

## ***BRCA1* and *BRCA2* Sequencing and/or Deletion/Duplication Analysis**

- I. *BRCA1* and *BRCA2* (81162, 81163, 81164, 81165, 81166, 81167, 81216) sequencing and/or deletion/duplication analysis for hereditary breast and/or ovarian cancer susceptibility is considered **medically necessary** when:
  - A. The member is 18 years or older, **AND**
    1. The member has a personal history of any of the following:
      - a) Male breast cancer, **OR**
      - b) Triple-negative breast cancer, **OR**
      - c) Epithelial ovarian cancer (including fallopian tube cancer or peritoneal cancer), **OR**
      - d) Pancreatic cancer, **OR**
      - e) Metastatic prostate cancer, **OR**
      - f) High- or very-high-risk group prostate cancer, **OR**
      - g) Multiple primary breast cancers (diagnosed synchronously or metachronously), **OR**
    2. The member has a personal history of breast cancer **AND** any of the following:
      - a) Female breast cancer diagnosed at age 50 years or younger, **OR**
      - b) Ashkenazi Jewish ancestry, **OR**
      - c) One or more close relatives with any of the following:
        - (1) Female breast cancer diagnosed at age 50 years or younger, **OR**
        - (2) Male breast cancer, **OR**
        - (3) Ovarian cancer, **OR**

- (4) Pancreatic cancer, **OR**
  - (5) Metastatic, or high- or very-high-risk group prostate cancer, **OR**
  - d) Three or more total diagnoses of breast cancer in the member and/or close relatives, **OR**
  - e) Two or more close relatives with either breast or prostate cancer (of any grade), **OR**
  - 3. The member does not have a personal history of a BRCA1/2-related cancer, but has a first- or second-degree relative meeting any of the above criteria, **OR**
  - 4. The member has metastatic breast cancer and is being considered for systemic treatment using PARP inhibitors, **OR**
  - 5. The member has high-risk, HER2-negative breast cancer and is being considered for adjuvant treatment with olaparib, **OR**
  - 6. The member's probability of having a *BRCA1* or *BRCA2* pathogenic variant is greater than 5% based on prior probability models (examples: Tyrer-Cuzick, BRCApro, CanRisk).
- II. *BRCA1* and *BRCA2* (81162, 81163, 81164, 81165, 81166, 81167, 81216) sequencing and/or deletion/duplication analysis for hereditary breast and/or ovarian cancer susceptibility is considered **investigational** for all other indications.
- III. *BRCA1/BRCA2* mRNA sequencing analysis for the interpretation of variants of unknown significance (0138U), when billed in addition, is considered **investigational** because it is typically either considered an existing component of the genetic testing process for quality assurance or follow up testing without proven utility.

## NOTES AND DEFINITIONS

1. **Close relatives** include first, second, and third degree blood relatives on the same side of the family:

- a. **First-degree relatives** are parents, siblings, and children
  - b. **Second-degree relatives** are grandparents, aunts, uncles, nieces, nephews, grandchildren, and half siblings
  - c. **Third-degree relatives** are great grandparents, great aunts, great uncles, great grandchildren, and first cousins
2. **"Breast cancer"** applies to patients with invasive cancer or ductal carcinoma in situ (DCIS).
3. **High-risk** breast cancer for olaparib therapy is defined as
  - a. Triple negative breast cancer treated with either:
    - i. Adjuvant chemotherapy with axillary node-positive disease or an invasive primary tumor greater than or equal to 2 cm on pathology analysis, **OR**
    - ii. Neoadjuvant chemotherapy with residual invasive breast cancer in the breast or resected lymph nodes, **OR**
  - b. Hormone receptor positive disease treated with either:
    - i. Adjuvant chemotherapy with four or more positive pathologically confirmed lymph nodes, **OR**
    - ii. Neoadjuvant chemotherapy which did not have a complete pathologic response, with a CPS+CG score [pre-treatment clinical (CS) and post-treatment pathological stage (PS), estrogen-receptor status (E) and grade (G)] of 3 or higher
4. **High-risk-prostate cancer** is defined by NCCN as an individual who has no very-high-risk features but has exactly one of the following high-risk features:
  - a. cT3a, **OR**
  - b. Grade Group 4 or Grade Group 5, **OR**
  - c. PSA > 20ng/ml
5. **Very-high-risk prostate cancer** is defined by NCCN as an individual who has at least one of the following:
  - a. CT3b-cT4
  - b. Primary Gleason pattern 5
  - c. 2 or 3 high-risk features

- d. >4 cores with Grade Group 4 or 5

## REFERENCES

1. National Comprehensive Cancer Network (NCCN). NCCN Clinical Practice Guidelines in Oncology: Genetic/Familial High-Risk Assessment: Genetic/Familial High-Risk Assessment: Breast, Ovarian, and Pancreatic. Version 3.2023.  
[https://www.nccn.org/professionals/physician\\_gls/pdf/genetics\\_bop.pdf](https://www.nccn.org/professionals/physician_gls/pdf/genetics_bop.pdf).
2. Owens DK, Davidson KW, Krist AH, et al. Risk Assessment, Genetic Counseling, and Genetic Testing for BRCA -Related Cancer: US Preventive Services Task Force Recommendation Statement. *JAMA - J Am Med Assoc*. 2019;322(7):652-665. doi:10.1001/jama.2019.10987