Annual Report 2013
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2013 Cancer Center Annual Report

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At the end of every year we reflect on the accomplishments of that year with pride. Why, because the focus of our programs are on the patients receiving best practice medicine and care. The best quality, patient safety, service and value are not only words in our vision, they are core to the physicians’ and staff’s guiding principles. As we reflect, we put pen to paper to write this annual report, not only for us to share the information with everyone, but to archive the successes and the challenges of the year.

So, we welcome you to the 2013 Billings Clinic Cancer Center’s Annual Report. The contents of this document not only outline the Cancer Center’s meaningful achievements, but also report our cancer statistics for the past year and a quality study reviewing our patients’ care and/or experience at the center.

In addition to the programs you will read in the pages that follow, we also want to share the other unique features of our cancer program:

- NCI Community Cancer Centers Program (NCCCP) since 2007: a program that focuses on improving cancer care in underserved populations, increasing access to cancer clinical trials and improving cancer care delivery across the continuum of care
- Stem Cell Transplant Program (SCT): only accredited (American Association of Blood Banks) SCT program in Montana and Wyoming
- Cancer Care Delivery Research (CCDR): through many community partnerships, active research has been a focus throughout the year
- Pediatric Oncology, Gynecologic Oncology, Naturopathic Medicine and Genetic counseling are clinical programs that are uniquely integrated into our extensive cancer care services
- Multidisciplinary Cancer Clinics: six cancer site-specific clinics are coordinated by patient care navigators and offer cancer patients access to multiple cancer and other specialists in a timely manner
- Advisory Board of Cancer Survivors: a group of cancer survivors meets regularly to discuss opportunities for cancer programs and advise the cancer leadership on ways to improve our services offered
- Outpatient palliative/symptom management program and clinic: a team of palliative care experts meets with patients to assist in symptom management and quality of life issues

We hope you enjoy and find value in this report. In addition to reviewing this 2013 annual report, we encourage you to visit our Billings Clinic Cancer Center website to familiarize yourself with all of our cancer related programs and services.
The American College of Surgeons (ACoS) Commission on Cancer (CoC) is a consortium of professional organizations focused on improving cancer outcomes through quality, multidisciplinary, and comprehensive cancer care delivery. There are different Cancer Program categories based on type of organization, services provided, and number of new cancer cases diagnosed and/or treated annually at a facility. Billings Clinic is considered a Comprehensive Community Cancer Program, the highest non-academic community hospital category.

Programs accredited by the ACoS CoC undergo a rigorous reaccreditation survey every three years. This involves an assessment of the program's compliance with the requirements for all standards, completion of an online Survey Application Readiness (SAR) tool with supporting documentation, and an onsite visit by an ACoS CoC surveyor to review program performance.

This year, Billings Clinic underwent its third successful survey and received three-year accreditation with commendation at the silver level. Commendation, which reflects performance beyond the basic CoC standards, was received for six out of the eight standards including: clinical trial accrual, Cancer Registry education, annual report, compliance with pathology reporting according to College of American Pathologist (CAP) guidelines, oncology nurse certification, and registry abstraction timeliness.

At the conclusion of the onsite visit, the surveyor stated Billings Clinic was among the top three programs nationally that he has had the pleasure of surveying. This comment helps validate the continual pursuit of providing excellent cancer care by our many multidisciplinary teams!

Unique Programs to Billings Clinic

Specialty Radiation Therapy

Billings Clinic is proud to announce the expansion of radiosurgical services in the region with a new approach to treating brain tumors using the Gamma Knife Perfexion®. Our physicians have completed training with the most renowned Neurosurgeons and Radiation Oncologists from the University of Pittsburgh and Cleveland Clinic to expand their expertise in the field of stereotactic radiosurgery.

Gamma Knife is used for the precise determination and targeting of various intracranial abnormalities, as well as for diagnostic and therapeutic procedures. This technology, with its dose-planning system, Gamma Plan, is a unique device used to non-invasively treat brain tumors and vascular malformations in the brain. Gamma Knife delivers very high doses of ionizing radiation to select, well-circumscribed targets in the brain. It is used to treat vascular disorders, benign tumors, metastases and other malignant tumors, and functional disorders such as epilepsy and Parkinson’s disease.

The Gamma Knife Perfexion® unit will be the first in Montana, as well as the four state region that includes Wyoming, North Dakota, South Dakota, and Idaho. Clinical treatment with the Gamma Knife is anticipated to begin in March 2014.
The Total Cancer Care® Program was initiated earlier this year at Billings Clinic. This collaborative program with Moffitt Cancer Center in Tampa, Florida helps us learn more about the specific molecular biology of cancer as it relates to treatment effectiveness. It involves sending tissue from patients diagnosed with lung cancer, breast cancer, colorectal cancer, and melanoma to Moffitt’s biorepository where they not only use the tissue to study the cancer, but also help identify patients for potential clinical trials based on the specific cancer characteristics.

