



# Transforming cancer care for our community

2017 Sanford Bismarck  
Cancer Program &  
Outcome Report

Focus: Cervical Cancer and  
Head & Neck Cancer

**SANFORD**<sup>®</sup>  
CANCER CENTER



Thandiwe Gray, MD  
Chair, Cancer Committee

## Introduction

Sanford Bismarck provides seamless integrated cancer care under the direction of a multidisciplinary team. We are extremely fortunate to have skilled physicians with established expertise in areas such as radiology, surgery, pathology, medical oncology and radiation oncology. Our team approach to care also incorporates research nurses, genetic counselors, dietitians, navigational nurses, social workers, specialty-trained radiology technicians and pharmacists, rehabilitation therapists and more to support patients with the latest, most advanced care according to evidence-based national guidelines.

Each week, our experts meet to help plan the individualized care for the newly diagnosed patients. This dedicated teamwork and the assurance that this cancer care meets and often exceeds the same national standards seen in the largest cancer centers of this nation is a source of pride for us. We are committed to delivering exceptional care close to home, as we too are members of this community in western North Dakota.

Thandiwe Gray, MD  
Chairperson, Sanford Bismarck Cancer Committee 2017

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# 2017 Sanford Medical Center Cancer Committee Membership

## Cancer Committee Chair

Thandiwe Gray, MD

## Cancer Liaison Physician

Kyle Russo, MD

## Cancer Conference Coordinators

Karna Colby, MD  
John Reynolds, MD  
Jeanette Viney, MD

## Cancer Program Administrators

Jan Kamphuis  
Barb Nies  
Randi Schaeffer

## Cancer Registry Quality Coordinator

Andrea Doerr-Greff

## Clinical Researchers

Tammy Fischer  
Mark Weichel

## Community Outreach Coordinators

Tara Schilke  
Barb Nies

## Genetic Counselor

Linda Wolf

## Psychosocial Services Coordinators

Gary Heaton  
Jennifer Hiatt

## Quality Improvement Coordinator

Kari Edwards

## Diagnostic Radiologists

John Miller, MD  
Christina Tello-Skjerseth, MD

## Medical Oncologists

Hermina Fernandes, MD  
Thandiwe Gray, MD  
Peter Kurniali, MD  
John Reynolds, MD  
Edward Wos, DO

## Pathologists

Karna Colby, MD  
Jason Meyer, MD

## Radiation Oncologists

Cole Kreofsky, MD  
Kyle Russo, MD

## Surgeons

Joshua Knudson, MD  
Jeanette Viney, MD

## Bismarck Cancer Center Administrator

Amy Gross

## Case Manager

Fonda Opp

## Certified Tumor Registrar

Jennifer Mees-Boger

## Hospice Care

Rochelle Schaeffer  
Thomas Thorson, MD

## Navigation

Keila Eisenbeis

## Performance Improvement

Sheri Kost

## Palliative Care

Tracy Freidt  
Aaron Vasa, MD

## Social Workers

Becky Bohrer  
Jennifer Hiatt

# Sanford Cancer Medical Team



**Douglas Berglund, MD**  
Colorectal Surgery



**Kimber Boyko, MD**  
General Surgery



**Karna Colby, MD**  
Pathology



**Bree Dewing, MD**  
General Surgery



**Hermina Fernandes, MD**  
Hematology/  
Medical Oncology



**Catherine Fisher, PhD**  
Pathology



**Bruce Gardner, MD**  
Radiology



**Kristin Gray, MD**  
Obstetrics &  
Gynecology



**Thandiwe Gray, MD**  
Hematology/  
Medical Oncology



**Erica Hofland, MD**  
Obstetrics &  
Gynecology



**Kenneth Irmen, PhD**  
Pathology



**Matthew Iwamoto, MD**  
Radiology



**Hongchen Jia, MD**  
Pathology



**Craig Johnson, MD**  
Pathology



**Kyle Johnson, MD**  
Ear, Nose & Throat



**Jill Klemin, MD**  
Family Medicine



**Peter Klemin, MD**  
Obstetrics &  
Gynecology



**Joshua Knudson, MD**  
General Surgery



**Cole Kreofsky, MD**  
Radiation Oncology



**Peter Kurniali, MD**  
Hematology/  
Medical Oncology



**Kristin Luckenbill, PhD**  
Pathology



**Michael McIntee, MD**  
Radiology



**Audrey McMacken, MD**  
Obstetrics &  
Gynecology



**Jason Meyer, MD**  
Pathology



**Andrew Miller, MD**  
Interventional  
Radiology



**John Miller, MD**  
Radiology



**Megan Miller, MD**  
Obstetrics &  
Gynecology



**Jeffrey Nelson, MD**  
Ear, Nose & Throat



**Sri Obulareddy, MD**  
Hematology/  
Medical Oncology



**Shari Orser, MD**  
Obstetrics &  
Gynecology (retired)



**Kathleen  
Perkerewicz, MD**  
Obstetrics &  
Gynecology



**Joshua  
Rampton, MD**  
Radiology



**Karen Rampton, MD**  
Radiology



**Dennis Reinke, MD**  
Pathology



**John Reynolds, MD**  
Hematology/  
Medical Oncology



**Kyle Russo, MD**  
Radiation Oncology



**Jessica Sedevie, MD**  
Obstetrics &  
Gynecology



**Christina  
Tello-Skjerseth, MD**  
Radiology



**Thomas  
Thorson, MD**  
Family Medicine



**Aaron Vasa, MD**  
Palliative Care



**Jeanette Viney, MD**  
General Surgery



**Edward Wos, MD**  
Hematology/  
Medical Oncology



**Sara Doll, FNP-C**  
Hematology/  
Medical Oncology



**Tricia Fossum, FNP**  
Radiology

# Advancing cancer care for all

## The importance of a cancer registry

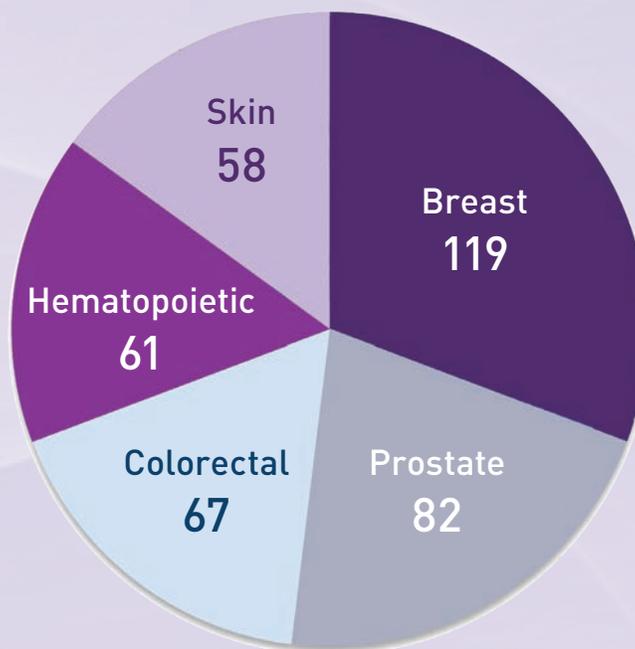
To move ahead in cancer, we must constantly be looking at what we have done and what we are doing now.

