Gynaecology and Obstetrics
GDPR	General Data Protection Regulation
GP	General Practitioner
HRD	Homologous Recombination Deficiency
ICD	International Classification of Diseases
ICD-O-3	International Classification of Diseases for Oncology, Third Edition
IKNL	Netherlands Comprehensive Cancer Organisation
IP	Inpatient
IQR	Interquartile range
IRB	Institutional Review Board
OHDSI	Observational Health Data Sciences and Informatics
OMOP	Observational Medical Outcomes Partnership
OP	Outpatient

Acronyms/term	Description
NCR	Netherlands Cancer Registry
PARP	Poly (ADP-ribose) polymera
RxNorm	Medical prescription normalised
SNOMED	Systematized Nomenclature of Medicine
TNM	Tumour, Nodes and Metastasis
WHO	World Health Organisation
WHO-PS	WHO Performance Status

1. TITLE

DARWIN EU® - Characterisation of systemic treatments for the management of ovarian cancer

2. DESCRIPTION OF THE STUDY TEAM

Study team role	Names	Organisation
Principal Investigator	Anum Zahra Berta Raventós Talita Duarte-Salles	Erasmus MC
Epidemiologist	Yuqing Hu[1]	Erasmus MC
Data Scientist	Cesar Barboza Maarten van Kessel Ross Williams Ioanna Nika Ger Inberg	Erasmus MC
Clinical Domain Expert	Anton Barchuk	Erasmus MC
Study Manager	Natasha Yefimenko	Erasmus MC
Data source	**Names**	**Data Partner Organisation***
DK-DHR	Elvira Bräuner Susanne Bruun	Danish Data Health Registries
CDW Bordeaux	Guillaume Verdy	Clinical Data Warehouse of Bordeaux University Hospital.
NCR	Jelle Evers Maaike van Swieten Maaike van der Aa	Netherlands Comprehensive Cancer Organisation
CRN	Espen Enerly Sigrid Leithe Anna Skog	Cancer Registry Norway

*Data partners do not have an investigator role. Data partners execute code at their data source, review, and approve their results.
[1] Added to study team on 12th December 2025.

3. ABSTRACT

Title

DARWIN EU® - Characterisation of systemic treatments for the management of ovarian cancer.

Rationale and background

Ovarian cancer remains a significant health concern in Europe, resulting in more deaths than any other gynaecological cancer. Treatment strategies for ovarian cancer include surgery, chemotherapy, and targeted therapies that are selected based on patient characteristics, as well as type and stage of cancer. Chemotherapy drugs include alkylating agents, anthracyclines, antimetabolites, platinum-based drugs, taxanes, and other targeted therapies, such as poly (ADP-ribose) polymera (PARP) inhibitors, hormonal agents, and anti-angiogenesis drugs (Bevacizumab). This study aimed to inform which systemic treatments are actively being used as a treatment for ovarian cancer across selected data sources in the DARWIN EU® network.

Research question and objectives

Research questions

What systemic treatments are used for the management of ovarian cancer?

Objectives

The study aimed to characterise systemic treatments for the management of ovarian cancer.

The specific objectives of this study were:

1. To describe demographic and pre-specified characteristics of patients newly diagnosed with ovarian cancer, overall and by age.
2. To describe the number of patients treated with systemic treatments, by ingredient and treatment class (i.e. alkylating agents, anthracyclines, antimetabolites, DNA agents, platinum-based chemotherapy, taxanes, topoisomerase inhibitors, vinca alkaloid, PARP inhibitors, monoclonal antibodies, hormonal agents), overall and by age, study period and where possible, cancer stage.
3. To describe sequences of treatments and treatment combinations for ovarian cancer, overall and stratified by age, and where possible, cancer stage.

Methods

Study design

Characterisation study to describe systemic treatments and patients with ovarian cancer.

Population

The study population included all individuals registered as female sex who were newly diagnosed with ovarian cancer and were present in the data sources during the study period from 01/01/2010 (or data sources start, if later) to 2024 or end of available data. In CRN, the study population was restricted to individuals diagnosed after 01/01/2019 (start of treatment data).

Variables

Exposure:

Systemic treatments for ovarian cancer.

Relevant covariates:

Systemic treatments were assessed both by treatment class and by ingredient. A total of 29 pre-specified ingredients were included and were grouped into 11 treatment classes.

Cancer stage (defined as Stage I to IV) was identified based on Tumour, Nodes, and Metastasis (TNM) staging and was assessed 1 week prior to 60 days after the index date, where available.

Data sources

1. Denmark: Danish Data Health Registries (DK-DHR)
2. France: Clinical Data Warehouse of Bordeaux University Hospital (CDW Bordeaux)
3. The Netherlands: Netherlands Cancer Registry (NCR)
4. Norway: Cancer Registry Norway (CRN)

Study size

No sample size was calculated.

Statistical analysis

For objective 1, individuals newly diagnosed with ovarian cancer were described in terms of demographics, baseline comorbidities, and pre-specified characteristics (i.e. cancer stage, BRCA status, WHO Performance Status), where available.

For objective 2, the number and percentage of individuals receiving pre-specified systemic treatments were described by ingredient and treatment class. Treatments were assessed across time windows of one month, three months, and up to a year after diagnosis.

For objective 3, sequences of treatments and treatment combinations were constructed based on pre-specified ingredients and parameters choices and were described from index date up to 5 years following diagnosis.

All results were reported by country/data source, overall and stratified by age group (18–44; 45–64; >65 years) and stage (where possible). Results of objective 2 were also stratified by calendar period (2010–2014, 2015–2019; 2020–2024).

Results

A total of 31,662 individuals newly diagnosed with ovarian cancer were included (n=8,938 in DK-DHR; n= 1,375 in CDW Bordeaux; n=19,356 in NCR; n=1,993 in CRN). Participants were predominantly older than 65 years (52% to 60%). The proportion of individuals diagnosed with advanced stage (III or IV) was 34.6% in DK-DHR, 59.5% in NCR, and 59.6% in CRN.

Among the systemic treatment classes examined, taxanes and platinum-based systemic treatments were the most common across all data sources in all time windows assessed. In the year following diagnosis, the proportion of patients treated ranged from 17.8% to 61% for taxanes and from 19.1% to 65% for platinum-based treatments. Most frequent ingredients were carboplatin and paclitaxel, ranging from 17.5% to 60.3% and 18.5% to 64.3%, respectively, in the year following diagnosis. Platinum-based drugs and taxanes were most commonly observed across cancer stages and ranged from approximately 21% to 41% for Stage I, 63% to 75% for Stage II, 69% to 83% for Stage III, and 62% to 80% for Stage IV. Ingredients with 0 or <5 counts across data sources were altretamine, lomustine, melphalan, mirvetuximab soravtansine, mitoxantrone, rucaparib, thiotepa, and vinblastine. Hormonal agents were not available in CRN.

Treatment pattern and combinations depicted as part of objective 3 showed that the most common systemic treatments consisted of platinum-based drugs combined with taxanes (ranged 23% in CDW Bordeaux to 57% in DK-DHR and NCR) or platinum-based drugs used alone (3% in CDW Bordeaux to 12.6%

in DK-DHR) as initial therapy in most data sources (across all cancer stages). Subsequent treatments differed by stage and data source. Particularly in advanced stages (III and IV), platinum-based drugs combined with taxane was followed by a combination of monoclonal antibodies (bevacizumab), topoisomerase inhibitors (topotecan), PARP inhibitors (olaparib and niraparib), and the anthracycline (doxorubicin).

Discussion

Most identified individuals diagnosed with ovarian cancer in the included data sources were aged >65 years and more commonly at an advanced stage (III and IV) at diagnosis. Platinum-based drugs and taxanes were the most commonly observed treatment across cancer stages, often used in combination with other drugs classes, particularly in advanced-stage ovarian cancer, which is consistent with clinical guidelines. The ability to fully characterise treatment was constrained by limitations in the included data sources, with NCR recording only primary treatments, limiting the assessment of treatment sequences, and CDW Bordeaux providing incomplete treatment data due to fragmented care.

4. AMENDMENTS AND UPDATES

None.

5. MILESTONES

Study deliverable	Timelines (planned)	Timelines (actual)
Final Study Protocol	30/10/2025	26/1/2026
Creation of Analytical code	15/12/2025	3/2/2026
Execution of Analytical Code on the data	26/1/2026	5/02/2026
Draft Study Report	3/3/2026	13/3/2026
Final Study Report	To be confirmed by EMA	To be confirmed by EMA

6. RATIONALE AND BACKGROUND

Ovarian cancer is caused when abnormal cells in ovaries, fallopian tubes, or peritoneum begin to grow and multiply in an uncontrolled manner. In Europe, ovarian cancer causes more deaths than any other gynaecological cancer, accounting for 5.2% of all cancer related deaths amongst adult women in 2022.(1, 2) Progressing as a silent disease, most of these cases are diagnosed after it has already spread to distant sites. In the past decades, a non-uniform yet overall decline in ovarian cancer mortality has been observed in most European countries.(3)

Epithelial ovarian cancers (EOC) account for nearly 90% of ovarian cancers, while non-epithelial cancers (germ cell, sex cord stromal, small cell) are rare. EOC are further divided into five major histotypes, high-grade and low-grade serous cancers and (aetiologically and genetically distant) endometrioid, clear-cell, and mucinous cancers.(3) Various factors have been found to be associated with increased risk of ovarian cancer, such as certain comorbidities (diabetes mellitus, endometriosis), early mensuration or late menopause, and family history of ovarian cancer.(3) Genetic factors, such as BRCA gene mutations, can increase the risk of ovarian cancer.(4)

Different treatment strategies are available for ovarian cancer, including surgery, chemotherapy, and targeted therapies. The most appropriate line to treatment, often utilised in combination, is based on type, stage, and molecular characteristics of ovarian cancer. Standard first-line treatment often includes surgery followed by chemotherapy regimen. These include alkylating agents, anthracycline, antimetabolites, DNA agents, taxanes, non-platinum, and platinum-based drugs. In recent years, the introduction of targeted therapies, such as Poly (ADP-ribose) polymerase (PARP) inhibitors, has significantly improved survival for patients. Bevacizumab, an anti-angiogenic agent (preventing cancer cells from developing blood vessels), is also commonly used in combination with chemotherapy. Hormonal therapy may be considered, in selected cases, based on cancer cell sensitivity.(5)

An important aspect of improving ovarian cancer treatment is understanding the drug utilisation patterns. Therefore, the objective of this study was to inform which authorised products were actively being used as a treatment for ovarian cancer.

7. RESEARCH QUESTION AND OBJECTIVES

Research questions

What systemic treatments are used for the management of ovarian cancer?

Research objectives

The study aimed to characterise systemic treatments for the management of ovarian cancer.

The specific objectives of this study were:

1. To describe demographic and pre-specified characteristics of patients newly diagnosed with ovarian cancer, overall and by age.
2. To describe the number of patients treated with systemic treatments, by ingredient and treatment class (i.e. alkylating agents, anthracyclines, antimetabolites, DNA agents, platinum-based chemotherapy, taxanes, topoisomerase inhibitors, vinca alkaloid, PARP inhibitors, monoclonal antibodies, hormonal agents), overall and by age, study period and where possible, cancer stage.
3. To describe sequences of treatments and treatment combinations for ovarian cancer, overall and stratified by age, and where possible, cancer stage.

8. RESEARCH METHODS

8.1. Study design

A cohort study, describing characteristics of females with newly diagnosed ovarian cancer (objective 1), assessing the number of individuals treated by ingredient and treatment class (objective 2), as well to analyse treatment sequences and combinations (Objective 3). A graphical depiction of the study design and definition of index date (i.e. date of ovarian cancer diagnosis) is described in **Figure 1**.

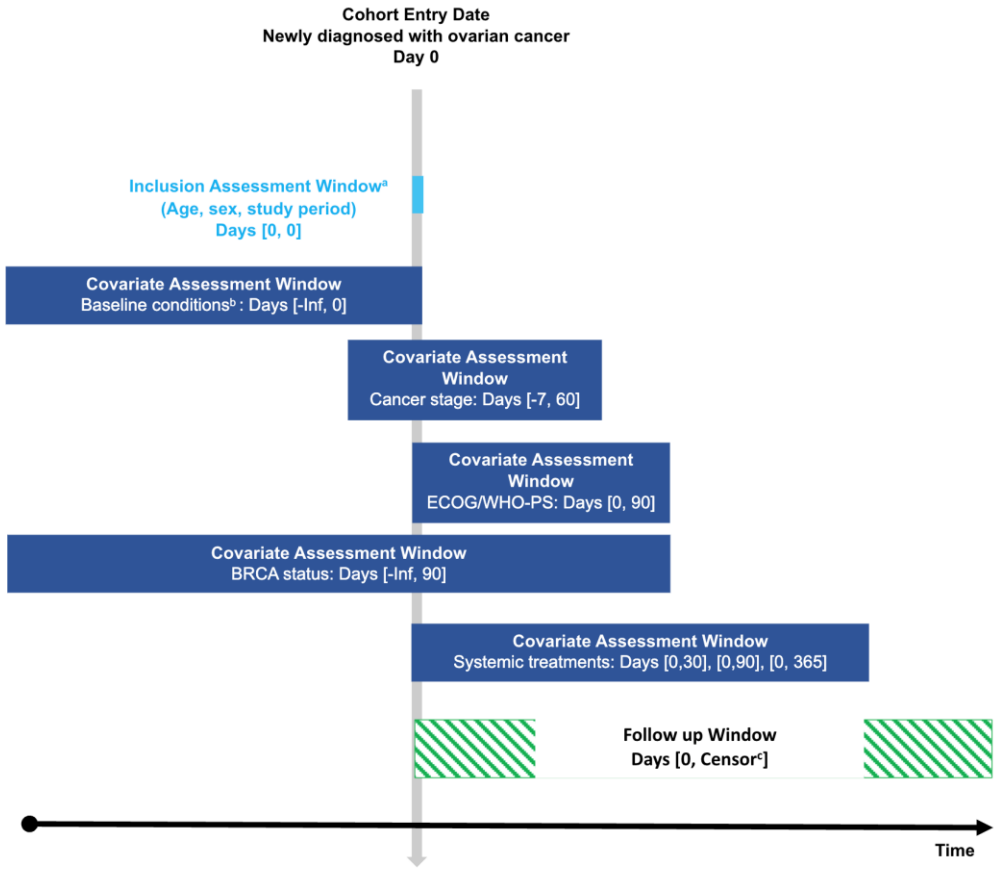

Figure 1. Graphical depiction of the study design.

a. Individuals newly diagnosed with ovarian cancer during the study period, up to one year to the end of data availability, who are females aged ≥18 years at day 0, will be included.
b. Baseline conditions: hyperglycaemia, diabetes mellitus, endometriosis, pelvic inflammatory disease, obesity, personal and family history of breast cancer.
c. Earliest of loss to follow–up, death, or end of observation period. For Objective 3, follow-up will be censored at 5 years after diagnosis.

BRCA=Breast cancer gene, ECOG/WHO-PS=Eastern Cooperative Oncology Group/WHO Performance Status, Inf=All prior history

8.2. Follow-up

Follow-up started on the date of first diagnosis with ovarian cancer. End of follow-up was defined as the earliest of loss to follow-up, death, or end of observation period (the latest available data), whichever occurred first. For Objective 3, females were followed during 5 years after diagnosis.

8.3. Study population with inclusion and exclusion criteria

For all study objectives, the inclusion criteria included:

- Individuals with a first diagnosis of ovarian cancer during the study period, up to one year prior to end of data availability.
- Females aged ≥18 years at the date of diagnosis.

No prior history requirement had been established for this study, in accordance with how patient's observability is defined in the included data sources (see **Section 8.4**). We included cases up to one year prior to the end of data availability to ensure some follow-up time for capturing treatments (e.g. if data was

available through December 2024, cases were included up to December 2023). For CRN, we restricted the study population to individuals newly diagnosed with ovarian cancer after 01/01/2019 (see **Section 8.10**).

Ovarian cancer was defined using a range of ovarian cancer types, consisting of several histological subtypes. This also includes cancers that arise in the fallopian tube, as well as the histologically similar primary peritoneal cancers. EOC was defined using a range of EOC types, consisting of several histological subtypes (such as high-grade and low-grade serous cancers, endometrioid, clear-cell, and mucinous cancers) and stages. Systematised Nomenclature of Medicine (SNOMED) and International Classification of Diseases for Oncology, Third Edition (ICD-O-3) codes was used to identify ovarian cancer cases. A list of concepts for the identification of ovarian cancer is described in **Annex IV**.

8.4. Study setting and data sources

This study was conducted using routinely collected data from data sources in the DARWIN EU® network of data partners. The study was informed by 4 data sources from 4 European countries, of which 3 are EU member states. All data were a *priori* mapped to the Observational Medical Outcomes Partnership (OMOP) Common Data Model (CDM).

Information on the data sources is available in **Table 1.**

Table 1. Data sources.

Country	Name of Data source	Health Care setting	Type of Data	Number of active individuals	Calendar period covered	Contributing to
Denmark	DK-DHR	Hospital care (IP, OP)	EHRs	5.98 M	1995 to 2024	All objectives
France	CDW Bordeaux	Hospital care (IP, OP)	EHRs, claims	0.26 M	2005 to 2025	All objectives
The Netherlands[2]	NCR	Hospital care (IP), others	Registries	2.43 M	1992 to 2025	All objectives
Norway	CRN	Hospital care (IP, OP)	Registries	0.35 M	1953 to 2025	All objectives

IP=inpatient, EHR=Electronic health record, OP=outpatient, DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway
[1] Defined as the maximum number of individuals in observation in the last 6 months of data.
[2] NCR has primary treatment registration for first nine months after ovarian cancer diagnosis.

Data sources selection

These data sources fulfilled the criteria required in terms of data quality, completeness, timeliness, and representativeness for characterisation study while covering different regions of Europe (**Annex II**).

8.5. Study period

The study spanned from January 2010 to December 2024, or end of available data (if earlier) for each contributing data source.

8.6. Variables

8.6.1. Exposure

For this study, the exposure of interest corresponded to pre-defined systemic treatments for ovarian cancer (**Table 2**).

Systemic treatments were assessed by:

- Treatment class, including 11 pre-specified treatment classes.
- Ingredient (active substance), including 29 pre-specified active substances.

Table 2. Exposure of interest.

Treatment class	Active substance
Alkylating agents	Altretamine, Chlorambucil, Cyclophosphamide, Ifosfamide, Lomustine, Melphalan, Thiotepa, Treosulfan
Anthracyclines	Doxorubicin, Epirubicin, Mitoxantrone
Antimetabolites	Fluorouracil, Gemcitabine, Methotrexate
DNA agents	Trabectedin
Platinum-based	Carboplatin, Cisplatin
Taxanes	Docetaxel, Paclitaxel
Topoisomerase inhibitors	Etoposide, Topotecan
Vinca Alkaloid	Vinblastine
PARP inhibitors	Niraparib, Olaparib, Rucaparib
Monoclonal antibodies	Bevacizumab, mirvetuximab soravtansine
Hormonal agents	Dexamethasone, Medroxyprogesterone

DNA=Deoxyribonucleic acid, PARP=poly-ADP ribose polymerase

Successive individual drug records (i.e. drug exposures) separated by less than 21 days were considered the same continuous exposure at ingredient-level (i.e. drug era). The rationale of using 21 days was based on the usual cycle length of chemotherapies. An additional window of 6 days (i.e. surveillance window) was added to account for the duration of the last administered treatment. This logic was used to derive continuous treatment episodes, as most data sources record treatments by administration date rather than as continuous treatment (see **Section 10.2**). The concept set active substances was identified based on ingredient-level codes are described in **Annex IV**.

8.6.2. Outcome

None.

8.6.3. Covariates, including confounders, effect modifiers, intercurrent events, and other variables

Covariates for stratification:

Covariates for stratification included age (all objectives), study period (objective 2), and cancer stage (objective 2 and 3). Age was assessed at index date (time 0) using three groups (18–44; 45–64; >65 years). Study period was assessed at index date and was categorised into three periods (2010–2014, 2015–2019, 2020–2024).

Cancer stage (defined as Stage I to IV) was identified based on Tumour, Nodes, and Metastasis (TNM) staging codes (including both clinical and pathological staging) and was assessed 1 week prior to 60 days after the index date (i.e. time window in days: [-7, 60]). The list of concepts used for TNM staging is described in **Annex IV**. If individuals had TNM codes indicating conflicting stages (e.g. Stage I and Stage II) within the time window for assessment, they were classified according to the lowest stage (see **Section 8.10**). The staging system utilised in the study is described in **Annex IV,** and it is based on logic with FIGO staging comparison to TNM staging.(6)

Objective 1:

Pre-specified characteristics included:

- Age (analysed as continuous and categorical variable, with age groups 18–44; 45–64; >65 years)
- Prior and future observation time
- Cancer stage (in DK-DHR, NCR, and CRN)
- BRCA status (in NCR only)
- Eastern Cooperative Oncology Group (ECOG)/WHO Performance Status (WHO-PS) (in NCR and CRN)

Pre-specified baseline comorbidities will include (in DK-DHR and CDW Bordeaux):

- Hyperglycaemia
- Diabetes mellitus
- Endometriosis
- Pelvic inflammatory disease
- Obesity
- Breast cancer history
- Family history of breast cancer

Age and observation time were described at index date (time 0). Definition of cancer stage was 7 days before to 60 days after index day, while ECOG/WHO-PS was defined 0 to 90 days after index date. BRCA status was defined any time prior to index date up to 90 days after (i.e. time window in days: [-Inf, 90]). Pre-specified comorbidities were described any time prior to index date (i.e. time window in days: [-Inf, 0]).

Importantly, not all information on covariates was available in data sources included. Cancer stage was used for stratification in Objective 1, as this is only available in DK-DHR, NCR, and CRN. Similarly, information on pre-specified baseline comorbidities was not available in the cancer registries. Information about BRCA (from 2015 onwards in NCR only) and ECOG/WHO-PS was only available in NCR and CRN (see **Section 12**).

The list of concepts used for the identification of covariates are described in **Annex IV**. These codes were identified following the DARWIN EU® phenotyping standard processes, which involved the review of code lists by clinical experts, and the review of phenotypes after their execution in the participating data sources.

Objective 2 and 3:

No additional covariates were assessed for objectives 2 and 3.

8.7. Study size

No sample size was calculated, as this was a characterisation study which did not test a specific hypothesis. In addition, we used already collected available data to estimate treatment pattens and combinations utilised in ovarian cancer. Thus, the sample size was driven by the availability of data for patients with new diagnosis of ovarian cancer. Based on a preliminary feasibility assessment in the selected data sources, the expected number of individuals with ovarian cancer ranged from 21,700 (DK-DHR) to 1,200 (CDW Bordeaux).

8.8. Data transformation

Analyses were conducted separately for each data source. Before study initiation, test runs of the analyses were performed on a subset of the data sources and quality control checks were performed. Once all the tests passed (see **Annex III**), the final study codes package was released in the version-controlled Study Repository for execution against all the participating data sources.

The data partners locally executed the analytics against the OMOP CDM in R Studio and reviewed and approved the, by default, aggregated results.

The study results of all data sources were checked, after which they were made available to the team, and the dissemination phase started. All results were locked and timestamped for reproducibility and transparency.

8.9. Statistical methods

8.9.1. Main summary measures

For objective 1, descriptives for patients with newly diagnosed with ovarian cancer was conducted at date of ovarian cancer diagnosis, using a pre-specified list of patient demographics and comorbidities. Individual characteristics were summarised using counts and percentages for categorical variables and medians with interquartile ranges for continuous variables.

For objective 2, a list of systemic treatments was assessed in terms of number and percentage of patients receiving each treatment, both at level of ingredient and treatment class.

For objective 3, drug utilisation sequences and combinations were described in figures accompanied by corresponding numbers and percentages.

8.9.2. Main statistical methods

R-packages

The characterisation study was performed based on OMOP CDM mapped data using the following R packages: *PatientProfiles*, *CohortCharacteristics*, *DrugUtilisation*, and *TreatmentPatterns.*(7-10) *PatientProfiles* and *CohortCharacteristics* were used as part of Objectives 1 and 2 to summarise patient characteristics, including demographics, baseline conditions, and medication use. *DrugUtilisation* was used to create the drug user cohorts required for Objective 2 and 3. Objective 3 also involved the use of *TreatmentPatterns* to depict treatment combinations and sequences.

Objective 1

The list of demographic and pre-specified conditions in newly diagnosed individuals with ovarian cancer (within specific time windows for assessment) are described in **Section 8.6.3**, with concept sets detailed in **Annex IV**. Pre-specified comorbidities were described in DK-DHR and CDW Bordeaux (see **Section 12**).

Results were reported overall and stratified by age groups (18–44; 45–64; >65 years).

Objective 2

Systemic treatments were described by treatment class and at ingredient level. Treatment classes are described in **Section 8.6.1**. Systemic treatments were assessed in three time periods: 1) 0 to 30 days after index date, 2) 0 to 90 days after index date, 3) 0 to 365 days after index date.

Patient characteristics were summarised using counts and percentages. Results were reported overall and stratified by age, study period, and cancer stage (where possible).

Objective 3

Sequences of treatments and treatment combinations were constructed using the *TreatmentPatterns* R-Package,(7) based on pre-specified ingredients (see **Section 8.6.1**). The target cohort (i.e. patients for whom treatments were assessed) were included females aged >18 years newly diagnosed with ovarian cancer. Treatments assessed included those starting from the date of entry into the target cohort (*WindowStart*) and were followed for up to a maximum of 5 years after diagnosis (*WindowEnd*).

Figure S2 explains how treatment combinations were defined. To align with the time gap used to derive continuous exposures (i.e. drug eras), the maximum allowable gap between two event eras for them to be combined into a single era (*eraCollapseSize*).

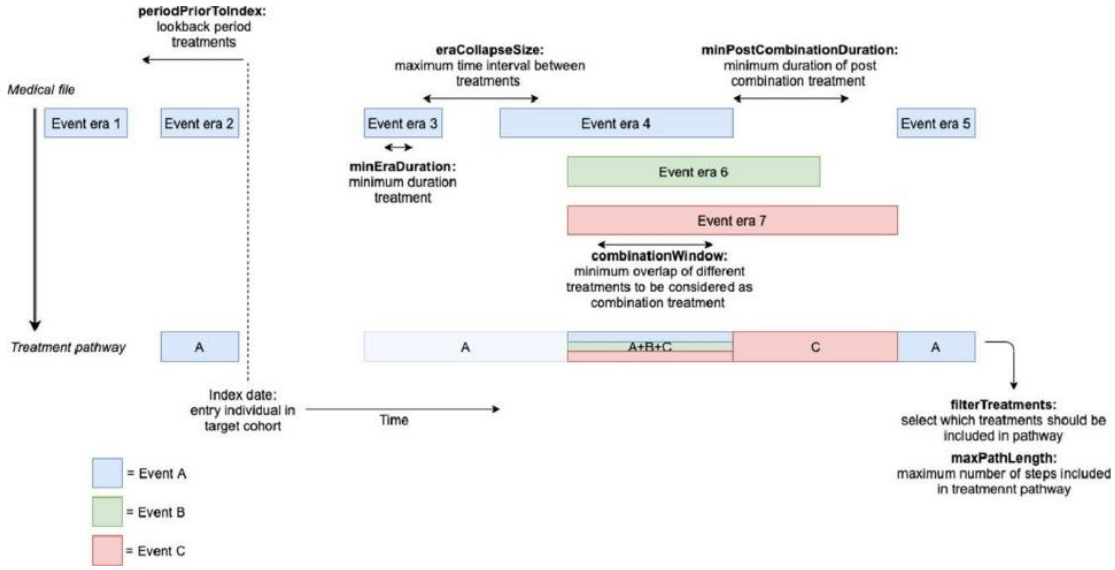

Figure 2. Design choices to construct treatment pathways in *TreatmentPatterns* R package.

We defined *eraCollapseSize* as 21 days (**Table 3**). The minimum time an event era should last to be included in the analysis (*minEraDuration*) was defined as 6 days, to align with the surveillance window, as described in **Section 8.6.1**. The minimum overlap of different treatments to be considered as combination treatment (*combinationWindow*) was defined as 5 days. This selected value was shorter than the surveillance window (6 days) to ensure that treatments which were recorded only once, which were not linked to others occurring within 21 days, could still be identified as part of combination treatments. The minimum time that an event era before or after a generated combination treatment (*minPostCombinationDuration*) should last to be included in the pathway as a separate treatment was defined as 4 days. This value was smaller than the *combinationWindow*, in accordance with the R package specifications.(7) The suitability of these preliminary parameters for assessing treatment combinations was reviewed during diagnostics stage. Sequences of treatments and treatment combinations were described in terms of number and percentages. Treatment pathways were visualised using sunburst plots depicting treatment patterns and Sankey diagrams depicting treatment sequences. Results were reported overall, stratified by age and cancer stage (where possible).

Table 3. Design choices to construct treatment pathways in *TreatmentPatterns* R package.

Individual pathway setting	Description	Value
WindowStart	The start time (number of days) prior to the index date of the target cohort (i.e. cohort of patients newly diagnosed with ovarian cancer) from which treatments should be included	0 days
WindowEnd	The end time (number of days) after the index date of the target cohort (i.e. cohort of patients newly diagnosed with ovarian cancer) from which treatments should be included	1,825 days (i.e. 5 years)
minEraDuration	Minimum time an event era (i.e. span of time an individual is exposed to a specific treatment of interest) should last to be included in the analysis	6 days
eraCollapseSize	Maximum gap within two eras of the same event cohort which would still allow the eras to be collapsed into one era	21 days
combinationWindow	Time that two event eras need to overlap to be considered a combination treatment	5 days
minPostCombinationDuration	Minimum time that an event era before or after a generated combination treatment should last to be included in the pathway as a separate treatment	4 days
filterTreatments	Select which treatments should be included in pathway first time occurrences of treatments ('First'), remove sequential repeated treatments ('Changes'), all treatments ('All')	Changes
maxPathLength	Maximum number of treatments included in pathway	10
Aggregate pathway setting		
groupCombinations	Select to group all non-fixed combinations in one category 'other' in the sunburst plot	FALSE / 10
addNoPaths	Select to include untreated persons without treatment pathway in the sunburst plot	TRUE

8.9.3. Missing values

Analyses for all objectives was conducted using available data without imputation. As such, no specific methods were applied to address missingness. For covariates based on conditions or drug exposures, the absence of a recorded entry was interpreted as the individual not having the condition or medication of interest.

8.9.4. Sensitivity analysis

Description of sensitivity analyses are presented in **Table 4**.

Table 4. Sensitivity analyses – rationale, strengths, and limitations.

	What is being varied? How?	Why? (What do you expect to learn?)	Strengths of the sensitivity analysis compared to the primary	Limitations of the sensitivity analysis compared to the primary
Epithelial ovarian cancer cases only	We restricted ovarian cases to only epithelial ovarian cancer cases in all data sources. This was applied to all objectives.	Epithelial ovarian cancer is the most prevalent and important sub-type of ovarian cancer, especially in women >60 years of age, and treatments for this type of cancer might differ from others.	Allowed for detailed analysis, specifically in epithelial ovarian cancer cases.	Cancer subtypes are optimally documented within cancer registries. However, cases may be missed in other data sources with less granular information.
Identification of cases DK-DHR	We restricted ovarian cancer cases to those recorded in the National Cancer Registry from Denmark. This was applied to all objectives.	Cases identified from the cancer registry were histologically confirmed.	Allowed for a more accurate capture of cases, reduced potential misclassification.	We did not provide data after December 2022 (end of data availability for the national cancer registry).
Change in settings for TreatmentPatterns (*combinationWindow*)	We increased the amount of time that drug eras need to overlap to be considered a combination therapy in Objective 3. This was increased from 5 to 14 days.	Allowed for more precise classification of sustained combination therapies.	Improve clinical relevance of treatment combinations identified by filtering out short overlaps.	Potentially excluded treatments that overlap for shorter durations than the specified threshold.

DK-DHR=Danish Data Health Registries.

8.10. Deviations from the protocol

Deviation number	Protocol version	Date	Section of study	Deviation	Reason
1	V 4.0	26/01/2026	**8.6.3. Covariates, including confounders, effect modifiers, intercurrent events, and other variables**	Individuals with more than one stage identified in the selected time window (i.e. time window in days: [-7, 60]) were assigned to the lower (less advanced) of the two stages. This deviates from the original protocol, where we specified that staging would be based on the codes more recent to the diagnosis date, with preference to post-diagnosis entries.	The approach of classifying individuals with conflicting stages in the selected time window of [-7,60] days to the lower stage as a conservative approach was adopted for operational purposes, as the initial strategy could not be implemented due to the complexity of the programming required. The number of individuals with conflicting stages is reported in **Table S16**.
2	V 4.0	2/03/2026	**8.3. Study population with inclusion and exclusion criteria**	We restricted the study population to individuals newly diagnosed with ovarian cancer after 01/01/2019 in CRN.	Data on cancer treatments is available from 2019 onwards in CRN.

CRN=Cancer Registry Norway; FIGO=International Federation of Gynaecology and Obstetrics; NCR=Netherlands Cancer Registry; TNM=Tumour, Nodes, and Metastasis.

9. RESULTS

The full set of results for this study is available through an interactive web-application ShinyApp at EUPAS1000000815.

9.1. Participants

The study included total of 31,662 individuals newly diagnosed with ovarian cancer (n=8,938 in DK-DHR; n= 1,375 in CDW Bordeaux; n=19,356 in NCR; n=1,993 in CRN). In **Table 5**, the selection of study participants has been tabulated based on the inclusion and exclusion criteria outlined in **Section 8.3**.

Table 5. Inclusion of study participants.

	Data sources			
	DK-DHR	CDW Bordeaux	NCR	CRN
Initial qualifying events (i.e. individuals newly diagnosed with ovarian cancer)	22,905	1,661	43,141	29,070
Individuals diagnosed after 1st January 2010 (all data sources) or 1st January 2019 (in CRN)	9,495	1,660	20,730	2,362
Individuals diagnosed before 31st December 2024	9,495	1,578	20,730	2,005
Individuals diagnosed up to one year prior to the end of data availability[1]	8,996	1,535	19,445	2,005
Sex: Female	8,987	1,417	19,445	2,003
Age ≥18 at diagnosis	8,938	1,375	19,356	1,993

DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway
[1] Dates of minimum 1 year of inclusion were 08/11/2023 for DK-DHR, 11/09/2024 for CDW Bordeaux, 01/02/2024 for NCR, and 01/01/2024 for CRN.

9.2. Descriptive data

9.2.1. Characterisation of individuals with ovarian cancer (Objective 1)

Table 6 includes the number of individuals identified in each data source and their baseline characteristics. Median age at diagnosis ranged from 65 to 68 years across data sources. Individuals aged >65 years represented the largest age group, accounting for 52% to 60% of individuals across data sources (**Table 6**). The observation time was shorter in CDW Bordeaux compared to other data sources, with a median of 63 [IQR: 3–1,128] days prior to index date (i.e. date of ovarian cancer diagnosis) and 494 [IQR: 130 – 1,304] days after index date. The median observation time was similar in DK-DHR and NCR and was longest in CRN, with a prior observation time of 23,404 [IQR: 17,675 – 24,691] days and a future observation time of 943 [IQR: 544 – 1,432] days (**Table 6**).

Baseline conditions were assessed in only DK-DHR and CDW Bordeaux. In DK-DHR, 15.6% of participants had a record indicating obesity (i.e. assessed as a condition), 10.3% had pelvic inflammatory disease, and nearly 10% had diabetes. A lower percentage was observed in CDW Bordeaux, with 9.4% individuals with obesity and 7% with diabetes mellitus. History of breast cancer was observed in 7.4% of individuals in DK-DHR and 2.4% in CDW Bordeaux.

Cancer stages were not assessed in CDW Bordeaux. Amongst the remaining data sources, stage of cancer at diagnosis (i.e. -7 to 60 days from cancer diagnosis) could not be identified in nearly 38% in DK-DHR, 13% in NCR, and 5% in CRN. Overall, a higher number of cases were recorded in the advanced stages of ovarian cancer (Stage III and IV) across included data sources. Cancer stages ranged from 13.5% (DK-DHR) to 26.4% (NCR) for Stage I, nearly 4% (DK-DHR) to 9% (CRN) for Stage II, 14.1% (DK-DHR) to 36.5% (CRN) for Stage III, and 23.1% (NCR) to 30.5% (DK-DHR) for Stage IV.

WHO-PS was only recorded in NCR and CRN and was observed for 46.7% and 87.6% of individuals, respectively. Considering all participants, most individuals with WHO-PS recorded were observed to have lower WHO-PS scores, with a score of 0 (25% in NCR; 61.5% in CRN) or 1 (14% in NCR, 18% in CRN). A total of 955 participants in NCR were positive for BRCA gene, representing 7.5% of the individuals diagnosed after 2015 (i.e. year in which information on BRCA became available in NCR). When stratified by age

groups, the most prevalent WHO-PS score was 0, ranging from 49.2% to 84.6% in NCR and 20.4% to 35% in CRN (see **Annex V Table S8**).

Table 6. Description of demographic and pre-specified characteristics of individuals newly diagnosed with ovarian cancer.

Characteristics		Data sources			
		DK-DHR	CDW Bordeaux	NCR	CRN
Number of subjects		8,938	1,375	19,356	1,993
Age, years (median, IQR)		68 [58 – 76]	65 [56 – 75]	68 [58 – 76]	66 [55 – 74]
Age group, N (%)	18 to 44 years	568 (6.4)	134 (9.7)	1,204 (6.2)	175 (8.8)
	45 to 64 years	2,972 (33.3)	527 (38.3)	6,546 (33.8)	756 (37.9)
	>65 years	5,398 (60.4)	714 (51.9)	11,606 (60.0)	1,062 (53.3)
Prior observation time, days (median, IQR)		7,718 [6,477 – 9,054]	63 [3 – 1,128]	8,833 [7,513 – 10,092]	23,404 [17,675 – 24,691]
Future observation time, days (median, IQR)		893 [358 – 2,031]	494 [130 – 1,304]	837 [322 – 1,829]	943 [544 – 1,432]
Baseline conditions, N (%)	Diabetes mellitus	870 (9.7)	96 (7.0)	–	–
	Endometriosis	70 (0.8)	5 (0.4)	–	–
	Family history of breast cancer	173 (1.9)	0 (0.0)	–	–
	History of breast cancer	662 (7.4)	33 (2.4)	–	–
	Hyperglycaemia	26 (0.3)	16 (1.2)	–	–
	Obesity	1,403 (15.7)	130 (9.4)	–	–
	Pelvic inflammatory disease	924 (10.3)	–	–	–
Cancer stage, N (%)	Stage I	1,206 (13.5)	–	3,958 (20.4)	526 (26.4)
	Stage II	328 (3.7)	–	1,377 (7.1)	188 (9.4)
	Stage III	1,264 (14.1)	–	6,340 (32.8)	728 (36.5)
	Stage IV	2,723 (30.5)	–	5,163 (26.7)	460 (23.1)
	No stage captured	3,417 (38.2)	–	2,518 (13.0)	91 (4.6)
WHO-PS score, N (%)	0	–	–	4,837 (25.0)	1,225 (61.5)
	1	–	–	2,771 (14.3)	365 (18.3)
	2	–	–	934 (4.8)	102 (5.1)
	3	–	–	411 (2.1)	41 (2.1)
	4	–	–	93 (0.5)	12 (0.6)
	No WHO-PS recorded			10,310 (53.3)	248 (12.4)
BRCA gene, N (%)[1]		–	–	955 (7.5)	–

BRCA=Breast cancer gene, IQR=inter quartile range, DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway
"–" Indicates that the variable was not assessed in the data source.
[1] Available for individuals diagnosed after 2015. The percentage of individuals with BRCA gene was calculated considering the number of individuals diagnosed after 2015 (n=12,705).

Among individuals aged 18 to 44 years, Stage I was the most prevalent (30.3% in DK-DHR to 59.4% in CRN), followed by Stage III (10.7% in DK-DHR to 20.9% in NCR) (**Table 7**). Similarly, in age group 45 to 64 years, Stage I was the most prevalent (18.4% in DK-DHR to 29.8% in CRN), followed by Stage III (15.3% in DK-DHR to 34.7% in CRN). For individuals aged >65 years, Stage IV was most observed (24.9% in CRN to 32.9% in DK-DHR). The number of individuals with no stage captured was highest in DK-DHR (38.6% in 18 to 44 years to 41.2% in >65 years), followed by NCR (9.4% in 45 to 64 years to 15.2% in >65 years) and CRN (<5 in 18 to 44 years to 6.7% in >65 years).

Table 7. Number of individuals across age groups stratified by stage in DK-DHR, CRN, and NCR.

Age group	Stage	Data sources		
		DK-DHR (n=8.983)	NCR (n=19,356)	CRN (n=1,993)
18 to 44 years	Stage I	172 (30.3)	587 (48.8)	104 (59.4)
	Stage II	24 (4.2)	71 (5.9)	15 (8.6)
	Stage III	61 (10.7)	252 (20.9)	36 (20.6)
	Stage IV	92 (16.2)	156 (13.0)	16 (9.1)
	No stage captured	219 (38.6)	138 (11.5)	<5
45 to 64 years	Stage I	547 (18.4)	1,832 (28.0)	225 (29.8)
	Stage II	139 (4.7)	599 (9.2)	73 (9.7)
	Stage III	456 (15.3)	1,989 (30.4)	262 (34.7)
	Stage IV	854 (28.7)	1,513 (23.1)	180 (23.8)
	No stage captured	976 (32.8)	613 (9.4)	16 (2.1)
>65 years	Stage I	487 (9.0)	1,539 (13.3)	197 (18.5)
	Stage II	165 (3.1)	707 (6.1)	100 (9.4)
	Stage III	747 (13.8)	4,099 (35.3)	430 (40.5)
	Stage IV	1,777 (32.9)	3,494 (30.1)	264 (24.9)
	No stage captured	2,222 (41.2)	1,767 (15.2)	71 (6.7)

NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway, DK-DHR=Danish Data Health Registries

9.3. Main results

9.3.1. Exposure to treatments (Objective 2)

The distribution of systemic treatments by treatment classes can be seen in **Table 8**. Amongst the systemic treatment classes studied, taxanes and platinum-based systemic treatments were the most common across all data sources in all time windows assessed, ranging from 7.1% (CDW Bordeaux) to 34.6% (NCR) for taxanes and from 7.9% (NCR) to 41.1% (DK-DHR) for platinum-based drugs in the month following index date (i.e. ovarian cancer diagnosis). This percentage increased to 17.8% to 61% for taxanes and from 19.1% to 65% platinum-based drugs in the year following index date. The next most frequent treatment class received by ovarian cancer individuals was monoclonal antibodies in DK-DHR and CRN in the first 3 months and year after ovarian cancer diagnosis. In NCR, alkylating agents and topoisomerase inhibitors were the third most common treatment class in the initial 3 months, while it was alkylating agents and PARP inhibitors for first year after ovarian cancer diagnosis.

In the first month, other systemic treatments, excluding taxanes and platinum-based drugs, were less frequently observed, ranging from 0.4% to 0.7% in CDW Bordeaux, 0.4% to 6.8% in CRN, 0.1% to 3.6% in

DK-DHR, and 0.1% to 0.2% in NCR. In treatment window to first 90 days, the percentage usage of these systemic treatments increased to 0.6% to 1.6% in CDW Bordeaux, 0.8% to 1.0% in CRN, 0.1% to 3.6% in DK-DHR, and 0.2% to 0.4% in NCR. For a treatment window of up to a year, this percentage increased to 0.6% to 3.3% in CDW Bordeaux, 0.3% to 31.5% in CRN, 0.1% to 14.3% in DK-DHR, and 0.4% to 3.5% in NCR.

DNA agents were only recorded in the one-year window after index date in DK-DHR (n=7) and CRN (n<5). Vinca alkaloid was only recorded for NCR, with counts fewer than 5 individuals in the three-months and one-year windows after index date. Hormonal agents were recorded in <3% of individuals across the time windows studied, with counts fewer than 5 individuals in NCR.

