Table of Contents

Cancer Registry Statistics ............................................. 1
Welcome ........................................................................ 2-3
From raising crops, to raising flowers ......................... 4-5
Prostate Cancer Diagnosis ............................................. 6
Prostate-Specific Antigen Testing ................................. 7
Treatment of Prostate Cancer ....................................... 8-9
Radiation Therapy Treatment Options for Prostate Cancer ..................... 10
Chemotherapy Options for Prostate Cancer ................... 11
Clinical Research .......................................................... 11
Precision Medicine in Cancer Treatment ..................... 12-13
Oncology Nursing .......................................................... 14-15
Integrative Therapies ..................................................... 16
Survivorship Resources Breaking Ground .................... 17
Sharing Time and Talents .............................................. 18-19
Venous Thromboembolism (VTE) Study: Pancreatic Cancer ........ 20-21
Clinical Achievements ................................................. back cover
Site Incidence Data Report for St. Cloud Hospital

The data below reflects the cancer care given at St. Cloud Hospital, Coborn Cancer Center and CentraCare Surgery Center.

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* The decrease in number of cases for 2016 may be due to a change in cancer registry data collection practices.
As of January 1, 2016, the registry no longer abstracted cases treated at the Alexandria Radiation Oncology Department and not diagnosed and/or treated at St. Cloud Hospital, CentraCare Surgery Center or Coborn Cancer Center. In past years, an average of 80 cases fell into this category.

Cancer Registry Statistics

Our service area

St. Cloud Hospital is located in the heart of Central Minnesota. Its primary service area covers Stearns, Benton and Sherburne counties, with a secondary service area extending to 23 counties across Central Minnesota.

Coborn Cancer Center provides comprehensive care and an extensive range of treatment options to support cancer patients and their families. We understand the importance of receiving quality cancer care and treatment close to home, and provide services in many Central Minnesota communities including St. Cloud, Alexandria, Glenwood, Little Falls, Long Prairie, Melrose, Monticello, Paynesville and Sauk Centre.

Coborn Cancer Center is a strong community supporter giving back more than $143,749 last year through education, prevention and early detection events to meet the needs of our community. These events included the CentraCare Health Family Farmers Market, Relay for Life, various support groups and much more.

Array of services supporting cancer patients

- Behavioral Health
- Breast Center
- Cancer Registry
- Cancer Research
- Center for Surgical Care
- CentraCare Digestive Center
- CentraCare Wound Center
- Chemotherapy and Infusion Services
- Gorecki Guest House
- Hematology/Oncology
- Home Care Services
- Hospice Services
- Hospitalist Program
- Imaging Services
- Inpatient Oncology
- Integrative Therapies
- Laboratory
- Palliative Care
- Pathology
- Pharmacy
- Radiation Oncology
- Rehabilitation Services
- Respiratory Care
- Spiritual Care
- Survivorship Services
- Volunteer Services

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- Hematology/Oncology
- Home Care Services
- Hospice Services
- Hospitalist Program
- Imaging Services
- Inpatient Oncology
- Integrative Therapies
- Laboratory
- Palliative Care
- Pathology
- Pharmacy
- Radiation Oncology
- Rehabilitation Services
- Respiratory Care
- Spiritual Care
- Survivorship Services
- Volunteer Services
As co-leaders of the oncology program at Coborn Cancer Center, we are proud to share highlights of our program in the 31st edition of the St. Cloud Hospital cancer report. In this past year, CentraCare Health made a commitment to invest in its people and community through Our Best Begins with Me and Our Service Promise culture work which continues to shape our organizational culture. We recognize and embrace the significance of bringing the best version of ourselves into each interaction to positively impact our patients’ experience.

Coborn Cancer Center has a rich history of excellence as demonstrated by our accreditation with commendation for the past four consecutive surveys with the most recent survey occurring in 2016 through the American College of Surgeons Commission on Cancer (CoC). We are also the recipient of the Outstanding Achievement Award, the highest honor a cancer program can receive for its commitment to providing comprehensive, high-quality and multidisciplinary patient-centered care. An achievement of this magnitude is not possible without the fortitude, perseverance and steadfast commitment to our patients and our program by our cancer care team. We can feel proud of our accomplishments knowing we are the only cancer program in the state of Minnesota who has achieved this recognition for four consecutive surveys!

Success this year is also marked by the implementation of Multidisciplinary Cancer Clinic (MCC) designed to minimize the time between breast cancer diagnosis and treatment. During a single visit, patients meet with a team of experts and together select a high-quality, unified treatment plan. This multidisciplinary approach means patients receive personalized cancer treatment by a team of physicians.
and health care professionals such as surgeons, medical oncologists, radiation oncologists, genetic counselors, nurses, pathologists and radiologists. The providers meet individually with each patient for a consultation based on the preliminary treatment plan defined by stage of diagnosis to present to the patient. The providers reconvene to discuss outcome of the treatment plan based on the patient’s response. All patients leave with a high-quality treatment plan, information to decide on treatment or a plan for additional evaluation. The overwhelming reception of this care delivery model, as demonstrated by our patients’ satisfaction, has prompted us to expand the Multidisciplinary Cancer Clinic to newly diagnosed lung cancer patients in 2017!

We would like to take this opportunity to welcome two new radiation oncologists, Chris Miller, MD, PhD, and Kadir Mullings, MBBS, to our team. We are excited to announce their arrival as we bring specialized radiation treatment modalities, in collaboration with our partners in neurosurgery, such as stereotactic radiosurgery (SRS) for patients with certain brain/CNS cancers and stereotactic body radiation therapy (SBRT) for patients with certain liver, lung and pancreatic resectable cancers. The benefit of offering SRS and SBRT at Coborn Cancer Center will be one more step toward bringing cancer care closer to home for our patients.

