Cheyenne Regional
Cancer Services

CANCER PROGRAM ANNUAL REPORT

2012-2013

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Introducing Dr. Alana Workman

Hematology/Oncology

- Fellowship: Montefiore Medical Center – Bronx, NY
- Residency: Lincoln Medical & Mental Health Center – Bronx, NY
- Medical School: University of the West Indies – Cave Hill, Barbados

The Power of Words

The walls of our new cancer center include quotes about perseverance, hope and finding the best in life. It is our hope that these words will inspire and encourage those fighting the battle against cancer and will also lift up the medical providers who care for our patients. We included the quotes because we understand firsthand how powerful the right words spoken at the right time can be. Our providers are often encouraged and inspired by the words they hear from patients and their family members.

Message from the Chair

Jeffrey C. Carlton, MD

The Cheyenne Regional Medical Center Cancer Committee and the CRMC Cancer Registry staff are excited to present the 2013 Cancer Program Annual Report. We hope that this report will illustrate the excellent care that cancer patients receive in our medical system and demonstrate our continued commitment to quality improvement and program development. We have completed our third year as the only cancer program in Wyoming to be accredited by the American College of Surgeons Commission on Cancer (ACoS CoC), the organization responsible for reviewing, inspecting and accrediting the majority of cancer programs around the country. The accreditation standards continue to guide our program toward rigorous data collection and review, quality improvement efforts, educational opportunities, collaborative multidisciplinary care and patient focused program development.

Through the efforts of our Certified Tumor Registrars (CTR), Shawn Bonner and Barb Weiss, our Cancer Registry has rigorously accrued data for the 2,194 patients diagnosed with cancer from 2008 through 2012. This data has been submitted to the National Cancer Data Base (NCDB) for comparison to the experience of cancer programs around the country, so that we may evaluate areas of our cancer program's performance and identify opportunities for improvement. Our data is carefully reviewed for errors and inconsistencies upon submission to the NCDB, and it is a credit to Ms. Bonner and Ms. Weiss that the accuracy and quality of our data is always deemed the highest.

The cancer committee continues to conduct monthly Cancer Conferences where at least 10 percent of newly diagnosed cancer cases are presented to a multidisciplinary audience for discussion and for treatment recommendations. I am very pleased with the presentations of patient information by our pathologists and radiologists and with the high level of discussions pursued by the always engaged group of physicians in attendance. We review treatment guidelines from the National Comprehensive Cancer Network (NCCN) website for each case presented to direct our management recommendations. The committee also conducts a retrospective review of a random 10 percent of patients treated in the previous year to evaluate whether the treatment provided conformed to NCCN guidelines. The audit for 2012 included 44 patients, all of whom received treatment consistent with the guidelines.

The past year has witnessed the development of multiple programs to benefit cancer patient care at CRMC. The list is too long to be comprehensively presented here but includes: (1) a new Cancer Rehabilitation Program with Cheyenne Regional Fitness Center to provide exercise programs tailored to manage treatment related fatigue; (2) a low-dose CT lung cancer screening program to detect early curable lung cancer in patients with risk factors; (3) further development of the clinical trials program under the direction of Jennifer Van Horn, RN, MSN, AOCNS, and Dr. Mohamed El-Tarabily; (4) a lymphedema management program under the direction of Amber Carroll, PT, to prevent and treat arm swelling in breast cancer patients; and (5) construction of the new comprehensive cancer center scheduled to open in early 2014.

As always, the entire cancer committee and I appreciate the hard work, wisdom and leadership provided by Tamela Thiede, RTR, CCS, CCS-P, the Oncology Service Line Director, and by our Cancer Registrars, Ms. Bonner and Ms. Weiss. These ladies continue to guide our accreditation process and help us plan for the "big picture" of regional cancer care while keeping us focused on the always most important "little picture" of providing the highest quality care with compassion for the patient sitting in front of us at the moment.

Jeffrey C. Carlton, MD
Chair, Radiation Oncology

CANCER **COMMITTEE 2012**

Name	Role
Jeffrey C. Carlton, MD	**Radiation Oncology, Chair**
Maristela Batezini, MD	Medical Oncology, Cancer Liaison Physician
Stine-Kathrein Kraeft, MD	Pathology, Cancer Conference Coordinator
Mohamed El-Tarabily, MD	Medical Oncology, Cancer Registry Coordinator
Richard Fermelia, MD	General Surgery
Eric Hoyer, MD	Diagnostic Radiology
Don Dickerson, MD	Radiation Oncology
Phillip Haberman, MD	Pathology
Jakub Stefka, MD	Pathology
Ron Waeckerlin, MD	Pathology
Amy Gruber, MD	Hospice
B. Douglas Harris, DO	Urology
Tamela Thiede, RTR, CCS, CCS-P	Director of Oncology Services
Constance Schmidt, RN, BSN, MHA, CBN	Chief Nursing Officer
Barbara Lawyer, RN	Oncology Program Manager / Outreach, Community Outreach Coordinator
Denise Sartz, RN, MS, AOCNP, FNP-C	Oncology Nurse Practitioner, Quality Improvement Coordinator
Catherine Hoff, RN, BSN	Oncology Case Manager
Danette Best, RN, BSN, OCN	Breast Health Navigator
Bruce Linscheid	Director of Pastoral Care
Pat Bradley	Pastoral Care
Shawn Bonner, CTR	Certified Tumor Registrar
Barb Weiss, CCA, CTR	Cancer Registry Staff
Elizabeth Nyce, RD	Nutrition Services
Cheryl Walker, PT	Physical Therapy
Patricia Wagner, RN, OCN	Ambulatory Infusion Center Charge Nurse
Bonnie Bath, RN, BSN, MSN	Oncology Nurse Educator
Leonard Geringer, RTT, RTR	Radiation Oncology Manager
Kimberly Johnson, RN, BSN	Ambulatory Infusion Center Nurse Manager
Beverly Gross	American Cancer Society
Tara Leinart, RN	Oncology Inpatient Unit Nurse Manager
Tamara Cottam, MD	Palliative Care
Roxanne Gorman	Quality Manager
Linda Akers, MSW, LSW	Oncology Social Worker

