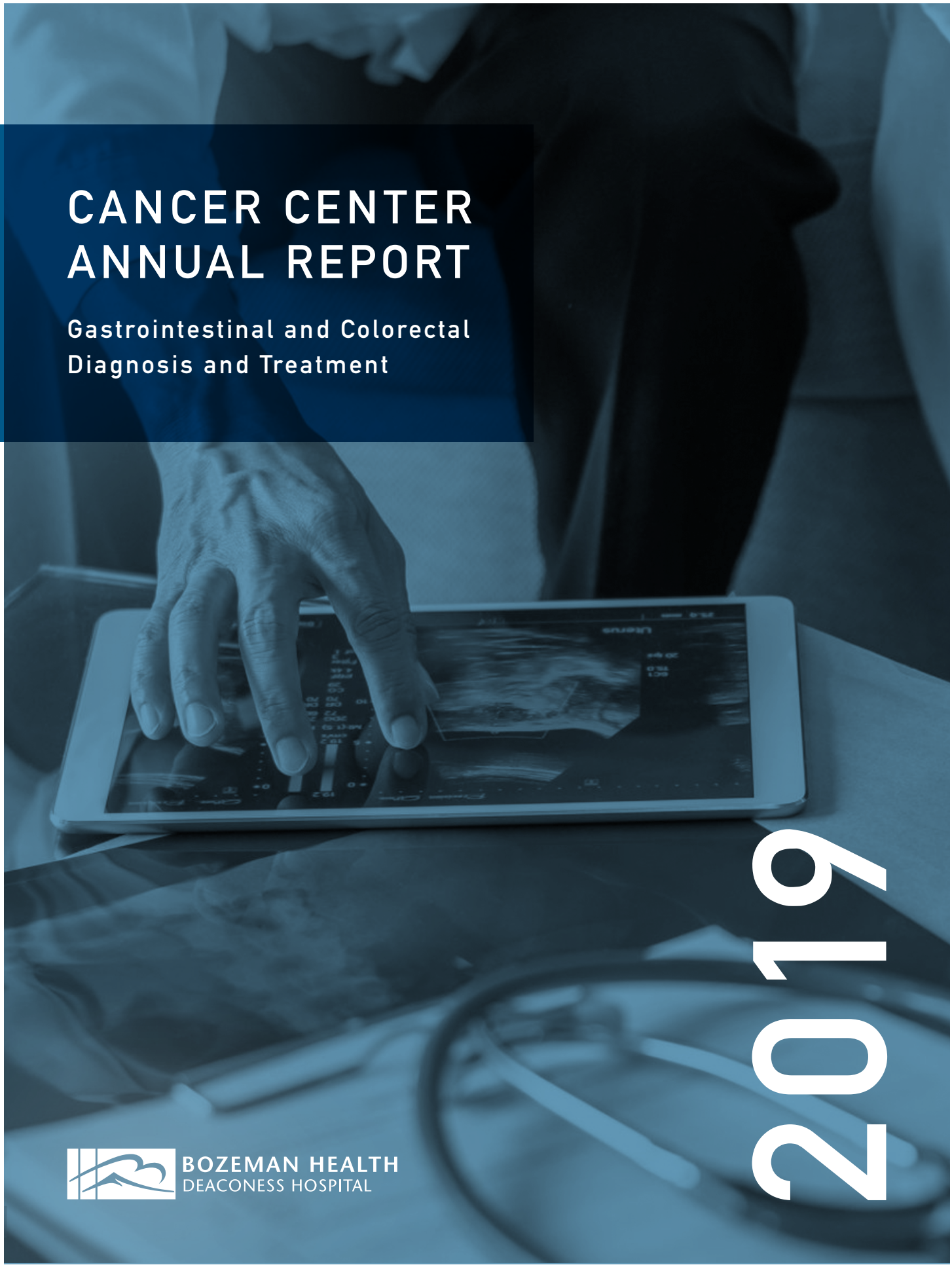

CANCER CENTER ANNUAL REPORT

Gastrointestinal and Colorectal Diagnosis and Treatment

2019

BOZEMAN HEALTH
DEACONESS HOSPITAL

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COLORECTAL CANCER

SCREENINGS HIT THE ROAD

Christopher Coburn

In Montana, colorectal cancer is the third most common type of cancer diagnosed. We know that, as with all cancers, early detection greatly improves survival rates.[1] For several years, Bozeman Health has been working to provide access to free screenings for colorectal cancer to members of our community through our outreach program, HealthCare Connections (HCC).

HealthCare Connections, Bozeman Health's mobile screening program, provides convenient access to free preventive health screenings, immunizations, and services to adults across Southwest Montana. Making around 40 stops per year – spanning from Bozeman to Gardiner, West Yellowstone to Three Forks – HealthCare Connections provides services to anyone in need, regardless of income or health insurance status. Is this way, HealthCare Connections is creating equitable access to high quality preventive screening and services across our region.

One screening offered on HealthCare Connections is a fecal occult blood test (FOBT). While not as reliable as colonoscopies, evidence has shown that take-home FOBT kits are effective at detecting blood in stool – a possible indication of colon cancer. Community members between the ages of 50 and 75 who visit HCC are offered a FOBT kit and given instructions on how to collect a sample and mail it to the lab for analysis. Once test results are processed, they are sent back to the individual at their house along with a letter that describes the results and provides possible next steps – including additional screening, if indicated. To make things easier for folks, HealthCare Connections provides – along with the FOBT kit – a specimen collection hat, gloves, and a pre-addressed and postage paid envelope.