Thank you for the privilege of sharing with you a few highlights of our program from this year. The annual report focuses on prostate cancer as the Cancer Care Center Board hopes to further advance the prostate cancer program in conjunction with radiation oncology and urology.

Sincerely,

Sonya Wieber, MS, MBA  Hilary Ufearo, MBBS
Section Director, Oncology  Physician Section Director, Oncology
Hematology/Oncology

Thomas Schrup, MD  Kurt Otto, MBA
Physician Vice President,  Vice President Operations,
Specialty Division  Specialty Division

* This award recognizes cancer programs that strive for excellence in demonstrating compliance with the Commission on Cancer standards and are committed to ensuring comprehensive, high-quality cancer care. Coborn Cancer Center is the only cancer program in Minnesota to achieve this designation for four consecutive surveys.
After discovering high PSA levels during his routine physical, Gary Geisinger, age 73, from Annandale, had a biopsy. Results showed six out of 12 samples as cancerous, with one on the aggressive side. As a result, Gary had his prostate removed and underwent radiation with Christopher Miller, MD at Coborn Cancer Center. “Guys should have their PSA levels checked every year,” Gary said. “Luckily, they caught mine in time. I had a good friend who died of prostate cancer, he wasn’t as lucky.” Today, Gary has good health and feels strong but has learned how to listen to his body. He doesn’t have the energy he once had, but he has learned his new limits and when to rest.

Gary and his family have a long history with Coborn Cancer Center. His wife and sister-in-law went through chemotherapy and radiation. “We’ve gotten to know and love the people at Coborn Cancer Center and consider them our good friends,” he said. “When we walk in the door, they are all so friendly and know us by name. The radiation staff and doctors are phenomenal.”

After retiring 15 years ago from a full life of farming, owning an antique business and 33 years designing heating and air conditioning equipment, Gary still manages to stay very active. He added new hobbies to his daily routine including gardening, landscaping and helping people in his town and church with handyman projects. “Growing up, I didn’t make a ton of money so I learned how to fix everything myself,” he said. “Now I’m the handyman of Annandale. I like to help people with whatever it is they need fixed, whether it’s a lawn mower, toilet or just landscaping.”

Gary spent most of his life raising soybeans and corn. After retiring, he missed raising crops and decided to fill the void with something else. Gary looked at his plain yard and decided to clean out all the landscaping and start over. He’s now a pro at gardening and raising flowers. He created a beautiful sanctuary in his backyard and named it “Beryl Park” after
“Be sure to have your PSA levels checked every year. It can be taken care of if you catch it in time. I lost a close friend to prostate cancer because they didn’t catch his in time.”

- Gary Geisinger, Prostate Cancer Survivor

Gary Geisinger and son, Jeff Geisinger enjoy the time they spend together at the auto body shop.
Prostate Cancer Diagnosis

Prostate cancer is the most common cancer among men in Minnesota and in the United States. During a man’s lifetime, one in seven men will be diagnosed with prostate cancer. In 2016, approximately 3,000 new cases of prostate cancer were diagnosed in Minnesota.

Although the risk factors for prostate cancer remain unclear, inherited genetic mutations are thought to account for five to 10 percent of prostate cancers. Men with a family history of prostate cancer are twice as likely to develop prostate cancer.

The occurrence of prostate cancer is strongly associated with age and rapidly rises around 50 years of age. The highest rates are seen in those aged 70 to 80 years. At age 50, men should talk to their health care provider about screening for prostate cancer.

Diets high in animal fat and low in vegetables increase a man’s risk of prostate cancer as does cigarette smoking and being overweight. Nationality is also a risk factor for black men due to dietary and genetic factors.

Most men do not have symptoms with early stage prostate cancer. The frequency of prostate cancer diagnosis has been increasing due to the use of serum prostate-specific antigen (PSA) screening. In addition, 20 percent of prostate abnormalities are found on a digital rectal exam. A prostate biopsy is recommended with either an elevated PSA or abnormal prostate exam. During a biopsy, a small amount of tissue is removed and examined under a microscope to look for cancer cells.

For men with newly diagnosed prostate cancer, important factors need to be considered when selecting initial treatment. The extent of disease, serum prostate-specific antigen (PSA) level and clinical behavior of the tumor (Gleason score/histologic grade). Additional considerations include the patient’s general health, age, overall life expectancy, comorbidities as well as treatment outcomes and individual treatment preferences.
Prostate-Specific Antigen Testing

Prostate-specific antigen (PSA) testing revolutionized prostate cancer screening. PSA is a blood test that measures the level of PSA, a protein released into a man’s blood by the cells of his prostate gland. Healthy men have low amounts of PSA in the blood. PSA levels normally increase as a prostate enlarges with age. A high (abnormal) PSA level can have many causes, including an enlarged prostate, an infection or, less often, prostate cancer.

The PSA was originally introduced as a tumor marker to detect cancer recurrence or progression of prostate cancer. In the early 1990s, it became widely used for prostate cancer screening and professional societies issued guidelines supporting routine prostate cancer screening with PSA. This routine testing led to a dramatic increase in the incidence of prostate cancer in 1992.

Many of these newly diagnosed cancers were clinically localized, which led to an increase in radical prostatectomy and radiation therapy. Aggressive treatments were intended to cure these early-stage cancers. After an initial peak, incidence rates fell, but they have persisted at a rate nearly twice than what was recorded in the pre-PSA era. A central argument against routine PSA screening is that many of these cancers, if left undetected, would never have become clinically meaningful during a man’s lifetime.

