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2015 Cancer Center Annual Report

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Welcome to the 2015 Billings Clinic annual report! As we reflect upon the past year, we feel a sense of pride regarding the major accomplishments achieved by our team of oncology providers and staff. We are pleased to document and share these with you along with our cancer statistics and quality study pertaining to ductal carcinoma in situ (DCIS). Some of the highlights you will read about in the enclosed report include:

- **Physician recruitment** – we are excited to welcome Dr. Jesus Fabregas and Dr. Michael Kidd to our Medical Oncology/Hematology department and Dr. Sameh Abuerreish to the Billings Clinic Cody Oncology hub.
- **Physician retirement** – we bid a fond farewell to Dr. Roger Santala and recognize his extraordinary commitment to advancing cancer care throughout our region during his 28 years at Billings Clinic.
- **Physician leadership** – three new department chairs have been appointed this year: Dr. Chris Goulet (Radiation Oncology), Dr. Pam Smith (Medical Oncology/Hematology), and Dr. Erin Stevens (Gynecologic Oncology).
- **Program accreditations** – successful re-accreditations have been received from the American Association of Blood Banks (for stem cell transplant) and the American Society of Clinical Oncology’s QOPI certification program. In addition, we are the only cancer program in the region to have successful accreditation from the American College of Radiology for radiation oncology.
- **Program growth and development** – we are enthusiastic about the growth of our Gamma Knife stereotactic radiosurgery program (having treated our 100th patient this fall) and the continued support, commitment, and expansion of our outreach programs for radiation, medical, and gynecologic oncology services.
- **Cancer research** – Billings Clinic has partnered with the Montana Cancer Consortium to form a community site for the NCI Community Oncology Research Program (NCORP); participating sites accrue patients to cancer prevention, control, screening, post-treatment surveillance, and quality of life trials, as well as cancer care delivery and comparative effectiveness research studies.

We hope you find this publication enjoyable and informative. In addition to reviewing this 2015 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.
Clinical Programs

Gynecologic Oncology

Billings Clinic continues to be home to the only full time gynecologic oncologists in Montana, Wyoming and North Dakota. Dr. Randall Gibb established the program in 2006, and since then, it has grown to include Dr. Erin Stevens and Dr. Justin Bottsford-Miller. All of our physicians have strong interests in gynecologic cancer treatment and management, clinical trial participation, minimally invasive surgical techniques, and quality of life in patients with cancer. The department continues to grow, as we have two additional partners scheduled to join the practice in September of 2016. Furthermore, we have hired two new physician assistants: Jodi Peterson, PA-C and Jacqueline Cutler, PA-C. Our PAs assist the physicians with surgery and help to provide continuity of care in the office throughout a woman’s cancer diagnosis, treatment, and survivorship.

Earlier this spring, we hosted our third annual “Beyond Pink” retreat for women with gynecologic cancer. The free event included a light breakfast and lunch, informational sessions with our oncologists and staff, opportunities to try whole person wellness activities, and allow our patients to build a support network with fellow survivors.

CHOOSING WISELY

In June 2011, guidelines were published by the Society of Gynecologic Oncology that recommended against performing pap smears for surveillance of endometrial cancer, as these are an inefficient tool for diagnosing a recurrence. The Choosing Wisely guidelines in October 2013 reaffirmed this recommendation. Our department performed a retrospective practice review to determine compliance with these published guidelines. Five-hundred ten patients were included in the analysis. Based on the predicted trend of performing pap smears at least twice yearly in the first two years and yearly thereafter, it was predicted that 731 pap smears would have been performed in 2014. While the total number of pap smears performed peaked in 2013 at 235, it declined in 2014 to 33. Following forward each patient in each year after diagnosis, there was a sharp decline in 2014 after the publication of the guidelines, highlighting our compliance.
**Clinical Programs (Cont’d)**

**Radiation Oncology**

Billings Clinic Radiation Oncology Department had a very productive year. We have added two outstanding physicists in Ed Slowey and Daniel Lewis. The physicians remain active in leadership roles within the Montana State Oncology Society (MSOS) and the Montana NCORP (NCI Community Oncology Research Program). Dr. Terakedis has been elected to the board of the MSOS, and within the MT NCORP, Dr. Schallenkamp serves as the co-principal investigator, Dr. Goulet is the liaison for the Alliance (a merger of the CALGB, ACOSOG, and NCCTG cooperative groups), and Dr. Proper is the liaison for the NRG (a merger of the NSABP, RTOG, and GOG cooperative groups).