Since 2016, HealthCare Connections has distributed over 750 FOBTs to our community. Of the tests returned and processed by our lab so far, 15 percent have been positive – potentially indicating cancer. Without access to this free screening resource, it's likely many community members would forgo or delay this important screening.

According to the 2017 Community Health Need Assessment (CHNA) conducted in Gallatin, Park and Madison counties, the number of community members who report engaging in appropriate colorectal cancer screening significantly increased between 2011 and 2017. Bozeman Health, and the HealthCare Connections program, are proud to be a part of realizing this success in our community.[2]

1. United States Cancer Statistics: SEER*Stat Database: NPCR and SEER Incidence - U.S. Cancer Statistics Public Use Database, Nov 2017 submission (2001-2015). Created on 9/15/2018

2. Professional Research Consultants. (2017). 2017 Community Health Needs Assessment Report: Gallatin, Madison and Park Counties, Montana.

15%

HAVE BEEN POSITIVE – POTENTIALLY INDICATING CANCER. WITHOUT ACCESS TO THIS FREE SCREENING RESOURCE, ITS LIKELY MANY COMMUNITY MEMBERS WOULD FORGO OR DELAY THIS IMPORTANT SCREENING.

RESEARCH IMPROVES COLON CANCER OUTLOOK

Kenneth May, MD PhD

In recent years, there has been an evolution in understanding of the biological differences between different types of colorectal cancer. Instead of using the "one-size-fits-all" approach of past years, oncologists are now tailoring treatments based on location of colorectal cancer, molecular mutations, and immune sensitivity. Left-sided and right-sided colon tumors can behave differently, and may respond better to specific chemotherapy regimens. Tumors that harbor a KRAS or NRAS mutation may not be sensitive to certain immunotherapies such as cetuximab or panitumumab. Tumors with mutations in BRAF may behave more aggressively compared with other types of colon cancer, and may benefit from intensified chemotherapy or a combination of chemotherapy and targeted therapy. Another important breakthrough from recent research showed that some patients with less risky colon cancer may only require three months of post-surgery chemotherapy, rather than the usual six months. This approach can spare many patients of the chronic side effects of longer courses of chemotherapy, including nerve damage (neuropathy).

[MISMATCH REPAIR DEFICIENCY]:

ONE OF THE BIGGEST BREAKTHROUGHS IN THE PAST FEW YEARS HAS BEEN THE RECOGNITION THAT A SMALL SUBSET OF COLORECTAL CANCERS HAVE A GENETIC DEFECT, CALLED "MISMATCH REPAIR DEFICIENCY" OR "MICROSATELLITE INSTABILITY (MSI)" THAT LEADS TO INCREASED MUTATIONS IN THE CANCER.

One of the biggest breakthroughs in the past few years has been the recognition that a small subset of colorectal cancers have a genetic defect, called "mismatch repair deficiency" or "microsatellite instability (MSI)" that leads to increased mutations in the cancer. This increased number of mutations makes the cancer more recognizable to the immune system. New drugs called checkpoint inhibitor immunotherapies have been developed to boost a patient's immune system to fight cancer. The research leading to the development of these drugs won the 2018 Nobel Prize in Medicine. Colorectal cancer patients with metastatic disease who have this particular genetic mutation pattern can now be treated with immunotherapy, rather than chemotherapy in many cases. Clinical trials are underway in Stage 3 colorectal cancer patients to see if combining chemotherapy with immunotherapy can increase the chance of cure. Given that only a small percentage of patients respond to these immunotherapies, the holy grail of cancer research currently is to learn how to make more patients' cancers sensitive to immune-boosting drugs.

For patients with rectal cancer, the standard-of-care treatment has been pre-surgery chemotherapy plus radiation, followed by surgery, followed by more chemotherapy after surgery. It is often difficult for patients to do more chemotherapy after surgery, and therefore patients now have the option of doing all of their chemotherapy and radiation before surgery, allowing uninterrupted recovery time after surgery. This new approach may also make surgical removal of the tumor easier, and reduce the chance of the rectal cancer spreading to other parts of the body before surgery.

Patients with colorectal cancer can have great hope in the extensive research underway to increase chance of cures and to help patients live longer than ever.

LYNCH SYNDROME

GENETIC TESTING FOR EARLY PREVENTION AND DETECTION

Kari Marley, PA-C

Lynch syndrome is an inherited or hereditary cancer syndrome that increases the risk of certain cancers, especially colorectal cancer. It is also known as hereditary non-polyposis colorectal cancer (HNPCC).

The inherited disorder is caused by a mutation in a mismatch repair gene. All cells replicate, and sometimes mistakes are made, so cells use this mismatch repair gene to correct the mistake. When there is a genetic mutation, or an inherited abnormality within one of the associated mismatch repair genes, the cells are not able to perform their job to repair other cells. Over time, accumulation of these damaged cells can lead to cancer.

Lynch syndrome is the most common inherited disorder that increases the risk of colorectal and endometrial (uterine) cancer. Rates of colorectal cancer can be increased as high as 20-80 percent for individuals that carry the mutation, and they may be diagnosed at a younger age than expected. Not everyone who has Lynch syndrome will develop cancer but it is important to know that their risk is elevated for these and other types of cancers.

Lynch syndrome may also be connected with higher risks for ovarian, pancreatic, stomach, small intestinal, kidney, brain, and skin cancers. Breast and prostate cancer may also be higher for those with this gene sequence, but there is not enough research to make the connection at this time.