CANCER **CARE PROGRAM**

The Cancer Care Program at Cheyenne Regional Medical Center focuses on providing state-of-the-art diagnostic technologies and treatments that reduce the symptoms and side effects of cancer treatment. This positively impacts survival rates and improve the overall quality of life for our patients and their families.

Our multidisciplinary cancer team meets regularly in a Cancer Conference to discuss patient cases that are diagnosed and/or treated at the hospital. Physicians and other health professionals involved in the care of cancer patients present and discuss the cases, including a review of the patient's history, pathology and imaging studies. Together with the patient, this team develops a unique and comprehensive treatment plan that may include conservative monitoring, surgery, chemotherapy, radiation or a combination of treatments. We believe providing patients with knowledge about their diagnosis and treatment options helps empower them.

As Wyoming's first American College of Surgeon's Commission on Cancer-accredited Oncology Program, Cheyenne Regional strives to meet the needs of cancer patients in the region. Cheyenne Regional's Cancer Committee establishes goals for quality improvement and directs the Oncology Program's growth by evaluating new technologies, programs and services that would enhance patient care. Our Cancer Committee includes board-certified physicians from medical specialties that diagnose or treat cancer, including Surgery, Medical Oncology, Hematology, Diagnostic Radiology, Radiation Oncology, Pathology, Internal Medicine, Family Medicine, Palliative Care and Urology. Other Cheyenne Regional departments that provide input include Administration, Social Work, Patient Navigation, Cancer Registry, Rehabilitation, Nursing and Nutritional Services.

Clinical and demographic data are collected, by Cheyenne Regional's Cancer Registry staff. This data plays a vital role in improving prevention, detection and treatment of cancer, including survival rates, treatment efficacy and incidence trends. It also improves overall patient care and allows us to offer services that enhance quality of life for cancer patients in our region.

Tammy Thiede, Deanna Bauman and Brenda Foley

Filled with light and beauty

Cheyenne Regional's new cancer center will open in early 2014. What will this mean for our community and region?

"This center has been in the planning stages for many years. It's exciting to know that we are so close to opening," said Tammy Thiede, Director of Oncology Services for Cheyenne Regional. Thiede has been with Cheyenne Regional for more than 30 years. She has spent much of that time caring for cancer patients.

"We have always focused on providing patient-centered care. But it can be difficult for patients to have to travel back and forth across town to keep appointments and receive that care," Thiede said. "Having all our services in one place is going to alleviate a lot of unnecessary stress for our patients and their families."

Dr. Mohamed El-Tarabily agrees that the new center will be a benefit to patients: "The convenience of having everything under one roof is going to make things so much easier for the patients, saving them precious time and energy. Total care of the patient can take place in one location with the ability to expand the services we offer to meet all their needs."

On a recent tour of the center, Brenda Foley, host of "Cheyenne Today" (KFBC AM 1240), described the new center as being a vital addition to our community. Foley's father, Tom Bauman, died from heart failure that resulted as a complication of multiple myeloma, a form of cancer. Foley's mother, Deanna Bauman, is currently undergoing chemotherapy treatment at Cheyenne Regional.

"Our community deserves to have the best, and that's what we are getting with this new cancer center," Foley said. "People with cancer are facing the fight of their lives. It will be nice for them to receive treatment in an environment that is filled with light and beauty and a sense of calm and well-being."

Bauman has been undergoing treatment for stage 4 pancreatic cancer since 2011. With her positive attitude and sense of humor, Bauman is an inspiration to her daughters, family and the Cheyenne Regional nurses and medical oncologist/hematologist who oversee her care. As Bauman walked through the new center with her daughter and Thiede, she shared her thoughts about what the facility will mean for patients:

"A lot of people in our community have had cancer or will have to face it themselves or with a loved one sometime in the future. If you have to make a difficult journey, it's nice to make it with people who care about you and in a place that is filled with art and beauty. The new center is warm and welcoming and has an atmosphere that will promote healing."

Foley added that she appreciates how much the new center will benefit cancer center staff: "This was built for the patients, but the people who provide care here also need to be taken care of. With our family's many visits to the hospital and cancer program, I've seen how hard everyone in the cancer program works. They are dedicated to their patients and their profession."

While the new center provides a welcoming environment, it is also spacious, ensuring room for a wide array of services and technology:

- The new center is 40,432 square feet and includes two floors.
- The Radiation Oncology program includes a new state-of-the-art linear accelerator for treatment and a CT scanner for treatment planning. The TomoTherapy machine will also be moved from the hospital's main building to the new center. Cheyenne Regional was the first Wyoming hospital to offer the unique treatment benefits of a TomoTherapy machine and is still one of only a handful of hospitals in the Rocky Mountain region to provide this service.