Through the MT NCORP, we continue to bring cutting edge research to our patients. Over time, we have placed patients on brain, breast, esophageal, lung, head and neck, pancreatic, endometrial, rectal, prostate, and symptom control protocols. Through this work, Dr. Schallenkamp was recognized as an author on the first report of RTOG 0622: phase 2 trial of samarium-153 followed by salvage irradiation in high risk non-metastatic prostate cancer after prostatectomy at this year’s ASTRO meeting, and the secondary analysis of the RTOG 0617 Randomized trial reporting on the quality of life analysis of the dose-escalation study as reported in JAMA Oncology in November of 2015.

Within the clinical practice, we treated our 100th patient with Gamma Knife, our 500th patient with HDR brachytherapy, incorporated prostate SBRT into our practice, and expanded breath-hold technology (to help exclude the heart from left-sided breast cancer treatments) to the practice in Sheridan, WY.

This year we also successfully navigated the accreditation process for the American College of Radiology (ACR) to become the only site in the region to have ACR accreditation. This was the culmination of a great deal of outstanding work by the entire team and highlights our commitment to quality and our dedication to continued improvement.

Billings Clinic Radiation Oncology Department has a bright future and we look forward to 2016.

The ACR Radiation Oncology Practice Accreditation provides a third party, impartial peer review and evaluation of patient care practices. Billings Clinic’s radiation oncology personnel, equipment, treatment-planning and treatment records, as well as patient safety policies and quality control/quality assessment activities were assessed as part of the accreditation process. Goals of this accreditation program are the recognize quality radiation oncology practices and make recommendations for improvement in practice and patient outcomes according to recognized standards of the scientific community.
Medical Oncology/Hematology

The Medical Oncology/Hematology department is very pleased to announce the arrival of two new hematologists/oncologists. Both Dr. Michael Kidd and Dr. Jesus Fabregas joined the department in August and have been very active in establishing busy clinical practices in just the few short months since their arrival.

Michael Kidd, M.D., attended medical school at St. Louis University School of Medicine and then completed his Internal Medicine Residency training and Hematology/Oncology Fellowship at the Mayo Clinic in Rochester, Minnesota. Dr. Kidd is an active member of the Billings Clinic Blood Utilization Committee, as well as our Commission on Cancer Quality Committee.

Jesus Fabregas, M.D., received his medical degree from the Universidad del Norte in Barranquilla, Colombia in 2003, and devoted the first years of his medical career to the Colombian Navy working with the underserved. He then completed his Internal Medicine Residency training and Fellowship in Hematology/Oncology at the University of Miami, during which time he developed a particular interest in lymphoma with focused research efforts in microRNA as well as clinical trials that included targeted and immunotherapies. With these special interests, Dr. Fabregas has joined our Hematologic Steering Committee which oversees our stem cell transplant program.

In addition to seeing patients at our main clinic, Dr. Kidd and Dr. Fabregas have assumed responsibilities in the region similar to the outreach services provided by Dr. Pamela Smith, Dr. Brock Whittenberger, and Kathy Waitman, DNP. Dr. Kidd travels to Livingston and Glasgow, while Dr. Fabregas sees patients in Sidney and Miles City. The enthusiasm and ardent commitment to excellence by both of these providers are a welcome addition to the department.

Dr. Roger Santala

In November of 2015, Dr. Roger Santala retired from Billings Clinic, after serving our region as a medical oncologist and hematologist for almost 30 years. Dr. Santala was one of the first Billings Clinic doctors to start outreach clinics to care for rural patients who were unable to travel hundreds of miles to reach a specialist for ongoing care. He has traveled one or more days a week ever since. A few years ago he started using telemedicine to reach patients over Eastern Montana Telemedicine Network, a private video network, to see even more rural patients in their hometowns.

During his tenure, Dr. Santala provided his expertise in medical oncology and hematology to patients in and out of the state. Even in the harshest weather conditions, Dr. Santala says his biggest concern is patient care regardless of where they’re at in Montana, North Dakota or Wyoming.

“Those sorts of challenges to medicine make it exciting and rewarding,” Dr. Santala said in an interview with KULR-8.

Cancer Center Medical Director John Schallenkamp, MD, said, “We are so grateful for Dr. Santala’s dedication to cancer care across this wide region that we serve.”
Cody Oncology and Cody Infusion

We are very pleased to welcome Dr. Sameh Abuerreish who joined the Cody Oncology team in April of this year.

Sameh Abuerreish, M.D. received his medical degree from the University of Jordan and completed his Internal Medicine Residency at the Indiana Medical Center. He finished Hematology/Oncology training with the United States Air Force in Wilford Hall / Brooke Army Medical Centers in 2003, and then served as a physician for the Air Force until 2008. He has years of outreach medical experience, coming to us from western Kansas where he excelled at delivering rural hematology and oncology services. Prior to that he worked in the Charleston Area Medical Center where he developed a particular focus in clotting and bleeding disorders.