Genetic mutations are identified by a DNA blood sample looking at what is called the "germline DNA," or DNA that we are born with. The blood test is sent to a special lab that maps the DNA looking for a genetic change associated with Lynch syndrome. Genetic mutations can also be found in tumors after they are removed in surgery and sent away to be tested for the presence of germline DNA.

Lynch syndrome runs in families. When a genetic mutation is identified and Lynch syndrome is diagnosed, other family members are at increased risk for having the syndrome and developing cancers related to the gene. A person only needs one copy of the abnormal gene to have the increased risk of cancer. This means that first degree family members—parents, siblings, and children—of individuals affected by Lynch syndrome have a 50 percent chance of also carrying the abnormal gene. It is recommended that these other family members be tested.

If a gene for the syndrome is identified, people are advised to have early and regular cancer screenings to identify any cancer as early as possible. Although it is impossible to change our genetic makeup, early prevention and detection can reduce the need for cancer treatment and reduce the risk of death.

WHO SHOULD BE CONSIDERED FOR GENETIC TESTING?

GENETIC COUNSELING AND DISCUSSION OF GENETIC TESTING SHOULD BE CONSIDERED IN INDIVIDUALS THAT:

- Are diagnosed with colorectal or endometrial cancer at age 50 or younger
- Have been diagnosed with two separate Lynch syndrome associated cancers
- Have a family member with a known genetic mutation
- Have a family history of colorectal cancer at an early age (50 or younger) especially in a first degree relative
- Have multiple family members with colorectal cancer
- Have multiple family members with endometrial cancer, especially at early age
- Have a family history of ovarian or pancreatic cancer or other Lynch syndrome cancers

RADIATION THERAPY AND GASTROINTESTINAL MALIGNANCIES

David Koeplin, MD

Gastrointestinal (GI) malignancies are a diverse group of tumors where the three main treatment options-surgery, chemotherapy, and radiation-have differing degrees of importance. The role of the new kid on the block, immunotherapy, is rapidly evolving.

Head and neck cancers

Radiation therapy is often the preferred treatment for these tumors. The advantage of radiation over surgery is to save organs. Rather than surgically removing the tongue or voice box, radiation (often in combination with chemotherapy) often successfully treats these tumors while maintaining the patient's ability to swallow or speak.

ESOPHAGEAL CANCER

The very earliest cancers are successfully treated with surgery alone, sometimes using an endoscope. Unfortunately, these tumors are often advanced when they are diagnosed. In these cases, chemotherapy and radiation are generally used, sometimes followed by surgery. It's not entirely clear if adding surgery to chemotherapy and radiation is beneficial because it is a major operation with a high risk of death.

SMALL BOWEL CANCERS

These are rare and are primarily treated with surgery.

[IMMUNOTHERAPY]:

TREATMENT DESIGNED TO PRODUCE IMMUNITY TO A DISEASE OR ENHANCE THE RESISTANCE OF THE IMMUNE SYSTEM TO AN ACTIVE DISEASE PROCESS, AS CANCER.

PANCREATIC CANCER

Surgery is the most important aspect of treatment for pancreatic cancer. At diagnosis, various imaging techniques are used to determine if the tumor is resectable, or removable by surgery. Often, these tumors are not removed because of critical vessel structures for blood and lymph fluid. If the tumor is considered borderline resectable, treatment, usually chemotherapy, is often given first to shrink the tumor and ideally make it easier to remove. Using radiation to treat pancreatic cancer is declining, as several studies have not shown a clear advantage to using it. This may be due to the radiation-resistance of pancreatic cells. Another factor is that the pancreas is surrounded by the stomach and small intestine, which limits the dose of radiation that can be used. A promising area of treatment in pancreatic cancer that isn't treatable with surgery, is the use of stereotactic body radiotherapy (SBRT) which involves fewer, more targeted radiation treatments given at higher doses.

LIVER AND BILE DUCT CANCERS

Surgery is the common treatment for these cancers. Radiation may be added if the tumor pathology indicates a high risk of recurrence. The liver is a frequent site of metastases for tumors of various origins. For patients with a limited number of metastases (oligometastases), aggressively treating the metastatic lesions with either surgery, SBRT, or other removal therapies has been shown to improve the length of life in suitably selected patients.

TUMORS OF THE APPENDIX

These are often discovered incidentally when a patient presents with abdominal pain and is thought to have appendicitis. Surgery alone is generally all that is needed for these tumors.

COLON CANCER

Surgery is the most important treatment for cancer of the colon. Chemotherapy is added for more advanced cases. Radiation is rarely used and is limited to situations where the tumor has grown into neighboring tissue or organs, and is not easily removed through surgery.

The best way to prevent colon cancer is with routine colonoscopies where polyps can be removed before they become cancerous. It is recommended to begin routine colonoscopies at age 50. However, patients with a family history of colon cancer are advised to starting screening 10 years before the age at which their family member was diagnosed.

RECTAL CANCER

Radiation, surgery, and chemotherapy are all very important in the treatment of most rectal cancer. An important consideration in the treatment of rectal cancer is how to determine how far above the anal sphincter the tumor is. For tumors that are close to the anal sphincter, the necessary surgery may involve removing the anus, requiring a colostomy. In these situations, radiation and chemotherapy are often given before surgery to shrink the tumor and save the sphincter. In some cases, even with shrinking the tumor, the sphincter cannot be saved. There is a growing body of evidence that if a patient has a good outcome with pre-surgery chemoradiation, it is not necessary to move on immediately to surgery, but rather to keep a close watch on the tissue. The risk of recurrence and death is higher with this approach, but for some patients they are willing to accept this risk if it means they can avoid a colostomy. A thorough discussion with the patient is extremely important before going this route.