The recording of treatments was lower in CDW Bordeaux compared with other data sources (see **Section 10.2**). This was consistent across treatment classes and time windows studied (**Table 8**). For the most common treatments, platinum-based drugs were observed in 19.1% of individuals in the year following diagnosis, and taxanes in 17.8%. In this this same window and treatments, figures for other data sources ranged from 63.6% to 65.0% and from 52.2% to 61%, respectively.

Table 8. Number and percentage of individuals treated with systemic treatments by treatment class.

Treatment classes, N (%)	Data sources			
	DK-DHR (n=8.983)	CDW Bordeaux (n=1,375)	NCR[1] (n=19,356)	CRN[2] (n=1,993)
Time window in days [0, 30]				
Alkylating agents	20 (0.2)	8 (0.6)	22 (0.1)	-<5
Anthracyclines	40 (0.4)	9 (0.7)	13 (0.1)	<5
Antimetabolites	30 (0.3)	10 (0.7)	16 (0.1)	<5
DNA agents	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Hormonal agents	12 (0.1)	9 (0.7)	<5	–
Monoclonal antibodies	52 (0.6)	<5	6 (0.0)	136 (6.8)
PARP inhibitors	<5	<5	<5	0 (0.0)
Platinum based	3,704 (41.4)	109 (7.9)	7,278 (37.6)	384 (19.3)
Taxanes	3,009 (33.7)	98 (7.1)	6,701 (34.6)	358 (18.0)
Topoisomerase inhibitors	54 (0.6)	5 (0.4)	44 (0.2)	7 (0.4)
Vinca alkaloid	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Time window in days [0, 90]				
Alkylating agents	44 (0.5)	11 (0.8)	70 (0.4)	<5
Anthracyclines	136 (1.5)	18 (1.3)	57 (0.3)	18 (0.9)
Antimetabolites	72 (0.8)	22 (1.6)	55 (0.3)	20 (1.0)
DNA agents	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Hormonal agents	48 (0.5)	11 (0.8)	<5	–
Monoclonal antibodies	323 (3.6)	8 (0.6)	30 (0.2)	317 (15.9)
PARP inhibitors	10 (0.1)	<5	<5	0 (0.0)
Platinum based	5,541 (62.0)	226 (16.4)	11,851 (61.2)	1,191 (59.8)
Taxanes	4,503 (50.4)	207 (15.1)	10,898 (56.3)	1,098 (55.1)
Topoisomerase inhibitors	83 (0.9)	9 (0.7)	81 (0.4)	15 (0.8)

Treatment classes, N (%)	Data sources			
	DK-DHR (n=8.983)	CDW Bordeaux (n=1,375)	NCR[1] (n=19,356)	CRN[2] (n=1,993)
Vinca alkaloid	0 (0.0)	0 (0.0)	<5	0 (0.0)
Time window in days [0, 365]				
Alkylating agents	113 (1.3)	12 (0.9)	160 (0.8)	5 (0.3)
Anthracyclines	1,039 (11.6)	45 (3.3)	140 (0.7)	79 (4.0)
Antimetabolites	206 (2.3)	33 (2.4)	108 (0.6)	37 (1.9)
DNA agents	7 (0.1)	0 (0.0)	0 (0.0)	<5
Hormonal agents	251 (2.8)	21 (1.5)	<5	–
Monoclonal antibodies	1,276 (14.3)	43 (3.1)	77 (0.4)	628 (31.5)
PARP inhibitors	530 (5.9)	8 (0.6)	669 (3.5)	268 (13.4)
Platinum based	5,681 (63.6)	262 (19.1)	12,311 (63.6)	1,296 (65.0)
Taxanes	4,663 (52.2)	245 (17.8)	11,285 (58.3)	1,215 (61.0)
Topoisomerase inhibitors	227 (2.5)	16 (1.2)	88 (0.5)	16 (0.8)
Vinca alkaloid	0 (0.0)	0 (0.0)	<5	0 (0.0)

DNA=Deoxyribonucleic acid, PARP=poly-ADP ribose polymerase, DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway.
"–" Denotes absence of information on the exposures in the data source. "0" denotes that the data source contains information, but no cases were observed.
[1] NCR only had registration for primary treatment.
[2] The study population was restricted to cases diagnosed after 2019. CRN does not have information on hormonal agents (i.e. dexamethasone, medroxyprogesterone).

The distribution of systemic treatments by treatment classes in different age groups can be seen in **Annex V Table S9**. Across all age groups, platinum-based and taxanes remained the most frequent systemic treatments. The next most common treatment remained monoclonal antibodies in CRN (17.7% to 13.2%) and PARP inhibitors in NCR (2.1% to 4.6%), across all age groups. In DK-DHR, the third most common treatment class was observed to be monoclonal antibodies in all age groups (8.5% to 15.6%), except 18 to 44 years, where it was topoisomerase inhibitors (9.7%).

The distribution of systemic treatments by treatment classes stratified by calendar years can be visualised in **Annex V Table S10**. Platinum-based drugs (14.8% in CDW Bordeaux to 72.3% in DK-DHR) and taxanes (15.7% in CDW Bordeaux to 60.5% in NCR) remained the most observed treatments. Anthracyclines were observed as the next most common treatment across all years in NCR (0.6% to 1%). Beyond platinum-based drugs and taxanes, anthracyclines were most observed treatments in years 2010 to 2014 in DK-DHR and CDW Bordeaux. For years 2015 to 2019, monoclonal antibodies emerged as most used treatment following platinum and taxanes in DK-DHR, CDW Bordeaux, and CRN. In more recent years (2020 to 2024), anthracyclines (3%) in CDW Bordeaux, monoclonal antibodies (31.6%) in CRN, and monoclonal antibodies and PARP inhibitors (each representing approximately 18.6%) in DK-DHR were observed as the third highest treatment classes.

The distribution of systemic treatments by treatment classes in different stages of ovarian cancer can be seen in **Table 9**. In Stage I ovarian cancer, platinum-based drugs and taxanes were the most frequently observed systemic treatments across data sources. These were followed by hormonal agents in DK-DHR (3.2%) and by topoisomerase inhibitors in CRN (1.3%) and NCR (0.9%). For Stage II, platinum-based drugs (70.7% in CRN to 75.3% in DK-DHR) and taxanes again accounted for the highest proportions (63.1% in DK-DHR to 69.8% in NCR). In Stage III ovarian cancer, after platinum-based agents and taxanes, the most used

therapies varied by data source: monoclonal antibodies (40%) and PARP inhibitors (22.5%) in CRN; monoclonal antibodies (14.1%) and anthracyclines (11.6%) in DK-DHR; and PARP inhibitors (4.5%) in NCR. For Stage IV, platinum-based drugs and taxanes remained predominant, followed by monoclonal antibodies in CRN (68%) and DK-DHR (21.5%), and PARP inhibitors in NCR (6.3%).

Table 9. Number and percentage of individuals treated with systemic treatments by stage and treatment class, in DK-DHR, NCR, and CRN.

Stage[1]	Treatment classes	Data sources		
		DK-DHR	NCR[2]	CRN[3]
Stage I	Alkylating agents	<5	17 (0.4)	<5
	Anthracyclines	30 (2.5)	9 (0.2)	<5
	Antimetabolites	19 (1.6)	9 (0.2)	6 (1.1)
	DNA agents	0 (0.0)	0 (0.0)	0 (0.0)
	Hormonal agents	38 (3.2)	<5	–
	Monoclonal antibodies	16 (1.3)	<5	11 (2.1)
	PARP inhibitors	6 (0.5)	25 (0.6)	7 (1.3)
	Platinum-based drugs	490 (40.6)	1,085 (27.4)	180 (34.2)
	Taxanes	398 (33.0)	847 (21.4)	150 (28.5)
	Topoisomerase inhibitors	20 (1.7)	34 (0.9)	7 (1.3)
	Vinca alkaloid	0 (0.0)	<5	0 (0.0)
Stage II	Alkylating agents	<5	16 (1.2)	0 (0.0)
	Anthracyclines	19 (5.8)	6 (0.4)	<5
	Antimetabolites	6 (1.8)	<5	6 (3.2)
	DNA agents	0 (0.0)	0 (0.0)	0 (0.0)
	Hormonal agents	12 (3.7)	0 (0.0)	–
	Monoclonal antibodies	12 (3.7)	0 (0.0)	0 (0.0)
	PARP inhibitors	<5	17 (1.2)	5 (2.7)
	Platinum-based drugs	247 (75.3)	1,030 (74.8)	133 (70.7)

Stage[1]	Treatment classes	Data sources		
		DK-DHR	NCR[2]	CRN[3]
	Taxanes	207 (63.1)	961 (69.8)	122 (64.9)
	Topoisomerase inhibitors	<5	11 (0.8)	<5
	Vinca alkaloid	0 (0.0)	<5	0 (0.0)
Stage III	Alkylating agents	20 (1.6)	63 (1.0)	<5
	Anthracyclines	147 (11.6)	58 (0.9)	31 (4.3)
	Antimetabolites	25 (2.0)	41 (0.6)	19 (2.6)
	DNA agents	<5	0 (0.0)	<5
	Hormonal agents	45 (3.6)	<5	–
	Monoclonal antibodies	178 (14.1)	28 (0.4)	291 (40.0)
	PARP inhibitors	88 (7.0)	283 (4.5)	164 (22.5)
	Platinum-based drugs	1,020 (80.7)	5,214 (82.2)	605 (83.1)
	Taxanes	870 (68.8)	4,895 (77.2)	578 (79.4)
	Topoisomerase inhibitors	31 (2.5)	14 (0.2)	<5
	Vinca alkaloid	0 (0.0)	<5	0 (0.0)
Stage IV	Alkylating agents	27 (1.0)	43 (0.8)	<5
	Anthracyclines	449 (16.5)	50 (1.0)	38 (8.3)
	Antimetabolites	89 (3.3)	42 (0.8)	6 (1.3)
	DNA agents	<5	0 (0.0)	<5
	Hormonal agents	77 (2.8)	0 (0.0)	–
	Monoclonal antibodies	585 (21.5)	31 (0.6)	313 (68.0)

Stage[1]	Treatment classes	Data sources		
		DK-DHR	NCR[2]	CRN[3]
	PARP inhibitors	238 (8.7)	323 (6.3)	89 (19.3)
	Platinum-based drugs	1,999 (73.4)	3,792 (73.4)	368 (80.0)
	Taxanes	1,699 (62.4)	3,498 (67.8)	357 (77.6)
	Topoisomerase inhibitors	83 (3.0)	13 (0.3)	<5
	Vinca alkaloid	0 (0.0)	<5	0 (0.0)

DNA=Deoxyribonucleic acid, PARP=poly-ADP ribose polymerase, DK-DHR=Danish Data Health Registries, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway.
[1] Number of individuals for Stage I: n=1,206 in DK-DHR, n=3,958 in NCR, and n=526 in CRN; Number of individuals for Stage II: n=328 in DK-DHR, n=1,377 in NCR, and n=188 in CRN; Number of individuals for Stage III: n=1,264 in DK-DHR, n=6,340 in NCR, and n=728 in CRN; Number of individuals for Stage IV: n=2,723 in DK-DHR, n=5,163 in NCR, and n=460 in CRN.
[2] NCR only had registration for primary treatment.
[3] The study population was restricted to cases diagnosed after 2019. CRN does not have information on hormonal agents (i.e. dexamethasone, medroxyprogesterone).
"–" Denotes absence of information on the exposures in the data source. "0" denotes that the data source contains information, but no cases were observed.

The number of individuals exposed to ingredients studied in the year following diagnosis are enumerated in **Table 10**, with results for other time windows detailed in **Annex V Table S11**. In terms of ingredients, carboplatin and paclitaxel were the most common treatments observed across the data sources in all time windows studied. Carboplatin ranged from nearly 18.5% in CDW Bordeaux to 41% in DK-DHR within the first 30 days after diagnosis and from 16% to 61.2% within the 90 days following diagnosis. For paclitaxel, figures ranged from nearly 7% in CDW Bordeaux to 35% in NCR in the first 30 days and from 15% to 56% when considering the first 90 days (see **Annex V Table S11**).

In the longer time window of first year, the treatment percentages further increased for carboplatin and paclitaxel. Other common systemic drugs included bevacizumab (ranging from 3.1% in CDW Bordeaux to 31.5% in CRN), doxorubicin (ranging from 3.3% in CDW Bordeaux to 11.1% DK-DHR), and olaparib (ranging from <5 counts in CDW Bordeaux to nearly 10% in CRN) in time window of first year. Some ingredients had zero counts in CDW Bordeaux (altretamine, chlorambucil, epirubicin, melphalan, mitoxantrone, medroxyprogesterone, melphalan, mirvetuximab soravtansine, mitoxantrone, rucaparib, thiotepa, trabectedin, treosulfan, vinblastine); CRN (altretamine, chlorambucil, epirubicin, lomustine, topotecan, melphalan, mirvetuximab soravtansine, rucaparib, thiotepa, treosulfan, topotecan, vinblastine); DK-DHR (chlorambucil, lomustine, mitoxantrone, mirvetuximab soravtansine, mitoxantrone, lomustine, rucaparib, thiotepa, vinblastine); and in NCR (altretamine, epirubicin, lomustine, methotrexate, mitoxantrone, medroxyprogesterone, mirvetuximab soravtansine, mitoxantrone, treosulfan, trabectedin) during the first year after cancer diagnosis. Ingredients with 0 or <5 counts across data sources were altretamine, lomustine, melphalan, mirvetuximab soravtansine, mitoxantrone, rucaparib, thiotepa, and vinblastine.

The ShinyApp (EUPAS1000000815) provides detailed results for the top 10 systemic treatments at both class and ingredient levels, overall and by covariates of interest, across the studied time windows.

Table 10. Number and percentage of individuals treated with systemic ingredients in first year of ovarian cancer diagnosis.

Systemic treatments, N (%)	Data sources			
	DK-DHR	CDW Bordeaux	NCR[1]	CRN[2]
Altretamine	<5	0 (0.0)	0 (0.0)	0 (0.0)
Bevacizumab	1,276 (14.3)	43 (3.1)	77 (0.4)	732 (11.3)
Carboplatin	5,605 (62.7)	254 (18.5)	12,155 (62.8)	1,407 (21.6)
Chlorambucil	0 (0.0)	0 (0.0)	6 (0.0)	0 (0.0)
Cisplatin	165 (1.8)	10 (0.7)	282 (1.5)	27 (0.4)
Cyclophosphamide	26 (0.3)	9 (0.7)	147 (0.8)	<5
Dexamethasone	244 (2.7)	21 (1.5)	<5	–
Docetaxel	405 (4.5)	8 (0.6)	52 (0.3)	291 (4.5)
Doxorubicin	991 (11.1)	45 (3.3)	139 (0.7)	88 (1.4)
Epirubicin	52 (0.6)	0 (0.0)	0 (0.0)	0 (0.0)
Etoposide	88 (1.0)	8 (0.6)	92 (0.5)	18 (0.3)
Fluorouracil	27 (0.3)	15 (1.1)	5 (0.0)	19 (0.3)
Gemcitabine	127 (1.4)	16 (1.2)	103 (0.5)	21 (0.3)
Ifosfamide	12 (0.1)	<5	8 (0.0)	<5
Lomustine	0 (0.0)	<5	0 (0.0)	0 (0.0)
Medroxyprogesterone	7 (0.1)	0 (0.0)	0 (0.0)	–

Systemic treatments, N (%)	Data sources			
	DK-DHR	CDW Bordeaux	NCR[1]	CRN[2]
Melphalan	<5	0 (0.0)	<5	0 (0.0)
Methotrexate	56 (0.6)	<5	0 (0.0)	<5
Mirvetuximab soravtansine	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Mitoxantrone	0 (0.0)	0 (0.0)	0 (0.0)	<5
Niraparib	195 (2.2)	<5	320 (1.7)	74 (1.1)
Olaparib	382 (4.3)	5 (0.4)	358 (1.8)	198 (3.0)
Paclitaxel	4,384 (49.1)	240 (17.5)	11,266 (58.2)	1,301 (20.0)
Rucaparib	0 (0.0)	0 (0.0)	<5	0 (0.0)
Thiotepa	0 (0.0)	0 (0.0)	<5	0 (0.0)
Topotecan	144 (1.6)	8 (0.6)	<5	0 (0.0)
Trabectedin	7 (0.1)	0 (0.0)	0 (0.0)	<5
Treosulfan	72 (0.8)	0 (0.0)	0 (0.0)	0 (0.0)
Vinblastine	0 (0.0)	0 (0.0)	<5	0 (0.0)

DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway
[1] NCR only had registration for primary treatment.
[2] The study population was restricted to cases diagnosed after 2019. CRN does not have information on hormonal agents (i.e. dexamethasone, medroxyprogesterone).
"–" Denotes absence of information on the exposures in the data source. "0" denotes that the data source contains information, but no cases were observed.

9.3.2. Sequences of treatments and treatment combinations (Objective 3)

Sequences of treatments and treatment combinations were constructed based on a pre-specified list of ingredients and parameter choices. Individuals were followed up to a maximum of five years following diagnosis (see **Section 8.9.2**). In this section we present results for treatment sequences and combinations with > 5 individuals. For easier visualisation, sunburst plots have been generated with a minimum frequency of 20. Details of less frequent treatment combinations can be explored in the ShinyApp, which also provides Sankey diagrams and additional information on counts of individuals receiving each sequence and combination. The percentages reported below represent the proportion of patients within each treatment line (i.e. each concentric ring in the sunburst plot).Overall and age-stratified

The most common systemic treatment combinations consisted of platinum-based drugs combined with taxanes (23% in CDW Bordeaux to 57% in DK-DHR and NCR) or platinum-based drugs used alone (3% in CDW Bordeaux to 12.6% in DK-DHR) as initial therapy. This initial treatment was followed by various subsequent treatment pathways, either by introducing a different treatment class to create a new combination or by continuing with monotherapy. New combination regimens were typically formed by adding monoclonal antibodies (mostly bevacizumab), PARP inhibitors (commonly olaparib), anthracyclines (mainly doxorubicin), or by maintaining the same treatment class but substituting to a different ingredient (e.g. docetaxel instead of paclitaxel). The primary treatment followed by monotherapy mostly consisted of monoclonal antibodies (bevacizumab) or PARP inhibitors (olaparib or niraparib). Results by data source are further described below. **Figure 3** to **Figure 6** display sunburst plots of overall outcomes by data source. The distribution in sunburst plots will differ from the percentages reported below, as figures have been generated with a minimum frequency of 20 for improved visualisation.

DK-DHR

No systemic treatment was recorded for nearly 15% of the individuals with ovarian cancer. Most common initial treatments included were platinum-based drugs combined with taxanes (carboplatin-paclitaxel=53%, carboplatin-docetaxel=5%) or carboplatin alone (12.6%). Further, this platinum-taxane combination was observed to be expanded with bevacizumab (10%) or doxorubicin (4%) or followed by platinum-based drugs alone (carboplatin=19%, paclitaxel=3%). Other treatment trajectories can be explored in the ShinyApp.

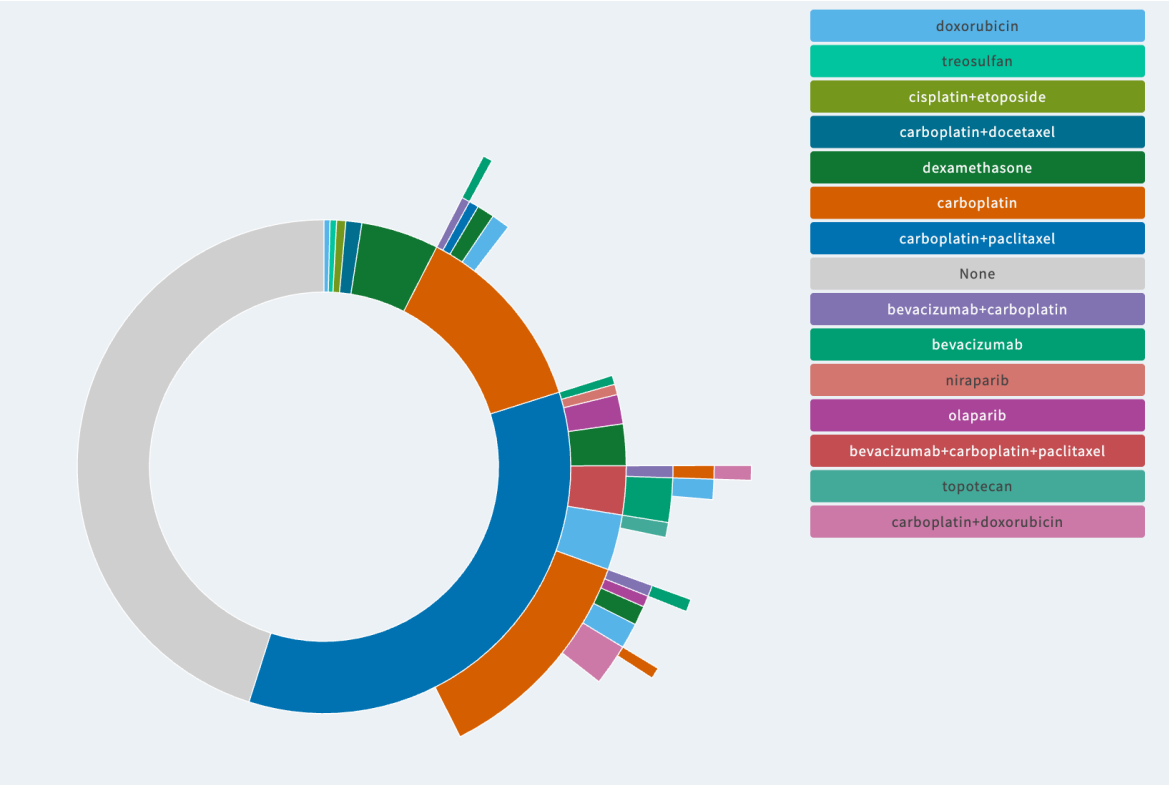

Figure 3. Sunburst plot for observed systemic treatment of ovarian cancer in DK-DHR*.

*Individuals were followed for up to a maximum of 5 years after diagnosis. Median follow-up in DK-DHR was 893 [IQR: 358 – 2,031] days. The sunburst plot has been generated with a minimum frequency of 20 for improved visualisation.
DK-DHR=Danish Data Health Registries.

CDW Bordeaux

No systemic treatment was recorded for 55% of the individuals with ovarian cancer. The most common initial treatment observed included platinum-based drugs combined with taxanes (23.4%). Further, this platinum-taxane combination was observed to be expanded with bevacizumab (4.9%) or doxorubicin (2.7%) or followed by platinum drugs alone (3.7%). Carboplatin-doxorubicin combination was observed as initial treatment in 2% individuals. Cancer stages were not available in CDW Bordeaux, and therefore, treatment patterns by stage could not be explored in this data source.

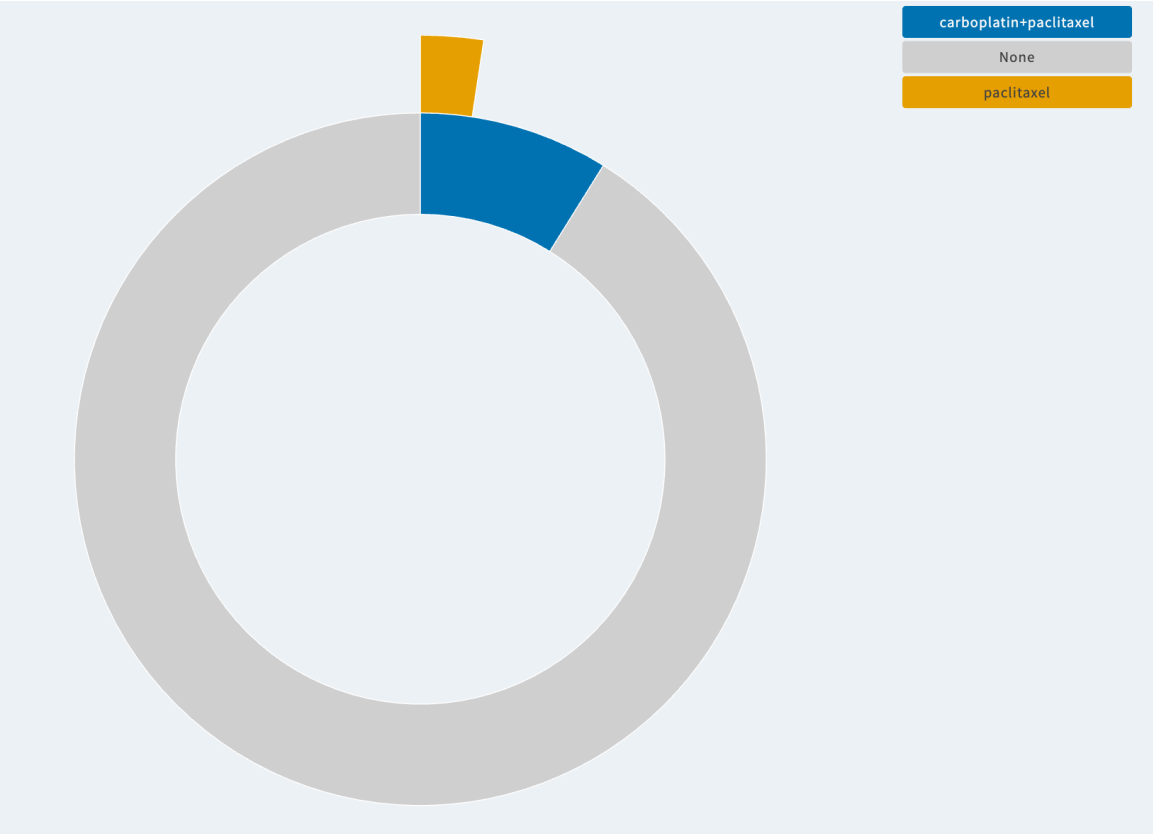

Figure 4. Sunburst plot for observed systemic treatment of ovarian cancer in CDW Bordeaux*.

*Individuals were followed for up to a maximum of 5 years after diagnosis. Median follow-up in CDW Bordeaux was 494 [IQR: 130 – 1,304] days. The sunburst plot has been generated with a minimum frequency of 20 for improved visualisation.
CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital.

NCR

NCR only had registration for primary treatment recorded usually within the first nine months post cancer diagnosis (see **Section 10.2**). A total of 34% of individuals received no systemic treatment. Initially, treatment combination carboplatin-paclitaxel accounted for 57%, while carboplatin alone was observed in 5% of individuals. Further, carboplatin-paclitaxel combination was followed by carboplatin alone (nearly 5%) or PARP inhibitors alone (olaparib=1.5%, niraparib=1.4%). Initial treatment of carboplatin-paclitaxel combination followed by bevacizumab (0.2%) was observed to be lower in NCR compared to other data sources.

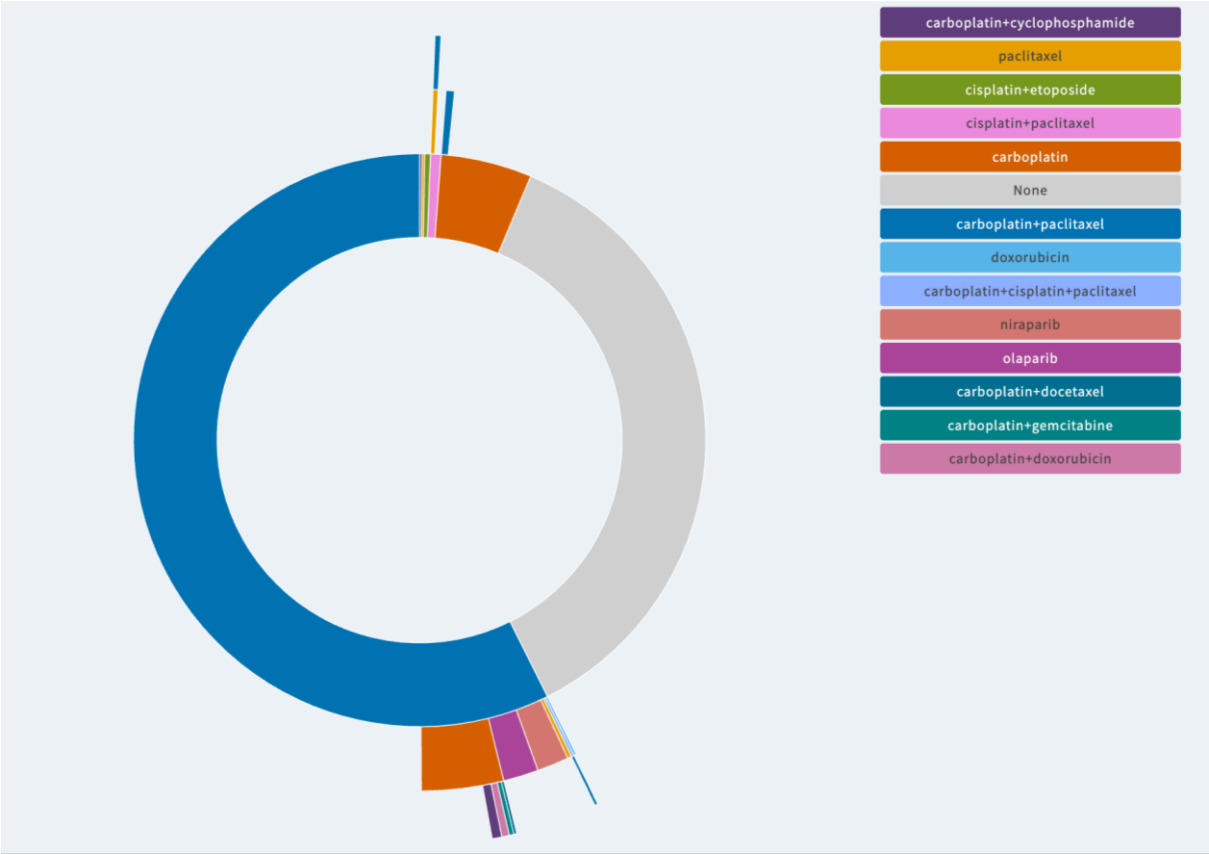

Figure 5. Sunburst plot for observed treatment of ovarian cancer in NCR *.

*NCR only had registration for primary treatment. Individuals were followed for up to a maximum of 5 years after diagnosis. Median follow-up in NCR was 837 [322 – 1,829] days. The sunburst plot has been generated with a minimum frequency of 20 for improved visualisation.
NCR=Netherlands Cancer Registry.

CRN

No systemic treatment was recorded for 15% of the individuals with ovarian cancer. The most common initial treatments included platinum-based drugs combined with taxanes (carboplatin-paclitaxel=53.7%, carboplatin-docetaxel=1%), carboplatin-paclitaxel combined with bevacizumab (15.8%), or carboplatin alone (5.7%). In 19.3% of individuals, the initial treatment of carboplatin-paclitaxel was subsequently expanded with bevacizumab. Following treatment with carboplatin-paclitaxel combination, 16% of individuals later followed treatment with carboplatin alone. The carboplatin-paclitaxel-bevacizumab initial treatment combination was further treated with carboplatin-bevacizumab in 5% or carboplatin-paclitaxel in 3% of individuals.

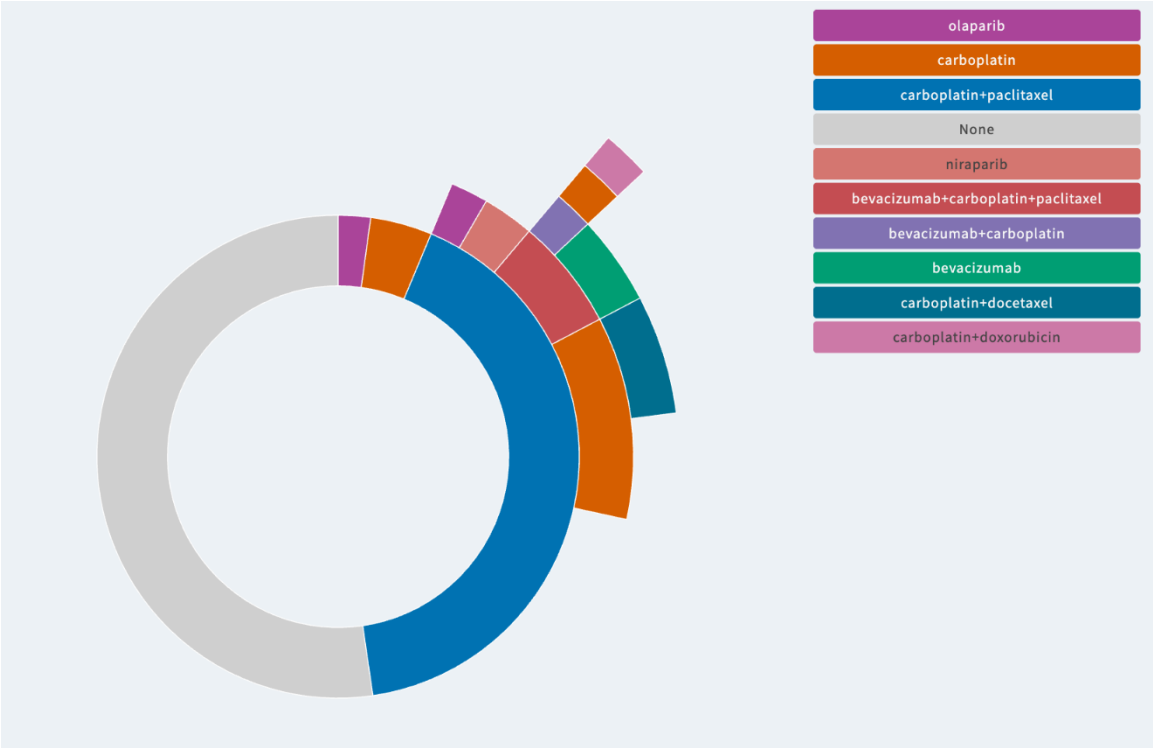

Figure 6. Sunburst plot for observed treatment of ovarian cancer in CRN*.

* The study population in the CRN was limited to cases diagnosed after 2019. Individuals were followed for up to a maximum of 5 years after diagnosis. Median follow-up in CRN was 943 [544 – 1,432] days. CRN does not have information on hormonal agents (i.e. dexamethasone, medroxyprogesterone). The sunburst plot has been generated with a minimum frequency of 20 for improved visualisation.
CRN=Cancer Registry Norway.

Stratification by age groups showed that the percentage of individuals without systemic treatment was highest in 18 to 44 years (24.7% in CRN to 49.2% in CDW Bordeaux) and >65 years (13.6% in CRN to 55.6% in CDW Bordeaux). Overall, cisplatin-paclitaxel combination remained the most frequent treatment, with the highest proportion (nearly 32% in CDW Bordeaux to 65.2% in NCR) observed in age group of 45 to 64 years. The next most common first-line treatment was carboplatin given alone, which ranged from nearly 2% in NCR to 5% in CRN in 18 to 44 years age group, 2% in CDW Bordeaux to 17.5% in DK-DHR in >65 years, and 2.3% in CRN to 6.1% in DK-DHR in 45 to 64 years. Detailed treatment pathways using sunburst plots and Sankey diagrams by age groups can be visualised in the ShinyApp.

9.3.2.2. Results stratified by cancer stage

The proportion of individuals treated with systemic drugs increased with subsequent increase in cancer stage until Stage III, after which a decrease was observed. Similarly, carboplatin-paclitaxel combination was observed to be increasingly used among individuals with higher cancer stages till Stage III. A higher number of individuals treated with carboplatin-paclitaxel combined with bevacizumab combination was also observed, particularly in Stage III and IV. Carboplatin-paclitaxel as combination was more frequently observed than carboplatin-docetaxel. The number and types of combinations were highest in Stage III and IV, demonstrating a greater number of systemic drugs utilised for cancer treatment. Detailed treatment pathways by tumour stage using sunburst plots and Sankey diagrams can be visualised in the ShinyApp, and results are summarised below. Sankey diagrams for Stage III and IV are included in the **Annex V Figure S1 to Figure S3**.

Stage I

Among individuals with Stage I ovarian cancer, the percentage of individuals who were not treated with systemic treatments was 26% in DK-DHR, 48% in CRN, and 67% in NCR. Individuals initially treated with carboplatin-paclitaxel ranged from 23% in NCR, 31% in CRN, and 38% in DK-DHR, while treatment with carboplatin alone ranged 6% in NCR, 8.2% in CRN, and 9% in DK-DHR.

Stage II

For Stage II, the proportion of individuals not treated with systemic treatments was 6% in DK-DHR, 14% in NCR, and 22% in CRN. Carboplatin-paclitaxel combination was observed as the most frequent treatment ranging from 51% (DK-DHR) to 67% (NCR). Similarly, Carboplatin-paclitaxel combination, followed by carboplatin treatment alone, was observed in 5% (NCR) to 26% (CRN). Around 22% individuals in DK-DHR were treated following carboplatin-paclitaxel combination with carboplatin alone.

Stage III

Lowest range of 4% (DK-DHR and CRN) to 16% (NCR) of individuals with no systemic treatment was recorded in Stage III ovarian cancer. A large proportion of individuals (65% to 74%) were initially treated with carboplatin-paclitaxel combination. This carboplatin-paclitaxel combination was followed by an addition of bevacizumab (9% to 19%), or carboplatin alone (6% to 30%), doxorubicin (5% in DK-DHR and CRN), PARP inhibitors (olaparib ranging 2% to 4%, niraparib ranging 1% to 3%). Initial treatment of carboplatin-paclitaxel-bevacizumab was observed in 17% of individuals in CRN, while treatment alone with carboplatin ranged from 6% (NCR) to 12% (DK-DHR).

Stage IV

For Stage IV, 5% individuals in CRN to 24% in NCR were not treated with systemic treatments. Carboplatin-paclitaxel combination was observed as the most frequent treatment, ranging from 50% (CRN) to 67% (NCR). Similarly, carboplatin-paclitaxel combination was followed by an addition of bevacizumab (11% to 30%), or carboplatin alone (5% to 24%), doxorubicin (4% in DK-DHR), PARP inhibitors (olaparib ranging 2% to 3%, niraparib ranging 1% to 3%), or carboplatin treatment alone (5% in NCR to 24% in DK-DHR). 27% individuals in DK-DHR were treated with carboplatin-paclitaxel-bevacizumab combination. Initial treatment of carboplatin alone ranged from 6% to 12%.

9.4. Other analysis

9.4.1. Epithelial ovarian cancer

In this sensitivity analysis (see **Section 8.9.4**), a total of 21,697 individuals newly diagnosed with epithelial ovarian cancer were included (n=5,570 in DK-DHR; n=555 in CDW Bordeaux; n=14,734 in NCR; n=901 in CRN), representing 68.5% of the ovarian cancer cases identified in the main analysis (62% in DK-DHR; 40.3%

in CDW Bordeaux; 76.1% in NCR; 45% in CRN). Baseline characteristics were consistent with those observed in the main analysis and are displayed in **Annex V Table S12**.

Amongst the systemic treatment classes studied, taxanes and platinum-based systemic treatments were the most common across all data sources in all time windows assessed and higher than observed in the main analysis with ovarian cancer. In the first year (see **Annex V Table S13**), treatment ranged from 13% (CDW Bordeaux) to 37.4% (NCR) for taxanes and from 13% (NCR) to 41.1% (DK-DHR) for platinum-based drugs in the month following index date (i.e. epithelial ovarian cancer diagnosis). The next most frequent treatment class among individuals with epithelial ovarian cancer was monoclonal antibodies in DK-DHR and CRN in the first year of treatment. The proportion of individuals receiving monoclonal antibodies was similar to that seen in the main analysis for ovarian cancer (15.5% in sensitivity vs 14.3% in main analysis), but lower than the proportion observed in CRN (24.1% in sensitivity vs 31.5% in main analysis). Consistent with the main analysis, carboplatin and paclitaxel were the most common treatment observed across the data sources in all time windows studied. Sunburst and Sankey diagrams showed similar treatment combination and sequences to those obtained in the main analysis (available in the ShinyApp). The percentage of no systemic treatment recorded was overall lower (10.9% to 44.5% in sensitivity vs 15% to 55% in main analysis), and treatment percentages were higher for platinum-based drugs combined with taxanes (37.6% to 60.7% in sensitivity vs 23% to 58% in main analysis) or platinum-based alone (3% to 14.6% in sensitivity vs 3% to 12.6% in main analysis), as was observed in DK-DHR, CDW Bordeaux, NCR. Further, percentage systemic treatment was also higher in platinum-taxane combination expanded with bevacizumab or doxorubicin or followed by platinum-based drugs alone (observed in DK-DHR, CDW Bordeaux, NCR). This trend was not observed in CRN, where the percentage of individuals with no systemic treatment increased (14.8% in main analysis to 18.3% in sensitivity), and systemic drug combinations were less prevalent than initially observed in the main analysis with ovarian cancer. Further details of treatment sequences are available in ShinyApp.

9.4.2. Restriction of cases recorded in the national cancer registry in DK-DHR

In this sensitivity analysis (details available in ShinyApp), we restricted ovarian cancer cases to those originating from the national cancer registry in DK-DHR. Here a total of 7,034 individuals with histologically confirmed ovarian cancer were included (**Annex V Table S14**). This number cannot be directly compared to the main analysis (n=8,938), as the time periods covered in both cases differed (i.e. data availability for the national cancer registry ended on December 2022).

Results showed a similar distribution in terms of demographic characteristics (age groups, 18–44 years: 5.9%; 45–64: 34.5%; >65: 59.7%) and comorbidities (most common in decreasing order, obesity: 15.5%; pelvic inflammatory disease: 10.2%; diabetes: 9.1%) compared to those obtained in the main analysis. The distribution of individuals across stages was generally similar between analyses. The proportion of individuals without a recorded stage decreased in the sensitivity analysis, with 28.2% unclassified compared to 38.2% in the main analysis. The proportion of individuals with Stage III and Stage IV also increased (main vs. sensitivity: 14.1% vs. 17% for Stage III; 30.5% vs. 35.7% for Stage IV).

The highest percentages of treatment classes included platinum drugs (69.9%), taxanes (57.8%), monoclonal antibodies (15.6%), and anthracyclines (12.4%) in the sensitivity in DK-DHR for the first year following ovarian cancer diagnosis. Compared to DK-DHR (main), the order of top 10 drugs (ingredient and treatment level) remained unchanged for the first year following ovarian cancer diagnosis.

No systemic treatment was recorded in lesser (11%) individuals with ovarian cancer compared to 15% in the main analysis. The most common initial treatment platinum-based drugs combined with taxanes increased to 57.7% compared to 53% in main analysis. The percentages for other drug combinations did not change drastically (<2% compared to main analysis) for the first- and second-line treatment.

9.4.3. Change in settings for *TreatmentPatterns*

The amount of time that drug eras needed to overlap to be considered a combination therapy was increased from 5 to 14 days. An increase in the combination window did not substantially (>2%) alter the treatment pathways across the data sources. While the percentages of different combinations observed changed, the order of the most frequently observed treatment combinations remained the same. Detailed treatment pathways using sunburst plots and Sankey diagrams for different combination windows can be visualised in the ShinyApp.

10. DISCUSSION

10.1. Key results

Among included data sources, 31,662 individuals newly diagnosed with ovarian cancer were identified with median age at diagnosis ranging from 65 to 68 years across data sources. Among data sources with cancer staging information, more advanced stage at ovarian cancer diagnosis was observed, with 14.1% (DK-DHR) to 36.5% (CRN) at Stage III, and 23.1% (NCR) to 30.5% (DK-DHR) at Stage IV. However, stage at cancer diagnosis was missing for 38% individuals in DK-DHR, 13% in NCR, and 5% in CRN.