It is very important we have people dedicated to collecting information. For Bismarck hospitals, we rely on a mutually shared cancer registry. Although cervical and head and neck cancers are not in the “top five” diagnosed cancers, the information collected can be even more important as we weigh in and compare our number of cases diagnosed and their long-term outcomes to the regional and national statistics.



Back row (L to R): Shirley, Annesse, Joyce  
Front row (L to R): Jennifer, Andrea

### Sanford Bismarck analytic 2016 top 5 cancers:



# Central North Dakota Cancer Registry

The Central North Dakota Cancer Registry (CNDCR) was established in 1982, as a joint venture between Sanford Health Bismarck and CHI St. Alexius Health. The Cancer Registry gathers and maintains accurate cancer data and provides research assistance to physicians, allied health staff and administration. Hundreds of pieces of data are recorded about every cancer diagnosis and the treatment.

CNDCR, along with the pathology department, coordinates bi-weekly multidisciplinary medical care conferences to discuss the best ways to treat specific individuals and their cancer. These conferences are attended by the surgeons, pathologists, radiologists, medical oncologists, radiation oncologists, physicians, nurses and allied health care staff involved in the care of the individual with cancer. In 2016, CNDCR coordinated 40 conferences in which 171 cancer cases were discussed.

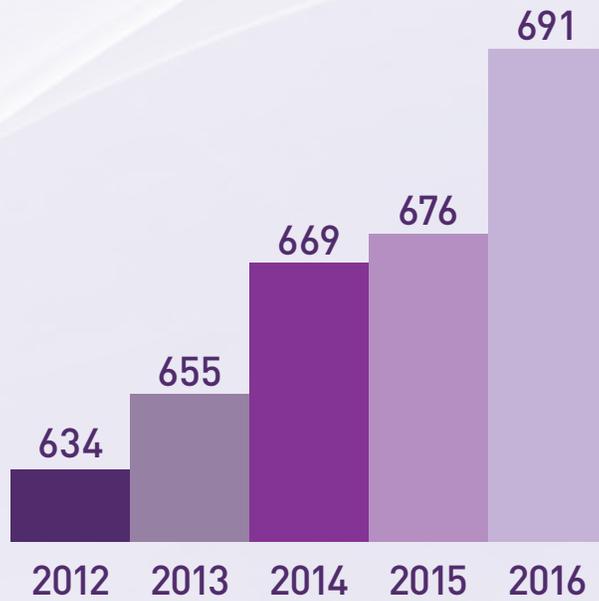
Since Sanford Health Bismarck diagnoses and treats a significant amount of breast and colon cancer, CNDCR participates in the Commission on Cancer's (CoC) Rapid Quality Reporting System (RQRS). RQRS allows CoC-accredited cancer programs to report real-time information about patients diagnosed with breast or colon cancer. The cancer program receives notifications

of treatment expectations and presents up-to-date compliance rates for specific standards of care. The RQRS data is presented to Sanford's cancer committee semi-annually. The information is evaluated and used to improve continuity of care.

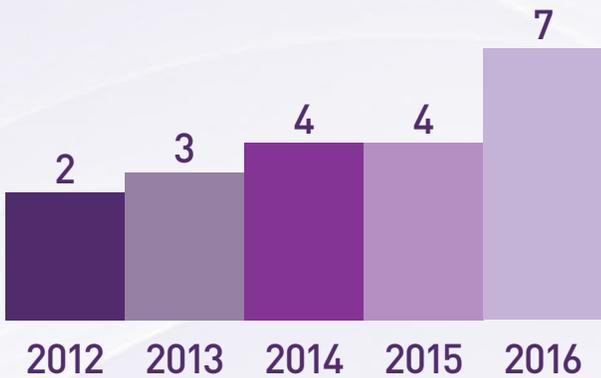


# Patients diagnosed and/or treated at Sanford Bismarck

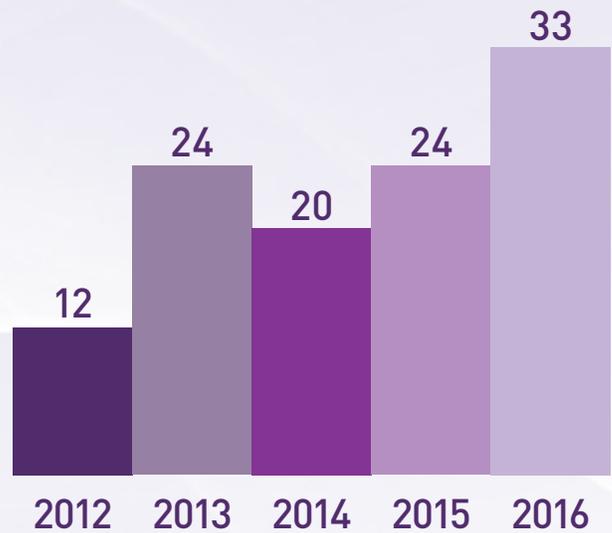
## Total cases per year



## Cervical cases



## Head and Neck cases





## Cause and prevention:

### What do cervical and oropharyngeal cancers have in common?

#### Cervical cancer and HPV

When women are exposed to genital human papillomavirus (HPV), their immune systems usually prevent the virus from doing serious harm. But in a small number of women, the virus survives for years. Eventually, the virus can lead to the conversion of normal cells on the surface of the cervix into cancerous cells.

At first, cells may only show signs of a viral infection. Eventually, the cells may develop precancerous changes and without medical interventions, may progress to invasive cervical cancer. It's not clear why some women are more likely to develop cervical cancer. Some types of HPV are simply more aggressive than others. Cigarette smoking, being overweight and long-term use of oral contraceptives also increase the risk of cervical cancer.

# Oropharyngeal cancer and other cancers and this same virus family

Over the last decade, it has become clear that HPV not only causes genital and anal cancers, but also causes a subset of head and neck squamous cell carcinoma (HNSCC). In fact, HPV is now the major cause of oropharyngeal cancer in developed countries, detected in 45–90 percent of cases.

## Understanding HPV

HPVs are a family of more than 200 related viruses. More than 40 HPV types can be easily spread through direct sexual contact – from the skin and mucous membranes of infected people to the skin and mucous membranes of their partners. They can be spread by vaginal, anal and oral sex. Other HPV types are responsible for non-genital warts, which are not sexually transmitted.

Sexually transmitted HPVs fall into two categories:

- Low-risk HPVs, which do not cause cancer but can cause skin warts (technically known as condylomata acuminata) on or around the genitals and anus. For example, HPV types 6 and 11 cause 90 percent of all genital warts. HPV types 6 and 11 also cause recurrent respiratory papillomatosis, a less common disease in which benign tumors grow in the air passages leading from the nose and mouth into the lungs.
- High-risk HPVs can cause cancer. About a dozen high-risk HPV types have been identified. Two of these, HPV types 16 and 18, are responsible for most HPV-caused cancers.