ANAL CANCER

Similar to cancers of the head and neck, anal cancer is generally treated successfully without surgery. Radiation alone or radiation with chemotherapy is generally used. This is a difficult treatment to get patients through, but the success rates are high and surgeries requiring a colostomy are generally avoided.

At Bozeman Health Cancer Center we offer genetic counseling and testing for women with ovarian cancer or with a family history of ovarian cancer.

COLORECTAL CANCER AND PSYCHOSOCIAL HEALTH

Becky Franks

The physical and psychological challenges that face those diagnosed with colorectal cancer (CRC) span further than some other cancer diagnoses.

Due to improved treatment and adequate screening, the mortality rate due to colorectal cancer has decreased by 30% since January of 2013. Although this is a great move forward, treatment side effects remain an ongoing challenge for CRC survivors. Long-term effects can persist beyond treatment and include fatigue, sleep difficulty, fear of recurrence, anxiety, depression, negative body image, sensory neuropathy, gastrointestinal problems, urinary incontinence, and sexual dysfunction. There are skills and services available to help reduce these symptoms and improve the ability to manage them as well.

Cancer Support Community offers a cancer support group that assists survivors to connect with others that share a similar experience throughout their cancer journey. Through support group, participants are able to connect with others dealing with similar life issues, which has been proven to decrease symptoms associated with anxiety and depression as well as to reduce isolation. This is also available for Caregivers through the Friends & Family Support Group.

Cancer Support Community also offers a multi-week educational series called Take Charge, that aims to assist participants in navigating life during and after treatment. Take Charge focuses on topics such as nutrition, exercise, sex & intimacy issues, anxiety reduction and managing post treatment side effects. The goal of Take Charge is to incorporate and educate cancer survivors about transition to long-term survivorship, and what life may look like once treatment is completed.

Research has also shown that symptoms associated with the anxiety and depression that participants have reported are lessened through the utilization and access to one on one counseling. Participants are able to schedule an appointment with a Licensed Clinical Social Worker, free of charge, in order to address any psychological difficulties that may be present. This counselor is also able to utilize a virtual platform in order to reach survivors that are unable to join programs or counseling in person.

THE PARTNERSHIP OF CANCER SUPPORT COMMUNITY WITH BOZEMAN HEALTH CANCER CENTER ASSURES THAT PEOPLE ARE PROVIDED PATIENT-CENTERED CARE, COMPLETE WITH COMPREHENSIVE PROGRAMMING THAT ADDRESSES THE PHYSICAL AND EMOTIONAL ISSUES RELATED TO A DIAGNOSIS OF CANCER.

FOR MORE INFORMATION GO TO:
WWW.CANCERSUPPORTMONTANA.ORG

COLON CANCER

PREVENTION AND DETECTION

Dr. Andrew Gentry

As noted in colorectal cancer statistics, 2017: Colorectal cancer (CRC) is the third most commonly diagnosed cancer among both men and women in the United States. Incidence and mortality rates have been declining for several decades because of historical changes in risk factors, the introduction and dissemination of screening tests, and improvements in treatment. We will focus on the changing epidemiology, treatments, and screening tests.

The colon is comprised of 6 segments: rectum, sigmoid, ascending, transverse, descending, and cecum. Colon cancer is most commonly found in segments closest to anus: rectum, sigmoid, and descending colon. This is important because there is an increasing incidence of colon cancer in people under the age of 50 with an increasing incidence toward the rectum (figure 1,2). This is important as the treatment for rectal cancer is more complex and difficult than in other locations.

Rectal cancer usually requires the combination of radiation and chemotherapy prior to surgical resection. The surgical treatment for rectal cancer usually includes a temporary colostomy bag to allow proper healing and eventual goal of "take down" of bag and reattaching the colon to the remaining rectum and anus.

Other segments of the colon, when cancer is discovered, usually proceed directly to surgery with a 3-5 day admission and surgical specimen staging. If surgical specimen is negative for lymph nodes, no further therapy is needed. However, if lymph nodes are positive on surgical specimen, then the patient will proceed with chemotherapy.

With modern directed chemotherapy and radiation machines, the treatment is tolerated much better than most other chemotherapy regimens and 5 year success rates for early detection and treatment are over 70% with a steady increase in survival over the past 40 years (figure 3).

Testing for colon cancer is designated into two different categories, the first of which is prevention or the goal of preventing cancer prior to its occurrence. The second is detection or the goal of detecting colon cancer early prior to its spread. The pathophysiology of progression to colon cancer from normal colon tissue usually takes about 12 years starting with tubular adenomas which progress over the years to tubulovillous adenomas, then villous adenomas, followed by villous adenomas with high grade dysplasia, then cancer. Evaluating the colon with colonoscopy and cutting out precancerous lesions or polyps while only adenomas reduces the risk of colon cancer and is the driving factor to decreasing rates of colon cancer in older groups (figure 3) and overall decrease in mortality (figure 4). The other options of testing for colon cancer is detection, which usually requires a stool study for blood or the evaluation of stool for DNA fragments associated with colon cancer. These stool tests are easily done at home and do not require any preparation, missed work, or sedation. Unfortunately, no test is perfect and if there is a positive test for blood or cancer DNA, a colonoscopy is required to confirm the existence of the cancer and mark its location.

