

HAHNE REGIONAL CANCER CENTER

ANNUAL REPORT FOR 2009
WITH STATISTICAL ANALYSIS OF 2008 CANCER DATA



Hahne Regional
Cancer Center

A service of DuBois Regional Medical Center



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SITE SPECIFIC STUDY: COLON

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SCOPE OF SERVICES

The Cancer Program continued to move forward during 2009 with significant advances in the ability of the Hahne Regional Cancer Center to provide state-of-the-art comprehensive cancer care. Our focus continues to be providing oncology patients within our service area quality care as it pertains to their disease. Remembering that the disease is only one aspect of our patients, we continue to address their overall needs with services provided through pastoral care services, social services, and nutritional counseling in a compassionate and caring environment.

In 2008, DRMC continued collaboration with Clearfield Hospital to utilize the Nathaniel D Yingling MD Cancer Center for treatment of patients from the Clearfield area. This venture continues to provide a Cancer Center in Clearfield with the Radiation Area being staffed by the Hahne Regional Cancer Center Staff. The Nathaniel D. Yingling Cancer Center (Radiation) treated 85 patients in 2008. We believe that this collaborative effort will benefit our communities.

Our goal, since inception, has been to provide quality care on a warm personal level, in a community setting, utilizing state of the art technology. As we accomplish our objectives, we continue to realize that while statistics are very important; the individual patient is the most vital component of our program.

People - The Hahne Regional Cancer Center provides, either through its own resources or in collaboration with other facilities or programs, comprehensive oncologic and hematologic care to a primary service area encompassing Clearfield, Elk, and Jefferson counties. In collaboration with Oncology Hematology Associates of Northern Pennsylvania (OHANP) hematology and medical oncology services are provided on site at the Hahne outpatient center. Radiation oncology services are provided as a program offered by DuBois Regional Medical Center.

Quality/Safety - The technology available to treat patients in the Hahne cancer center is state of the art including a Varian 2300CD Linear accelerator with 120-leaf multileaf collimator with IGRT (Image Guided Radiation Therapy) and GE Lightspeed RT 16 large bore simulator. DRMC continues a strong commitment to providing the best in cancer care to the community it serves. This market leading technology allows us to treat cancer by providing the most accurate delivery systems with new energy options concentrating the radiation dose on cancer cells, fighting tumor growth while lowering the dose to surrounding normal tissues. Radiation therapy treatment options provided at Hahne include external beam therapy: 3-D Conformal and Intensity Modulated Radiation Therapy (IMRT).

Growth - In support of our mission to provide comprehensive cancer care close to home, medical oncology services are provided by OHANP in the neighboring communities of Brookville and Ridgway. The services provided include physician consultation, follow up visits, chemotherapy administration and access to clinical trial information. DRMC and Clearfield Hospital worked together to provide radiation oncology services to Clearfield and surrounding communities.

SCOPE OF SERVICES CONTINUED

The Nathaniel D. Yingling Cancer Center opened in January of 2007 to provide Radiation oncology services. These services include physician consultative visits and external beam therapy including 3D Conformal Therapy, IMRT (Intensity Modulated Radiation Therapy) and the latest imaging technology IGRT (Image Guided Radiation Therapy). IGRT is a technology designed to improve the precision and effectiveness of cancer treatments by giving doctors the ability through imaging to target and track tumors more accurately, allowing radiation to be delivered to tumors with more precision than was previously possible. The enhanced accuracy of our treatment system benefits a wide range of malignancies including: prostate, lung, intra-abdominal, pelvic, breast, and head and neck sites.

Service - The third floor inpatient unit is an adult care medical/surgical unit providing 24-hour quality care to address the acute care needs of patients and families. The unit specializes in the care of oncology/chemotherapy and hospice patients, urology patients, renal failure patients and patients requiring peritoneal dialysis and hemodialysis. The Home Care oncology service is comprised of an array of highly skilled professionals who collaborate to meet the multiple needs of patients with cancer in the home setting. Registered Nurses, Physical, Speech and Occupational Therapists, Medical Social Workers, Health Care Assistants, Nutritionists and other disciplines make it possible to provide care in the comfort of the patient's home. DRMC Home Care also provides a Medicare



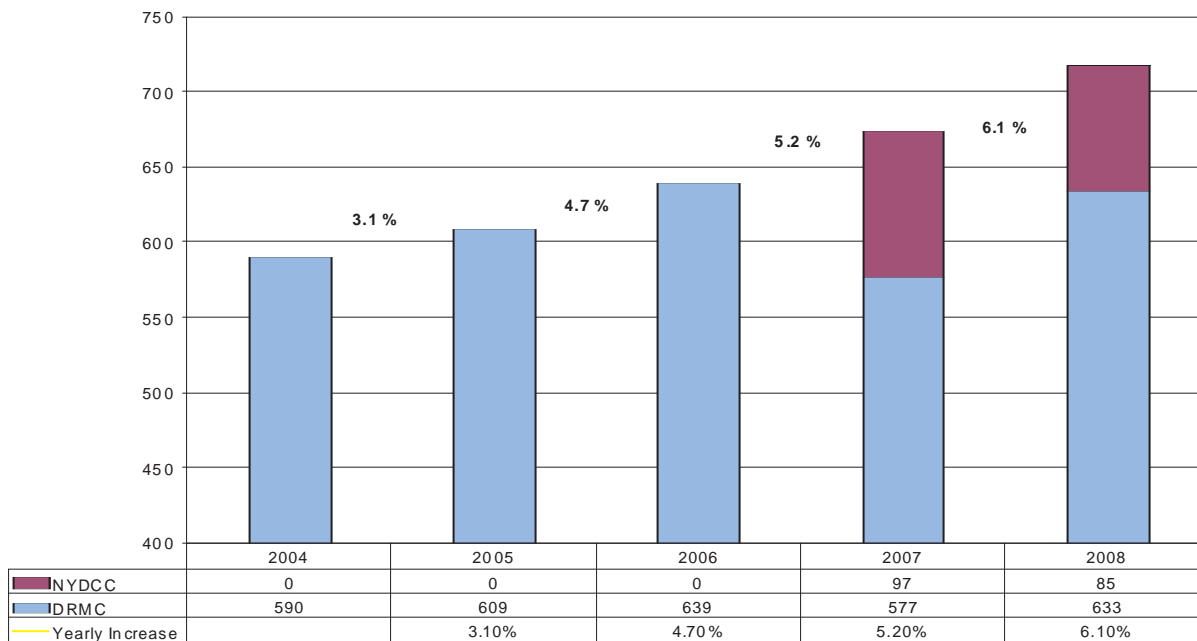
Certified Hospice Program to terminally ill patients who reside in Clearfield, Jefferson, Elk and Indiana counties including residents of area nursing homes. The mission of DRMC Hospice is to enable patients to live an alert, pain free life and to manage other symptoms so that the patient's last days may be spent in comfort and dignity with quality of life at home or in a home-like setting. Bereavement services are also provided to families or friends of hospice patients. The multidisciplinary team of professionals includes the Hospice Medical Director, Registered Nurses, Social Service Professionals, Pastoral Care Services, Health care Assistants and other ancillary disciplines and trained volunteers. Collaboratively, these professionals work together to meet the physical, psychosocial, spiritual and emotional needs of the patients and their families.

