



Quality Cancer Care
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cancer center
at Ohio Valley Medical Center

2009 Annual Cancer Report

2008 Calendar Year Statistics
2009 Fiscal Year Activities



Cancer Committee— 2009

G. Reddy, M.D., Chairman
Radiation Oncology
G. Saracco, M.D., Cancer Liaison Physician,
Surgery
N. Ikhlaque M.D., Cancer Liaison Physician
Medical Oncology
S. Mehrotra, M.D. Medical Oncology
N. Khan, M.D. Pathology
V. Almario, M.D., Diagnostic Radiology
E. Kluth, DDS., Dentistry
W. Suwaid, M.D., General Medicine
J. Etzel, D.O., General Medicine

Ex-Officio Members

B. Albertini, Assistant Administrator
P. George R.N., Director of Nursing
L. Palotay, Director of Med. Rec.
B. Saleh, OCN, NP-C
K. Downing, R.N., O.C.N
A. Gamble, LSW
S. Rodabough, CTR
J. Hess, RT. T.
B. Vieweg, R.N.
S. Trudo, R.N.
A. LaForme, OTR/L
B. Ogilbee, RT. T.
S. Malson, R.N
S. Ware, R.N. Breast Coordinator

Cancer Committee Goals for 2009

1. Programmatic- Establish a public relations campaign to increase awareness of available services to the community.
2. Quality Improvement- Improve education to increase influenza vaccination rates of oncology staff.
3. Clinical- Decrease elapsed time from abnormal screening mammogram to biopsy.
4. Community Outreach- Provide tobacco education to fifth graders of Ohio and Marshall Counties of West Virginia.

Cancer Services Available at OVMC's Cancer Center

- Board-certified surgeons, medical oncologists, radiation oncologist and hematologist
- Oncology-certified nurses
- Minimally invasive surgery
- Video-assisted thorascopic procedures
- Plastic & reconstructive surgery
- Breast conservation procedures
- Gastroenterology & endoscopy services
- Image-guided biopsies and treatment
- External beam and high dose rate brachytherapy (HDR), including MammoSite
- Three-dimensional treatment planning
- Intensity Modulated Radiation Therapy (IMRT)
- Full service laboratory & pathology services
- Radiology Services including: Digital mammography/PET/CT/MRI/Stereotactic imaging.
- Chemotherapy Outpatient Infusion Center
- The Breast Center
- The Women's Center
- 16-bed, inpatient oncology unit
- On-site pharmacy
- Multidisciplinary cancer conferences
- Medical social workers
- Enterostomal therapy
- Lymphedema therapy
- Nutrition counseling
- Pain management services
- End-of-life services
- Pastoral services
- Support & Informational Groups
- Community Health Education

Quality Improvement Report

The OVMC Cancer Center continues to provide the region with the latest in specialty cancer care, continuing the tradition of providing access to the most effective diagnostic and treatment options available. In 2008, there were 372 newly diagnosed cases at OVMC.

Over the past year, our cancer team has continued to strengthen its multi-disciplinary team approach in improving cancer care. Collaborative efforts among physicians, colleagues, patients, families and volunteers have touched the lives of many within our community.

OVMC's cancer program consists of many services including radiation oncology, medical oncology, oncology nursing, cancer registry, advanced imaging technology and genetic counseling, as well as its two centers, the OVMC Cancer Infusion Center and the OVMC Women's Center. In addition, OVMC features a 16-bed Inpatient Oncology Unit that provides cancer care services for patients with surgical, medical and palliative/hospice needs. Quality of life throughout cancer treatment and survivorship is a priority of cancer services and each department that serves cancer patients.

In 2009, the cancer program experienced many improvements. Telemetry monitors were installed on the inpatient oncology unit, allowing cancer patients in need of monitoring to remain under specialized care. In the Women's Center, ultrasound guided stereotactic breast biopsy equipment was installed, assisting in decreasing the need for open breast biopsies.

The Cancer Committee at OVMC is a multidisciplinary committee of the Medical-Dental Staff with representation from Surgery, Medicine, Medical Oncology, Radiation Oncology, Dentistry, Diagnostic Radiology, Pathology and the Cancer Liaison Physician. Ex-officio members include representation from Administration, Nursing, Social Services, Performance Improvement, and the Cancer Registrar. Other disciplines may also participate on the Committee as indicated.

The success of our cancer program would not be possible without the support of administration, the medical staff and ancillary departments.