Changes have occurred at the national level with the reorganization of cooperative groups into the National Clinical Trial Network (NCTN). The NCTN will now be comprised of 4 adult groups: Southwestern Oncology Group (SWOG), Alliance (formerly NCCTG, CALGB, and ACSOG), NRG (formerly NSABP, RTOG and GOG), and ACRIN (ACRIN and ECOG). The Children’s Oncology Group (COG) will remain separate. Furthermore, the Community Cancer Oncology Program (CCOP) and National Cancer Institute Community Cancer Centers Program (NCCCP) programs are merging into the National Community Oncology Research Program (NCORP). We are collaborating with MCC and other oncology providers within the region on the writing of a proposal for funding. While NCORP will continue to place a strong emphasis on clinical trial accrual, Cancer Care Delivery Research (CCDR) is a new program component which will focus on oncology care delivery models, cost, quality, and outcomes. Billings Clinic will take an active leadership role in both components of the new program.

Research Program

Billings Clinic continues to demonstrate a strong commitment to the use of clinical trials in cancer treatment. In 2013, Billings Clinic enrolled 102 cancer patients (7% of analytic cases) on clinical trials.

Collaborative involvement in several community awareness programs continues to help promote awareness of cancer clinical trials. In February, we celebrated Cancer Clinical Trial awareness month with the Montana Cancer Consortium (MCC) and Montana Cancer Control Coalition (MTCCC). Articles were written in newspapers across the state, educational programs were broadcast on community television, and messages were distributed using social media. Later in May, Billings Clinic celebrated International Research Week with the Research Center, Center for Translational Research, Nursing Research committee, and Cancer Research department setting up posters with findings from locally conducted research. Additionally, a lunch and learn program was held to educate staff and the community at large about the research opportunities at Billings Clinic.
Specialty Support Programs

A dedicated team of oncology professionals has progressively developed an extensive array of specialty support programs to address patients’ and families’ holistic needs over the past ten years. This team includes ten patient navigators, three licensed social workers/professional counselors, two oncology dietitians, three certified lymphedema specialists/physical therapists, a speech therapist, a genetic counselor, a symptom management nurse, and a lay navigator. Through their expertise, patients’ and families’ physical, psychosocial, and spiritual needs are addressed in a comprehensive and inclusive manner through specialty consultations, as well as group activities such as lunch and learn programs, support groups, annual retreats targeted to specific patient populations, and survivorship education. Additionally, a Facebook group (Billings Clinic Cancer Pathways) was created this fall as a mechanism to utilize social media to further promote awareness among our patients of these wonderful programs and services. Please consider joining this group by going to www.facebook.com/groups/billingscliniccancerpathways

Survivorship support is one area Billings Clinic has been working diligently on over the past year to better integrate electronic medical record (EMR) tools and nurse navigation processes for improved efficiencies in providing cancer patients with survivorship documents. Initial provision of survivorship documents (a comprehensive treatment summary and survivorship care plan) began in 2010 when Billings Clinic launched a 2-year pilot study supported through the National Cancer Institute’s Community Cancer Centers Program (NCCCP). While high levels of satisfaction with the survivorship documents were noted among patients, caregivers, and primary care providers, the time required to complete the survivorship documents (average three hours) was prohibitive.

Lean Six Sigma tools SIPOC (suppliers, input, process, output, customers) diagram, process map, waste walk, fishbone diagram, cause and effect prioritization matrix were applied to survivorship processes to improve efficiency. Institute of Medicine specifications influenced survivorship document design while National Comprehensive Cancer Network guidelines established surveillance plans. EMR forms captured discrete data elements tracked by navigators as patients progressed through the continuum, thereby creating a data repository which could later populate the treatment summary. Standard order sets for surveillance and site-specific survivorship care plans outlining late- and long-term effects of treatment, follow-up care, wellness strategies, and resources were created in the EMR. Four months post-implementation, we are pleased to report these system enhancements have yielded a much improved average of 45-60 minutes to compile the treatment summary and survivorship care plan. Through collaborative process improvement, roadblocks to providing survivorship documents were reduced, thereby improving the quality of care provided to cancer survivors.
Unique Programs (Cont’d)

Outreach Programs

Billings Clinic is committed to collaborating with local healthcare facilities to provide quality oncology specialty services throughout our vast geographic region.

Medical Oncology: Outreach services are provided in eight different sites throughout the region by our expert team of medical oncologists/hematologists. The frequency of visits to each community is dependent upon volume demands. This year a new outreach clinic was started in Worland, Wyoming, which is staffed by Dr. Robert Joseph from our Cody Oncology hub.

Gynecologic Oncology: In addition to gynecology oncology surgical and clinical services provided in Missoula and Helena, clinical outreach was resumed in Bozeman this fall.

Cody Oncology and Infusion Center: The Billings Clinic Cody Oncology and Infusion Center has been in full operation since November 2012, providing full-time medical oncology and infusion coverage to the north-central Wyoming region. Since Dr. Robert Joseph’s arrival in March of 2013, this service has experienced a 53% increase in volume.

The Cody Oncology team works closely with the Billings Oncology team to provide comprehensive services both locally, as well as via telemedicine. Additionally, this team actively participates in multi-disciplinary tumor boards and weekly rounds, enrolls patients to clinical trials, and provides supportive services for patients.

The Cody Infusion Center is staffed five days a week with an RN skilled in providing a variety of treatments, including chemotherapy and a multitude of infusions for other diagnoses. As an increasing array of infusion referrals are received, infusion services continue to expand so that patients living in the north-central Wyoming region can receive treatments closer to home.