Finance - Our cancer program provides outreach services, professional, community and patient/family education, cancer prevention and detection screenings and a clinical trial program. Hospital sponsored door to door transportation service is also available free to patients who have no other means of transportation and choose to receive care at the center.

CANCER REGISTRY ACTIVITY AT DRMC IN 2008

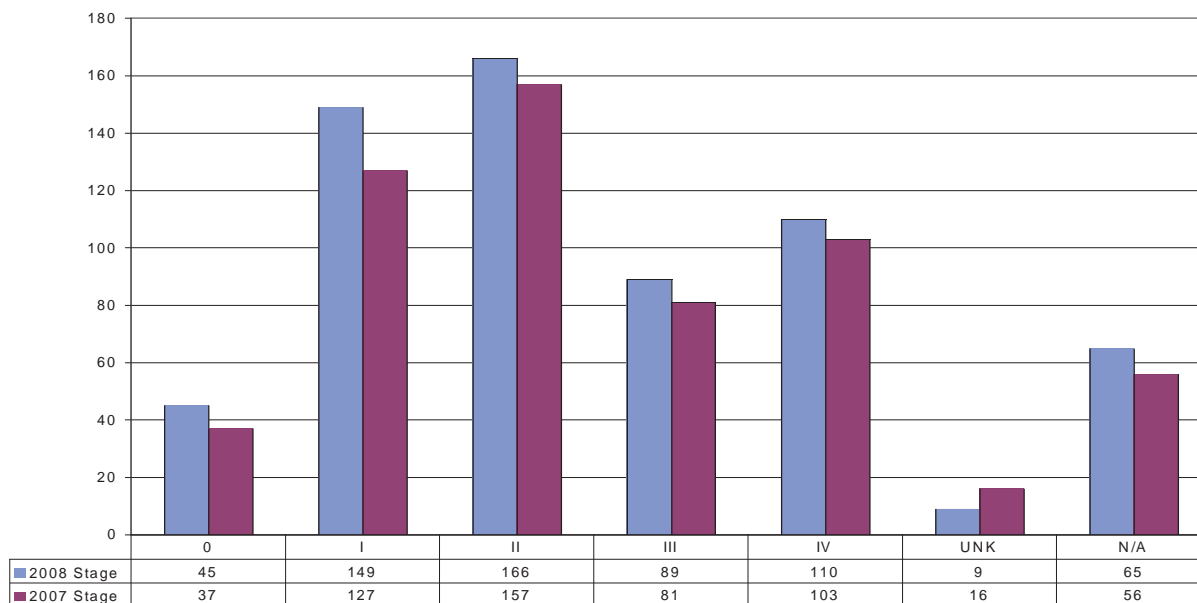
In 2008 the registry at DRMC continued to experience growth. There were 633 cases of cancer abstracted for DRMC and 85 cases abstracted for NDYCC, totaling 718 cases abstracted up 44 cases from 2007, showing a 6.1 % increase in cases accessioned.

Cases Accessioned by year First seen at DRMC and/or NDYCC with Percent Growth



The following chart depicts the AJCC stage at diagnosis for 2007 cases accessioned vs 2008 cases accessioned at DuBois Regional Medical Center.

AJCC Stage at Diagnosis 2007 vs 2008



The majority of our cases continue to be diagnosed in the earlier stages; 360, Stage II or less vs 273 Stage III or more in 2008 and 321 Stage II or less vs 256 Stage III or more in 2007.

CANCER REGISTRY ACTIVITY AT DRMC IN 2008 CONTINUED

Data collected on the most prevalent analytical cancer sites featured in the American Cancer Society Cancer Facts and Figures 2009 is compared to the same sites at DRMC. Comparing the incidence at DRMC to estimated incidence in the state of Pennsylvania to estimated incidence in the United States.

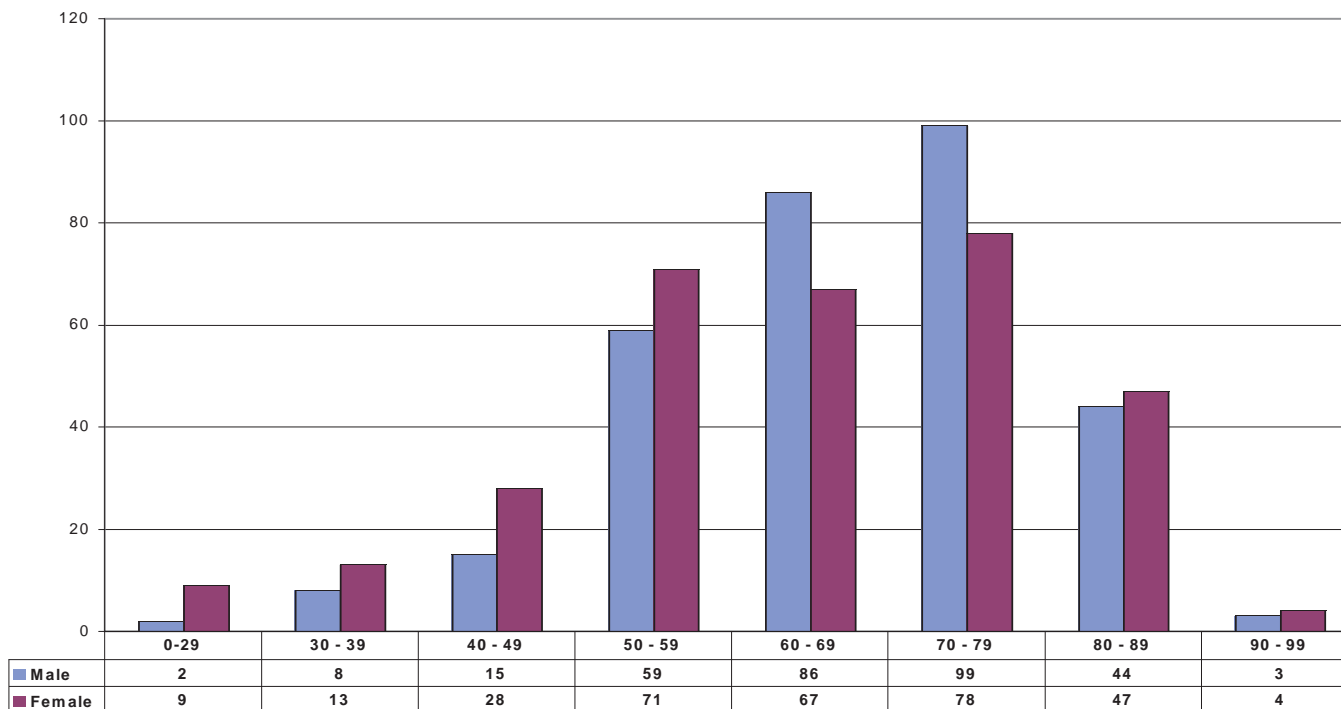
DuBois Regional Medical Center Cancer Cases Accessioned in 2008