Accreditation

OVMC's Cancer Center is accredited by the American College of Surgeons (ACoS) Commission on Cancer (CoC). OVMC is designated as a Community Hospital Cancer Program and received three commendations at the last survey in 2006. The program underwent its' most recent scheduled survey in October 2009. Results of this year's survey will be released in early 2010.

Since our first accreditation in the 1980's, the process, which takes place every three years, has become more comprehensive and stringent. The OVMC cancer committee has worked tirelessly to fine-tune the program to meet the new standards and make improvements that better allows the cancer program to meet the community's needs.

The Department of General Surgery

Whether the primary modality of therapy or in conjunction with other treatment plans, our experienced, board-certified surgeons are leaders and innovators in their respective fields. Cutting-edge techniques utilize minimally invasive surgeries. Our multi-modality approach toward cancer care helps surgeons offer the best possible treatment. We offer thoracic, breast, colorectal, general and plastic surgeries, all of which are provided in a very compassionate and caring environment.

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Chemotherapy and Infusion Services

Our Outpatient Oncology & Infusion Center, led by Dr. Nadeem Ikhlaque, board certified in Oncology and Hematology, provides patients with chemotherapy and medical infusion services in a caring, comfortable and newly remodeled setting.

Care in the unit is provided by nurses whose primary concern is the safety of our patients during treatment, patient and family education, patient support, ongoing evaluation of our patients' progress and patient/family coping mechanisms.

The focus of patient care is to maintain our patients' health, independence and role in the community. Patients are encouraged to become an active participant in their care and decision making process.

The Infusion Center is open from 8:00 a.m. to 4:30 p.m. Monday through Friday, excluding holidays. Twelve comfortable recliners, soft blankets, individual televisions, light refreshments and drinks are provided to our patients as well as the option to rest in a private bed; this allows patients to receive care in a relaxed, personalized setting.

Services provided by the Cancer Center include: chemotherapy and biotherapy infusions, injections, monitoring of lab results, care of venous access devices, complementary cancer genetic testing and coordination of support services.

The Department of Radiation Oncology

Ohio Valley Medical Center is proud to have a Board Certified radiation oncologist caring for our patients. Dr. Gurijala Reddy, Chairman of the Cancer Committee is a specialist with advanced training and over 30 years of experience in the evaluation and treatment of cancer. Dr. Reddy works closely with a team of professionals including medical physicists, dosimetrists, radiation therapists, oncology nurses. Together, this group of experts operates state-of-the-art equipment needed to plan and administer radiation therapy, and practices the skills and compassion necessary to treat cancer patients.

The equipment in Ohio Valley Medical Center's Radiation Oncology Department consists primarily of four state-of-the-art components: a linear accelerator, a CT simulator, a treatment planning computer and a high dose rate (HDR) brachytherapy unit. The CT simulator and treatment computer are used in combination for planning and preparation of the patients prior to their actual treatment. The linear accelerator is used to deliver the radiation therapy through external radiation, while the HDR unit delivers the radiation internally (brachytherapy).



The Radiation Oncology Department offers our cancer patients state-of-the-art cancer treatments that include conventional beam therapy and intensity-modulated radiation therapy (IMRT). The Siemens Oncor Linear Accelerator with dual energy photons and multiple energy electrons allows patient treatments to be tailored to best treat the cancer. Another component of this linear accelerator is the multi leaf collimator which has 82 individual leaves that shape the radiation beam around the patients' cancer. Intensity-modulated radiation therapy (IMRT) gives the advantage to treat tumors with a higher dose of radiation without damaging large amounts of healthy tissue. This technique decreases the risk of side effects, while increasing the chance to cure the cancer. Currently, IMRT is being performed on cancers affecting the prostate, head and neck, breast, and other sites. This machine also has portal imaging capability for daily verification of the treatment area as needed and without the necessity of a "film."

The CT simulator allows for extremely accurate planning of the patient's radiation treatment plan. Structures are defined in great detail, allowing the radiation oncologist to more accurately direct the radiation to decrease the exposure to healthy tissue.



HDR brachytherapy administers radiation from within the body cavity and directly into the body cavity or tumor for a temporary amount of time. This allows most patients to be treated on an outpatient basis. Fewer treatments are necessary than external beam radiation because of the ability to deliver high doses of radiation to the tumor or tumor bed. Currently, HDR brachytherapy is being performed on cancers affecting the rectum, cervix/uterus, vagina, esophagus, lung, breast, and soft tissue sarcomas.