## What this means in fighting cancer

The epidemiology of HNSCC has changed dramatically over the past two decades. As tobacco use, traditionally the most important risk factor for HNSCC, has decreased in the U.S., the

prevalence of tobacco-associated HPV-unrelated HNSC has also decreased.

In stark contrast, the occurrence of HPV-associated oropharyngeal cancers overall is increasing. HPV infection usually takes more than 10 years to progress from infection to malignancy. Sexual behavior has consistently been associated with increased oral HPV prevalence, supporting the sexual transmission of the virus. It can be difficult to differentiate which behaviors transmit HPV infection to the oral cavity/oropharynx. Statistics also support that tobacco-related and immunosuppression caused by other illnesses may impact oral HPV natural history (i.e. make infections more likely to persist).

As a result, HPV is no longer just associated with cervical problems but is responsible for many cancers and conditions in both men and women.

## Taking action against these HPV-related cancers

In the U.S., three HPV vaccines are currently available. The quadrivalent vaccine, Gardasil® (HPV4), was the first one and protects against infection with HPV types 6, 11, 16 and 18. This vaccine was first licensed in 2006 for use in females ages 9-26 years old for the prevention of cervical, vaginal and vulvar cancers.

Clinical trials of the quadrivalent vaccine have demonstrated very high vaccine efficacy (>98%) for the prevention of anal, cervical, vaginal and vulvar pre-cancers. Upon licensure of the quadrivalent vaccine for females in 2006, the national Advisory Committee on Immunization Practices (ACIP) recommended that all female adolescents ages 11-12 years receive the vaccine as part of routine



care, with a “catch up” vaccination for females ages 13-26 years who had not been previously vaccinated. They also recommend vaccination be available for females as young as age 9 if they were felt to be at high risk for infection.

In 2009, licensure of the quadrivalent vaccine was expanded to include males. Men cannot develop cervical cancer, but the HPV vaccine may prevent genital warts, anal cancer, and the spread of HPV to sexual partners and the development of oropharyngeal cancers.

In 2011, the Centers for Disease Control (CDC) began recommending the vaccine for males ages 11 through 21 years old (26 for some high-risk groups). Children can start getting the vaccine as young as age 9, but it’s suggested for preteens ages 11-12, which is when it works best and can be lumped in with other necessary vaccinations. It’s so effective at this young age that these adolescents only need two doses of the vaccine, rather than the originally recommended three.

## Why don't people over 21 (or high risk age 26) get vaccinated?

An estimated 80 percent of sexually active people will be exposed to HPV by age 45. In many people, the virus goes away on its own after two years. For men, there's no commercially available test to find out if you have been exposed. Women can be checked for HPV exposure as part of a Pap test. The vaccine might not be a bad idea for someone outside the CDC's recommended age range (ages 27-30), but it is very expensive (estimated \$400+ for the series), and insurance likely will not pay for it.

## Which vaccine do we use?

The ACIP does not recommend one HPV vaccine over the other, instead stating that the "ACIP recommends vaccination with HPV2 or HPV4 for the prevention of cervical cancers and precancers ... HPV4 is recommended also for prevention of genital warts" (Centers for Disease Control and Prevention (CDC), 2010). The recommendation does, however, explicitly state that once the two or three dose HPV vaccine series is begun, the same vaccine product should be used for all doses.

The excellent safety profile suggest that these vaccines will provide major health benefits to the population. As data emerges on the efficacy of these vaccines against HPV-related head and neck cancer, and ongoing studies evaluate the long-term efficacy of the vaccine against both ano-genital and non-ano-genital endpoints, it is likely that an even greater benefit from these vaccines will be realized.

## Take away points

- **Care:** If you are responsible for youth ages 9-21, know they should get vaccinated for all of the above reasons.
- **Teach and practice:** If you're sexually active, know the best way to prevent HPV and other sexually transmitted infections is to remain in a mutually monogamous relationship with an uninfected partner.
- **Recognize:** Cancers found in the earliest stages have the best chance of being treated. Routine screening Pap tests are important for females, as is reporting abnormal lumps/bumps in the mouth/throat/neck and genital areas. Cancers, especially HPV-related head and neck cancers, do have a much better prognosis after treatment than those related to non-HPV risk factors.

# Prevention through tobacco cessation

Sanford Bismarck's tobacco education program sees patients in both inpatient and outpatient settings. We educate about 275 to 325 patients per month, and approximately 25 of those total patients are seen in an outpatient appointment.

Most of the outpatients that we counsel have a one-on-one session for 60 minutes for their first session and up to 30 minutes for any additional sessions. We randomly conduct follow-up phone calls to our inpatients and follow up with all of our outpatients. An average of 41 percent of our inpatients that had a follow-up phone call report either trying to quit, having quit or having lessened their tobacco use.

## Specific goals of the tobacco cessation program at Sanford Bismarck for 2018:

- Assist more of our orthopedic patients to quit tobacco before surgery, since four weeks of abstinence of nicotine is a requirement before surgery.
- Look at a screening tool to better identify the oncology patients who want assistance in tobacco cessation.

## Specific goals for all nursing and provider visits:

- Identify persons currently using tobacco products
- Assist persons in withdrawal from these products
- Identify persons needing increased cancer screening



Teresa Kershaw, MBA,  
RRT, RPSGT, CTTS

Respiratory Care Manager  
Bismarck

# Teaching you what she taught us

In 2017 The Sanford Bismarck Cancer Committee chose cervical cancer as an area to increase professional and public education and screening efforts.

In June 2017, Maria Bell, MD, MPH, MBA, gynecologic oncologist of Sanford Health, updated over 40 professionals on cervical cancer. These are notes from her lecture the committee wishes to disperse:

## Cervical cancer facts:

- It is nothing short of a miracle to go from not knowing what caused cervical cancer to a vaccine that can prevent 90 percent of cervical cancer in 22 years.
- It is a public health challenge.
- Cervical cancer has been a disease without a voice – societal issues.
- Worldwide, it is the second most common cause of cancer death in women.
- It is most prevalent in developing countries due to lack of screening.

## Finding cervical cancer

The Pap smear test is the most successful cancer screening technique in history. Its use began in the mid 1940s, and since then, it has decreased the number of invasive cervical cancer and increased statistics in diagnosing pre-invasive disease.

## 2017 National Screening Guidelines: US Preventative Service Task Force

### Determining who gets screened

- Recommends for women beginning at age 21 years and continuing through age 65 years for both vaccinated and unvaccinated women.
- Recommends against screening for cervical cancer in women younger than age 21 years.
- Recommends against screening for cervical cancer in women older than age 65 years who have had adequate prior screening and are not otherwise at high risk for cervical cancer.
- Recommends against screening for cervical cancer in women who have had a hysterectomy with removal of the cervix and who do not have a history of a high-grade precancerous lesion (cervical intraepithelial neoplasia [CIN] grade 2 or 3) or cervical cancer

### Screening for cervical cancer

- Recommends screening for cervical cancer in women age 21 to 65 years with cytology (Pap smear) every 3 years, or for women age 30 to 65 years who want to lengthen the screening interval, screening with a combination of cytology and human papillomavirus (HPV) testing every 5 years.

- Recommends against screening for cervical cancer with HPV testing alone or in combination with cytology, in women younger than age 30 years.