All baseline characteristics could not be reliably assessed across all data sources, with information on comorbidities available in only DK-DHR and CDW Bordeaux. In general, baseline comorbidities had a lower prevalence in CDW Bordeaux compared to DK-DHR, likely due to the nature of the CDW Bordeaux, which captures only hospital data (e.g. history of breast cancer: 7.4% in DK-DHR vs. 2.4% in CDW Bourdeaux). WHO-PS was only recorded in NCR and CRN and was incomplete, being missing in approximately half of the ovarian cancer cases. BRCA status was only recorded in NCR after 2015, with 7.5% of individuals diagnosed with ovarian cancer after 2015 being BRCA positive. Lastly, median follow up after diagnosis was lowest in CDW Bordeaux estimated at 494 days, whilst this ranged from 837 to 943 days across other data sources.

Objective 2 results are reported for the first year after ovarian cancer diagnosis. Taxanes and platinum-based therapies were the most frequently used drug classes across all data sources (ranging from 17.8% in CDW Bordeaux to 61.0% in CRN for taxanes, and from 19.1% to 65% across the same data sources for platinum-based drugs). This was similar across age groups and calendar periods. The proportion of people treated with platinum-based drugs and taxanes was lowest for those at Stage I at diagnosis and increased with higher stages at cancer diagnosis. This ranged from 21% to 41% for those at Stage I, 63% to 75% for Stage II, 69% to 83% for Stage III, and 62% to 80% for Stage IV. The third most commonly used drugs in the year after diagnosis were monoclonal antibodies in DK-DHR and CRN, PARP inhibitors in NCR, and anthracyclines in CDW Bordeaux. In general, monoclonal antibodies were captured in individuals with more advanced disease and were observed in 0.4% to 40% of those with Stage III and 0.6% to 68% of those with Stage IV. A similar trend was observed for PARP inhibitors, which were observed in 4.5% to 22.5%, and 6.3% to 19.3% of individuals with Stage III and IV, respectively. In more recent years (2020 to 2024) overall, the third most common treatment classes following platinum-based drugs and taxanes observed were anthracyclines in CDW Bordeaux (3.0%), monoclonal antibodies and PARP inhibitors in DK-DHR (each representing approximately 18.6%), PARP inhibitors in NCR (10.4%), and monoclonal antibodies in CRN. In 2010 to 2014, platinum-based and taxanes predominated to a greater extent than in 2020 to 2024, with other drug classes captured in <1% of individuals in NCR. In 2010 to 2014, anthracyclines ranked third in DK-DHR (8.8%) and CDW Bordeaux (5.4%). Subsequent treatments differed by stage and data source.

Treatment sequences and combinations depicted in Objective 3 showed that the most common systemic treatments consisted of platinum-based drugs combined with taxanes (ranged from 23% in CDW Bordeaux to 57% in DK-DHR and NCR) or platinum-based drugs used alone (3% in CDW Bordeaux to 12.6% in DK-DHR) as initial therapy in most data sources (across all cancer stages). New combination regimens were typically formed by adding monoclonal antibodies (mostly bevacizumab), PARP inhibitors (commonly olaparib), anthracyclines (mainly doxorubicin), or by maintaining the same treatment class but substituting to a

different ingredient (e.g. docetaxel instead of paclitaxel). Individuals with ovarian cancer without any systemic treatment recorded represented 15% of cases in DK-DHR and CRN, 55% in CDW Bordeaux, and 34% in NCR (see **Section 10.2**). Overall, the proportion of individuals treated with systemic drugs increased with subsequent increase in cancer stage until Stage III after which a decrease was observed. Percentage of carboplatin-paclitaxel combination observed increased with each subsequent increase in cancer stage till stage III (for example in DK-DHR: Stage I: 38%, Stage II: 51.3%, Stage III: 68.9%, Stage IV: 63.3%). A high number of individuals treated with carboplatin-paclitaxel combined with bevacizumab combination were observed particularly in Stage III and IV compared to lower stages (e.g. DK-DHR: Stage I: 2%, Stage II: 1.29%, Stage III: 9. 15%, Stage IV: 11.2%).

In the first sensitivity analysis, individuals with epithelial ovarian cancer represented 68.5% of all ovarian cancer cases identified in the study (62% in DK-DHR; 40.3% in CDW Bordeaux; 76.1% in NCR; 45% in CRN). Treatment sequences and combinations were similar to those observed in the main analysis. However, the percentage of individuals for whom no systemic treatment was recorded was overall lower (10.9% to 44.5% in sensitivity vs 15% to 55% in main analysis, across data sources). In DK-DHR, CDW Bordeaux, and NCR, treatment percentages were higher for platinum-taxanes combinations (37.6% to 60.7% in sensitivity vs 23% to 58% in main analysis) or platinum-based alone (3% to 14.6% in sensitivity vs 3% to 12.6% in main analysis).

When ovarian cancer cases were restricted to those from the national cancer registry in DK-DHR, demographic characteristics and comorbidities was similar to the main analysis, while the number of individuals with missing information on stage decreased from 38.2% in main analysis to 28.2%. The order of top 10 drugs (ingredient and treatment level) remained unchanged for the first year following ovarian cancer diagnosis.

Lastly, increasing the combination window (i.e. the amount of time two drug eras needed to overlap to be considered a combination therapy) from 5 to 14 days did not result in a substantial (<2%) alteration in the treatment pathways which were observed across the data sources.

10.2. Strengths and limitations of the research methods

This study identified a large number of individuals with ovarian cancer (n=31,662). Three of the four included data sources provided data at national level, enabling broader population coverage and improving the representativeness of the findings in those countries, and included data from cancer registries.

However, limitations include:

Care for individuals included in CDW Bordeaux can be fragmented between Bordeaux University Hospital (included in the data source) and a separate specialist oncology institute (not captured). For ovarian cancer, most patients are referred to the specialist institute. Although less common, patients who receive systemic treatment in the Bordeaux University Hospital are generally treated exclusively at this centre, and treatment data for these patients should therefore be complete. However, some patients may undergo surgery at this hospital while being referred to other institutions for systemic treatment, which may result in incomplete treatment data and might explain the large number of untreated individuals observed in this data source (55%). NCR only had registration for primary treatment recorded usually within the first nine months post cancer diagnosis, and therefore, cannot be used to understand treatment sequences. In some cases, treatments are recorded beyond this nine-month period, allowing the capture of additional lines of treatment. However, complete data on treatment is restricted to primary treatment. Regarding CRN, data on systemic treatments for ovarian cancer are only available since 2019. In addition, medication records for approximately 10% of the Norwegian population were partial in CRN, capturing only prescribed drugs, while hospital-administered medications were not recorded.

Certain variables mapped to the OMOP CDM were not consistently available, such as cancer grade (morphological grade is only available in CRN), platinum sensitivity status, or BRCA gene (available in NCR

only from 2015 onwards), which may have been useful in understanding of systemic treatment patterns. In most cases this information is not available in the source data, or in the case of CDW Bordeaux, is available in unstructured fields of the source data.

Combinations and sequences derived as part of Objective 3 were based on the assumptions and time windows defined in this study (**Table 3**). These assumptions were necessary due to the differing approaches used to record treatment duration. Most of the data sources included captured administration of treatments on a specific day (e.g. DK-DHR, CRN for intravenous treatments; CDW Bordeaux for all treatments), while others recorded the dates of treatment series (i.e. NCR), or assigned a fixed duration value (e.g. 30 days for oral treatments in CRN). Although the overall trends and most used systemic treatments are consistent across sources and align with clinical guidelines,(11) the lack of precise cancer treatment duration limited a detailed systemic treatment examination and the ability to establish precise treatment patterns. Whilst a sensitivity analysis varying the time period yielded similar results, these assumptions have not been validated. Lastly, although a follow-up period of up to 5 years after diagnosis was permitted, the median follow-up time was shorter. For most data sources this was approximately 2.5 years, except for CDW Bordeaux, where it was close to 16 months. Consequently, the treatments observed do not reflect the full 5-year period and should be interpreted in the context of the median follow-up for each data source.

Certain drugs were not observed in the data sources. These include vinca alkaloids (zero counts across all data sources, except for NCR, with fewer than 5 counts) and DNA agents (zero counts in CDW Bordeaux and NCR). Eight ingredients (including melphalan) were observed in 0 or fewer than 5 individuals across data sources. To our knowledge, the only classes that are not collected among included data sources are hormonal agents in CRN. For other treatments, we cannot rule out whether the absence of records entirely reflect that these treatments were not administered for ovarian cancer treatment or if they were not recorded in the selected data sources. This is particularly relevant for CDW Bordeaux, where treatment data are incomplete.

Cancer staging information was only available in three data sources and was missing in some patients. Cancer staging was not consistently recorded using the FIGO classification for ovarian cancer (only NCR has FIGO staging available). Therefore, TNM staging (corresponding to FIGO staging)(6) was used as a proxy to derive cancer stages. Both clinical and pathological components of TNM staging were utilised as combined categories (for example, clinical and pathological T stages combined into one T category) to optimise the capture of staging information in data sources. This approach is a limitation, as pathological staging is considered the most accurate method for determining the precise extent of ovarian cancer, but not all data sources contained sufficiently granular data to record it. While we use a relatively narrow window to assess staging (i.e., [-7, 60] days), some individuals were categorised into more than one staging. For these cases, preference was given to the lower of the two stagings, which might have resulted in a slightly conservative estimate of the number of individuals diagnosed at higher stage. However, the number of individuals affected by this adjustment was minimal affecting 6.8% in NCR and <2% of cases in remaining data sources (see **Annex V Table S15**). Reasons behind the higher percentage in NCR are uncertain and require further investigation.

Lastly, the observed cases of epithelial ovarian cancer were lower than expected based on their prevalence, as epithelial ovarian cancer is known to account for >90% of all ovarian cancer cases.(13) This discrepancy may be partially explained by the limited granularity of the vocabularies used in the source data. However, the reasons underlying this observation were not assessed in this study and warrant further investigation.

10.3. Interpretation

This study characterised individuals newly diagnosed with ovarian cancer and described systemic treatments used for its management. For data sources with national-level coverage, the number of cases identified in this study was consistent with figures reported by the Association of Nordic Cancer Registries

(ANCR), with approximately 500–600 new cases per year in Denmark (around 8,300 cases from 2010–2023) and Norway (approximately 2,600 cases from 2019–2023).(14) Figures also aligned to those published by the Netherlands Comprehensive Cancer Organisation (IKNL), showing roughly 1,280–1,480 cases per year (20,900 cases from 2010–2024).(15)

Ovarian cancer is diagnosed at advances stages (around 60% reported in 2018) (16), as demonstrated in the study, where a higher number of individuals were diagnosed with Stage III or IV (34.6% in DK-DHR, 59.5% in NCR, and 59.6% in CRN). The distribution of ovarian cancer stages observed in NCR aligned with figures reported by IKNL, with 2023 data indicating that 19% of cases were Stage I, 9% Stage II, 37% Stage III, and 33% Stage IV at diagnosis.(15) In our study, considering the entire period, the corresponding proportions in NCR were 20.4%, 7.1%, 32.8%, and 26.7%.

Systemic treatment recommendations (5, 11) for ovarian cancer include adjuvant chemotherapy with platinum-based drugs combined with taxanes (mostly paclitaxel-carboplatin or carboplatin alone) for treatment of early-stage ovarian cancer (Stage I and II). In advanced stages (Stage III and IV), systemic chemotherapy after surgery is recommended for all individuals with consideration of inclusion of bevacizumab and maintenance therapies. The first-line treatment includes paclitaxel-carboplatin with bevacizumab. Maintenance therapy with PARP inhibitors (olaparib, niraparib) with or without bevacizumab is advised based on cancer-specific genetic markers (such as BRCA 1/2 or Homologous Recombination Deficiency (HRD) status). For patients with contraindications to paclitaxel, alternative combinations, such as carboplatin with docetaxel or pegylated liposomal doxorubicin, are advised.

A broad list of pre-specified treatments for ovarian cancer was assessed in the study. This included older therapies, such as alkylating agents, anthracyclines, topoisomerase inhibitors, or antimetabolites, as well as more recent drug therapies, such as monoclonal antibodies or PARP inhibitors. Treatment patterns and most utilised systemic treatments for ovarian cancer observed in this study were in line with clinical guidelines.(5, 6) Taxanes (i.e. paclitaxel, docetaxel) and platinum-based drugs (i.e. carboplatin, cisplatin) were observed as the most common systemic treatments across all data sources, irrespective of the cancer stage. This observation is in line with the European Society for Medical Oncology (ESMO) guideline for managing ovarian cancer.(11) Paclitaxel combined with carboplatin was found to be more prevalent as first-line treatment than docetaxel-carboplatin combination. This could be partially explained by the tolerability of paclitaxel, which has been shown to have a more favourable side effect profile in clinical settings.(11) Similarly, first-line treatment with carboplatin monotherapy, especially in the lower cancer stages (Stage I and II) was observed across all data sources, consistent with clinical recommendations.(11)

In advanced stages (Stage III or IV), the study found platinum-taxane combination were followed by a combination of monoclonal antibodies (bevacizumab), topoisomerase inhibitors (topotecan), PARP inhibitors (olaparib and niraparib), and anthracyclines (doxorubicin). Similarly, PARP inhibitors, such as olaparib and niraparib, were more frequently observed in advanced stage ovarian cancer as initial or in subsequent treatment pathways, and became more evident in the later years of the study, reflecting their more recent authorisations. Doxorubicin is recommended as combination treatment with taxanes or monoclonal antibodies in platinum-resistant ovarian cancer (11), while PARP inhibitors are clinically indicated based on BRCA gene and HRD status of the individual diagnosed with ovarian cancer. Although genetic information (BRCA gene or platinum sensitivity) and other biomarker information were not consistently available in the current study, the detection of these treatment pathways suggests the presence of individuals with these characteristics.

Less common treatment combinations, such as carboplatin-etoposide or carboplatin-gemcitabine, were observed in individuals but with variations in treatment patterns and pathways across data sources. These combinations are used for treatment of non-epithelial ovarian cancer according to clinical guidelines,(5) which was not specifically assessed as part of this study, which focused on ovarian cancer (overall) and epithelial ovarian cancer. Dexamethasone was observed in multiple treatment pathways in combination

with a range of ingredients (e.g. 2.8% in DK-DHR in first year following ovarian cancer diagnosis). Unlike other chemotherapy drugs investigated in the current study, dexamethasone is used as a supportive medication used to prevent chemotherapy-induced nausea, vomiting, and allergic reactions.(17)

Ingredients with 0 or <5 counts across data sources were altretamine, lomustine, melphalan, mirvetuximab soravtansine, mitoxantrone, rucaparib, thiotepa, and vinblastine. Some of these findings are consistent with the current clinical context, such as established recommendations (e.g. vinblastine not recommended) or the recent approval of drugs (e.g. mirvetuximab soravtansine in November 2024, and rucaparib in Norway from February 2026 [12]). While consistent with current guidelines, results obtained in this study should be interpreted in light of the study's limitations, including design choices for constructing sequences and combinations, and the available follow-up time to assess treatments after diagnosis (see **Section 10.2**). Limitations surrounding treatments captured should also be considered for certain data sources, such as CDW Bordeaux and NCR, where these data were incomplete or unavailable for certain treatment lines or study years.

No systemic treatment was observed for 15% in DK-DHR and CRN, 55% in CDW Bordeaux, and 34% in NCR. The high proportion of individuals with no treatment recorded in CDW Bordeaux is likely attributable to fragmented care and referral to another hospital for treatment (see **Section 10.2**). In general, the proportion of individuals with no treatment recorded was higher in those at Stage I, followed by Stage IV, and among individuals aged 18 to 44 years and those older than 65 years. A possible explanation could be that patients with early-stage disease (such as Stage IA) did not undergo surgery and were subsequently managed with surveillance without systemic therapy or declined further treatment. Similarly, this observation could potentially be explained in older individuals with advanced disease, where treatment decisions also take medical fitness into account, leading to treatment choices, such as best supportive care or palliative care, as more suitable treatment options than administration of systemic treatments. This entails that individuals do not receive active cancer treatment (such as chemotherapy, radiotherapy, or surgery) and the treatment is focused on managing symptoms, enhancing quality of life.(11) However, exact reasons for these findings were not explored in this study and warrant further investigation.

10.4. Generalisability

All data sources included in this study, except CDW Bordeaux, are cancer registries or are linked to cancer registries with national coverage, ensuring comprehensive capture of ovarian cancer cases at the population level. As a result, findings for these data sources are broadly generalisable to their respective national populations. In contrast, CDW Bordeaux is a hospital-based data source and only captures events occurring within the hospital. Therefore, the representativeness of CDW Bordeaux to its respective country is unknown and, hence, findings from this data source should not be generalised to its entire country.

While we consider our results to largely reflect systemic treatments in the respective countries and healthcare settings, results should not be generalised to Europe, as differences in population characteristics, access to treatment, and coding practices might vary by country.

11. CONCLUSION

This study examined demographics, pre-specified characteristics, and exposure to individual systemic treatment classes and ingredients in 31,662 individuals newly diagnosed with ovarian cancer in data sources from Denmark, France, The Netherlands, and Norway. Most individuals were aged >65 years and diagnosed at a more advanced stage of ovarian cancer. Epithelial ovarian cancer was specifically recorded in 40% to 76% of ovarian cases across data sources, representing a lower proportion than that suggested by the literature.

Platinum-based drugs and taxanes were the most commonly observed treatment across cancer stages, often used in combination with other drugs particularly in advanced-stage ovarian cancer, which is

consistent with clinical guidelines. Altretamine, lomustine, melphalan, mirvetuximab soravtansine, mitoxantrone, rucaparib, thiotepa, and vinblastine were observed in 0 or <5 counts across the included data sources. The absence of recorded systemic treatment was greatest in Stage I diagnoses, followed by Stage IV, and in individuals aged 18 to 44 and over 65. The ability to fully characterise treatment was constrained by limitations in the included data sources, with NCR recording only primary treatments, limiting the assessment of treatment sequences, and CDW Bordeaux providing incomplete treatment data due to fragmented care.

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13. ANNEXES

ANNEX I. Description of data sources

Danish Data Health Registries (DK-DHR)

#	Section	Description
1	Database Identification and country	DK-DHR (Danish Data Health Registries) Denmark
2	Data partner information section	Danish Medicines Agency (DKMA) Data Analytics Centre (DAC)
3	Coverage and timespan	Data collection since: 1995 Extent: Nation-wide. The data is representative of the entire Danish population.
4	Healthcare setting / type of data	Community pharmacists, and secondary care - specialists (ambulatory or hospital outpatient care), and hospital inpatient care. The following data elements are collected: diagnosis (including rare diseases and pregnancy data), hospital admissions, discharge and ICU data, Cause of death, Drug prescriptions, dispensing, vaccination and contraception, Procedures, Devices, and Sociodemographic information.
5	Data collection process	Outpatient electronic health records, and Inpatient hospital electronic health records, and Registries, and Other. All causes of deaths, all retrieved drug prescriptions, all records of vaccinations, all hospital inpatient and outpatients contacts including disease diagnoses and hospital surgical and non-surgical procedures, cancers, laboratory test results for the entire Danish population from 1/1/1995 onwards.
6	General representativeness	The data is representative of the entire Danish population. Healthcare is free in Denmark, so we do not expect any bias in data collection based on socio-economic status.
7	Data content /source coding	Diagnoses and causes of death are collected using the ICD-10 vocabulary. ATC and RxNorm are used for Drugs. SNOMED codes are used for Procedures.
8	Data Harmonization	The data has been mapped to the OMOP CDM v5.4 and the OMOP standard vocabularies (SNOMED, RxNorm, LOINC). The format, structural and semantic conformance has been verified upon onboarding into the DARWIN EU® data network. No.
9	Quality control (database specific)	The data we have received relating to nationwide Danish Health Data registries offer an opportunity for large-scale, population-based studies with several advantages 1) Their large size improves the precision of estimates and enables the study of rare exposures and outcomes with long-term latency, 2) Inclusion of nearly all individuals in the target population ensures that the data reflect routine clinical care and all clinical segments of the source population, 3) Data are collected independently of each research study, thus minimising certain types of bias, e.g. non-response, and the influence from attention to the research question on the diagnostic process. Before the source data is sent to us, the Danish Health Data Authority runs and does comprehensive checks of the registry table data validity of the variables, breaks in data, changes in variable coding, missingness, etc. We perform checks of missingness/completeness in relation to requested variables. In essence, we are receiving a dump of a mirror of the data that is controlled by the SDS. The documentation performed by SDS is available online, in Danish primarily https://www.esundhed.dk/Dokumentation (all variables), but also in English https://sundhedsdatastyrelsen.dk/da/english/health_data_and_registers/national_health_registers
10	Linkage	There is no linkage in this data source.
11	Vital status	The Cause of Death registry (DAR) is used, the cause of death is collected using ICD-10 codes.
12	Limitations	No database-specific limitations documented. General limitations for the data type applicable.

#	Section	Description
13	Main references	Schmidt M, Schmidt SAJ,Adelborg K,Sundbøll J,Laugesen K,Ehrenstein V,Sørensen HT "The Danish health care system and epidemiological research: from health care contacts to database records." Clinical epidemiology (2019): 31372058
14	Link to HMA-EMA catalogue and database webpage	HMA-EMA Catalogue entry: https://catalogues.ema.europa.eu/data-source/1111217 Website: https://sundhedsdatastyrelsen.dk/da/english/health_data_and_registers/healthdatadenmark

Clinical Data Warehouse of Bordeaux University Hospital (CDW Bordeaux)

#	Section	Description
1	Database Identification and country	CDW Bordeaux (Clinical Data Warehouse of Bordeaux University Hospital) Nouvelle-Aquitaine, France
2	Data partner information section	CHU DE BORDEAUX - DIRECTION GENERALE Gironde / Nouvelle-Aquitaine
3	Coverage and timespan	Data collection since: 2005 Extent: Regional. It covers the population of Bordeaux metropolitan area, and possibly beyond, as the health care centre for referrals and expertise for the Nouvelle Aquitaine region. The database contains data from 2005 onwards.
4	Healthcare setting / type of data	Secondary care - specialists (ambulatory or hospital outpatient care), and hospital inpatient care, and claims data. The database currently captures information about patient demographics, visit details, conditions, procedures, drugs, measurements, and mortality.
5	Data collection process	Outpatient electronic health records, and Inpatient hospital electronic health records, and Inpatient hospital billing systems, and Biobank. The integrated data is extracted from the hospital production information system via a real-time research database. The data is then processed and quality controlled by a team dedicated to maintaining the database. Internal evaluations were carried out to ensure consistency between the research database and the patient bedside software.
6	General representativeness	This is the 6th largest metropolitan area in France, and CHUBX is the largest hospital in the region. More than 75% of the patients administered to Bordeaux university hospital reside in the Gironde departments, with almost 50% coming directly from the Bordeaux metropolitan area. The hospital also captures additional cases from Nouvelle-Aquitaine region.
7	Data content /source coding	Diagnosis source data is coded in ICD-10 terminology. Procedures are coded in CCAM (French terminology). Laboratory measurements are coded in local terminology and partially mapped to LOINC. Drugs are coded through a local terminology and then mapped to UCD (French terminology), as well as ATC codes.
8	Data Harmonization	The data has been mapped to the OMOP CDM v5.4 and the OMOP standard vocabularies (SNOMED, RxNorm, LOINC). The format, structural and semantic conformance has been verified upon onboarding into the DARWIN EU® data network. We use the hospital's unique identifier to generate the patient identifier in OMOP. If two identities are merged at the hospital, the merge is taken into account in the CDW. An automatic (hourly) detection of suspected duplicated identities has been implemented at the hospital since 2020, with merging of duplicated identities by a specialized team. Identities since 2015 were processed retrospectively. Thus, the rate of identity duplication in the database is low, especially since 2015.
9	Quality control (database specific)	- The integrated data comes from the hospital production information system through a real-time replicated database. Consistency evaluations between the replicated database and the production system are performed by the technical team in charge of maintaining the replicated database.

#	Section	Description
		- In the same way, consistency checks are performed between the replicated database and the data integrated into the i2b2 CDW. In addition, dashboards enable monitoring the data integrated into the i2B2 CDW, in particular by controlling the amount of data available over time, and its evolution, according to the various data sources. - An internal evaluation was carried out to ensure the consistency between the data integrated into i2b2 and the data available in the software used at the patient's bedside. In addition, many use cases were performed on the i2b2 CDW, with return to the patient chart and comparison of the data integrated into i2b2 and the data available in the care file.
10	Linkage	Death certificates (without the cause of death).
11	Vital status	The database is linked to the French death registry.
12	Limitations	CDW Bordeaux is limited to events captured in the hospital setting and thus does not include patient events not treated by the hospital (e.g. rare cancers). Patient events that are not included in CDW Bordeaux are rare disease treatments or specialist events that occur outside of CHUBX.
13	Main references	Cossin S, Diouf S,Griffier R,Le Barrois d'Orgeval P,Diallo G,Jouhet V "Linkage of Hospital Records and Death Certificates by a Search Engine and Machine Learning." JAMIA open (2021): 33709061
14	Link to HMA-EMA catalogue and database webpage	HMA-EMA Catalogue entry: https://catalogues.ema.europa.eu/data-source/1111112 Website: https://www.chu-bordeaux.fr/

Netherlands Cancer Registry (NCR)

#	Section	Description
1	Database Identification and country	NCR (Netherlands Cancer Registry) the Netherlands
2	Data partner information section	IKNL Clinical Data Science
3	Coverage and timespan	Data collection since: 1992 Extent: Nation-wide. The NCR compiles clinical data of all individuals newly diagnosed with cancer in the Netherlands. Cancer registration clerks register newly diagnosed cancer patients, starting in 1989, on a national basis, with 3 million patients included.
4	Healthcare setting / type of data	Hospital inpatient care, and other (specify). The NCR is a registry that contains details about the cancer diagnosis of the patient, the primary treatment, and the vital status.
5	Data collection process	Registries. Cancer registration clerks enter and process the data.
6	General representativeness	The data has nationwide coverage in The Netherlands of people having a cancer diagnosis since 1993.
7	Data content /source coding	ATC codes, ICD-O-3. The diagnosis contains the type of cancer (ICD-O-3) and the stage (TNM).
8	Data Harmonization	The data has been mapped to the OMOP CDM v5.4 and the OMOP standard vocabularies (SNOMED, RxNorm, LOINC). The format, structural and semantic conformance has been verified upon onboarding into the DARWIN EU® data network. We use identifiable data for linkage and identification across hospitals.
9	Quality control (database specific)	All data is collected and checked by data managers. These are some of the quality control procedures:

#	Section	Description
		- All data managers receive a training when they start, and they get yearly refresher courses. - The registration application limits what can be registered, depending on certain disease characteristics. This prevents a lot of errors. - A team of data managers is responsible for quality (werkgroep kwaliteit). - Random samples of registered data are checked. - Automatic checks are done. - Researchers, who use the data, can request quality checks if they suspect issues.
10	Linkage	Established linkages: National statistics from CBS PROMS from PROFILES Pathology data from PALGA Other info from other Dutch sources
11	Vital status	Vital status for all patients included in the NCR is linked once every year using the governmental Personal Records Database.
12	Limitations	The database only has patients with a cancer diagnosis. The primary treatment is mainly registered. There are some lab results, mainly around the diagnosis. There is no sociodemographic information. Only ATC codes are available for some drugs, and this can only be mapped to ingredient level in OMOP.
13	Main references	Gijs Geleijnse, RuRu Chun-Ju Chiang, Melle Sieswerda, Melinda Schuurman, K. C. Lee, Johan van Soest, Andre Dekker, Wen-Chung Lee & Xander A. A. M. Verbeek "Prognostic factors analysis for oral cavity cancer survival in the Netherlands and Taiwan using a privacy-preserving federated infrastructure" Scientific Reports (2020):
14	Link to HMA-EMA catalogue and database webpage	HMA-EMA Catalogue entry: https://catalogues.ema.europa.eu/data-source/1111117 Website: https://iknl.nl/en

Cancer Registry Norway (CRN)

#	Section	Description
1	Database Identification and country	CRN (Cancer Registry Norway) Norway
2	Data partner information section	Norwegian Institute of Public Health Cancer Registry of Norway
3	Coverage and timespan	Data collection since: 1953 Extent: Nation-wide. The catchment area is all of Norway. The approximate population is around 5.6 Million.
4	Healthcare setting / type of data	Secondary care - specialists (ambulatory or hospital outpatient care), and hospital inpatient care. The following data elements are collected: diagnoses, pathology, lab reports, clinical notifications, deaths, procedures, measurements, drug prescription and dispensing.
5	Data collection process	Registries. Data is entered and processed by the data controllers, where a standard SOP of data quality checks are completed. As well, strict quality assessment procedures are done to manually assess the quality of the information in regards to general statistics and cancer-specific domain information.
6	General representativeness	All cancer patients in Norway must be registered in the CRN, independent of age or sociodemographic factors. Therefore the database should mirror the source population well.
7	Data content /source coding	ICD03 and ICD10 are used for topography/morphology/disease of the cancer diagnosis. Other used systems are ISUP, ECOG and SNOMED.

#	Section	Description
		Drugs prescriptions and dispensing is recorded with ATC codes, indications for the prescriptions are recorded with ICD10 codes.
8	Data Harmonization	The data has been mapped to the OMOP CDM v5.4 and the OMOP standard vocabularies (SNOMED, RxNorm, LOINC). The format, structural and semantic conformance has been verified upon onboarding into the DARWIN EU® data network. No. All patients have 11-digit unique identifiers used. Persons who have changed their unique identifier have a link between the old and new number.
9	Quality control (database specific)	The CRN has a strict QA-regime, with validation of all received information and a rule-engine ensuring that international, national, and in-house rules are being implemented the same way for all cases. In addition, we have manual quality assurance checks for different cancer sites, to uncover unlikely information, for instance checking all cases of melanoma where the diameter of the tumour exceeds 2 cm etc. The quality of the CRN-data is described in articles and by different quality measures in our annual statistics (for instance: percentage of cases morphologically verified, estimated completeness of cases, percentage cases only documented by a death certificate, male to female ratio, etc.).
10	Linkage	Every citizen has a unique personal identifier, and via this identifier, patients can be linked to other national data sources. But none are specifically mentioned.
11	Vital status	Vital status is regularly updated in the Cancer Registry of Norway through linkage with the National Population Register. Information on cause for death is obtained from the Cause of death Registry through linkage.
12	Limitations	No database-specific limitations documented. General limitations for the data type applicable.
13	Main references	Larsen IK, Småstuen M,Johannesen TB,Langmark F,Parkin DM,Bray F,Møller B "Data quality at the Cancer Registry of Norway: an overview of comparability, completeness, validity and timeliness." European journal of cancer (Oxford, England : 1990) (2009): 19091545
14	Link to HMA-EMA catalogue and database webpage	HMA-EMA Catalogue entry: https://catalogues.ema.europa.eu/data-source/1111128 Website: https://www.kreftregisteret.no/en/

ANNEX II. Fitness for use assessment

Data source justification for inclusion and key characteristics

In this section we provide a justification for including the selected data sources. We also provide the expected number of person counts based on a preliminary feasibility assessment. Please note that these numbers are approximate, rounded to the nearest multiple of 100, and correspond to the entire data source, with no restriction on age, sex, or study period. Therefore, the number of individuals who will be included in the study might differ to those reported in this section.

Danish Data Health Registries (DK-DHR):

DK-DHR will be included in this study due to its nationwide coverage and its comprehensive record of cancer diagnoses. DK-DHR is a registry-based data source that includes secondary inpatient, outpatient, and emergency health data from the entire population of Denmark (approximately 4.3 million female patients). Data on cancer is obtained from the National Patient Registry (with data up to end of data availability) and the National Cancer Registry (with data up to December 2022). The National Cancer Registry contains information on all primary cancer cases histologically confirmed in the country.

Based on a preliminary feasibility assessment, the expected number of person counts for ovarian cancer is approximately 20,000. Person counts of treatments of interest (assessed at ingredient-level) range from 100 to 1,895,200. Data availability in DK-DHR starts in 1995. The date of the most recent data extraction is November 2024. Observability is defined as the time from the earliest of date of birth or registry start through to death. The median follow-up of the first observation period in DK-DHR is 7,920 days (2,610-1,090).

DK-DHR has blanket Institutional Review Board (IRB) approval.

Clinical Data Warehouse of Bordeaux University Hospital (CDW Bordeaux):

CDW Bordeaux will be included in this study because it is a hospital registry that includes secondary inpatient, outpatient, and emergency room health data (approximately 1.22 million women). Based on a preliminary feasibility assessment, the expected number of person counts is approximately 1,200. Data availability in CDW Bordeaux starts in 2005, and the date of the most recent data extraction is September 2025. Observability is defined as the period between a patient's first hospital admission and their most recent hospital discharge. The median follow-up of the first observation period in CDW Bordeaux is 2,470 days (1370-5,550).

IRB approval for CDW Bordeaux is estimated to take 1 to 2 weeks.

Netherlands Cancer Registry (NCR):

NCR will be included in this study because it is a cancer registry, compiling clinical data for all newly diagnosed cancer patients in the Netherlands. The number of female patients included is approximately 1.32 million. Based on a preliminary feasibility assessment, the expected number of person counts is 6,400. Person counts of treatments of interest (assessed at ingredient-level) range from 100 to 70,900. In the current onboarded data source, data availability extends up to January 2025 and includes data on individuals aged 18 or older. Due to lack of completeness of most recent data, the study will be restricted up to December 2023. Observability is defined as the time from the earliest of date of birth or registry start through to death, last vital status update (collected annually, latest in 2023), or emigration. The median follow-up of the first observation period in NCR is 1,020 days (6,220-1,170).

IRB approval for NCR is estimated to take 1 to 3 months.

Cancer Registry Norway (CRN):

CRN will be included in this study because it is the national cancer registry in Norway (approximately 585,000 women). Based on a preliminary feasibility assessment, the expected number of person count is 6200. Person counts of treatments of interest (assessed at ingredient-level) range from 100 to 12,500. Moreover, data availability and follow-up in CRN starts in 1951 and extends up to September 2025. However, due to lack of completeness of most recent data, the study will be restricted up to December 2024. Observability is defined as the time from the earliest of date of birth or registry start through to death, last vital status update (collected annually, latest in 2024), or emigration. The median follow-up of the first observation period in CRN is 1,890 days (1,200-2,400).

ANNEX III. Operational and reporting considerations

DATA MANAGEMENT

Data management

All data sources have previously mapped their data to the OMOP common data model. This enabled the use of standardised analytics and using DARWIN EU® tools across the network since the structure of the data and the terminology system was harmonised. The OMOP CDM was developed and maintained by the Observational Health Data Sciences and Informatics (OHDSI) initiative and is described in detail on the wiki page of the CDM: https://ohdsi.github.io/CommonDataModel and in The Book of OHDSI: http://book.ohdsi.org

The analytic code for this study was written in R and used standardised analytics wherever possible. Each data partner executed the study code against their data source containing individual data and then returned the results (csv files) which only contained aggregated data. The results from each of the contributing data sites were then combined in tables and figures for the study report.

Data storage and protection

For this study, personal data from individuals in various EU member states were processed, using information collected from national/regional electronic health record data sources. Due to the sensitive nature of this personal medical data, it is important to be fully aware of ethical and regulatory aspects and to strive to take all reasonable measures to ensure compliance with ethical and regulatory issues on privacy.

All data sources used in this study were already used for pharmaco-epidemiological research and have a well-developed mechanism to ensure that European and local regulations dealing with ethical use of the data and adequate privacy control were adhered to. In agreement with these regulations, rather than combining person level data and performing only a central analysis, local analyses were run, which generate non-identifiable aggregate summary results.

The output files are stored in the DARWIN EU® Digital Research Environment (DRE). These output files do not contain any data that allow identification of subjects included in the study. The DRE implements further security measures to ensure a high level of stored data protection to comply with the local implementation of the General Data Protection Regulation (GDPR) (EU) 679/20161 in the various member states.

QUALITY CONTROL

Data source quality control

-*CohortDiagnostics* (https://github.com/OHDSI/CohortDiagnostics) and *DrugExposureDiagnostics* (https://cran.r-project.org/web/packages/DrugExposureDiagnostics/index.html) R packages were run to assess the use of different codes across the data sources contributing to the study and identify any codes potentially omitted in error. -

The study code was based on DARWIN EU® R packages: *DrugUtilisation* to characterise the drug use, *CohortCharacteristics* to characterise the cohort by indication, and *TreatmentPatterns* to depict treatment sequences and combinations. These packages include numerous automated unit tests to ensure the validity of the codes, alongside software peer review and user testing. The R package will be made publicly available via GitHub.

ANNEX IV. Concept sets

Table S1. List of concepts used for ovarian cancer.

Concept ID	Concept name	Vocabulary
36557481	Adenocarcinoid tumor of ovary	ICDO3
36517442	Adenocarcinoma in tubulovillous adenoma of ovary	ICDO3
44501799	Adenocarcinoma in villous adenoma of ovary	ICDO3
36533493	Adenocarcinoma with apocrine metaplasia of ovary	ICDO3
36555833	Adenocarcinoma with cartilaginous and osseous metaplasia of ovary	ICDO3
44501497	Adenocarcinoma with mixed subtypes of ovary	ICDO3
36549048	Adenocarcinoma with neuroendocrine differentiation of ovary	ICDO3
36555562	Adenocarcinoma with spindle cell metaplasia of ovary	ICDO3
44502635	Adenocarcinoma with squamous metaplasia of ovary	ICDO3
42512706	Adenocarcinoma, intestinal type of ovary	ICDO3
44500057	Adenocarcinoma, NOS, of ovary	ICDO3
36522016	Adenoid cystic carcinoma of ovary	ICDO3
44501979	Adenosarcoma of ovary	ICDO3
44502118	Adenosquamous carcinoma of ovary	ICDO3
36561709	Androblastoma, malignant of ovary	ICDO3
36547231	Angiomyosarcoma of ovary	ICDO3
44500697	Astrocytoma, NOS, of ovary	ICDO3
36564919	Basal cell adenocarcinoma of ovary	ICDO3
44501034	Brenner tumor, malignant of ovary	ICDO3
4311576	Carcinoma of ovary, stage 1	SNOMED
4311462	Carcinoma of ovary, stage 2	SNOMED
4313202	Carcinoma of ovary, stage 3	SNOMED
4310444	Carcinoma of ovary, stage 4	SNOMED
36518615	Carcinoma simplex of ovary	ICDO3
36555513	Carcinoma with osteoclast-like giant cells of ovary	ICDO3
44500115	Carcinoma, anaplastic, NOS, of ovary	ICDO3
36687125	Carcinosarcoma of bilateral ovaries	SNOMED
36687123	Carcinosarcoma of left ovary	SNOMED
45765433	Carcinosarcoma of ovary	SNOMED
36687124	Carcinosarcoma of right ovary	SNOMED
36565621	Carcinosarcoma, embryonal of ovary	ICDO3
42512428	Chondrosarcoma, NOS, of ovary	ICDO3
44499580	Choriocarcinoma combined with other germ cell elements of ovary	ICDO3
4112865	Choriocarcinoma of ovary	SNOMED

Concept ID	Concept name	Vocabulary
44503153	Clear cell adenocarcinofibroma of ovary	ICDO3
1246658	Clear cell adenocarcinoma of Mullerian origin of ovary	SNOMED
35621826	Clear cell adenocarcinoma of ovary	SNOMED
44499691	Clear cell adenocarcinoma, NOS, of fallopian tube	ICDO3
44500698	CNS embryonal tumor, NOS, of ovary	ICDO3
42512649	Combined small cell carcinoma of ovary	ICDO3
4198275	Cystadenocarcinoma of ovary	SNOMED
36528030	Cystadenocarcinoma, NOS, of fallopian tube	ICDO3
42511808	Dedifferentiated liposarcoma of ovary	ICDO3
36541965	Desmoplastic small round cell tumor of ovary	ICDO3
4116076	Embryonal carcinoma of ovary	SNOMED
42512212	Embryonal rhabdomyosarcoma, NOS, of ovary	ICDO3
4110870	Endodermal sinus tumor of ovary	SNOMED
36551251	Endometrial stromal sarcoma, low grade of ovary	ICDO3
36549177	Endometrioid adenocarcinoma, ciliated cell variant of ovary	ICDO3
44500794	Endometrioid adenocarcinoma, NOS, of fallopian tube	ICDO3
44499441	Endometrioid adenocarcinoma, NOS, of peritoneum, NOS	ICDO3
36546706	Endometrioid adenocarcinoma, secretory variant of ovary	ICDO3
44501646	Endometrioid adenofibroma, malignant of ovary	ICDO3
4112857	Endometrioid carcinoma ovary	SNOMED
36526539	Enterochromaffin cell carcinoid of ovary	ICDO3
36522186	Enterochromaffin-like cell tumor of ovary	ICDO3
36554315	Ependymoma, NOS, of ovary	ICDO3
36560084	Epithelial-myoepithelial carcinoma of ovary	ICDO3
36523542	Epithelioid leiomyosarcoma of ovary	ICDO3
36563283	Epithelioid sarcoma, NOS, of ovary	ICDO3
36541361	Epithelioma, malignant of ovary	ICDO3
1553496	Extra-adrenal paraganglioma, NOS, of ovary	ICDO3
36557412	Fascial fibrosarcoma of ovary	ICDO3
44501972	Fibrosarcoma, NOS, of ovary	ICDO3
44499578	Germ cell tumor, nonseminomatous of ovary	ICDO3
36540048	Giant cell and spindle cell carcinoma of ovary	ICDO3
44500481	Giant cell carcinoma of ovary	ICDO3
36558110	Giant cell sarcoma of ovary	ICDO3
36551702	Glassy cell carcinoma of ovary	ICDO3
36530159	Goblet cell carcinoid of ovary	ICDO3
44499811	Granular cell carcinoma of ovary	ICDO3

Concept ID	Concept name	Vocabulary
42512346	Hemangiosarcoma of ovary	ICDO3
36567568	Hepatoid adenocarcinoma of ovary	ICDO3
44501211	High grade serous carcinoma of fallopian tube	ICDO3
44505267	High grade serous carcinoma of peritoneum, NOS	ICDO3
44505258	High grade serous carcinoma of specified parts of peritoneum	ICDO3
36537077	Infantile fibrosarcoma of ovary	ICDO3
36526802	Large cell carcinoma with rhabdoid phenotype of ovary	ICDO3
44499710	Large cell carcinoma, NOS, of ovary	ICDO3
36566846	Large cell neuroendocrine carcinoma of ovary	ICDO3
602311	Left ovarian primary endometrioid carcinoma	SNOMED
602307	Left ovarian primary mucinous cystadenocarcinoma	SNOMED
608867	Left ovarian primary sarcoma	SNOMED
44502971	Leiomyosarcoma, NOS, of ovary	ICDO3
44501960	Leydig cell tumor, malignant of ovary	ICDO3
44500457	Low grade serous carcinoma of fallopian tube	ICDO3
44501803	Low grade serous carcinoma of peritoneum, NOS	ICDO3
44500650	Low grade serous carcinoma of specified parts of peritoneum	ICDO3
1245142	Malignant Brenner tumor of ovary	SNOMED
4116077	Malignant dysgerminoma of ovary	SNOMED
4116073	Malignant epithelial tumor of ovary	SNOMED
36686094	Malignant germ cell neoplasm of left ovary	SNOMED
36686093	Malignant germ cell neoplasm of right ovary	SNOMED
4112864	Malignant germ cell tumor of ovary	SNOMED
4112862	Malignant granulosa cell tumor of ovary	SNOMED
37311080	Malignant immature teratoma of ovary	SNOMED
44501734	Malignant melanoma, NOS, of ovary	ICDO3
4181351	Malignant neoplasm of ovary	SNOMED
37166979	Malignant non-dysgerminomatous germ cell tumor of ovary	SNOMED
4116074	Malignant sex cord tumor of ovary	SNOMED
36554907	Malignant teratoma, intermediate of ovary	ICDO3
36549316	Malignant teratoma, undifferentiated of ovary	ICDO3
36521466	Malignant tumor, clear cell type of ovary	ICDO3
36559221	Malignant tumor, giant cell type of ovary	ICDO3
36524459	Malignant tumor, small cell type of ovary	ICDO3
36564832	Malignant tumor, spindle cell type of ovary	ICDO3
36521027	Medullary carcinoma, NOS, of ovary	ICDO3
36555512	Medulloepithelioma, NOS, of ovary	ICDO3