* National Comparison of the ten most prevalent cancer Sites

*Estimated Cancer Cases from: The American Cancer Society Cancer Facts & Figures 2009

	DRMC		PENNSYLVANIA		USA	
	Cases	Percent	Cases	Percent	Cases	Percent
FEMALE BREAST	102	16.11%	9380	12.65%	192370	13.00%
LUNG/ BRONCHUS	91	14.38%	10480	14.13%	219440	14.83%
PROSTATE	91	14.38%	8130	10.96%	192280	13.00%
COLON/RECTAL	57	9.00%	7590	10.23%	146970	9.93%
LYMPH -NON HODGKINS	29	4.58%	3330	4.49%	65980	4.46%
BLADDER	24	3.79%	4160	5.61%	70980	4.80%
SKIN - MELANOMA	23	3.63%	3440	4.64%	68720	4.65%
CORPUS UTERI	23	3.63%	2550	3.44%	42160	2.85%
UTERINE CERVIX	4	0.63%	500	0.67%	11270	0.76%
LEUKEMIA	12	1.90%	2200	2.97%	44790	3.03%
All Others	177	27.96%	22410	30.21%	424390	28.69%
TOTAL CASES	633	100.00%	74170	100.00%	1479350	100.00%

Age by Sex for all cases accessioned in 2008
316 Males 317 Females



Most patients continue to be diagnosed in their fifties to seventies totally 460 (73%) of all those accessioned in 2008.

CANCER REGISTRY ACTIVITY AT DRMC IN 2008 CONTINUED

A frequency report follows for all cases analytical and non-analytical abstracted to the cancer registry in 2008. The registry accessioned 633 cases, 591 (93.4%) were newly diagnosed and/or treated at DRMC, while 42 (6.6%) patients with recurrent disease. Primary site, class, sex and stage at diagnosis give the following distribution of cases.

PRIMARY SITE	TOTAL	CLASS		SEX		AJCC STAGE						UNK	N/A
		A	N/A	M	F	0	I	II	III	IV			
ALL SITES	633	591	42	315	317	44	146	171	88	111	10	62	
ORAL CAVITY	13	11	2	10	3	0	2	3	1	7	0	0	
TONGUE	2	1	1	1	1	0	1	1	0	0	0	0	
OROPHARYNX	2	2	0	2	0	0	0	0	0	2	0	0	
OTHER	9	8	1	7	2	0	1	2	1	5	0	0	
DIGESTIVE SYSTEM	94	86	8	49	45	0	12	21	27	27	3	4	
ESOPHAGUS	7	7	0	6	1	0	0	1	3	3	0	0	
STOMACH	4	4	0	3	1	0	2	0	1	1	0	0	
COLON	46	38	8	20	26	0	5	11	17	11	2	0	
RECTUM	19	19	0	10	9	0	4	5	3	6	0	1	
LIVER	3	3	0	2	1	0	1	0	0	0	1	1	
PANCREAS	11	11	0	6	5	0	0	3	3	5	0	0	
OTHER	4	4	0	2	2	0	0	1	0	1	0	2	
RESPIRATORY SYSTEM	105	100	5	57	48	0	25	8	27	41	2	2	
LARYNX	8	8	0	7	1	0	6	2	0	0	0	0	
LUNG/BRONCHUS	96	91	5	49	47	0	19	6	27	41	2	1	
OTHER	1	1	0	1	0	0	0	0	0	0	0	1	
BLOOD & BONE MARROW	31	29	2	17	14	0	0	0	0	0	0	31	
LEUKEMIA	13	12	1	7	6	0	0	0	0	0	0	13	
MULTIPLE MYELOMA	10	9	1	7	3	0	0	0	0	0	0	10	
OTHER	8	8	0	3	5	0	0	0	0	0	0	8	
BONE	1	1	0	0	1	0	0	0	0	1	0	0	
CONNECT/SOFT TISSUE	6	4	2	4	2	0	2	0	1	0	1	2	
SKIN	30	24	6	16	14	12	10	2	2	1	2	1	
MELANOMA	29	23	6	15	14	12	10	2	2	1	2	0	
OTHER	1	1	0	1	0	0	0	0	0	0	0	1	
BREAST	108	104	4	2	106	22	48	29	8	0	1	0	
FEMALE GENITAL	34	34	0	0	34	0	12	4	8	5	0	5	
CERVIX UTERI	4	4	0	0	4	0	1	1	2	0	0	0	
CORPUS UTERI	23	23	0	0	23	0	10	2	6	2	0	3	
OVARY	5	5	0	0	5	0	1	1	0	3	0	0	
OTHER	2	2	0	0	2	0	0	0	0	0	0	2	
MALE GENITAL	103	94	9	103	0	0	2	89	4	8	0	0	
PROSTATE	99	91	8	99	0	0	0	88	3	8	0	0	
TESTIS	4	3	1	4	0	0	2	1	1	0	0	0	
URINARY SYSTEM	42	40	2	27	15	10	15	7	5	4	0	1	
BLADDER	24	24	0	17	7	10	7	7	0	0	0	0	
KIDNEY/RENAL	16	14	2	8	8	0	8	0	4	4	0	0	
OTHER	2	2	0	2	0	0	0	0	1	0	0	1	
BRAIN & CNS	7	7	0	1	6	0	0	0	0	0	0	7	
BRAIN (BENIGN)	3	3	0	0	3	0	0	0	0	0	0	3	
BRAIN (MALIGNANT)	4	4	0	1	3	0	0	0	0	0	0	4	
ENDOCRINE	17	17	0	2	15	0	13	0	3	1	0	0	
LYMPHATIC SYSTEM	32	31	1	20	12	0	5	8	2	15	1	1	
HODGKIN'S DISEASE	2	2	0	1	1	0	0	0	1	1	0	0	
NON-HODGKIN'S	30	29	1	19	11	0	5	8	1	14	1	1	
UNKNOWN PRIMARY	7	7	0	6	1	0	0	0	0	0	0	7	
OTHER/ILL-DEFINED	3	2	1	1	2	0	0	0	0	1	0	2	