This vast experience in rural and outreach medicine makes Dr. Abuerreish an ideal physician for the Cody Oncology practice where he sees a wide variety of patients, ranging from those with benign hematology disorders to very complex cancer diagnoses. His team building efforts and commitment to educating the local medical community are highly valued. Dr. Abuerreish also provides regional outreach with clinics in Worland and Thermopolis.

The Cody Infusion Center not only provides comprehensive cancer care for patients in Northern Wyoming, but also supports the infusional needs for all Cody Clinic patients. This includes services such as:

- Antibiotic therapy
- Biotherapy (such as monoclonal antibodies, immunoglobulin, etc)
- Injections (for bone loss, allergies, anemia, etc)
- Infusion therapy for non-cancer diagnosis
- Fluid replacement
Outreach Programs

Billings Clinic has a strong and steady commitment to collaborating with local healthcare facilities to provide quality oncology specialty services throughout our vast geographic region. Our oncology outreach services allow patients access to expert specialty care within their local communities.

Currently, medical oncology outreach services are provided 24 days each month in eight communities throughout Montana, Wyoming, and North Dakota including Glasgow, Sidney, Glendive, Miles City, Livingston, Worland, Thermopolis, and Williston. Gynecologic oncology surgical and clinical services are provided seven days each month at Community Medical Center in Missoula and St. Peter’s Hospital in Helena, with an additional day each month of clinical service outreach at Bozeman OB/GYN in Bozeman. Radiation oncology outreach services are provided through full-time coverage at Community Medical Center in Missoula and two days each week at the Welch Cancer Center in Sheridan, Wyoming.

Billings Clinic places a high value on building relationships with regional referring providers, partnering in the collaborative care of patients, and delivering specialty cancer care closer to home whenever possible.

include map of service area with all oncology outreach locations
Clinical Programs (Cont’d)

Cancer Surgery

Billings Clinic general surgeons treat and manage patients with a broad spectrum of surgical conditions affecting most systems in the body. They work with referring physicians to establish a diagnosis and then provide preoperative, operative and postoperative care. Our surgeons collaborate with other Billings Clinic specialists and health care professionals as members of disease-specific cancer program teams to create individualized treatment plans for patients diagnosed with cancer.

Our general surgeons have special interests in surgical treatment of cancer related to:

- Gastric cancer and other foregut malignancies
- Adrenal tumors and other retroperitoneal malignancies
- Neuroendocrine tumors of the gastrointestinal tract
- Biliary tract disease
- Bladder surgery
- Breast surgery, including breast conserving and reconstructive surgery
- Colon and rectal oncologic surgery
- Complex liver surgery/resections
- Endocrine disease (thyroidectomy, parathyroidectomy)
- Esophageal disease
- Melanoma
- Pancreatic surgery

- Thoracic malignancy

In addition, these providers offer:

- Advanced laparoscopic staging biopsies and tumor resections
- Placement of brachytherapy implants for focused radiation therapy treatments
- Peritoneal chemoperfusion for tumors which have advanced into the peritoneal cavity
- Sentinel node mapping for breast cancer and melanoma

Billings Clinic’s nine general surgeons and the entire care team are committed to patient-centered care, quality outcomes and evidence-based, specialized surgical expertise close to home for patients in Montana, northern Wyoming and the western Dakotas. By offering complex surgical care at Billings Clinic, we eliminate the need for many of our patients to travel outside the state or region.

Surgeon John Gregory, MD, and Marc Syrenne, RN, in one of Billings Clinic’s new operating rooms.
Reger Center for Breast Health

Billings Clinic’s Reger Center for Breast Health welcomes board-certified Radiologist Tara Bowman, MD, to Billings. Dr. Bowman received her medical degree from University of North Dakota School of Medicine and Health Sciences, Grand Forks, North Dakota. She completed her internship and residency at Sacred Heart Medical Center, Spokane, Washington, and received her Breast Imaging Fellowship from University of California San Francisco, San Francisco, California. This fellowship means she has had extensive clinical experience in screening and diagnostic mammography, 3D breast tomosynthesis, breast ultrasound, breast MRI, breast pathology, and interventional procedures. Dr. Bowman joins our team of breast imaging specialists at Billings Clinic Reger Family Center for Breast Health.

QUESTIONS ABOUT SCREENING GUIDELINES?
We’re grateful that the American Cancer Society, along with many other research entities, continues to perform exhaustive research on this subject.