## Finding advanced cervical cancer

What are the most common signs of invasive cervical cancer?

- 80 percent present with abnormal vaginal bleeding (usually intermittent and after intercourse)
- Foul vaginal discharge
- Pain – associated with advanced disease
- Leg edema – associated with advanced disease

## Treating cervical cancer

- **Treatments for early stages**
  - o Conization: The removal of a cone-shaped piece of tissue for diagnostic/biopsy or treatment purposes to remove very early cancerous cells. Women do have the choice to preserve fertility with this procedure.
  - o Extradascial hysterectomy: The removal of the intact uterine fundus and cervix, leaving the parametrial soft tissues or a portion of the upper vagina.
- **Treatments for later stages**
  - o Radical hysterectomy: The complete removal of the uterus, cervix, upper vagina, and parametrium. Lymph nodes, ovaries and fallopian tubes are also usually removed in this situation
  - o Radiation and chemotherapy for poor surgical candidates and advanced disease.

## Take away points on HPV and vaccinations:

Cervical cancer only accounts for 1 in 3 cancers caused by HPV infection. While there is screening for cervical cancer, there is no routine screening for the other 20,000 cancers caused by HPV infections each year in the United States.

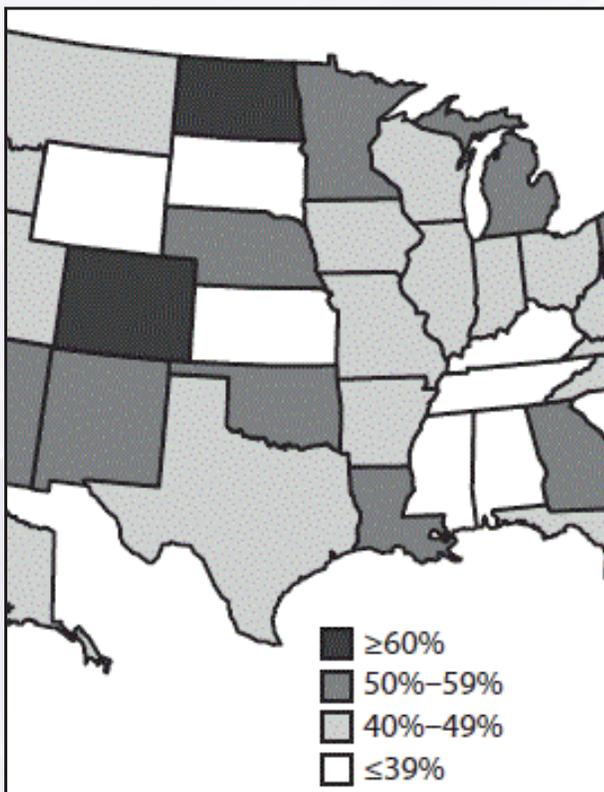
HPV vaccine can safely be administered at the same visit as other vaccines recommended for adolescents at ages 11 or 12 years, such as tetanus toxoid, reduced diphtheria toxoid and acellular pertussis (Tdap) vaccine, quadrivalent meningococcal conjugate (MenACWY) vaccine and influenza vaccine. Administering all indicated vaccines at a single visit at ages 11 or 12 years increases the likelihood that patients receive their vaccinations on schedule.



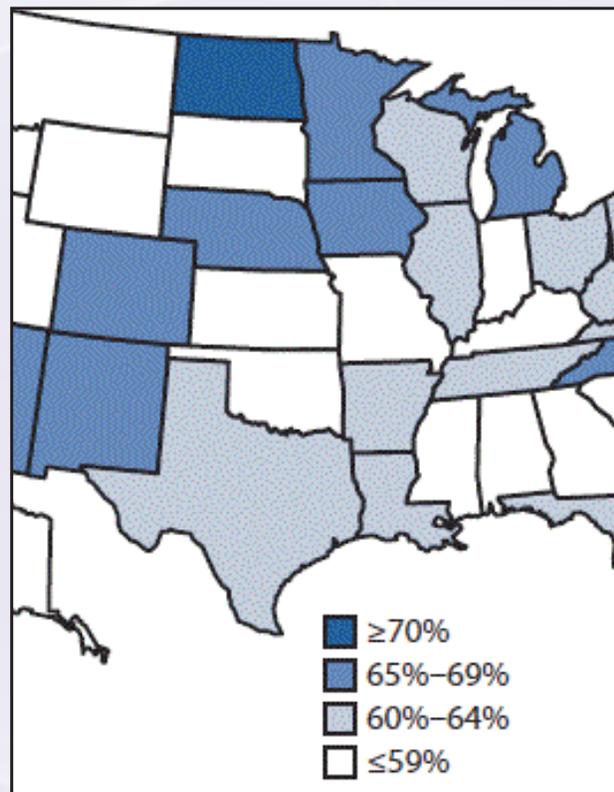
Maria Bell, MD,  
MPH, MBA

Gynecologic Oncology  
Sioux Falls and  
Bismarck

## How is North Dakota doing?



Estimated vaccination coverage with ≥1 dose of HPV vaccine\* among **male adolescents** aged 13–17 years† — National Immunization Survey-Teen, § United States, 2015



Estimated vaccination coverage with ≥1 dose of HPV vaccine\* among **female adolescents** aged 13–17 years† — National Immunization Survey-Teen, § United States, 2015

Outcome goal: ever increasing vaccination use

We are proud to be providers in a state that is leading the nation in this effort. Much credit is also attributed to North Dakota's strong state public health efforts.



## Understand the benefits of a nurse navigator

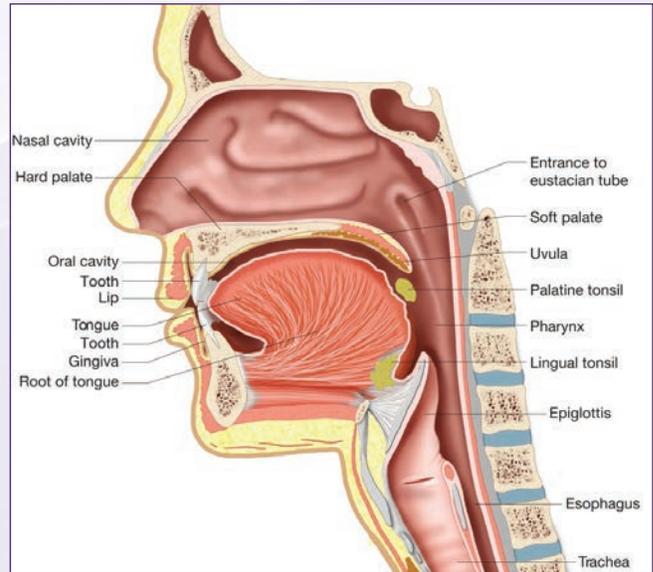
Navigation nursing roles include meeting every new patient diagnosed with head and neck cancer or cervical cancer. The nurse navigator follows the cancer patient from diagnosis to survivorship and beyond. From guiding each patient through our complex health care system to ensuring the patient sees the appropriate interdisciplinary team, a nurse navigator is integral to making a patient feel supported and comfortable, while eliminating any health disparities to ensure timely treatment.