Arts-in-Medicine

The arts have proven to reduce anxiety, depression, and other difficult emotions that often accompany a cancer diagnosis. Billings Clinic Cancer Center’s healing arts program was bolstered by the LIVESTRONG Foundation’s Community Impact Project grant to replicate the Creative Centers Artist-in-Residence program. This $15,000 grant funded two local artists and all art supplies needed for the program.

The artists, Mur Quaglia and Brooke Atherton, worked at the bedside and chair-side creating art with patients. They created snowflakes, fabric art, paintings, necklaces, a collaborative staff painting, and several other projects. They empowered patients and families with the creative process during treatment and at special retreats and events.

A large scale piece called the Healing Garden will be available early 2014 to showcase the work of several survivors and mark the impact of this wonderful grant. A variety of Arts-in-Medicine workshops will continue to be offered at the Cancer Center supported through funds donated to the Cancer Wellness program.
In 2012, Billings Clinic added two new team members to our Pediatric Center, Dr. Courtney Lyle, MD, pediatric hematologist/oncologist, and Jill Wineinger, RN, BSN, pediatric nurse clinician. Since joining Billings Clinic, Dr. Lyle and Jill have worked with the Inpatient Cancer Care (ICC) team to develop expertise in providing inpatient oncology care for pediatric patients ages nine to 17 years old.

To prepare the staff to safely and effectively care for pediatric oncology patients, a robust education plan was developed. During the first part of 2013, Dr. Lyle presented education to staff on pediatric end-of-life care during the Hot Topics in Pediatrics Nursing workshop. In addition, she met with the ICC team and presented education on childhood cancers. This interactive education provided opportunities for staff to ask questions and feel more comfortable with the care of such a young group. Jill also provided several educational opportunities including “A Child-Centered Approach in a Healthcare Setting” which increased staff knowledge of pediatric growth and development.

Billings Clinic partnered with Rocky Mountain Hospital for Children in Denver, Colorado to obtain additional expertise in pediatric nursing education. Two pediatric nurses from Rocky Mountain Hospital for Children came to Billings Clinic and provided the Association of Pediatric Hematology/Oncology (APON) Pediatric Chemotherapy and Biotherapy Provider Program for 21 ICC staff members. The same staff members are also now Pediatric Advanced Life Support (PALS) trained and certified.

The unit also obtained pediatric specific equipment to meet the medical needs of this patient population. The unit now has a special emergency code cart for pediatric emergencies called a Broselow cart. Staff completed “Broselow Training – How to use Color Coding in Pediatric Emergencies”. Age-specific diversional activities were also acquired such as movies, videos, and electronic games.

System changes to the electronic medical record (EMR) were made to accommodate the special medical orders needed to care for this age population. Both Dr. Lyle and Jill worked with the oncology nurse informaticist to develop pediatric oncology orders in the EMR which outline evidence-based cancer treatment regimens for chemotherapy/biotherapy.

In September, a Pediatric Practice Advisory Committee (PPAC) was developed to streamline all pediatric care throughout the organization. This committee will allow current policies to be updated to better serve the pediatric population in the acute care setting.

With the support and training provided by both Dr. Lyle and Jill, ICC has admitted 12 patients ages nine – 15 in 2013, with an average length of stay of three-to-four days.
New Programs

NAPBC Accreditation

Earlier this year, Billings Clinic was granted three-year, full accreditation designation by the National Accreditation Program for Breast Centers (NAPBC), a program administered by the American College of Surgeons. The NAPBC is a consortium of professional organizations dedicated to the improvement of the care and monitoring of outcomes for patients with diseases of the breast. NAPBC accreditation signifies a facility’s dedication to providing the highest level of quality breast care through compliance with nationally established program standards. Standards set by the NAPBC ensure patients receiving care at a NAPBC-accredited center have access to comprehensive and coordinated breast care, state-of-the-art services, and a multidisciplinary team approach.

Reger Family Center for Breast Health

The 4,300-square-foot Reger Family Center for Breast Health opened in October 2013 on the second floor of the Billings Clinic Cancer Center. The center offers complete breast diagnostic services in a private, comfortable environment. Features include a spa-like atmosphere, specialty coffee and comfortable seating in the lobby, private changing rooms with doors that enter directly to the mammography suite, and warm spa robes or capes.

Mammography, breast ultrasound, stereotactic breast biopsy, and bone densitometry (DEXA scan) suites are all located together so that comprehensive evaluations can be completed in a single location. Additionally, tomosynthesis technology, which provides the highest resolution mammography to detect early breast cancers, is now available at Billings Clinic.