- That said, the release of these reports often cause confusion among our patients.
- Billings Clinic radiologists continue to abide by the recommendations of the National Comprehensive Cancer Network, the Society of Breast Imaging and the American College of Radiology, which recommend annual mammography beginning at age 40.
- The maximum lifesaving benefits of mammography are when done at yearly intervals, beginning at the age of 40, for women with average risk.
- We feel the benefit of detecting breast cancer earlier far outweighs the harm of false positives.
- Please don’t hesitate to ask any questions that you may have.

THANK YOU, THE STAFF AT THE REGER CENTER FOR BREAST HEALTH

PHOTO COMING
Oncology Nursing

A recent study published in the Journal of Clinical Oncology raised awareness that combining intraperitoneal (IP) and intravenous (IV) chemotherapy performs as well in clinical practice as it did in clinical trials for women who had undergone surgery for stage III ovarian cancer. However, fewer than half of patients with ovarian cancer who can benefit from this treatment combination actually receive it.

The regimen mentioned above can be given in both the inpatient and outpatient settings. Nurses in the outpatient Infusion Center frequently administer IP chemotherapy. This involves giving chemotherapy directly into the peritoneum through a port-a-cath located in the abdomen. With increasing interest from the Gynecologic Oncologists at Billings Clinic, a request was made to expand training in IP chemotherapy administration to include the Inpatient Cancer Care (ICC) nurses. Prior to this request, no inpatient nursing staff had experience with IP chemotherapy administration.

Using the Institute of Healthcare Improvement’s Plan-Do-Study-Act approach, a plan was developed to expand this specialized skill to the inpatient setting through training and competency evaluation of the ICC chemotherapy RNs. After meeting with the oncology leadership team and staff of the Infusion Center, a review of the IP chemotherapy competency and practice revealed updates were needed to reflect current evidence-based practice interventions. As such, a plan was devised to standardize all nursing staff in evidence-based practice of IP chemotherapy administration.

A team was developed including the nurse clinician, staff nurses, pharmacy, clinical nursing administration, and physicians. After a thorough review of the literature, all agreed that:

- There was no need to warm IP fluid greater than room temperature as there is no evidence to support this increases patients’ comfort.
- IP chemotherapy was to be mixed in a one liter bag followed by one liter of fluid in order to bathe the peritoneal cavity.
- IP and IV drugs would not be administered simultaneously, adhering to the administration technique utilized in the clinical trial.
- Placement of patients in trendelenberg and reverse-trendelenberg position after administration would be avoided in order to prevent gastrointestinal and/or respiratory distress.

ENHANCED DOCUMENTATION OF CHEMOTHERAPY DOUBLE-CHECKS

In preparation for our recent QOPI recertification site visit, documentation processes pertaining to the independent double-checking of chemotherapy were enhanced within the electronic medical record (EMR) to meet the ASCO/ONS Chemotherapy Administration Safety Standards. The additional forms created within our EMR provide documentation of the two RN’s who verified the accuracy of each drug to be administered, including dose, volume, rate of administration, expiration, appearance, and physical integrity, as well as the bedside verification of patient identity. Enhancements to the documentation processes provide an additional measure of safety at the time of administration of cytotoxic drugs.
The competency was revised and a patient education document was created. An educational article, revised competency, patient education material, and IP port information were shared with the staff and uploaded to the intranet for easy access. Using a train-the-trainer approach, experiences with outpatient infusion nurses competent in IP administration were arranged for the ICC charge nurses. In addition, the nurse clinician trained the ICC staff when a patient presented to the unit for IP treatment.

To date, four additional nurses have been trained on ICC and the unit has successfully administered its first IP treatment. With regard to standardization of practice to align with current evidence, patients have reported no adverse effects with room temperature IP administration. Variances in nursing practice have been eliminated and positive feedback has been obtained from the staff regarding their experiences with caring for these patients. Future direction for this project includes creating an instructional video of the procedure which can be viewed by new staff and as a refresher.
Support Programs (Cont’d)

Patient Care Navigation

Billings Clinic Cancer Center continues to offer extensive patient care navigation services for individuals diagnosed with cancer. Our navigators guide patients and families through the health care system, providing education and directing to appropriate services along the way. In order to ensure patients have all necessary information so that they can play an active role in their care, navigators have begun providing individualized treatment plans, treatment summaries, and survivorship plans as part of our patient care navigation services.

Treatment plans provide patients with key pieces of information such as diagnosis, cancer stage, and medications prescribed along with frequency and duration of treatment. Symptoms to report and follow-up care are also included in this treatment plan. Treatment plans are provided to patients prior to the initiation of chemotherapy so there is clear communication and understanding of the plan of care established.