In 2016 the cancer committee studied all 2015 chemotherapy patients who required hospital admission during or after treatment. Patients with head and neck cancer and lymphoma were identified as groups needing more outpatient services. This led to the increased focus for their support through the 2017 clinical process change efforts. The number of navigators and ENT providers increased. Coordination efforts created an increased number of referrals for pre-treatment, on treatment and post-treatment services.

# What are cancers of the head and neck?

Cancers known collectively as head and neck cancers usually begin in the squamous cells that line the moist, mucosal surfaces inside the head and neck. They are divided by site of origin:

- **Oral cavity:** The oral cavity includes the lips, front two-thirds of the tongue, gums, lining inside the cheeks and lips, floor (bottom) of the mouth under the tongue, hard palate (bony top of the mouth), and small area of the gum behind the wisdom teeth.
- **Pharynx:** The pharynx (throat) is a hollow tube about 5 inches long starting behind the nose and leading to the esophagus. It has three parts including the nasopharynx (the upper part of the pharynx, behind the nose); the oropharynx (the middle part of the pharynx, including the soft palate [the back of the mouth], the base of the tongue, and the tonsils); the hypopharynx (the lower part of the pharynx).
- **Larynx:** The larynx, also called the voice box, is a short passageway formed by cartilage just below the pharynx in the neck. The larynx contains the vocal cords. It also has a small piece of tissue, called the epiglottis, which moves to cover the larynx to prevent food from entering the air passages.
- **Paranasal sinuses and nasal cavity:** The paranasal sinuses are small hollow spaces in the bones of the head surrounding the nose. The nasal cavity is the hollow space inside the nose.
- **Salivary glands:** The major salivary glands, which produce saliva, are in the floor of the mouth and near the jawbone.



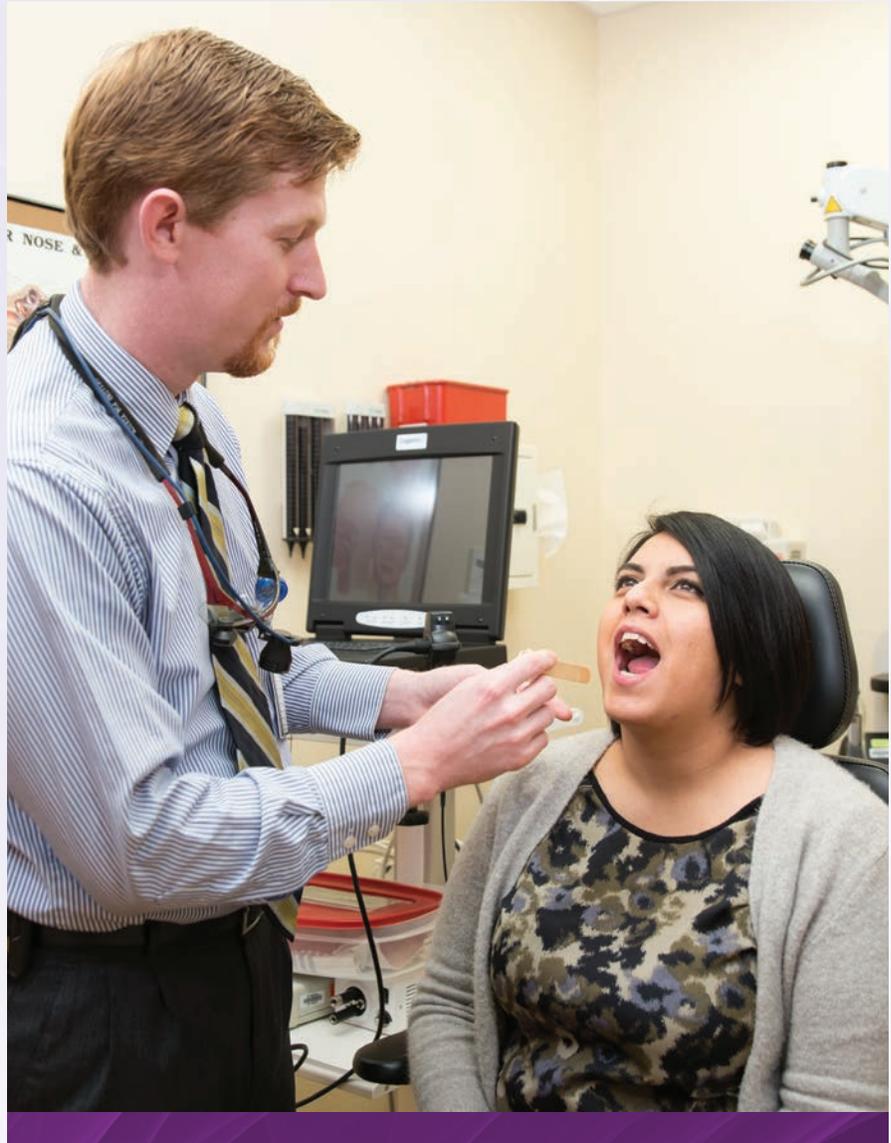
## A few 2017 outcomes at Sanford Bismarck

- An increased number of head and neck cases were brought to tumor conference for both education and planning for all professionals.
- Radical neck dissection procedures were done in Bismarck. These previously had to be referred to Sioux Falls or Mayo.
- Formal Presentation of the Head & Neck portion of the new 2018 Staging Manual for the 23 professionals attending Grand Rounds (11.1.2017 Dr. K. Johnson)
- Services now are provided to change patient's tracheoesophageal voice prosthesis (TEP) (Dr. Charron & ST team).
- Community outreach in October included the Head & Neck Education at U of Mary Cancer Summit and at Spirit Lake. A post-education survey outcome: Of the 42 present, 40 reported enhanced prior education (95 percent), and 41 reported new education (98 percent). Multiple other public education events were done in 2017 on this topic by Sanford Bismarck professionals.

# Head and neck cancer:

## The responsibilities of an ear, nose and throat (ENT) physician

- Scope and biopsy the tissue that appears abnormal
- Order further testing to determine depth/spread of any abnormal tissue
- Determine what is the next best step to eradicate this disease.
  - This may involve the tumor conference team, a group of physicians and support staff who specialize in cancer and meet weekly. As a team, the best steps of treatment are planned. This could also involve our Sanford Fargo ENT team, as not all surgical equipment is kept in Bismarck for cost effectiveness in care.
- Perform or refer patients for the surgical, radiation and/or chemotherapy services, rehabilitation services, and nurse navigational services for timely and successful care.
- Follow up to ensure goals of long-term survivorship and survivorship needs are met.