A retail Breast Boutique is also housed within the Reger Family Center for Breast Health. The Breast Boutique has two private fitting rooms and the region’s only experienced certified fitter to assist women with pre- and post-breast surgery needs. The boutique, staffed Monday through Friday, is open to anyone in need of mastectomy and breast-cancer merchandise including bras, prostheses, camisoles, scarves, hats, lotions, and other personal care items. One improvement this boutique brings to the community is the ability for Billings Clinic to bill purchases directly to patients’ insurance, rather than patients having to pay for products upfront and then be reimbursed.

iPad Donation Helps Patients Stay Connected

United Luv, a family t-shirt company, gifted nine iPads to Billings Clinic for oncology patient use during lengthy cancer treatments. This gift was in memory of one of the founding members of United Luv whose vision was to provide iPads to area cancer centers to help others battling cancer stay connected with family and friends during treatment. This very special gift was matched by the Billings Clinic Foundation for a total of 18 iPads available to patients receiving cancer treatment in the Infusion Center, Inpatient Cancer Care unit, and Pediatric Oncology.
Welcome New Physicians

We want to extend a grand welcome to the new oncologists who joined Billings Clinic in 2013. The clinical contributions they bring to cancer care in the region are truly outstanding.

**Dr. Robert Joseph**
Billings Clinic welcomed Dr. Robert Joseph to our Billings Clinic Cody Oncology and Infusion Center as a medical oncologist and hematologist in March 2013. Dr. Joseph attended medical school at the University of Illinois School of Medicine in Chicago, Illinois, and finished the Straight Medical Internship in Los Angeles County, University of Southern California (LAC/USC). He completed his residencies in hematology/oncology at Veterans Affairs Wadsworth, University of California, Los Angeles Medical Centers and at LAC/USC Medical Center.

**Dr. Michelle Proper**
Billings Clinic welcomed Dr. Michelle Proper to our Cancer Center as a Radiation Oncologist in October 2013. Dr. Proper completed medical training at University of Illinois at Chicago – College of Medicine, and her residency in Radiology Oncology at University of Colorado, Denver, Colorado. Dr. Proper specializes in treating all types of cancer with radiation therapy, but has a special interest in treating breast, gynecologic, and gastrointestinal cancers. Her prior research involved Stereotactic Body Radiation Therapy, which is used at Billings Clinic for certain cancers.

**Dr. Pamela Smith**
Billings Clinic welcomed Dr. Pamela Smith to our Cancer Center as a Medical Oncologist and Hematologist in September 2013. Dr. Smith completed medical training and residency at The University of Colorado Health Sciences Center, Denver, Colorado, and her fellowship in Hematology and Oncology at Tufts Medical Center, Boston, Massachusetts.

**Dr. Erin Stevens**
Billings Clinic welcomed Dr. Erin Stevens to our Cancer Center as a Gynecologic Oncologist in August 2013. Dr. Stevens completed medical training at New York Medical College in Valhalla, New York, her residency at Stony Brook Medical Center in Stony Brook, New York, and her fellowship in Gynecologic Oncology at The State University of New York (SUNY) Downstate Medical Center in Brooklyn, New York. She also spent time serving OB/GYN patients in Miles City. Dr. Stevens specializes in the diagnosis and treatment for all types of female reproductive cancers and pre-cancerous conditions.

**Dr. Venu Thirukonda**
Billings Clinic welcomed Dr. Venu Thirukonda to our Cancer Center as a medical oncologist and hematologist in July 2013. Dr. Thirukonda completed medical training at Madurai Medical College in Madurai, India, and his fellowship in hematology and oncology at Montefiore Medical Center, Albert Einstein College of Medicine in Bronx, New York.
Use of Herceptin in HER-2 Positive Breast Cancer

The Billings Clinic Cancer Center embarked on a study in 2013 to evaluate the use of Herceptin in invasive HER-2 positive breast cancer cases (N=81) between 2009 and 2012. In addition, stage at diagnosis and overall survival for all Billings Clinic breast cancer cases was compared to national survival rates using data from the National Oncology Data Base (NODB), National Cancer Data Base (NCDB), and Montana Cancer Registry (MCR).

Background

Breast cancer is the most common malignancy diagnosed in women and the second leading cause of cancer-related deaths in women (Figure 1). These statistics shed light onto the importance of continued focus on quality outcomes for this wide-reaching disease.

HER-2, or human epidermal growth factor receptor 2, is overexpressed in about 20% of breast cancers. Targeting HER-2 with the monoclonal antibody trastuzumab (Herceptin) improves survival in both early-stage and advanced breast cancer (Trastuzumab plus Adjuvant Chemotherapy for Operable HER2-Positive Breast Cancer; Edward Romond, et al; N Engl J Med2005;353:1673.)


Estimates are rounded to the nearest 10 and exclude basal cell and squamous cell skin cancers and in situ carcinoma except urinary bladder.
Randomized Phase 2 Trial of Trastuzumab Combined With Docetaxel in Patients with HER2-Positive Metastatic Breast Cancer; M Martin et al; J Clin Onc 2005:23;4265). Women with early stage (stages I-III) breast cancer with HER-2 overexpression should receive treatment with chemotherapy and Herceptin as adjuvant therapy. Furthermore, clinical trials have shown survival improvement in node-positive and high-risk node-negative (tumor > 1cm) cancers when Herceptin is added to chemotherapy. For node-negative patients with tumors smaller than 1cm, there are no randomized clinical trial data. Based on the increased risk of recurrence for tumors that overexpress HER-2, the National Comprehensive Cancer Network (NCCN) recommends the use of Herceptin and chemotherapy for small tumors (Figure 2).