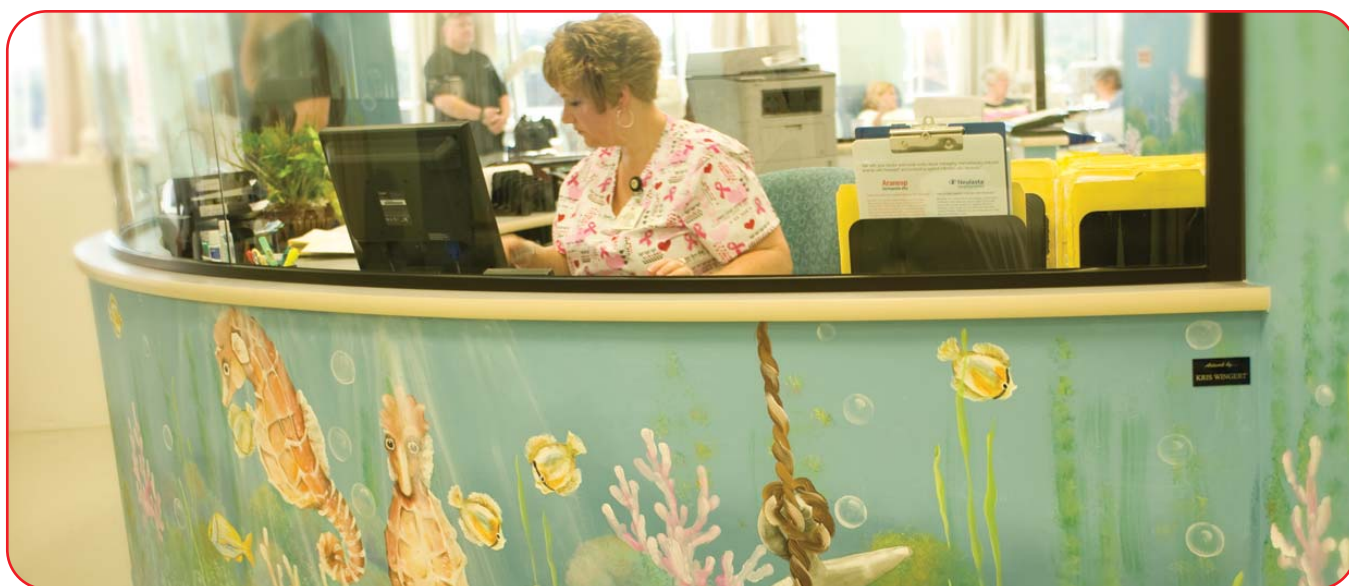
COLON CANCER

Signs and symptoms: Early stage colorectal cancer does not usually have symptoms; therefore, screening is necessary to detect colorectal cancer in its early stages. Advanced disease may cause rectal bleeding, blood in the stool, a change in bowel habits, and cramping pain in the lower abdomen. In some cases, blood loss from the cancer leads to anemia (low red blood cells), causing symptoms such as weakness and excessive fatigue.

Risk factors: The risk of colorectal cancer increases with age; 91% of cases are diagnosed in individuals aged 50 and older. Several modifiable factors are associated with increased risk of colorectal cancer. Among these are obesity, physical inactivity, a diet high in red or processed meat, heavy alcohol consumption, and possibly smoking and inadequate intake of fruits and vegetables. Studies indicate that compared to healthy-weight individuals, men and women who are overweight are more likely to develop and die from colorectal cancer. Consumption of milk and calcium appears to decrease risk. Studies suggest that regular use of nonsteroidal anti-inflammatory drugs, such as aspirin, and menopausal hormone therapy may also reduce colorectal cancer risk. However, these drugs are not currently recommended for the prevention of colorectal cancer because they can have other serious adverse health effects.

Colorectal cancer risk is also increased by certain inherited genetic mutations [familial adenomatous polyposis (FAP) and hereditary non-polyposis colorectal cancer (HNPCC), also known as Lynch syndrome], a personal or family history of colorectal cancer and/or polyps, or a personal history of chronic inflammatory bowel disease. Studies have also found an association between diabetes and colorectal cancer.