Treatment summaries outline key aspects of the cancer care delivered including the treating providers along with contact information, diagnosis, stage, and comprehensive treatment received (surgery, chemotherapy, biotherapy, hormonal therapy, and/or radiation therapy). Ongoing toxicities or side-effects for all treatments received are included in the summary, as well as information concerning the likely course of recovery for identified toxicities. The treatment summary is provided at the conclusion of initial cancer treatment as a brief synopsis of the cancer care received.

In addition to the treatment summary, survivorship care plans are provided to patients to help ensure a smooth transition of care between oncology and primary care. The survivorship care plan outlines the need for any ongoing adjuvant therapy (name, duration, and potential side effects), schedule of follow up (in an easy to follow table identifying provider responsible and frequency of visits), ongoing cancer surveillance, possible symptoms for cancer recurrence, long-term effects that may occur as a result of treatment received, local resources available for cancer survivors, and general health information.

Oncology Rehabilitation (STAR program)

Billings Clinic Cancer Center has partnered with Oncology Rehab Partners, an industry leader in cancer rehabilitation and survivorship care, to initiate the STAR Program. The STAR Program (Survivorship, Training And Rehabilitation), is an evidence-based cancer rehabilitation certification program created by Dr. Julia Silver, an Associate Professor at Harvard Medical School and breast cancer survivor.

The premise behind the STAR program is to identify patients anywhere along the cancer continuum who are experiencing any of the following symptoms: pain (including headaches), numbness/tingling, swelling, fatigue, memory and cognitive impairment, balance/coordination concerns, difficulty swallowing and/or speaking, decreased sexual function, difficulty completing simple tasks at home, and trouble with driving and working (or returning to work). Based upon responses to screening questionnaires, referrals are made to the appropriate specialty such as: physiatry, physical therapy, occupational therapy, speech therapy, nutritional counseling, mental health counseling, psychosocial supportive services, or lymphedema therapy.

The STAR Program is unique in that cancer patients are screened multiple times throughout the course of therapy, regardless of whether or not they verbalize concerns to their provider. This is important as recent literature shows that while 65-90% of cancer patients and survivors experience physical and psychosocial issues, only about 5% are actually referred to rehabilitation services.

The Billings Clinic Cancer Center is excited to launch the STAR Program and formalize processes for routine screening of rehabilitation needs and early referral when concerns are noted. We are proud of the 52 providers and staff who completed the STAR training course and enthusiastic about the opportunity to offer our cancer patients specialized oncology rehabilitation services at Billings Clinic.
Cancer Research

The first year of the NCI Community Oncology Research Program (NCORP) was a busy one with much excitement and planning for new trials in this age of targeted therapy. The landscape of clinical trial protocols has changed greatly with the testing for biomarkers specific for many of the targeted therapies available. As such, this year, we would like to highlight two examples of these trials available to cancer patients at the Billings Clinic.

Southwestern Oncology Group (SWOG) recently opened the LUNG-MAP trial. This is a biomarker study for patients with squamous cell non-small cell lung cancer (NSCLC) with stage IV or recurrent disease who have received one prior systemic treatment a platinum-containing regimen. Based upon the results of the biomarker test, patients are eligible to enroll in one of five other trials available. For those who test positive for a biomarker, they would enroll in a separate study specific to that biomarker, whereas those who have no biomarker would enroll in the S1400A Anti-PD-L study.

Another interesting trial available at Billings Clinic is the ALCHEMIST (Adjuvant Lung Cancer Enrichment Marker Identification and Sequencing Trials) which is a set of 3 integrated trials testing targeted therapy in early-stage lung cancer. The first trial is the screening trial A151216 where eligible patients have their tumor tissue tested for genetic changes in ALK (Anaplastic Lymphoma Kinase) or EGFR (Epidermal Growth Factor Receptor), and if positive for one of these, they are referred to one of the targeted treatment trials. For example, if EGFR positive, the patient could enroll in the A081105 trial and would receive Erlotinib or placebo, following standard of care adjuvant treatment. If ALK positive, they would be eligible for E4512 and receive Crizotinib or placebo following standard of care adjuvant treatment. Patients who have no biomarker identified are followed for five years.