HDR brachytherapy of the breast is administered via MammoSite or Contura in appropriately selected patients. These devices are inserted into the breast after lumpectomy or re-excision. This technique allows a breast cancer patient to complete radiation treatment by a protocol of two treatments a day over a course of five days. This timeframe is much shorter than that of external beam

radiation, which may last four to six weeks. Interstitial catheter brachytherapy is another method of treatment in properly selected patients.

The Radiation Oncology Department staff includes: Dr. G.N. Reddy, Board Certified Radiation Oncologist; Dr. Yong Park, RSO; Iron City Medical Physics (contract service); Jim Hess RT(T), Chief Therapist; three staff therapists; one medical dosimetrist; two registered nurses; and support staff.

Clinical Management

The inpatient oncology unit is equipped with 16 beds. The nursing staff provides organized chemotherapy education and generalized information for all oncology patients. Nurses providing care to oncology patients attended outside oncology conferences and educational sessions on campus.

To ease the difficulty of hospital stays, snacks and refreshments are available for patients and family members. Educational materials are accessible to all patients and family members.

In 2009, the inpatient unit gained the capability to keep oncology patients on the unit for remote telemetry monitoring. This allows the patients and families to stay on the same unit and receive continuous telemetry monitoring without having to be transferred to different departments.

At the Ohio Valley Medical Center Cancer Center, multidisciplinary teams of specialists pool their knowledge and experience in collaboration to determine the best treatment options. During weekly tumor conferences surgeons, medical and radiation oncologists, radiologists, pathologists, nurses, medical residents and allied health members gather to review and discuss patient cases

Prevention and Outreach

In 2009, the Cancer Center reached community members through outreach programs that encouraged cancer prevention through healthier lifestyles and early detection by taking advantage of available testing. Outreach programs concerning the importance of early detection and prevention were provided during six community events.

Also in 2009, the American Cancer Society awarded OVMC with a Targeted Community Investment Grant for a sum totaling almost \$9,000. This grant was used to focus anti-tobacco education to the fifth graders of Ohio and Marshall County School Districts in West Virginia. As a result of the awarded grant, approximately 700 students were educated on the dangers of tobacco use.

Our Cancer Center offers self-help programs including smoking cessation, nutrition and health, breast health and skin cancer prevention. These programs as well as complimentary screenings for the early detection of skin, prostate, colorectal and breast cancers are provided throughout the year. For additional information and a calendar of upcoming events, contact the Cancer Center at 304-234-1692.

We continue to learn more about the causes of cancer each year. Some of those causes – like smoking and overexposure to the sun – we can choose to avoid. We have also learned that discovering cancer in its early stages provides the greatest hope for a cure. According to the

American Cancer Society, educating the community about the risk factors associated with cancer and early detection testing has proven to be effective in the fight against cancer. People are listening and taking action.

Registry

The cancer registry is an essential component of the Commission on Cancer accredited cancer program. The Cancer Program Ohio Valley Medical Center is a strategic partner with CHAMPS Oncology Data Services who staff the registry with multi-credentialed CTR's and CoC consultants. CHAMPS personnel help programs achieve their goals by collecting and reporting quality cancer data in support of their business planning and outreach initiatives.

Data collected by the cancer registry is an invaluable tool in the fight against cancer. As an accredited CoC facility the registry collects demographic and disease specific data elements on each cancer patient presenting for diagnosis or treatment. The information collected is utilized by physicians, administration, and other healthcare professionals. Among the many uses are:

- measuring quality outcomes
- tracking community outreach initiatives
- supporting clinical, diagnostic, and treatment research
- evaluating the effectiveness of current treatment modalities
- presenting data for individualized patient treatment planning
- submitting to local and national databases for incidence and outcome comparison

2008 Data Summary

Ohio Valley Medical Center's cancer registry accessioned 372 new cancer cases for 2008.

Figure 1 illustrates the top five cancer sites. The top five cancer sites presented at OVMC in 2008 are Breast, Lung, Colon, Bladder and Rectum.