Prostate cancer screening is controversial, with conflicting data as to the need to do PSA testing. Thus, many professional society guidelines (American College of Physicians, American Cancer Society, American Urological Association and American Society of Clinical Oncology) uniformly recommend making informed decisions about screening that reflect their personal preferences and values.

It is important for discussions to take place with a man’s primary care provider to determine risk factors for prostate cancer and screening. Of the known prostate cancer risk factors, the most important are age, ethnicity, genetic factors and possible dietary factors.

Who should be screened for prostate cancer?

Prostate cancer screening is done in men who have no symptoms of the disease. It is not clear whether getting screened for prostate cancer can extend a man’s life or help him avoid any symptoms or problems. For this reason, doctors do not know who — if anyone — should be screened for prostate cancer.

Most experts recommend that each man work with his primary care provider to decide whether screening is right for him. In most cases, men should start discussing prostate cancer screening around the age of 50. Men with risk factors for prostate cancer (such as black men or men with a family history of prostate cancer) might want to begin screening at age 40 to 45. Most doctors recommend against screening for men age 70 or older, or those with serious health problems.

Because individual patient preferences for specific health outcomes are a deciding factor in determining whether to screen for prostate cancer, men who are potential candidates for screening should engage in discussions or decision-making processes with their primary care provider to be informed on these recommendations.

The prostate-specific antigen (PSA) test is a blood test that measures level of PSA, a protein released into a man’s blood by the cells of his prostate gland. A high (abnormal) PSA level can have many causes, including an enlarged prostate, an infection or, less often, prostate cancer.
Treatment of Prostate Cancer

Treatment Planning
Doctors use many sources to plan a patient’s treatment including tests completed as part of the work-up along with the grade and stage of the prostate cancer. Personal preferences and potential side effects are very important when considering treatment. Prostate cancer often grows slowly. A doctor may determine life expectancy. If a man is likely to die of other causes, having more tests and cancer treatment may have little or no benefit.

Risk Assessment
To plan the best treatment, doctors want to know if and how fast the cancer has spread, how fast the cancer is likely to grow, how fast the cancer will respond to treatment and whether the cancer will reappear on tests after treatment (called a recurrence). Treatment options are typically based on different risk group scores. Risk is based on staging scores of the cancer, the Gleason Score and the prostate-specific antigen (PSA) value.

Testing
There are several molecular tests that may help assess the aggressiveness of localized prostate cancer. Many imaging tests are used for metastases. A bone scan is advised for men with signs or symptoms that cancer could have spread to the bones. A computed tomography (CT) or magnetic resonance imaging (MRI) study will show if lymph nodes are enlarged. A positron-emission tomography (PET) scan is used to assess for cancer in the lymph nodes. If the CT or MRI scan suggests that the cancer has spread into the lymph nodes, a fine-needle aspiration can confirm if cancer is present. This is a type of biopsy. It uses a very thin needle to remove very small pieces of tissue. A CT scan, MRI or ultrasound machine is used to guide the needle into the lymph node.

When all essential assessments have been completed, there will be options to choose from, and a urologist will counsel the patient on determining the best treatment plan. Treatment options include active surveillance, surgery, radiation and medications.

Active Surveillance
Small prostate tumors are often found with PSA screening tests or in prostates removed because of a condition called benign prostatic hyperplasia. If small tumors grow slowly, they may never cause health problems, especially for older men. Thus, some men would suffer needlessly from treatment side effects. This is when active surveillance is the best option.

Surgical Treatment
Surgery is an option for healthy men diagnosed with prostate cancer. Depending on where the cancer was found, the prostate, surrounding tissue, and/or lymph nodes may be removed during surgery. Different surgical techniques are available and include open or closed (laparoscopic with or without robot assistance).

Surgical side effects of prostate surgery include urinary incontinence and erectile dysfunction. Some men may experience side effects for a short amount of time where others may have lifelong issues. It is known that men are at higher risk for erectile dysfunction if they are older, had problems before surgery or if nerves were damaged during surgery.

Radiation Therapy
Radiation therapy is an option for many men with prostate cancer. The radiation beam precisely targets the areas with cancer. Areas which receive radiation may include the prostate, surrounding tissues as well as pelvic lymph nodes. Radiation therapy treatment options are discussed on page 10. Possible side effects of radiation are erectile dysfunction, bladder and bowel changes. Side effects are different for everyone and can be short and/or long-term.

Hormone Therapy
Prostate cancer cells need hormones called androgens to grow. The main male androgen is testosterone. Hormone therapy either stops the body from making testosterone or stops the action of testosterone to slow tumor growth or shrink the tumor. A bilateral orchiectomy involves the surgical removal of both testicles, the primary source of testosterone in the body. Another type of hormone therapy is the use of medications listed on page 11. Side effects of hormone therapy include decreased desire to have sex and erectile dysfunction, which don’t appear to lessen with time.
**Immunotherapy**

Sipuleucel-T is a drug that uses white cells to destroy prostate cancer cells. In a lab, white blood cells from a blood sample are changed by a protein so they will find and destroy prostate cancer cells. Side effects of this drug include chills, fever, nausea and headaches. These effects don’t appear to last long.

**Chemotherapy**

Chemotherapy is the use of drugs to kill cancer cells. These are listed on page 11. Side effects of this treatment include fatigue, weakness, numbness of fingers and toes, inflammation of the mouth, diarrhea and low blood counts.