- The Ambulatory Infusion Center (AIC) has been expanded from its current capacity of 18 treatment chairs and one bed to 23 treatment chairs and two private rooms, each including a treatment bed and chair. The expansion can't come too soon as the current AIC infusion area is often at capacity. The new AIC has also been designed to offer a warm and comfortable environment and will ensure more timely treatment by having staff pharmacists on site. "It can take up to 10 hours for a patient to receive an infusion," Thiede said. "Our infusion center has been designed so that it has the feel of a living room, with warm colors, artwork, TVs and enough room so that patients can move around."
- Another improvement will be the close proximity of all cancer-related services. Currently, cancer patients must travel to several places in Cheyenne to receive care. The constant travel can be exhausting not to mention difficult for patients and family members to coordinate. In the new center, all cancer-related care—including physician appointments, lab work, radiation oncology treatments, chemotherapy and infusions—will take place under one roof.
- A healing garden and historic square have been included to enhance the look and feel of the center for patients, family members and the surrounding neighborhood.
- Patients and staff will benefit from the warmth and beauty provided by the three stone fireplaces and the fresh air afforded by two balconies and several patios.
- The new center also has areas designated for massage and lymphedema therapy, meditation/yoga and support groups as well as nutrition, social work and chaplain consultations. "We understand that cancer is about treating the mind, body and soul. We are striving for whole body treatment," Thiede said.
- A boutique with wig and hat-fitting stations and private dressing rooms for breast prosthesis fittings is included, as well as a library with computerized and bound educational materials for the use of patients and families.
- A bridge connects Cheyenne Regional Medical Center to the new center for hospital patients who have cancer and require radiation treatment.

"Our community has been blessed with staff and doctors who care," said Foley of Cheyenne Regional's cancer services. "You are not a statistic when you go there. If you want kind and compassionate care, it doesn't get any better than at Cheyenne Regional Medical Center."

In Thiede's own family, a grandfather and an aunt died from cancer many years ago. Her mother is a breast cancer survivor, and another family member is currently undergoing cancer care at Cheyenne Regional.

"So many people in Cheyenne, Laramie County and the surrounding region have been touched by cancer," Thiede said. "We are grateful to our community, our board of trustees and hospital leadership for making this center a reality."

CANCER **CARE PROGRAM**

Ambulatory Infusion Center

The Ambulatory Infusion Center (AIC) provides infusion and injection services to patients with a wide variety of diagnoses. The AIC offers a specialized environment in which patients may have their laboratory tests, chemotherapy administration, specialty infusions, transfusions and injections. The AIC has experienced registered nurses who are Oncology Nursing Society certified in chemotherapy administration. An on-site nurse practitioner/advanced practice nurse is available for chemotherapy education and symptom management. The AIC offers patients and families the services they need in a stress-free environment close to home.

Pathology

Our Pathology Department has the expertise to diagnose and classify all types of cancer, which helps surgeons and oncologists to choose the most effective treatment method for their patients. Each pathologist is board certified by the American Board of Pathology in Clinical Pathology. They offer 24- to 48-hour turnaround time for most tests.

Hospice

Hospice offers both outpatient and inpatient (at Davis Hospice Center) services, allowing patients to remain at home as long as possible and offering a dignified and comfortable inpatient atmosphere when their needs can be better met on an inpatient basis. Hospice bereavement programs and services offer support and guidance to those in the grieving process.

Outreach Services

The Wyoming Department of Health awarded Cheyenne Regional Medical Center the Wyoming Cancer Resource Services grant. The purpose of the grant is to reduce the impact of cancer. The hospital's Cancer Resource staff provides cancer awareness through education programs such as Sun Safety. Low income and/or underinsured patients needing assistance are recruited into state-funded cancer screening programs (breast, cervical and colorectal) and other mammogram assistance programs.

Rehabilitation

Rehabilitation for cancer patients helps them achieve the best physical, social, psychological and work-related functioning possible during and after cancer treatment. Patients that are recognized as needing additional rehabilitation can attend specialized training and classes at Cheyenne Regional Fitness Center.

Laboratory

The Laboratory at Cheyenne Regional Medical Center is a key component in the detection, diagnosis and treatment of cancer. Our on-site laboratory provides quick results for many routine laboratory tests, enabling physicians to prescribe or adjust patients' treatment plans as needed without unnecessary delays.

Nutritional Services

Inpatient oncology patients who are at nutritional risk receive a complete nutritional assessment by our oncology dietitian. A nutritional plan of care is tailored to the patient's current medical needs and to personal preferences. Patient education, nutritional supplements, personalized high-protein or nutrition-dense diets and enteral/parenteral nutrition are provided by highly trained dietitians to assist the patients in maintaining healthy diets and eating habits during treatment for cancer.

Cancer Resource Center

The Cancer Resource Center delivers professional assistance and education to cancer patients, their families and their caregivers from the moment of diagnosis. Working in collaboration with the American Cancer Society, the Cancer Resource Center has a library and boutique with computer access to online information, a conference area for patients and families and information for community members who are interested in cancer detection, treatment, clinical trials and prevention. An extensive library of books, magazines, pamphlets, videos and DVDs is offered to patients and families wishing to learn more about their cancer diagnosis. Free wigs, scarves, turbans and hats are available as well as breast prostheses and mastectomy bras for uninsured patients.

Infusion Center Staff

Inpatient Oncology Unit

Our seven-bed inpatient unit is an important part of comprehensive cancer care at Cheyenne Regional Medical Center. We offer a multidisciplinary, holistic approach to cancer care that considers the medical, functional, psychosocial and spiritual needs of our patients. Physicians, specialists and highly trained oncology nurses coordinate patient care with social workers, case managers, patient navigators, dietitians and pharmacists who are specially trained in cancer care.