National guidelines, supported by multiple professional societies place testing for colon cancer in a tiered process (figure 5). The first tier contains one prevention option and one detection option.

The multiservice task force also highlights the quality measures colonoscopy and include detection and removal those precancerous polyps in over 20% of females and 30% of males undergoing cancer prevention colonoscopy. There is also a measure for complete colonoscopy evaluation to the cecum of over 95%. At Bozeman Health Gastroenterology our polyp detection rate is over 40% and complete colon evaluation rate is over 99%.

Figure 1

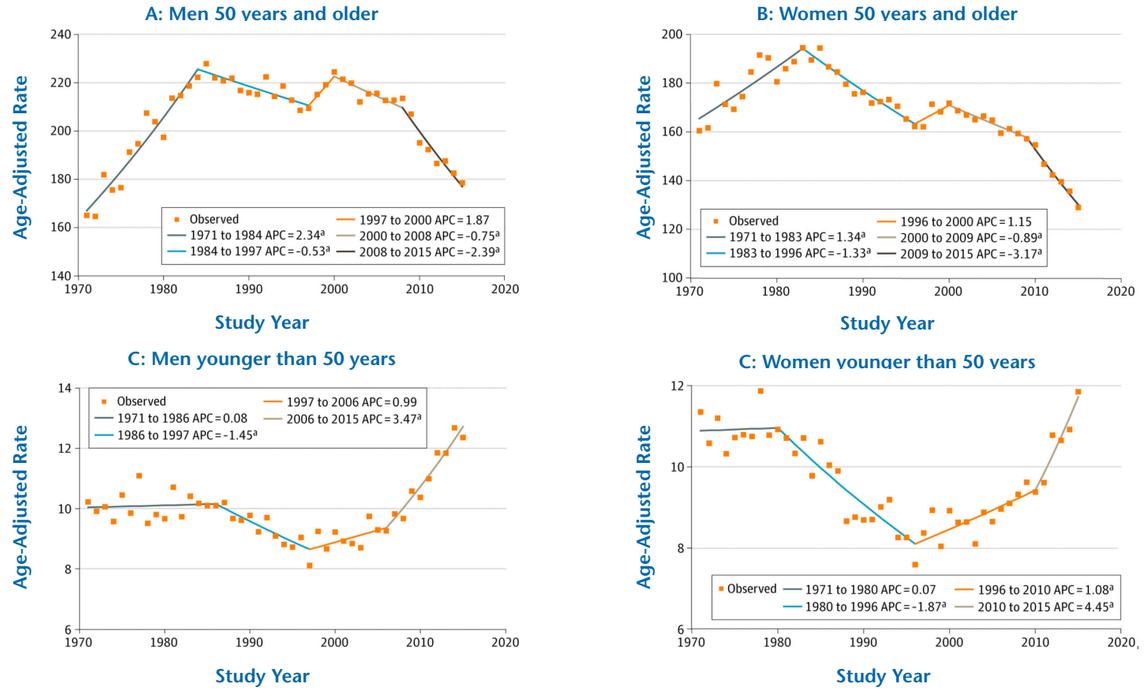

Figure 2

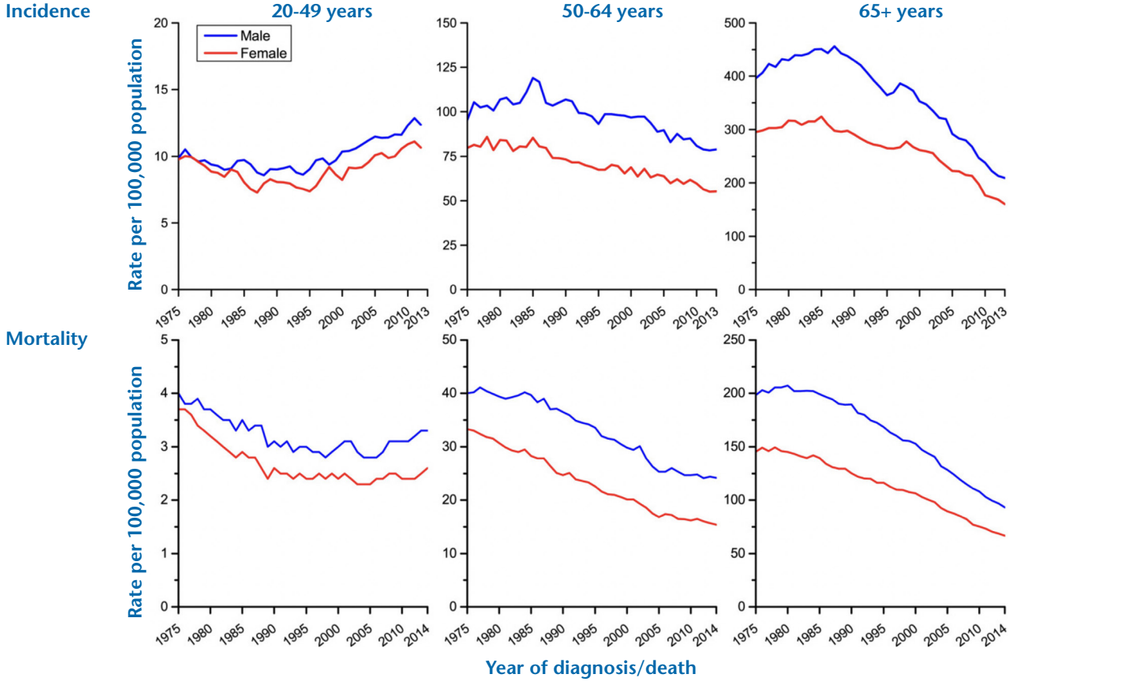

Figure 3

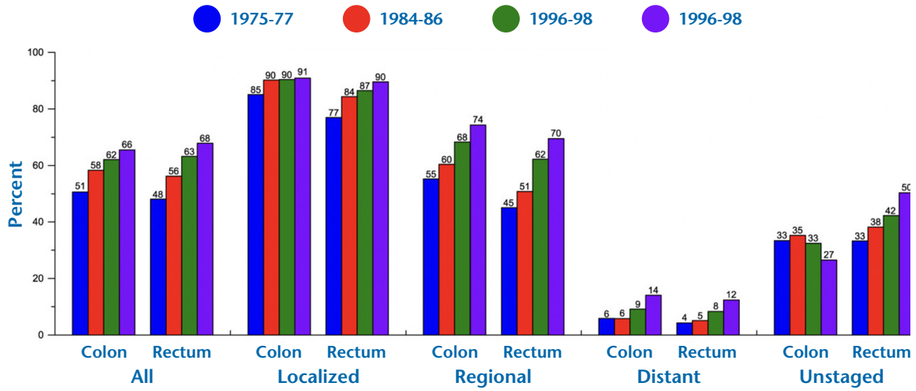

Figure 4

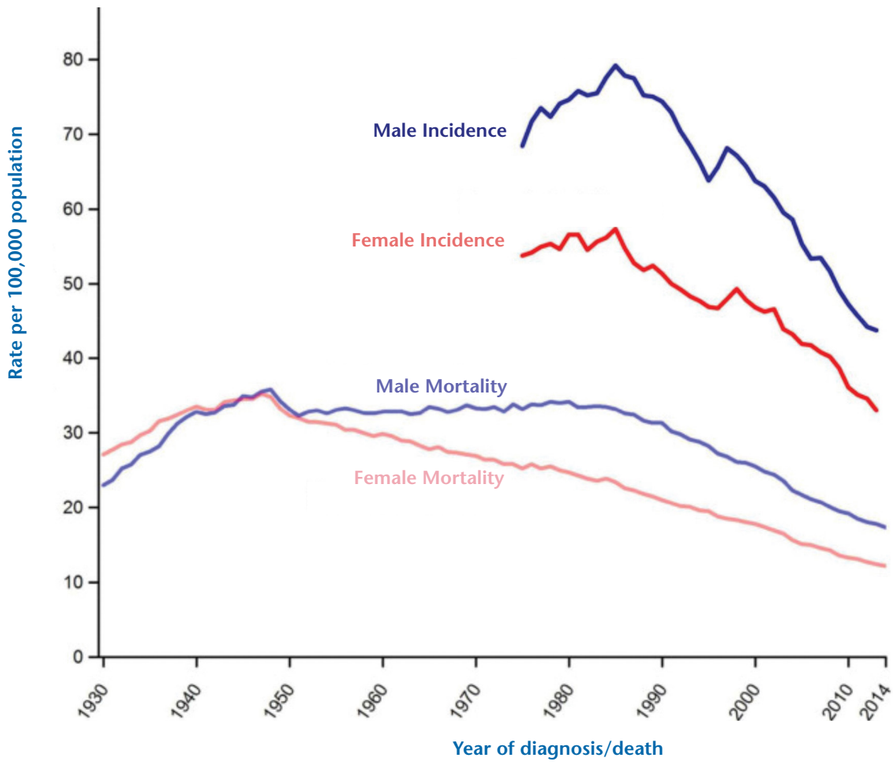

Figure 5

Table 4. Multi Society Task Force Ranking of current Colorectal Cancer screening tests

Tier 1:

Colonoscopy every 10 years

Tier 2:

CT colonography every 5 years
FIT-fecal DNA every 3 years
Flexible sigmoidoscopy every 10 years (or every 5 years)

Tier 3:

Capsule colonoscopy every 5 years
Available tests not currently recommended
Septin 9

NUTRITION INTERVENTION

Rebecca Cawood, RD, LN

Studies suggest that early nutrition intervention during cancer treatment is associated with fewer side effects, fewer hospitalizations, and better quality of life. In patients with colorectal cancer (CRC), nutrition treatment plans are targeted at reducing the risk of malnutrition from common side effects including mucositis, diarrhea, nausea, vomiting, and fatigue which influence poor appetite and unintentional weight loss.

After surgery, a person will eventually be able eat most foods, but initially should start out with a low fiber diet (less 20 grams of fiber per day) to allow the body to adjust and recover. In order to support recovery, patients should stay adequately hydrated, follow a small, frequent meal schedule, and include a high-protein food at each meal or snack. Four to six weeks after surgery, food choices can gradually be eased into the diet as tolerated by the individual. Eventually, a high fiber diet will help to promote bowel health and reduce risk of complications and recurrence. Special care should be taken for patients with small bowel resections, ostomies, and ileac pouches to monitor for fluid and electrolyte loss.

