Banner Health
Denali Center
Fairbanks Memorial Hospital
Community-Owned

Cancer Program 2008 Annual Report

Report for 2006-2007 Cancer Data

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Fairbanks Memorial Hospital Cancer Program Report 2008

Letter from the Chairman

Dear Colleagues,

Fairbanks Memorial Hospital continues its dedication to being the region's paramount provider of cancer care services and a leader in cancer education, prevention, detection, and treatment. As we highlight the activities of the 2006 and 2007 years in this annual report, we are grateful for the contributions of our physicians, nurses, support staff and administration for their role in the continued development of the Cancer Program.

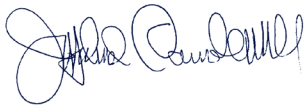
As an accredited American College of Surgeons Commission program, we go through a rigorous screening every three years showing we continue to meet all criteria for the designation of a "Community Hospital Cancer Program." Our cancer program continues to improve the quality of care to our patients, their families, and our community. This has been accomplished by the completion of ongoing quality management, AJCC staging, patient care evaluation studies, and evaluation of the patient outcome. Fairbanks Memorial Hospital Cancer Program was the first hospital in the state to receive this accreditation and continue to maintain it for the last 30 years.

In addition to the prestigious accreditation, several key additions were made to the hospital to improve our patient care. In 2006 we added a new complete wing to the hospital called the Fairbanks Imaging Center, which brings new state of the art imaging equipment to maximize our patient care, including a breast MRI acquired in 2007.

Our facility continues to support oncology services through monthly cancer conferences as well as monthly tumor boards and specialty breast cancer conference. This support forum discusses each case and shares new technologies, drugs, and procedures open to our patients. From 2006-2007, more than 200 cases were presented for review at these conferences, with representatives from Radiology, Pathology, Surgery, Radiation Oncology, Pharmacy, Primary Care Physicians, Nurses, Social Workers, Rehabilitation Services, Tumor Registry, and Medical Oncology.

Fairbanks Memorial Hospital Cancer Program continues to provide excellent oncology services for both inpatient and outpatient services, and the community. We look forward to the future, as we welcome new opportunities and challenges in pursuing better care for our patients.

Sincerely,



J. Michael Carroll, MD
Cancer Committee Chair

Letter from the Tumor Retistry

Dear Reader:

The Fairbanks Memorial Hospital Tumor Registry, under the medical direction of the Cancer Committee, maintains a database on all cancer patients seen at FMH since January, 1970. To date, over 5,394 cases are included in this database with over 2,358 under active follow-up. This database is a vital tool for programmatic and administrative planning and research and for monitoring patient outcomes.

Cases are separated by two categories:

- Analytic cases are those patients who are diagnosed and/or receive treatment at Fairbanks Memorial Hospital.
- Non-analytic cases are patients who already have been diagnosed and all first course of treatment was completed elsewhere and are receiving subsequent treatment, patients diagnosed prior to our reference date of January 1, 1987, or those diagnosed at autopsy.

The registry maintains a lifetime follow-up on management and progress of each analytic case. This data is used in tracking hospital treatment trends, and can be compared with state and national data. The Tumor Registry provides statistical data to physicians for individual studies, and conducts patient care evaluation studies as well. Our lost to follow-up rate is maintained at 5% or less.

The registry is managed by the Radiation Oncology Supervisor and is staffed by 3 persons, or 2.2 FTEs (full time equivalents). The registry staff includes two registrars in training and one certified tumor registrar.

The Registry is responsible for compliance with the requirements of the Joint Commission on Cancer, the Joint Commission on the Accreditation of Healthcare Organizations, National Cancer Database and Alaska Cancer Registry, as well as other state and federal agencies.

To request data for studies or information regarding the Fairbanks Memorial Hospital Tumor Registry, please contact registry staff at 907-458-5458.