Concept ID	Concept name	Vocabulary
44499765	Mesodermal mixed tumor of ovary	ICDO3
36539989	Mesonephroma, malignant of ovary	ICDO3
44500093	Mesothelioma, malignant of ovary	ICDO3
44500675	Metaplastic carcinoma, NOS, of ovary	ICDO3
36519660	Mixed adenoneuroendocrine carcinoma of ovary	ICDO3
44502626	Mixed cell adenocarcinoma of ovary	ICDO3
44503047	Mixed germ cell tumor of ovary	ICDO3
42512021	Mixed tumor, malignant, NOS, of ovary	ICDO3
44501089	Mucin-producing adenocarcinoma of ovary	ICDO3
44503112	Mucinous adenocarcinofibroma of ovary	ICDO3
36546343	Mucinous carcinoma, gastric type of ovary	ICDO3
4112856	Mucinous cystadenocarcinoma of ovary	SNOMED
44502729	Mullerian mixed tumor of ovary	ICDO3
36533456	Myoepithelial carcinoma of ovary	ICDO3
42512745	Myofibroblastic sarcoma of ovary	ICDO3
36533215	Myosarcoma of ovary	ICDO3
36548200	Myxofibrosarcoma of ovary	ICDO3
36518902	Myxoid leiomyosarcoma of ovary	ICDO3
36549503	Myxosarcoma of ovary	ICDO3
36551146	Nephroblastoma, NOS, of ovary	ICDO3
42512400	Neuroblastoma, NOS, of ovary	ICDO3
44500500	Neuroendocrine carcinoma, NOS, of ovary	ICDO3
36537956	Neuroendocrine tumor, grade 2 of ovary	ICDO3
44500023	Neuroendocrine tumor, NOS, of ovary	ICDO3
44501472	Non-small cell carcinoma of ovary	ICDO3
44502948	Oxyphilic adenocarcinoma of ovary	ICDO3
44500139	Papillary adenocarcinoma, NOS, of fallopian tube	ICDO3
44501638	Papillary adenocarcinoma, NOS, of ovary	ICDO3
44501144	Papillary adenocarcinoma, NOS, of peritoneum, NOS	ICDO3
42512613	Papillary carcinoma, follicular variant of ovary	ICDO3
44502916	Papillary carcinoma, NOS, of ovary	ICDO3
44502628	Papillary cystadenocarcinoma, NOS, of ovary	ICDO3
36403161	Papillary serous cystadenocarcinoma of ovary	ICDO3
44502604	Papillary squamous cell carcinoma of ovary	ICDO3
36548557	Pleomorphic carcinoma of ovary	ICDO3
36529012	Polyembryoma of ovary	ICDO3
36528200	Polygonal cell carcinoma of ovary	ICDO3

Concept ID	Concept name	Vocabulary
37018972	Primary adenocarcinoma of fallopian tube	SNOMED
36715933	Primary adenocarcinoma of peritoneum	SNOMED
37167583	Primary carcinosarcoma of ovary	SNOMED
37167592	Primary clear cell adenocarcinoma of ovary	SNOMED
37166281	Primary cystadenocarcinoma of ovary	SNOMED
37167518	Primary endometrioid carcinoma of ovary	SNOMED
36716618	Primary high grade serous adenocarcinoma of ovary	SNOMED
36717228	Primary low grade serous adenocarcinoma of ovary	SNOMED
37167659	Primary malignant dysgerminoma of ovary	SNOMED
37167658	Primary malignant granulosa cell tumor of ovary	SNOMED
36712933	Primary malignant neoplasm of both ovaries	SNOMED
4289681	Primary malignant neoplasm of left ovary	SNOMED
200051	Primary malignant neoplasm of ovary	SNOMED
4289392	Primary malignant neoplasm of right ovary	SNOMED
37168510	Primary malignant Sertoli-Leydig cell tumor of ovary	SNOMED
37167657	Primary malignant sex cord tumor of ovary	SNOMED
37116598	Primary mucinous adenocarcinoma of ovary	SNOMED
37166252	Primary mucinous cystadenocarcinoma of ovary	SNOMED
37396690	Primary non-gestational choriocarcinoma of ovary	SNOMED
602309	Primary serous papillary cystadenocarcinoma of left ovary	SNOMED
602308	Primary serous papillary cystadenocarcinoma of right ovary	SNOMED
37166251	Primary serous papillary cystadenocarcinoma ovary	SNOMED
37167594	Primary small cell neuroendocrine carcinoma of ovary	SNOMED
37167733	Primary theca steroid producing cell malignant neoplasm of ovary	SNOMED
36529849	Pseudosarcomatous carcinoma of ovary	ICDO3
44500161	Rhabdoid tumor, NOS, of ovary	ICDO3
44502642	Rhabdomyosarcoma, NOS, of ovary	ICDO3
602310	Right ovarian primary endometrioid carcinoma	SNOMED
602306	Right ovarian primary mucinous cystadenocarcinoma	SNOMED
608868	Right ovarian primary sarcoma	SNOMED
44501486	Scirrhous adenocarcinoma of ovary	ICDO3
36527913	Sebaceous carcinoma of ovary	ICDO3
44502582	Seminoma, NOS, of ovary	ICDO3
42512888	Seromucinous carcinoma of ovary	ICDO3
44501671	Serous adenocarcinofibroma of ovary	ICDO3
44500067	Serous carcinoma, NOS, of fallopian tube	ICDO3
44499443	Serous carcinoma, NOS, of ovary	ICDO3

Concept ID	Concept name	Vocabulary
44502285	Serous carcinoma, NOS, of peritoneum, NOS	ICDO3
44500796	Serous carcinoma, NOS, of specified parts of peritoneum	ICDO3
44502962	Sertoli cell carcinoma of ovary	ICDO3
36533533	Sertoli-Leydig cell tumor, poorly differentiated, with heterologous elements of ovary	ICDO3
44499561	Signet ring cell carcinoma of ovary	ICDO3
42511825	Small cell carcinoma, intermediate cell of ovary	ICDO3
36546973	Small cell sarcoma of ovary	ICDO3
36549054	Solid carcinoma, NOS, of ovary	ICDO3
36519688	Solitary fibrous tumor, malignant of ovary	ICDO3
36550763	Spindle cell carcinoma, NOS, of ovary	ICDO3
44499569	Spindle cell sarcoma of ovary	ICDO3
36567017	Squamous cell carcinoma with horn formation of ovary	ICDO3
36562826	Squamous cell carcinoma, adenoid of ovary	ICDO3
36550805	Squamous cell carcinoma, keratinizing, NOS, of ovary	ICDO3
36563636	Squamous cell carcinoma, large cell, nonkeratinizing, NOS, of ovary	ICDO3
36550888	Squamous cell carcinoma, microinvasive of ovary	ICDO3
44500986	Squamous cell carcinoma, NOS, of ovary	ICDO3
36518848	Squamous cell carcinoma, small cell, nonkeratinizing of ovary	ICDO3
36562083	Squamous cell carcinoma, spindle cell of ovary	ICDO3
44505882	Steroid cell tumor, malignant of ovary	ICDO3
44501102	Stromal sarcoma, NOS, of ovary	ICDO3
44502732	Struma ovarii, malignant of ovary	ICDO3
36527293	Superficial spreading adenocarcinoma of ovary	ICDO3
36517655	Teratocarcinoma of ovary	ICDO3
44502731	Teratoma with malignant transformation of ovary	ICDO3
44500162	Teratoma, malignant, NOS, of ovary	ICDO3
36519879	Thecoma, malignant of ovary	ICDO3
44500991	Transitional cell carcinoma, NOS, of ovary	ICDO3
36522229	Trophoblastic tumor, epithelioid of ovary	ICDO3
36568387	Tumor cells, malignant of ovary	ICDO3
36557833	Undifferentiated sarcoma of ovary	ICDO3
36565806	Verrucous carcinoma, NOS, of ovary	ICDO3
36524110	Villous adenocarcinoma of ovary	ICDO3

Table S2. List of conditions definitions for Epithelial ovarian cancer (sensitivity analysis).

Concept ID	Concept name	Vocabulary
36557481	Adenocarcinoid tumor of ovary	ICDO3
36517442	Adenocarcinoma in tubulovillous adenoma of ovary	ICDO3
44501799	Adenocarcinoma in villous adenoma of ovary	ICDO3
36533493	Adenocarcinoma with apocrine metaplasia of ovary	ICDO3
36555833	Adenocarcinoma with cartilaginous and osseous metaplasia of ovary	ICDO3
44501497	Adenocarcinoma with mixed subtypes of ovary	ICDO3
36549048	Adenocarcinoma with neuroendocrine differentiation of ovary	ICDO3
36555562	Adenocarcinoma with spindle cell metaplasia of ovary	ICDO3
44502635	Adenocarcinoma with squamous metaplasia of ovary	ICDO3
42512706	Adenocarcinoma, intestinal type of ovary	ICDO3
44500057	Adenocarcinoma, NOS, of ovary	ICDO3
36522016	Adenoid cystic carcinoma of ovary	ICDO3
44502118	Adenosquamous carcinoma of ovary	ICDO3
36518615	Carcinoma simplex of ovary	ICDO3
36555513	Carcinoma with osteoclast-like giant cells of ovary	ICDO3
44500115	Carcinoma, anaplastic, NOS, of ovary	ICDO3
4211948	Clear cell (mesonephric) neoplasm of ovary	SNOMED
44503153	Clear cell adenocarcinofibroma of ovary	ICDO3
1246658	Clear cell adenocarcinoma of Mullerian origin of ovary	SNOMED
35621826	Clear cell adenocarcinoma of ovary	SNOMED
44499691	Clear cell adenocarcinoma, NOS, of fallopian tube	ICDO3
4198275	Cystadenocarcinoma of ovary	SNOMED
36528030	Cystadenocarcinoma, NOS, of fallopian tube	ICDO3
37163188	Cystadenoma of ovary in childhood	SNOMED
36549177	Endometrioid adenocarcinoma, ciliated cell variant of ovary	ICDO3
44500794	Endometrioid adenocarcinoma, NOS, of fallopian tube	ICDO3
44499441	Endometrioid adenocarcinoma, NOS, of peritoneum, NOS	ICDO3
36546706	Endometrioid adenocarcinoma, secretory variant of ovary	ICDO3
44501646	Endometrioid adenofibroma, malignant of ovary	ICDO3
4112857	Endometrioid carcinoma ovary	SNOMED
36526539	Enterochromaffin cell carcinoid of ovary	ICDO3

Concept ID	Concept name	Vocabulary
4034004	Epithelial tumor of ovary	SNOMED
36560084	Epithelial-myoepithelial carcinoma of ovary	ICDO3
36541361	Epithelioma, malignant of ovary	ICDO3
36540048	Giant cell and spindle cell carcinoma of ovary	ICDO3
44500481	Giant cell carcinoma of ovary	ICDO3
36551702	Glassy cell carcinoma of ovary	ICDO3
36530159	Goblet cell carcinoid of ovary	ICDO3
44499811	Granular cell carcinoma of ovary	ICDO3
36567568	Hepatoid adenocarcinoma of ovary	ICDO3
36526802	Large cell carcinoma with rhabdoid phenotype of ovary	ICDO3
44499710	Large cell carcinoma, NOS, of ovary	ICDO3
602311	Left ovarian primary endometrioid carcinoma	SNOMED
602307	Left ovarian primary mucinous cystadenocarcinoma	SNOMED
4116073	Malignant epithelial tumor of ovary	SNOMED
44500675	Metaplastic carcinoma, NOS, of ovary	ICDO3
36519660	Mixed adenoneuroendocrine carcinoma of ovary	ICDO3
44502626	Mixed cell adenocarcinoma of ovary	ICDO3
4112859	Mixed epithelial tumor of ovary	SNOMED
44503112	Mucinous adenocarcinofibroma of ovary	ICDO3
36546343	Mucinous carcinoma, gastric type of ovary	ICDO3
4112856	Mucinous cystadenocarcinoma of ovary	SNOMED
36533456	Myoepithelial carcinoma of ovary	ICDO3
44502948	Oxyphilic adenocarcinoma of ovary	ICDO3
44500139	Papillary adenocarcinoma, NOS, of fallopian tube	ICDO3
44501638	Papillary adenocarcinoma, NOS, of ovary	ICDO3
44501144	Papillary adenocarcinoma, NOS, of peritoneum, NOS	ICDO3
42512613	Papillary carcinoma, follicular variant of ovary	ICDO3
44502916	Papillary carcinoma, NOS, of ovary	ICDO3
44502628	Papillary cystadenocarcinoma, NOS, of ovary	ICDO3
36403096	Papillary pseudomucinous cystadenocarcinoma of ovary	ICDO3
44502604	Papillary squamous cell carcinoma of ovary	ICDO3
36548557	Pleomorphic carcinoma of ovary	ICDO3

Concept ID	Concept name	Vocabulary
36528200	Polygonal cell carcinoma of ovary	ICDO3
37167592	Primary clear cell adenocarcinoma of ovary	SNOMED
37166281	Primary cystadenocarcinoma of ovary	SNOMED
37167518	Primary endometrioid carcinoma of ovary	SNOMED
36716618	Primary high grade serous adenocarcinoma of ovary	SNOMED
36717228	Primary low grade serous adenocarcinoma of ovary	SNOMED
37116598	Primary mucinous adenocarcinoma of ovary	SNOMED
37166252	Primary mucinous cystadenocarcinoma of ovary	SNOMED
37166253	Primary undifferentiated carcinoma of ovary	SNOMED
602310	Right ovarian primary endometrioid carcinoma	SNOMED
602306	Right ovarian primary mucinous cystadenocarcinoma	SNOMED
44501486	Scirrhous adenocarcinoma of ovary	ICDO3
36527913	Sebaceous carcinoma of ovary	ICDO3
44501671	Serous adenocarcinofibroma of ovary	ICDO3
44499443	Serous carcinoma, NOS, of ovary	ICDO3
37209153	Serous cystadenoma of left ovary	SNOMED
37209154	Serous cystadenoma of right ovary	SNOMED
36403111	Serous cystadenoma, malignant of ovary	ICDO3
4110864	Serous papillary cystadenoma of ovary	SNOMED
36549054	Solid carcinoma, NOS, of ovary	ICDO3
36550763	Spindle cell carcinoma, NOS, of ovary	ICDO3
36566848	Squamous cell carcinoma in situ, NOS, of ovary	ICDO3
36567017	Squamous cell carcinoma with horn formation of ovary	ICDO3
36562826	Squamous cell carcinoma, adenoid of ovary	ICDO3
36550805	Squamous cell carcinoma, keratinizing, NOS, of ovary	ICDO3
36563636	Squamous cell carcinoma, large cell, nonkeratinizing, NOS, of ovary	ICDO3
36550888	Squamous cell carcinoma, microinvasive of ovary	ICDO3
44500986	Squamous cell carcinoma, NOS, of ovary	ICDO3
36518848	Squamous cell carcinoma, small cell, nonkeratinizing of ovary	ICDO3
36562083	Squamous cell carcinoma, spindle cell of ovary	ICDO3
36527293	Superficial spreading adenocarcinoma of ovary	ICDO3
44500991	Transitional cell carcinoma, NOS, of ovary	ICDO3

Concept ID	Concept name	Vocabulary
37159984	Undifferentiated carcinoma of left ovary	SNOMED
37159983	Undifferentiated carcinoma of right ovary	SNOMED
36565806	Verrucous carcinoma, NOS, of ovary	ICDO3
36524110	Villous adenocarcinoma of ovary	ICDO3

Table S3. List of conditions definitions for ovarian cancer phenotype (ICD03) for sensitivity analysis.

Concept ID	Concept name	Vocabulary
36557481	Adenocarcinoid tumor of ovary	ICDO3
36517442	Adenocarcinoma in tubulovillous adenoma of ovary	ICDO3
44501799	Adenocarcinoma in villous adenoma of ovary	ICDO3
36533493	Adenocarcinoma with apocrine metaplasia of ovary	ICDO3
36555833	Adenocarcinoma with cartilaginous and osseous metaplasia of ovary	ICDO3
44501497	Adenocarcinoma with mixed subtypes of ovary	ICDO3
36549048	Adenocarcinoma with neuroendocrine differentiation of ovary	ICDO3
36555562	Adenocarcinoma with spindle cell metaplasia of ovary	ICDO3
44502635	Adenocarcinoma with squamous metaplasia of ovary	ICDO3
42512706	Adenocarcinoma, intestinal type of ovary	ICDO3
44500057	Adenocarcinoma, NOS, of ovary	ICDO3
36522016	Adenoid cystic carcinoma of ovary	ICDO3
44501979	Adenosarcoma of ovary	ICDO3
44502118	Adenosquamous carcinoma of ovary	ICDO3
36561709	Androblastoma, malignant of ovary	ICDO3
36547231	Angiomyosarcoma of ovary	ICDO3
44500697	Astrocytoma, NOS, of ovary	ICDO3
36556138	B lymphoblastic leukemia/lymphoma with hyperdiploidy of ovary	ICDO3
36558050	B lymphoblastic leukemia/lymphoma with hypodiploidy (Hypodiploid ALL) of ovary	ICDO3
36526374	B lymphoblastic leukemia/lymphoma with t(1;19)(q23;p13.3); E2A-PBX1 (TCF3-PBX1) of ovary	ICDO3
36522225	B lymphoblastic leukemia/lymphoma with t(12;21)(p13;q22); TEL-AML1 (ETV6-RUNX1) of ovary	ICDO3
36544829	B lymphoblastic leukemia/lymphoma with t(5;14)(q31;q32); IL3-IGH of ovary	ICDO3
36547766	B lymphoblastic leukemia/lymphoma with t(9;22)(q34;q11.2); BCR-ABL1 of ovary	ICDO3

Concept ID	Concept name	Vocabulary
36565212	B lymphoblastic leukemia/lymphoma with t(v;11q23); MLL rearranged of ovary	ICDO3
36535132	B lymphoblastic leukemia/lymphoma, NOS, of ovary	ICDO3
36563703	B-cell chronic lymphocytic leukemia/small lymphocytic lymphoma of ovary	ICDO3
36564919	Basal cell adenocarcinoma of ovary	ICDO3
44501034	Brenner tumor, malignant of ovary	ICDO3
36518615	Carcinoma simplex of ovary	ICDO3
36555513	Carcinoma with osteoclast-like giant cells of ovary	ICDO3
44500115	Carcinoma, anaplastic, NOS, of ovary	ICDO3
36565621	Carcinosarcoma, embryonal of ovary	ICDO3
42512428	Chondrosarcoma, NOS, of ovary	ICDO3
44499580	Choriocarcinoma combined with other germ cell elements of ovary	ICDO3
44503153	Clear cell adenocarcinofibroma of ovary	ICDO3
44500698	CNS embryonal tumor, NOS, of ovary	ICDO3
42512649	Combined small cell carcinoma of ovary	ICDO3
36545852	Composite Hodgkin and non-Hodgkin lymphoma of ovary	ICDO3
42511808	Dedifferentiated liposarcoma of ovary	ICDO3
36541965	Desmoplastic small round cell tumor of ovary	ICDO3
42512212	Embryonal rhabdomyosarcoma, NOS, of ovary	ICDO3
36551251	Endometrial stromal sarcoma, low grade of ovary	ICDO3
36549177	Endometrioid adenocarcinoma, ciliated cell variant of ovary	ICDO3
36546706	Endometrioid adenocarcinoma, secretory variant of ovary	ICDO3
44501646	Endometrioid adenofibroma, malignant of ovary	ICDO3
36526539	Enterochromaffin cell carcinoid of ovary	ICDO3
36522186	Enterochromaffin-like cell tumor of ovary	ICDO3
36554315	Ependymoma, NOS, of ovary	ICDO3
36560084	Epithelial-myoepithelial carcinoma of ovary	ICDO3
36523542	Epithelioid leiomyosarcoma of ovary	ICDO3
36563283	Epithelioid sarcoma, NOS, of ovary	ICDO3
36541361	Epithelioma, malignant of ovary	ICDO3
1553496	Extra-adrenal paraganglioma, NOS, of ovary	ICDO3
36557412	Fascial fibrosarcoma of ovary	ICDO3

Concept ID	Concept name	Vocabulary
36530406	Fibroblastic reticular cell tumor of ovary	ICDO3
44501972	Fibrosarcoma, NOS, of ovary	ICDO3
36544875	Follicular dendritic cell sarcoma of ovary	ICDO3
44499578	Germ cell tumor, nonseminomatous of ovary	ICDO3
36540048	Giant cell and spindle cell carcinoma of ovary	ICDO3
44500481	Giant cell carcinoma of ovary	ICDO3
36558110	Giant cell sarcoma of ovary	ICDO3
36551702	Glassy cell carcinoma of ovary	ICDO3
36530159	Goblet cell carcinoid of ovary	ICDO3
44499811	Granular cell carcinoma of ovary	ICDO3
42512346	Hemangiosarcoma of ovary	ICDO3
36567568	Hepatoid adenocarcinoma of ovary	ICDO3
36519971	Histiocytic sarcoma of ovary	ICDO3
36531908	Hodgkin granuloma of ovary	ICDO3
36539456	Hodgkin lymphoma, lymphocyte depletion, diffuse fibrosis of ovary	ICDO3
36520549	Hodgkin lymphoma, lymphocyte depletion, NOS, of ovary	ICDO3
36527223	Hodgkin lymphoma, lymphocyte depletion, reticular of ovary	ICDO3
36558535	Hodgkin lymphoma, lymphocyte-rich of ovary	ICDO3
36525354	Hodgkin lymphoma, mixed cellularity, NOS, of ovary	ICDO3
36522111	Hodgkin lymphoma, nodular lymphocyte predominant of ovary	ICDO3
36535710	Hodgkin lymphoma, nodular sclerosis, cellular phase of ovary	ICDO3
36541550	Hodgkin lymphoma, nodular sclerosis, grade 1 of ovary	ICDO3
36540859	Hodgkin lymphoma, nodular sclerosis, grade 2 of ovary	ICDO3
36527828	Hodgkin lymphoma, nodular sclerosis, NOS, of ovary	ICDO3
36525284	Hodgkin lymphoma, NOS, of ovary	ICDO3
36548310	Hodgkin sarcoma of ovary	ICDO3
36537077	Infantile fibrosarcoma of ovary	ICDO3
36539417	Interdigitating dendritic cell sarcoma of ovary	ICDO3
36561559	Langerhans cell histiocytosis, disseminated of ovary	ICDO3
36541333	Langerhans cell sarcoma of ovary	ICDO3
36526802	Large cell carcinoma with rhabdoid phenotype of ovary	ICDO3
44499710	Large cell carcinoma, NOS, of ovary	ICDO3

Concept ID	Concept name	Vocabulary
36566846	Large cell neuroendocrine carcinoma of ovary	ICDO3
44502971	Leiomyosarcoma, NOS, of ovary	ICDO3
44501960	Leydig cell tumor, malignant of ovary	ICDO3
36529632	Malignant histiocytosis of ovary	ICDO3
36536784	Malignant lymphoma, NOS, of ovary	ICDO3
36522631	Malignant mastocytosis of ovary	ICDO3
44501734	Malignant melanoma, NOS, of ovary	ICDO3
36554907	Malignant teratoma, intermediate of ovary	ICDO3
36549316	Malignant teratoma, undifferentiated of ovary	ICDO3
36521466	Malignant tumor, clear cell type of ovary	ICDO3
36559221	Malignant tumor, giant cell type of ovary	ICDO3
36524459	Malignant tumor, small cell type of ovary	ICDO3
36564832	Malignant tumor, spindle cell type of ovary	ICDO3
36548805	Mast cell sarcoma of ovary	ICDO3
36521027	Medullary carcinoma, NOS, of ovary	ICDO3
36555512	Medulloepithelioma, NOS, of ovary	ICDO3
44499765	Mesodermal mixed tumor of ovary	ICDO3
36539989	Mesonephroma, malignant of ovary	ICDO3
44500093	Mesothelioma, malignant of ovary	ICDO3
44500675	Metaplastic carcinoma, NOS, of ovary	ICDO3
36519660	Mixed adenoneuroendocrine carcinoma of ovary	ICDO3
44502626	Mixed cell adenocarcinoma of ovary	ICDO3
44503047	Mixed germ cell tumor of ovary	ICDO3
42512021	Mixed tumor, malignant, NOS, of ovary	ICDO3
44501089	Mucin-producing adenocarcinoma of ovary	ICDO3
44503112	Mucinous adenocarcinofibroma of ovary	ICDO3
36546343	Mucinous carcinoma, gastric type of ovary	ICDO3
44502729	Mullerian mixed tumor of ovary	ICDO3
36402466	Mullerian mixed tumor,uncertain behaviour of ovary	ICDO3
36542360	Myeloid or lymphoid neoplasm with FGFR1 abnormalities of ovary	ICDO3
36547008	Myeloid or lymphoid neoplasm with PDGFRA rearrangement of ovary	ICDO3
42511905	Myeloid sarcoma of ovary	ICDO3

Concept ID	Concept name	Vocabulary
36531078	Myeloproliferative neoplasm, unclassifiable of ovary	ICDO3
36533456	Myoepithelial carcinoma of ovary	ICDO3
42512745	Myofibroblastic sarcoma of ovary	ICDO3
36533215	Myosarcoma of ovary	ICDO3
36548200	Myxofibrosarcoma of ovary	ICDO3
36518902	Myxoid leiomyosarcoma of ovary	ICDO3
36549503	Myxosarcoma of ovary	ICDO3
36551146	Nephroblastoma, NOS, of ovary	ICDO3
42512400	Neuroblastoma, NOS, of ovary	ICDO3
44500500	Neuroendocrine carcinoma, NOS, of ovary	ICDO3
36537956	Neuroendocrine tumor, grade 2 of ovary	ICDO3
44500023	Neuroendocrine tumor, NOS, of ovary	ICDO3
44501472	Non-small cell carcinoma of ovary	ICDO3
44502948	Oxyphilic adenocarcinoma of ovary	ICDO3
44501638	Papillary adenocarcinoma, NOS, of ovary	ICDO3
42512613	Papillary carcinoma, follicular variant of ovary	ICDO3
44502916	Papillary carcinoma, NOS, of ovary	ICDO3
36403161	Papillary serous cystadenocarcinoma of ovary	ICDO3
44502604	Papillary squamous cell carcinoma of ovary	ICDO3
36548557	Pleomorphic carcinoma of ovary	ICDO3
36529012	Polyembryoma of ovary	ICDO3
36528200	Polygonal cell carcinoma of ovary	ICDO3
36553838	Precursor T-cell lymphoblastic leukemia of ovary	ICDO3
36529849	Pseudosarcomatous carcinoma of ovary	ICDO3
44500161	Rhabdoid tumor, NOS, of ovary	ICDO3
44502642	Rhabdomyosarcoma, NOS, of ovary	ICDO3
44501486	Scirrhous adenocarcinoma of ovary	ICDO3
36527913	Sebaceous carcinoma of ovary	ICDO3
44502582	Seminoma, NOS, of ovary	ICDO3
42512888	Seromucinous carcinoma of ovary	ICDO3
44501671	Serous adenocarcinofibroma of ovary	ICDO3
44500067	Serous carcinoma, NOS, of fallopian tube	ICDO3

Concept ID	Concept name	Vocabulary
44499443	Serous carcinoma, NOS, of ovary	ICDO3
44502285	Serous carcinoma, NOS, of peritoneum, NOS	ICDO3
44500796	Serous carcinoma, NOS, of specified parts of peritoneum	ICDO3
44502962	Sertoli cell carcinoma of ovary	ICDO3
36533533	Sertoli-Leydig cell tumor, poorly differentiated, with heterologous elements of ovary	ICDO3
44499561	Signet ring cell carcinoma of ovary	ICDO3
42511825	Small cell carcinoma, intermediate cell of ovary	ICDO3
36546973	Small cell sarcoma of ovary	ICDO3
36549054	Solid carcinoma, NOS, of ovary	ICDO3
36519688	Solitary fibrous tumor, malignant of ovary	ICDO3
36550763	Spindle cell carcinoma, NOS, of ovary	ICDO3
44499569	Spindle cell sarcoma of ovary	ICDO3
36567017	Squamous cell carcinoma with horn formation of ovary	ICDO3
36562826	Squamous cell carcinoma, adenoid of ovary	ICDO3
36550805	Squamous cell carcinoma, keratinizing, NOS, of ovary	ICDO3
36563636	Squamous cell carcinoma, large cell, nonkeratinizing, NOS, of ovary	ICDO3
36550888	Squamous cell carcinoma, microinvasive of ovary	ICDO3
44500986	Squamous cell carcinoma, NOS, of ovary	ICDO3
36518848	Squamous cell carcinoma, small cell, nonkeratinizing of ovary	ICDO3
36562083	Squamous cell carcinoma, spindle cell of ovary	ICDO3
44505882	Steroid cell tumor, malignant of ovary	ICDO3
44501102	Stromal sarcoma, NOS, of ovary	ICDO3
44502732	Struma ovarii, malignant of ovary	ICDO3
36527293	Superficial spreading adenocarcinoma of ovary	ICDO3
36555667	Systemic EBV positive T-cell lymphoproliferative disease of childhood of ovary	ICDO3
36548473	T-cell large granular lymphocytic leukemia of ovary	ICDO3
36517655	Teratocarcinoma of ovary	ICDO3
44502731	Teratoma with malignant transformation of ovary	ICDO3
44500162	Teratoma, malignant, NOS, of ovary	ICDO3
36519879	Thecoma, malignant of ovary	ICDO3
44500991	Transitional cell carcinoma, NOS, of ovary	ICDO3

Concept ID	Concept name	Vocabulary
36522229	Trophoblastic tumor, epithelioid of ovary	ICDO3
36568387	Tumor cells, malignant of ovary	ICDO3
36557833	Undifferentiated sarcoma of ovary	ICDO3
36565806	Verrucous carcinoma, NOS, of ovary	ICDO3
36524110	Villous adenocarcinoma of ovary	ICDO3

Table S4. Definition of covariates.

Concept ID	Concept name	Vocabulary
Diabetes mellitus		
36713275	Atypical diabetes mellitus	SNOMED
36715417	DEND syndrome	SNOMED
201820	Diabetes mellitus	SNOMED
4143529	Diabetes mellitus associated with cystic fibrosis	SNOMED
4245270	Diabetes mellitus associated with genetic syndrome	SNOMED
4240589	Diabetes mellitus associated with hormonal etiology	SNOMED
4178452	Diabetes mellitus associated with pancreatic disease	SNOMED
4178790	Diabetes mellitus associated with receptor abnormality	SNOMED
42537681	Diabetes mellitus caused by chemical	SNOMED
765478	Diabetes mellitus caused by drug without complication	SNOMED
4192852	Diabetes mellitus caused by insulin receptor antibodies	SNOMED
3178281	Diabetes mellitus complicating Cystic fibrosis	Nebraska Lexicon
4144583	Diabetes mellitus due to cystic fibrosis	SNOMED
43531011	Diabetes mellitus due to genetic defect in beta cell function	SNOMED
43531642	Diabetes mellitus due to genetic defect in insulin action	SNOMED
45757077	Diabetes mellitus due to pancreatic injury	SNOMED
4237068	Diabetes mellitus due to structurally abnormal insulin	SNOMED
4079850	Diabetes mellitus in neonate small for gestational age	SNOMED
45766050	Diabetes mellitus in remission	SNOMED
4235410	Diabetes mellitus induced by non-steroid drugs	SNOMED
37174264	Diabetes mellitus type 1 stage 1	SNOMED
37174265	Diabetes mellitus type 1 stage 2	SNOMED
37174270	Diabetes mellitus type 1 stage 3	SNOMED

Concept ID	Concept name	Vocabulary
45757674	Diabetes mellitus type 1 without retinopathy	SNOMED
45757474	Diabetes mellitus type 2 without retinopathy	SNOMED
44793113	Diabetes mellitus with multiple complications	SNOMED
43531645	Diabetes mellitus, transient neonatal 1	SNOMED
43531019	Diabetes mellitus, transient neonatal 2	SNOMED
43531020	Diabetes mellitus, transient neonatal 3	SNOMED
43531597	Disorder due to well controlled type 2 diabetes mellitus	SNOMED
4202383	Drug-induced diabetes mellitus	SNOMED
1340306	Exacerbation of diabetes mellitus	OMOP Extension
766252	Exacerbation of type 1 diabetes mellitus	OMOP Extension
766253	Exacerbation of type 2 diabetes mellitus	OMOP Extension
4084643	Extreme insulin resistance with acanthosis nigricans, hirsutism AND abnormal insulin receptors	SNOMED
4099741	Fibrocalculous pancreatic diabetes	SNOMED
37163452	Fulminant type 1 diabetes mellitus	SNOMED
37396524	Gingival disease co-occurrent with diabetes mellitus	SNOMED
46274096	Gingivitis co-occurrent with diabetes mellitus	SNOMED
4048202	Houssay's syndrome	SNOMED
4047906	Insulin dependent diabetes mellitus type 1A	SNOMED
4102018	Insulin dependent diabetes mellitus type 1B	SNOMED
4129525	Insulin resistance - type B	SNOMED
4130162	Insulin treated type 2 diabetes mellitus	SNOMED
36717215	Intellectual disability, craniofacial dysmorphism, hypogonadism, diabetes mellitus syndrome	SNOMED
1075372	Intermediate DEND syndrome	SNOMED
37162799	Intrauterine growth restriction, short stature, early adult-onset diabetes syndrome	SNOMED
37165632	Juvenile-onset diabetes mellitus, central and peripheral neurodegeneration syndrome	SNOMED
604357	Ketosis-prone diabetes mellitus	SNOMED
37163431	Ketosis-resistant diabetes mellitus	SNOMED
4145827	Latent autoimmune diabetes mellitus in adult	SNOMED
4006979	Leprechaunism syndrome	SNOMED
4131907	Lipoatrophic diabetes	SNOMED

Concept ID	Concept name	Vocabulary
44787902	Lipoatrophic diabetes mellitus without complication	SNOMED
4327944	Malnutrition related diabetes mellitus	SNOMED
4030061	Malnutrition-related diabetes mellitus - fibrocalculous	SNOMED
4129516	Maternally inherited diabetes and deafness	SNOMED
44792134	Maternally inherited diabetes mellitus	SNOMED
43531006	Maturity onset diabetes of the young, type 1	SNOMED
4130164	Maturity onset diabetes of the young, type 2	SNOMED
43531640	Maturity-onset diabetes of the young	SNOMED
43531017	Maturity-onset diabetes of the young, type 10	SNOMED
43531018	Maturity-onset diabetes of the young, type 11	SNOMED
43531012	Maturity-onset diabetes of the young, type 3	SNOMED
43531013	Maturity-onset diabetes of the young, type 4	SNOMED
43531014	Maturity-onset diabetes of the young, type 5	SNOMED
43531643	Maturity-onset diabetes of the young, type 6	SNOMED
43531015	Maturity-onset diabetes of the young, type 7	SNOMED
43531644	Maturity-onset diabetes of the young, type 8	SNOMED
43531016	Maturity-onset diabetes of the young, type 9	SNOMED
4034963	Megaloblastic anemia, thiamine-responsive, with diabetes mellitus and sensorineural deafness	SNOMED
4034961	Muscular atrophy, ataxia, retinitis pigmentosa, and diabetes mellitus	SNOMED
37204818	Myopathy and diabetes mellitus	SNOMED
193323	Neonatal diabetes mellitus	SNOMED
4228483	Newly diagnosed diabetes	SNOMED
3661732	Newly diagnosed type 1 diabetes mellitus	SNOMED
36716258	Pancreatic hypoplasia, diabetes mellitus, congenital heart disease syndrome	SNOMED
43531641	Permanent neonatal diabetes mellitus	SNOMED
37110041	Permanent neonatal diabetes mellitus with cerebellar agenesis syndrome	SNOMED
4030066	Photomyoclonus, diabetes mellitus, deafness, nephropathy and cerebral dysfunction	SNOMED
3198118	Poorly controlled diabetes mellitus	Nebraska Lexicon
3194119	Poorly controlled type 1 diabetes	Nebraska Lexicon
3193274	Poorly controlled type 2 diabetes	Nebraska Lexicon
3198350	Poorly controlled type I diabetes with circulatory disorder	Nebraska Lexicon

Concept ID	Concept name	Vocabulary
3196797	Poorly controlled type I diabetes with complication	Nebraska Lexicon
3192955	Poorly controlled type I diabetes with neuropathy	Nebraska Lexicon
3192052	Poorly controlled type I diabetes with renal complication	Nebraska Lexicon
3192767	Poorly controlled type II diabetes with circulatory disease	Nebraska Lexicon
3194082	Poorly controlled type II diabetes with complications	Nebraska Lexicon
3191208	Poorly controlled type II diabetes with neuropathy	Nebraska Lexicon
3194332	Poorly controlled type II diabetes with renal complications	Nebraska Lexicon
40482883	Posttransplant diabetes mellitus	SNOMED
44793114	Pre-existing diabetes mellitus	SNOMED
4062687	Pre-existing malnutrition-related diabetes mellitus	SNOMED
4063042	Pre-existing type 1 diabetes mellitus	SNOMED
4063043	Pre-existing type 2 diabetes mellitus	SNOMED
1244603	Presymptomatic type 1 diabetes mellitus	SNOMED
37204277	Primary microcephaly, epilepsy, permanent neonatal diabetes syndrome	SNOMED
37204232	Primary microcephaly, mild intellectual disability, young-onset diabetes syndrome	SNOMED
1340515	Progression of diabetes mellitus	OMOP Extension
4212631	Protein-deficient diabetes mellitus	SNOMED
4140808	Rabson-Mendenhall syndrome	SNOMED
195771	Secondary diabetes mellitus	SNOMED
4034960	Secondary endocrine diabetes mellitus	SNOMED
1340528	Slowly progressive insulin dependent diabetes mellitus type 1A	OMOP Extension
4099334	Steroid-induced diabetes	SNOMED
37116379	Stimmler syndrome	SNOMED
4129378	Transient neonatal diabetes mellitus	SNOMED
201254	Type 1 diabetes mellitus	SNOMED
4099215	Type 1 diabetes mellitus maturity onset	SNOMED
4099214	Type 1 diabetes mellitus with ulcer	SNOMED
201826	Type 2 diabetes mellitus	SNOMED
45757508	Type 2 diabetes mellitus controlled by diet	SNOMED
4230254	Type 2 diabetes mellitus in nonobese	SNOMED
4304377	Type 2 diabetes mellitus in obese	SNOMED

Concept ID	Concept name	Vocabulary
4099651	Type 2 diabetes mellitus with ulcer	SNOMED
45766051	Type I diabetes mellitus in remission	SNOMED
45766052	Type II diabetes mellitus in remission	SNOMED
40484649	Well controlled type 1 diabetes mellitus	SNOMED
40485020	Well controlled type 2 diabetes mellitus	SNOMED
4322638	Wolfram syndrome	SNOMED
37168689	Wolfram syndrome type 1	SNOMED
37168690	Wolfram syndrome type 2	SNOMED
37116960	Wolfram-like syndrome	SNOMED
37311329	Woodhouse Sakati syndrome	SNOMED
Endometriosis		
37209188	Bilateral endometriosis of ovaries	SNOMED
4034015	Chocolate cyst of ovary	SNOMED
1077191	Endometrial cyst of right ovary	SNOMED
1075027	Endometrioma of both ovaries	SNOMED
1077434	Endometrioma of left ovary	SNOMED
37209400	Endometriosis of left ovary	SNOMED
199881	Endometriosis of ovary	SNOMED
37209399	Endometriosis of right ovary	SNOMED
37166692	Ruptured endometrial cystoma of ovary	SNOMED
1077390	Superficial endometriosis of bilateral ovaries	SNOMED
1077383	Superficial endometriosis of left ovary	SNOMED
37117191	Superficial endometriosis of ovary	SNOMED
1077488	Superficial endometriosis of right ovary	SNOMED
Pelvic inflammatory disease		
4034008	Actinomycotic cervicitis	SNOMED
4213204	Acute gonococcal bartholinitis	SNOMED
193136	Acute gonococcal cervicitis	SNOMED
200040	Acute gonococcal endometritis	SNOMED
200334	Acute gonococcal salpingitis	SNOMED
4033947	Acute gonococcal vulvovaginitis	SNOMED
37167153	Acute on chronic pelvic inflammatory disease	SNOMED

Concept ID	Concept name	Vocabulary
4130331	Acute pelvic inflammatory disease	SNOMED
4303258	Bacterial vaginosis	SNOMED
45757276	Bacterial vaginosis in pregnancy	SNOMED
4217669	Candidal vulvovaginitis	SNOMED
1076580	Candidal vulvovaginitis during pregnancy	SNOMED
198363	Candidiasis of vagina	SNOMED
42534937	Candidiasis of vagina in pregnancy	SNOMED
444106	Candidiasis of vulva	SNOMED
4061215	Carbuncle of labium	SNOMED
4061052	Carbuncle of vagina	SNOMED
4132149	Carbuncle of vulva	SNOMED
4130345	Chlamydial bartholinitis	SNOMED
4127403	Chlamydial cervicitis	SNOMED
4096951	Chlamydial pelvic inflammatory disease	SNOMED
4130332	Chlamydial salpingitis	SNOMED
4127408	Chlamydial vulvovaginitis	SNOMED
1077462	Chronic candidal vulvovaginitis during pregnancy	SNOMED
1076506	Chronic candidiasis of vagina during pregnancy	SNOMED
4048087	Chronic gonococcal bartholinitis	SNOMED
194863	Chronic gonococcal cervicitis	SNOMED
193699	Chronic gonococcal endometritis	SNOMED
193700	Chronic gonococcal salpingitis	SNOMED
4042511	Chronic gonococcal vulvovaginitis	SNOMED
4127391	Chronic pelvic inflammatory disease	SNOMED
4056781	Chronic pyometra	SNOMED
42599058	Contagious equine metritis	SNOMED Veterinary
4061217	Female gonococcal pelvic inflammatory disease	SNOMED
199067	Female pelvic inflammatory disease	SNOMED
36717567	Female pelvic inflammatory disease caused by Mycoplasma genitalium	SNOMED
4056324	Female syphilitic pelvic inflammatory disease	SNOMED
42597060	Fungal endometritis	SNOMED Veterinary
4056330	Furuncle of vulva	SNOMED

Concept ID	Concept name	Vocabulary
4302958	Gardnerella vaginitis	SNOMED
42536561	Genital tract infection due to and following ectopic pregnancy	SNOMED
42536562	Genital tract infection due to and following molar pregnancy	SNOMED
42536558	Genital tract infection due to and following pregnancy with abortive outcome	SNOMED
4291613	Gonococcal bartholinitis	SNOMED
4034007	Gonococcal cervicitis	SNOMED
4128047	Gonococcal endometritis	SNOMED
4127390	Gonococcal salpingitis	SNOMED
4080595	Gonococcal Skenitis	SNOMED
4034010	Gonococcal vulvovaginitis	SNOMED
4129544	Hematopyometra	SNOMED
4030750	Herpetic cervicitis	SNOMED
201211	Herpetic vulvovaginitis	SNOMED
4300123	Hidradenitis suppurativa of vulva	SNOMED
43021989	Infection and inflammation associated with retained intrauterine contraceptive device	SNOMED
3177672	Infection of female pelvic organs	Nebraska Lexicon
954079	Infectious pustular vulvovaginitis	SNOMED Veterinary
1076373	Infective cervicitis	SNOMED
4127406	Infective vaginitis	SNOMED
4088316	Infective vulvitis	SNOMED
4286510	Mucopurulent vaginitis	SNOMED
4327947	Mumps oophoritis	SNOMED
1076105	Mycoplasma genitalium cervicitis	SNOMED
4150781	Mycoplasmal pelvic inflammatory disease	SNOMED
4128053	Neonatal gonococcal vulvovaginitis	SNOMED
4096510	Pelvic inflammation with female sterility caused by Chlamydia trachomatis	SNOMED
4155530	Pelvic inflammatory disease caused by Metamycoplasma hominis	SNOMED
44784476	Postabortal pelvic inflammatory disease	SNOMED
1244149	Postpartum bacterial vaginosis	SNOMED
1074848	Postpartum candidiasis of vagina	SNOMED
4294438	Primary herpetic vulvovaginitis	SNOMED