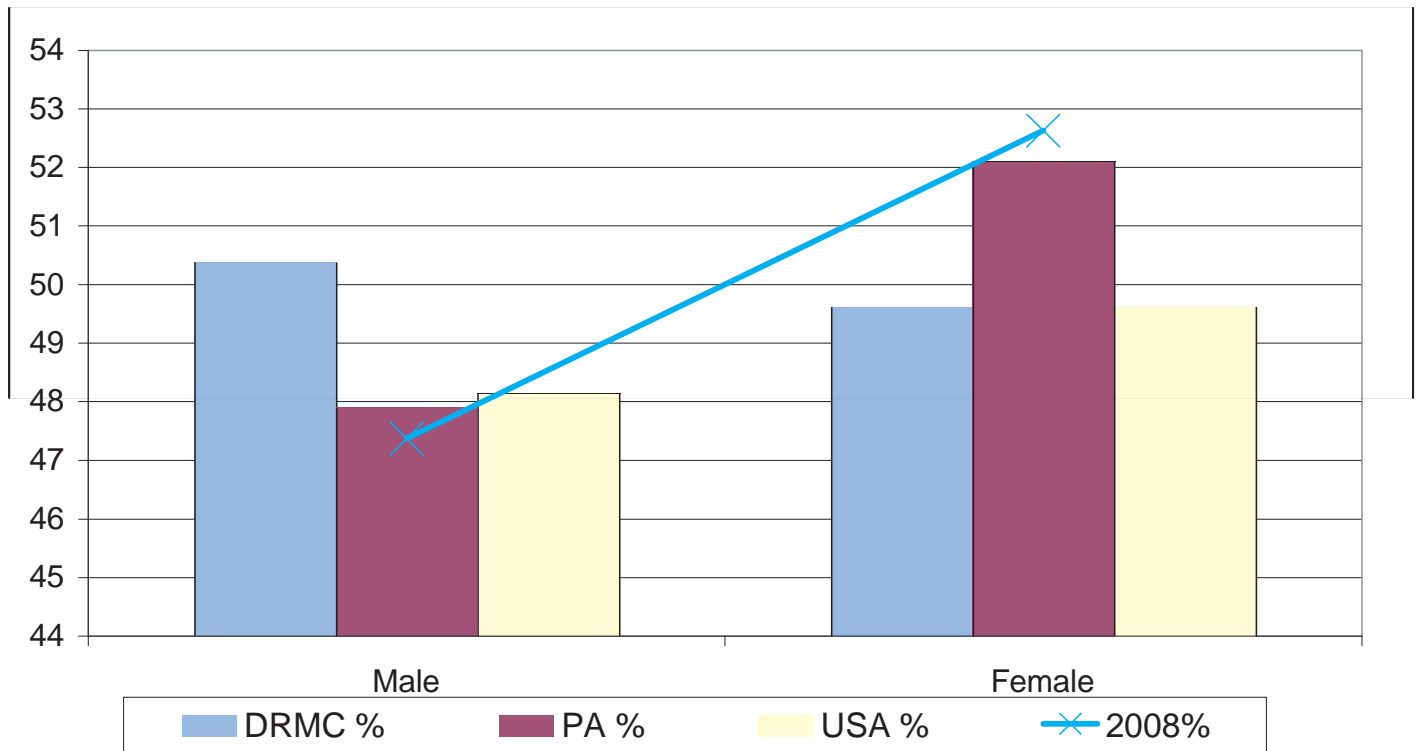
Early detection: Beginning at age 50, men and women who are at average risk for developing colorectal cancer should begin screening. Screening can result in the detection and removal of colorectal polyps before they become cancerous, as well as the detection of cancer that is at an early stage. Thus, screening reduces mortality both by decreasing the incidence of cancer and by detecting a higher proportion of cancers at early, more treatable stages. The American Cancer Society collaborated with several other organizations to release updated colorectal cancer screening guidelines in March 2008. These new joint guidelines emphasize cancer prevention and draw a distinction between colorectal screening tests that primarily detect cancer and those that can detect both cancer and precancerous polyps. There are a number of recommended screening options that vary by the extent of bowel preparation, as well as test performance, limitations, time interval, and cost. For detailed information on colorectal cancer screening options, please see Colorectal Cancer Facts & Figures 2008-2010 on cancer.org. (See page 68 for the American Cancer Society's screening guidelines for colorectal cancer.)



COLON CANCER CONTINUED

The following information compares Colon Cancer diagnosed from 2000 to 2006 at DuBois Regional Medical Center with Comprehensive Community Hospital Cancer Centers in Pennsylvania (30 hospitals) and in the United States (535 hospitals) with Trendline 2008 (38) cases.

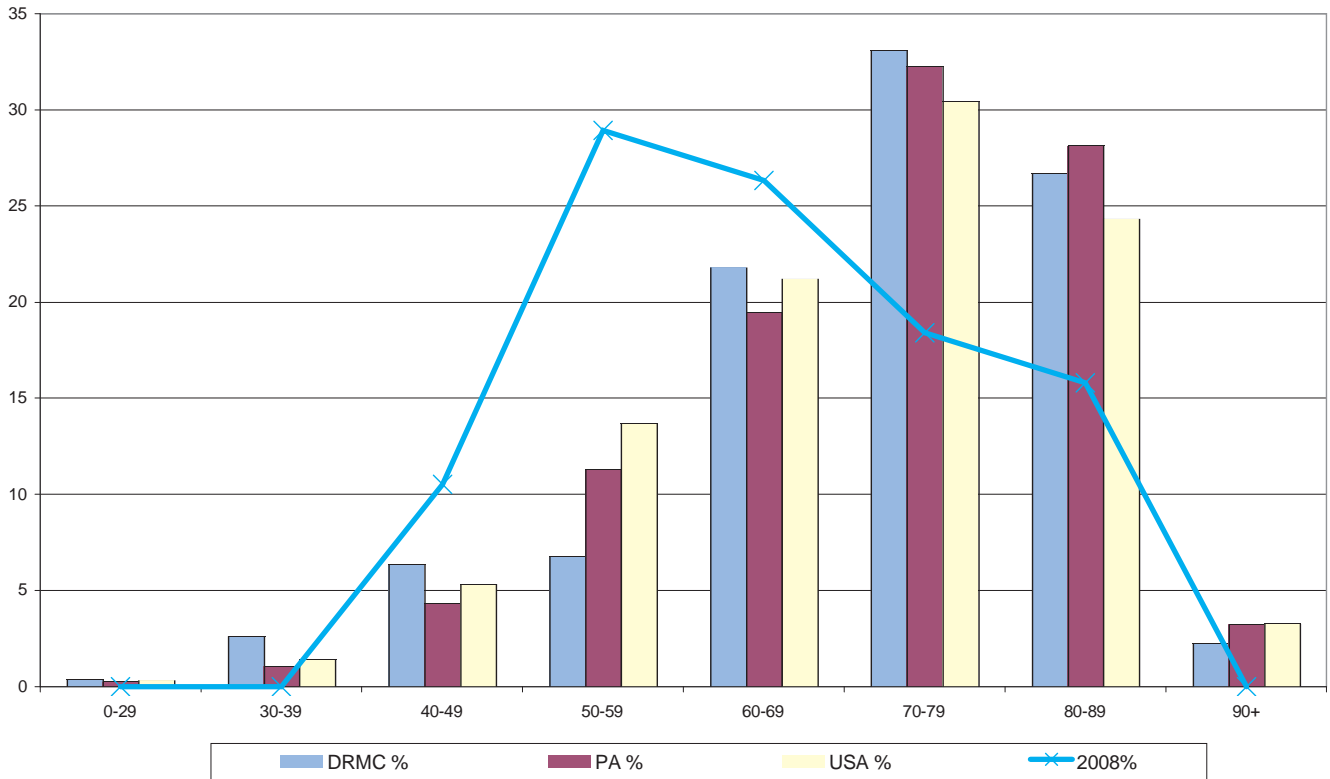
Gender of Colon Cancer Diagnosed 2000 to 2006
All Reported Cases - Comprehensive Community Cancer Center
DuBois Regional Medical Center vs Pennsylvania Hospitals (30)
vs USA Hospitals (535) Trendline 2008 cases (38)