Oncology Diagnostic and Medical Imaging

Our dedicated, experienced staff consists of board-certified radiologists as well as nationally and state-certified technologists, sonographers, mammographers and registered nurses. Our Medical Imaging Department is equipped with technology and services that include:

- MRI (Magnetic Resonance Imaging)
- Digital Mammography, Breast MRI and Stereotactic Breast Biopsies
- Ultrafast CT Scanners and CT Coronary Angiography
- Dual Head Nuclear Medicine Scanner
- Angiographic Suite for Interventional Radiology
- Ultrasound with 3-D and 4-D Imagery
- Bone Densitometry
- CAD (Computer Aided Detection) Image Reading Capability
- Fluoroscopy
- PET/CT Scanner
- Nuclear Medicine SPECT/CT Scanner
- Low Dose CT Lung Cancer Screening

Oncology Patient Navigation & Breast Health Navigator

Our patient navigators offer continuum of care to cancer patients, their families, caregivers and survivors throughout the healthcare system. They help patients find information about diagnosis, treatment and recovery, enabling patients to make informed decisions about their care. The navigators coordinate services by collaborating with medical providers, nutritionists, counselors, community resources and support groups in order to identify patient needs and assist in finding financial, psycho-social and other resources to meet these needs.

Cheyenne Regional was the first hospital in Wyoming to offer the services of a breast health navigator, an oncology registered nurse who guides and supports breast cancer patients throughout the treatment and recovery process. Patients find that working with the navigator helps reduce the anxiety experienced during cancer treatment.

Radiation Oncology Staff

Radiation Oncology

The Radiation Oncology Department at Cheyenne Regional Medical Center uses the newest technologies to provide the safest treatments consistent with nationally recognized best practices. Treatment options include External Beam Radiation and High-Dose Rate and Low-Dose Rate Brachytherapy. Two board-certified radiation oncologists, a medical physicist, certified medical dosimetrists, registered radiation therapists, registered nurses and clinical specialists provide a state-of-the-art experience for patients undergoing cancer treatments.

Cheyenne Regional currently has two treatment systems for External Beam Radiation therapy. These systems can provide both (Intensity Modulated Radiation Therapy (IMRT) and Image Guided Radiation Therapy (IGRT) treatments. The TomoTherapy Hi-Art system uses an on-board CT imaging system for IGRT, to precisely align the patient for the specialized delivery of an IMRT treatment. Cheyenne Regional was the first facility in the region to use the TomoTherapy system. This technology is used for all IMRT treatments and for Stereotactic Radiosurgery and Stereotactic Body Radiation treatments. It enables the delivery of high doses of radiation to the treatment area while sparing sensitive areas near the area being treated. Multi-leaf collimation allows the tumor to be treated with the necessary radiation while minimizing side effects in the surrounding healthy tissue.

High-Dose Rate and Low-Dose Rate Brachytherapy systems at Cheyenne Regional use a radioactive source that is either implanted directly into tissues or introduced into catheters in the area to be treated.

Medical Oncology & Hematology

At Cheyenne Oncology and Hematology Associates, the physicians work with an experienced staff to provide individualized care for patients with cancer or blood diseases. Our on-site laboratory, staffed by a medical laboratory technician, permits faster reporting to the hematologists/oncologists. Our registered nursing staff offers IV hydration, injections, central venous access maintenance, port flushing, therapeutic phlebotomies and patient education. An American Cancer Society volunteer is available in the clinic two mornings a week to offer our patients additional support, including informational pamphlets and service such as free wigs and hats.

Clinical Trials and Research

Clinical trials are now offered at Cheyenne Regional. Several trials ranging from outcome studies to supportive and treatment pharmaceutical trials have been made available. By taking part in clinical trials, participants can not only play a more active role in their own healthcare, but they can also access new treatments and help others by contributing to medical research.

Palliative Care

Palliative care specializes in the relief of the pain, symptoms and stress of serious illness. Palliative care can be provided at any point in an illness and even during treatment meant to provide a cure. Its main purpose is to improve the quality of life for patients and their families. Palliative care customizes treatment to meet the needs of each individual person. This service aims to relieve symptoms such as pain, shortness of breath, fatigue, constipation, nausea, loss of appetite and difficulty sleeping. The Palliative Cure team of physicians, nurse practitioners, social workers and chaplains help patients and families make medical decisions, choose treatments, provide support and provide resource assistance.

Surgical Specialties

Cheyenne Regional Medical Center Perioperative Services assists oncology and surgical patients in many ways. Care Clinic is a pre-operative testing and teaching unit that prepares surgical patients with information regarding their elective and planned surgical procedures. Patients are admitted to Same Day Surgery the morning of their surgery/procedure and are discharged home or to a nursing unit following their surgical or invasive procedure. The Post Anesthetic Care Unit (PACU) provides intensive nursing care to surgical inpatients and outpatients of all ages who require intensive observation and monitoring following an operative procedure or other specialized procedures in which an anesthetic agent has been administered. PACU also has a pre-operative area where patients having epidurals and regional blocks are closely monitored. Our Operating Rooms (ORs) provide surgical services to patients of all ages. Services can be scheduled and are also available for emergencies 24 hours a day, seven days a week.

Jeffrey C. Carlton, MD; Don R. Dickerson, MD; Maristela Batezini, MD; Mohamed E. El-Tarabily, MD; Alana Workman, MD

ACUTE MYELOBLASTIC LEUKEMIA AND MYELODYSPLASTIC SYNDROMES OUTCOME STUDY

I am privileged to share the outcome data from Cheyenne Regional Cancer Center regarding Acute Myeloblastic Leukemia (AML) and Myelodysplastic Syndromes (MDS).