A balanced, nutrient dense diet is recommended for CRC survivors. A registered dietitian (RD) can assist patients in creating a long term eating plan that reduces amounts of fatty meat, processed meats, and refined carbohydrates. The ideal diet has a variety of fruits and vegetables, lean proteins, legumes, and whole grains. Patients can also be assessed for additional nutrient needs such as calcium, vitamin D, vitamin B12, and folic acid. Patients of the Bozeman Health Cancer Center are able to work one-on-one with a RD to create a specific diet based on their individual needs.

PELVIC REHABILITATION
FOR GI AND COLORECTAL CANCERS

Morgan York-Singer, PT, DPT, PRPC

Surgical, chemotherapy and radiation treatment for colorectal and GI related cancers can have obvious effects on a patient's bowel, urinary, integumentary (skin) and sexual/reproductive systems, which can greatly alter their quality of life. Pelvic health physical therapy is a specialty of physical therapy (PT) in which the practitioner has enhanced training specifically in the neuromusculoskeletal components of the abdominal, pelvic and respiratory regions in regards to their impact on the aforementioned systems and overall core strength and conditioning.

SYMPTOMS THAT CAN BENEFIT FROM PELVIC HEALTH PT EVALUATION AND TREATMENT

- Bowel issues – constipation, pain or difficulty with defecation, diarrhea, increased urgency and fecal incontinence or leakage.
- Urinary issues – urinary urgency and/or frequency, urinary incontinence (urge, stress or mixed), urinary hesitancy, pain with voiding, nocturia (increased nighttime voiding), and dysuria
- Sexual and reproductive issues – pelvic pain with intercourse, hormonal changes to pelvic tissues, adhesions/scarring, erectile dysfunction.
- Post-operative scar adhesions
- Core strength and weakness
- Back, sacroiliac (SI) and hip pain
- Generalized deconditioning and fatigue

Pelvic PT is based on evaluation of each of the patient's needs creating an individualized plan of care that may include therapeutic exercise, neuromuscular re-education for motor retraining, manual therapy techniques, and patient education including behavioral changes. At Bozeman Health Rehabilitation Services, a real time ultrasound machine can give real time visual feedback of the inner core musculature which can be quite beneficial for motor retraining and strengthening.

LYMPHEDEMA

Anna Buckmaster, PT, DPT, CLT

Lymphedema is a buildup of lymphatic fluid that results in chronic swelling in the limbs and/or torso. For colorectal patients, buildup is usually in the torso or legs. This can be a result of surgery, chemotherapy and/or radiation. The risk of developing lymphedema increases based on the number of lymph nodes removed, obesity, and other underlying health issues.

Early stages of lymphedema include aching or heaviness in the arms, legs, or torso, usually at the end of the day. In some cases, swelling may be visible. More advanced stages of lymphedema have constant swelling and the skin starts to tighten or become firm.

Treatment is provided by a certified lymphedema therapist (CLT) and includes manual lymphatic drainage (specialized massage), compression, exercise, and skin care. Manual lymphatic drainage is sometimes done with a home compression pump.

The earlier this condition is recognized, the easier it is to treat. Patients at risk for lymphedema due to their cancer treatments should be educated and screened early to reduce a possible negative impact on quality of life.

MANUAL THERAPY IS A SPECIALIZED MASSAGE TO HELP MOVE AND DISTRIBUTE LYMPHATIC FLUID.

COLON AND RECTAL CANCER

Byron Wright, MD

Cancer of the Colon and Rectum, or Colorectal Cancer (CRC), is a common malignancy that most typically occurs later in life with the majority of cases being diagnosed in both men and women after the age of 50. Despite the increased risk later in life, CRC is a cancer that continues to occur with some regularity in younger patients in their 40s and occasionally even their 30s. Although CRC remains a common cancer, the overall incidence has decreased significantly as screening efforts aimed at prevention and/or early detection and eradication have been hugely successful. There are approximately 135,000 new cases diagnosed annually accounting for roughly 50,000 annual, or 8%, of all cancer related deaths in the US. Current public health efforts and recommendations consist primarily of efforts geared towards raising public awareness in hopes of increasing compliance with screening recommendations for endoscopic screening beginning at age 50 and every 10 years thereafter at a minimum depending on initial findings and anticipated risk. Known relevant family history or underlying potentially inherited cancer syndrome can mandate initial screening at an earlier age and/or with greater frequency thereafter.

RISK FACTORS

Although many, indeed most, patients with newly diagnosed CRC will have no easily identifiable particular risk factor for the disease, there are several well established risk factors that merit awareness.

Age: Advancing age substantially increases the risk of developing CRC. Overall risk rises rapidly after age 50 with over 90% of new cases being diagnosed after this age and increasing further as age advances. The incidence of CRC after age 60 is 50-fold higher than for people less than age 40.

Diet: Possible dietary factors have been the subject of intense study in relation to the development of CRC. For example, diets high in the consumption of red meats, processed meats, and animal fat correlate with a greater incidence of CRC. Conversely, diets high in natural fiber, fruits and vegetables, folate, calcium, and certain vitamins all seem to correlate with a less frequent occurrence of CRC.

Smoking: Most studies have concluded that long term cigarette use promotes premalignant polyp growth, the overall incidence of CRC, and also promotes the occurrence of CRC at an earlier age.

Hereditary CRC Syndromes: The majority of Colon and Rectal Cancers occur sporadically without substantial family history or any identifiable genetic contribution. True hereditary conditions account for less than 10% of all CRC. The 2 most common and easily identifiable contributing syndromes are Lynch Syndrome (Hereditary Nonpolyposis Coli), accounting for as high as 5% of all CRC, with roughly 80% of affected patients developing CRC by the 5th decade of life, and Familial Adenomatous Polyposis (FAP) with patients predictably developing hundreds to thousands of premalignant polyps throughout the colon and a lifetime risk of CRC that approaches 100%.