Concept ID	Concept name	Vocabulary
4230796	Pyometra	SNOMED
42536672	Pyometra co-occurrent and due to acute inflammatory disease of uterus	SNOMED
42536673	Pyometra co-occurrent and due to chronic inflammatory disease of uterus	SNOMED
4266028	Pyosalpinx	SNOMED
45769465	Recurrent candidiasis of vagina	SNOMED
37160069	Recurrent cervicitis caused by human herpes simplex virus	SNOMED
4298852	Recurrent herpetic vulvovaginitis	SNOMED
36685194	Recurrent inflammation of vulva caused by human herpes simplex virus	SNOMED
37167336	Salpingo-oophoritis following ectopic pregnancy	SNOMED
37167335	Salpingo-oophoritis following molar pregnancy	SNOMED
4327065	Streptococcal cervicitis	SNOMED
4130343	Streptococcal vulvovaginitis	SNOMED
4060954	Subacute pyometra	SNOMED
4298860	Syphilitic chancre of vulva	SNOMED
4074179	Trichomonal cervicitis	SNOMED
4081056	Trichomonal vaginitis	SNOMED
4323204	Trichomonal vaginitis in pregnancy	SNOMED
4130344	Trichomonal vulvitis	SNOMED
194871	Trichomonal vulvovaginitis	SNOMED
197204	Tuberculosis of female genital organs	SNOMED
4266861	Tuberculous cervicitis	SNOMED
4261372	Tuberculous endometritis	SNOMED
444260	Tuberculous oophoritis	SNOMED
198336	Tuberculous salpingitis	SNOMED
4127398	Uterine candidiasis	SNOMED
1245704	Vulvovaginitis caused by Amoeba	SNOMED
Obesity		
604591	6q16 microdeletion syndrome	SNOMED
4271317	Adiposogenital dystrophy	SNOMED
4171972	Adult-onset obesity	SNOMED
4270189	Alstrom syndrome	SNOMED

Concept ID	Concept name	Vocabulary
4079899	Android obesity	SNOMED
4235799	Buffalo obesity	SNOMED
4087487	Central obesity	SNOMED
40481140	Childhood obesity	SNOMED
36713437	Choroideremia with deafness and obesity syndrome	SNOMED
1245357	Clark Baraitser syndrome	SNOMED
36678790	Colobomatous microphthalmia, obesity, hypogenitalism, intellectual disability syndrome	SNOMED
45763687	Congenital leptin deficiency	SNOMED
4097929	Constitutional obesity	SNOMED
1076370	CPE-related Prader-Willi-like syndrome	SNOMED
1076371	Developmental delay, overweight, facial dysmorphism, behavioral abnormalities syndrome	SNOMED
4097996	Drug-induced obesity	SNOMED
1075371	Early-onset obesity, hyperphagia, severe developmental delay syndrome	SNOMED
4182506	Endogenous obesity	SNOMED
4100857	Extreme obesity with alveolar hypoventilation	SNOMED
4160821	Familial obesity	SNOMED
4029277	Fat pad syndrome	SNOMED
4029276	Generalized obesity	SNOMED
37166819	Genetic non-syndromic obesity	SNOMED
4029900	Gynecoid obesity	SNOMED
36717154	Hydrocephalus with obesity and hypogonadism syndrome	SNOMED
4005991	Hyperinsulinar obesity	SNOMED
4185912	Hyperplastic obesity	SNOMED
4163032	Hyperplastic-hypertrophic obesity	SNOMED
4171147	Hypertrophic obesity	SNOMED
4177337	Hypogonadal obesity	SNOMED
4220527	Hypothalamic obesity	SNOMED
4203289	Hypothyroid obesity	SNOMED
35622038	Intellectual disability, obesity, brain malformation, facial dysmorphism syndrome	SNOMED
36674490	Intellectual disability, obesity, prognathism, eye and skin anomalies syndrome	SNOMED

Concept ID	Concept name	Vocabulary
36674893	Intellectual disability, seizures, macrocephaly, obesity syndrome	SNOMED
4171317	Lifelong obesity	SNOMED
438731	Localized adiposity	SNOMED
37208175	Lower body obesity	SNOMED
37164247	MAGEL2-related Prader-Willi-like syndrome	SNOMED
42872398	Maternal obesity complicating pregnancy, childbirth and the puerperium, antepartum	SNOMED
4216214	Mauriac's syndrome	SNOMED
36716144	MEHMO syndrome	SNOMED
37110069	MOMO syndrome	SNOMED
434005	Morbid obesity	SNOMED
37395980	MORM syndrome	SNOMED
1075370	MYT1L-related developmental delay, intellectual disability, obesity syndrome	SNOMED
433736	Obesity	SNOMED
4212443	Obesity by adipocyte growth pattern	SNOMED
4215969	Obesity by contributing factors	SNOMED
4189665	Obesity by fat distribution pattern	SNOMED
36716555	Obesity caused by energy imbalance	SNOMED
37204685	Obesity due to CEP19 deficiency	SNOMED
37206117	Obesity due to leptin receptor gene deficiency	SNOMED
37397209	Obesity due to melanocortin 4 receptor deficiency	SNOMED
37162364	Obesity due to pituitary disease	SNOMED
36716151	Obesity due to prohormone convertase I deficiency	SNOMED
37204815	Obesity due to SIM1 deficiency	SNOMED
37311904	Obesity in adolescence	SNOMED
45757112	Obesity in mother complicating childbirth	SNOMED
4183240	Obesity of endocrine origin	SNOMED
36717199	Obesity, colitis, hypothyroidism, cardiac hypertrophy, developmental delay syndrome	SNOMED
4093860	Peripheral obesity	SNOMED
37163354	PHIP-related behavioral problems, intellectual disability, obesity, dysmorphic features syndrome	SNOMED
36674827	Prader-Willi-like syndrome	SNOMED

Concept ID	Concept name	Vocabulary
3199162	Pregnancy complicated by obesity	Nebraska Lexicon
45771307	Proopiomelanocortin deficiency syndrome	SNOMED
36676689	Rapid-onset childhood obesity, hypothalamic dysfunction, hypoventilation, autonomic dysregulation syndrome	SNOMED
37204691	Severe early-onset obesity insulin resistance syndrome due to SH2B1 deficiency	SNOMED
37018860	Severe obesity	SNOMED
42539192	Severe obesity complicating pregnancy	SNOMED
37164244	SIM1-related Prader-Willi-like syndrome	SNOMED
4217557	Simple obesity	SNOMED
37166818	Spastic paraplegia, intellectual disability, nystagmus, obesity syndrome	SNOMED
4211019	Steatopygia	SNOMED
36714072	Syndromic X-linked intellectual disability type 7	SNOMED
36714548	Wilson Turner syndrome	SNOMED
37165655	X-linked intellectual disability, short stature, overweight syndrome	SNOMED
Family history of breast cancer		
4179963	Family history of breast cancer	SNOMED
35624517	Family history of malignant neoplasm of breast at under age 50 in second degree female relative	SNOMED
42535025	Family history of malignant neoplasm of breast at under age 50 in second degree relative	SNOMED
46270155	Family history of malignant neoplasm of breast diagnosed before 45 years of age	SNOMED
4328583	Family history of malignant neoplasm of breast in first degree relative	SNOMED
46270130	Family history of malignant neoplasm of breast in first degree relative less than 50 years of age	SNOMED
Hyperglycaemia		
4129517	Acute hyperglycemia	SNOMED
4016046	Chronic hyperglycemia	SNOMED
4134557	Dawn phenomenon	SNOMED
45757129	Diabetes mellitus in mother complicating childbirth	SNOMED
40480068	Drug-induced hyperglycemia	SNOMED
3183244	Gestational diabetes during pregnancy	Nebraska Lexicon
4326434	Gestational diabetes mellitus class A1	SNOMED
4263902	Gestational diabetes mellitus class A2	SNOMED

Concept ID	Concept name	Vocabulary
4214376	Hyperglycemia	SNOMED
37311673	Hyperglycemia due to diabetes mellitus	SNOMED
37016348	Hyperglycemia due to type 1 diabetes mellitus	SNOMED
37016349	Hyperglycemia due to type 2 diabetes mellitus	SNOMED
40480031	Hyperglycemic crisis due to diabetes mellitus	SNOMED
42536603	Hyperosmolar hyperglycemic coma due to diabetes mellitus without ketoacidosis	SNOMED
4147719	Hyperosmolar non-ketotic state due to diabetes mellitus	SNOMED
4215719	Hyperosmolar non-ketotic state due to type 2 diabetes mellitus	SNOMED
4029421	Metabolic stress hyperglycemia	SNOMED
45763914	Non-diabetic hyperglycemia	SNOMED
4034965	Poor glycemic control	SNOMED
45757789	Postpartum gestational diabetes mellitus	SNOMED
45757079	Pre-existing diabetes mellitus in mother complicating childbirth	SNOMED
43531007	Pre-existing diabetes mellitus in pregnancy	SNOMED
43531008	Pre-existing type 1 diabetes mellitus in pregnancy	SNOMED
43531010	Pre-existing type 2 diabetes mellitus in pregnancy	SNOMED
4029420	Severe hyperglycemia due to diabetes mellitus	SNOMED
45769462	Steroid-induced hyperglycemia	SNOMED
WHO performance status		
4190931	WHO performance status grade 0	SNOMED
4161577	WHO performance status grade 1	SNOMED
4161578	WHO performance status grade 2	SNOMED
4162590	WHO performance status grade 3	SNOMED
4161579	WHO performance status grade 4	SNOMED
4162588	WHO performance status scale	SNOMED
BRCA gene		
3002832	BRCA1 gene mutations tested for in Blood or Tissue by Molecular genetics method Nominal	LOINC
4135410	BRCA1 gene mutation detected	SNOMED
4135411	BRCA2 gene mutation detected	SNOMED
36734714	BRCA2 on GRCh38 chr13: Substitution in position 32316435 of G replaced by A measurement	SNOMED

Concept ID	Concept name	Vocabulary
36737496	BRCA1 on GRCh38 chr17: Substitution in position 43125170 of G replaced by C measurement	OMOP Genomic
History of breast cancer		
4162253	Primary malignant neoplasm of breast	SNOMED

Table S5. List of ingredient definitions.

Ingredient Concept ID	Substance Name
1368823	Altretamine
1390051	Chlorambucil
1310317	Cyclophosphamide
19078187	Ifosfamide
1391846	Lomustine
1301267	Melphalan
19137385	Thiotepa
19042545	Treosulfan
1338512	Doxorubicin
1344354	Epirubicin
1309188	Mitoxantrone
955632	Fluorouracil
1314924	Gemcitabine
1305058	Methotrexate
35603017	Trabectedin
1344905	Carboplatin
1397599	Cisplatin
1315942	Docetaxel
1378382	Paclitaxel
1350504	Etoposide

Ingredient Concept ID	Substance Name
1378509	Topotecan
19008264	Vinblastine
1593861	Niraparib
45892579	Olaparib
1718850	Rucaparib
1397141	Bevacizumab
741947	Mirvetuximab soravtansine
1518254	Dexamethasone
1500211	Medroxyprogesterone

Table S6. List of Tumour, Nodes, and Metastasis (TNM) staging codes.

Concept ID	Concept name	Vocabulary
	AJCC/UICC Stage 1	
1633905	AJCC/UICC 6th clinical Stage 1	Cancer Modifier
1634205	AJCC/UICC 6th clinical Stage 1A	Cancer Modifier
1634814	AJCC/UICC 6th clinical Stage 1A1	Cancer Modifier
1634095	AJCC/UICC 6th clinical Stage 1A2	Cancer Modifier
1635579	AJCC/UICC 6th clinical Stage 1A3	Cancer Modifier
1633897	AJCC/UICC 6th clinical Stage 1B	Cancer Modifier
1633403	AJCC/UICC 6th clinical Stage 1B1	Cancer Modifier
1634433	AJCC/UICC 6th clinical Stage 1B2	Cancer Modifier
1633856	AJCC/UICC 6th clinical Stage 1C	Cancer Modifier
1634593	AJCC/UICC 6th clinical Stage 1E	Cancer Modifier
1634349	AJCC/UICC 6th clinical Stage 1s	Cancer Modifier
1635797	AJCC/UICC 6th pathological Stage 1	Cancer Modifier
1635884	AJCC/UICC 6th pathological Stage 1A	Cancer Modifier
1635839	AJCC/UICC 6th pathological Stage 1A1	Cancer Modifier
1635705	AJCC/UICC 6th pathological Stage 1A2	Cancer Modifier
1634234	AJCC/UICC 6th pathological Stage 1A3	Cancer Modifier
1633290	AJCC/UICC 6th pathological Stage 1B	Cancer Modifier
1635157	AJCC/UICC 6th pathological Stage 1B1	Cancer Modifier
1635183	AJCC/UICC 6th pathological Stage 1B2	Cancer Modifier
1634079	AJCC/UICC 6th pathological Stage 1C	Cancer Modifier
1634354	AJCC/UICC 6th pathological Stage 1E	Cancer Modifier
1635709	AJCC/UICC 6th pathological Stage 1s	Cancer Modifier
1634769	AJCC/UICC 6th post therapy clinical Stage 1	Cancer Modifier
1635596	AJCC/UICC 6th post therapy clinical Stage 1A	Cancer Modifier
1634639	AJCC/UICC 6th post therapy clinical Stage 1A1	Cancer Modifier
1634982	AJCC/UICC 6th post therapy clinical Stage 1A2	Cancer Modifier
1634253	AJCC/UICC 6th post therapy clinical Stage 1A3	Cancer Modifier
1634856	AJCC/UICC 6th post therapy clinical Stage 1B	Cancer Modifier
1635261	AJCC/UICC 6th post therapy clinical Stage 1B1	Cancer Modifier
1634800	AJCC/UICC 6th post therapy clinical Stage 1B2	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634109	AJCC/UICC 6th post therapy clinical Stage 1C	Cancer Modifier
1635073	AJCC/UICC 6th post therapy clinical Stage 1E	Cancer Modifier
1635310	AJCC/UICC 6th post therapy clinical Stage 1s	Cancer Modifier
1635780	AJCC/UICC 6th post therapy pathological Stage 1	Cancer Modifier
1633588	AJCC/UICC 6th post therapy pathological Stage 1A	Cancer Modifier
1633310	AJCC/UICC 6th post therapy pathological Stage 1A1	Cancer Modifier
1634992	AJCC/UICC 6th post therapy pathological Stage 1A2	Cancer Modifier
1635195	AJCC/UICC 6th post therapy pathological Stage 1A3	Cancer Modifier
1635775	AJCC/UICC 6th post therapy pathological Stage 1B	Cancer Modifier
1634670	AJCC/UICC 6th post therapy pathological Stage 1B1	Cancer Modifier
1634715	AJCC/UICC 6th post therapy pathological Stage 1B2	Cancer Modifier
1635176	AJCC/UICC 6th post therapy pathological Stage 1C	Cancer Modifier
1633789	AJCC/UICC 6th post therapy pathological Stage 1E	Cancer Modifier
1635755	AJCC/UICC 6th post therapy pathological Stage 1s	Cancer Modifier
1634888	AJCC/UICC 6th Stage 1	Cancer Modifier
1634027	AJCC/UICC 6th Stage 1A	Cancer Modifier
1633734	AJCC/UICC 6th Stage 1A1	Cancer Modifier
1634553	AJCC/UICC 6th Stage 1A2	Cancer Modifier
1634171	AJCC/UICC 6th Stage 1A3	Cancer Modifier
1634604	AJCC/UICC 6th Stage 1B	Cancer Modifier
1635608	AJCC/UICC 6th Stage 1B1	Cancer Modifier
1633761	AJCC/UICC 6th Stage 1B2	Cancer Modifier
1635191	AJCC/UICC 6th Stage 1C	Cancer Modifier
1634474	AJCC/UICC 6th Stage 1E	Cancer Modifier
1634912	AJCC/UICC 6th Stage 1s	Cancer Modifier
1634457	AJCC/UICC 7th clinical Stage 1	Cancer Modifier
1634860	AJCC/UICC 7th clinical Stage 1A	Cancer Modifier
1634468	AJCC/UICC 7th clinical Stage 1A1	Cancer Modifier
1634627	AJCC/UICC 7th clinical Stage 1A2	Cancer Modifier
1633425	AJCC/UICC 7th clinical Stage 1A3	Cancer Modifier
1634958	AJCC/UICC 7th clinical Stage 1B	Cancer Modifier
1634294	AJCC/UICC 7th clinical Stage 1B1	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634861	AJCC/UICC 7th clinical Stage 1B2	Cancer Modifier
1633366	AJCC/UICC 7th clinical Stage 1C	Cancer Modifier
1633321	AJCC/UICC 7th clinical Stage 1E	Cancer Modifier
1635659	AJCC/UICC 7th clinical Stage 1s	Cancer Modifier
1635800	AJCC/UICC 7th pathological Stage 1	Cancer Modifier
1633594	AJCC/UICC 7th pathological Stage 1A	Cancer Modifier
1634413	AJCC/UICC 7th pathological Stage 1A1	Cancer Modifier
1635864	AJCC/UICC 7th pathological Stage 1A2	Cancer Modifier
1633818	AJCC/UICC 7th pathological Stage 1A3	Cancer Modifier
1635653	AJCC/UICC 7th pathological Stage 1B	Cancer Modifier
1635011	AJCC/UICC 7th pathological Stage 1B1	Cancer Modifier
1634462	AJCC/UICC 7th pathological Stage 1B2	Cancer Modifier
1633537	AJCC/UICC 7th pathological Stage 1C	Cancer Modifier
1634751	AJCC/UICC 7th pathological Stage 1E	Cancer Modifier
1634357	AJCC/UICC 7th pathological Stage 1s	Cancer Modifier
1634580	AJCC/UICC 7th post therapy clinical Stage 1	Cancer Modifier
1634483	AJCC/UICC 7th post therapy clinical Stage 1A	Cancer Modifier
1634673	AJCC/UICC 7th post therapy clinical Stage 1A1	Cancer Modifier
1634009	AJCC/UICC 7th post therapy clinical Stage 1A2	Cancer Modifier
1635649	AJCC/UICC 7th post therapy clinical Stage 1A3	Cancer Modifier
1633683	AJCC/UICC 7th post therapy clinical Stage 1B	Cancer Modifier
1633768	AJCC/UICC 7th post therapy clinical Stage 1B1	Cancer Modifier
1633738	AJCC/UICC 7th post therapy clinical Stage 1B2	Cancer Modifier
1633327	AJCC/UICC 7th post therapy clinical Stage 1C	Cancer Modifier
1633960	AJCC/UICC 7th post therapy clinical Stage 1E	Cancer Modifier
1633967	AJCC/UICC 7th post therapy clinical Stage 1s	Cancer Modifier
1633769	AJCC/UICC 7th post therapy pathological Stage 1	Cancer Modifier
1633906	AJCC/UICC 7th post therapy pathological Stage 1A	Cancer Modifier
1634289	AJCC/UICC 7th post therapy pathological Stage 1A1	Cancer Modifier
1634417	AJCC/UICC 7th post therapy pathological Stage 1A2	Cancer Modifier
1634707	AJCC/UICC 7th post therapy pathological Stage 1A3	Cancer Modifier
1633772	AJCC/UICC 7th post therapy pathological Stage 1B	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633442	AJCC/UICC 7th post therapy pathological Stage 1B1	Cancer Modifier
1633580	AJCC/UICC 7th post therapy pathological Stage 1B2	Cancer Modifier
1633988	AJCC/UICC 7th post therapy pathological Stage 1C	Cancer Modifier
1633681	AJCC/UICC 7th post therapy pathological Stage 1E	Cancer Modifier
1634065	AJCC/UICC 7th post therapy pathological Stage 1s	Cancer Modifier
1635867	AJCC/UICC 7th Stage 1	Cancer Modifier
1633669	AJCC/UICC 7th Stage 1A	Cancer Modifier
1634690	AJCC/UICC 7th Stage 1A1	Cancer Modifier
1633677	AJCC/UICC 7th Stage 1A2	Cancer Modifier
1633971	AJCC/UICC 7th Stage 1A3	Cancer Modifier
1635138	AJCC/UICC 7th Stage 1B	Cancer Modifier
1633617	AJCC/UICC 7th Stage 1B1	Cancer Modifier
1633917	AJCC/UICC 7th Stage 1B2	Cancer Modifier
1634470	AJCC/UICC 7th Stage 1C	Cancer Modifier
1634419	AJCC/UICC 7th Stage 1E	Cancer Modifier
1635458	AJCC/UICC 7th Stage 1s	Cancer Modifier
1635758	AJCC/UICC 8th clinical Stage 1	Cancer Modifier
1634066	AJCC/UICC 8th clinical Stage 1A	Cancer Modifier
1633970	AJCC/UICC 8th clinical Stage 1A1	Cancer Modifier
1634021	AJCC/UICC 8th clinical Stage 1A2	Cancer Modifier
1635802	AJCC/UICC 8th clinical Stage 1A3	Cancer Modifier
1634160	AJCC/UICC 8th clinical Stage 1B	Cancer Modifier
1634512	AJCC/UICC 8th clinical Stage 1B1	Cancer Modifier
1635721	AJCC/UICC 8th clinical Stage 1B2	Cancer Modifier
1635248	AJCC/UICC 8th clinical Stage 1C	Cancer Modifier
1634761	AJCC/UICC 8th clinical Stage 1E	Cancer Modifier
1633698	AJCC/UICC 8th clinical Stage 1s	Cancer Modifier
1634799	AJCC/UICC 8th pathological Stage 1	Cancer Modifier
1633452	AJCC/UICC 8th pathological Stage 1A	Cancer Modifier
1633624	AJCC/UICC 8th pathological Stage 1A1	Cancer Modifier
1634510	AJCC/UICC 8th pathological Stage 1A2	Cancer Modifier
1633937	AJCC/UICC 8th pathological Stage 1A3	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634060	AJCC/UICC 8th pathological Stage 1B	Cancer Modifier
1634747	AJCC/UICC 8th pathological Stage 1B1	Cancer Modifier
1635332	AJCC/UICC 8th pathological Stage 1B2	Cancer Modifier
1634672	AJCC/UICC 8th pathological Stage 1C	Cancer Modifier
1633744	AJCC/UICC 8th pathological Stage 1E	Cancer Modifier
1634302	AJCC/UICC 8th pathological Stage 1s	Cancer Modifier
1634014	AJCC/UICC 8th post therapy clinical Stage 1	Cancer Modifier
1633472	AJCC/UICC 8th post therapy clinical Stage 1A	Cancer Modifier
1633297	AJCC/UICC 8th post therapy clinical Stage 1A1	Cancer Modifier
1635629	AJCC/UICC 8th post therapy clinical Stage 1A2	Cancer Modifier
1633376	AJCC/UICC 8th post therapy clinical Stage 1A3	Cancer Modifier
1635147	AJCC/UICC 8th post therapy clinical Stage 1B	Cancer Modifier
1633479	AJCC/UICC 8th post therapy clinical Stage 1B1	Cancer Modifier
1634879	AJCC/UICC 8th post therapy clinical Stage 1B2	Cancer Modifier
1635633	AJCC/UICC 8th post therapy clinical Stage 1C	Cancer Modifier
1633846	AJCC/UICC 8th post therapy clinical Stage 1E	Cancer Modifier
1635540	AJCC/UICC 8th post therapy clinical Stage 1s	Cancer Modifier
1634013	AJCC/UICC 8th post therapy pathological Stage 1	Cancer Modifier
1634544	AJCC/UICC 8th post therapy pathological Stage 1A	Cancer Modifier
1633857	AJCC/UICC 8th post therapy pathological Stage 1A1	Cancer Modifier
1633483	AJCC/UICC 8th post therapy pathological Stage 1A2	Cancer Modifier
1633731	AJCC/UICC 8th post therapy pathological Stage 1A3	Cancer Modifier
1635400	AJCC/UICC 8th post therapy pathological Stage 1B	Cancer Modifier
1635527	AJCC/UICC 8th post therapy pathological Stage 1B1	Cancer Modifier
1633898	AJCC/UICC 8th post therapy pathological Stage 1B2	Cancer Modifier
1634129	AJCC/UICC 8th post therapy pathological Stage 1C	Cancer Modifier
1634361	AJCC/UICC 8th post therapy pathological Stage 1E	Cancer Modifier
1635866	AJCC/UICC 8th post therapy pathological Stage 1s	Cancer Modifier
1634895	AJCC/UICC 8th Stage 1	Cancer Modifier
1633516	AJCC/UICC 8th Stage 1A	Cancer Modifier
1635814	AJCC/UICC 8th Stage 1A1	Cancer Modifier
1633944	AJCC/UICC 8th Stage 1A2	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633704	AJCC/UICC 8th Stage 1A3	Cancer Modifier
1634698	AJCC/UICC 8th Stage 1B	Cancer Modifier
1633526	AJCC/UICC 8th Stage 1B1	Cancer Modifier
1634351	AJCC/UICC 8th Stage 1B2	Cancer Modifier
1633968	AJCC/UICC 8th Stage 1C	Cancer Modifier
1635738	AJCC/UICC 8th Stage 1E	Cancer Modifier
1635726	AJCC/UICC 8th Stage 1s	Cancer Modifier
1635199	AJCC/UICC clinical Stage 1	Cancer Modifier
1634671	AJCC/UICC clinical Stage 1A	Cancer Modifier
1634927	AJCC/UICC clinical Stage 1A1	Cancer Modifier
1633948	AJCC/UICC clinical Stage 1A2	Cancer Modifier
1635216	AJCC/UICC clinical Stage 1A3	Cancer Modifier
1633618	AJCC/UICC clinical Stage 1B	Cancer Modifier
1635184	AJCC/UICC clinical Stage 1B1	Cancer Modifier
1634794	AJCC/UICC clinical Stage 1B2	Cancer Modifier
1634813	AJCC/UICC clinical Stage 1C	Cancer Modifier
1635482	AJCC/UICC clinical Stage 1E	Cancer Modifier
1635293	AJCC/UICC clinical Stage 1s	Cancer Modifier
1634252	AJCC/UICC pathological Stage 1	Cancer Modifier
1633891	AJCC/UICC pathological Stage 1A	Cancer Modifier
1634719	AJCC/UICC pathological Stage 1A1	Cancer Modifier
1635454	AJCC/UICC pathological Stage 1A2	Cancer Modifier
1635256	AJCC/UICC pathological Stage 1A3	Cancer Modifier
1633869	AJCC/UICC pathological Stage 1B	Cancer Modifier
1635882	AJCC/UICC pathological Stage 1B1	Cancer Modifier
1633717	AJCC/UICC pathological Stage 1B2	Cancer Modifier
1633591	AJCC/UICC pathological Stage 1C	Cancer Modifier
1633568	AJCC/UICC pathological Stage 1E	Cancer Modifier
1634629	AJCC/UICC pathological Stage 1s	Cancer Modifier
1634467	AJCC/UICC post therapy clinical Stage 1	Cancer Modifier
1633511	AJCC/UICC post therapy clinical Stage 1A	Cancer Modifier
1635431	AJCC/UICC post therapy clinical Stage 1A1	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635654	AJCC/UICC post therapy clinical Stage 1A2	Cancer Modifier
1635489	AJCC/UICC post therapy clinical Stage 1A3	Cancer Modifier
1633576	AJCC/UICC post therapy clinical Stage 1B	Cancer Modifier
1635106	AJCC/UICC post therapy clinical Stage 1B1	Cancer Modifier
1635695	AJCC/UICC post therapy clinical Stage 1B2	Cancer Modifier
1633727	AJCC/UICC post therapy clinical Stage 1C	Cancer Modifier
1633998	AJCC/UICC post therapy clinical Stage 1E	Cancer Modifier
1634952	AJCC/UICC post therapy clinical Stage 1s	Cancer Modifier
1635095	AJCC/UICC post therapy pathological Stage 1	Cancer Modifier
1633664	AJCC/UICC post therapy pathological Stage 1A	Cancer Modifier
1634168	AJCC/UICC post therapy pathological Stage 1A1	Cancer Modifier
1634343	AJCC/UICC post therapy pathological Stage 1A2	Cancer Modifier
1634266	AJCC/UICC post therapy pathological Stage 1A3	Cancer Modifier
1635453	AJCC/UICC post therapy pathological Stage 1B	Cancer Modifier
1635207	AJCC/UICC post therapy pathological Stage 1B1	Cancer Modifier
1634292	AJCC/UICC post therapy pathological Stage 1B2	Cancer Modifier
1634416	AJCC/UICC post therapy pathological Stage 1C	Cancer Modifier
1633383	AJCC/UICC post therapy pathological Stage 1E	Cancer Modifier
1633505	AJCC/UICC post therapy pathological Stage 1s	Cancer Modifier
1633306	AJCC/UICC Stage 1	Cancer Modifier
1635790	AJCC/UICC Stage 1A	Cancer Modifier
1633565	AJCC/UICC Stage 1A1	Cancer Modifier
1635611	AJCC/UICC Stage 1A2	Cancer Modifier
1634353	AJCC/UICC Stage 1A3	Cancer Modifier
1634494	AJCC/UICC Stage 1B	Cancer Modifier
1634019	AJCC/UICC Stage 1B1	Cancer Modifier
1635020	AJCC/UICC Stage 1B2	Cancer Modifier
1634868	AJCC/UICC Stage 1C	Cancer Modifier
1633701	AJCC/UICC Stage 1E	Cancer Modifier
1635474	AJCC/UICC Stage 1s	Cancer Modifier
AJCC/UICC Stage 2		
1634718	AJCC/UICC 6th clinical Stage 2	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634801	AJCC/UICC 6th clinical Stage 2A	Cancer Modifier
1635347	AJCC/UICC 6th clinical Stage 2A1	Cancer Modifier
1634479	AJCC/UICC 6th clinical Stage 2A2	Cancer Modifier
1634008	AJCC/UICC 6th clinical Stage 2B	Cancer Modifier
1633835	AJCC/UICC 6th clinical Stage 2C	Cancer Modifier
1634987	AJCC/UICC 6th clinical Stage 2E	Cancer Modifier
1633751	AJCC/UICC 6th pathological Stage 2	Cancer Modifier
1634615	AJCC/UICC 6th pathological Stage 2A	Cancer Modifier
1633402	AJCC/UICC 6th pathological Stage 2A1	Cancer Modifier
1634379	AJCC/UICC 6th pathological Stage 2A2	Cancer Modifier
1634677	AJCC/UICC 6th pathological Stage 2B	Cancer Modifier
1633873	AJCC/UICC 6th pathological Stage 2C	Cancer Modifier
1635774	AJCC/UICC 6th pathological Stage 2E	Cancer Modifier
1635399	AJCC/UICC 6th post therapy clinical Stage 2	Cancer Modifier
1634073	AJCC/UICC 6th post therapy clinical Stage 2A	Cancer Modifier
1635251	AJCC/UICC 6th post therapy clinical Stage 2A1	Cancer Modifier
1634778	AJCC/UICC 6th post therapy clinical Stage 2A2	Cancer Modifier
1633409	AJCC/UICC 6th post therapy clinical Stage 2B	Cancer Modifier
1633391	AJCC/UICC 6th post therapy clinical Stage 2C	Cancer Modifier
1634883	AJCC/UICC 6th post therapy clinical Stage 2E	Cancer Modifier
1635382	AJCC/UICC 6th post therapy pathological Stage 2	Cancer Modifier
1634225	AJCC/UICC 6th post therapy pathological Stage 2A	Cancer Modifier
1634097	AJCC/UICC 6th post therapy pathological Stage 2A1	Cancer Modifier
1633325	AJCC/UICC 6th post therapy pathological Stage 2A2	Cancer Modifier
1635236	AJCC/UICC 6th post therapy pathological Stage 2B	Cancer Modifier
1634440	AJCC/UICC 6th post therapy pathological Stage 2C	Cancer Modifier
1635417	AJCC/UICC 6th post therapy pathological Stage 2E	Cancer Modifier
1633753	AJCC/UICC 6th Stage 2	Cancer Modifier
1633482	AJCC/UICC 6th Stage 2A	Cancer Modifier
1633774	AJCC/UICC 6th Stage 2A1	Cancer Modifier
1635877	AJCC/UICC 6th Stage 2A2	Cancer Modifier
1634542	AJCC/UICC 6th Stage 2B	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635239	AJCC/UICC 6th Stage 2C	Cancer Modifier
1635074	AJCC/UICC 6th Stage 2E	Cancer Modifier
1635182	AJCC/UICC 7th clinical Stage 2	Cancer Modifier
1633345	AJCC/UICC 7th clinical Stage 2A	Cancer Modifier
1634099	AJCC/UICC 7th clinical Stage 2A1	Cancer Modifier
1635034	AJCC/UICC 7th clinical Stage 2A2	Cancer Modifier
1635896	AJCC/UICC 7th clinical Stage 2B	Cancer Modifier
1634465	AJCC/UICC 7th clinical Stage 2C	Cancer Modifier
1635243	AJCC/UICC 7th clinical Stage 2E	Cancer Modifier
1634619	AJCC/UICC 7th pathological Stage 2	Cancer Modifier
1635381	AJCC/UICC 7th pathological Stage 2A	Cancer Modifier
1635411	AJCC/UICC 7th pathological Stage 2A1	Cancer Modifier
1634575	AJCC/UICC 7th pathological Stage 2A2	Cancer Modifier
1633915	AJCC/UICC 7th pathological Stage 2B	Cancer Modifier
1633386	AJCC/UICC 7th pathological Stage 2C	Cancer Modifier
1633861	AJCC/UICC 7th pathological Stage 2E	Cancer Modifier
1635541	AJCC/UICC 7th post therapy clinical Stage 2	Cancer Modifier
1633357	AJCC/UICC 7th post therapy clinical Stage 2A	Cancer Modifier
1635218	AJCC/UICC 7th post therapy clinical Stage 2A1	Cancer Modifier
1634177	AJCC/UICC 7th post therapy clinical Stage 2A2	Cancer Modifier
1634886	AJCC/UICC 7th post therapy clinical Stage 2B	Cancer Modifier
1633535	AJCC/UICC 7th post therapy clinical Stage 2C	Cancer Modifier
1634970	AJCC/UICC 7th post therapy clinical Stage 2E	Cancer Modifier
1634994	AJCC/UICC 7th post therapy pathological Stage 2	Cancer Modifier
1634443	AJCC/UICC 7th post therapy pathological Stage 2A	Cancer Modifier
1634865	AJCC/UICC 7th post therapy pathological Stage 2A1	Cancer Modifier
1635591	AJCC/UICC 7th post therapy pathological Stage 2A2	Cancer Modifier
1635197	AJCC/UICC 7th post therapy pathological Stage 2B	Cancer Modifier
1635088	AJCC/UICC 7th post therapy pathological Stage 2C	Cancer Modifier
1634314	AJCC/UICC 7th post therapy pathological Stage 2E	Cancer Modifier
1634181	AJCC/UICC 7th Stage 2	Cancer Modifier
1634937	AJCC/UICC 7th Stage 2A	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635546	AJCC/UICC 7th Stage 2A1	Cancer Modifier
1635215	AJCC/UICC 7th Stage 2A2	Cancer Modifier
1634368	AJCC/UICC 7th Stage 2B	Cancer Modifier
1635193	AJCC/UICC 7th Stage 2C	Cancer Modifier
1633627	AJCC/UICC 7th Stage 2E	Cancer Modifier
1635217	AJCC/UICC 8th clinical Stage 2	Cancer Modifier
1635786	AJCC/UICC 8th clinical Stage 2A	Cancer Modifier
1633940	AJCC/UICC 8th clinical Stage 2A1	Cancer Modifier
1634141	AJCC/UICC 8th clinical Stage 2A2	Cancer Modifier
1634056	AJCC/UICC 8th clinical Stage 2B	Cancer Modifier
1634932	AJCC/UICC 8th clinical Stage 2C	Cancer Modifier
1635601	AJCC/UICC 8th clinical Stage 2E	Cancer Modifier
1635386	AJCC/UICC 8th pathological Stage 2	Cancer Modifier
1634890	AJCC/UICC 8th pathological Stage 2A	Cancer Modifier
1635569	AJCC/UICC 8th pathological Stage 2A1	Cancer Modifier
1634051	AJCC/UICC 8th pathological Stage 2A2	Cancer Modifier
1633430	AJCC/UICC 8th pathological Stage 2B	Cancer Modifier
1634390	AJCC/UICC 8th pathological Stage 2C	Cancer Modifier
1633928	AJCC/UICC 8th pathological Stage 2E	Cancer Modifier
1635401	AJCC/UICC 8th post therapy clinical Stage 2	Cancer Modifier
1635177	AJCC/UICC 8th post therapy clinical Stage 2A	Cancer Modifier
1635099	AJCC/UICC 8th post therapy clinical Stage 2A1	Cancer Modifier
1635043	AJCC/UICC 8th post therapy clinical Stage 2A2	Cancer Modifier
1635423	AJCC/UICC 8th post therapy clinical Stage 2B	Cancer Modifier
1635366	AJCC/UICC 8th post therapy clinical Stage 2C	Cancer Modifier
1635319	AJCC/UICC 8th post therapy clinical Stage 2E	Cancer Modifier
1634036	AJCC/UICC 8th post therapy pathological Stage 2	Cancer Modifier
1635047	AJCC/UICC 8th post therapy pathological Stage 2A	Cancer Modifier
1633808	AJCC/UICC 8th post therapy pathological Stage 2A1	Cancer Modifier
1634167	AJCC/UICC 8th post therapy pathological Stage 2A2	Cancer Modifier
1634760	AJCC/UICC 8th post therapy pathological Stage 2B	Cancer Modifier
1633567	AJCC/UICC 8th post therapy pathological Stage 2C	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633438	AJCC/UICC 8th post therapy pathological Stage 2E	Cancer Modifier
1634316	AJCC/UICC 8th Stage 2	Cancer Modifier
1634226	AJCC/UICC 8th Stage 2A	Cancer Modifier
1635811	AJCC/UICC 8th Stage 2A1	Cancer Modifier
1635494	AJCC/UICC 8th Stage 2A2	Cancer Modifier
1635288	AJCC/UICC 8th Stage 2B	Cancer Modifier
1634900	AJCC/UICC 8th Stage 2C	Cancer Modifier
1635730	AJCC/UICC 8th Stage 2E	Cancer Modifier
1633841	AJCC/UICC clinical Stage 2	Cancer Modifier
1635486	AJCC/UICC clinical Stage 2A	Cancer Modifier
1635115	AJCC/UICC clinical Stage 2A1	Cancer Modifier
1633489	AJCC/UICC clinical Stage 2A2	Cancer Modifier
1634332	AJCC/UICC clinical Stage 2B	Cancer Modifier
1635056	AJCC/UICC clinical Stage 2C	Cancer Modifier
1634917	AJCC/UICC clinical Stage 2E	Cancer Modifier
1633702	AJCC/UICC pathological Stage 2	Cancer Modifier
1634960	AJCC/UICC pathological Stage 2A	Cancer Modifier
1633296	AJCC/UICC pathological Stage 2A1	Cancer Modifier
1635175	AJCC/UICC pathological Stage 2A2	Cancer Modifier
1633813	AJCC/UICC pathological Stage 2B	Cancer Modifier
1633859	AJCC/UICC pathological Stage 2C	Cancer Modifier
1635428	AJCC/UICC pathological Stage 2E	Cancer Modifier
1633756	AJCC/UICC post therapy clinical Stage 2	Cancer Modifier
1635173	AJCC/UICC post therapy clinical Stage 2A	Cancer Modifier
1634485	AJCC/UICC post therapy clinical Stage 2A1	Cancer Modifier
1635692	AJCC/UICC post therapy clinical Stage 2A2	Cancer Modifier
1633286	AJCC/UICC post therapy clinical Stage 2B	Cancer Modifier
1633320	AJCC/UICC post therapy clinical Stage 2C	Cancer Modifier
1635576	AJCC/UICC post therapy clinical Stage 2E	Cancer Modifier
1635689	AJCC/UICC post therapy pathological Stage 2	Cancer Modifier
1634998	AJCC/UICC post therapy pathological Stage 2A	Cancer Modifier
1635886	AJCC/UICC post therapy pathological Stage 2A1	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635809	AJCC/UICC post therapy pathological Stage 2A2	Cancer Modifier
1635334	AJCC/UICC post therapy pathological Stage 2B	Cancer Modifier
1635036	AJCC/UICC post therapy pathological Stage 2C	Cancer Modifier
1633342	AJCC/UICC post therapy pathological Stage 2E	Cancer Modifier
1634209	AJCC/UICC Stage 2	Cancer Modifier
1634123	AJCC/UICC Stage 2A	Cancer Modifier
1633743	AJCC/UICC Stage 2A1	Cancer Modifier
1634338	AJCC/UICC Stage 2A2	Cancer Modifier
1634028	AJCC/UICC Stage 2B	Cancer Modifier
1634903	AJCC/UICC Stage 2C	Cancer Modifier
1634914	AJCC/UICC Stage 2E	Cancer Modifier
AJCC/UICC Stage 3		
1635848	AJCC/UICC 6th clinical Stage 3	Cancer Modifier
1634996	AJCC/UICC 6th clinical Stage 3A	Cancer Modifier
1634871	AJCC/UICC 6th clinical Stage 3A1	Cancer Modifier
1633894	AJCC/UICC 6th clinical Stage 3A2	Cancer Modifier
1635728	AJCC/UICC 6th clinical Stage 3B	Cancer Modifier
1635214	AJCC/UICC 6th clinical Stage 3C	Cancer Modifier
1635642	AJCC/UICC 6th clinical Stage 3C1	Cancer Modifier
1633639	AJCC/UICC 6th clinical Stage 3C2	Cancer Modifier
1635031	AJCC/UICC 6th clinical Stage 3D	Cancer Modifier
1633499	AJCC/UICC 6th pathological Stage 3	Cancer Modifier
1635862	AJCC/UICC 6th pathological Stage 3A	Cancer Modifier
1633990	AJCC/UICC 6th pathological Stage 3A1	Cancer Modifier
1635715	AJCC/UICC 6th pathological Stage 3A2	Cancer Modifier
1633759	AJCC/UICC 6th pathological Stage 3B	Cancer Modifier
1635440	AJCC/UICC 6th pathological Stage 3C	Cancer Modifier
1634218	AJCC/UICC 6th pathological Stage 3C1	Cancer Modifier
1635485	AJCC/UICC 6th pathological Stage 3C2	Cancer Modifier
1634135	AJCC/UICC 6th pathological Stage 3D	Cancer Modifier
1634091	AJCC/UICC 6th post therapy clinical Stage 3	Cancer Modifier
1635477	AJCC/UICC 6th post therapy clinical Stage 3A	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634388	AJCC/UICC 6th post therapy clinical Stage 3A1	Cancer Modifier
1634344	AJCC/UICC 6th post therapy clinical Stage 3A2	Cancer Modifier
1634726	AJCC/UICC 6th post therapy clinical Stage 3B	Cancer Modifier
1633602	AJCC/UICC 6th post therapy clinical Stage 3C	Cancer Modifier
1634061	AJCC/UICC 6th post therapy clinical Stage 3C1	Cancer Modifier
1633983	AJCC/UICC 6th post therapy clinical Stage 3C2	Cancer Modifier
1634284	AJCC/UICC 6th post therapy clinical Stage 3D	Cancer Modifier
1634007	AJCC/UICC 6th post therapy pathological Stage 3	Cancer Modifier
1634924	AJCC/UICC 6th post therapy pathological Stage 3A	Cancer Modifier
1633319	AJCC/UICC 6th post therapy pathological Stage 3A1	Cancer Modifier
1635389	AJCC/UICC 6th post therapy pathological Stage 3A2	Cancer Modifier
1634803	AJCC/UICC 6th post therapy pathological Stage 3B	Cancer Modifier
1634398	AJCC/UICC 6th post therapy pathological Stage 3C	Cancer Modifier
1635688	AJCC/UICC 6th post therapy pathological Stage 3C1	Cancer Modifier
1633629	AJCC/UICC 6th post therapy pathological Stage 3C2	Cancer Modifier
1633632	AJCC/UICC 6th post therapy pathological Stage 3D	Cancer Modifier
1634610	AJCC/UICC 6th Stage 3	Cancer Modifier
1634078	AJCC/UICC 6th Stage 3A	Cancer Modifier
1634782	AJCC/UICC 6th Stage 3A1	Cancer Modifier
1635880	AJCC/UICC 6th Stage 3A2	Cancer Modifier
1635238	AJCC/UICC 6th Stage 3B	Cancer Modifier
1635272	AJCC/UICC 6th Stage 3C	Cancer Modifier
1633614	AJCC/UICC 6th Stage 3C1	Cancer Modifier
1634849	AJCC/UICC 6th Stage 3C2	Cancer Modifier
1635330	AJCC/UICC 6th Stage 3D	Cancer Modifier
1635125	AJCC/UICC 7th clinical Stage 3	Cancer Modifier
1633561	AJCC/UICC 7th clinical Stage 3A	Cancer Modifier
1635098	AJCC/UICC 7th clinical Stage 3A1	Cancer Modifier
1635734	AJCC/UICC 7th clinical Stage 3A2	Cancer Modifier
1634348	AJCC/UICC 7th clinical Stage 3B	Cancer Modifier
1635761	AJCC/UICC 7th clinical Stage 3C	Cancer Modifier
1634333	AJCC/UICC 7th clinical Stage 3C1	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635014	AJCC/UICC 7th clinical Stage 3C2	Cancer Modifier
1634694	AJCC/UICC 7th clinical Stage 3D	Cancer Modifier
1634947	AJCC/UICC 7th pathological Stage 3	Cancer Modifier
1634842	AJCC/UICC 7th pathological Stage 3A	Cancer Modifier
1635016	AJCC/UICC 7th pathological Stage 3A1	Cancer Modifier
1635510	AJCC/UICC 7th pathological Stage 3A2	Cancer Modifier
1635602	AJCC/UICC 7th pathological Stage 3B	Cancer Modifier
1634299	AJCC/UICC 7th pathological Stage 3C	Cancer Modifier
1635770	AJCC/UICC 7th pathological Stage 3C1	Cancer Modifier
1635054	AJCC/UICC 7th pathological Stage 3C2	Cancer Modifier
1633536	AJCC/UICC 7th pathological Stage 3D	Cancer Modifier
1633559	AJCC/UICC 7th post therapy clinical Stage 3	Cancer Modifier
1634835	AJCC/UICC 7th post therapy clinical Stage 3A	Cancer Modifier
1634228	AJCC/UICC 7th post therapy clinical Stage 3A1	Cancer Modifier
1634156	AJCC/UICC 7th post therapy clinical Stage 3A2	Cancer Modifier
1633694	AJCC/UICC 7th post therapy clinical Stage 3B	Cancer Modifier
1633654	AJCC/UICC 7th post therapy clinical Stage 3C	Cancer Modifier
1633359	AJCC/UICC 7th post therapy clinical Stage 3C1	Cancer Modifier
1633827	AJCC/UICC 7th post therapy clinical Stage 3C2	Cancer Modifier
1635221	AJCC/UICC 7th post therapy clinical Stage 3D	Cancer Modifier
1635063	AJCC/UICC 7th post therapy pathological Stage 3	Cancer Modifier
1634410	AJCC/UICC 7th post therapy pathological Stage 3A	Cancer Modifier
1634283	AJCC/UICC 7th post therapy pathological Stage 3A1	Cancer Modifier
1634128	AJCC/UICC 7th post therapy pathological Stage 3A2	Cancer Modifier
1635425	AJCC/UICC 7th post therapy pathological Stage 3B	Cancer Modifier
1634201	AJCC/UICC 7th post therapy pathological Stage 3C	Cancer Modifier
1633592	AJCC/UICC 7th post therapy pathological Stage 3C1	Cancer Modifier
1634885	AJCC/UICC 7th post therapy pathological Stage 3C2	Cancer Modifier
1634644	AJCC/UICC 7th post therapy pathological Stage 3D	Cancer Modifier
1633382	AJCC/UICC 7th Stage 3	Cancer Modifier
1634603	AJCC/UICC 7th Stage 3A	Cancer Modifier
1635868	AJCC/UICC 7th Stage 3A1	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635662	AJCC/UICC 7th Stage 3A2	Cancer Modifier
1634911	AJCC/UICC 7th Stage 3B	Cancer Modifier
1633957	AJCC/UICC 7th Stage 3C	Cancer Modifier
1634543	AJCC/UICC 7th Stage 3C1	Cancer Modifier
1635086	AJCC/UICC 7th Stage 3C2	Cancer Modifier
1635435	AJCC/UICC 7th Stage 3D	Cancer Modifier
1634596	AJCC/UICC 8th clinical Stage 3	Cancer Modifier
1635265	AJCC/UICC 8th clinical Stage 3A	Cancer Modifier
1635640	AJCC/UICC 8th clinical Stage 3A1	Cancer Modifier
1634461	AJCC/UICC 8th clinical Stage 3A2	Cancer Modifier
1634006	AJCC/UICC 8th clinical Stage 3B	Cancer Modifier
1634811	AJCC/UICC 8th clinical Stage 3C	Cancer Modifier
1635859	AJCC/UICC 8th clinical Stage 3C1	Cancer Modifier
1635395	AJCC/UICC 8th clinical Stage 3C2	Cancer Modifier
1635533	AJCC/UICC 8th clinical Stage 3D	Cancer Modifier
1634705	AJCC/UICC 8th pathological Stage 3	Cancer Modifier
1633636	AJCC/UICC 8th pathological Stage 3A	Cancer Modifier
1635408	AJCC/UICC 8th pathological Stage 3A1	Cancer Modifier
1633571	AJCC/UICC 8th pathological Stage 3A2	Cancer Modifier
1634612	AJCC/UICC 8th pathological Stage 3B	Cancer Modifier
1633736	AJCC/UICC 8th pathological Stage 3C	Cancer Modifier
1633393	AJCC/UICC 8th pathological Stage 3C1	Cancer Modifier
1635045	AJCC/UICC 8th pathological Stage 3C2	Cancer Modifier
1634759	AJCC/UICC 8th pathological Stage 3D	Cancer Modifier
1634337	AJCC/UICC 8th post therapy clinical Stage 3	Cancer Modifier
1633490	AJCC/UICC 8th post therapy clinical Stage 3A	Cancer Modifier
1635785	AJCC/UICC 8th post therapy clinical Stage 3A1	Cancer Modifier
1634999	AJCC/UICC 8th post therapy clinical Stage 3A2	Cancer Modifier
1634106	AJCC/UICC 8th post therapy clinical Stage 3B	Cancer Modifier
1634910	AJCC/UICC 8th post therapy clinical Stage 3C	Cancer Modifier
1634909	AJCC/UICC 8th post therapy clinical Stage 3C1	Cancer Modifier
1635554	AJCC/UICC 8th post therapy clinical Stage 3C2	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635324	AJCC/UICC 8th post therapy clinical Stage 3D	Cancer Modifier
1634507	AJCC/UICC 8th post therapy pathological Stage 3	Cancer Modifier
1634423	AJCC/UICC 8th post therapy pathological Stage 3A	Cancer Modifier
1634210	AJCC/UICC 8th post therapy pathological Stage 3A1	Cancer Modifier
1635528	AJCC/UICC 8th post therapy pathological Stage 3A2	Cancer Modifier
1633868	AJCC/UICC 8th post therapy pathological Stage 3B	Cancer Modifier
1634833	AJCC/UICC 8th post therapy pathological Stage 3C	Cancer Modifier
1633708	AJCC/UICC 8th post therapy pathological Stage 3C1	Cancer Modifier
1634978	AJCC/UICC 8th post therapy pathological Stage 3C2	Cancer Modifier
1633389	AJCC/UICC 8th post therapy pathological Stage 3D	Cancer Modifier
1633462	AJCC/UICC 8th Stage 3	Cancer Modifier
1633314	AJCC/UICC 8th Stage 3A	Cancer Modifier
1633811	AJCC/UICC 8th Stage 3A1	Cancer Modifier
1634331	AJCC/UICC 8th Stage 3A2	Cancer Modifier
1634395	AJCC/UICC 8th Stage 3B	Cancer Modifier
1635126	AJCC/UICC 8th Stage 3C	Cancer Modifier
1635437	AJCC/UICC 8th Stage 3C1	Cancer Modifier
1634220	AJCC/UICC 8th Stage 3C2	Cancer Modifier
1633773	AJCC/UICC 8th Stage 3D	Cancer Modifier
1634876	AJCC/UICC clinical Stage 3	Cancer Modifier
1634922	AJCC/UICC clinical Stage 3A	Cancer Modifier
1634030	AJCC/UICC clinical Stage 3A1	Cancer Modifier
1634232	AJCC/UICC clinical Stage 3A2	Cancer Modifier
1635764	AJCC/UICC clinical Stage 3B	Cancer Modifier
1634571	AJCC/UICC clinical Stage 3C	Cancer Modifier
1633418	AJCC/UICC clinical Stage 3C1	Cancer Modifier
1635253	AJCC/UICC clinical Stage 3C2	Cancer Modifier
1634297	AJCC/UICC clinical Stage 3D	Cancer Modifier
1635566	AJCC/UICC pathological Stage 3	Cancer Modifier
1633519	AJCC/UICC pathological Stage 3A	Cancer Modifier
1633303	AJCC/UICC pathological Stage 3A1	Cancer Modifier
1635725	AJCC/UICC pathological Stage 3A2	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634789	AJCC/UICC pathological Stage 3B	Cancer Modifier
1635372	AJCC/UICC pathological Stage 3C	Cancer Modifier
1633718	AJCC/UICC pathological Stage 3C1	Cancer Modifier
1633961	AJCC/UICC pathological Stage 3C2	Cancer Modifier
1634918	AJCC/UICC pathological Stage 3D	Cancer Modifier
1634850	AJCC/UICC post therapy clinical Stage 3	Cancer Modifier
1633865	AJCC/UICC post therapy clinical Stage 3A	Cancer Modifier
1633821	AJCC/UICC post therapy clinical Stage 3A1	Cancer Modifier
1635030	AJCC/UICC post therapy clinical Stage 3A2	Cancer Modifier
1634214	AJCC/UICC post therapy clinical Stage 3B	Cancer Modifier
1635455	AJCC/UICC post therapy clinical Stage 3C	Cancer Modifier
1634441	AJCC/UICC post therapy clinical Stage 3C1	Cancer Modifier
1635782	AJCC/UICC post therapy clinical Stage 3C2	Cancer Modifier
1635286	AJCC/UICC post therapy clinical Stage 3D	Cancer Modifier
1633837	AJCC/UICC post therapy pathological Stage 3	Cancer Modifier
1633381	AJCC/UICC post therapy pathological Stage 3A	Cancer Modifier
1635460	AJCC/UICC post therapy pathological Stage 3A1	Cancer Modifier
1634164	AJCC/UICC post therapy pathological Stage 3A2	Cancer Modifier
1635674	AJCC/UICC post therapy pathological Stage 3B	Cancer Modifier
1635325	AJCC/UICC post therapy pathological Stage 3C	Cancer Modifier
1633796	AJCC/UICC post therapy pathological Stage 3C1	Cancer Modifier
1634140	AJCC/UICC post therapy pathological Stage 3C2	Cancer Modifier
1633794	AJCC/UICC post therapy pathological Stage 3D	Cancer Modifier
1633650	AJCC/UICC Stage 3	Cancer Modifier
1635855	AJCC/UICC Stage 3A	Cancer Modifier
1635412	AJCC/UICC Stage 3A1	Cancer Modifier
1634304	AJCC/UICC Stage 3A2	Cancer Modifier
1634411	AJCC/UICC Stage 3B	Cancer Modifier
1634150	AJCC/UICC Stage 3C	Cancer Modifier
1634626	AJCC/UICC Stage 3C1	Cancer Modifier
1634556	AJCC/UICC Stage 3C2	Cancer Modifier
1633431	AJCC/UICC Stage 3D	Cancer Modifier