Figure 1: Top Five Cancer Sites in 2008

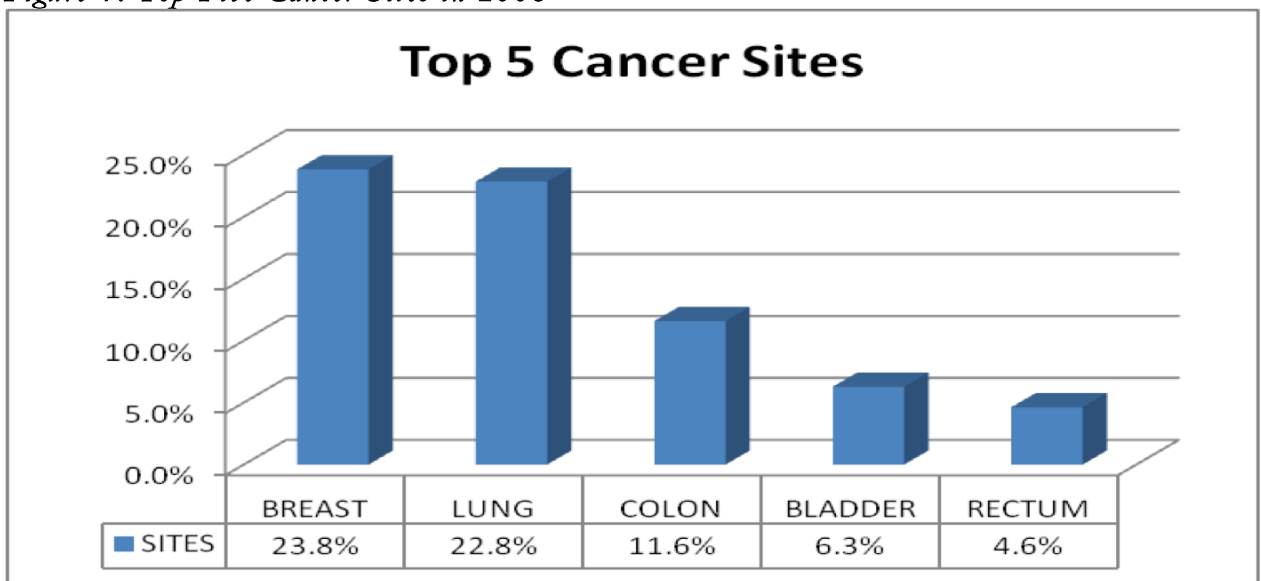
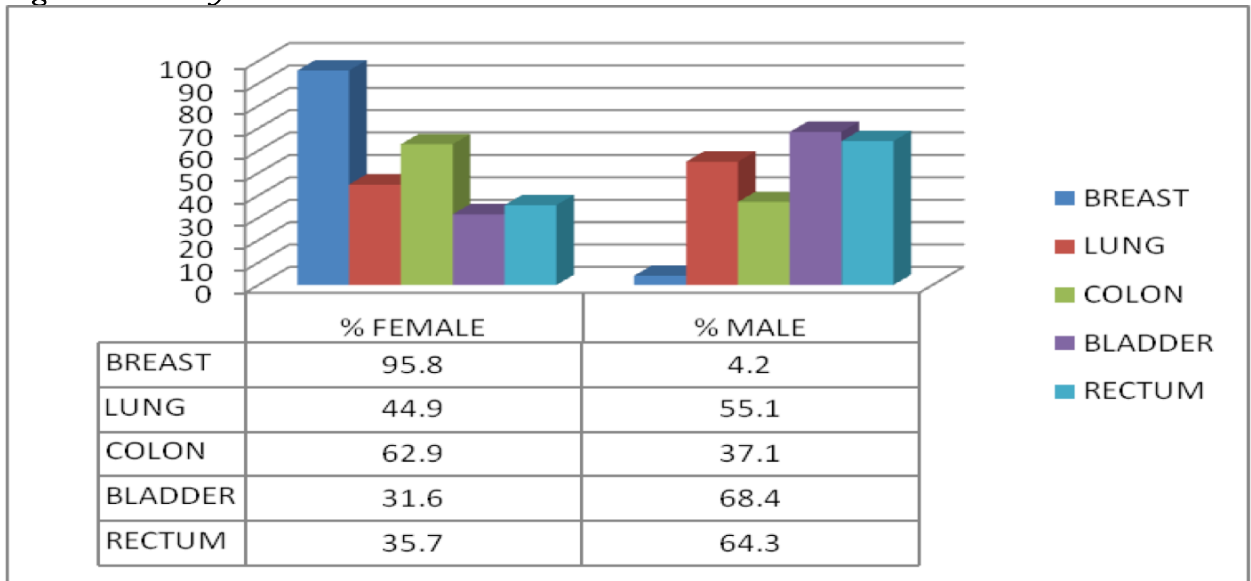


