**Supplemental Materials**

**Saam, et al.**

**Patients tested at a laboratory for hereditary cancer syndromes show overlap for multiple syndromes in their personal and familial cancer histories.**

**2013 HBOC Criteria**

*National Comprehensive Cancer Network. Genetic/Familial High-Risk Assessment: Breast and Ovarian. NCCN Clinical Practice Guidelines in Oncology. 2013(1.2013).*

Patients with a personal history of breast cancer met HBOC testing criteria if they had one or more of the following:

* Diagnosed ≤ 45 years of age
* Diagnosed ≤ 50 years of age with:
  + Two breast primaries when first breast cancer diagnosis occurred\*
  + ≥ 1 first, second, or third degree relative with breast cancer at any age
  + An unknown or limited family history
* Diagnosed ≤ 60 years of age with a triple-negative breast cancer
* Diagnosed at any age with:
  + ≥ 1 first, second, or third degree relative with breast cancer diagnosed ≤ 50 years of age and/or ≥ 1 first, second, or third degree relative with epithelial ovarian\*\* cancer
  + ≥ 2 first, second, or third degree relatives with breast cancer at any age
  + ≥ 2 first, second, or third degree relatives with pancreatic cancer or aggressive prostate cancer (Gleason score ≥ 7) at any age
  + A first, second, or third degree male relative with breast cancer
  + An ancestry associated with higher mutation frequency (eg Ashkenazi Jewish)
* Personal history of epithelial ovarian\*\* cancer
* Personal history of male breast cancer
* Personal history of pancreatic cancer or aggressive prostate cancer (Gleason score ≥ 7) at any age with ≥ 2 first, second, or third degree relative with breast and/or ovarian\*\* and/or pancreatic or aggressive prostate cancer (Gleason score ≥ 7) at any age

Unaffected patients meet HBOC testing criteria if they have:

* A first or second degree relative meeting any of the above criteria
* A third degree relative with breast cancer and/or ovarian\*\* cancer and who has ≥ 2 first, second, or third degree relatives with breast cancer (at least one with a breast cancer diagnosed ≤ 50 years of age) and/or ovarian\* cancer

\*includes bilateral (contralateral) disease

\*\*includes fallopian tube and primary peritoneal cancers