New cases
The pancreas is an organ located behind the stomach; it is shaped like a fish and averages 6 inches long and 2 inches wide. According to the American Cancer Society (ACS), about 53,070 people will be diagnosed with pancreatic cancer in 2016, with about 41,780 dying from pancreatic cancer. About 3% of all cancers in the United States are pancreatic.

Risk factors
Multiple risk factors affect your chances of getting pancreatic cancer. Some risk factors can be changed, such as tobacco use, obesity and exposure to certain chemicals. Other risk factors cannot be changed, and the chance of developing pancreatic cancer increases as you age. The average age of those with pancreatic cancer is 71. Men and African-Americans are also more likely to develop this type of cancer. Family history impacts the chances of developing pancreatic cancer, especially if certain gene mutations are present. Other health issues such as diabetes, chronic pancreatitis, cirrhosis of the liver and stomach problems may increase the risk of developing pancreatic cancer.

Symptoms
Detecting pancreatic cancer is difficult because the pancreas is deep inside the body, and cancer symptoms usually do not show up until the cancer has spread outside of the organ. Jaundice is one of the first symptoms in someone with pancreatic cancer. Abdominal and back pain, weight loss, nausea and vomiting, enlarged gallbladder or liver enlargement, blood clots, fatty tissue abnormalities and diabetes are other signs of pancreatic cancer. There currently is no recommended screening exam for pancreatic cancer. Due to the increased risk for people with specific genetic mutations, the ACS recommends that people with concern for these gene mutations talk with a genetic counselor. If someone is found to be high risk, exams like endoscopic ultrasounds (EUS) can be performed to detect pancreatic cancer.

Diagnosis
Imaging tests are often used to help diagnose cancer. Pancreatic cancer can also be diagnosed using blood tests such as liver function tests and tumor markers. CA19-9 and carcinoembryonic antigen (CEA) are two tumor markers that can aid in diagnosis. Biopsies are used to remove tissue either through the skin or using EUS.

Type
The pancreas has exocrine and endocrine cells that form different types of tumors. Exocrine cancers of the pancreas are the most common, with adenocarcinoma, representing approximately 95% of pancreatic cancers.

Staging
Cancers are staged using the American Joint Committee on Cancer (AJCC) TNM system. The T describes the size of the tumor and whether the tumor has grown outside of the pancreas. The N indicates if any cancer has spread to lymph nodes. Metastases to other organs are delineated by the M in the staging system. The stages range from 0 to IV. Grade is another scale that determines the outlook of the cancer. Physicians use both stage and grade to determine a patient’s survival outlook as well as treatment.

Treatment
Pancreatic cancer treatment can be divided into three groups: resectable, borderline resectable and unresectable. Resectable tumors are those that can be removed; borderline resectable tumors have reached nearby blood vessels but can still be removed with surgery. Unresectable tumors cannot be removed with surgery because they are locally advanced (i.e., surrounded by major blood vessels) or metastatic. In addition to surgery, ablation and embolization treatments, radiation therapy and chemotherapy are also used in treating pancreatic cancer.

Survival rates
The five-year survival rate for cancer refers to the percentage of patients who live for at least five years after their diagnosis. The National Cancer Database (NCDB) compiles observed survival rates; see below chart for exocrine pancreatic cancer:

<table>
<thead>
<tr>
<th>Stage</th>
<th>5-year observed survival rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>14%</td>
</tr>
<tr>
<td>IB</td>
<td>12%</td>
</tr>
<tr>
<td>IIA</td>
<td>7%</td>
</tr>
<tr>
<td>IIB</td>
<td>5%</td>
</tr>
<tr>
<td>III</td>
<td>3%</td>
</tr>
<tr>
<td>IV</td>
<td>1%</td>
</tr>
</tbody>
</table>
Novant Health Presbyterian Cancer Center cases and outcomes

Novant Health Charlotte-area cancer centers — Novant Health Presbyterian Medical Center, Novant Health Huntersville Medical Center and Novant Health Matthews Medical Center (greater Charlotte) — treated 40 patients with pancreatic cancer in 2015. There were also 20 patients who had a diagnosis or consult in the facilities but chose to have no treatment due to the progression of disease. The median age of the patients was 67 years old. Forty-seven percent were male and 53% were female.

Each year the greater Charlotte facilities compare their demographic and treatment data to the NCDB. The most current year of data available in the NCDB is 2013.

As noted by the ACS, the average age of diagnosis of pancreatic cancer is 71. In greater Charlotte, 43% of patients were 70 or older; 52% in the NCDB are 70 or older. (See Figure 1.)

Caucasians account for 68% of the diagnoses in greater Charlotte, compared with 81% in the NCDB. (See Figure 2.)
As part of the Commission on Cancer (CoC) accreditation awarded to high-quality cancer programs, our data are reviewed by a physician member of our cancer committee to determine adherence to nationally recognized guidelines. The National Comprehensive Cancer Network (NCCN) publishes guidelines used to ensure high quality and effective treatment of cancer patients. Using version 1.2016 of the NCCN guidelines, the treatment of 60 pancreatic cancer patients by stage was assessed. Of those patients with pancreatic cancer in greater Charlotte, 67% were 65 or older, 47% were male and 53% female. There were no stage I cases eligible for the review; 31% were stage II patients; 13% stage III and 56% stage IV. The first course of treatment was assessed per the CoC standard. The first course of treatment for stage II patients was surgery or chemotherapy. Chemotherapy was the first course of treatment for all stage III patients. For their first course, 89% of the stage IV patients received chemotherapy, and 11% of the stage IV patients received radiation therapy, all with a palliative intent. All patients in the review were managed in accordance with NCCN guidelines.

The stage of pancreatic cancer patients is similar in greater Charlotte and the NCDB. Greater Charlotte has slightly more stage II diagnoses and fewer stage I diagnoses. As expected, with this type of hard-to-detect cancer, 45% of cases are stage IV in greater Charlotte and 49% in the NCDB. (See Figure 3.)