SCREENING RECOMMENDATIONS:

Recognition that the majority of invasive colon cancers arise from pre-existing polyps in a fairly predictable stepwise fashion has formed the basis for, and the tremendous success of, early widespread endoscopic screening geared towards early recognition and removal of premalignant polyps before they have the chance to develop into invasive cancers. For average risk patients, screening is recommended beginning at age 50 and generally continued every 5 to 10 years thereafter depending on risk and methodology. The most commonly used screening methods are briefly described below:

Colonoscopy: The gold standard for widespread screening, Colonoscopy has been deemed cost effective at a 10-year interval in average risk patients beginning at age 50. Polyp clearance is the goal as well as stratification of future risk and screening frequency in patients with positive findings. The disadvantages of this screening method are the need for IV sedation/anesthesia as well as a somewhat morbid bowel preparation ahead of the procedure.

Double Contrast Barium Enema (DCBE): Contrast enema can be a useful alternative to colonoscopy in patients that are not good candidates for the sedation required with colonoscopy or that have a failed colonoscopy secondary to technical concerns. This study should be performed every 5 years.

Computed Tomography Colonoscopy (CTC): Commonly referred to as virtual colonoscopy, CTC has proven effective in the detection of polyps 10mm or larger. It has the advantage of being a non-invasive study but is labor intensive from the standpoint of the interpreting radiologist and requires follow up Colonoscopy for any positive findings. Recommended frequency is every 5 years.

Other less commonly used methods include Flexible Sigmoidoscopy, Annual Fecal Occult Blood stool testing, and also Annual Fecal Immunochemical stool testing.

SYMPTOMS, DIAGNOSIS AND STAGING:

Although many newly diagnosed cases of CRC are discovered during screening colonoscopy in a truly asymptomatic patient, a preponderance of new cases are diagnosed in the work up and investigation of a variety of resultant symptoms. Commonly reported symptoms include unexplained abdominal pain and cramping, anemia, bloody stools, change in bowel habits, unexplained weight loss and fatigue as well as a broader variety of complaints that might arise in the setting of symptomatic metastatic disease as the presenting manifestation of a previously unknown colon cancer. For example, a patient with lung metastasis might present with shortness of breath as the initial symptom that leads to the discovery of their cancer.

The overwhelming majority of newly diagnosed colon cancers are diagnosed via Lower Endoscopy or Colonoscopy. Tissue biopsies are easily obtained during colonoscopy with a reasonably low complication rate. The vast majority of colon cancers are adenocarcinomas that take on a fairly typical, ulcerated, highly irregular appearance arising from the inner most lining (mucosa) of the colon.

Staging of CRC follows a pattern typical of most GI malignancies whereby tumors localized to the area of origin are referred to as either Stage I or Stage II, depending, in the case of Colon and Rectal Cancers, on how far through the wall of the bowel the tumor has penetrated or grown. Tumors that have spread to the regional lymph nodes of the involved segment of bowel are referred to as Stage III tumors and cancers that have spread to any distant metastatic site (liver, lung, etc) are considered Stage IV CRC. These are important distinctions, not only in terms of ultimate cancer outcome, but also in terms of treatment strategy and planning. In most instances, after initial diagnosis with Endoscopic biopsy, patients undergo Computed Tomography (CT) of the chest, abdomen and pelvis to help establish the extent of local regional diseases and to rule out distant metastatic disease to other sites, such as the liver or lungs.

SURGERY FOR COLON AND RECTAL CANCER

For the overwhelming majority of patients with newly diagnosed Colon Cancer, Surgery will be the first treatment they undergo in the management of their cancer. The goal of the operation is to adequately clear the tumor for full therapeutic effect, safely reestablish intestinal continuity, and provide adequate tissue for final pathologic staging of the tumor itself, allowing for proper determination of postoperative treatment options and expected prognostic outcome. The extent of resection depends in large part on location of the tumor in the colon, the size and extent of the tumor and, to some degree, the manner of presentation. Generally speaking, however, a segment of the colon is removed, leaving enough of the colon behind to have fairly normal colonic function.

Tumors located in the rectum are approached differently than elsewhere in the colon based on the narrow confines of the pelvis, the often advanced growth of disease by the time the diagnosis is made and the inability of the surgeon to clear out wide areas of tissue in this anatomic location. For this reason, the majority of patients newly diagnosed with rectal cancer undergo chemotherapy and radiation initially to shrink and minimize the tumor, followed by surgery to remove the area, and then often receive additional chemotherapy after recovering from that.

Over the past 2 decades, the surgical approach to the removal of Colon and Rectal Cancers has transitioned from one where virtually all the cases were done through standard big incision approaches (Open Surgery) to the current practice of utilizing minimally invasive surgical approaches (either Laparoscopic or Robotic) to remove the involved segment of the colon or rectum. Although these approaches need to be applied selectively, and are not necessarily appropriate for every patient, they have helped to shorten hospital and recovery times, and have improved other aspects of care for large numbers of patients as well. Currently at Bozeman Deaconess Health, the majority of Newly Diagnosed cases of CRC are treated operatively with a Minimally Invasive Approach.

BOZEMAN HEALTH
DEACONESS HOSPITAL

CANCER CENTER

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