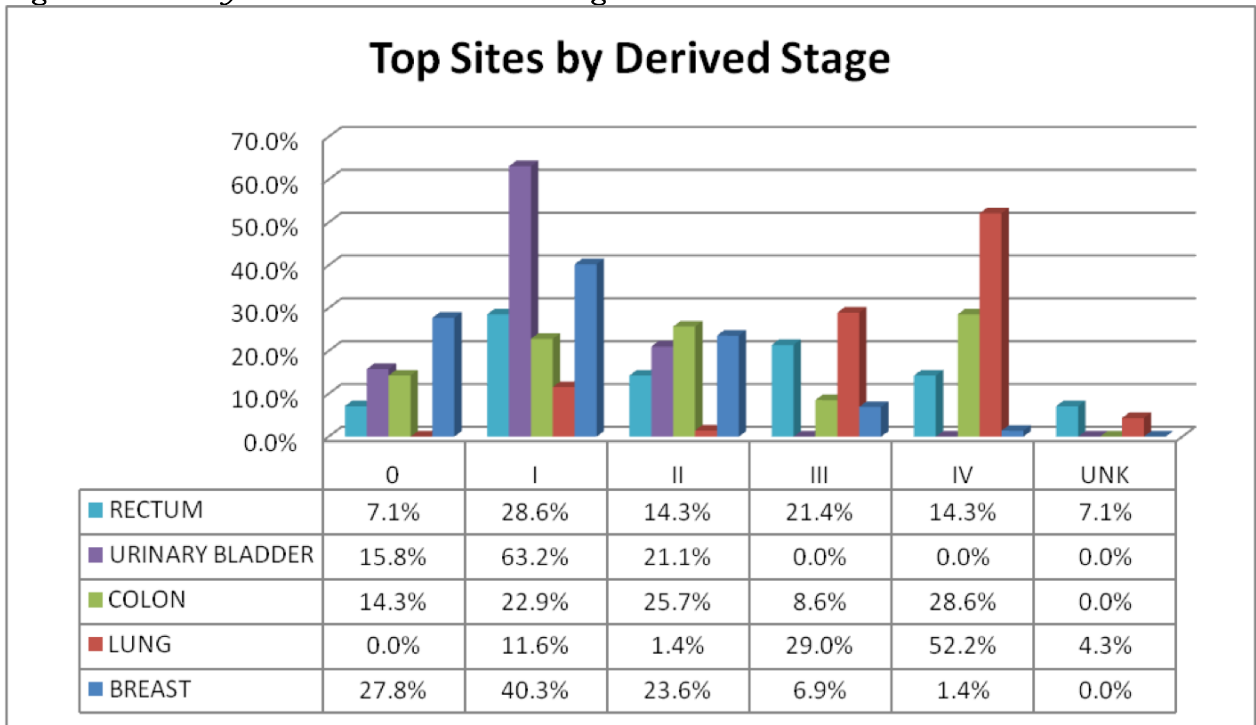
Figure 2 illustrates the top five sites by gender. 60.4% cases were Female and 39.4% cases were male.

Figure 2: Site by Gender



The next graph (**Figure 3**) illustrates the top five cancer sites by Collaborative Derived Stage distribution. Rectal, Urinary Bladder, and Breast cancers presented to OVMC in 2008 with predominately Stage 1 disease were Colon and Lung cancers presented with Stage IV disease.

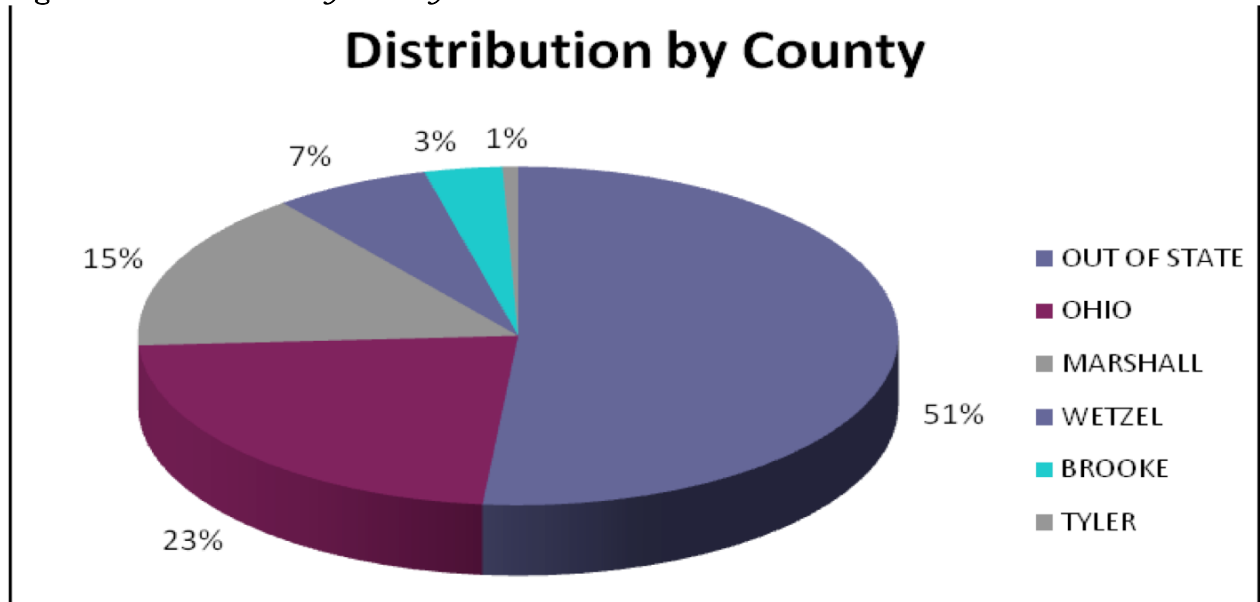
Figure 3: Sites by Collaborative Derived Stage