Gender	DRMC #	DRMC %	PA #	PA %	USA #	USA %	2008 DRMC	2008 DRMC %
Male	134	50.38	6755	47.9	124169	48.13	18	47.37
Female	132	49.62	7348	52.1	133824	49.62	20	52.63

COLON CANCER CONTINUED

Age of Colon Cancer Diagnosed 2000 to 2006
 All Reported Cases - Comprehensive Community Cancer Center
 DuBois Regional Medical Center vs Pennsylvania Hospitals (30)
 vs USA Hospitals (535) Trendline 2008 cases (38)

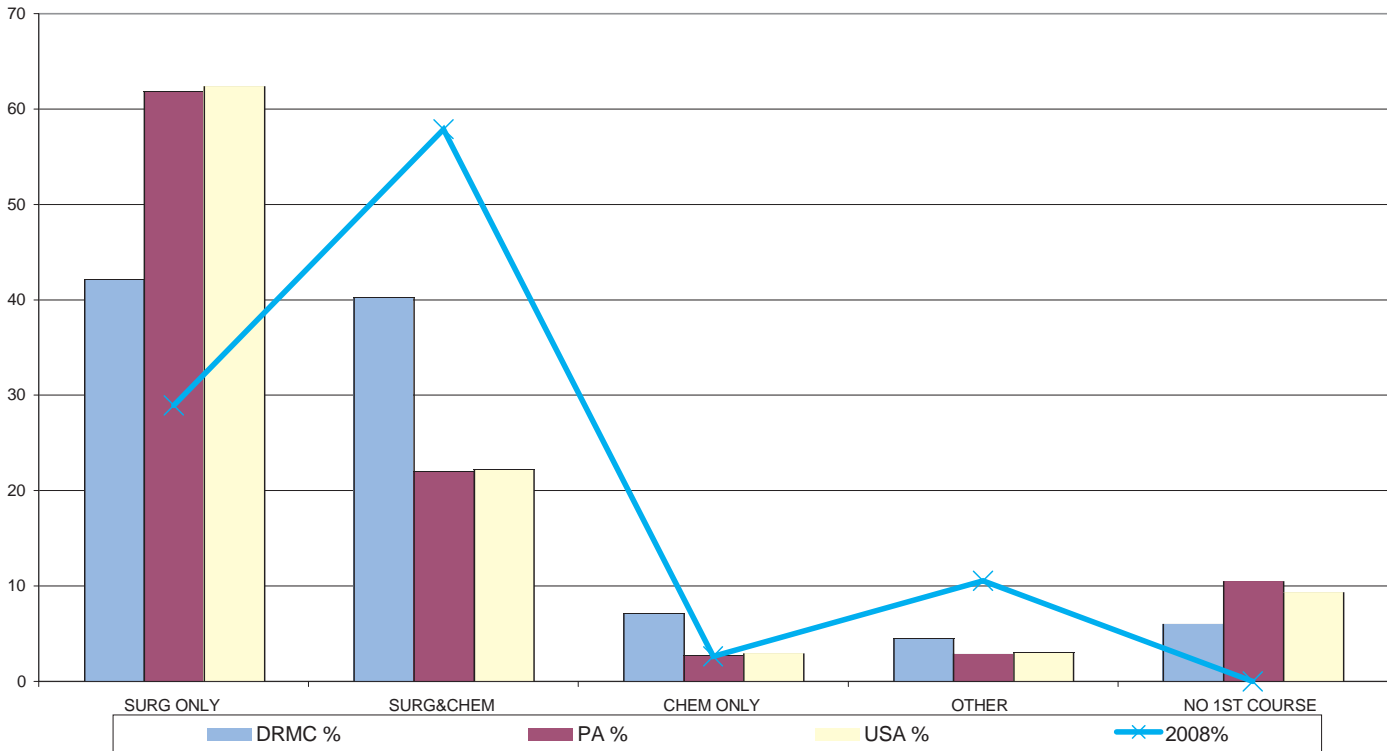


AGE	DRMC #	DRMC %	PA #	PA %	USA #	USA %	2008 DRMC	2008 DRMC%
0-29	1	0.38	37	0.26	822	0.32	0	0
30-39	7	2.63	149	1.06	3574	1.39	0	0
40-49	17	6.39	606	4.3	13760	5.33	4	10.53
50-59	18	6.77	1593	11.3	35370	13.71	11	28.94
60-69	58	21.8	2746	19.47	54723	21.21	10	26.32
70-79	88	33.08	4549	32.26	78565	30.45	7	18.42
80-89	71	26.69	3968	28.14	62775	24.33	6	15.79
90+	6	2.26	455	3.23	8404	3.26	0	0

Most patients continue to be diagnosed in their sixties to seventies (82%) DRMC; (80%) PA; and (76%) USA with trendline of 2008 DRMC cases (60%) of all those accessioned from 2000-2006 at Comprehensive Community Hospital Cancer Centers.