Clinical trials are continually changing as more biomarkers are identified and targeted therapies are developed for those markers. This is indeed an exciting time in the area of cancer research as trials are increasingly exploring ways to make cancer treatment as targeted as possible.
Quality Study

Breast Cancer: DCIS Upgraded to Invasive Carcinoma

Background:

Both invasive breast cancer and ductal carcinoma in situ are relatively common diagnoses for women in the United States. Ductal carcinoma in situ is classified as Stage 0 breast cancer and is a non invasive breast neoplasm. Recent Surveillance, Epidemiology, and End Results (SEER) statistics suggest that about one in eight US women will have a diagnosis of breast cancer in their lifetime. In 2015, it was expected that there would be 231,000 cases of invasive breast cancer and 60,000 cases of in situ carcinoma of the female breast of which DCIS usually makes up about 85% (1). Thus, for every four to five cases of breast cancer, one case of DCIS is diagnosed.

DCIS can be managed by breast conservation with lumpectomy with or without radiation or by mastectomy (per NCCN guidelines) (2). Sentinel lymph node biopsy is recommended for invasive carcinoma but is not routinely recommended as part of the management for DCIS. Unfortunately, some cases of biopsy proven DCIS are upgraded to invasive carcinoma after review of the pathology from the definitive breast surgery. In these cases, a sentinel lymph node biopsy is recommended as part of the standard evaluation. Unfortunately, if the invasive carcinoma is recognized after the initial surgery, the lymphatic drainage may have been altered by that initial surgery, making the use of a sentinel node biopsy potentially less effective.

In an effort to evaluate our program, we reviewed our rate of DCIS that is upgraded to invasive carcinoma and our use of sentinel node biopsy in DCIS from January 2011 through June 2015.

DCIS at Billings Clinic:

From January of 2011 through June of 2015, there were 85 cases of DCIS compared to 706 cases of invasive breast cancer at Billings Clinic. Figure 1 shows the number of cases of DCIS and invasive breast cancer by year while figure 2 shows the percentage of DCIS cases amongst breast cancer diagnosis by year. While there is some variation on a year by year basis, overall only 11% of our breast cancer cases were DCIS. This is a lower rate than the approximate 20% reported in nationwide statistics (1).

![Number of Patients with DCIS or Invasive Breast Cancer at Billings Clinic by Year](image)

Figure 1: Comparison of the number of DCIS cases and invasive breast cancer cases at Billings Clinic.

*Only includes January through June 2015.
Quality Study (Cont’d)

Upgrading of DCIS

From January 2011 through June 2015 there were 104 biopsies that showed DCIS without evidence of invasive carcinoma. However, at the time of the definitive surgery, 19 of these were upgraded to invasive carcinoma. Over this whole time frame, 18% of DCIS biopsies were upgraded to invasive carcinoma. The percentage of biopsies by year that were upgraded is shown in Figure 3.

The rate of DCIS getting upgraded to invasive cancer has been evaluated in a number of other series (see Table 1) and ranges from 18% to 39.6%. Billings Clinic rate of 18% of cases that get upgraded is on the low end of the reported series, but still correlates with the majority of the series which demonstrate rates of 18-26%.

<table>
<thead>
<tr>
<th>Series</th>
<th>Upgraded%</th>
<th># of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicholson et al. (3)</td>
<td>24.7%</td>
<td>26,696</td>
</tr>
<tr>
<td>Yen et al. (4)</td>
<td>20.1%</td>
<td>398</td>
</tr>
<tr>
<td>Schulz et al. (5)</td>
<td>18.0%</td>
<td>205</td>
</tr>
<tr>
<td>Tunon-de-Lara et al. (6)</td>
<td>39.6%</td>
<td>192</td>
</tr>
<tr>
<td>Meijnen et al. (7)</td>
<td>26.2%</td>
<td>172</td>
</tr>
<tr>
<td>Doyle et al. (8)</td>
<td>37.9%</td>
<td>145</td>
</tr>
</tbody>
</table>

Table 1: Published series documenting the rate of DCIS that gets upgraded to invasive carcinoma at the time of definitive surgery.
Characteristics of Upgraded DCIS:

Several papers in the literature have reported on characteristics that increase the likelihood of having DCIS upgraded to invasive carcinoma on final pathology. These have included younger age, a palpable mass, a larger lesion on mammography, intermediate or high grade DCIS, comedocarcinoma, and Her2 positive DCIS (3) (4) (5) (6). We evaluated our cases based on grade and whether the lesion was palpable or visible on ultrasound (see Figure 4). While there was not a clear correlation with grade, palpable lesions or lesions visible on ultrasound had a 44% likelihood of getting upgraded to invasive carcinoma at the time of the definitive breast surgery. This has implications for sentinel lymph node use in DCIS.

Sentinel Node Use in DCIS:

During the time of this analysis, a total of 48% (50 out of 104 patients) of DCIS patients had a sentinel node biopsy as part of the initial definitive surgery. In the patients with only DCIS, a sentinel node procedure was done 38% of the time and in the patients who were upgraded to invasive carcinoma, it was done in 68% of the cases. Figure 5 shows the breakdown of the percentage of time that a sentinel node biopsy was performed on the DCIS only patients and the upgraded patients as a function of tumor grade and whether a mass lesion was present.

