About 266,120 new cases of breast cancer will be diagnosed in 2018, according to the American Cancer Society. Breast cancer accounts for 15.3% of all new cancer cases. This type of cancer develops when cells begin to grow out of control. The cells form a tumor or lump that is sometimes felt or seen on X-ray. Ductal breast cancer begins in the ducts that carry milk to the nipple. Lobular breast cancer begins in the gland that makes breast milk. Cancer spreads in our bodies through lymph nodes or blood. The best way to detect cancer early is through regular screenings or mammograms.

**Type**
The different types of breast cancer are ductal carcinoma in situ, invasive, angiosarcoma of the breast, inflammatory and Paget's disease. After a breast cancer is diagnosed, the next steps are to determine the grade, stage and receptor status to come up with a patient's prognosis and treatment.

**Grade**
Grade 1 (well-differentiated) cancers are made up of slow-growing cells. Grade 3 (poorly differentiated) cancers grow and spread faster. Grade 2 (moderately differentiated) cancer is between a grade 1 and 3 in terms of the speed and spread of the cells.

**Stage**
Breast cancer is staged by determining the TNM categories of the tumor: T is the size of the tumor; the N indicates the cancer’s spread to lymph nodes; and M denotes the spread to distant sites. Breast cancer stages range from 0 (ductal carcinoma in situ) to stage 4 (metastatic).

**Hormone receptor status**
The hormone receptor status of a tumor is used to help determine prognosis, as well as certain targeted treatments that can be used to treat breast cancer. Cancer cells are tested to see if they have proteins that are estrogen receptors (ERs) or progesterone receptors (PRs). Hormone-receptor-positive breast cancer has either ER or PR. Hormone-receptor-negative breast cancer has neither ER nor PR. Therefore, a targeted hormone therapy is not helpful in the treatment of those cancers. HER2/neu is a growth promoting protein on the outside of all breast cells. If a higher than normal level of HER2 is identified in the cells, then the cancer is HER2 positive. About 1 in 5 women with breast cancer has HER2 positive disease. Invasive breast cancers should be tested for HER2, as positive HER2 cancers can benefit from certain drugs.

**Treatment**
Breast cancer treatment can include surgery, chemotherapy, radiation therapy, hormone therapy and targeted therapies. Targeted therapies are different than chemotherapy. Chemotherapy attacks all cells, including the cancer cells, while targeted therapies block cancer cells from growing and spreading.

Candidates for preoperative systemic therapy for breast cancer include patients with inoperable breast cancer, inflammatory breast cancer, bulky or matted N2 axillary nodes, N3 nodal disease, T4 tumors and patients who desire breast conservation and have a large breast primary tumor relative to breast size.

Known benefits of preoperative systemic therapy include facilitating breast conservation; making inoperable tumors operable; providing important prognostic information at an individual patient level based on response to therapy, particularly in those with triple-negative and HER2-positive breast cancer; and allowing time for genetic testing and time to plan breast reconstruction in patients electing mastectomy.

**Survival rates**
The percent of breast cancer survivors who survive five years is 89.7%, according to the National Cancer Institute Cancer Stat Facts for Female Breast Cancer, based on data from 2008-2014. Relative survival compares patients diagnosed with cancer to the general population with the same age, race and gender. It is important to remember that survival is based on large groups of people and cannot predict the survival of every individual.
Novant Health UVA Health System cancer care at Prince William Medical Center: Cases and outcomes

The National Cancer Database (NCDB) provides benchmarks and comparison data for over 1,500 Commission on Cancer-accredited facilities. The most current available data are for cases diagnosed in 2015. Following are demographic comparisons for Prince William Medical Center and the NCDB for 2015 breast cancer cases.

Figure 1 shows that Prince William Medical Center data are similar to the NCDB in age at diagnosis for breast cancer. Two age groups were exceptions: 50-59 and 60-69.

Whites account for over 70% of breast cancer diagnoses in both the Prince William Medical Center and the NCDB facilities. Figure 2 shows Prince William has a higher incidence of breast cancer cases among blacks (18%) compared to 11% for the NCDB, as well as a slightly higher incidence of Asian/Pacific Islander cases (5% compared to 4% in the NCDB).

Note: Percentage may not total 100% due to rounding.
Commission on Cancer
Standard 4.6 study results

As part of our commitment to providing the highest quality care, a physician member of the cancer committee at Prince William Medical Center performed a study to assess that nationally recognized treatment guidelines are being used in the formulation of the first course of treatment for patients with newly diagnosed stage 2A-3B breast cancer. The initial treatments for 33 patients diagnosed with these stages during 2017 were reviewed. Patient age ranged from 27 to 82 years. Initial treatment included neoadjuvant chemotherapy in 10 patients. Those treatment regimens were: five had dose dense Adriamycin/Cytoxan followed by Taxol; one Adriamycin/Cytoxan followed by Carboplatin/Taxol; three Taxol/Carboplatin and one Docetaxel/Carboplatin. Five of these 10 patients were HER2/neu positive and received Herceptin/Perjeta as part of their preoperative treatment regimen. Of the remaining 23 patients, eight were not eligible for preoperative systemic therapy and 15 had breast conserving therapy. With reference to National Comprehensive Cancer Network (NCCN) Guidelines (NCCN-Breast Cancer Version 2.2017) for initial treatment of breast carcinoma eligible for preoperative systemic therapy, all cases (100%) were managed in accordance with evidence-based national guidelines.

Figure 3 shows the stage of breast cancer patients is similar at Prince William Medical Center and the NCDB.

Note: Percentage may not total 100% due to rounding.