Because of potential cardiac toxicity from Herceptin and side effects from chemotherapy, not all patients are candidates for systemic treatment. Patients with metastatic breast cancer and HER-2 positive disease also benefit from Herceptin therapy as a single agent or when added to hormonal therapy or chemotherapy.

<table>
<thead>
<tr>
<th>Tumor Size</th>
<th>Node Status</th>
<th>Treatment*</th>
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</thead>
<tbody>
<tr>
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<td>neg</td>
<td>H</td>
</tr>
<tr>
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<td>pos, &lt;2mm</td>
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<td>H, T, C</td>
</tr>
<tr>
<td>Any</td>
<td>pos</td>
<td>H, T, C</td>
</tr>
</tbody>
</table>

*N = trastuzumab (herceptin)  H = hormone therapy  C = chemotherapy

Figure 2: NCCN Guidelines for Herceptin Use in HER-2 Positive Early Stage Breast Cancer.
Quality Measures and Outcomes

In an effort to assess quality and improve outcomes, the Billings Clinic Cancer Committee undertook a retrospective review of Billings Clinic cancer registry patients with invasive HER-2 positive breast cancer diagnosed between 2009 and 2012 and the use of Herceptin. Additionally, stage at diagnosis and overall survival for all breast cancers diagnosed at Billings Clinic was compared to national statistics including data obtained from the NODB, NCBC, and MCR. A total of 762 patients were diagnosed with breast cancer at Billings Clinic between 2009 and 2012, of which 81 were HER-2 positive invasive breast cancers (Graph 1).

Of the 81 patients with HER-2 positive invasive breast cancer, 65 patients (80.2%) received Herceptin as part of their systemic therapy (Graph 2).

Graph 1: This shows the annual distribution by year of diagnosis for the 762 breast cancers and 82 HER-2 positive cases diagnosed during the years 2009-2012. Note one of the HER-2 positive cases reported during this timeframe was not an invasive breast cancer.

Graph 2: This shows Herceptin was given for Billings Clinic cancer patients diagnosed 2009-2012 with HER-2 positive invasive breast cancer in 80.2% of cases. In 9 additional cases, Herceptin was discussed; this equates to 91.4% of HER-2 positive invasive breast cancer patients either received or were considered for Herceptin.
Reasons identified as to why Herceptin was not given to 16 HER-2 positive invasive breast cancer patients included (Graph 3):

- 5 patients declined
- 3 patients had no follow-up care at Billings Clinic
- 3 patients enrolled in a clinical trial in which they received lapatinib instead
- 1 patient died within 3 days of diagnosis
- 1 patient had significant comorbidities which precluded systemic therapy
- 1 patient was treated with hormone therapy alone because of advanced age (93 years old with metastatic disease)
- 1 patient had a tumor that was 95% HER-2 negative and only 5% HER-2 positive
- 1 patient with no apparent reason

Additionally, adjuvant Herceptin use in early stage invasive breast cancer patients at Billings Clinic was reviewed based on tumor size, nodal status, and estrogen receptor status (Figure 3).

Graph 3: This graph shows 31% of HER-2 positive invasive breast cancer patients did not receive Herceptin due to their own choice; 19% did not pursue follow-up care beyond diagnosis; 19% received Lapatinib on clinical trial; and the other 31% due to a variety of other single-cause reasons.

Figure 3: This shows 76% of hormone receptor (HR) positive patients and 100% of HR negative patients with smaller tumors and node negative tumors received Herceptin per NCCN guidelines. 91% of HR positive and 71.4% of HR negative node positive patients received Herceptin.
Stage at Diagnosis and Survival Comparison

Graphs 4, 5, and 6 depict Billings Clinic overall 5-year survivorship for breast cancer by stage compared to the NODB, MCR, and NCDB respectively. Billings Clinic overall survival for breast cancer is comparable to survival rates from these regional and national benchmarks.

Graphs 7 and 8 depict stage at diagnosis for breast cancers diagnosed at Billings Clinic versus all other hospitals in the NODB. A lower rate of Stage 0 and slightly higher rate of Stage III breast cancers was noted for Billings Clinic as compared to all other hospitals in the NODB, although progress was noted in 2012 with an increasing rate of stage 0 cancers diagnosed. To further investigate this, stage at diagnosis was also compared using the NCDB whereby similar trends were found when comparing to other hospitals in Montana, as well as the ACS’s Great West comprehensive cancer center program (Graphs 9 and 10).
Patient Care Evaluation Study (Cont’d)

Conclusions

Thus, Billings Clinic Cancer Center outcomes for the treatment of breast cancer compare favorably to national outcomes. Specifically, use of Herceptin in HER-2 positive invasive breast cancers is highly concordant with the NCCN guidelines, based on hormone receptor status, tumor size, and nodal status. About 10-11% of patients with breast cancer treated at the Billings Clinic had HER-2 positive invasive breast cancer, and the majority of these patients received Herceptin (80%). Of the 20% of patients who did not receive Herceptin, 6% refused Herceptin as recommended by the oncologist, 4% received lapatinib as alternate treatment according to clinical trial enrollment, and 4% did not pursue additional follow-up beyond diagnosis. In addition, stage at diagnosis and overall survival are similar to national benchmarks, with slight improvements noted of recent at Billings Clinic with increased diagnosis of stage 0 breast cancers. This is an area that will need to continue to be monitored in order to ensure this upward trend continues so that stage at diagnosis is more closely aligned with national benchmarks.