Demographics

Figure 4 illustrates a distribution of the cancer patients that presented in 2008 by county. 51% of the patients presenting to Ohio Valley Medical Center reside out of state and 23% of patients reside in Ohio County.

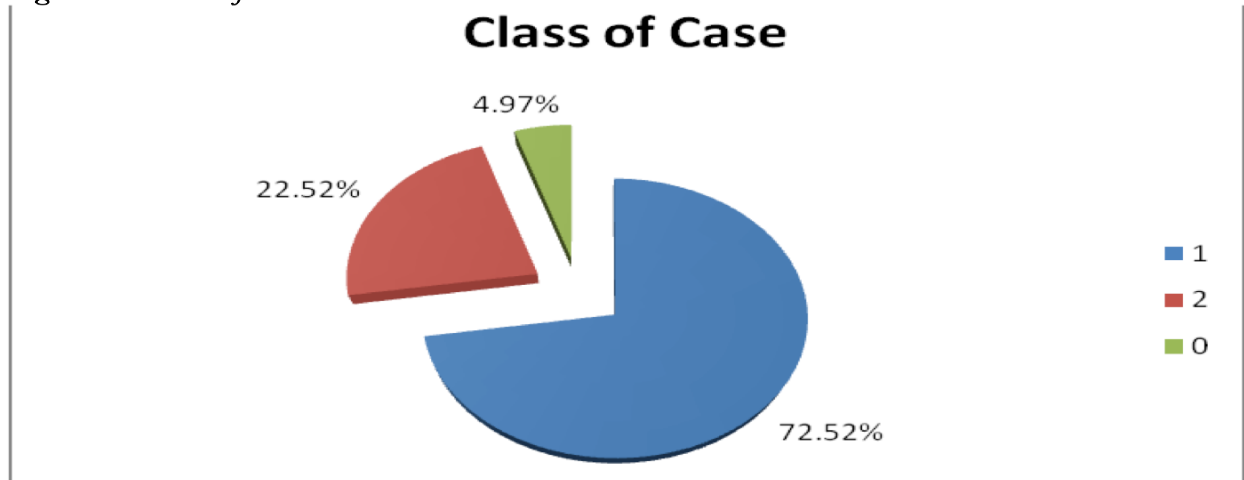
Figure 4: Distribution by County



Each case accessioned into the registry database is assigned a class of case based on the location of initial diagnosis and/or treatment, which allows for the evaluation of referral patterns. Class of case analysis can also be a valuable tool in the planning and allocation of resources at the facility.

In summary, 5% of cancer patients presented as Class of case 0. These cases were first diagnosed at OVMC but received first course of therapy elsewhere. 73% of cancer patients presented as Class of case 1. Class 1 cases include all cases newly diagnosed and received first course treatment at OVMC. Finally, 23% of the cancer patients presented as Class of Case 2 cases. Class 2 cases were first diagnosed elsewhere and presented to OVMC for first course of therapy.

Figure 5: Class of Case Distribution



The following table details the number of analytic cases (Class 0,1,2) by primary site for 2008.