COLON CANCER CONTINUED

Treatment of Colon Cancer Diagnosed 2000 to 2006
 All Reported Cases - Comprehensive Community Cancer Center
 DuBois Regional Medical Center vs Pennsylvania Hospitals (30)
 vs USA Hospitals (535) Trendline 2008 cases (38)



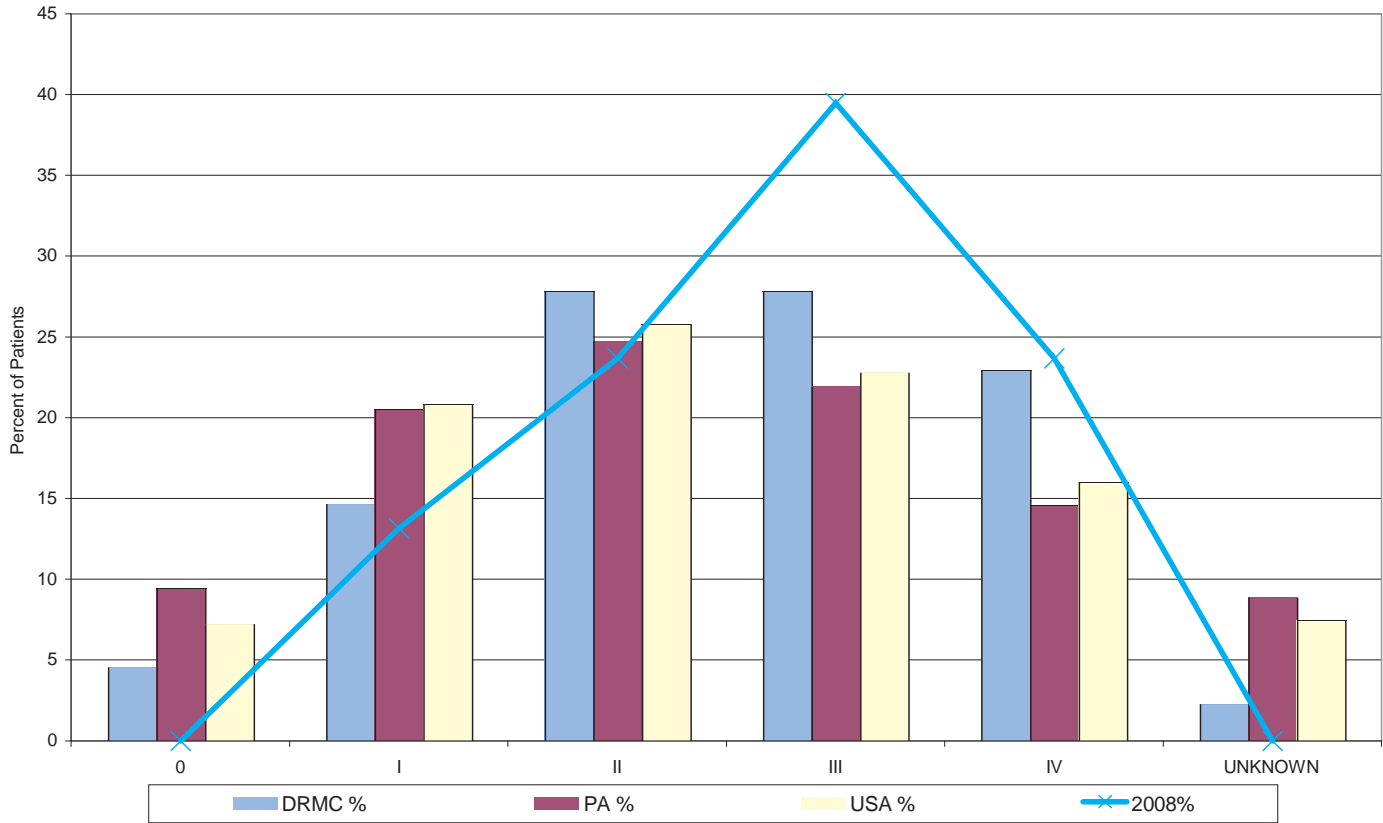
TREATMENT	DRMC #	DRMC %	PA #	PA %	USA #	USA %	2008 DRMC	2008 DRMC%
SURG ONLY	112	42.11	8719	61.82	161006	62.41	11	28.95
SURG&CHEM	107	40.23	3112	22.07	57462	22.27	22	57.89
CHEM ONLY	19	7.14	382	2.71	7527	2.92	1	2.63
OTHER	12	4.51	410	2.91	7897	3.06	4	10.52
NO 1ST COURSE	16	6.02	1480	10.49	24101	9.34	0	0

Treatment: Surgery is the most common treatment for colon cancer. For cancers that have not spread, surgical removal may be curative. A permanent colostomy (creation of an abdominal opening for elimination of body wastes) is rarely needed for colon cancer. Chemotherapy alone, or in combination with radiation, is given before or after surgery to most patients whose cancer has penetrated the bowel wall deeply or spread to lymph nodes.

Adjuvant chemotherapy (anticancer drugs in addition to surgery or radiation) for colon cancer is equally effective and can be no more toxic in otherwise healthy patients aged 70 and older than in younger patients. Oxaliplatin, in combination with 5-fluorouracil (5-FU) and followed by leucovorin (LV), may be used to treat persons with metastatic carcinoma of the colon. Three targeted monoclonal antibody therapies are approved by the FDA to treat metastatic colorectal cancer: bevacizumab (Avastin) blocks the growth of blood vessels to the tumor and cetuximab (Erbix) and panitumumab (Vectibix) both block the effects of hormone-like factors that promote cancer cell growth.

COLON CANCER CONTINUED

Stage of Colon Cancer Diagnosed 2000 to 2006
 All Reported Cases - Comprehensive Community Cancer Center
 DuBois Regional Medical Center vs Pennsylvania Hospitals (30)
 vs USA Hospitals (535) Trendline 2008 cases (38)



STAGE	DRMC #	DRMC %	PA #	PA %	USA #	USA %	2008 DRMC	2008 DRMC%
0	12	4.51	1330	9.43	18618	7.22	0	0
I	39	14.66	2890	20.49	53641	20.79	5	13.15
II	74	27.82	3491	24.75	66545	25.79	9	23.68
III	74	27.82	3090	21.91	58789	22.79	15	39.47
IV	61	22.93	2055	14.57	41251	15.99	9	23.68
UNKNOWN	6	2.26	1247	8.84	19149	7.42	0	0