Leah Driscoll

Nevelyn Schooler

Cancer Conference

Cancer Conferences are held every third Tuesday of the month at 12:45 p.m. A multidisciplinary team of physicians and other healthcare professionals participate in these conferences which include discussions of patient medical history, diagnostic studies, surgical procedures, stage of disease at diagnosis, treatment options including palliative care, pain management and survival outcomes. The Medical Education Committee of Fairbanks Memorial Hospital designates this program for CME Credit 1 category.

In addition, Fairbanks Memorial Hospital has two other multidisciplinary conferences: the Breast Stereotactic Conference and the Multidisciplinary Conference.

Disciplines represented at Cancer Conferences include:

- Diagnostic Radiology
- General Surgery
- Medical Oncology
- Radiation Oncology
- Rehabilitation Services
- Pathology
- Pulmonology
- Internal Medicine
- Chiropractors
- Urology
- Otolaryngologist
- Family Practice

Cancer Program Overview

Cancer – the word itself can stir a lot of emotions. But when you or someone close to you is diagnosed with it, cancer takes on a whole new meaning. Fortunately, the Fairbanks Cancer Treatment Center (FCTC) offers patients treatment for most cancers without having to leave their family, friends and support network. This is an immensely important factor in cancer treatment. Having the emotional support of nearby friends and family is often vital to recovery.

With the needs of the cancer patient in mind, the FCTC houses both radiation therapy and an independent medical oncology (chemotherapy) practice. Having these services within the hospital allows cancer patients access to a variety of medical services in one location (lab, x-ray, etc.) and the ability to coordinate their care with their local doctor. More importantly, patients are able to stay home and close to their families during treatment. They can also take advantage of the center's educational resources, numerous support groups and other services for patients, their family and friends.

Commission on Cancer

The Fairbanks Cancer Treatment Center is one of two accredited cancer program in the state of Alaska. Our cancer program is recognized by the Commission on Cancer of the American College of Surgeons and coordinates services with the Radiology and Laboratory departments of Fairbanks Memorial Hospital.

Receiving care at a Commission on Cancer approved cancer program ensures that a patient will have access to:

- Quality care close to home
- Comprehensive care offering a range of state-of-the-art services and equipment
- A multi-specialty team approach to coordinate the best treatment options available to cancer patients
- Information about cancer clinical trials, education and support
- Lifelong patient follow-up through a cancer registry that collects data on type and stage of cancers and treatment results
- Ongoing monitoring and improvement of care

Approval by the Commission on Cancer is given only to those facilities that have voluntarily committed to provide the best in diagnosis and treatment of cancer, and undergo a rigorous evaluation process and a review of their performance. In order to maintain approval, facilities with approved cancer programs must undergo an on-site review every three years.

Treatment Options

Patients receiving cancer care at Fairbanks Memorial Hospital can be confident that they are getting the most current and specialized treatments available.

Our Fairbanks Cancer Treatment Center provides an interdisciplinary team of experts who work together to present each patient with an individualized treatment plan.

Following is a list of cancer treatment options available at Fairbanks Cancer Treatment Center:

- Advanced Surgical Services
- Chemotherapy (In-patient and Outpatient)
- Hormone Therapy
- Management of Treatment-related Side Effects
- Nuclear Medicine
- Pain Management
- State-of-the-art Radiation Therapies (including IMRT and 3D Conformal therapy)
- Stereotactic Radiotherapy
- Treatment and care for benign and malignant hematological disorders
- Ultrasound Guided Prostate Brachytherapy Program

Clinical Trials

Clinical trials test many types of cancer treatment such as new drugs, new approaches to surgery or radiation therapy, new combinations of treatments and new methods such as gene therapy. The goal of this research is to find better ways to treat cancer and help cancer patients. More and more cancer patients are looking for ways to achieve victory over the disease without compromising their quality of life. The FCTC offers information about clinical trials as the final stage of a long and careful cancer research process.