Graphs 7 and 8: This demonstrates lower rates of Stage 0 and slightly higher rates of Stage III breast cancer diagnosed at Billings Clinic as compared to all other hospitals in the NODB.

Graphs 9 and 10: Similar findings are noted when looking at data within the NCDB; Billings Clinic has a lower percentage of breast cancers diagnosed at Stage 0 and slightly higher rates of Stage III.

Stage at Diagnosis for Breast Cancers at Billings Clinic 2009-2012

Graphs at Diagnosis for Breast Cancers at All Other Montana Hospitals in National Cancer Database 2009-2011

Stage at Diagnosis for Breast Cancers in the NODB 2009-2012

Stage at Diagnosis for Breast Cancers at All Other ACS Great West Region Comprehensive Cancer Center Programs in National Cancer Database 2009-2011
Cancer Registry Milestones

This has been a year of significant technological advances for the Billings Clinic Cancer Registry.

In March, the Registry initiated use of an automated, case-matching file importation process for its encounter-based case finding system, reducing manual processing time significantly. Following, in July, the Registry also fully implemented a second case-finding methodology (E-Path) that utilizes artificial medical intelligence to electronically review pathology reports. This state-of-the-art software has likewise contributed to manual processing reductions and has produced an added benefit of locating eligible patients more quickly for clinical trials. The E-Path software utilized by the cancer registry is a product of Artificial Intelligence in Medicine, Inc., an information technology and software development company based in Toronto, Ontario.

To maintain their educational credentials, our certified tumor registrars participate in a number of self-study activities throughout the year, as well as attend state and national meetings sponsored by their respective professional organizations, the Montana Cancer Registrars Association (MCRA) and National Cancer Registrars Association (NCRA). This year, the registrars traveled to Bozeman for the statewide meeting and one attended the NCRA annual meeting in San Francisco. These events provide important opportunities for networking, sharing “best practices”, and keeping abreast of the latest developments in the field.

The Registry continues to actively participate in the Commission on Cancer’s Rapid Quality Reporting System (RQRS) and provides support for other quality initiatives such as ongoing monitoring of quality measures for continued recognition as an NAPBC accredited breast center. It also just concluded participation in the National Cancer Institute-sponsored PROSSES study, and has begun participation in Total Cancer Care® through the Moffitt Cancer Center in Tampa, Florida.
## 2012 Primary Site Table -- Cancer Cases

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<th>Primary Site</th>
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<th>F</th>
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## 2012 Primary Site Table (Cont'd -- Cancer Cases)

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* Analytic: Patients diagnosed and/or received any of first course treatment at Billings Clinic.
** Exp: Expired
*** N/A: Case is not eligible for staging. An AJCC staging scheme has not been developed for this site or histology is excluded from an AJCC site scheme.
**** NSR: No staging required
***** Unk: Cases that do not have enough information to stage or the physician considered it unstageable.

Exclusions: Not Male and Not Female

0 0
According to the most recent and available national data from SEER (Surveillance Epidemiology and End Results) for years 2006-2010 inclusive, the median age at diagnosis for all cancer sites is age 66 for men and age 65 for women. The data above for Billings Clinic shows a similar pattern with the median age at diagnosis for men at 66 and for women at 64.

The graph shows a small decline in analytic cases in 2012 after 4 consecutive years of increase (orange bar). This pattern is not unlike the experience of other cancer programs regionally and nationally and may reflect continuing weakness in the national economy, as well as changes in oncology practice patterns, including those related to the diagnosis and treatment of prostate cancer.

Analytic cases are those diagnosed and/or receiving part or all of the entire first course of treatment at Billings Clinic. Non-analytic cases (lavender bar) include those who may only receive follow-up care or treatment for a recurrence at Billings Clinic. The total number of cases for each year, inclusive of analytic and non-analytic cases, is noted at the top of each bar or column.
The bar graph above shows a changing pattern over time for the primary diagnosis of breast cancer for women at Billings Clinic. The numbers at the right end of each bar indicate actual number of cases and total percentage of this cancer for each year.

The bar graph above shows fluctuation over time for the primary diagnosis of prostate cancer for men at Billings Clinic. The numbers at the right end of each bar indicate actual number of cases and total percentage of this cancer for each year.
The stacked graph [above] shows a 5 year trend for the primary cancers seen at Billings Clinic, irrespective of gender. The American Cancer Society (ACS) ranks breast, prostate, lung, melanoma and colon cancers as the top 5 cancers in terms of incidence nationally. Our rankings are similar to those of ACS with one exception: uterine cancer ranks 6th in terms of numbers of cases seen at Billings Clinic while bladder cancer ranks in 6th place nationally according to ACS estimates. Our higher rate of uterine cancers treated is likely reflective of our widely recognized regional expertise with gynecological cancers, having a dynamic treatment program led by a board certified gynecologic oncologist, trained in advanced robotic surgical techniques.
**Top Five Cancers - Female**