**Radiopharmaceuticals**

Medications containing a radioactive substance are injected into the body to treat prostate cancer that has spread to the bones, which may improve survival time and/or delay bone problems and the need for radiation to treat pain. Low blood counts, nausea, vomiting and diarrhea are possible side effects of this treatment.

A provider will counsel the patient on treatment options and help with choosing the best plan for them.

(left to right)
Marc Dvoracek, MD, Pathology
Christopher Boelter, MD, Urology
Don Jurgens, MD, Hematology/Oncology
Chadd McMahon, MD, Diagnostic Radiology
Lori Pinke, MD, Urology
Kadir Mullings, MBBS, Radiation Oncology
Radiation Therapy
Treatment Options for Prostate Cancer

The goal of radiation therapy (RT) for men with localized prostate cancer is delivering a dose of radiation that destroys tumor cells while minimizing radiation to surrounding normal tissues. For men with low-risk prostate cancer, observation, surgery or external beam radiation therapy (EBRT) are options. Treatment options for men with intermediate-risk prostate cancer include: EBRT alone, EBRT in combination with androgen deprivation therapy (ADT) or EBRT combined with a brachytherapy (radioactive prostate implants). For men with higher-risk prostate cancer, it is generally recommended to proceed with surgery, EBRT in combination with ADT or EBRT in combination with brachytherapy.

Radiation doses can be delivered with a conventional fractionation regimen which uses smaller daily doses for a longer period (38-45 fractions) or hypofractionation which uses larger daily doses for a shorter period (approximately 20 fractions). Both regimens are similar in effectiveness and side effects.

Brachytherapy is an advanced method of delivering radiation to tumors by placing radioactive material in or near the tumor under image guidance (typically ultrasound) allowing a higher dose of radiation to be given while minimizing radiation exposure to the surrounding healthy/normal tissues. It is usually performed under light, general or spinal anesthesia.

Brachytherapy is delivered either with permanent low dose rate (LDR) radioactive sources or by the placement of temporary high dose rate (HDR) sources into hollow catheters or needles positioned in the prostate. LDR brachytherapy can be completed in a single outpatient visit with a limited number of sessions. The HDR brachytherapy dose is usually administered in one to four large dose fractions over approximately 24 to 40 hours. The implanted RT dose is emitted over several months, depending upon the specific isotope. Iridium-192 is typically used for prostate cancer.
Chemotherapy Options for Prostate Cancer

Treatment options include hormone therapy, chemotherapy, bisphosphonates and biotherapy. Male sex hormones cause prostate cancer to grow. Hormonal therapy removes or blocks hormones to stop cancer cells from growing. Types of hormonal therapy include Lupron, Casodex or Degarelix.

Prostate cancer that is resistant to hormonal therapy can be treated with chemotherapy. Two types of oral chemotherapy for prostate cancer are Zytiga and Xtandi. Jevtana, Docetaxel and Mitoxantrone are types of intravenous chemotherapy administered by specially-trained registered nurses at Coborn Cancer Center.

Zometa, a bisphosphonate, inhibits osteoclastic bone resorption. Xgeva is a type of biotherapy called a monoclonal antibody which identifies proteins and attaches to the proteins to prevent cancer cells from growing. Zometa and Xgeva are used to delay the spread of cancer in the bones and prevent fractures. Our highly-skilled and caring staff provide education to patients about their cancer treatment including how to manage side effects.

Clinical Research

Coborn Cancer Center has a research program dedicated to helping advance cancer care. Each new patient is screened and any potential trials the patient may be eligible for are shared with their physician. A team of a physician investigator, three registered nurses and two clinical research associates comprise the research department. There are approximately 40 trials for many types of cancer, treatment-related side effects and quality of life.

Currently, Coborn Cancer Center is participating in three trials for prostate cancer. One study compares patients undergoing radiation and hormonal therapy by adding chemotherapy after completion of initial treatment. Another, is an observational study describing the patterns of care and quality of life for advanced prostate cancer. The third study is for advanced hormone sensitive prostate cancer comparing an investigational hormone suppressing agent to a standard agent. Coborn Cancer Center participates in trials set forth by the National Cancer Institute along with industry driven trials.
Different people’s tumors can have different biomarkers. Using precision medicine, we can target therapy to the specific molecular disorder that is driving the cancer. Matching the therapy to those molecular alterations has led to some remarkably improved outcomes. Examples:

- A patient had a left lung lower lobectomy in October 2012 for Stage IA poorly differentiated adenocarcinoma. Her disease recurred in February 2015 in the form of malignant left pleural effusion. Her tumor had a mutation in anaplastic lymphoma kinase (ALK) gene. By treating her cancer with ALK inhibitor Crizotinib, her disease remains in remission.

- A patient was diagnosed in February 2017 with metastatic poorly differentiated bronchogenic adenocarcinoma. The tumor programmed death ligand 1 (PD-L1) test was positive with 90 percent expression. He was treated with PD-1 inhibitor Pembrolizumab leading to dramatic resolution of his lymphadenopathy.

Precision medicine (personalized medicine or molecular medicine) is defined as treating patients based on characteristics that distinguish them from other patients with the same disease. Currently genomics is the predominant factor influencing precision medicine in oncology. Until recently, individual genes were tested separately and sequentially by traditional Sanger sequencing methods. However, decreasing costs and improved efficiencies in sequencing technology (next-generation sequencing or NGS) have made full gene sequencing and multigene panels more cost effective.