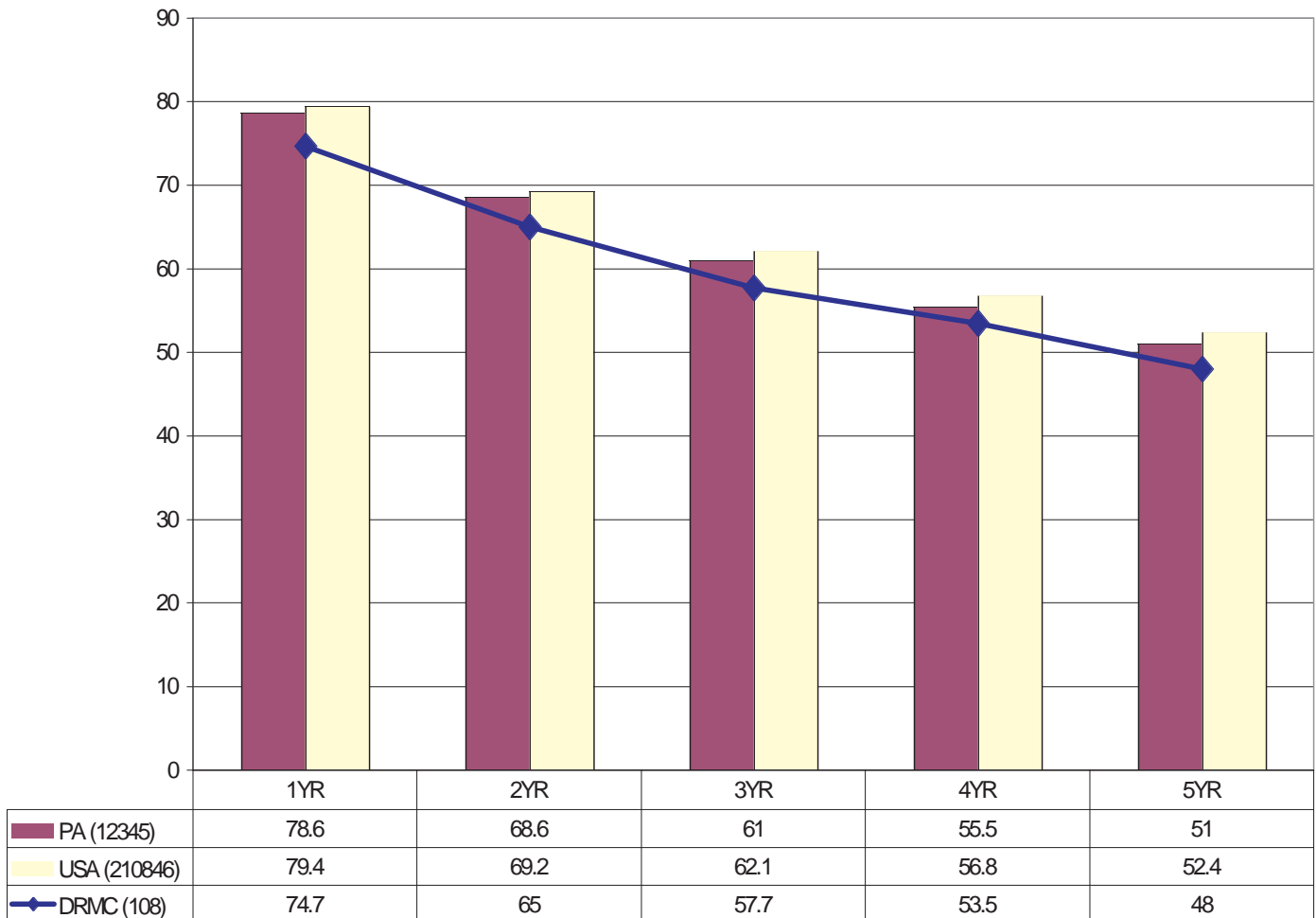
Stage of disease at diagnosis for late Stage III and IV is higher at DRMC (51%) than for Pennsylvania (36%) or the United States (39%). This continues with 2008 data showing a 63% late Stage III or IV.

COLON CANCER CONTINUED

Survival: The 1- and 5-year relative survival for persons with colorectal cancer is 83% and 64%, respectively. Survival continues to decline beyond 5 years to 58% at 10 years after diagnosis. When colorectal cancers are detected at an early, localized stage, the 5-year survival is 90%; however, only 40% of colorectal cancers are diagnosed at this stage, mostly due to underuse of screening. After the cancer has spread regionally to involve adjacent organs or lymph nodes, the 5-year survival drops to 68%. For persons with distant metastases, 5-year survival is 11%. The graph below shows the Observed overall five year survival of DRMC vs PA vs USA. The statistical significance between the overall survival for the Population of DRMC vs PA (-0.62) and for DRMC vs USA (-0.92), no statistical significance in overall survival.

Observed Survival for Colon Cnccr Cases Diagnosed in 1998 - 2001 Data from USA Hospitals (1342) and PA Hospitals (72) and DRMC

DRMC vs PA $z = -0.6209$ DRMC vs USA $z = -0.8318$



GLOSSARY OF CANCER TERMS

- Analytic Cases: Cases which were first diagnosed and/or received all or part of their first course of treatment at DRMC.
- Combined Modality: Two or more types of treatment-surgery, radiation therapy, chemotherapy, or immunotherapy-used alternatively or together for maximum effectiveness.
- First Course of Therapy: The initial cancer-directed treatment or series of treatments, usually initiated within four months of diagnosis.
- Incidence: the extent to which disease occurs in the population. Cancer incidence is the established number of new cases of cancer diagnosed each year.
- Non-Analytic: Cases diagnosed elsewhere and receiving all of their first course of treatment elsewhere or diagnosed at DRMC prior to our reference date of January 1, 1989. Also, cases first diagnosed at autopsy with unsuspected malignancy.
- Radiotherapy: Treatment of cancer with high-energy radiation. Radiation therapy may be used to reduce the size of a cancer before surgery, or to destroy any remaining cancer cells after surgery.
- Staging: An evaluation of the extent of disease. A classification based on stage at diagnosis helps determine appropriate treatment and prognosis.
- Intensity Modulated Radiation Therapy: IMRT uses computer programs to design the radiation dose distribution, and control the radiation therapy treatment delivery system.

ACCREDITATIONS

American College of Surgeons Commission on Cancer
American College of Radiology
Joint Commission on Accreditation of Healthcare Organizations

AFFILIATIONS

Clinical Trials Support Unit, National Cancer Institute

REFERENCES

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- AJCC Cancer Staging Manual, Sixth Edition, American Joint Committee On Cancer, Executive Office, 55 East Erie Street, Chicago, Illinois, 60611