National data from the American Cancer Society (years 2010-2012) indicate the leading cancers for women remain breast (28-31%), lung (14%), and colorectal (9-10%) cancers. Billings Clinic data for the last 5 years (2008-2012) for women is shown in the pie charts herein. While breast cancer remains our primary female cancer, representing approximately 22-29% of all female cancers at Billings Clinic, uterine cancer is second (9-13%) followed by lung cancer (8-12%). This variation from national statistics is likely reflective of our widely recognized expertise in gynecologic cancers, having the only such program in Montana, Wyoming and North Dakota.
Top Five Cancers - Male

A review of the most recent national data available from the American Cancer Society (years 2010-2012) indicates the primary 3 cancers for men have remained unchanged with prostate cancer in the lead for men (28-29% of all male cases) followed by lung (14-15%) and colorectal (9%) cancers. Statewide data over a five year period (2006-2010) from the Montana Central Tumor Registry reflects a similar pattern. Billings Clinic data shown in the pie charts herein for years 2008-2012 indicates a break from this pattern. While prostate cancer remains the primary male cancer at Billings Clinic, melanoma takes second place followed by lung cancer for men. This variance from national and state trends is likely a function of our recognized expertise as a resource and referral site for dermatology and specialized skin cancer therapies including Mohs surgery.
Bette Bohlinger Leadership Award

Sarah Porter-Osen, NCCCP Coordinator, received the 2013 Bette Bohlinger Leadership Award at the annual Montana Cancer Control Coalition (MTCCC) statewide meeting. Sarah has been actively involved with MTCCC’s Screening and Early Detection team and is an advocate for programs which provide cancer screening for under- and un-insured women. Sarah also led MTCCC in the implementation of a successful statewide “Ask Me” campaign to encourage colorectal cancer screening. We are so proud of Sarah in her commitment to the cancer community.
Peer-Reviewed Publications


Awards, Presentations, Publications and Recognitions (Cont’d)


Published Abstracts from National Conferences


Poster Presentations at National Conferences


• Budnick, L., Herbert, W., Griffin, T., Swoboda, E., Stevens, E., & Ninivaggio, C. (2013). Web-based application of the perineal simulator as a tool for medical students and interns to learn perineal anatomy and obstetric laceration classification. APGO/CREOG, Phoenix, AZ.


• Garretto, D., & Stevens, E. (2013). The significance of excess gestational weight gain and delivery lacerations. ACOG Annual Clinical Meeting, New Orleans, LA.


• Stevens, E., & Henretta, M.S. (2013). Beyond the dark side of the moon: Evaluating the quality of web-based information at the end of life. SGO 44th Annual Meeting on Women’s Cancer, Los Angeles, CA.


• Swoboda, E., & Stevens, E. (2013). Assessing the self confidence of graduating chief residents in performing hysterectomies by modality and type of surgical assistant. APGO/CREOG, Phoenix, AZ.


Podium Presentations at National Conferences

- Design and evaluation of a quality educational workshop for oncology nurses
  *Quality and Safety Education for Nurses*, Atlanta, GA.
  Presented by: Leah Scaramuzzo, RN, MSN, AOCN®, Oncology Nurse Clinician

- Effective mentoring of resident-led research projects
  *APGO/CREOG Annual Meeting*, Phoenix, AZ.
  Presented by: Erin Stevens, MD, Gynecologic Oncology

- Evidence-based medicine: Why the reluctance to follow guidelines and data?
  *APGO/CREOG Annual Meeting*, Phoenix, AZ.
  Presented by: Erin Stevens, MD, Gynecologic Oncology

- Getting patients active: Using quality measures to drive practice change
  *Oncology Nursing Society*, Washington, DC.
  Presented by: Leah Scaramuzzo, RN, MSN, AOCN®, Oncology Nurse Clinician

- Integrating Cerner applications to deliver treatment summaries and survivorship plans
  *Cerner Health Conference*, Kansas City, MO.
  Presented by: Karyl Blaseg, RN, MSN, OCN®, Manager of Cancer Programs

- Overcoming opioid-induced oversedation in hospitalized patients: Nurse-driven research, quality improvement, and evidence-based practice
  *National Magnet Conference*, Orlando, FL.
  Presented by: Jeannine Brant, PhD, APRN, AOCN®, Nurse Scientist and Oncology Clinical Nurse Specialist

- Stomping cancer through culture
  *Spirit of Eagles’ Changing Patterns of Cancer in Native Communities: Strength through Tradition and Science*, Albuquerque, NM.
  Presented by: Shawna Cooper, Patient Advocate

- Surgical anatomy: Tips and tricks
  *Downstate Annual OB/GYN Review Course*, Brooklyn, NY.
  Presented by: Erin Stevens, MD, Gynecologic Oncology

- Telemedicine and telesurveillance
  *NAPBC Lead your Breast Program to Excellence conference*, Chicago, IL.
  Presented by: Jorge Nieva, MD, Chair of Hematology and Oncology

Regional Presentations

- Breast cancer in Wyoming 2013
  *Powell Valley Healthcare providers*, Powell, WY
  Presented by: Robert Joseph, MD, Cody Oncology

- Cancer survivorship
  *Billings Clinic Primary Care Fall Workshop*, Billings, MT
  Presented by: Jorge Nieva, MD, Chair of Hematology and Oncology