Advanced genomic testing devotes attention to studying a single individual. Looking for a specific genetic abnormality in a tumor is not new; it is the standard of care for patients with breast, lung, ovarian, colon and other cancers. Comprehensive genomic profiling takes the basic tumor test to the next level with state-of-the-art gene mapping analysis, which may open up new options to patients with rare, unusual or hard to treat cancers and those whose tumors did not respond adequately to conventional therapy. At Coborn Cancer Center, genomic molecular tests have been routinely ordered as part of the standard care for patients with breast, non-small cell lung, ovarian, colorectal cancers, melanoma and many other solid and blood malignancies. NGS with broad molecular panels are replacing individual genetic tests at the time of cancer diagnosis. The tremendous progress in cancer through the use of targeted therapy and immunotherapy allows oncologists to target therapy to the specific molecular disorder that is driving the cancer episode. Immunotherapy use is expanding rapidly with broadening indications. Biomarkers offer the advantages of precision immunotherapy.

Some of the molecular biomarkers currently used as part of routine testing in patients with specific cancers will be described together with their therapeutic implications.

**Molecular Biomarkers in Advanced Non-small Cell Lung Cancer (NSCLC):**

- Advanced NSCLC with mutated epidermal growth factor receptor (EGFR) is preferentially treated with EGFR tyrosine kinase inhibitors including: Gefitinib (Iressa), Erlotinib (Tarcera) and Afatinib (Gilotrif).
- Acquired resistance to these drugs is often due to EGFR T790M mutations that respond to Osimertinib (Tagrisso).
- Advanced NSCLC with echinoderm microtubule-associated protein-like 4 (EML4)-ALK rearrangements is treated with ALK inhibitors including Crizotinib (Xalkori), Ceritinib (Zykadia), Alectinib (Alecensa) and Brigatinib (Alumbrig).
- Proto-oncogene tyrosine-protein kinase ROS (ROS1) rearrangements respond to Crizotinib (Xalkori).
- Advanced NSCLC that expresses PD-L1 in at least 50 percent of tumor cells, responds well to PD-L1 immunotherapy Pembrolizumab (Keytruda). Second line PD-L1 inhibitors including Atezolizumab (Tecentriq) and Nivolumab (Opdivo) produce responses regardless of PD-L1 expression.

**Molecular Biomarkers in Advanced Melanoma:**

- B-Raf proto-oncogene, serine/threonine kinase (BRAF) mutated melanoma responds to BRAF inhibitors including Vemurafenib (Zelboraf), Dabrafenib (Tafinlar) and mitogen-activated protein kinase (MEK) inhibitors including Trametinib (Mekinist) and Cobimetinib (Cotellic).
- Tyrosine-protein kinase Kit (C-KIT or CD117) mutation, seen mainly in mucosal melanoma, predicts response to C-KIT inhibitors like Imatinib (Gleevec).
Advanced melanomas regardless of BRAF status respond to immunotherapy agents like Pembrolizumab (Keytruda), Nivolumab (Opdivo) and Ipilimumab (Yervoy).

Molecular Biomarkers in Colorectal Cancer (CRC):
- BRAF V600 mutation in metastatic CRC confers poor prognosis, predicting highly unlikely response to EGFR TKI therapy.
- Only patients with wild, unmutated rat sarcoma viral oncogene homolog (RAS) metastatic CRC are candidates for anti-EGFR therapy including Cetuximab (Erbitux) and Panitumumab (Vectibix).
- DNA mismatch repair deficient (dMMR) and/or microsatellite instability-high (MSI-H) status in metastatic CRC predicts response to PD-1 (PDL-1) inhibitors including Pembrolizumab (Keytruda).
- Pharmacogenomics or precise prescriptions is illustrated by testing for dihydropyrimidine dehydrogenase (DPYD or DPD) genotype and UDP glucuronosyltransferase family 1 member A1 (UGT1A1) genetic polymorphism. DPD deficiency accounts for most of 5-FU toxicity. UGT1A1*28 and UGT1A1*1 variants are associated with increased risk of irinotecan (FOLFIRI, FOLFOXIRI) induced diarrhea and Neutropenia.

Molecular Biomarkers in Brain Cancer:
- Methylated-DNA-protein-cysteine methyltransferase (MGMT) promoter methylation confers survival advantage in glioblastoma multiforme (GBM) as it makes GBM more sensitive to Temozolomide.
- Isocitrate dehydrogenase (IDH) mutations are associated with survival benefit for patients treated with radiation or alkylators.
- Codeletion of 1p/19q is strongly associated with oligodendrogliomas, and it confers a favorable prognosis.

In summary, molecular markers are increasingly used to guide therapies in patients with cancer. Although these predictive biomarkers are clinically useful, they are not the only factors affecting patient outcomes. Patient characteristics like performance status, age, comorbidity and symptoms, as well as tumor characteristics like histology, growth, number and size of metastatic lesions together with drug reimbursement and cost effectiveness are all important.

It is important to emphasize that precision cancer care is an evolving science. While the field is growing, there is still much to learn. Not all mutations can be matched with known treatment options and advanced genomic testing is not appropriate for all patients.
Oncology Nursing

Oncology nursing care is provided at Coborn Cancer Center and the Inpatient Oncology Unit at St. Cloud Hospital. In partnership with Coborn Cancer Center, oncology care is also provided at regional affiliate sites in Central Minnesota. These sites include Alexandria, Glenwood, Little Falls, Long Prairie, Melrose, Monticello, Paynesville, and Sauk Centre. Nursing care is provided by registered nurses, licensed practical nurses, certified medical assistants and nursing assistant/patient care assistants. The following is a summary of the nurses’ preparation to provide an exceptional patient care experience for our oncology patients.