Concept ID	Concept name	Vocabulary
	AJCC/UICC Stage 4	
1634307	AJCC/UICC 6th clinical Stage 4	Cancer Modifier
1635535	AJCC/UICC 6th clinical Stage 4A	Cancer Modifier
1634152	AJCC/UICC 6th clinical Stage 4A1	Cancer Modifier
1634480	AJCC/UICC 6th clinical Stage 4A2	Cancer Modifier
1633922	AJCC/UICC 6th clinical Stage 4B	Cancer Modifier
1633270	AJCC/UICC 6th clinical Stage 4C	Cancer Modifier
1634208	AJCC/UICC 6th pathological Stage 4	Cancer Modifier
1634731	AJCC/UICC 6th pathological Stage 4A	Cancer Modifier
1635787	AJCC/UICC 6th pathological Stage 4A1	Cancer Modifier
1635053	AJCC/UICC 6th pathological Stage 4A2	Cancer Modifier
1635370	AJCC/UICC 6th pathological Stage 4B	Cancer Modifier
1635893	AJCC/UICC 6th pathological Stage 4C	Cancer Modifier
1633966	AJCC/UICC 6th post therapy clinical Stage 4	Cancer Modifier
1635246	AJCC/UICC 6th post therapy clinical Stage 4A	Cancer Modifier
1634555	AJCC/UICC 6th post therapy clinical Stage 4A1	Cancer Modifier
1635844	AJCC/UICC 6th post therapy clinical Stage 4A2	Cancer Modifier
1634137	AJCC/UICC 6th post therapy clinical Stage 4B	Cancer Modifier
1634679	AJCC/UICC 6th post therapy clinical Stage 4C	Cancer Modifier
1634859	AJCC/UICC 6th post therapy pathological Stage 4	Cancer Modifier
1634665	AJCC/UICC 6th post therapy pathological Stage 4A	Cancer Modifier
1634001	AJCC/UICC 6th post therapy pathological Stage 4A1	Cancer Modifier
1633463	AJCC/UICC 6th post therapy pathological Stage 4A2	Cancer Modifier
1634692	AJCC/UICC 6th post therapy pathological Stage 4B	Cancer Modifier
1633649	AJCC/UICC 6th post therapy pathological Stage 4C	Cancer Modifier
1635323	AJCC/UICC 6th Stage 4	Cancer Modifier
1635806	AJCC/UICC 6th Stage 4A	Cancer Modifier
1635208	AJCC/UICC 6th Stage 4A1	Cancer Modifier
1635833	AJCC/UICC 6th Stage 4A2	Cancer Modifier
1634488	AJCC/UICC 6th Stage 4B	Cancer Modifier
1634377	AJCC/UICC 6th Stage 4C	Cancer Modifier
1634766	AJCC/UICC 7th clinical Stage 4	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634451	AJCC/UICC 7th clinical Stage 4A	Cancer Modifier
1634875	AJCC/UICC 7th clinical Stage 4A1	Cancer Modifier
1633272	AJCC/UICC 7th clinical Stage 4A2	Cancer Modifier
1635757	AJCC/UICC 7th clinical Stage 4B	Cancer Modifier
1634614	AJCC/UICC 7th clinical Stage 4C	Cancer Modifier
1635230	AJCC/UICC 7th pathological Stage 4	Cancer Modifier
1635745	AJCC/UICC 7th pathological Stage 4A	Cancer Modifier
1634537	AJCC/UICC 7th pathological Stage 4A1	Cancer Modifier
1633372	AJCC/UICC 7th pathological Stage 4A2	Cancer Modifier
1634472	AJCC/UICC 7th pathological Stage 4B	Cancer Modifier
1634492	AJCC/UICC 7th pathological Stage 4C	Cancer Modifier
1633414	AJCC/UICC 7th post therapy clinical Stage 4	Cancer Modifier
1634926	AJCC/UICC 7th post therapy clinical Stage 4A	Cancer Modifier
1633337	AJCC/UICC 7th post therapy clinical Stage 4A1	Cancer Modifier
1633333	AJCC/UICC 7th post therapy clinical Stage 4A2	Cancer Modifier
1633985	AJCC/UICC 7th post therapy clinical Stage 4B	Cancer Modifier
1633638	AJCC/UICC 7th post therapy clinical Stage 4C	Cancer Modifier
1635356	AJCC/UICC 7th post therapy pathological Stage 4	Cancer Modifier
1633523	AJCC/UICC 7th post therapy pathological Stage 4A	Cancer Modifier
1634964	AJCC/UICC 7th post therapy pathological Stage 4A1	Cancer Modifier
1635298	AJCC/UICC 7th post therapy pathological Stage 4A2	Cancer Modifier
1634831	AJCC/UICC 7th post therapy pathological Stage 4B	Cancer Modifier
1634513	AJCC/UICC 7th post therapy pathological Stage 4C	Cancer Modifier
1633902	AJCC/UICC 7th Stage 4	Cancer Modifier
1635234	AJCC/UICC 7th Stage 4A	Cancer Modifier
1633929	AJCC/UICC 7th Stage 4A1	Cancer Modifier
1635273	AJCC/UICC 7th Stage 4A2	Cancer Modifier
1635337	AJCC/UICC 7th Stage 4B	Cancer Modifier
1634250	AJCC/UICC 7th Stage 4C	Cancer Modifier
1635029	AJCC/UICC 8th clinical Stage 4	Cancer Modifier
1634810	AJCC/UICC 8th clinical Stage 4A	Cancer Modifier
1634285	AJCC/UICC 8th clinical Stage 4A1	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633370	AJCC/UICC 8th clinical Stage 4A2	Cancer Modifier
1635708	AJCC/UICC 8th clinical Stage 4B	Cancer Modifier
1635006	AJCC/UICC 8th clinical Stage 4C	Cancer Modifier
1633697	AJCC/UICC 8th pathological Stage 4	Cancer Modifier
1634005	AJCC/UICC 8th pathological Stage 4A	Cancer Modifier
1633786	AJCC/UICC 8th pathological Stage 4A1	Cancer Modifier
1633298	AJCC/UICC 8th pathological Stage 4A2	Cancer Modifier
1634487	AJCC/UICC 8th pathological Stage 4B	Cancer Modifier
1634551	AJCC/UICC 8th pathological Stage 4C	Cancer Modifier
1634358	AJCC/UICC 8th post therapy clinical Stage 4	Cancer Modifier
1634330	AJCC/UICC 8th post therapy clinical Stage 4A	Cancer Modifier
1633641	AJCC/UICC 8th post therapy clinical Stage 4A1	Cancer Modifier
1635818	AJCC/UICC 8th post therapy clinical Stage 4A2	Cancer Modifier
1635696	AJCC/UICC 8th post therapy clinical Stage 4B	Cancer Modifier
1634908	AJCC/UICC 8th post therapy clinical Stage 4C	Cancer Modifier
1635316	AJCC/UICC 8th post therapy pathological Stage 4	Cancer Modifier
1635869	AJCC/UICC 8th post therapy pathological Stage 4A	Cancer Modifier
1635129	AJCC/UICC 8th post therapy pathological Stage 4A1	Cancer Modifier
1633823	AJCC/UICC 8th post therapy pathological Stage 4A2	Cancer Modifier
1635488	AJCC/UICC 8th post therapy pathological Stage 4B	Cancer Modifier
1635853	AJCC/UICC 8th post therapy pathological Stage 4C	Cancer Modifier
1634131	AJCC/UICC 8th Stage 4	Cancer Modifier
1635314	AJCC/UICC 8th Stage 4A	Cancer Modifier
1634295	AJCC/UICC 8th Stage 4A1	Cancer Modifier
1633924	AJCC/UICC 8th Stage 4A2	Cancer Modifier
1635518	AJCC/UICC 8th Stage 4B	Cancer Modifier
1633316	AJCC/UICC 8th Stage 4C	Cancer Modifier
1634447	AJCC/UICC clinical Stage 4	Cancer Modifier
1635450	AJCC/UICC clinical Stage 4A	Cancer Modifier
1634384	AJCC/UICC clinical Stage 4A1	Cancer Modifier
1634350	AJCC/UICC clinical Stage 4A2	Cancer Modifier
1634525	AJCC/UICC clinical Stage 4B	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635404	AJCC/UICC clinical Stage 4C	Cancer Modifier
1634688	AJCC/UICC pathological Stage 4	Cancer Modifier
1635232	AJCC/UICC pathological Stage 4A	Cancer Modifier
1635365	AJCC/UICC pathological Stage 4A1	Cancer Modifier
1634063	AJCC/UICC pathological Stage 4A2	Cancer Modifier
1633577	AJCC/UICC pathological Stage 4B	Cancer Modifier
1635567	AJCC/UICC pathological Stage 4C	Cancer Modifier
1633600	AJCC/UICC post therapy clinical Stage 4	Cancer Modifier
1634733	AJCC/UICC post therapy clinical Stage 4A	Cancer Modifier
1635574	AJCC/UICC post therapy clinical Stage 4A1	Cancer Modifier
1635500	AJCC/UICC post therapy clinical Stage 4A2	Cancer Modifier
1634367	AJCC/UICC post therapy clinical Stage 4B	Cancer Modifier
1635146	AJCC/UICC post therapy clinical Stage 4C	Cancer Modifier
1634077	AJCC/UICC post therapy pathological Stage 4	Cancer Modifier
1633860	AJCC/UICC post therapy pathological Stage 4A	Cancer Modifier
1633555	AJCC/UICC post therapy pathological Stage 4A1	Cancer Modifier
1633385	AJCC/UICC post therapy pathological Stage 4A2	Cancer Modifier
1633973	AJCC/UICC post therapy pathological Stage 4B	Cancer Modifier
1635801	AJCC/UICC post therapy pathological Stage 4C	Cancer Modifier
1633308	AJCC/UICC Stage 4	Cancer Modifier
1633439	AJCC/UICC Stage 4A	Cancer Modifier
1635355	AJCC/UICC Stage 4A1	Cancer Modifier
1635066	AJCC/UICC Stage 4A2	Cancer Modifier
1633748	AJCC/UICC Stage 4B	Cancer Modifier
1633675	AJCC/UICC Stage 4C	Cancer Modifier
AJCC/UICC M1 Category		
1634829	AJCC/UICC 6th clinical M1 Category	Cancer Modifier
1633709	AJCC/UICC 6th clinical M1a Category	Cancer Modifier
1634442	AJCC/UICC 6th clinical M1b Category	Cancer Modifier
1635067	AJCC/UICC 6th clinical M1c Category	Cancer Modifier
1634427	AJCC/UICC 6th clinical M1d Category	Cancer Modifier
1635380	AJCC/UICC 6th M1 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635019	AJCC/UICC 6th M1a Category	Cancer Modifier
1635669	AJCC/UICC 6th M1b Category	Cancer Modifier
1633309	AJCC/UICC 6th M1c Category	Cancer Modifier
1635212	AJCC/UICC 6th M1d Category	Cancer Modifier
1633469	AJCC/UICC 6th pathological M1 Category	Cancer Modifier
1634637	AJCC/UICC 6th pathological M1a Category	Cancer Modifier
1635160	AJCC/UICC 6th pathological M1b Category	Cancer Modifier
1634424	AJCC/UICC 6th pathological M1c Category	Cancer Modifier
1635303	AJCC/UICC 6th pathological M1d Category	Cancer Modifier
1635154	AJCC/UICC 6th post therapy clinical M1 Category	Cancer Modifier
1633533	AJCC/UICC 6th post therapy clinical M1a Category	Cancer Modifier
1635684	AJCC/UICC 6th post therapy clinical M1b Category	Cancer Modifier
1633729	AJCC/UICC 6th post therapy clinical M1c Category	Cancer Modifier
1635791	AJCC/UICC 6th post therapy clinical M1d Category	Cancer Modifier
1634446	AJCC/UICC 6th post therapy pathological M1 Category	Cancer Modifier
1633466	AJCC/UICC 6th post therapy pathological M1a Category	Cancer Modifier
1633646	AJCC/UICC 6th post therapy pathological M1b Category	Cancer Modifier
1633284	AJCC/UICC 6th post therapy pathological M1c Category	Cancer Modifier
1635260	AJCC/UICC 6th post therapy pathological M1d Category	Cancer Modifier
1633276	AJCC/UICC 7th clinical M1 Category	Cancer Modifier
1635878	AJCC/UICC 7th clinical M1a Category	Cancer Modifier
1635302	AJCC/UICC 7th clinical M1b Category	Cancer Modifier
1635461	AJCC/UICC 7th clinical M1c Category	Cancer Modifier
1633666	AJCC/UICC 7th clinical M1d Category	Cancer Modifier
1633696	AJCC/UICC 7th M1 Category	Cancer Modifier
1634775	AJCC/UICC 7th M1a Category	Cancer Modifier
1635747	AJCC/UICC 7th M1b Category	Cancer Modifier
1635843	AJCC/UICC 7th M1c Category	Cancer Modifier
1633866	AJCC/UICC 7th M1d Category	Cancer Modifier
1635336	AJCC/UICC 7th pathological M1 Category	Cancer Modifier
1634268	AJCC/UICC 7th pathological M1a Category	Cancer Modifier
1635008	AJCC/UICC 7th pathological M1b Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634188	AJCC/UICC 7th pathological M1c Category	Cancer Modifier
1634325	AJCC/UICC 7th pathological M1d Category	Cancer Modifier
1635457	AJCC/UICC 7th post therapy clinical M1 Category	Cancer Modifier
1633304	AJCC/UICC 7th post therapy clinical M1a Category	Cancer Modifier
1634795	AJCC/UICC 7th post therapy clinical M1b Category	Cancer Modifier
1633585	AJCC/UICC 7th post therapy clinical M1c Category	Cancer Modifier
1635704	AJCC/UICC 7th post therapy clinical M1d Category	Cancer Modifier
1634407	AJCC/UICC 7th post therapy pathological M1 Category	Cancer Modifier
1634583	AJCC/UICC 7th post therapy pathological M1a Category	Cancer Modifier
1635753	AJCC/UICC 7th post therapy pathological M1b Category	Cancer Modifier
1634652	AJCC/UICC 7th post therapy pathological M1c Category	Cancer Modifier
1635606	AJCC/UICC 7th post therapy pathological M1d Category	Cancer Modifier
1633974	AJCC/UICC 8th clinical M1 Category	Cancer Modifier
1635149	AJCC/UICC 8th clinical M1a Category	Cancer Modifier
1633375	AJCC/UICC 8th clinical M1b Category	Cancer Modifier
1633784	AJCC/UICC 8th clinical M1c Category	Cancer Modifier
1633799	AJCC/UICC 8th clinical M1d Category	Cancer Modifier
1633498	AJCC/UICC 8th M1 Category	Cancer Modifier
1634082	AJCC/UICC 8th M1a Category	Cancer Modifier
1634661	AJCC/UICC 8th M1b Category	Cancer Modifier
1634975	AJCC/UICC 8th M1c Category	Cancer Modifier
1634259	AJCC/UICC 8th M1d Category	Cancer Modifier
1634891	AJCC/UICC 8th pathological M1 Category	Cancer Modifier
1635097	AJCC/UICC 8th pathological M1a Category	Cancer Modifier
1634712	AJCC/UICC 8th pathological M1b Category	Cancer Modifier
1634657	AJCC/UICC 8th pathological M1c Category	Cancer Modifier
1634526	AJCC/UICC 8th pathological M1d Category	Cancer Modifier
1633795	AJCC/UICC 8th post therapy clinical M1 Category	Cancer Modifier
1634834	AJCC/UICC 8th post therapy clinical M1a Category	Cancer Modifier
1634262	AJCC/UICC 8th post therapy clinical M1b Category	Cancer Modifier
1634300	AJCC/UICC 8th post therapy clinical M1c Category	Cancer Modifier
1634798	AJCC/UICC 8th post therapy clinical M1d Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634083	AJCC/UICC 8th post therapy pathological M1 Category	Cancer Modifier
1634142	AJCC/UICC 8th post therapy pathological M1a Category	Cancer Modifier
1634339	AJCC/UICC 8th post therapy pathological M1b Category	Cancer Modifier
1635390	AJCC/UICC 8th post therapy pathological M1c Category	Cancer Modifier
1635465	AJCC/UICC 8th post therapy pathological M1d Category	Cancer Modifier
1635085	AJCC/UICC clinical M1 Category	Cancer Modifier
1633777	AJCC/UICC clinical M1a Category	Cancer Modifier
1635090	AJCC/UICC clinical M1b Category	Cancer Modifier
1635255	AJCC/UICC clinical M1c Category	Cancer Modifier
1634048	AJCC/UICC clinical M1d Category	Cancer Modifier
1635142	AJCC/UICC M1 Category	Cancer Modifier
1635100	AJCC/UICC M1a Category	Cancer Modifier
1634463	AJCC/UICC M1b Category	Cancer Modifier
1635519	AJCC/UICC M1c Category	Cancer Modifier
1634064	AJCC/UICC M1d Category	Cancer Modifier
1635505	AJCC/UICC pathological M1 Category	Cancer Modifier
1634312	AJCC/UICC pathological M1a Category	Cancer Modifier
1634093	AJCC/UICC pathological M1b Category	Cancer Modifier
1635338	AJCC/UICC pathological M1c Category	Cancer Modifier
1635373	AJCC/UICC pathological M1d Category	Cancer Modifier
1633413	AJCC/UICC post therapy clinical M1 Category	Cancer Modifier
1634836	AJCC/UICC post therapy clinical M1a Category	Cancer Modifier
1635850	AJCC/UICC post therapy clinical M1b Category	Cancer Modifier
1633352	AJCC/UICC post therapy clinical M1c Category	Cancer Modifier
1634293	AJCC/UICC post therapy clinical M1d Category	Cancer Modifier
1634355	AJCC/UICC post therapy pathological M1 Category	Cancer Modifier
1633657	AJCC/UICC post therapy pathological M1a Category	Cancer Modifier
1635829	AJCC/UICC post therapy pathological M1b Category	Cancer Modifier
1635498	AJCC/UICC post therapy pathological M1c Category	Cancer Modifier
1634003	AJCC/UICC post therapy pathological M1d Category	Cancer Modifier
AJCC/UICC M0 Category		
1634194	AJCC/UICC 6th clinical M0 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634887	AJCC/UICC 6th M0 Category	Cancer Modifier
1635345	AJCC/UICC 6th pathological M0 Category	Cancer Modifier
1635415	AJCC/UICC 6th post therapy clinical M0 Category	Cancer Modifier
1635257	AJCC/UICC 6th post therapy pathological M0 Category	Cancer Modifier
1633468	AJCC/UICC 7th clinical M0 Category	Cancer Modifier
1633829	AJCC/UICC 7th M0 Category	Cancer Modifier
1635536	AJCC/UICC 7th pathological M0 Category	Cancer Modifier
1633313	AJCC/UICC 7th post therapy clinical M0 Category	Cancer Modifier
1635263	AJCC/UICC 7th post therapy pathological M0 Category	Cancer Modifier
1634757	AJCC/UICC 8th clinical M0 Category	Cancer Modifier
1633299	AJCC/UICC 8th M0 Category	Cancer Modifier
1634606	AJCC/UICC 8th pathological M0 Category	Cancer Modifier
1633358	AJCC/UICC 8th post therapy clinical M0 Category	Cancer Modifier
1634315	AJCC/UICC 8th post therapy pathological M0 Category	Cancer Modifier
1635291	AJCC/UICC clinical M0 Category	Cancer Modifier
1635624	AJCC/UICC M0 Category	Cancer Modifier
1634618	AJCC/UICC pathological M0 Category	Cancer Modifier
1634802	AJCC/UICC post therapy clinical M0 Category	Cancer Modifier
1633364	AJCC/UICC post therapy pathological M0 Category	Cancer Modifier
AJCC/UICC N1 Category		
1635605	AJCC/UICC 6th clinical N3 Category	Cancer Modifier
1633434	AJCC/UICC 6th clinical N3a Category	Cancer Modifier
1635283	AJCC/UICC 6th clinical N3b Category	Cancer Modifier
1633334	AJCC/UICC 6th clinical N3c Category	Cancer Modifier
1634563	AJCC/UICC 6th N3 Category	Cancer Modifier
1633670	AJCC/UICC 6th N3a Category	Cancer Modifier
1635795	AJCC/UICC 6th N3b Category	Cancer Modifier
1635737	AJCC/UICC 6th N3c Category	Cancer Modifier
1634504	AJCC/UICC 6th pathological N3 Category	Cancer Modifier
1634271	AJCC/UICC 6th pathological N3a Category	Cancer Modifier
1633500	AJCC/UICC 6th pathological N3b Category	Cancer Modifier
1635354	AJCC/UICC 6th pathological N3c Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633508	AJCC/UICC 6th post therapy clinical N3 Category	Cancer Modifier
1634812	AJCC/UICC 6th post therapy clinical N3a Category	Cancer Modifier
1635478	AJCC/UICC 6th post therapy clinical N3b Category	Cancer Modifier
1633964	AJCC/UICC 6th post therapy clinical N3c Category	Cancer Modifier
1634342	AJCC/UICC 6th post therapy pathological N3 Category	Cancer Modifier
1634971	AJCC/UICC 6th post therapy pathological N3a Category	Cancer Modifier
1633611	AJCC/UICC 6th post therapy pathological N3b Category	Cancer Modifier
1635379	AJCC/UICC 6th post therapy pathological N3c Category	Cancer Modifier
1634037	AJCC/UICC 7th clinical N3 Category	Cancer Modifier
1635004	AJCC/UICC 7th clinical N3a Category	Cancer Modifier
1635084	AJCC/UICC 7th clinical N3b Category	Cancer Modifier
1633934	AJCC/UICC 7th clinical N3c Category	Cancer Modifier
1633684	AJCC/UICC 7th N3 Category	Cancer Modifier
1635109	AJCC/UICC 7th N3a Category	Cancer Modifier
1633277	AJCC/UICC 7th N3b Category	Cancer Modifier
1634478	AJCC/UICC 7th N3c Category	Cancer Modifier
1633668	AJCC/UICC 7th pathological N3 Category	Cancer Modifier
1634397	AJCC/UICC 7th pathological N3a Category	Cancer Modifier
1634847	AJCC/UICC 7th pathological N3b Category	Cancer Modifier
1634723	AJCC/UICC 7th pathological N3c Category	Cancer Modifier
1635206	AJCC/UICC 7th post therapy clinical N3 Category	Cancer Modifier
1634935	AJCC/UICC 7th post therapy clinical N3a Category	Cancer Modifier
1635110	AJCC/UICC 7th post therapy clinical N3b Category	Cancer Modifier
1633806	AJCC/UICC 7th post therapy clinical N3c Category	Cancer Modifier
1634613	AJCC/UICC 7th post therapy pathological N3 Category	Cancer Modifier
1635452	AJCC/UICC 7th post therapy pathological N3a Category	Cancer Modifier
1633645	AJCC/UICC 7th post therapy pathological N3b Category	Cancer Modifier
1634365	AJCC/UICC 7th post therapy pathological N3c Category	Cancer Modifier
1633854	AJCC/UICC 8th clinical N3 Category	Cancer Modifier
1635496	AJCC/UICC 8th clinical N3a Category	Cancer Modifier
1635828	AJCC/UICC 8th clinical N3b Category	Cancer Modifier
1635133	AJCC/UICC 8th clinical N3c Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634147	AJCC/UICC 8th N3 Category	Cancer Modifier
1634183	AJCC/UICC 8th N3a Category	Cancer Modifier
1635091	AJCC/UICC 8th N3b Category	Cancer Modifier
1634198	AJCC/UICC 8th N3c Category	Cancer Modifier
1635307	AJCC/UICC 8th pathological N3 Category	Cancer Modifier
1635545	AJCC/UICC 8th pathological N3a Category	Cancer Modifier
1634770	AJCC/UICC 8th pathological N3b Category	Cancer Modifier
1633895	AJCC/UICC 8th pathological N3c Category	Cancer Modifier
1634717	AJCC/UICC 8th post therapy clinical N3 Category	Cancer Modifier
1634565	AJCC/UICC 8th post therapy clinical N3a Category	Cancer Modifier
1634287	AJCC/UICC 8th post therapy clinical N3b Category	Cancer Modifier
1634403	AJCC/UICC 8th post therapy clinical N3c Category	Cancer Modifier
1634114	AJCC/UICC 8th post therapy pathological N3 Category	Cancer Modifier
1634239	AJCC/UICC 8th post therapy pathological N3a Category	Cancer Modifier
1635042	AJCC/UICC 8th post therapy pathological N3b Category	Cancer Modifier
1635551	AJCC/UICC 8th post therapy pathological N3c Category	Cancer Modifier
1633914	AJCC/UICC clinical N3 Category	Cancer Modifier
1634649	AJCC/UICC clinical N3a Category	Cancer Modifier
1635610	AJCC/UICC clinical N3b Category	Cancer Modifier
1634650	AJCC/UICC clinical N3c Category	Cancer Modifier
1635320	AJCC/UICC N3 Category	Cancer Modifier
1635590	AJCC/UICC N3a Category	Cancer Modifier
1633422	AJCC/UICC N3b Category	Cancer Modifier
1634735	AJCC/UICC N3c Category	Cancer Modifier
1635706	AJCC/UICC pathological N3 Category	Cancer Modifier
1633401	AJCC/UICC pathological N3a Category	Cancer Modifier
1633384	AJCC/UICC pathological N3b Category	Cancer Modifier
1634305	AJCC/UICC pathological N3c Category	Cancer Modifier
1634102	AJCC/UICC post therapy clinical N3 Category	Cancer Modifier
1633456	AJCC/UICC post therapy clinical N3a Category	Cancer Modifier
1635630	AJCC/UICC post therapy clinical N3b Category	Cancer Modifier
1635736	AJCC/UICC post therapy clinical N3c Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635094	AJCC/UICC post therapy pathological N3 Category	Cancer Modifier
1634776	AJCC/UICC post therapy pathological N3a Category	Cancer Modifier
1634784	AJCC/UICC post therapy pathological N3b Category	Cancer Modifier
1633408	AJCC/UICC post therapy pathological N3c Category	Cancer Modifier
AJCC/UICC N0 Category		
1633315	AJCC/UICC 6th clinical N0 Category	Cancer Modifier
1635846	AJCC/UICC 6th clinical N0a Category	Cancer Modifier
1635102	AJCC/UICC 6th clinical N0b Category	Cancer Modifier
1635023	AJCC/UICC 6th N0 Category	Cancer Modifier
1634703	AJCC/UICC 6th N0a Category	Cancer Modifier
1633410	AJCC/UICC 6th N0b Category	Cancer Modifier
1634212	AJCC/UICC 6th pathological N0 Category	Cancer Modifier
1634823	AJCC/UICC 6th pathological N0a Category	Cancer Modifier
1634796	AJCC/UICC 6th pathological N0b Category	Cancer Modifier
1634296	AJCC/UICC 6th post therapy clinical N0 Category	Cancer Modifier
1634396	AJCC/UICC 6th post therapy clinical N0a Category	Cancer Modifier
1634901	AJCC/UICC 6th post therapy clinical N0b Category	Cancer Modifier
1634948	AJCC/UICC 6th post therapy pathological N0 Category	Cancer Modifier
1635202	AJCC/UICC 6th post therapy pathological N0a Category	Cancer Modifier
1635087	AJCC/UICC 6th post therapy pathological N0b Category	Cancer Modifier
1633942	AJCC/UICC 7th clinical N0 Category	Cancer Modifier
1633557	AJCC/UICC 7th clinical N0a Category	Cancer Modifier
1635744	AJCC/UICC 7th clinical N0b Category	Cancer Modifier
1633720	AJCC/UICC 7th N0 Category	Cancer Modifier
1633842	AJCC/UICC 7th N0a Category	Cancer Modifier
1635089	AJCC/UICC 7th N0b Category	Cancer Modifier
1633726	AJCC/UICC 7th pathological N0 Category	Cancer Modifier
1635093	AJCC/UICC 7th pathological N0a Category	Cancer Modifier
1635361	AJCC/UICC 7th pathological N0b Category	Cancer Modifier
1635778	AJCC/UICC 7th post therapy clinical N0 Category	Cancer Modifier
1634640	AJCC/UICC 7th post therapy clinical N0a Category	Cancer Modifier
1635359	AJCC/UICC 7th post therapy clinical N0b Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634511	AJCC/UICC 7th post therapy pathological N0 Category	Cancer Modifier
1635538	AJCC/UICC 7th post therapy pathological N0a Category	Cancer Modifier
1634469	AJCC/UICC 7th post therapy pathological N0b Category	Cancer Modifier
1634070	AJCC/UICC 8th clinical N0 Category	Cancer Modifier
1633719	AJCC/UICC 8th clinical N0a Category	Cancer Modifier
1633534	AJCC/UICC 8th clinical N0b Category	Cancer Modifier
1634780	AJCC/UICC 8th N0 Category	Cancer Modifier
1635523	AJCC/UICC 8th N0a Category	Cancer Modifier
1634038	AJCC/UICC 8th N0b Category	Cancer Modifier
1635560	AJCC/UICC 8th pathological N0 Category	Cancer Modifier
1633504	AJCC/UICC 8th pathological N0a Category	Cancer Modifier
1634990	AJCC/UICC 8th pathological N0b Category	Cancer Modifier
1634642	AJCC/UICC 8th post therapy clinical N0 Category	Cancer Modifier
1634520	AJCC/UICC 8th post therapy clinical N0a Category	Cancer Modifier
1635765	AJCC/UICC 8th post therapy clinical N0b Category	Cancer Modifier
1635563	AJCC/UICC 8th post therapy pathological N0 Category	Cancer Modifier
1635092	AJCC/UICC 8th post therapy pathological N0a Category	Cancer Modifier
1635819	AJCC/UICC 8th post therapy pathological N0b Category	Cancer Modifier
1634145	AJCC/UICC clinical N0 Category	Cancer Modifier
1635732	AJCC/UICC clinical N0a Category	Cancer Modifier
1635495	AJCC/UICC clinical N0b Category	Cancer Modifier
1633440	AJCC/UICC N0 Category	Cancer Modifier
1633621	AJCC/UICC N0a Category	Cancer Modifier
1635244	AJCC/UICC N0b Category	Cancer Modifier
1635597	AJCC/UICC pathological N0 Category	Cancer Modifier
1633923	AJCC/UICC pathological N0a Category	Cancer Modifier
1633322	AJCC/UICC pathological N0b Category	Cancer Modifier
1633686	AJCC/UICC post therapy clinical N0 Category	Cancer Modifier
1634516	AJCC/UICC post therapy clinical N0a Category	Cancer Modifier
1634700	AJCC/UICC post therapy clinical N0b Category	Cancer Modifier
1633527	AJCC/UICC post therapy pathological N0 Category	Cancer Modifier
1634158	AJCC/UICC post therapy pathological N0a Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634985	AJCC/UICC post therapy pathological N0b Category	Cancer Modifier
	AJCC/UICC T1 Category	
1634381	AJCC/UICC 6th clinical T1 Category	Cancer Modifier
1633520	AJCC/UICC 6th clinical T1a Category	Cancer Modifier
1634828	AJCC/UICC 6th clinical T1a1 Category	Cancer Modifier
1634432	AJCC/UICC 6th clinical T1a2 Category	Cancer Modifier
1633492	AJCC/UICC 6th clinical T1b Category	Cancer Modifier
1634587	AJCC/UICC 6th clinical T1b1 Category	Cancer Modifier
1634547	AJCC/UICC 6th clinical T1b2 Category	Cancer Modifier
1635584	AJCC/UICC 6th clinical T1b3 Category	Cancer Modifier
1634501	AJCC/UICC 6th clinical T1c Category	Cancer Modifier
1635357	AJCC/UICC 6th clinical T1c1 Category	Cancer Modifier
1634309	AJCC/UICC 6th clinical T1c2 Category	Cancer Modifier
1635406	AJCC/UICC 6th clinical T1c3 Category	Cancer Modifier
1633497	AJCC/UICC 6th clinical T1d Category	Cancer Modifier
1633445	AJCC/UICC 6th pathological T1 Category	Cancer Modifier
1635059	AJCC/UICC 6th pathological T1a Category	Cancer Modifier
1634047	AJCC/UICC 6th pathological T1a1 Category	Cancer Modifier
1633848	AJCC/UICC 6th pathological T1a2 Category	Cancer Modifier
1634578	AJCC/UICC 6th pathological T1b Category	Cancer Modifier
1634961	AJCC/UICC 6th pathological T1b1 Category	Cancer Modifier
1634012	AJCC/UICC 6th pathological T1b2 Category	Cancer Modifier
1633412	AJCC/UICC 6th pathological T1b3 Category	Cancer Modifier
1633962	AJCC/UICC 6th pathological T1c Category	Cancer Modifier
1634057	AJCC/UICC 6th pathological T1c1 Category	Cancer Modifier
1633340	AJCC/UICC 6th pathological T1c2 Category	Cancer Modifier
1634076	AJCC/UICC 6th pathological T1c3 Category	Cancer Modifier
1635078	AJCC/UICC 6th pathological T1d Category	Cancer Modifier
1635874	AJCC/UICC 6th post therapy clinical T1 Category	Cancer Modifier
1635627	AJCC/UICC 6th post therapy clinical T1a Category	Cancer Modifier
1633470	AJCC/UICC 6th post therapy clinical T1a1 Category	Cancer Modifier
1635346	AJCC/UICC 6th post therapy clinical T1a2 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635727	AJCC/UICC 6th post therapy clinical T1b Category	Cancer Modifier
1634257	AJCC/UICC 6th post therapy clinical T1b1 Category	Cancer Modifier
1633930	AJCC/UICC 6th post therapy clinical T1b2 Category	Cancer Modifier
1635123	AJCC/UICC 6th post therapy clinical T1b3 Category	Cancer Modifier
1635703	AJCC/UICC 6th post therapy clinical T1c Category	Cancer Modifier
1635127	AJCC/UICC 6th post therapy clinical T1c1 Category	Cancer Modifier
1634053	AJCC/UICC 6th post therapy clinical T1c2 Category	Cancer Modifier
1635514	AJCC/UICC 6th post therapy clinical T1c3 Category	Cancer Modifier
1633671	AJCC/UICC 6th post therapy clinical T1d Category	Cancer Modifier
1634566	AJCC/UICC 6th post therapy pathological T1 Category	Cancer Modifier
1633574	AJCC/UICC 6th post therapy pathological T1a Category	Cancer Modifier
1635804	AJCC/UICC 6th post therapy pathological T1a1 Category	Cancer Modifier
1635582	AJCC/UICC 6th post therapy pathological T1a2 Category	Cancer Modifier
1635789	AJCC/UICC 6th post therapy pathological T1b Category	Cancer Modifier
1633365	AJCC/UICC 6th post therapy pathological T1b1 Category	Cancer Modifier
1635329	AJCC/UICC 6th post therapy pathological T1b2 Category	Cancer Modifier
1635604	AJCC/UICC 6th post therapy pathological T1b3 Category	Cancer Modifier
1634807	AJCC/UICC 6th post therapy pathological T1c Category	Cancer Modifier
1635845	AJCC/UICC 6th post therapy pathological T1c1 Category	Cancer Modifier
1633532	AJCC/UICC 6th post therapy pathological T1c2 Category	Cancer Modifier
1635586	AJCC/UICC 6th post therapy pathological T1c3 Category	Cancer Modifier
1635521	AJCC/UICC 6th post therapy pathological T1d Category	Cancer Modifier
1635713	AJCC/UICC 6th T1 Category	Cancer Modifier
1633451	AJCC/UICC 6th T1a Category	Cancer Modifier
1634369	AJCC/UICC 6th T1a1 Category	Cancer Modifier
1635678	AJCC/UICC 6th T1a2 Category	Cancer Modifier
1634178	AJCC/UICC 6th T1b Category	Cancer Modifier
1634843	AJCC/UICC 6th T1b1 Category	Cancer Modifier
1634646	AJCC/UICC 6th T1b2 Category	Cancer Modifier
1634360	AJCC/UICC 6th T1b3 Category	Cancer Modifier
1633486	AJCC/UICC 6th T1c Category	Cancer Modifier
1633780	AJCC/UICC 6th T1c1 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635788	AJCC/UICC 6th T1c2 Category	Cancer Modifier
1635306	AJCC/UICC 6th T1c3 Category	Cancer Modifier
1635205	AJCC/UICC 6th T1d Category	Cancer Modifier
1635664	AJCC/UICC 7th clinical T1 Category	Cancer Modifier
1634728	AJCC/UICC 7th clinical T1a Category	Cancer Modifier
1634190	AJCC/UICC 7th clinical T1a1 Category	Cancer Modifier
1633417	AJCC/UICC 7th clinical T1a2 Category	Cancer Modifier
1634662	AJCC/UICC 7th clinical T1b Category	Cancer Modifier
1633454	AJCC/UICC 7th clinical T1b1 Category	Cancer Modifier
1634126	AJCC/UICC 7th clinical T1b2 Category	Cancer Modifier
1634783	AJCC/UICC 7th clinical T1b3 Category	Cancer Modifier
1635861	AJCC/UICC 7th clinical T1c Category	Cancer Modifier
1634258	AJCC/UICC 7th clinical T1c1 Category	Cancer Modifier
1634858	AJCC/UICC 7th clinical T1c2 Category	Cancer Modifier
1634588	AJCC/UICC 7th clinical T1c3 Category	Cancer Modifier
1635583	AJCC/UICC 7th clinical T1d Category	Cancer Modifier
1635422	AJCC/UICC 7th pathological T1 Category	Cancer Modifier
1633268	AJCC/UICC 7th pathological T1a Category	Cancer Modifier
1633680	AJCC/UICC 7th pathological T1a1 Category	Cancer Modifier
1634736	AJCC/UICC 7th pathological T1a2 Category	Cancer Modifier
1634236	AJCC/UICC 7th pathological T1b Category	Cancer Modifier
1634237	AJCC/UICC 7th pathological T1b1 Category	Cancer Modifier
1633595	AJCC/UICC 7th pathological T1b2 Category	Cancer Modifier
1633287	AJCC/UICC 7th pathological T1b3 Category	Cancer Modifier
1635010	AJCC/UICC 7th pathological T1c Category	Cancer Modifier
1635048	AJCC/UICC 7th pathological T1c1 Category	Cancer Modifier
1634301	AJCC/UICC 7th pathological T1c2 Category	Cancer Modifier
1634032	AJCC/UICC 7th pathological T1c3 Category	Cancer Modifier
1635469	AJCC/UICC 7th pathological T1d Category	Cancer Modifier
1634509	AJCC/UICC 7th post therapy clinical T1 Category	Cancer Modifier
1633556	AJCC/UICC 7th post therapy clinical T1a Category	Cancer Modifier
1633407	AJCC/UICC 7th post therapy clinical T1a1 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635259	AJCC/UICC 7th post therapy clinical T1a2 Category	Cancer Modifier
1635779	AJCC/UICC 7th post therapy clinical T1b Category	Cancer Modifier
1635353	AJCC/UICC 7th post therapy clinical T1b1 Category	Cancer Modifier
1635178	AJCC/UICC 7th post therapy clinical T1b2 Category	Cancer Modifier
1634170	AJCC/UICC 7th post therapy clinical T1b3 Category	Cancer Modifier
1634347	AJCC/UICC 7th post therapy clinical T1c Category	Cancer Modifier
1634500	AJCC/UICC 7th post therapy clinical T1c1 Category	Cancer Modifier
1635476	AJCC/UICC 7th post therapy clinical T1c2 Category	Cancer Modifier
1634695	AJCC/UICC 7th post therapy clinical T1c3 Category	Cancer Modifier
1635683	AJCC/UICC 7th post therapy clinical T1d Category	Cancer Modifier
1634684	AJCC/UICC 7th post therapy pathological T1 Category	Cancer Modifier
1633888	AJCC/UICC 7th post therapy pathological T1a Category	Cancer Modifier
1635699	AJCC/UICC 7th post therapy pathological T1a1 Category	Cancer Modifier
1634693	AJCC/UICC 7th post therapy pathological T1a2 Category	Cancer Modifier
1634600	AJCC/UICC 7th post therapy pathological T1b Category	Cancer Modifier
1635502	AJCC/UICC 7th post therapy pathological T1b1 Category	Cancer Modifier
1633875	AJCC/UICC 7th post therapy pathological T1b2 Category	Cancer Modifier
1635598	AJCC/UICC 7th post therapy pathological T1b3 Category	Cancer Modifier
1634595	AJCC/UICC 7th post therapy pathological T1c Category	Cancer Modifier
1633289	AJCC/UICC 7th post therapy pathological T1c1 Category	Cancer Modifier
1633746	AJCC/UICC 7th post therapy pathological T1c2 Category	Cancer Modifier
1634200	AJCC/UICC 7th post therapy pathological T1c3 Category	Cancer Modifier
1634288	AJCC/UICC 7th post therapy pathological T1d Category	Cancer Modifier
1633549	AJCC/UICC 7th T1 Category	Cancer Modifier
1633764	AJCC/UICC 7th T1a Category	Cancer Modifier
1634676	AJCC/UICC 7th T1a1 Category	Cancer Modifier
1634521	AJCC/UICC 7th T1a2 Category	Cancer Modifier
1634319	AJCC/UICC 7th T1b Category	Cancer Modifier
1634668	AJCC/UICC 7th T1b1 Category	Cancer Modifier
1635493	AJCC/UICC 7th T1b2 Category	Cancer Modifier
1634255	AJCC/UICC 7th T1b3 Category	Cancer Modifier
1635626	AJCC/UICC 7th T1c Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634753	AJCC/UICC 7th T1c1 Category	Cancer Modifier
1635219	AJCC/UICC 7th T1c2 Category	Cancer Modifier