- Cancer survivorship
  *Oncology for Primary Care Physicians Conference*, Kalispell, MT
  Presented by: Justine DeRousse, PA-C, Cody Oncology

- Cervical cancer: Screening, prevention and treatment
  *Billings Clinic Women’s Health Symposium*, Billings, MT
  Presented by: Erin Stevens, MD, Gynecologic Oncology

- Communication techniques with palliative and end-of-life care
  *End-of-Life Nursing Education Consortium (ELNEC)*, Billings, MT
  Presented by: Jennifer Finn, LCSW, OSW-C, Cancer Programs
Awards, Presentations, Publications and Recognitions (Cont’d)

- Cultural differences with end-of-life care
  *End-of-Life Nursing Education Consortium (ELNEC)*, Billings, MT
  Presented by: Shawna Cooper, Oncology Patient Advocate

- Cultural sensitivity and reflections on hope and cancer
  *Big Sky Oncology Nursing Society Conference*, Billings, MT
  Presented by: Meg Hatch, MDiv, Pastoral Care

- End-of-life care
  *End-of-Life Nursing Education Consortium (ELNEC)*, Billings, MT
  Presented by: Jeannine Brant, PhD, APRN, AOCN®, Nurse Scientist and Oncology Clinical Nurse Specialist

- Enteral tubes: What, where, how
  *Big Sky Oncology Nursing Society Conference*, Billings, MT
  Presented by: Beth Hall, RD, CLC, CSO, LN, Oncology Dietitian

- Ethical and legal challenges in palliative care
  *End-of-Life Nursing Education Consortium (ELNEC)*, Billings, MT
  Presented by: Erin Stevens, MD, Gynecologic Oncology

- Grief, loss, and bereavement
  *End-of-Life Nursing Education Consortium (ELNEC)*, Billings, MT
  Presented by: Meg Hatch, MDiv, Pastoral Care

- New drug therapies for metastatic prostate cancer
  *Big Sky Urology Conference*, Big Sky, MT
  Presented by: Ala’a Muslimani, MD, Hematology and Oncology

- Nurse navigators’ role in cancer survivorship
  *Big Sky Oncology Nursing Society Conference*, Billings, MT
  Presented by: Karyl Blaseg, RN, MSN, OCN®, Manager of Cancer Programs

- Pain management in palliative care
  *End-of-Life Nursing Education Consortium (ELNEC)*, Billings, MT
  Presented by: Jeannine Brant, PhD, APRN, AOCN®, Nurse Scientist and Oncology Clinical Nurse Specialist

- Palliative care and end-of-life care
  *Big Sky Oncology Nursing Society Conference*, Billings, MT
  Presented by: Jennifer Finn, MSW, OSW-C, Oncology Social Worker

- Pediatric oncology
  *Billings Clinic Primary Care Fall Workshop*, Billings, MT
  Presented by: Courtney Lyle, MD, MAS, Pediatric Oncology

- Pediatric end-of-life care
  *Hot Topics in Pediatric Nursing*, Billings, MT
  Presented by: Courtney Lyle, MD, MAS, Pediatric Oncology

- The science of clinical trials
  *Montana Cancer Control Consortium annual meeting*, Bozeman, MT
  Presented by: Jorge Nieva, MD, Chair of Hematology and Oncology

- Scientific basis of targeted therapeutics
  *Big Sky Oncology Nursing Society Conference*, Billings, MT
  Presented by: Pam Smith, MD, Hematology and Oncology

- Symptom management at end-of-life
  *End-of-Life Nursing Education Consortium (ELNEC)*, Billings, MT
  Presented by: Kathryn Waitman, DNP, AOCNP®, Hematology and Oncology; Alison Weber, RN, BSN, Cancer Programs; Jennifer Finn, LSW, OSW-C, Cancer Programs; Linda Shelton, PT, Cancer Programs

- Treatment of bone metastasis in prostate cancer
  *Big Sky Urology Conference*, Big Sky, MT
  Presented by: Ala’a Muslimani, MD, Hematology and Oncology

- Treatment modalities: Surgery, transplant, radiation therapy, chemotherapy, targeted therapy, and biotherapy
  *Big Sky Oncology Nursing Society Conference*, Billings, MT
  Presented by: Venu Thirukonda, MD, Hematology and Oncology

- When to refer to a Gynecologic Oncologist
  *Billings Clinic Primary Care Fall Workshop*, Billings, MT
  Presented by: Erin Stevens, MD, Gynecologic Oncology
Billings Clinic Grand Rounds Presentations

- Anemia
  Presented by: Alaa Muslimani, MD, Hematology and Oncology

- Collaborative management of breast cancer
  Presented by: Simone Davion, MD, Pathology; Alaa Muslimani, MD, Hematology and Oncology; Michelle Proper, MD, Radiation Oncology

- Myths versus realities: Gynecologic cancers
  Presented by: Erin Stevens, MD, Gynecologic Oncology
For the Physician/Provider Communication Line, please call (406) 255-8411 or 1-800-325-1774.

For questions about cancer or if you need a physician, please call HealthLine nurses at (406) 255-8400 or 1-800-252-1246.

www.billingsclinic.com/cancer