For a comparison, SEER data from 2000-2008 DCIS patients showed use of sentinel lymph node in 49% of mastectomy patients and 15% of lumpectomy patients (10) (11). The United Kingdom National Health Service Breast Screening Programme series from 2003-2011, showed use of axillary surgery in 72.4% of patients undergoing mastectomy and 23.8% of patients undergoing lumpectomy (3).
In our series, only one patient (1%) ended up having node positive disease. Other series have documented rates of 1.4% to 14%, with all but one series having rates under 5% (3) (6) (7) (8) (11).

**Conclusion**
As biopsies are only evaluating a part of the larger lesion, there is always going to be some sampling error. Our 18% rate of DCIS biopsies that get upgraded to invasive carcinoma is in concordance with several other published reports in the literature.

In our series, the presence of a palpable lesion or mass visible on ultrasound was the biggest factor associated with DCIS getting upgraded to invasive carcinoma. In those patients, 44% were upgraded. The grade of the DCIS did not appear to have any clear influence with upgrading noted in 14% of grade 1, 23% of grade 2, and 18% of grade 3 biopsies. While we are doing sentinel lymph node procedures on the majority of DCIS patients that are ultimately upgraded to invasive carcinoma, we may have an opportunity to better refine the overall group of DCIS patients that get a sentinel lymph node procedure to limit this procedure in those patients who only have DCIS.

**References**


 Registry Update

The Cancer Registrars at Billings Clinic have started to prepare for the transition from Collaborative Staging to the American Joint Committee on Cancer (AJCC) Tumor, Node and Metastases (TNM) staging standard. The goal of this change, which will be implemented in January 2016, is to provide continuity among Cancer Registries across the country. In preparation for this change, our Cancer Registrars have been participating in educational modules discussing these changes and how to best implement the new system of staging. The Cancer Registry also transitioned from ICD-9 coding to ICD-10 this fall. This transition went smoothly with the assistance of the Information Services team who helped develop tools needed to abstract the data.

Each year Cancer Registrars need continuing education to maintain their Certified Tumor Registrar (CTR) credentials. This year, members of our Cancer Registry attended both state and national conferences. One member traveled to Helena to participate in the Montana Cancer Registrars Association annual meeting. Marcia Tostengard, CTR, continues in her role as President Elect of the Montana Registrars Association, and will become President of the association in May 2016. Two members of the registry traveled to San Antonio, Texas to attend the National Cancer Registrars Association annual conference. With the ever changing world of Cancer Registry, attendance at these conferences is essential to learn of changes and best practices for implementation.

The Cancer Registrars continue to use E-Path and AIMS (Artificial Intelligence in Medicine, Inc) for case finding processes. This helps with rapid abstraction of cases, often within three months of first contact. The Registry also participates in the Commission on Cancer Rapid Quality Reporting System (RQRS). Case alerts are reviewed with Medical and Radiation Oncologists, as well as reported to Cancer Committee in order to look at any trends for why cases may fall out of the set parameters.
## 2014 Primary Site Table -- Cancer Cases

Summary by Body System, Sex, Class, Status and Best CS/AJCC Stage Report

<table>
<thead>
<tr>
<th>Primary Site</th>
<th>Total (%)</th>
<th>M</th>
<th>F</th>
<th>Analy</th>
<th>NA</th>
<th>Alive</th>
<th>Exp</th>
<th>Stg 0</th>
<th>Stg I</th>
<th>Stg II</th>
<th>Stg III</th>
<th>Stg IV</th>
<th>88</th>
<th>Unk</th>
<th>Blank/NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORAL CAVITY &amp; PHARYNX</td>
<td>60 (3.5%)</td>
<td>45</td>
<td>15</td>
<td>57</td>
<td>3</td>
<td>49</td>
<td>11</td>
<td>3</td>
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## 2014 Primary Site Table

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## 2014 Primary Site Table  Cancer Cases Cont’d -

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^ Back to Table of Contents
Cancer Registry (Cont’d)

Top 5 Cancers-Female
2014

- Breast 196
- Corpus Uterus 120
- Cervix Uteri 82
- Lung/Bronchus 70
- Melanoma 61

Top 5 Cancers-Male
2014

- Prostate 186
- Lung/Bronchus 85
- Urinary Bladder 58
- Colorectal 53
- Melanoma 91
Jeannine M. Brant, PhD, APRN, AOCN, FAAN was inducted into the American Academy of Nursing at a recent ceremony in Washington, DC. The American Academy of Nursing is an organization of distinguished leaders in nursing who have been recognized for their outstanding contributions to the profession and to health care. There are over 19 million nurses worldwide, and the Academy Fellows includes 2,200 who are recognized nationally and internationally as nursing leaders in education, management, practice and research.