1635328	AJCC/UICC 7th T1c3 Category	Cancer Modifier
1633570	AJCC/UICC 7th T1d Category	Cancer Modifier
1633883	AJCC/UICC 8th clinical T1 Category	Cancer Modifier
1635229	AJCC/UICC 8th clinical T1a Category	Cancer Modifier
1634437	AJCC/UICC 8th clinical T1a1 Category	Cancer Modifier
1634945	AJCC/UICC 8th clinical T1a2 Category	Cancer Modifier
1633531	AJCC/UICC 8th clinical T1b Category	Cancer Modifier
1635568	AJCC/UICC 8th clinical T1b1 Category	Cancer Modifier
1633980	AJCC/UICC 8th clinical T1b2 Category	Cancer Modifier
1635512	AJCC/UICC 8th clinical T1b3 Category	Cancer Modifier
1635647	AJCC/UICC 8th clinical T1c Category	Cancer Modifier
1633432	AJCC/UICC 8th clinical T1c1 Category	Cancer Modifier
1634749	AJCC/UICC 8th clinical T1c2 Category	Cancer Modifier
1635322	AJCC/UICC 8th clinical T1c3 Category	Cancer Modifier
1634636	AJCC/UICC 8th clinical T1d Category	Cancer Modifier
1635070	AJCC/UICC 8th pathological T1 Category	Cancer Modifier
1633374	AJCC/UICC 8th pathological T1a Category	Cancer Modifier
1634683	AJCC/UICC 8th pathological T1a1 Category	Cancer Modifier
1634089	AJCC/UICC 8th pathological T1a2 Category	Cancer Modifier
1633282	AJCC/UICC 8th pathological T1b Category	Cancer Modifier
1634045	AJCC/UICC 8th pathological T1b1 Category	Cancer Modifier
1634711	AJCC/UICC 8th pathological T1b2 Category	Cancer Modifier
1634059	AJCC/UICC 8th pathological T1b3 Category	Cancer Modifier
1635810	AJCC/UICC 8th pathological T1c Category	Cancer Modifier
1635487	AJCC/UICC 8th pathological T1c1 Category	Cancer Modifier
1634933	AJCC/UICC 8th pathological T1c2 Category	Cancer Modifier
1634846	AJCC/UICC 8th pathological T1c3 Category	Cancer Modifier
1633448	AJCC/UICC 8th pathological T1d Category	Cancer Modifier
1635870	AJCC/UICC 8th post therapy clinical T1 Category	Cancer Modifier
1635466	AJCC/UICC 8th post therapy clinical T1a Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634857	AJCC/UICC 8th post therapy clinical T1a1 Category	Cancer Modifier
1633582	AJCC/UICC 8th post therapy clinical T1a2 Category	Cancer Modifier
1635158	AJCC/UICC 8th post therapy clinical T1b Category	Cancer Modifier
1635224	AJCC/UICC 8th post therapy clinical T1b1 Category	Cancer Modifier
1634385	AJCC/UICC 8th post therapy clinical T1b2 Category	Cancer Modifier
1633610	AJCC/UICC 8th post therapy clinical T1b3 Category	Cancer Modifier
1635163	AJCC/UICC 8th post therapy clinical T1c Category	Cancer Modifier
1633378	AJCC/UICC 8th post therapy clinical T1c1 Category	Cancer Modifier
1633969	AJCC/UICC 8th post therapy clinical T1c2 Category	Cancer Modifier
1635150	AJCC/UICC 8th post therapy clinical T1c3 Category	Cancer Modifier
1633487	AJCC/UICC 8th post therapy clinical T1d Category	Cancer Modifier
1634111	AJCC/UICC 8th post therapy pathological T1 Category	Cancer Modifier
1634322	AJCC/UICC 8th post therapy pathological T1a Category	Cancer Modifier
1633882	AJCC/UICC 8th post therapy pathological T1a1 Category	Cancer Modifier
1634493	AJCC/UICC 8th post therapy pathological T1a2 Category	Cancer Modifier
1633644	AJCC/UICC 8th post therapy pathological T1b Category	Cancer Modifier
1634744	AJCC/UICC 8th post therapy pathological T1b1 Category	Cancer Modifier
1635364	AJCC/UICC 8th post therapy pathological T1b2 Category	Cancer Modifier
1635210	AJCC/UICC 8th post therapy pathological T1b3 Category	Cancer Modifier
1635580	AJCC/UICC 8th post therapy pathological T1c Category	Cancer Modifier
1634533	AJCC/UICC 8th post therapy pathological T1c1 Category	Cancer Modifier
1634925	AJCC/UICC 8th post therapy pathological T1c2 Category	Cancer Modifier
1634598	AJCC/UICC 8th post therapy pathological T1c3 Category	Cancer Modifier
1635712	AJCC/UICC 8th post therapy pathological T1d Category	Cancer Modifier
1635793	AJCC/UICC 8th T1 Category	Cancer Modifier
1634584	AJCC/UICC 8th T1a Category	Cancer Modifier
1635220	AJCC/UICC 8th T1a1 Category	Cancer Modifier
1633797	AJCC/UICC 8th T1a2 Category	Cancer Modifier
1635687	AJCC/UICC 8th T1b Category	Cancer Modifier
1635292	AJCC/UICC 8th T1b1 Category	Cancer Modifier
1634402	AJCC/UICC 8th T1b2 Category	Cancer Modifier
1633449	AJCC/UICC 8th T1b3 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634817	AJCC/UICC 8th T1c Category	Cancer Modifier
1635180	AJCC/UICC 8th T1c1 Category	Cancer Modifier
1634211	AJCC/UICC 8th T1c2 Category	Cancer Modifier
1635015	AJCC/UICC 8th T1c3 Category	Cancer Modifier
1633579	AJCC/UICC 8th T1d Category	Cancer Modifier
1635661	AJCC/UICC clinical T1 Category	Cancer Modifier
1633742	AJCC/UICC clinical T1a Category	Cancer Modifier
1635676	AJCC/UICC clinical T1a1 Category	Cancer Modifier
1635081	AJCC/UICC clinical T1a2 Category	Cancer Modifier
1635039	AJCC/UICC clinical T1b Category	Cancer Modifier
1635701	AJCC/UICC clinical T1b1 Category	Cancer Modifier
1634659	AJCC/UICC clinical T1b2 Category	Cancer Modifier
1635348	AJCC/UICC clinical T1b3 Category	Cancer Modifier
1634320	AJCC/UICC clinical T1c Category	Cancer Modifier
1634515	AJCC/UICC clinical T1c1 Category	Cancer Modifier
1634184	AJCC/UICC clinical T1c2 Category	Cancer Modifier
1633494	AJCC/UICC clinical T1c3 Category	Cancer Modifier
1634931	AJCC/UICC clinical T1d Category	Cancer Modifier
1634004	AJCC/UICC pathological T1 Category	Cancer Modifier
1633722	AJCC/UICC pathological T1a Category	Cancer Modifier
1634867	AJCC/UICC pathological T1a1 Category	Cancer Modifier
1635881	AJCC/UICC pathological T1a2 Category	Cancer Modifier
1633693	AJCC/UICC pathological T1b Category	Cancer Modifier
1635168	AJCC/UICC pathological T1b1 Category	Cancer Modifier
1635120	AJCC/UICC pathological T1b2 Category	Cancer Modifier
1633919	AJCC/UICC pathological T1b3 Category	Cancer Modifier
1635017	AJCC/UICC pathological T1c Category	Cancer Modifier
1633387	AJCC/UICC pathological T1c1 Category	Cancer Modifier
1635112	AJCC/UICC pathological T1c2 Category	Cancer Modifier
1633779	AJCC/UICC pathological T1c3 Category	Cancer Modifier
1634272	AJCC/UICC pathological T1d Category	Cancer Modifier
1633377	AJCC/UICC post therapy clinical T1 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635371	AJCC/UICC post therapy clinical T1a Category	Cancer Modifier
1635698	AJCC/UICC post therapy clinical T1a1 Category	Cancer Modifier
1635481	AJCC/UICC post therapy clinical T1a2 Category	Cancer Modifier
1634217	AJCC/UICC post therapy clinical T1b Category	Cancer Modifier
1634011	AJCC/UICC post therapy clinical T1b1 Category	Cancer Modifier
1634880	AJCC/UICC post therapy clinical T1b2 Category	Cancer Modifier
1634763	AJCC/UICC post therapy clinical T1b3 Category	Cancer Modifier
1634758	AJCC/UICC post therapy clinical T1c Category	Cancer Modifier
1633845	AJCC/UICC post therapy clinical T1c1 Category	Cancer Modifier
1633803	AJCC/UICC post therapy clinical T1c2 Category	Cancer Modifier
1634153	AJCC/UICC post therapy clinical T1c3 Category	Cancer Modifier
1633703	AJCC/UICC post therapy clinical T1d Category	Cancer Modifier
1635781	AJCC/UICC post therapy pathological T1 Category	Cancer Modifier
1634793	AJCC/UICC post therapy pathological T1a Category	Cancer Modifier
1633812	AJCC/UICC post therapy pathological T1a1 Category	Cancer Modifier
1634685	AJCC/UICC post therapy pathological T1a2 Category	Cancer Modifier
1634264	AJCC/UICC post therapy pathological T1b Category	Cancer Modifier
1633380	AJCC/UICC post therapy pathological T1b1 Category	Cancer Modifier
1635607	AJCC/UICC post therapy pathological T1b2 Category	Cancer Modifier
1634311	AJCC/UICC post therapy pathological T1b3 Category	Cancer Modifier
1633935	AJCC/UICC post therapy pathological T1c Category	Cancer Modifier
1635144	AJCC/UICC post therapy pathological T1c1 Category	Cancer Modifier
1635548	AJCC/UICC post therapy pathological T1c2 Category	Cancer Modifier
1634851	AJCC/UICC post therapy pathological T1c3 Category	Cancer Modifier
1635237	AJCC/UICC post therapy pathological T1d Category	Cancer Modifier
1635564	AJCC/UICC T1 Category	Cancer Modifier
1633880	AJCC/UICC T1a Category	Cancer Modifier
1634674	AJCC/UICC T1a1 Category	Cancer Modifier
1635553	AJCC/UICC T1a2 Category	Cancer Modifier
1633921	AJCC/UICC T1b Category	Cancer Modifier
1633396	AJCC/UICC T1b1 Category	Cancer Modifier
1635666	AJCC/UICC T1b2 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633760	AJCC/UICC T1b3 Category	Cancer Modifier
1633529	AJCC/UICC T1c Category	Cancer Modifier
1635069	AJCC/UICC T1c1 Category	Cancer Modifier
1635668	AJCC/UICC T1c2 Category	Cancer Modifier
1634701	AJCC/UICC T1c3 Category	Cancer Modifier
1634100	AJCC/UICC T1d Category	Cancer Modifier
AJCC/UICC T2 Category		
1633747	AJCC/UICC 6th clinical T2 Category	Cancer Modifier
1633947	AJCC/UICC 6th clinical T2a Category	Cancer Modifier
1634260	AJCC/UICC 6th clinical T2a1 Category	Cancer Modifier
1635665	AJCC/UICC 6th clinical T2a2 Category	Cancer Modifier
1635509	AJCC/UICC 6th clinical T2b Category	Cancer Modifier
1633545	AJCC/UICC 6th clinical T2c Category	Cancer Modifier
1634235	AJCC/UICC 6th clinical T2d Category	Cancer Modifier
1634792	AJCC/UICC 6th pathological T2 Category	Cancer Modifier
1634221	AJCC/UICC 6th pathological T2a Category	Cancer Modifier
1635680	AJCC/UICC 6th pathological T2a1 Category	Cancer Modifier
1635326	AJCC/UICC 6th pathological T2a2 Category	Cancer Modifier
1635876	AJCC/UICC 6th pathological T2b Category	Cancer Modifier
1633999	AJCC/UICC 6th pathological T2c Category	Cancer Modifier
1633692	AJCC/UICC 6th pathological T2d Category	Cancer Modifier
1635055	AJCC/UICC 6th post therapy clinical T2 Category	Cancer Modifier
1634664	AJCC/UICC 6th post therapy clinical T2a Category	Cancer Modifier
1635143	AJCC/UICC 6th post therapy clinical T2a1 Category	Cancer Modifier
1635735	AJCC/UICC 6th post therapy clinical T2a2 Category	Cancer Modifier
1635414	AJCC/UICC 6th post therapy clinical T2b Category	Cancer Modifier
1634133	AJCC/UICC 6th post therapy clinical T2c Category	Cancer Modifier
1635383	AJCC/UICC 6th post therapy clinical T2d Category	Cancer Modifier
1634274	AJCC/UICC 6th post therapy pathological T2 Category	Cancer Modifier
1635756	AJCC/UICC 6th post therapy pathological T2a Category	Cancer Modifier
1635211	AJCC/UICC 6th post therapy pathological T2a1 Category	Cancer Modifier
1633732	AJCC/UICC 6th post therapy pathological T2a2 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633715	AJCC/UICC 6th post therapy pathological T2b Category	Cancer Modifier
1635438	AJCC/UICC 6th post therapy pathological T2c Category	Cancer Modifier
1635783	AJCC/UICC 6th post therapy pathological T2d Category	Cancer Modifier
1634195	AJCC/UICC 6th T2 Category	Cancer Modifier
1633976	AJCC/UICC 6th T2a Category	Cancer Modifier
1634473	AJCC/UICC 6th T2a1 Category	Cancer Modifier
1635537	AJCC/UICC 6th T2a2 Category	Cancer Modifier
1633605	AJCC/UICC 6th T2b Category	Cancer Modifier
1634524	AJCC/UICC 6th T2c Category	Cancer Modifier
1633981	AJCC/UICC 6th T2d Category	Cancer Modifier
1634029	AJCC/UICC 7th clinical T2 Category	Cancer Modifier
1635700	AJCC/UICC 7th clinical T2a Category	Cancer Modifier
1635026	AJCC/UICC 7th clinical T2a1 Category	Cancer Modifier
1634993	AJCC/UICC 7th clinical T2a2 Category	Cancer Modifier
1633958	AJCC/UICC 7th clinical T2b Category	Cancer Modifier
1634936	AJCC/UICC 7th clinical T2c Category	Cancer Modifier
1634277	AJCC/UICC 7th clinical T2d Category	Cancer Modifier
1634491	AJCC/UICC 7th pathological T2 Category	Cancer Modifier
1633341	AJCC/UICC 7th pathological T2a Category	Cancer Modifier
1634765	AJCC/UICC 7th pathological T2a1 Category	Cancer Modifier
1635442	AJCC/UICC 7th pathological T2a2 Category	Cancer Modifier
1635038	AJCC/UICC 7th pathological T2b Category	Cancer Modifier
1635254	AJCC/UICC 7th pathological T2c Category	Cancer Modifier
1635342	AJCC/UICC 7th pathological T2d Category	Cancer Modifier
1634378	AJCC/UICC 7th post therapy clinical T2 Category	Cancer Modifier
1635119	AJCC/UICC 7th post therapy clinical T2a Category	Cancer Modifier
1633893	AJCC/UICC 7th post therapy clinical T2a1 Category	Cancer Modifier
1634929	AJCC/UICC 7th post therapy clinical T2a2 Category	Cancer Modifier
1634790	AJCC/UICC 7th post therapy clinical T2b Category	Cancer Modifier
1633379	AJCC/UICC 7th post therapy clinical T2c Category	Cancer Modifier
1635407	AJCC/UICC 7th post therapy clinical T2d Category	Cancer Modifier
1633353	AJCC/UICC 7th post therapy pathological T2 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633787	AJCC/UICC 7th post therapy pathological T2a Category	Cancer Modifier
1635117	AJCC/UICC 7th post therapy pathological T2a1 Category	Cancer Modifier
1635225	AJCC/UICC 7th post therapy pathological T2a2 Category	Cancer Modifier
1635367	AJCC/UICC 7th post therapy pathological T2b Category	Cancer Modifier
1635652	AJCC/UICC 7th post therapy pathological T2c Category	Cancer Modifier
1633847	AJCC/UICC 7th post therapy pathological T2d Category	Cancer Modifier
1634506	AJCC/UICC 7th T2 Category	Cancer Modifier
1635532	AJCC/UICC 7th T2a Category	Cancer Modifier
1635827	AJCC/UICC 7th T2a1 Category	Cancer Modifier
1634535	AJCC/UICC 7th T2a2 Category	Cancer Modifier
1635301	AJCC/UICC 7th T2b Category	Cancer Modifier
1635192	AJCC/UICC 7th T2c Category	Cancer Modifier
1634572	AJCC/UICC 7th T2d Category	Cancer Modifier
1634651	AJCC/UICC 8th clinical T2 Category	Cancer Modifier
1635635	AJCC/UICC 8th clinical T2a Category	Cancer Modifier
1634840	AJCC/UICC 8th clinical T2a1 Category	Cancer Modifier
1633896	AJCC/UICC 8th clinical T2a2 Category	Cancer Modifier
1635451	AJCC/UICC 8th clinical T2b Category	Cancer Modifier
1635287	AJCC/UICC 8th clinical T2c Category	Cancer Modifier
1635071	AJCC/UICC 8th clinical T2d Category	Cancer Modifier
1633307	AJCC/UICC 8th pathological T2 Category	Cancer Modifier
1633453	AJCC/UICC 8th pathological T2a Category	Cancer Modifier
1634786	AJCC/UICC 8th pathological T2a1 Category	Cancer Modifier
1634938	AJCC/UICC 8th pathological T2a2 Category	Cancer Modifier
1634781	AJCC/UICC 8th pathological T2b Category	Cancer Modifier
1634709	AJCC/UICC 8th pathological T2c Category	Cancer Modifier
1634409	AJCC/UICC 8th pathological T2d Category	Cancer Modifier
1634518	AJCC/UICC 8th post therapy clinical T2 Category	Cancer Modifier
1634173	AJCC/UICC 8th post therapy clinical T2a Category	Cancer Modifier
1634130	AJCC/UICC 8th post therapy clinical T2a1 Category	Cancer Modifier
1634276	AJCC/UICC 8th post therapy clinical T2a2 Category	Cancer Modifier
1633329	AJCC/UICC 8th post therapy clinical T2b Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634616	AJCC/UICC 8th post therapy clinical T2c Category	Cancer Modifier
1633539	AJCC/UICC 8th post therapy clinical T2d Category	Cancer Modifier
1634204	AJCC/UICC 8th post therapy pathological T2 Category	Cancer Modifier
1634187	AJCC/UICC 8th post therapy pathological T2a Category	Cancer Modifier
1635759	AJCC/UICC 8th post therapy pathological T2a1 Category	Cancer Modifier
1634420	AJCC/UICC 8th post therapy pathological T2a2 Category	Cancer Modifier
1633631	AJCC/UICC 8th post therapy pathological T2b Category	Cancer Modifier
1634062	AJCC/UICC 8th post therapy pathological T2c Category	Cancer Modifier
1633398	AJCC/UICC 8th post therapy pathological T2d Category	Cancer Modifier
1633339	AJCC/UICC 8th T2 Category	Cancer Modifier
1635181	AJCC/UICC 8th T2a Category	Cancer Modifier
1633583	AJCC/UICC 8th T2a1 Category	Cancer Modifier
1634149	AJCC/UICC 8th T2a2 Category	Cancer Modifier
1634429	AJCC/UICC 8th T2b Category	Cancer Modifier
1634169	AJCC/UICC 8th T2c Category	Cancer Modifier
1633552	AJCC/UICC 8th T2d Category	Cancer Modifier
1635033	AJCC/UICC clinical T2 Category	Cancer Modifier
1634689	AJCC/UICC clinical T2a Category	Cancer Modifier
1635046	AJCC/UICC clinical T2a1 Category	Cancer Modifier
1635269	AJCC/UICC clinical T2a2 Category	Cancer Modifier
1633781	AJCC/UICC clinical T2b Category	Cancer Modifier
1634514	AJCC/UICC clinical T2c Category	Cancer Modifier
1633541	AJCC/UICC clinical T2d Category	Cancer Modifier
1633978	AJCC/UICC pathological T2 Category	Cancer Modifier
1634597	AJCC/UICC pathological T2a Category	Cancer Modifier
1634633	AJCC/UICC pathological T2a1 Category	Cancer Modifier
1634166	AJCC/UICC pathological T2a2 Category	Cancer Modifier
1635575	AJCC/UICC pathological T2b Category	Cancer Modifier
1634503	AJCC/UICC pathological T2c Category	Cancer Modifier
1633278	AJCC/UICC pathological T2d Category	Cancer Modifier
1634819	AJCC/UICC post therapy clinical T2 Category	Cancer Modifier
1634979	AJCC/UICC post therapy clinical T2a Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1634687	AJCC/UICC post therapy clinical T2a1 Category	Cancer Modifier
1634136	AJCC/UICC post therapy clinical T2a2 Category	Cancer Modifier
1634179	AJCC/UICC post therapy clinical T2b Category	Cancer Modifier
1634346	AJCC/UICC post therapy clinical T2c Category	Cancer Modifier
1635167	AJCC/UICC post therapy clinical T2d Category	Cancer Modifier
1634660	AJCC/UICC post therapy pathological T2 Category	Cancer Modifier
1634246	AJCC/UICC post therapy pathological T2a Category	Cancer Modifier
1633285	AJCC/UICC post therapy pathological T2a1 Category	Cancer Modifier
1635716	AJCC/UICC post therapy pathological T2a2 Category	Cancer Modifier
1634182	AJCC/UICC post therapy pathological T2b Category	Cancer Modifier
1633867	AJCC/UICC post therapy pathological T2c Category	Cancer Modifier
1633478	AJCC/UICC post therapy pathological T2d Category	Cancer Modifier
1635562	AJCC/UICC T2 Category	Cancer Modifier
1635327	AJCC/UICC T2a Category	Cancer Modifier
1633714	AJCC/UICC T2a1 Category	Cancer Modifier
1635685	AJCC/UICC T2a2 Category	Cancer Modifier
1633593	AJCC/UICC T2b Category	Cancer Modifier
1635270	AJCC/UICC T2c Category	Cancer Modifier
1633678	AJCC/UICC T2d Category	Cancer Modifier
AJCC/UICC T3 Category		
1633877	AJCC/UICC 6th clinical T3 Category	Cancer Modifier
1633563	AJCC/UICC 6th clinical T3a Category	Cancer Modifier
1635837	AJCC/UICC 6th clinical T3b Category	Cancer Modifier
1633540	AJCC/UICC 6th clinical T3c Category	Cancer Modifier
1633790	AJCC/UICC 6th clinical T3d Category	Cancer Modifier
1635057	AJCC/UICC 6th clinical T3e Category	Cancer Modifier
1635670	AJCC/UICC 6th pathological T3 Category	Cancer Modifier
1635318	AJCC/UICC 6th pathological T3a Category	Cancer Modifier
1634363	AJCC/UICC 6th pathological T3b Category	Cancer Modifier
1634251	AJCC/UICC 6th pathological T3c Category	Cancer Modifier
1635107	AJCC/UICC 6th pathological T3d Category	Cancer Modifier
1635671	AJCC/UICC 6th pathological T3e Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635267	AJCC/UICC 6th post therapy clinical T3 Category	Cancer Modifier
1635573	AJCC/UICC 6th post therapy clinical T3a Category	Cancer Modifier
1634040	AJCC/UICC 6th post therapy clinical T3b Category	Cancer Modifier
1633493	AJCC/UICC 6th post therapy clinical T3c Category	Cancer Modifier
1635304	AJCC/UICC 6th post therapy clinical T3d Category	Cancer Modifier
1634112	AJCC/UICC 6th post therapy clinical T3e Category	Cancer Modifier
1634552	AJCC/UICC 6th post therapy pathological T3 Category	Cancer Modifier
1634713	AJCC/UICC 6th post therapy pathological T3a Category	Cancer Modifier
1635427	AJCC/UICC 6th post therapy pathological T3b Category	Cancer Modifier
1634939	AJCC/UICC 6th post therapy pathological T3c Category	Cancer Modifier
1634496	AJCC/UICC 6th post therapy pathological T3d Category	Cancer Modifier
1635397	AJCC/UICC 6th post therapy pathological T3e Category	Cancer Modifier
1634122	AJCC/UICC 6th T3 Category	Cancer Modifier
1634017	AJCC/UICC 6th T3a Category	Cancer Modifier
1634907	AJCC/UICC 6th T3b Category	Cancer Modifier
1635409	AJCC/UICC 6th T3c Category	Cancer Modifier
1635529	AJCC/UICC 6th T3d Category	Cancer Modifier
1635619	AJCC/UICC 6th T3e Category	Cancer Modifier
1633324	AJCC/UICC 7th clinical T3 Category	Cancer Modifier
1635375	AJCC/UICC 7th clinical T3a Category	Cancer Modifier
1633946	AJCC/UICC 7th clinical T3b Category	Cancer Modifier
1635145	AJCC/UICC 7th clinical T3c Category	Cancer Modifier
1633739	AJCC/UICC 7th clinical T3d Category	Cancer Modifier
1634400	AJCC/UICC 7th clinical T3e Category	Cancer Modifier
1634658	AJCC/UICC 7th pathological T3 Category	Cancer Modifier
1634714	AJCC/UICC 7th pathological T3a Category	Cancer Modifier
1635333	AJCC/UICC 7th pathological T3b Category	Cancer Modifier
1634455	AJCC/UICC 7th pathological T3c Category	Cancer Modifier
1635490	AJCC/UICC 7th pathological T3d Category	Cancer Modifier
1633809	AJCC/UICC 7th pathological T3e Category	Cancer Modifier
1635851	AJCC/UICC 7th post therapy clinical T3 Category	Cancer Modifier
1634387	AJCC/UICC 7th post therapy clinical T3a Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
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1634995	AJCC/UICC 7th post therapy clinical T3c Category	Cancer Modifier
1634906	AJCC/UICC 7th post therapy clinical T3d Category	Cancer Modifier
1635892	AJCC/UICC 7th post therapy clinical T3e Category	Cancer Modifier
1634157	AJCC/UICC 7th post therapy pathological T3 Category	Cancer Modifier
1634105	AJCC/UICC 7th post therapy pathological T3a Category	Cancer Modifier
1634710	AJCC/UICC 7th post therapy pathological T3b Category	Cancer Modifier
1635308	AJCC/UICC 7th post therapy pathological T3c Category	Cancer Modifier
1634043	AJCC/UICC 7th post therapy pathological T3d Category	Cancer Modifier
1634585	AJCC/UICC 7th post therapy pathological T3e Category	Cancer Modifier
1635854	AJCC/UICC 7th T3 Category	Cancer Modifier
1634577	AJCC/UICC 7th T3a Category	Cancer Modifier
1635777	AJCC/UICC 7th T3b Category	Cancer Modifier
1634962	AJCC/UICC 7th T3c Category	Cancer Modifier
1634852	AJCC/UICC 7th T3d Category	Cancer Modifier
1634444	AJCC/UICC 7th T3e Category	Cancer Modifier
1635556	AJCC/UICC 8th clinical T3 Category	Cancer Modifier
1635116	AJCC/UICC 8th clinical T3a Category	Cancer Modifier
1635813	AJCC/UICC 8th clinical T3b Category	Cancer Modifier
1633525	AJCC/UICC 8th clinical T3c Category	Cancer Modifier
1634663	AJCC/UICC 8th clinical T3d Category	Cancer Modifier
1634839	AJCC/UICC 8th clinical T3e Category	Cancer Modifier
1634386	AJCC/UICC 8th pathological T3 Category	Cancer Modifier
1635171	AJCC/UICC 8th pathological T3a Category	Cancer Modifier
1635037	AJCC/UICC 8th pathological T3b Category	Cancer Modifier
1633581	AJCC/UICC 8th pathological T3c Category	Cancer Modifier
1635651	AJCC/UICC 8th pathological T3d Category	Cancer Modifier
1635690	AJCC/UICC 8th pathological T3e Category	Cancer Modifier
1633628	AJCC/UICC 8th post therapy clinical T3 Category	Cancer Modifier
1633673	AJCC/UICC 8th post therapy clinical T3a Category	Cancer Modifier
1635879	AJCC/UICC 8th post therapy clinical T3b Category	Cancer Modifier
1635710	AJCC/UICC 8th post therapy clinical T3c Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
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1633446	AJCC/UICC 8th post therapy clinical T3e Category	Cancer Modifier
1635799	AJCC/UICC 8th post therapy pathological T3 Category	Cancer Modifier
1635209	AJCC/UICC 8th post therapy pathological T3a Category	Cancer Modifier
1634608	AJCC/UICC 8th post therapy pathological T3b Category	Cancer Modifier
1634282	AJCC/UICC 8th post therapy pathological T3c Category	Cancer Modifier
1633782	AJCC/UICC 8th post therapy pathological T3d Category	Cancer Modifier
1633660	AJCC/UICC 8th post therapy pathological T3e Category	Cancer Modifier
1633528	AJCC/UICC 8th T3 Category	Cancer Modifier
1634913	AJCC/UICC 8th T3a Category	Cancer Modifier
1634691	AJCC/UICC 8th T3b Category	Cancer Modifier
1633851	AJCC/UICC 8th T3c Category	Cancer Modifier
1635741	AJCC/UICC 8th T3d Category	Cancer Modifier
1635595	AJCC/UICC 8th T3e Category	Cancer Modifier
1635895	AJCC/UICC clinical T3 Category	Cancer Modifier
1633758	AJCC/UICC clinical T3a Category	Cancer Modifier
1633765	AJCC/UICC clinical T3b Category	Cancer Modifier
1634088	AJCC/UICC clinical T3c Category	Cancer Modifier
1635707	AJCC/UICC clinical T3d Category	Cancer Modifier
1633838	AJCC/UICC clinical T3e Category	Cancer Modifier
1634406	AJCC/UICC pathological T3 Category	Cancer Modifier
1633288	AJCC/UICC pathological T3a Category	Cancer Modifier
1633406	AJCC/UICC pathological T3b Category	Cancer Modifier
1635027	AJCC/UICC pathological T3c Category	Cancer Modifier
1635377	AJCC/UICC pathological T3d Category	Cancer Modifier
1634025	AJCC/UICC pathological T3e Category	Cancer Modifier
1633608	AJCC/UICC post therapy clinical T3 Category	Cancer Modifier
1635570	AJCC/UICC post therapy clinical T3a Category	Cancer Modifier
1634458	AJCC/UICC post therapy clinical T3b Category	Cancer Modifier
1634827	AJCC/UICC post therapy clinical T3c Category	Cancer Modifier
1635313	AJCC/UICC post therapy clinical T3d Category	Cancer Modifier
1634464	AJCC/UICC post therapy clinical T3e Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633436	AJCC/UICC post therapy pathological T3 Category	Cancer Modifier
1635035	AJCC/UICC post therapy pathological T3a Category	Cancer Modifier
1633721	AJCC/UICC post therapy pathological T3b Category	Cancer Modifier
1635331	AJCC/UICC post therapy pathological T3c Category	Cancer Modifier
1635515	AJCC/UICC post therapy pathological T3d Category	Cancer Modifier
1635492	AJCC/UICC post therapy pathological T3e Category	Cancer Modifier
1634376	AJCC/UICC T3 Category	Cancer Modifier
1633771	AJCC/UICC T3a Category	Cancer Modifier
1634980	AJCC/UICC T3b Category	Cancer Modifier
1633360	AJCC/UICC T3c Category	Cancer Modifier
1635625	AJCC/UICC T3d Category	Cancer Modifier
1634730	AJCC/UICC T3e Category	Cancer Modifier
	AJCC/UICC T4 Category	
1635522	AJCC/UICC 6th clinical T4 Category	Cancer Modifier
1634247	AJCC/UICC 6th clinical T4a Category	Cancer Modifier
1634624	AJCC/UICC 6th clinical T4b Category	Cancer Modifier
1635643	AJCC/UICC 6th clinical T4c Category	Cancer Modifier
1634477	AJCC/UICC 6th clinical T4d Category	Cancer Modifier
1633546	AJCC/UICC 6th clinical T4e Category	Cancer Modifier
1635311	AJCC/UICC 6th pathological T4 Category	Cancer Modifier
1634101	AJCC/UICC 6th pathological T4a Category	Cancer Modifier
1633900	AJCC/UICC 6th pathological T4b Category	Cancer Modifier
1633326	AJCC/UICC 6th pathological T4c Category	Cancer Modifier
1635615	AJCC/UICC 6th pathological T4d Category	Cancer Modifier
1635294	AJCC/UICC 6th pathological T4e Category	Cancer Modifier
1635343	AJCC/UICC 6th post therapy clinical T4 Category	Cancer Modifier
1634820	AJCC/UICC 6th post therapy clinical T4a Category	Cancer Modifier
1634841	AJCC/UICC 6th post therapy clinical T4b Category	Cancer Modifier
1634050	AJCC/UICC 6th post therapy clinical T4c Category	Cancer Modifier
1634490	AJCC/UICC 6th post therapy clinical T4d Category	Cancer Modifier
1633725	AJCC/UICC 6th post therapy clinical T4e Category	Cancer Modifier
1634984	AJCC/UICC 6th post therapy pathological T4 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635491	AJCC/UICC 6th post therapy pathological T4a Category	Cancer Modifier
1634974	AJCC/UICC 6th post therapy pathological T4b Category	Cancer Modifier
1635266	AJCC/UICC 6th post therapy pathological T4c Category	Cancer Modifier
1635051	AJCC/UICC 6th post therapy pathological T4d Category	Cancer Modifier
1633538	AJCC/UICC 6th post therapy pathological T4e Category	Cancer Modifier
1635743	AJCC/UICC 6th T4 Category	Cancer Modifier
1634944	AJCC/UICC 6th T4a Category	Cancer Modifier
1633515	AJCC/UICC 6th T4b Category	Cancer Modifier
1635443	AJCC/UICC 6th T4c Category	Cancer Modifier
1634864	AJCC/UICC 6th T4d Category	Cancer Modifier
1635547	AJCC/UICC 6th T4e Category	Cancer Modifier
1635530	AJCC/UICC 7th clinical T4 Category	Cancer Modifier
1634522	AJCC/UICC 7th clinical T4a Category	Cancer Modifier
1634120	AJCC/UICC 7th clinical T4b Category	Cancer Modifier
1634046	AJCC/UICC 7th clinical T4c Category	Cancer Modifier
1635768	AJCC/UICC 7th clinical T4d Category	Cancer Modifier
1634641	AJCC/UICC 7th clinical T4e Category	Cancer Modifier
1635341	AJCC/UICC 7th pathological T4 Category	Cancer Modifier
1633723	AJCC/UICC 7th pathological T4a Category	Cancer Modifier
1633699	AJCC/UICC 7th pathological T4b Category	Cancer Modifier
1635241	AJCC/UICC 7th pathological T4c Category	Cancer Modifier
1634941	AJCC/UICC 7th pathological T4d Category	Cancer Modifier
1634404	AJCC/UICC 7th pathological T4e Category	Cancer Modifier
1633762	AJCC/UICC 7th post therapy clinical T4 Category	Cancer Modifier
1634495	AJCC/UICC 7th post therapy clinical T4a Category	Cancer Modifier
1635863	AJCC/UICC 7th post therapy clinical T4b Category	Cancer Modifier
1635763	AJCC/UICC 7th post therapy clinical T4c Category	Cancer Modifier
1635617	AJCC/UICC 7th post therapy clinical T4d Category	Cancer Modifier
1634023	AJCC/UICC 7th post therapy clinical T4e Category	Cancer Modifier
1633467	AJCC/UICC 7th post therapy pathological T4 Category	Cancer Modifier
1633874	AJCC/UICC 7th post therapy pathological T4a Category	Cancer Modifier
1634132	AJCC/UICC 7th post therapy pathological T4b Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633473	AJCC/UICC 7th post therapy pathological T4c Category	Cancer Modifier
1634951	AJCC/UICC 7th post therapy pathological T4d Category	Cancer Modifier
1635771	AJCC/UICC 7th post therapy pathological T4e Category	Cancer Modifier
1634576	AJCC/UICC 7th T4 Category	Cancer Modifier
1634724	AJCC/UICC 7th T4a Category	Cancer Modifier
1634162	AJCC/UICC 7th T4b Category	Cancer Modifier
1634476	AJCC/UICC 7th T4c Category	Cancer Modifier
1635275	AJCC/UICC 7th T4d Category	Cancer Modifier
1633604	AJCC/UICC 7th T4e Category	Cancer Modifier
1634973	AJCC/UICC 8th clinical T4 Category	Cancer Modifier
1634963	AJCC/UICC 8th clinical T4a Category	Cancer Modifier
1634854	AJCC/UICC 8th clinical T4b Category	Cancer Modifier
1633767	AJCC/UICC 8th clinical T4c Category	Cancer Modifier
1635022	AJCC/UICC 8th clinical T4d Category	Cancer Modifier
1635648	AJCC/UICC 8th clinical T4e Category	Cancer Modifier
1635396	AJCC/UICC 8th pathological T4 Category	Cancer Modifier
1634894	AJCC/UICC 8th pathological T4a Category	Cancer Modifier
1633658	AJCC/UICC 8th pathological T4b Category	Cancer Modifier
1635592	AJCC/UICC 8th pathological T4c Category	Cancer Modifier
1633892	AJCC/UICC 8th pathological T4d Category	Cancer Modifier
1633824	AJCC/UICC 8th pathological T4e Category	Cancer Modifier
1635424	AJCC/UICC 8th post therapy clinical T4 Category	Cancer Modifier
1634540	AJCC/UICC 8th post therapy clinical T4a Category	Cancer Modifier
1635531	AJCC/UICC 8th post therapy clinical T4b Category	Cancer Modifier
1634534	AJCC/UICC 8th post therapy clinical T4c Category	Cancer Modifier
1634656	AJCC/UICC 8th post therapy clinical T4d Category	Cancer Modifier
1634972	AJCC/UICC 8th post therapy clinical T4e Category	Cancer Modifier
1633665	AJCC/UICC 8th post therapy pathological T4 Category	Cancer Modifier
1633616	AJCC/UICC 8th post therapy pathological T4a Category	Cancer Modifier
1634219	AJCC/UICC 8th post therapy pathological T4b Category	Cancer Modifier
1633543	AJCC/UICC 8th post therapy pathological T4c Category	Cancer Modifier
1635271	AJCC/UICC 8th post therapy pathological T4d Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1633832	AJCC/UICC 8th post therapy pathological T4e Category	Cancer Modifier
1635242	AJCC/UICC 8th T4 Category	Cancer Modifier
1633411	AJCC/UICC 8th T4a Category	Cancer Modifier
1634318	AJCC/UICC 8th T4b Category	Cancer Modifier
1633399	AJCC/UICC 8th T4c Category	Cancer Modifier
1634582	AJCC/UICC 8th T4d Category	Cancer Modifier
1634096	AJCC/UICC 8th T4e Category	Cancer Modifier
1635558	AJCC/UICC clinical T4 Category	Cancer Modifier
1634192	AJCC/UICC clinical T4a Category	Cancer Modifier
1634291	AJCC/UICC clinical T4b Category	Cancer Modifier
1634877	AJCC/UICC clinical T4c Category	Cancer Modifier
1635368	AJCC/UICC clinical T4d Category	Cancer Modifier
1634561	AJCC/UICC clinical T4e Category	Cancer Modifier
1633943	AJCC/UICC pathological T4 Category	Cancer Modifier
1633300	AJCC/UICC pathological T4a Category	Cancer Modifier
1634957	AJCC/UICC pathological T4b Category	Cancer Modifier
1635446	AJCC/UICC pathological T4c Category	Cancer Modifier
1635003	AJCC/UICC pathological T4d Category	Cancer Modifier
1635058	AJCC/UICC pathological T4e Category	Cancer Modifier
1635044	AJCC/UICC post therapy clinical T4 Category	Cancer Modifier
1634020	AJCC/UICC post therapy clinical T4a Category	Cancer Modifier
1635456	AJCC/UICC post therapy clinical T4b Category	Cancer Modifier
1634280	AJCC/UICC post therapy clinical T4c Category	Cancer Modifier
1633863	AJCC/UICC post therapy clinical T4d Category	Cancer Modifier
1633691	AJCC/UICC post therapy clinical T4e Category	Cancer Modifier
1635082	AJCC/UICC post therapy pathological T4 Category	Cancer Modifier
1633623	AJCC/UICC post therapy pathological T4a Category	Cancer Modifier
1635623	AJCC/UICC post therapy pathological T4b Category	Cancer Modifier
1635891	AJCC/UICC post therapy pathological T4c Category	Cancer Modifier
1634904	AJCC/UICC post therapy pathological T4d Category	Cancer Modifier
1633689	AJCC/UICC post therapy pathological T4e Category	Cancer Modifier
1634654	AJCC/UICC T4 Category	Cancer Modifier