**Education Preparation** (St. Cloud Campus* only)
- Direct Care RNs with baccalaureate or higher degree in nursing: 78%
- Number of advanced practice RNs: 3

**National Certification of Direct Care Staff** (St. Cloud Campus* only)
- NDNQI Benchmark: 33.64% (90th percentile)
  - Inpatient Oncology: 51%
  - Outpatient Oncology: 77%

**Oncology Nursing Society Specialty Training Completion**
- Chemotherapy/Biotherapy Certificate Course (inpatient): 89%
- Chemotherapy/Biotherapy Certificate Course (outpatient/regional sites): 98%
- Radiation Therapy Certificate Course: 66%

* St. Cloud Campus: Coborn Cancer Center, Inpatient Oncology Unit at St. Cloud Hospital

(left to right)
Stacy St. Onge, BSN, RN, OCN, Clinical Research
Dawn Demant, BA, RN, OCN, Chemotherapy and Infusion
Todd Allen, BSN, RN, CHPN, Inpatient Oncology
Kara Panek, BSN, RN, OCN, Inpatient Oncology
Janelle Thoreson, BSN, RN, OCN, Medical Oncology Clinic
Why do oncology nurses become certified?

Oncology nursing certification is a formal recognition of specialized knowledge, skills and experience. Certification helps develop specialty nursing by creating minimum competency standards for the care of the oncology patient. Regardless of the health care setting, certification benefits patients and their families, nurses and employers. Oncology nursing certification validates that nurses have met stringent requirements for knowledge and experience and are qualified to provide competent oncology care.

St. Cloud Hospital demonstrates their commitment to providing the highest quality of care to patients with cancer throughout the health and illness continuum by hiring certified nurses, supporting nurses in attaining and maintaining certification, rewarding nurses who become certified and informing patients and the public about the certification status of their nursing staff.

(Information from the Oncology Nursing Certification Corporation at oncc.org.)

Oncology Nurses in the Spotlight

Awards & Recognitions

Daisy Award
Kara Panek, BSN, RN, OCN, Inpatient Oncology
Linda Barthelemy, BA, RN, OCN, Medical Oncology Clinic
Laurie Henkemeyer, RN, Palliative Care

March of Dimes
Oncology Nursing Finalist
Roland Brummer, RN, OCN, Inpatient Oncology

“Innovative Practice

Multidisciplinary Cancer Clinic for Newly Diagnosed Breast Cancer Patients

Breast Cancer: These two words change a person’s life forever. A diagnosis of cancer presents many challenges including a great deal of stress, anxiety and fear of the unknown. Entering the world of cancer care introduces a new set of words and acronyms as well as numerous doctor visits.

In Fall of 2015, a recommendation was brought forward from the St. Cloud Hospital Breast Care Committee to create a multidisciplinary cancer clinic for newly diagnosed breast cancer patients where all care providers would meet with the patient at one location, on the same day, to develop a patient specific treatment plan. Prior to this project, patients met with each specialty separately at different locations on separate days, which at times resulted in an unclear treatment plan. Jane Vortherms, MHA, RN, OCN, director of outpatient medical oncology, co-led this project with Nathan Reuter, MD, and Hilary Ufearo, MBBS. The primary impetus was to streamline the patient care experience and illustrate a unified treatment planning approach to reduce patient confusion. Secondarily, it reduces time the RN Care Coordinator spent clarifying the treatment plan when it differed between specialists.

The project required involvement with many stakeholders including physicians, nurses, RN Care Coordinators, schedulers, Epic Cadence team, billing and compliance teams. Through the nine-month planning process all stakeholders were supportive of the project.

On May 19, 2016, the Multidisciplinary Cancer Clinic for Breast Cancer (MCC-B) was implemented. The breast cancer RN care coordinators have a critical role with its ongoing success. Currently, Angela Haan, MSN, RN, OCN, and Tara Hinnenkamp, BSN, RN, OCN, assist in explaining MCC-B to patients and assist with coordinating their appointment time including working with physicians to ensure all staging work-up is completed prior to their appointment.

Patient feedback has been overwhelming. One patient indicated “I felt I was the focus that day which was wonderful.” Another patient said, “I was glad I could stay in one room and everyone came to me.” Through positive interdisciplinary collaboration, commitment, communication and an ongoing patient-centric focus, we successfully launched the MCC-B.

“When you’re an oncology nurse, you know that every day you will touch a life or a life will touch yours.”

- Julie Mages, RN, Radiation Oncology, Coborn Cancer Center
Integrative Therapies

Since May 2016, Coborn Cancer Center has been offering integrative therapy services to our patients as a holistic method to support health and the healing process. These services, including acupuncture, Healing Touch and aromatherapy, are offered at no charge to patients who are currently receiving treatment for cancer and those in the survivorship phase.

Acupuncture has been the most utilized integrative therapy service, accounting for approximately 90 percent of appointments. Acupuncture is a method of promoting the body's natural healing functions and can be used to treat dysfunction or to promote health and prevent illness. It is a holistic modality, taking into consideration a person's emotional and spiritual state, as well as the condition of the physical body. Affecting a person on all levels, it can help with a wide range of conditions or symptoms. Commonly, it is used to treat a variety of side effects of cancer treatment, including nausea and vomiting, fatigue, peripheral neuropathy, pain and anxiousness.