# Head and neck cancer:

## Radiation oncology's approach

**Kyle Russo, MD**  
**Radiation Oncologist**  
**Bismarck Cancer Center**

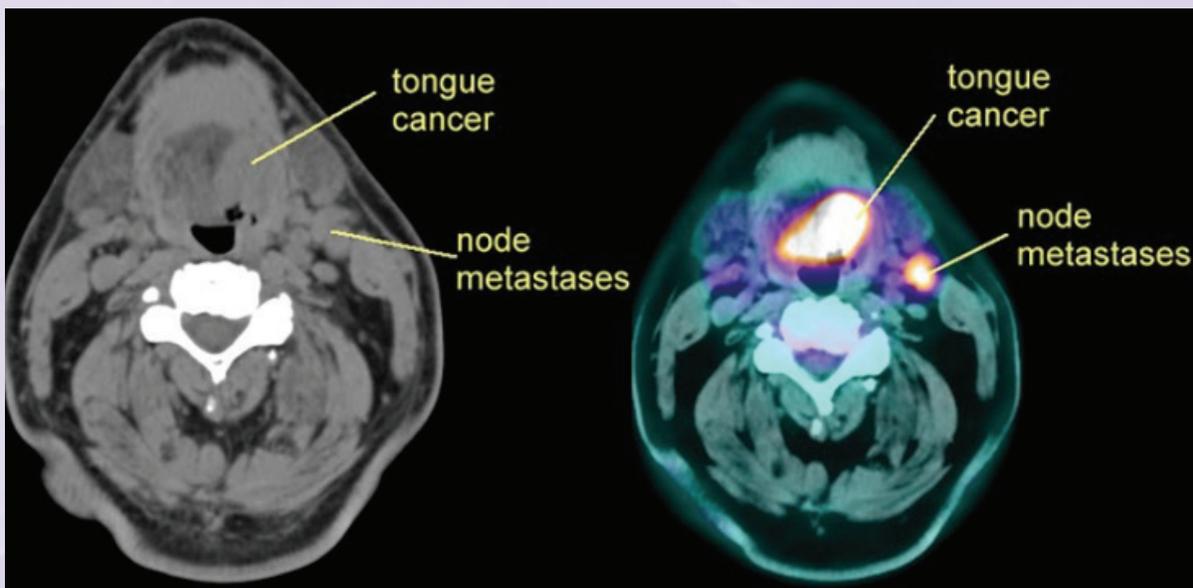
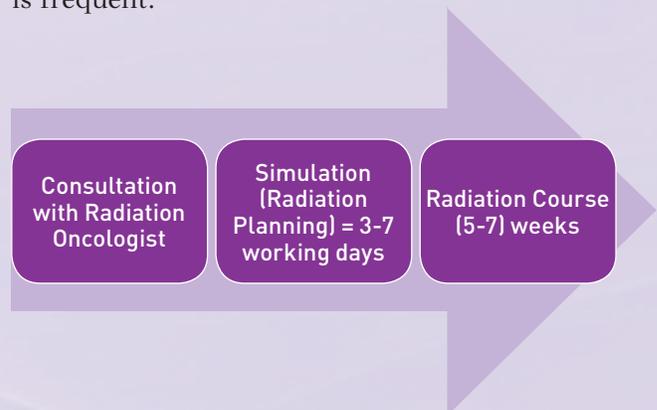
Radiation oncology plays a key role in the treatment of head and neck cancer, as 80-90 percent of patients with head and neck cancer will receive radiation as part of their treatment course.

Radiation oncologists are specially trained in the diagnosis, management and follow up of head and neck cancer. They use special imaging such as positron emission tomography (PET) scans and magnetic resonance imaging (MRI) to target the tumor using radiation.

Patients with head and neck cancer require comprehensive support to get through the side effects of treatment. The Bismarck Cancer Center provides many services to support patients including our cancer dietician, social worker and oncology nursing care.

Nutrition is monitored very closely during treatment, as many head and neck patients experience difficulty eating or getting adequate nutrition.

In addition, radiation oncology regularly addresses the pain management needs of patients undergoing radiation and chemotherapy for head and neck cancer, and the use of pain medicine is frequent.



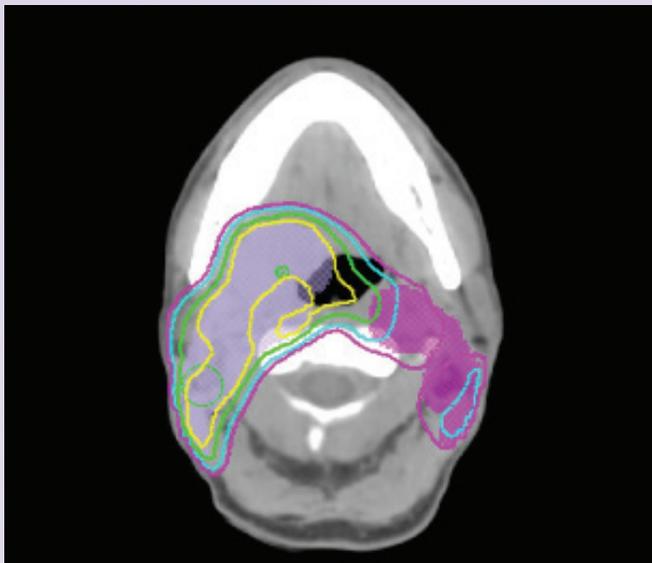
CT Scan

Fused PET/CT



Radiation Machine = Linear Accelerator (LINAC)

- Machine moves in a circle around the patient.
- The machine never touches the patient and remains about 1-2 feet from them.
- Radiation delivery takes about 3 minutes
- The patient will be on the table for about 10-15 minutes total.
- Patients are positioned supine and will therefore need to be able to lay flat for 10-15 minutes
- They will be alone in the treatment room during the majority of the 10-15 minutes but radiation staff can see/hear them using cameras.
- They also have a device they can press should they not be able to vocalize a need for help (laryngectomy, uncapped tracheostomy).



## A typical course of Radiation Therapy

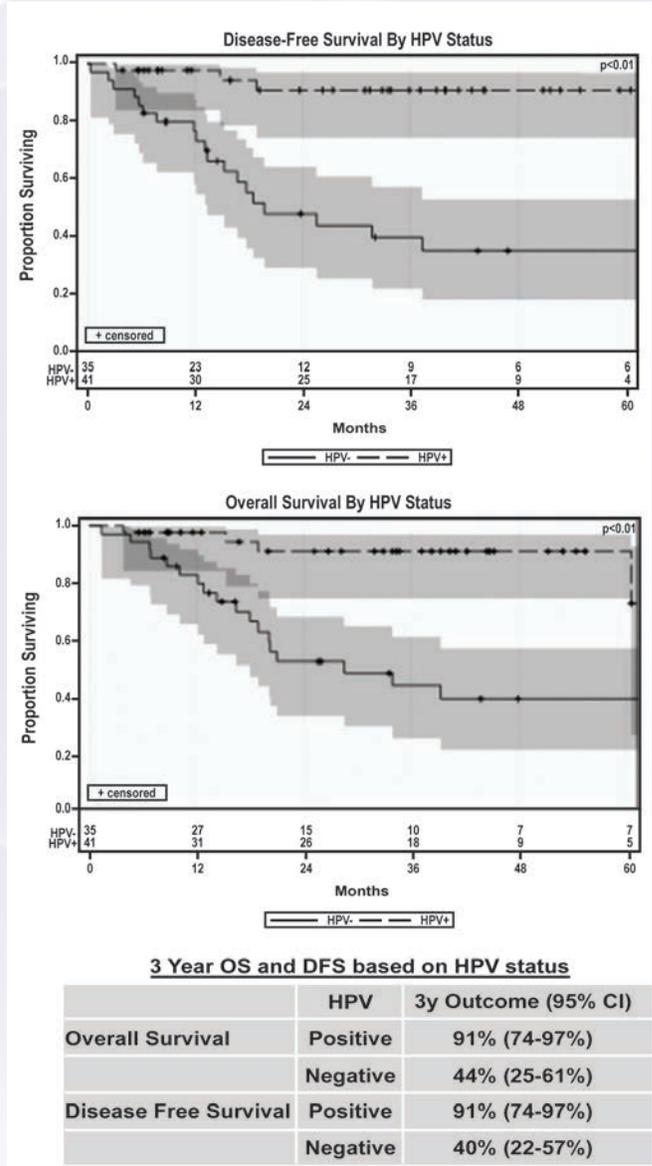
- Patients are treated daily with radiation.
- Treatments are given Monday through Friday with the weekends off. This allows time for the normal tissues to heal.
- A typical course of radiation for head and neck cancer lasts about 7 weeks (35 treatments).
- We use highly-conformal radiation called intensity modulated radiation therapy (IMRT) with volumetric modulated arc therapy (VMAT). This type of treatment ensures radiation is delivered to the tumor, while minimizing radiation to the healthy surrounding tissues and normal parts of the body.
- We also use daily image guided radiation therapy (IGRT) which is when a CT scan is taken just before each treatment. This allows the most precise targeting of the tumor to further minimize radiation exposure to healthy tissue.