ACUTE MYELOBLASTIC LEUKEMIA

Several prognostic factors are recognized to determine the outcome of Acute Myeloblastic Leukemia (AML). Older age and previous exposure to mitotic agents predict for shorter latency time to develop therapy-related Acute Myeloid Leukemia. Ten to twenty percent of all cases of AML, MDS and MDS/MPN (Myeloproliferative neoplasm) are related to previous treatment with cytotoxic agents. Antecedent hematologic disorders are common in older patients with AML, occurring in 24 to 40 percent of cases.

A population-based retrospective study from the United Kingdom that included 11,303 patients with AML diagnosed from 2001 to 2006 reported an estimated five-year overall survival rate of 15 percent, which varied according to the age at diagnosis. The survival rate was 53 percent for patients between 15 to 24 years, 49 percent for patients between 25 to 39 years, 33 percent for patients between 40 to 59 years, 13 percent for patients between 60 to 69 years, 3 percent for patients between 70 to 79 years and 0 percent for patients over 80 years.

Dr. El-Tarabily, MD

Worsening performance status is recognized as a poor prognostic factor with increased 30-day mortality after induction therapy. Chromosomal and molecular abnormalities are also important prognostic factors for the outcome of AML. Favorable chromosomal abnormalities (16% of cases) included translocation (8;21), inversion (16)(p13;q32), translocation (16;16)(p13;q22), translocation (15;17)(q24.1;q21.1). Normal karyotype is encountered in 40 percent of patients. Adverse or poor chromosomal abnormalities (25 percent) include abnormalities of chromosome 5, chromosome 7, chromosome 3, chromosome 11, monosomy 17 and complex aberrant karyotypes.

This report includes data for the 18 patients diagnosed with AML from 2008 through 2012 at Cheyenne Regional Medical Center. Eleven patients were over the age of 65 (61.1 percent) and seven patients were below the age of 65 years (38.9 percent) (Table 1). Ten out of our 18 patients with AML achieved complete remission for a 56 percent complete remission (CR) rate. Two of the 10 patients who achieved a complete response relapsed (a relapse rate of 20 percent). Eight patients of the 18 AML patients never were disease free (44 percent) of patients). Among the 18 patients, six patients are still alive with a survival rate of 33.3 percent (Table 2). Despite the fact that our five-year survival data is immature (only four years captured), our survival rate at this point is comparable to the British population study, if not better.

MYELODYSPLASTIC SYNDROMES

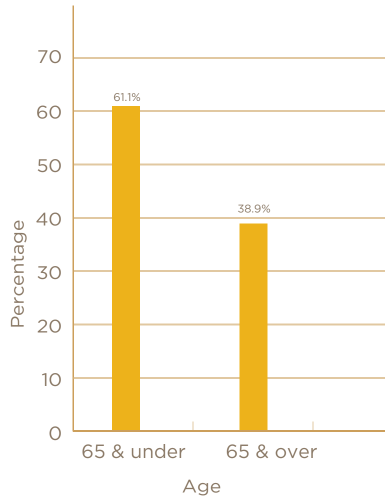
The myelodysplastic syndromes (MDS) represent myeloid clonal hemopathies with relatively heterogeneous spectrums of presentation. The major clinical problems in these disorders are morbidities caused by patients' cytopenias and the potential for MDS to evolve into Acute Myeloid Leukemia (AML). Significant independent variables for determining outcome for both survival and AML evolution were found to be marrow blast percentage, number of cytopenias and cytogenetic subgroup (good, intermediate, poor).

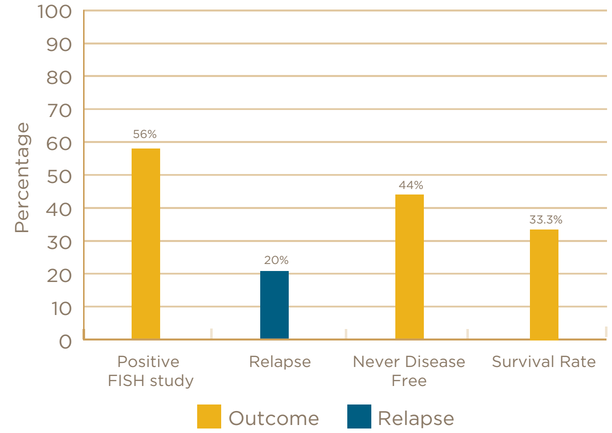
The revised International Prognostic Scoring System (IPSS-R) was developed by the International Working Group for the Prognosis of Myelodysplastic Syndromes from data of untreated patients with primary MDS from 11 countries (N = 7,012). Novel components of the IPSS-R include five cytogenetic prognostic subgroups, blast percentage values and depth of cytopenias.

This report includes the data for the 11 patients diagnosed with Myelodysplastic Syndrome (MDS) during the years 2008 through 2012 at Cheyenne Regional Medical Center. We had a total of 11 patients with MDS. Nine were above the age of 65 and two patients were below the age of 65 (Table 3). Seven out of the 11 patients with MDS had a positive FISH study for MDS (Table 4); four were considered intermediate risk and three were high-risk (Table 5). All the high-risk group patients died from their disease while three out of the four intermediate-risk group patients are alive with a survival rate of 75 percent. Four patients were FISH unknown. Three patients out of those four died from their disease, with a survival rate of 25 percent. So, four of 11 patients diagnosed with MDS are alive with an overall survival rate of 36.4 percent. We must bear in mind that our five-year survival data is immature (only four years captured) because we changed statistics documentation systems for our regional cancer patients in 2008.