Table 1: The Total Number of Analytic Cases by Collaborative Derived Stage

SITE	0	I	II	III	IV	88	UNK	ALL OTHER	TOTAL
BREAST	20	29	17	5	1	0	0	0	72
BRONCHUS & LUNG	0	8	1	20	36	1	3	0	69
COLON	5	8	9	3	10	0	0	0	35
URINARY BLADDER	0	12	4	0	0	0	0	3	19
RECTUM	1	4	2	3	2	1	1	0	14
CORPUS UTERI	0	9	1	0	0	0	2	0	12
THYROID GLAND	0	11	0	0	0	0	0	0	11
BLOOD & BONE MARROW	0	0	0	0	0	9	0	0	9
LYMPH NODES	0	2	1	0	6	0	0	0	9
PROSTATE GLAND	0	1	8	0	0	0	0	0	9
KIDNEY	0	2	1	0	2	0	0	0	5
STOMACH	1	1	0	0	1	2	0	0	5
UNK PRIMARY	0	0	0	0	0	5	0	0	5
PANCREAS	0	0	0	1	2	0	1	0	4
ANUS & ANAL CANAL	0	0	1	0	1	1	0	0	3
ESOPHAGUS	0	0	0	2	1	0	0	0	3
LARYNX	0	1	0	1	1	0	0	0	3
BRAIN	0	0	0	0	0	2	0	0	2
CERVIX UTERI	0	0	0	1	0	0	0	1	2
PENIS	2	0	0	0	0	0	0	0	2
BASE OF TONGUE	0	0	0	0	1	0	0	0	1
MENINGES	0	0	0	0	0	1	0	0	1
OTHER BILIARY TRACT	0	0	1	0	0	0	0	0	1
OVARY	0	0	0	0	1	0	0	0	1
RECTOSIGMOID JUNCTION	0	0	0	1	0	0	0	0	1
SKIN	0	1	0	0	0	0	0	0	1
SMALL INTESTINE	0	0	0	0	1	0	0	0	1
TONSIL	0	0	0	1	0	0	0	0	1
URETER	0	1	0	0	0	0	0	0	1
OVERALL TOTALS	29	90	46	38	66	22	7	4	302

Follow-Up

Meaningful survival and outcome measures require reliable tracking of disease, recurrence and vital status for the lifetime of each patient record. Accurate follow-up data enables Ohio Valley Medical Center to compare outcomes with regional, state, or national statistics. The successful follow-up rate at Ohio Valley Medical Center for the last 5-years is 94%, and the rate since the established registry reference year (1996) is 90%. Both rates are well above the CoC requirement of 90% and 80% respectively.

Continuing Education

In response to the increased demand of quality registry data, national and international standard setters are revising and expanding the level of data elements collected by the cancer registry. 2010 will see tremendous changes in data collection standards, and continuing education of registry personnel will be a priority. As a strategic partner with CHAMPS Oncology Data Services the facility can be assured that registry staff will exceed all educational requirements.

COMPARATIVE SITE STUDY ANALYSIS

Colon cancer is the fourth most frequently diagnosed cancer in US and 2nd leading cause of death. In 2009, approximately 106,000 cases will be diagnosed and 5000 deaths will be related to colon cancer. Despite this, mortality has slightly decreased in the last 30 years due to early detection.

Staging of colon cancer is done to determine prognosis of patients and to decide appropriate therapy for patients diagnosed with colon cancer. If patients are Stage 0, Stage 1 or Stage 2 most of the times no treatment is required except in cases with poor prognostic features. In the last few years it has been realized that the number of lymph nodes recovered at time of surgery has an impact on survival and makes a difference in deciding which patients should receive adjuvant chemotherapy. This has been incorporated in our pathology reporting at this time. K-ras is a gene mutation which predicts lack of response to Cetuximab therapy. NCCN guidelines recommend performing it on specimens at the time of diagnosis. This has been discussed at our tumor board meetings and at our institution we are doing k-ras testing on all colon cancer specimens at the time of initial diagnoses.