The image to the left is a radiation plan for a patient with right tonsil cancer. Notice how the dose is focused on the tumor (light purple), not the healthy tissues.

At the Bismarck Cancer Center, we have vast experiences with head and neck cancer and have collaborated with Sanford Health in Sioux Falls and the University of Iowa to publish our findings at national meetings and peer-reviewed journals.

Our patients have experienced excellent results, particularly with HPV-associated head oropharynx cancer, where they had zero cancer recurrences in a series going back nearly a decade.

Reference published through Bismarck Cancer Center (Dr. Russo).



**Russo J.K.**, Braseth A. Radiation and chemotherapy with no excessive toxicity in a patient with HPV-related tonsil cancer and porphyria cutanea tarda: case report and literature review. *Head and Neck* 2017 Aug. 16.

Morbidity of chemoradiation is HPV positive oropharyngeal cancer. **Russo J.K.**, Miller C, Kraft E. Submitted to Head and Neck Symposium 2017, Scottsdale, AZ.

John M. Watkins, Anthony N. Snow, Sarah L. Mott, Sagar Vishal, Chris Hellekson, Joshua Kaelberer, Jessica Parkhurst, Carryn Anderson, John M. Buatti, **J. Kyle Russo**, Surgically-Managed, Node-Positive (pN+) Oropharyngeal Cancer (OPC): p16-Specific Outcomes and Role of Adjuvant Therapy. Abstract complete, pending submission.

**J. Kyle Russo**, Anthony N. Snow, Andrew Terrell, Sagar J. Vishal, Michael Laszewski, Catherine

Fisher, Bill Liu, Sarah L. Mott, Chris Hellekson, Joshua Kaelberer, Muhammad Furqan, Carryn M. Anderson, John M. Buatti, John M. Watkins, Resected p16+ Oropharyngeal Cancer (OPC) with Nodal Extracapsular Extension (ECE): Is Adjuvant Chemoradiotherapy (CRT) Superior to Radiotherapy (RT) Alone? Poster presentation at the 58th Annual Meeting of the American Society for Radiation Oncology (ASTRO), Boston, MA: 26 Sept 2016.

**J. Kyle Russo, M.D.**, A. Snow, M.D., S. Mott, M.S., M. Laszewski, M.D., A. Hetland, M.D., A. Terrell, M.D., B. Liu, B.S., C. Fisher, M.D., C. M. Anderson, M.D., T. Dufan, M.D., J. Watkins, M.D, All High Risk? Pathologic Extracapsular Extension in the Era of Human Papillomavirus Associated Head/Neck Cancers, Poster Presentation 2106 Multidisciplinary Head and Neck Symposium, Scottsdale, Arizona: 18 Feb 2016

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Sanford Bismarck is accredited by the American College of Surgeons Commission on Cancer (CoC) meeting the quality initiatives: Dr. Russo is our cancer liaison physician.

The CoC measures our quality of care against others regionally and nationally. The Web-based Cancer Program Practice Profile Reports (CP<sup>3</sup>R) offer local providers comparative information to assess adherence to and consideration of standard of care therapies for major cancers. This reporting tool provides a platform from which to promote continuous practice improvement to improve quality of patient care at the local level. It also

permits hospitals to compare their care for these patients relative to that of other providers.

CP<sup>3</sup>R currently reports 23 quality measures covering nine primary sites. The cancer committee discusses the latest CP<sup>3</sup>R data at least annually. Our CP<sup>3</sup>R report on cervical cancer demonstrates a 100 percent compliance with chemotherapy administered to cervical cancer patients who received radiation for stage 1B2 to Stage 4 with positive pelvic nodes, positive surgical margin and/or positive parametrium. These data reports do not cover head and neck cancers. (Based on Oct. 30, 2017 data release).

# Occupational, Physical and Speech therapy services

Tiffany Skor, MOTR/L, CLT  
Karmen Steffan, M.S., CCC/SLP  
and Renee Ward, MA, CCC, SLP  
Savannah Olson, PT, DPT, CLT

Bismarck Sanford Health provides rehabilitation through occupational therapy (OT), physical therapy (PT) and speech therapy (ST) services. We help patients retain or regain as much function as possible throughout their cancer treatment beginning at diagnosis, through treatment and beyond.



Patients may experience pain, weakness, and restricted motion or swelling in their head, neck or shoulder areas because of surgery or other treatments. Side effects from radiation or surgery may also include dry mouth, oral pain and/or difficulty swallowing.

Our three certified lymphedema therapists have specialized training to address scar tissue, fibrosis (tissue hardening) and swelling. Treatment may include manual lymph drainage, fitting of compression garments, elastic taping, self-care and lymphedema risk reduction education, postural exercises and strengthening. Our oncology certified PT can also address orthopedic issues and balance impairments that often present during or after cancer treatments, in addition to establishing an individualized activity plan to help patients regain as much function as possible after treatment.

Other side effects from treatment include changes in swallowing and voice, which can occur immediately after treatment or much later. Our ST department is specifically trained in dysphagia and voice treatment to address all issues patients may have. Some issues with swallowing include coughing or choking with food and liquid, pills or food sticking in the throat and more. This may place patients at risk for aspiration pneumonia. Our experts can work with patients to strengthen the swallow muscles, develop swallow strategies or make diet changes.

Changes in voice may be noticed including hoarseness, pitch changes, needing to strain to produce voice and even difficulty breathing. Patients may benefit from stretching and relaxation of the voice muscles, a vocal hygiene program or vocal cord strengthening exercises.