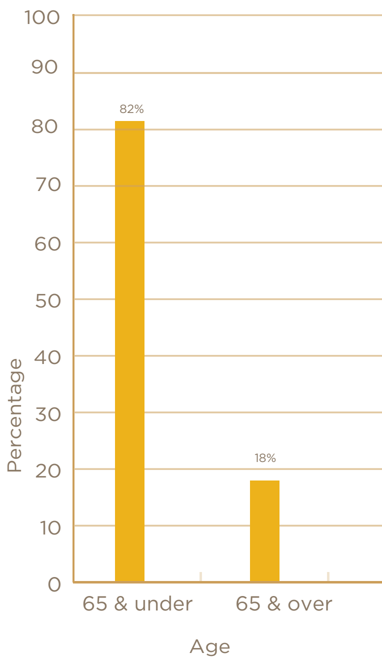
Cheyenne Regional Medical Center Cancer Registry statistics demonstrate that our patients with these two deadly diseases are receiving a high level of effective care, comparable to many larger organizations.

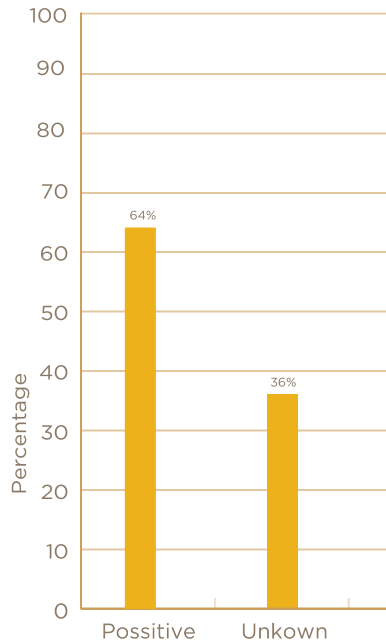
ACUTE MYELOBLASTIC LEUKEMIA

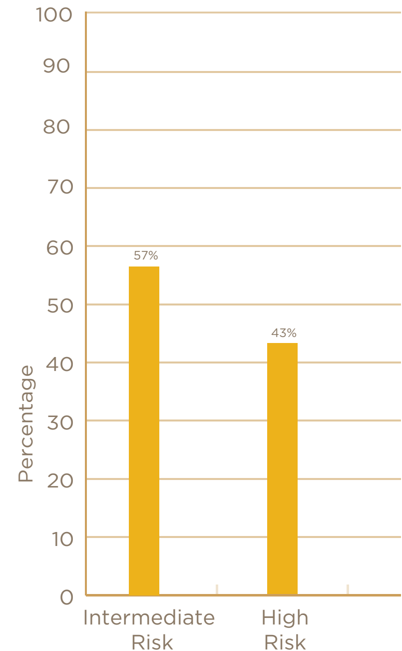




MYELODYSPLASTIC SYNDROMES







CHEYENNE **REGIONAL CANCER CASES**

YEARLY BREAKDOWN BY YEAR OF DIAGNOSIS • 2002 - 2012

PRIMARY SITE	ALL YEARS '92-'12	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12
LIP	13	0	0	0	1	0	1	0	0	1	0	1
TONGUE	52	0	3	3	1	2	3	1	2	7	2	3
MOUTH	46	2	1	1	3	0	3	4	1	2	1	0
PAROTID & MAJOR SALIVARY GLANDS	25	5	1	2	0	0	3	1	0	2	3	3
PHARYNX	59	4	3	5	1	1	4	7	2	1	2	7
ESOPHAGUS	73	8	3	7	2	4	3	1	3	7	6	4
STOMACH	72	3	2	4	6	0	4	5	4	4	4	1
SMALL INTESTINE	28	2	0	1	1	2	1	0	1	3	5	1
COLON	585	20	19	32	29	31	29	29	18	32	29	33
RECTUM/ANUS/RECTOSIGMOID	217	11	14	10	8	9	7	8	5	12	15	13
LIVER	69	3	2	2	1	8	4	3	2	3	6	3
GALLBLADDER & BILIARY TRACT	67	1	8	5	4	5	3	3	7	6	2	3
PANCREAS	171	8	5	4	10	12	8	7	6	5	13	12
OTHER DIGESTIVE ORGANS	10	1	0	0	0	0	1	1	1	0	1	4
NASAL CAVITY & MIDDLE EAR	5	0	0	0	0	0	0	1	0	1	0	0
ACCESSORY SINUSES	2	0	0	0	0	1	0	0	0	0	0	0
LARYNX	85	3	3	4	3	1	4	5	2	3	6	7
LUNG	1,069	47	40	60	44	53	61	47	64	68	58	66
OTHER, INCLUDING TRACHEA, HEART, MEDIASTINUM & PLEURA	29	0	1	4	1	3	2	0	2	2	2	2
BONE & JOINTS	16	1	1	0	1	0	0	1	0	0	1	0
OTHER NERVES, PERITONEUM & CONNECTIVE TISSUE	49	4	4	1	3	5	0	0	1	0	0	2
MULTIPLE MYELOMA	86	3	0	8	5	2	2	6	3	3	11	7
LEUKEMIA	160	6	8	12	2	6	8	6	3	11	17	22
OTHER HEMATOPOIETIC DISEASES	44	3	11	6	4	3	5	0	0	0	0	0
SKIN - REPORTABLE	12	0	0	2	2	0	2	3	0	0	1	0
MELANOMA OF SKIN	102	2	0	2	6	2	3	1	2	4	3	2
BREAST	1,600	103	69	89	66	86	75	97	85	80	86	78
INVASIVE CERVICAL & UTERINE	90	4	5	4	2	3	3	3	4	6	6	2
CORPUS UTERI & UTERUS	214	4	4	11	9	10	14	15	9	14	12	13
OVARY	145	6	6	12	13	8	2	7	6	7	10	4
VULVA, VAGINA & OTHER FEMALE GENITAL ORGANS	43	3	2	2	2	0	2	0	0	2	0	2
PROSTATE	1,451	92	109	82	76	87	83	68	79	43	52	35
TESTIS	68	1	2	1	3	4	2	3	3	5	2	3
PENIS & OTHER MALE GENITAL ORGANS	4	0	0	0	0	0	0	0	1	0	0	0
KIDNEY	202	8	13	8	9	13	22	11	12	8	16	16
BLADDER	447	21	19	23	31	28	18	30	24	31	28	31
OTHER URINARY ORGANS -including renal, pelvis, ureter and urethra	42	2	2	2	2	1	5	4	2	2	0	1
BRAIN / CNS	229	9	15	13	7	15	14	16	12	17	8	9
THYROID	272	12	20	33	18	30	19	14	11	17	17	12
THYMUS & OTHER ENDOCRINE	56	1	0	2	0	4	6	4	2	3	0	4
HODGKIN'S LYMPHOMA	45	1	1	2	1	0	3	2	2	2	0	1
NON-HODGKIN LYMPHOMA	280	13	16	14	16	11	9	12	17	22	9	11
UNKNOWN/MISC	229	9	10	1	10	7	8	17	9	12	26	32
TOTAL	**8,563**	**426**	**422**	**474**	**403**	**457**	**446**	**443**	**407**	**448**	**460**	**450**