Our goal at OVMC is to detect colon cancer at an early stage and to achieve maximal cure rate and for patients who are diagnosed in more advanced stages to be able to provide best adjuvant and palliative therapies. (Table 2)

Table 2

Colon Cancer Incidence by Stage											
	0	Stage 0 %	I	Stage I %	II	Stage II %	III	Stage III %	IV	Stage IV %	TOTAL
OVMC	5	14%	8	23%	9	26%	3	9%	10	29%	35
NCDB	4805	8%	13738	22%	17065	27%	15769	25%	11882	19%	63260

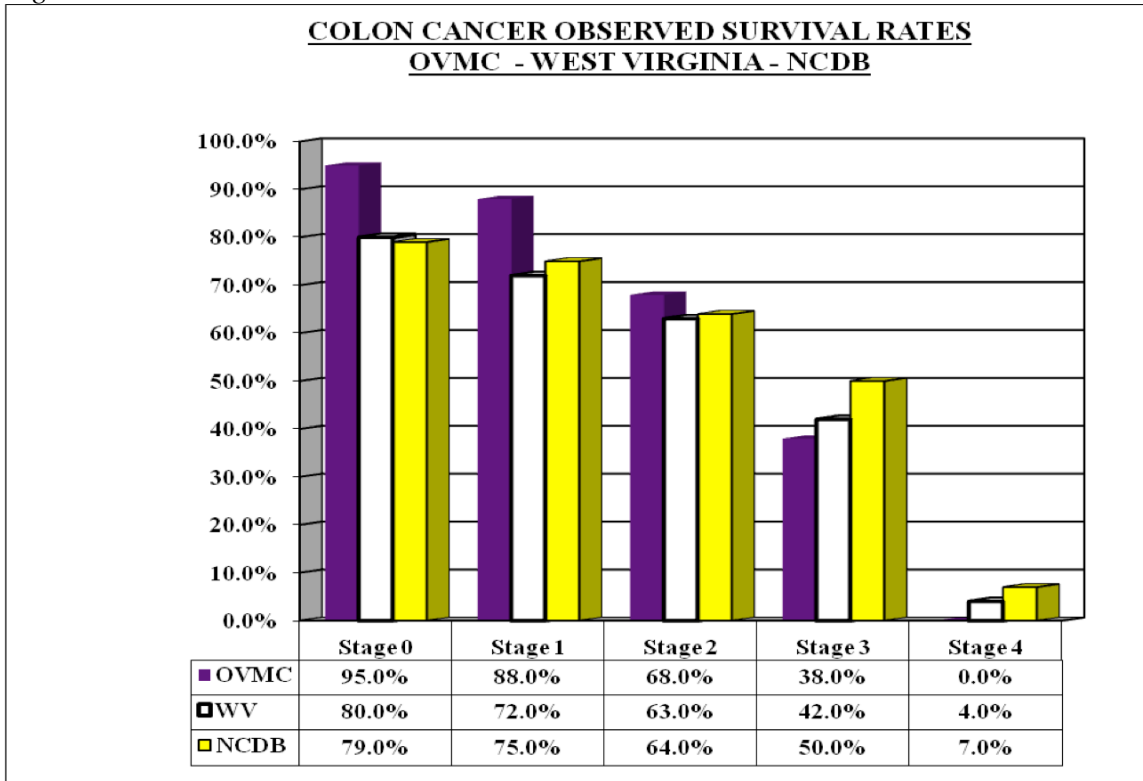
NCDB incidence data is based on 2006 case information submitted by cancer registries nationally.

At Ohio Valley Medical Center, five year observed survival rates were evaluated between 1998 and 2001. OVMC had 112 cases diagnosed with colon cancer: 20 cases were Stage 0; 17 cases Stage 1; 34 cases Stage 2; 21 cases Stage 3; and 20 cases were Stage 4. We were able to diagnose slightly higher numbers of Stage 0 and Stage 1 cases. Due to the

small number it may not be statistically significant but this can be attributed to our efforts towards early detection with free community screening programs offered through the hospital. We continue to strive for early detection in the community since this is the only curative treatment for colon cancer.

In addition, a comparison of five year observed survival rate of colon cancer cases diagnosed at OVMC by AJCC stage (5th Edition) compared to West Virginia and NCDB was evaluated between 1998 and 2001. (Figure 6)

Figure 6



Ohio Valley Medical Center’s colon cancer survival rates are closely related to the Commission on Cancers’ National Cancer Database and to the State of West Virginia. Ohio Valley has a relatively higher survival rates for Stage 0, Stage 1, and Stage 2. Stage 3 and Stage 4 survival rates at Ohio Valley Medical Center are slightly lower as this can be related to the fewer number of cases that presented with advanced stage of disease.

The numbers of Stage 3 & Stage 4 are small to detect statistically significant difference but survival of Stage 3 and Stage 4 colon cancer is similar to WV cancer registry and NCDB survival rates. Better survival rates are expected after year 2003 due to development of new systemic therapies such as FOLFOX, FOLFIRI, Avastin and Cetuximab containing combinations.

Respectfully Submitted,
Sushil Mehrotra, M.D.