Concept ID	Concept name	Vocabulary
1635222	AJCC/UICC T4a Category	Cancer Modifier
1634436	AJCC/UICC T4b Category	Cancer Modifier
1635526	AJCC/UICC T4c Category	Cancer Modifier
1633909	AJCC/UICC T4d Category	Cancer Modifier
1634193	AJCC/UICC T4e Category	Cancer Modifier

Table S7. Staging system utilised in the study to compute staging based on T, N, M codes (6).

FIGO staging	UICC TNM staging		
Stage	T	N	M
IA	T1a	N0	M0
IB	T1b	N0	M0
IC	T1c	N0	M0
IIA	T2a	N0	M0
IIB	T2b	N0	M0
IIIA	T3a	N0	M0
	T3a	N1	M0
IIIB	T3b	N0	M0
	T3b	N1	M0
IIIC	T3c	N0	M0
	T3c	N1	M0
IV*	Any T	Any N	M1

*For the computation of Stage IV, as T and N categories were not restricted; therefore, only the presence of M1 codes was used in the current study to assign Stage IV.

ANNEX V. Supplementary Tables and Figures

Table S8. Number and percentage of patients with pre-specified characteristics in NCR and CRN, stratified by age.

Age group	Characteristic[1], N (%)	NCR[2] (n=19,356)	CRN[3] (n=1,993)
18 to 44 years	WHO-PS 0	148 (84.6)	421 (35.0)
	WHO-PS 1	14 (8.0)	89 (7.4)
	WHO-PS 2	<5	15 (1.2)
	WHO-PS 3	0 (0.0)	6 (0.5)
	WHO-PS 4	0 (0.0)	93 (0.5)
	BRCA gene[1]	–	68
45 to 64 years	WHO-PS 0	555 (73.4)	2,050 (31.3)
	WHO-PS 1	105 (13.9)	859 (13.1)
	WHO-PS 2	20 (2.6)	199 (3.0)
	WHO-PS 3	6 (0.8)	69 (1.1)
	WHO-PS 4	<5	23 (0.4)
	BRCA gene[1]	–	470
> 65 years	WHO-PS 0	522 (49.2)	2,366 (20.4)
	WHO-PS 1	246 (23.2)	934 (4.8)
	WHO-PS 2	81 (7.6)	720 (6.2)
	WHO-PS 3	35 (3.3)	336 (2.9)
	WHO-PS 4	11 (1.0)	70 (0.6)
	BRCA gene[1]	–	417

BRCA=Breast cancer gene, WHO-PS=WHO performance status, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway.
"–" Indicates that the variable was not assessed in the data source.
[1] Available for individuals diagnosed after 2015. For BRCA gene, counts are reported without percentages as the number of individuals diagnosed after 2015 by age group was not available.
[2] NCR only had registration for primary treatment.
[3] The study population was restricted to cases diagnosed after 2019.

Table S9. Number and percentage of patients treated with systemic treatments by treatment class, stratified by age group.

Age groups[1]	Treatment class	Data sources			
		DK-DHR (n=8,938)	CDW Bordeaux (n=1,375)	NCR[2] (n=19,356)	CRN[3] (n=1,993)
18 to 44 years	Alkylating agents	8 (1.4)	<5	12 (1.0)	<5
	Anthracyclines	39 (6.9)	<5	10 (0.8)	7 (4.0)
	Antimetabolites	10 (1.8)	<5	<5	8 (4.6)
	DNA agents	<5	0 (0.0)	0 (0.0)	<5
	Hormonal agents	12 (2.1)	<5	0 (0.0)	–
	Monoclonal antibodies	48 (8.5)	5 (3.7)	9 (0.7)	31 (17.7)
	PARP inhibitors	23 (4.0)	0 (0.0)	25 (2.1)	18 (10.3)
	Platinum based	281 (49.5)	26 (19.4)	593 (49.3)	82 (46.9)
	Taxanes	219 (38.6)	21 (15.7)	515 (42.8)	72 (41.1)
	Topoisomerase inhibitors	55 (9.7)	5 (3.7)	65 (5.4)	9 (5.1)
	Vinca alkaloid	0 (0.0)	0 (0.0)	<5	0 (0.0)
45 to 64 years	Alkylating agents	21 (0.7)	<5	49 (0.7)	0 (0.0)
	Anthracyclines	401 (13.5)	20 (3.8)	61 (0.9)	37 (4.9)
	Antimetabolites	85 (2.9)	18 (3.4)	45 (0.7)	12 (1.6)
	DNA agents	<5	0 (0.0)	0 (0.0)	<5
	Hormonal agents	59 (2.0)	7 (1.3)	0 (0.0)	–
	Monoclonal antibodies	463 (15.6)	20 (3.8)	34 (0.5)	244 (32.3)
	PARP inhibitors	238 (8.0)	<5	304 (4.6)	138 (18.3)
	Platinum based	2,048 (68.9)	113 (21.4)	4,588 (70.1)	531 (70.2)
	Taxanes	1,933 (65.0)	106 (20.1)	4,429 (67.7)	512 (67.7)
	Topoisomerase inhibitors	84 (2.8)	<5	13 (0.2)	<5
	Vinca alkaloid	0 (0.0)	0 (0.0)	<5	0 (0.0)
>65 years	Alkylating agents	84 (1.6)	5 (0.7)	99 (0.9)	<5
	Anthracyclines	599 (11.1)	22 (3.1)	69 (0.6)	35 (3.3)
	Antimetabolites	111 (2.1)	11 (1.5)	59 (0.5)	17 (1.6)
	DNA agents	<5	0 (0.0)	0 (0.0)	<5
	Hormonal agents	180 (3.3)	13 (1.8)	<5	–

Age groups[1]	Treatment class	Data sources			
		DK-DHR (n=8,938)	CDW Bordeaux (n=1,375)	NCR[2] (n=19,356)	CRN[3] (n=1,993)
	Monoclonal antibodies	765 (14.2)	18 (2.5)	34 (0.3)	353 (33.2)
	PARP inhibitors	269 (5.0)	5 (0.7)	340 (2.9)	112 (10.5)
	Platinum based	3,352 (62.1)	123 (17.2)	7,130 (61.4)	683 (64.3)
	Taxanes	2,511 (46.5)	118 (16.5)	6,341 (54.6)	631 (59.4)
	Topoisomerase inhibitors	88 (1.6)	7 (1.0)	10 (0.1)	<5
	Vinca alkaloid	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)

DNA=Deoxyribonucleic acid, PARP=poly-ADP ribose polymerase, DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway
"–" Indicates that the exposure was not recorded in the data source.
[1] Number of individuals for 18 to 44 years: n=568 in DK-DHR, n=134 in CDW Bordeaux, n=1,204 in NCR, and n=175 in CRN; Number of individuals 45 to 64 years: n=2972 in DK-DHR, n=527 in CDW Bordeaux, n=6546 in NCR, and n=756 in CRN; Number of individuals for >65 years: n=5,398 in DK-DHR, n=714 in CDW Bordeaux, n=11,606 in NCR, and n=1062 in CRN.
[2] NCR only had registration for primary treatment.
[3] The study population was restricted to cases diagnosed after 2019. CRN does not have information on hormonal agents (i.e. dexamethasone, medroxyprogesterone).

Table S10. Number and percentage of patients treated with systemic treatments by treatment class, stratified by calendar period.

Calendar year[1]	Treatment class	Data sources			
		DK-DHR (n=8,938)	CDW Bordeaux (n=1,375)	NCR[2] (n=19,356)	CRN[3] (n=1,993)
2010 to 2014	Alkylating agents	80 (2.4)	8 (1.9)	37 (0.6)	–
	Anthracyclines	298 (8.8)	23 (5.4)	36 (0.5)	–
	Antimetabolites	67 (2.0)	12 (2.8)	41 (0.6)	–
	DNA agents	<5	0 (0.0)	0 (0.0)	–
	Hormonal agents	101 (3.0)	8 (1.9)	0 (0.0)	–
	Monoclonal antibodies	176 (5.2)	13 (3.1)	45 (0.7)	–
	PARP inhibitors	0 (0.0)	0 (0.0)	<5	–
	Platinum based	1,800 (53.1)	111 (26.2)	3,948 (59.4)	–
	Taxanes	1,519 (44.8)	94 (22.2)	3,674 (55.2)	–
	Topoisomerase inhibitors	119 (3.5)	14 (3.3)	11 (0.2)	–
	Vinca alkaloid	0 (0.0)	0 (0.0)	0 (0.0)	–
2015 to 2019	Alkylating agents	30 (0.9)	<5	67 (1.0)	<5
	Anthracyclines	455 (14.0)	8 (1.6)	47 (0.7)	16 (3.5)
	Antimetabolites	91 (2.8)	16 (3.3)	36 (0.5)	11 (2.4)
	DNA agents	<5	0 (0.0)	0 (0.0)	<5
	Hormonal agents	87 (2.7)	8 (1.6)	<5	–
	Monoclonal antibodies	676 (20.8)	28 (5.7)	24 (0.3)	142 (31.3)
	PARP inhibitors	102 (3.1)	<5	69 (1.0)	23 (5.1)
	Platinum based	2,222 (68.3)	82 (16.8)	4,637 (66.6)	283 (62.3)
	Taxanes	1,815 (55.8)	78 (16.0)	4,211 (60.5)	264 (58.1)
	Topoisomerase inhibitors	68 (2.1)	<5	36 (0.5)	<5
	Vinca alkaloid	0 (0.0)	0 (0.0)	<5	0 (0.0)
2020 to 2024	Alkylating agents	<5	<5	56 (1.0)	<5
	Anthracyclines	286 (12.5)	14 (3.0)	57 (1.0)	63 (4.1)
	Antimetabolites	48 (2.1)	5 (1.1)	31 (0.5)	26 (1.7)
	DNA agents	<5	0 (0.0)	0 (0.0)	<5
	Hormonal agents	63 (2.7)	5 (1.1)	<5	–

Calendar year[1]	Treatment class	Data sources			
		DK-DHR (n=8,938)	CDW Bordeaux (n=1,375)	NCR[2] (n=19,356)	CRN[3] (n=1,993)
	Monoclonal antibodies	424 (18.5)	<5	8 (0.1)	486 (31.6)
	PARP inhibitors	428 (18.6)	6 (1.3)	599 (10.4)	245 (15.9)
	Platinum based	1,659 (72.3)	69 (14.8)	3,726 (64.8)	1,013 (65.8)
	Taxanes	1,329 (57.9)	73 (15.7)	3,400 (59.2)	951 (61.8)
	Topoisomerase inhibitors	40 (1.7)	0 (0.0)	41 (0.7)	12 (0.8)
	Vinca alkaloid	0 (0.0)	0 (0.0)	<5	0 (0.0)

DNA=Deoxyribonucleic acid, PARP=poly-ADP ribose polymerase, DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway
[1] Number of individuals for 2010 to 2014: n=3,387 in DK-DHR, n=423 in CDW Bordeaux, n=6,651 in NCR; Number of individuals 2015 to 2019: n=3,255 in DK-DHR, n=487 in CDW Bordeaux, n=6,958 in NCR, and n=454 in CRN; Number of individuals for 2020 to 2014: n=2,296 in DK-DHR, n=465 in CDW Bordeaux, n=5,747 in NCR, and n=1,539 in CRN. [2] NCR only had registration for primary treatment.
[3] The study population was restricted to cases diagnosed after 2019. CRN does not have information on hormonal agents (i.e. dexamethasone, medroxyprogesterone).
"–" Denotes absence of information on the exposures in the data source. "0" denotes that the data source contains information, but no cases were observed.

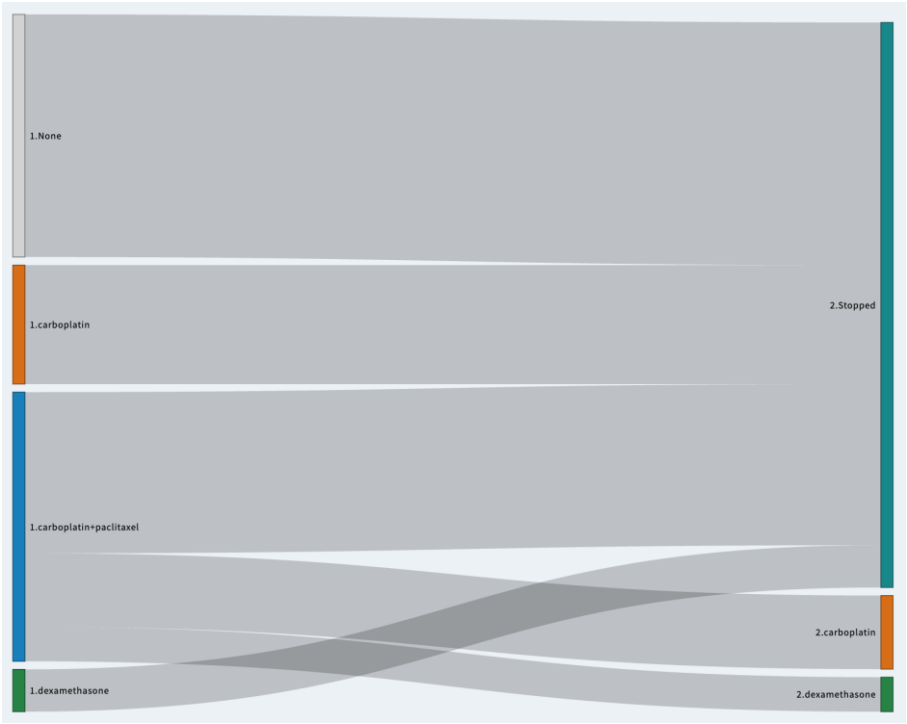
Table S11. Number and percentage of patients treated with systemic treatments by systemic ingredients in the 30 and 90 days following cancer diagnosis.

Time window	Ingredients	Data sources			
		DK-DHR	CDW Bordeaux	NCR[1]	CRN[2]
[0, 30]	Altretamine	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Bevacizumab	52 (0.6)	<5	6 (0.0)	138 (2.1)
	Carboplatin	3,650 (40.9)	107 (7.8)	7,207 (37.2)	380 (5.8)
	Chlorambucil	0 (0.0)	0 (0.0)	<5	0 (0.0)
	Cisplatin	59 (0.7)	<5	73 (0.4)	8 (0.1)
	Cyclophosphamide	<5	5 (0.4)	16 (0.1)	<5
	Dexamethasone	10 (0.1)	9 (0.7)	<5	–
	Docetaxel	200 (2.2)	0 (0.0)	8 (0.0)	5 (0.1)
	Doxorubicin	38 (0.4)	9 (0.7)	13 (0.1)	<5
	Epirubicin	<5	0 (0.0)	0 (0.0)	0 (0.0)
	Etoposide	47 (0.5)	<5	47 (0.2)	7 (0.1)
	Fluorouracil	<5	6 (0.4)	<5	<5
	Gemcitabine	23 (0.3)	<5	14 (0.1)	<5
	Ifosfamide	<5	<5	<5	0 (0.0)
	Lomustine	0 (0.0)	<5	0 (0.0)	0 (0.0)
	Medroxyprogesterone	<5	0 (0.0)	0 (0.0)	–
	Melphalan	0 (0.0)	0 (0.0)	<5	0 (0.0)
	Methotrexate	<5	<5	0 (0.0)	0 (0.0)
	Mirvetuximab soravtansine	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Mitoxantrone	0 (0.0)	0 (0.0)	0 (0.0)	<5
	Niraparib	0 (0.0)	<5	<5	0 (0.0)
	Olaparib	<5	<5	<5	0 (0.0)
	Paclitaxel	2,817 (31.5)	97 (7.1)	6,692 (34.6)	358 (5.5)
	Rucaparib	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Thiotepa	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Topotecan	7 (0.1)	<5	0 (0.0)	0 (0.0)
	Trabectedin	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Treosulfan	16 (0.2)	0 (0.0)	0 (0.0)	0 (0.0)
	Vinblastine	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
[0, 90]	Altretamine	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Bevacizumab	323 (3.6)	8 (0.6)	30 (0.2)	328 (5.0)
	Carboplatin	5,471 (61.2)	219 (15.9)	11,667 (60.3)	1,211 (18.6)
	Chlorambucil	0 (0.0)	0 (0.0)	<5	0 (0.0)

Time window	Ingredients	Data sources			
		DK-DHR	CDW Bordeaux	NCR[1]	CRN[2]
	Cisplatin	122 (1.4)	6 (0.4)	232 (1.2)	21 (0.3)
	Cyclophosphamide	7 (0.1)	8 (0.6)	61 (0.3)	<5
	Dexamethasone	44 (0.5)	11 (0.8)	<5	–
	Docetaxel	346 (3.9)	<5	36 (0.2)	74 (1.1)
	Doxorubicin	129 (1.4)	18 (1.3)	56 (0.3)	17 (0.3)
	Epirubicin	7 (0.1)	0 (0.0)	0 (0.0)	0 (0.0)
	Etoposide	72 (0.8)	6 (0.4)	87 (0.4)	17 (0.3)
	Fluorouracil	16 (0.2)	13 (0.9)	<5	16 (0.2)
	Gemcitabine	45 (0.5)	7 (0.5)	52 (0.3)	<5
	Ifosfamide	6 (0.1)	<5	<5	0 (0.0)
	Lomustine	0 (0.0)	<5	0 (0.0)	0 (0.0)
	Medroxyprogesterone	<5	0 (0.0)	0 (0.0)	–
	Melphalan	<5	0 (0.0)	<5	0 (0.0)
	Methotrexate	12 (0.1)	<5	0 (0.0)	<5
	Mirvetuximab soravtansine	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Mitoxantrone	0 (0.0)	0 (0.0)	0 (0.0)	<5
	Niraparib	<5	<5	<5	0 (0.0)
	Olaparib	8 (0.1)	<5	<5	0 (0.0)
	Paclitaxel	4,222 (47.3)	205 (14.9)	10,878 (56.2)	1,123 (17.3)
	Rucaparib	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Thiotepa	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Topotecan	12 (0.1)	<5	0 (0.0)	0 (0.0)
	Trabectedin	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
	Treosulfan	29 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)
	Vinblastine	0 (0.0)	0 (0.0)	<5	0 (0.0)

DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway
[1] NCR only had registration for primary treatment.
[2] The study population was restricted to cases diagnosed after 2019. CRN does not have information on hormonal agents (i.e. dexamethasone, medroxyprogesterone).
"–" Denotes absence of information on the exposures in the data source. "0" denotes that the data source contains information, but no cases were observed.

A) Stage III



B) Stage IV

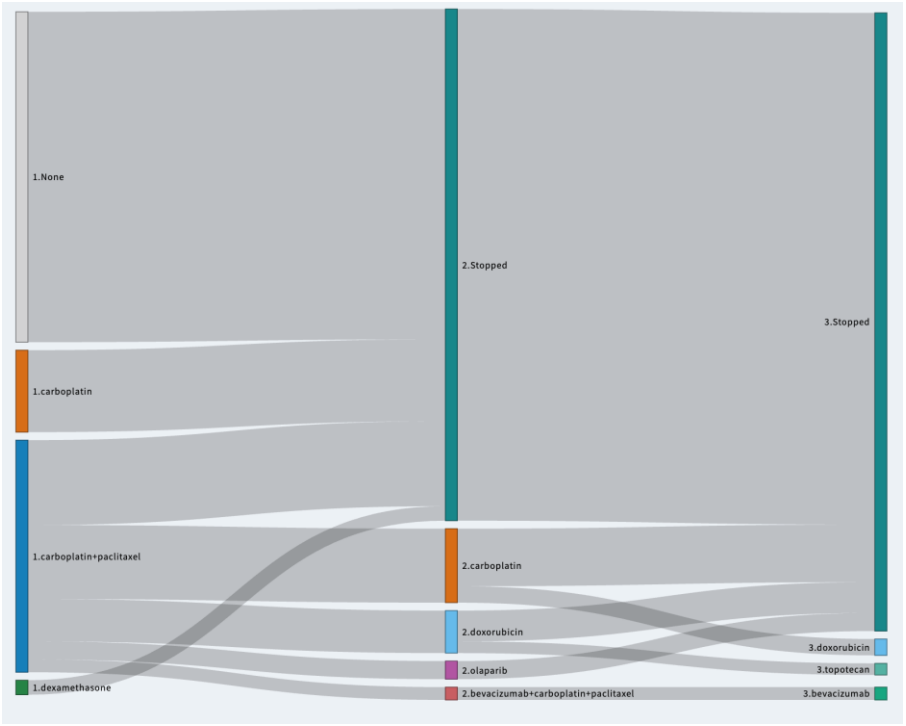
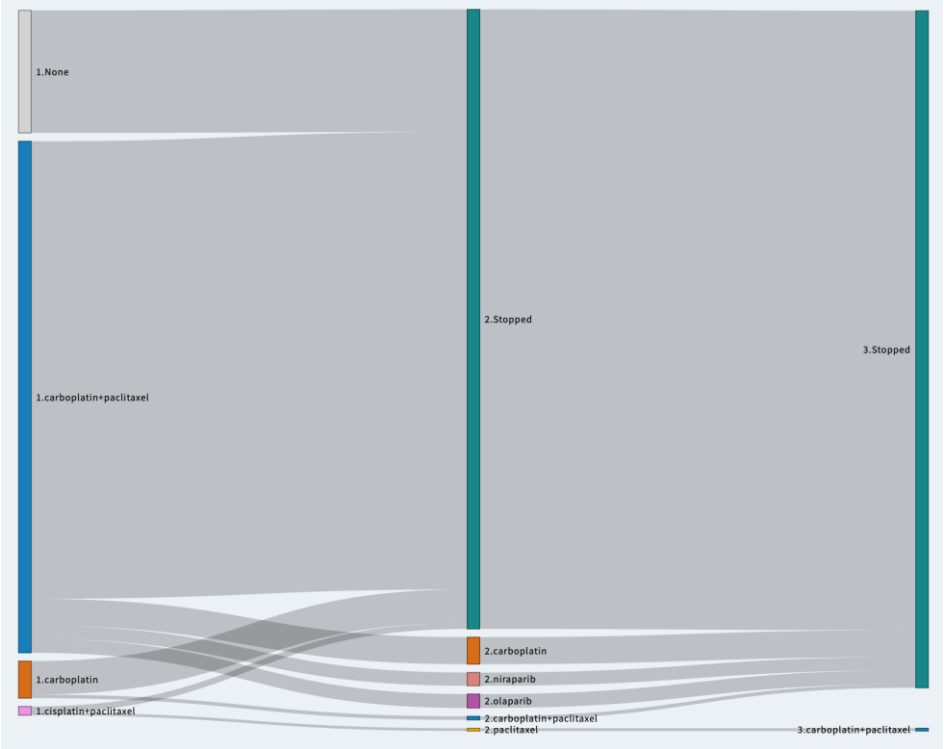


Figure S1. Sankey diagram for observed treatment of ovarian cancer in DK-DHR for Stage III (A) and IV (B)*.

* Individuals were followed for up to a maximum of 5 years after diagnosis. Median follow-up in DK-DHR was 893 [IQR: 358 – 2,031]. The Sankey diagram has been generated with a minimum frequency of 20 for improved visualisation.
DK-DHR=Danish Data Health Registries.

A) Stage III



B) Stage IV

Figure S2. Sankey diagram for treatment of ovarian cancer in NCR for Stage III (A) and IV (B).

* NCR only had registration for primary treatment. Individuals were followed for up to a maximum of 5 years after diagnosis. Median follow-up in NCR was 837 [322 – 1,829] days. The Sankey diagram has been generated with a minimum frequency of 20 for improved visualisation.
NCR=Netherlands Cancer Registry.

A) Stage III

B) Stage IV

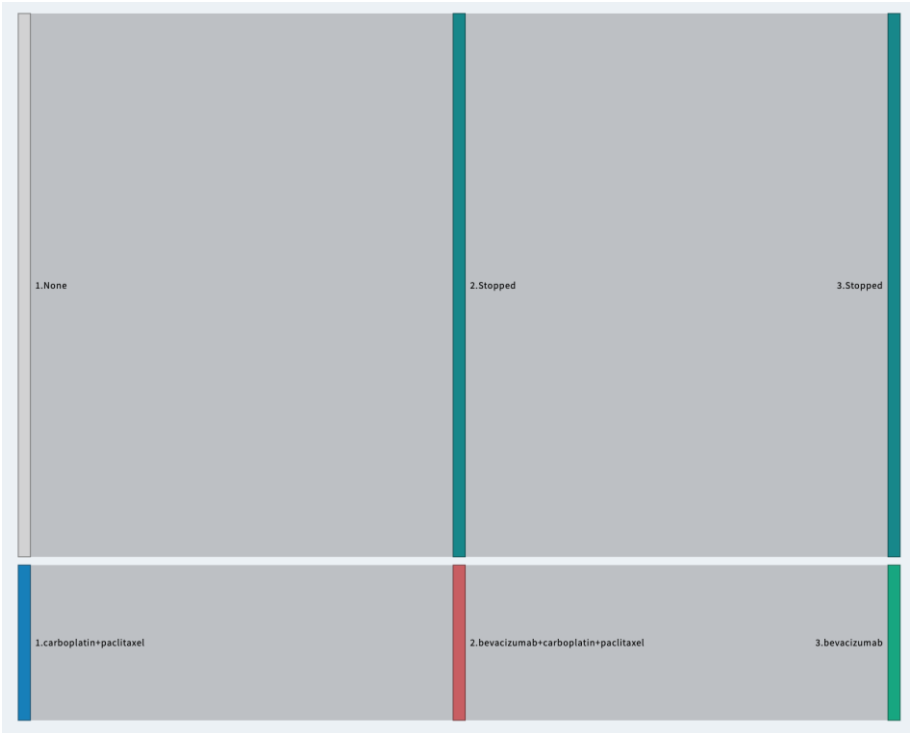


Figure S3. Sankey diagram for treatment of ovarian cancer in CRN for Stage III (A) and IV (B).

* The study population in the CRN was limited to cases diagnosed after 2019. Individuals were followed for up to a maximum of 5 years after diagnosis. Median follow-up in CRN was 943 [544 – 1,432] days. CRN does not have information on hormonal agents (i.e. dexamethasone, medroxyprogesterone). The Sankey diagram has been generated with a minimum frequency of 20 for improved visualisation.
CRN=Cancer Registry Norway

Table S12. Description of demographic and pre-specified characteristics of patients newly diagnosed with ovarian cancer stratified by age in DK-DHR and CDW Bordeaux.

Characteristics		DK-DHR	CDW Bordeaux
Number of individuals		8,935	1,374
Number of individuals in each age group, N (%)	18 to 44 years	568 (6.4)	135 (9.8)
	45 to 64 years	2,971 (33.3)	526 (38.3)
	> 65 years	5,396 (60.4)	713 (51.9)
Baseline conditions [-inf, 0]			
Diabetes mellitus	Overall	870 (9.7)	96 (7.0)
	18 to 44 years	22 (3.9)	<5
	45 to 64 years	224 (7.5)	20 (3.8)
	> 65 years	624 (11.6)	74 (10.4)
Endometriosis	Overall	70 (0.8)	5 (0.4)
	18 to 44 years	19 (3.3)	<5
	45 to 64 years	45 (1.5)	<5
	> 65 years	6 (0.1)	<5
Family history of breast cancer	Overall	173 (1.9)	0 (0.0)
	18 to 44 years	18 (3.2)	0 (0.0)
	45 to 64 years	100 (3.4)	0 (0.0)
	> 65 years	55 (1.0)	0 (0.0)
History of breast cancer	Overall	662 (7.4)	33 (2.4)
	18 to 44 years	15 (2.6)	0 (0.0)
	45 to 64 years	186 (6.3)	10 (1.9)
	> 65 years	461 (8.5)	23 (3.2)
Hyperglycaemia	overall	26 (0.3)	16 (1.2)
	18 to 44 years	<5	<5
	45 to 64 years	11 (0.4)	6 (1.1)
	> 65 years	11 (0.2)	8 (1.1)
Obesity	overall	1,403 (15.7)	129 (9.4)
	18 to 44 years	125 (22.0)	14 (10.4)
	45 to 64 years	550 (18.5)	48 (9.1)
	> 65 years	728 (13.5)	67 (9.4)
Pelvic inflammatory disease	overall	924 (10.3)	<5
	18 to 44 years	121 (21.3)	<5
	45 to 64 years	422 (14.2)	0 (0.0)
	> 65 years	381 (7.1)	<5

DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital

Table S13: Description of demographic and pre-specified characteristics of individuals newly diagnosed with epithelial ovarian cancer (sensitivity analysis).

Characteristics		Data sources			
		DK-DHR	CDW Bordeaux	NCR[1]	CRN[2]
Number subjects		5,507	555	14,734	901
Age, years (median, IQR)		68 [58 to 76]	66 [56 to 73]	67 [58 to 76]	64 [52 to 73]
Prior observation time, days (median, IQR)		7,493 [6,388 to 8,733]	60 [11 to 1,532]	8,796 [7,483 to 10,057]	22,361 [17,169to 24,575]
Future observation time, days (median, IQR)		410 [410 to 2,210]	218 [218 to 1,563]	366 [366 to 1,933]	563 [563 to 1,482]
Baseline conditions, N (%)	Diabetes	522 (9.5)	32 (5.8)	–	–
	Endometriosis	41 (0.7)	-	–	–
	Family history of breast cancer	80 (1.5)	0 (0.0)	–	–
	History of breast cancer	364 (6.6)	<5	–	–
	Hyperglycaemia	15 (0.3)	5 (0.9)	–	–
	Obesity	831 (15.1)	65 (11.7)	–	–
	Pelvic inflammatory disease	544 (9.9)	-	–	–
Cancer stage, N (%)	Stage I	878 (15.9)	–	3,109 (21.1)	346 (38.4)
	Stage II	220 (4.0)	–	1,114 (7.6)	89 (9.9)
	Stage III	1,013 (18.4)	–	5,091 (34.6)	277 (30.7)
	Stage IV	2,069 (37.6)	–	3,997 (27.1)	178 (19.8)
	No stages captured	1,327 (24.1)	–	1,423 (9.7)	11 (1.2)
WHO performance status scale, N (%)	0	–	–	3,827 (26.0)	589 (65.4)
	1	–	–	2,170 (14.7)	167 (18.5)
	2	–	–	723 (4.9)	43 (4.8)
	3	–	–	299 (2.0)	18 (2.0)
	4	–	–	63 (0.4)	5 (0.6)
	WHO-PS not recorded	–	–	7,652 (51.9)	80 (8.9)
BRCA gene[3]		–	–	724 (7.5)	–

DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway
[1] NCR only had registration for primary treatment.
[2] The study population was restricted to cases diagnosed after 2019.
[3] Available for individuals diagnosed after 2015. The percentage of individuals with BRCA gene was calculated considering the number of individuals diagnosed after 2015 (n=9,543).
"–" Indicates that the variable was not assessed in the data source.

Table S14: Systemic treatment by treatment class in individuals with epithelial ovarian cancer (sensitivity analysis).

Treatment classes, N (%)	Data sources			
	DK-DHR(n=5,507)	CDW Bordeaux (n=555)	NCR[1](n=14,734)	CRN[2] (n=901)
Alkylating agents	75 (1.4)	0 (0.0)	124 (0.8)	0 (0.0)
Anthracyclines	706 (12.8)	20 (3.6)	103 (0.7)	35 (3.9)
Antimetabolites	129 (2.3)	8 (1.4)	87 (0.6)	28 (3.1)
DNA agents	<5	0 (0.0)	0 (0.0)	<5
Hormonal agents	156 (2.8)	8 (1.4)	<5	-
Monoclonal antibodies	852 (15.5)	39 (7.0)	64 (0.4)	217 (24.1)
PARP inhibitors	238 (4.3)	<5	514 (3.5)	76 (8.4)
Platinum based	3,822 (69.4)	167 (30.1)	9,934 (67.4)	542 (60.2)
Taxanes	3,159 (57.4)	159 (28.6)	9,170 (62.2)	502 (55.7)
Topoisomerase inhibitors	122 (2.2)	<5	9 (0.1)	<5
Vinca alkaloid	0 (0.0)	0 (0.0)	<5	0 (0.0)

DNA=Deoxyribonucleic acid, PARP=poly-ADP ribose polymerase, DK-DHR=Danish Data Health Registries, CDW Bordeaux=Clinical Data Warehouse of Bordeaux University Hospital, NCR=Netherlands Cancer Registry, CRN=Cancer Registry Norway
[1] NCR only had registration for primary treatment.
[2] The study population was restricted to cases diagnosed after 2019.

Table S15: Inclusion of individuals recorded in the national cancer registry in DK-DHR (sensitivity analysis).

	DK-DHR
Initial qualifying events (i.e. individuals newly diagnosed with ovarian cancer)	15,435
Individuals diagnosed after 1st January 2010 (all data sources)	7,060
Individuals diagnosed before 31st December 2022	7,060
Sex: Female	7,056
Age ≥18 at diagnosis	7,026

DK-DHR=Danish Data Health Registries

Table S16: Multiple cancer stages captured in time window of 7 days before to 60 days after diagnosis of (epithelial) ovarian cancer in data sources.

Multiple cancer stages	Number of individuals (%)
Individuals with ovarian cancer in CRN	34 (1.7%)
Individuals with epithelial ovarian cancer in CRN	17 (1.9%)
Individuals with ovarian cancer in DK-DHR	71 (<1%)
Individuals with epithelial ovarian cancer in DK-DHR	74 (1.3%)
Individuals with ovarian cancer in DK-DHR (sensitivity)	67 (1%)
Individuals with ovarian cancer in NCR	1,318 (6.8%)
Individuals with epithelial ovarian cancer in NCR	1,273 (8.6%)

ANNEX VI. Glossary

Additional definitions are available in the EMA Glossary of terms https://www.ema.europa.eu/en/about-us/glossaries.

Aggregated Data

Data collected and combined from multiple sources to generate summary information, typically anonymised.

Benefit-Risk Assessment

Evaluation of the positive therapeutic effects of a medicine compared to its risks (e.g., side effects).

Common Data Model (CDM)

A standardized data structure that enables data from multiple sources to be harmonized, making analysis consistent and reproducible. DARWIN EU® utilises the OMOP CDM maintained by the OHDSI community.

Complex Studies (C3)

Studies requiring the development or customisation of specific study designs, protocols, and Statistical Analysis Plans (SAPs), with extensive collection or extraction of data. Examples include etiological studies measuring the strength and determinants of an association between an exposure and the occurrence of a health outcome in a defined population considering sources of bias, potential confounding factors, and effect modifiers.

Coordination Centre (CC)

The central hub responsible for managing and overseeing the activities within DARWIN EU®. It is based at Erasmus University Medical Centre in Rotterdam, the Netherlands.

Data Access

The process of obtaining permission to use specific datasets for regulatory or scientific studies.

Data Quality Framework

A set of standards and procedures to ensure accuracy, completeness, timeliness, and consistency of data used in DARWIN EU®.

Data Source

A database or repository of structured health-related data, such as electronic health records (EHRs), insurance claims, or registries.

DARWIN EU®

The European Medicines Agency's (EMA) federated network of real-world data sources designed to generate evidence to support regulatory decision-making.

EMA (European Medicines Agency)

The regulatory body responsible for the evaluation and supervision of medicinal products in the EU, overseeing DARWIN EU®.

Evidence Generation

The process of analysing real-world data to produce scientific information that can inform healthcare or regulatory decisions.

Federated Network

A data infrastructure where data remain at their original location but can be analysed in a harmonised way across multiple partners using a common model and tools.

GDPR (General Data Protection Regulation)

The EU regulation governing the protection of personal data and privacy, crucial to how DARWIN EU® handles health data.

Health Technology Assessment (HTA)

A systematic evaluation of properties and impacts of health technology, often using DARWIN EU® data to support assessments.

Metadata

Descriptive information about a data source (e.g., its content, quality, and structure), essential for identifying relevant databases in DARWIN EU® studies.

Off-the-Shelf Studies (OTS)

Studies for which a standard protocol per study/analysis type and standardised analytics may be developed and applied or adapted, typically relating to a descriptive research question. This includes studies on disease epidemiology, for example, the estimation of the prevalence or incidence of health outcomes in defined time periods and population groups, or drug utilisation studies at the population or patient level.

OHDSI (Observational Health Data Sciences and Informatics)

An open-science collaborative community that develops tools and standards (including the OMOP CDM) to enable large-scale analytics of observational health data. OHDSI provides the technical and scientific foundation for DARWIN EU®'s analytical ecosystem.

Patient-Level Data

Data related to individuals, de-identified, used for longitudinal or detailed analyses.

OMOP (Observational Medical Outcomes Partnership)

A common data model (CDM) that standardises the structure and content of observational healthcare data, enabling systematic analysis across disparate datasets. DARWIN EU® uses the OMOP CDM to ensure interoperability and consistency in real-world evidence generation.

Real-World Data (RWD)

Data relating to individual health status or healthcare delivery that is collected from routine clinical practice rather than from randomised controlled trials.

Real-World Evidence (RWE)

Clinical evidence derived from the analysis of RWD, used to inform decisions by regulators, payers, or clinicians.

Regulatory Decision-Making

The process by which authorities like EMA assess data to authorise, monitor, or modify the use of medicines in the EU.

Routine Repeated Studies (RR)

Studies that are either Off-the-Shelf or Complex studies repeated on a regular basis, following the same protocol and study code, but with updated data and/or different data partners.

Study Protocol

A detailed plan describing how a specific real-world study will be conducted, including objectives, design, data sources, and analyses.

Very Complex Studies (C4)

Studies which cannot rely only on electronic health care databases, or which would require complex methodological work, for example, due to the occurrence of events that cannot be defined by existing diagnosis codes, including events that do not yet have a diagnosis code, where it may be necessary to combine a diagnosis code with other data such as results of laboratory investigations. These studies might require the collection of data prospectively, or the inclusion of new (not previously onboarded) data sources.