Dr. Brant, the oncology clinical nurse specialist and nurse scientist at Billings Clinic, promotes evidenced-based practice and nursing research throughout the organization. Her early work addressed cancer disparities in American Indians (AI), which led to the development of the AI Women Reaching for Wellness Program.

A leader in cancer and palliative care, Dr. Brant currently serves on the Oncology Nursing Society Pain guideline team, International Advisory Panel, and Regional Palliative Care Conference Planning Committee; the American Society of Clinical Oncology Palliative Care Symposium Planning Committee; and the National Cancer Institute Executive Committee with oversight for Palliative Care in the Middle East. Dr. Brant is a prolific writer with more than 75 contributions to the literature on cancer, palliative care, and pain and symptom management and is an editor of the Oncology Nursing Society (ONS) Standards of Oncology Nursing Practice, the ONS Core Curriculum, and the Journal of Advanced Practitioners in Oncology. As an internationally recognized speaker, she has given more than 200 lectures around the world with her most recent work focused in the Middle East.

NEED COPY FOR WOMEN’S CHOICE AWARD
Peer-Reviewed Publications


Awards, Presentations, and Publications (Cont’d)

Published Abstracts


Poster Presentations


Podium Presentations (National)


Podium Presentations (Local/Regional)

- **Finn, J.** (2015). Depression and anxiety. *Big Sky Oncology Nursing Society Fall Conference*, Billings, MT.
- **Finn, J.** (2015). Discussing end-of-life before it’s time. *Everything You’ve Ever Wanted to Know about End-of-Life Care … but were Afraid to Ask!*, Billings, MT.
- **Finn, J.** (2015). Outpatient supportive/palliative care case presentation. *American Cancer Society CAN Palliative Care Summit*, Helena, MT.
- **Scaramuzzo, L.** (2015). Incorporating physical activity into cancer care. *Big Sky Oncology Nursing Society Fall Conference*, Billings, MT.
- **Scaramuzzo, L.** (2015). Ready, set, go with the Iowa model. *Interdisciplinary Evidence-Based Practice Symposium*, Billings, MT.
- **Scaramuzzo, L.** (2015). Teach back: So how do you do it? *Everything You’ve Ever Wanted to Know about End-of-Life Care … but were Afraid to Ask!*, Billings, MT.
- **Stevens, E.** (2015). Death with dignity: What did Brittany Maynard teach us? *Everything You’ve Ever Wanted to Know about End-of-Life Care … but were Afraid to Ask!*, Billings, MT.
- **Stevens, E.** (2015). Evidence based communication: SPIKES. *Everything You’ve Ever Wanted to Know about End-of-Life Care … but were Afraid to Ask!*, Billings, MT.
- **Stevens, E.** (2015). Landmark trials in ovarian cancer: Where we’ve been and where we’re headed. *Community Medical Center*, Missoula, MT.
- **Stevens, E.** (2015). Landmark trials in ovarian cancer: Where we’ve been and where we’re headed. *St. Agnes Oncology Symposium: Contemporary Care of the Ovarian Cancer Patient*, Fresno, CA.
• **Stevens, E.** (2015). Pap smears and HPV: What’s new and what’s next. *American College of Physicians, Montana Chapter, Billings, MT.*


• **Stevens, E.** (2015). Pap smears and HPV: What’s new and what’s next. *North Dakota OB/GYN Meeting, Medora, ND.*

• **Stevens, E.** (2015). Tubes and ovaries and the time of hysterectomy: BSO or BS? *Montana/Idaho ACOG Meeting, Big Sky, MT.*

• **Stevens, E.** (2015). When to Refer to a Gynecologic Oncologist. *Billings Clinic Lunch and Learn, Glendive, MT.*

• **Stevens, E.** (2015). When to Refer to a Gynecologic Oncologist. *Billings Clinic Lunch and Learn, Miles City, MT.*

• **Waitman, K.** (2015). Compassion fatigue and caregiver burnout. *Big Sky Oncology Nursing Society Fall Conference, Billings, MT.*

• **Waitman, K., & Finn, J.** (2015). Managing quality of life with advanced cancer. *Supportive Care Case Conference, Billings, MT.*

• **Walton, A.** (2015). Infection and sepsis challenges in rural nursing. *Big Sky Oncology Nursing Society Fall Conference, Billings, MT.*
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