Acupuncture works by using very fine sterilized, stainless-steel needles inserted into the skin at specific body points (acupoints) to bring about a predictable physiological response. Acupuncture needles are either inserted and then removed, or inserted and left in place for 20 to 30 minutes. It is not painful, and most people report feeling a deep sense of relaxation. Acupoints can also be manipulated through pressure techniques with the hands (acupressure). There are hundreds of acupoints on the body and points are chosen based on the person's condition and the desired response. When performed by a trained practitioner, acupuncture is safe with very few side effects and can be used alongside conventional medical treatments such as chemotherapy, radiation therapy or surgery. Currently, Coborn Cancer Center has two acupuncture practitioners to meet the holistic needs of our patients.
Survivorship Resources Breaking Ground

Thank you to our community of donors who helped support our future cancer survivorship building. We met the $3.2 million goal for the project and await the opening of Coborn Healing Center in Summer 2018.

After speaking with doctors, nurses, other healthcare professionals and, most importantly cancer patients and their family advocates, we realized why the need for this building is so great. Fundraising for the survivorship building project started in Fall 2015.

The view of cancer for those never diagnosed with the disease, is often either you are cured or you’re not. With the advent of innovative technology, better drugs and research, it is far from that simple. Our patients are not only surviving, but thriving with cancer and need more support. The Coborn Healing Center will serve as the connection place for survivorship services that truly enhance our patients’ lives throughout their cancer journey.

Cancer, like heart disease or a stroke, is a traumatic health event with repercussions that affect mind, body and spirit of the patient and their support system of family and friends. For example, when you have a heart attack, they recommend cardiac rehabilitation. When you have a stroke, you complete physical and occupational therapy. While completing the six to 12 weeks of therapy, you have the support of medical professionals who continue to educate, inform and assist you in “living” with your disease. When looking at cancer, it seems logical that the same protocol should exist. Long-term success should be inevitable. This philosophy is at the heart of a cancer survivorship center which brings — under one roof — all of the resources a patient and their family needs as they move from treatment back to work and home. All of this is possible thanks to our community of supporters.
Sharing Time and Talents

These amazing people (and animals) share their time and talents in a variety of capacities to enrich the care experience of our patients and their families. We couldn’t do what we do without our volunteers. Together, we’re making a difference — and you can, too. If you are interested in volunteering, please call the Volunteer Office at 320-255-5638.
The consistent, enthusiastic presence of our volunteers is an invaluable resource. Serving the needs of our patients, their family and friends and oncology staff is both challenging and inspiring, and we’re grateful to our 189 volunteers who provided 4,670 volunteer hours for Coborn Cancer Center and the St. Cloud Hospital Oncology Unit. Volunteers provide more than just time and energy — they offer support, courage, solace and joy to our patients, their loved ones and our staff, in their own unique way.

Life as a volunteer

Volunteers from all walks of life come together to contribute their special talents, time and energy for many different reasons. Many of our volunteers have been touched personally by cancer, but that is not a requirement. For most, volunteering is a powerful experience, and the responsibility of serving oncology patients is an honor. Each is committed to providing a welcoming and caring environment for patients and their families.

Mary Figueroa, 10-year cancer survivor and community volunteer, discovered first-hand she felt cold getting chemo, and her handmade shawl was comforting. “I lived with my shawl which is as big as a blanket,” Mary said. “When I couldn’t walk and I couldn’t move that was what I held.” Today, Mary makes shawls, afghans and hats for other cancer patients. One day while Mary was waiting for treatment at Coborn Cancer Center and working on a shawl she noticed another lady. Mary recalled, “I could tell she was scared so I finished the shawl fast and gave it to her just before they called me in. It was near Mother’s Day, so I wished her a Happy Mother’s Day, and she just started crying.” They both experienced the power of kindness from volunteer service.

The personal attention and compassion of our volunteers can make a tremendous difference in a patient’s experience.

Infusion staff shared a story about how our volunteer, Barb Nierengarten, seemed to sense how a first-time patient for a new medication was feeling. She sat with the patient once the chemo was started and they chatted. Approximately 35 minutes later, the infusion was complete, and the patient couldn’t believe that she got through it without a hitch. Volunteers like Barb are a priceless resource for Coborn Cancer Center!

Making a difference

We rely on our caring, compassionate volunteers in many important capacities to further our mission to provide quality, comprehensive services for cancer prevention, diagnosis and treatment. Each position plays a vital role for providing quality care with personal service for patients, their families and caregivers. Whether their needs are a snack during treatment, a magazine while they wait or a compassionate listening ear, volunteers help to ensure they have the best experience possible.

Last year, volunteers with certified therapy dogs provided Animal-Assisted Therapy encounters to 831 cancer patients, their families and staff. These caring canines and their handlers make a difference. One evening while visiting the Oncology Unit at St. Cloud Hospital, Marlene Dingmann and her dog, Billie, encountered a woman who looked very emotional. They stopped by to help, and Billie laid by the patient to give him comfort. Marlene said, “As soon as we stepped into the room, I knew something was happening. Her father was in the bed and he was in the final stages. He looked over and his breathing changed immediately so that was pretty powerful.” They left to visit more patients and 10 minutes later a nurse said the family wanted to see them. “The daughter got on the floor and she was crying and hugged my dog, Billie, and she said thank you for helping him pass; he was a dog lover,” said Marlene.

Coborn Cancer Center volunteers play soothing, tranquil music in the lobby, serve in administration support, dietetics, Enhancement Program, Infusion Center, Pharmacy and survivorship. In the St. Cloud Hospital Oncology Unit, volunteers serve warm, freshly baked cookies, provide Healing Touch and serve in Patient & Family Care or STEP Force. Community volunteers use their talents to craft in-kind gifts for patients including hats, scarves, blankets, shawls, crescent pillows, fabric bags, seatbelt cushions, cancer treatment care packs and more. Volunteering in oncology is a distinct and richly, rewarding experience.

