Clinical Description: Advanced/Metastatic Ovarian Cancer (Epithelial Ovarian, Fallopian Tube, or Primary Peritoneal Cancer)

Synonyms: Advanced EOC (Epithelial Ovarian Cancer), Metastatic Ovarian Cancer, Stage III Ovarian Cancer, Stage IV Ovarian Cancer, Advanced Fallopian Tube Cancer, Advanced Primary Peritoneal Cancer.

1. Clinical Case Definition

This phenotype defines advanced or metastatic malignant neoplasms arising from the epithelial cells of the ovary, the fallopian tube, or the peritoneum. Due to their shared embryologic origin (Müllerian epithelium), similar histological features (most commonly high-grade serous carcinoma), and overlapping clinical management, these three malignancies are clinically grouped and treated as a single entity.

The phenotype specifically targets advanced disease, corresponding to Stage III or Stage IV according to the International Federation of Gynecology and Obstetrics (FIGO) staging system.

- **Stage III** is characterized by tumor involvement of one or both ovaries/fallopian tubes, or primary peritoneal cancer, with confirmed cytological or histological spread to the peritoneum outside the pelvis (e.g., omental caking, peritoneal implants) and/or metastasis to the retroperitoneal lymph nodes.
- **Stage IV** is characterized by distant metastasis beyond the peritoneal cavity (e.g., liver parenchyma, lungs, pleural effusion with positive cytology, extra-abdominal lymph nodes).

Diagnosis requires definitive histologic confirmation from tissue biopsy (e.g., surgical specimen, core biopsy) or cytological analysis of malignant cells (e.g., from ascites). Radiographic imaging (CT/MRI) is essential for staging, and elevated serum tumor markers (e.g., CA-125) are characteristic and supportive.

2. Phenotype Scope & Granularity

- **Temporal Context:** Prevalent disease state. Intended to identify patients with an existing diagnosis of advanced or metastatic disease, regardless of treatment status (e.g., newly diagnosed, recurrent, or actively treated).
- **Severity:** Advanced (Stage III) or Metastatic (Stage IV) only. This scope is not inclusive of localized or early-stage (Stage I-II) disease.
- **Acuity / Chronicity:** Chronic condition.

- **Etiology:** Primary malignant neoplasm of epithelial origin (ovary, fallopian tube, or peritoneum). Includes both sporadic cases and those associated with hereditary syndromes (e.g., BRCA1/2 mutations).
- **Population Context:** Primarily the adult population.

3. Related Conditions & Scope Boundaries

This phenotype is defined by specific primary site, histology, and stage. The following conditions and contexts are clinically related but are not within the scope of this phenotype:

- **Treatment Response Status (Platinum Sensitivity/Resistance):** This phenotype defines the anatomical and histological presence of advanced cancer. The classification of the disease as "Platinum-Sensitive" or "Platinum-Resistant" describes the tumor's response relative to prior chemotherapy exposure and requires specific temporal logic (e.g., time from last platinum dose to recurrence). These are separate clinical constructs and are explicitly not defined within this core clinical description.
- **Early-Stage Ovarian Cancer (FIGO Stage I-II):** Disease confined to the ovaries or pelvis is not within the scope of this advanced phenotype.
- **Non-Epithelial Ovarian Cancers:** Cancers with different histologies (e.g., Germ cell tumors, Sex cord-stromal tumors) have distinct biology and treatment paradigms and are not within the scope of this epithelial-focused phenotype.
- **Ovarian Tumors of Low Malignant Potential (Borderline Tumors):** These tumors are distinct from invasive epithelial cancer and are not within scope.
- **Secondary Metastases to the Ovary:** Cancers metastasizing *to* the ovary from other primary sites (e.g., colorectal cancer, gastric cancer [Krukenberg tumor], breast cancer) are not within the scope of this primary ovarian/fallopian/peritoneal phenotype.

4. Key Complications & Common Comorbidities

The following are common complications associated with advanced and metastatic ovarian cancer, but they are distinct from the definition of the core malignancy:

- Malignant Ascites
- Bowel Obstruction (Malignant)
- Malignant Pleural Effusion
- Venous Thromboembolism (VTE)
- Cachexia and Malnutrition
- Hydronephrosis (due to pelvic mass effect)

5. Intended Data Sources

This clinical description is intended for building concept sets against real-world administrative claims, electronic health record (EHR) databases, and patient registries. The target data should

be standardized to the OMOP Common Data Model. Examples of licensable data sources where this concept set would be applied include:

- **Optum®** (Clinformatics® Data Mart, SES, Pan-Therapeutic)
- **Merative™** (MarketScan® Commercial Claims and Encounters)
- **Veradigm** (Health Verity, Practice Fusion EHR)
- **IQVIA** (AmbEMR, PharMetrics Plus)
- **HealthVerity**