Most patients with head and neck cancer can benefit from therapy. Here are some common questions to help you identify your own need for rehabilitation:

- Are you experiencing treatment-related pain?
- Did you have any lymph nodes removed during your surgery?
- Does food get stuck when you are eating?
- Do you have scar tissue affecting your ability to turn your head or neck?
- Are you experiencing changes in your voice?
- Do you get fatigued after minimal activity?
- Are you having difficulty regaining motion in your shoulders?

Participation in rehabilitation following a head and neck cancer diagnosis is crucial for patients to achieve optimal performance in their daily life. Bismarck Sanford Health offers the staff, education and resources to support patients completely.

# The medical oncologist's practice

Although eliminating cancer is the primary goal of treatment, preserving the function of the nearby nerves, organs and tissues is also very important. Many cervical and head and neck cancers can be cured, especially if they are found early. Therefore, when planning treatment, doctors consider how treatment might affect a person's quality of life, such as how a person feels, looks, talks, eats and breathes.

Medical oncologists manage any medications needed to shrink a tumor before surgery and help ensure the non-return of a cancer after a surgery. A decade ago, radiotherapy only following surgery was the standard approach to the treatment of advanced resectable disease. Now, there are many more options available to cancer patients.

Chemotherapy, the use of medication to treat cancer, may be incorporated into treatment of cancer. Together, the medical oncologist and patient develop a treatment plan, determining what drug or combination of drugs will be used during treatment.

Targeted therapy, a group of IV and oral drugs, is a newer treatment option targeting the cancer's specific genes, proteins or the tissue environment that contributes to cancer growth and survival. This type of treatment blocks the growth and spread of cancer cells, while limiting damage to healthy cells.

Systemic chemotherapy still has a role especially when combined with radiation. Common ways to give chemotherapy include an intravenous (IV) tube placed into a vein using a needle or in a pill or capsule that is swallowed (orally). A chemotherapy

regimen usually consists of a specific number of cycles given over a set period of time. A patient may receive one drug at a time or combinations of different drugs at the same time.

## Developing a 'Survivorship Care Plan'

Another important time in the oncology office is time spent creating your 'Survivorship Care Plan.' This plan is a compilation of dates, diagnosis and treatment information that is important for you to have and carry for life through your medical cares. The scheduled survivorship clinic visit will help the patient manage long-term issues in wellness post-treatment and include experts in nutrition, social work, and rehabilitation. Curative and quality of life goals can be reached by teamwork.



## Broader options through clinical trials

A medical oncologist may look at your eligibility for participation in any clinical trial. Often, research nurses further explain clinical trials, answering any questions and concerns.

There are many different types of clinical trials for cancer patients. Some trials look at adding supportive medications to your plan, while others may be studying genetic mutations. Some trials may help you very much personally, while others are designed to advance care for all patients with your same diagnosis.

## Outcome 2017

- Every patient's chart with a new diagnosis of head and neck or cervical cancer was reviewed for clinical trial eligibility.
- Survivorship care plans were developed for every cervical and head and neck cancer patient seen in the Sanford Bismarck Medical Oncology office.
- Bismarck Cancer Center patients also receive a survivorship care plan at the end of radiation treatments.



# The role of an oncology dietitian

Jill Henley,  
Sanford Bismarck's  
oncology dietitian

The treatment journey requires a team of specialists helping each cancer patient overcome the many struggles and challenges they face during the day to day. For patients with head and neck cancer, their care often includes an oncology dietitian, and at Sanford Bismarck, cancer patients are meeting with oncology dietitian Jill Henley to find dietary answers.

An oncology dietitian is a registered dietitian who is a board-certified specialist in oncology (CSO), a credential received through the American Dietetic Association. Certification for oncology dietitians are administered by the Commission on Dietetic Registration, and to qualify, CSO candidates must have at least 2,000 hours in practice and pass a national exam.

## Helping head and neck cancer patients

Maintaining adequate food and fluid intake during treatment can be a challenge for head and neck cancer patients. Individuals will often struggle with eating and drinking because of the cancer itself but also from the different cancer treatments. Common nutrition-related side effects of head and neck cancers and its treatments include chewing and swallowing difficulties, taste alteration, dry mouth, thick saliva, nausea and vomiting.

Oncology dietitians play an essential role in helping patients better manage these side effects, maintain weight, reduce fatigue and overcome the challenges that they may encounter during their treatment plan.

Dietitians work closely to develop nutrition goals tailored specifically to meet the needs of the patient. Nutrition goals focus on monitoring weight trends to minimize significant weight loss and provide tips and ideas to aid with minimizing treatment side effects that can negatively impact tolerance to one's treatment. They can also offer strategies for family or caretakers to help patients maintain nutrition for the best treatment outcome.

## Overcoming challenges together

Maintaining adequate food and fluid intake during treatment can help prevent acute medical issues like nausea, vomiting and dehydration, which can result in a hospitalization or delay of treatment.

Because patients can have difficulty chewing and swallowing, sometimes a feeding tube is needed on a short-term basis. Registered

dietitians can calculate energy needs and provide recommendations for support. They educate the patient and family with the use and care of a feeding tube but also aid in setting up formula and supplies for home. Dietitians will provide close monitoring of tube feeding tolerance and can make necessary adjustments as needed.

The idea of using and/or needing a feeding tube can be challenging for patients. However, this option can alleviate the stress of trying to maintain

adequate food and fluid intake, helping patients focus on their cancer treatment. The dietician offers support during this transition.

Once treatment is completed, patients can have residual side effects which can continue to impact nutritional status and quality of life. Registered dietitians provide monitoring not only during treatment, but also after to improve a patient's quality of life.



# From the other side of the chair

Val Cartwright, RN  
Oncology Chemotherapy  
Sanford Infusion Center  
Bismarck

I've been a nurse for 49 years and an oncology chemotherapy nurse for 30 years, but 10 years ago I became the cancer patient.

It started with a sore spot on the side of my tongue, but neither my dentist nor oral surgeon could see or feel anything abnormal. After a year, that sore spot changed to a lump, and it just didn't look normal. The biopsy was positive for squamous cell cancer, so I had surgery to remove the left side of my tongue. One month later, two sore lumps popped up under my chin. They too were positive for cancer. I had to be referred to a center that could do a neck resection. That was followed by 7 weeks of radiation and weekly chemotherapy.

Being a chemotherapy nurse did not lessen the shock of being told, "You have cancer." Just like everyone else, I couldn't believe it. I had never smoked or chewed. How could I have cancer in my mouth!

But because I am a chemo nurse I was terrified. I had taken care of worse case head and neck cancer patients, and I couldn't bear the thought of my family taking care of me through this. Going through treatment was the hardest thing I have ever done. At the worst, I didn't care about anything. I just wanted to lie on my couch. I basically did not eat or talk for a month, and I lost 45 pounds. But I made it! I knew I wasn't dying, but God and I had many talks about curing me and letting me live!

My family, friends and coworkers took amazing care of me and carried me through the bad times. My doctors at the cancer center made me feel like I was their No. 1 patient. Most of all, my experience of being the patient has opened my eyes and made me a more understanding nurse. I still have issues—swallowing is still difficult, and I can't sing anymore, but I am 10 years cancer free, and I thank God for my experience and the gift of life every day.



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