“Every time I see the fear and uncertainty when a patient comes in to get a wig and leaves with a smile on their face and tells me I made their day, I feel I really made a difference.”

- Jackie Maleska, Enhancement Program Volunteer
Venous Thromboembolism (VTE) Study: Pancreatic Cancer

Venous thromboembolism (VTE) is defined as a blood clot developing in a vein. Studies have shown the association of VTE with certain types of cancer is significant, with the greatest risk associated with pancreatic cancer. VTE occurrence is highest in the first three months of diagnosis, and treatment with chemotherapy further increases the risk. The literature indicates that VTE prophylaxis may be appropriate for some individuals, however, thromboprophylaxis comes with its own set of complications. Several risk prediction scores have been developed to assist the medical oncologist in identifying patients who are at high risk for VTE and would benefit from prophylaxis. One example is the Khorana risk prediction score. The Khorana score is well validated and easy to calculate the patient’s risk by assigning points based on certain clinical factors. These include type of cancer, pre-chemotherapy platelets, hemoglobin, leukocytes and body mass index.

In 2016, the Cancer Care Center Board approved an in-depth review of pancreatic cancer patients treated at Coborn Cancer Center with a focus on the diagnosis and treatment of VTE. There were 128 newly-diagnosed patients between Jan. 1, 2014 to Nov. 15, 2015 retrieved from the cancer registry database. Of these cases, 75 were seen by the medical oncologists.

- About 33 percent (23/75) of patients developed a VTE, with the highest incidence occurring while the patient was being treated with chemotherapy (Figure 1).
- Chemotherapy patients were 60 percent (45/75).
- Of these patients, nearly 27 percent (12/45) developed a VTE, with 83 percent (10/12) occurring within five months of chemotherapy (Figure 2) and the highest percentage developing a VTE within one month.
- Approximately 73 percent (33/45) of patients treated with chemotherapy did not develop VTE.
- Almost 49 percent (22/45) of the patients on chemotherapy had a Khorana score of two; 24.4 percent (11/45) had a high Khorana score greater than or equal to three.

Average survival did correlate with high Khorana score (Figure 3). Our data is consistent with literature reflecting higher Khorana scores correlate with higher mortality rates regardless of blood clot presence. When the Khorana score is higher (greater than or equal to three), prophylactic anticoagulation could be considered for higher-risk cancers or malignancies such as pancreatic cancer.

### Figure 1

<table>
<thead>
<tr>
<th>Time of Incidence</th>
<th>Number of Patients with VTE</th>
<th>Percentage of Patients (of total Patients)</th>
<th>Average Khorana Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>At diagnosis</td>
<td>5</td>
<td>6.7%</td>
<td>3.1</td>
</tr>
<tr>
<td>During hospitalization</td>
<td>1</td>
<td>1.3%</td>
<td>2</td>
</tr>
<tr>
<td>following surgery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within 1 1/2 months of</td>
<td>3</td>
<td>4.0%</td>
<td>3.3</td>
</tr>
<tr>
<td>hospitalization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>With 6 months of</td>
<td>2</td>
<td>2.7%</td>
<td>2.5</td>
</tr>
<tr>
<td>hospitalization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>While receiving chemotherapy</td>
<td>12</td>
<td>16.0%</td>
<td>3.5</td>
</tr>
</tbody>
</table>

### Figure 2

Timeline of VTE: Chemotherapy Patients

<table>
<thead>
<tr>
<th>Time Between Chemotherapy and Development of VTE</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 1 month</td>
<td>13%</td>
</tr>
<tr>
<td>Within 2 months</td>
<td>7%</td>
</tr>
<tr>
<td>Within 5 months</td>
<td>2%</td>
</tr>
</tbody>
</table>

### Figure 3

Average Survival Time (Months) by Khorana Score

- Score of 3 (16 patients): 6.1%
- Score of 4 (12 patients): 3.7%
- Score of 5 (1 patient treated): 1.9%
A review of documentation related to AJCC staging was also completed. Of the 75 cases treated, 94.7 percent (71/75) had the stage documented. Most cases, 78.7 percent, were metastatic or stage IV (Figure 4).

Findings and recommendations of the study were as follows: All treatment was given appropriately. No recommendations for VTE prophylaxis were given based on the study findings. All cases should have the AJCC stage documented. Nursing will develop an education sheet describing the warning signs and symptoms of VTE and will provide non-medical prevention tips to patients.

Figure 4
Clinical Achievements

Coborn Cancer Center is nationally recognized for its dedication to quality. Our professionals are committed to providing patients with exceptional outcomes based on adherence to best-practice standards, multidisciplinary coordination of care, shared decision making, access to leading cancer providers, research and clinical trials and continued adoption of new technologies, services and programming.

Some examples of our recognized quality include:

St. Cloud Hospital Magnet Designation

Magnet designation is the highest international recognition for excellence in the provision of nursing services, quality patient care and innovation in professional nursing practice. St. Cloud Hospital has been Magnet-designated since 2004.

Cancer Center receives three-year approval with Commendation, achievement award

In 2016, Coborn Cancer Center received a three-year approval with Commendation and an Outstanding Achievement Award as a Community Hospital Comprehensive Cancer Program from the American College of Surgeons Commission on Cancer.

This award recognizes cancer programs that strive for excellence in demonstrating compliance with the Commission on Cancer standards and are committed to ensuring comprehensive, high-quality cancer care. Coborn Cancer Center is the only cancer program in Minnesota to achieve this designation for four consecutive surveys.