Counts do not include cervix in-situ cases or basal cell and squamous cell carcinomas of the skin.

DISTRIBUTION **BY RESIDENCE**

Cheyenne Regional Cases From 1992 to 2012

Total Wyoming	8,075
Out-of-state and unknown residence	488
Total	**8,563**

County/State	Cases
Albany	337
Campbell	9
Carbon	152
Converse	23
Crook	1
Fremont	11
Goshen	265
Hot Springs	3
Johnson	1
Laramie	6,696
Natrona	28
Niobrara	18
Park	2
Platte	486
Sheridan	5
Sublette	5
Sweetwater	19
Teton	4
Uinta	2
Washakie	3
Weston	5
Arizona	13
Colorado	84
Nebraska	167
Other states	102
Unknown	122

BREAKDOWN **BY SITE**

All Primary-Site Cases Entered from 1992-2012

Site	Cases
Breast	1,600
Prostate	1,451
Lung	1,069
Colon	585
Bladder	447
Non-Hodgkin's Lymphoma	280
Thyroid	272
Brain/CNS	229
Rectum/Anus/Rectosigmoid	217
Corpus Uteri & Uterus	214
Kidney	202
Pancreas	171
Ovary	145
Leukemia	160
Melanoma of Skin	102
Invasive Cervix Uteri	90
Multiple Myeloma	86
Larynx	85
Stomach	72
Esophagus	73
Liver	69
Testis	68
Gallbladder & Biliary Tract	67
Pharynx	59
Thymus & Other Endocrine	56
Tongue	52
Other Nerves, Peritoneium & Connective Tissue	49
Other Hematopoietic Diseases	44
Mouth	46
Hodgkin's Lymphoma	45
Vulva, Vagina & Other Female Genital Organs	43
Other Urinary Organs—including Renal Pelvis, Ureter, Urethra	42
Other—including Trachea, Heart, Mediastinum & Pleura	29
Small Intestine	28
Parotid & Major Salivary Glands	25
Bone & Joints	16
Lip	13
Skin—Reportable	12
Other Digestive Organs	10
Nasal Cavity & Middle Ear	5
Penis & Other Male Genital Organs	4
Accessory Sinuses	2
Unknown/ Misc	229
Total	**8,563**

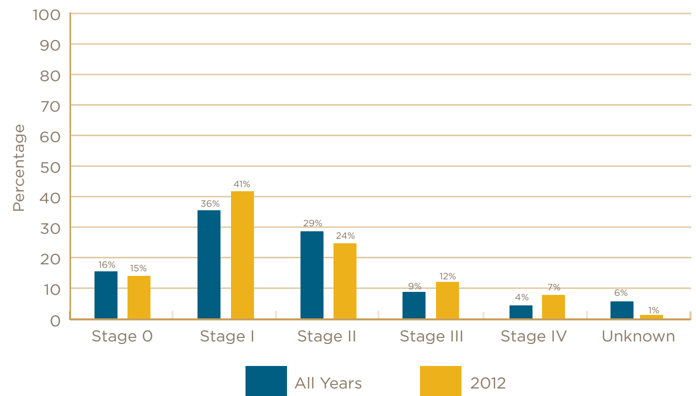
BREAST **CANCER**

1,600 Cases from 1992-2012

Age at Diagnosis

AGE AT DIAGNOSIS	ALL YEARS	2012
20-29	4	0
30-39	68	3
40-49	278	17
50-59	371	19
60-69	394	20
70-79	324	12
80-89	147	5
90-99	14	2
TOTAL	1,600	**78**

AJCC Stage at Diagnosis



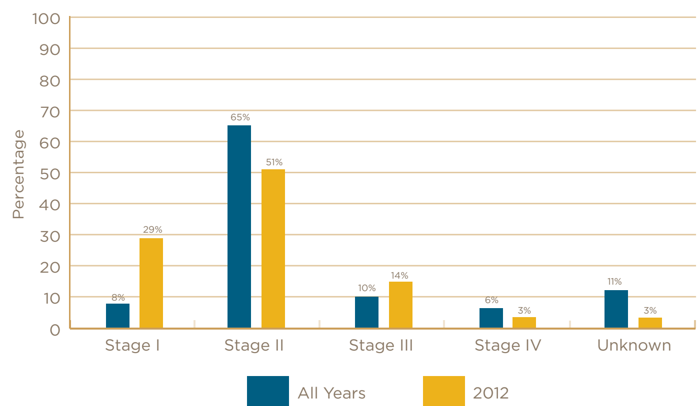
PROSTATE **CANCER**

1,451 Cases from 1992-2012

Age at Diagnosis

AGE AT DIAGNOSIS	ALL YEARS	2012
20-29	0	0
30-39	1	0
40-49	31	1
50-59	250	3
60-69	534	14
70-79	505	14
80-89	120	3
90-99	10	0
TOTAL	1,451	**35**

AJCC Stage at Diagnosis



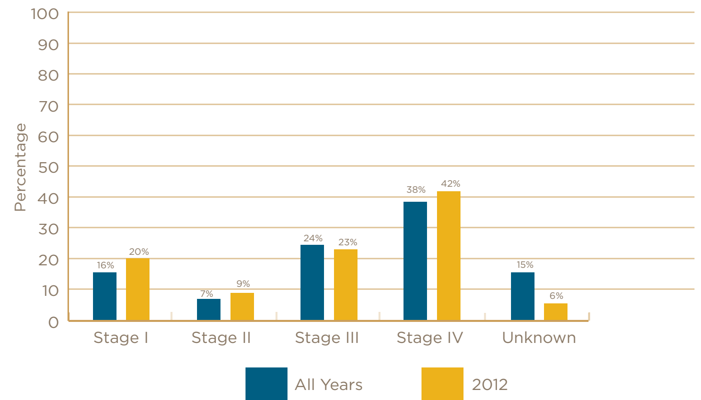
LUNG CANCER

1,069 Cases from 1992-2012

Age at Diagnosis

AGE AT DIAGNOSIS	ALL YEARS	2012
20-29	4	0
30-39	6	0
40-49	57	1
50-59	151	10
60-69	360	25
70-79	348	20
80-89	131	9
90-99	12	1
TOTAL	1,069	66

AJCC Stage at Diagnosis



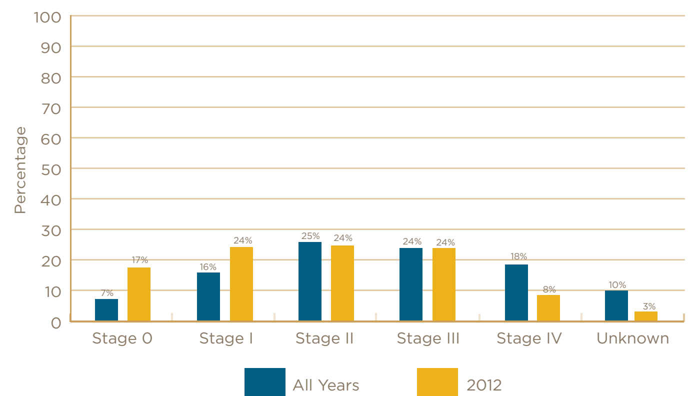
COLON CANCER

585 Cases from 1992-2012

Age at Diagnosis

AGE AT DIAGNOSIS	ALL YEARS	2012
20-29	5	0
30-39	5	1
40-49	33	1
50-59	58	6
60-69	140	7
70-79	185	7
80-89	137	10
90-99	22	1
TOTAL	585	33

AJCC Stage at Diagnosis



HEMATOPOIETIC **CANCER**

615 Cases from 1992-2012

Age at Diagnosis

AGE AT DIAGNOSIS	ALL YEARS	2012
0-9	1	0
10+19	8	0
20-29	34	2
30-39	18	1
40-49	54	1
50-59	89	5
60-69	121	17
70-79	152	9
80-89	116	9
90-99	22	3
TOTAL	615	**47**

GLOSSARY

Biological Response Modifier (BRM) or Immunotherapy
BRM is a generic term which covers all chemical or biological agents that alter the immune system or change the host's response (defense mechanism) to the cancer.

First Course Treatment
Generally the initial tumor-directed treatment or series of treatments, usually initiated within the first four months after diagnosis.

Observed Survival Rate
The literal survival rate from counting each case in the registry.

Relative Survival Rate
Survival rate that takes the normal life expectancy into account. This avoids the bias that the figures may convey with the majority of patients being older but having expired due to causes other than cancer.

Stage of Disease
Determined at first course of treatment. SEER Summary Staging Guide is used except where indicated.

In Situ
Neoplasm which fulfills all microscopic criteria for malignancy except invasion.

Localized
Neoplasm that appears entirely confined to the organ of origin.

Regional
Neoplasm has spread by direct extension to immediate adjacent organs or tissues and/or has metastasized to regional lymph nodes or organs and appears not to have spread any further.

Distant
Neoplasm has spread beyond immediate adjacent organs or tissues by direct extension and/or has either developed secondary or metastatic tumors, metastasized to distant lymph nodes or has been determined to be systemic in origin.

Unknown or Not Recorded
Tumor is said to be unknown when the stage cannot be determined from the medical record or a medical authority.

BEAM **OF HOPE**

Cheyenne Regional's "Beam of Hope" has been transformed into a rainbow of wishes and tributes, thanks to the many patients, community members and hospital staff who signed the beam. The 20-foot beam is the last large beam to be placed in our new cancer center.

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