Patient Library

The FCTC Patient Library is open to everyone in the community and provides individuals a variety of ways to learn about both cancer and the latest technology used in the battle against it. The free resources available to the public include pamphlets, videos and an interactive computer system. Feel free to visit at your convenience.

2006 Primary Cancer Sites

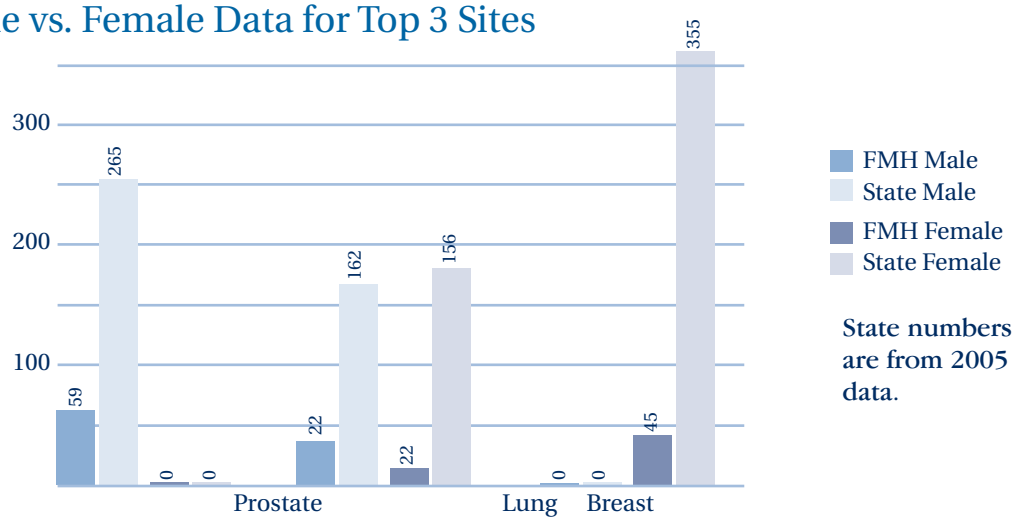
Number of Cases Presented at The Cancer Conferences by Site 2006

	# Presented	Total Diagnosed
Breast	40	48
Prostate	12	59
Bladder	7	11
Leukemia, Lymphoma, MDS & Hodgkins Disease	10	26
Head & Neck	2	7
Kidney & Ureter	12	10
Lung	3	44
Liver	3	3
Colorectal	10	35
Esophageal	1	7
Melanoma	2	9
Pancreas	2	9

Total number of analytical cases for 2006=318
Total number of cases presented at Cancer Conference in 2006 = 104

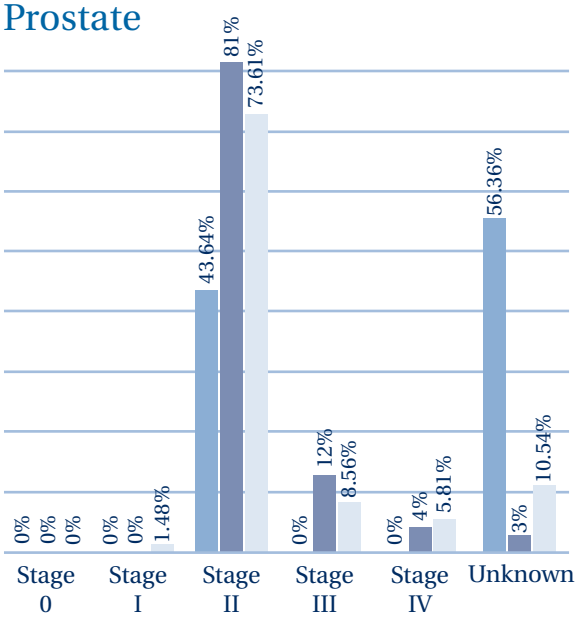
All Sites	% of State Cases	State 2005	FMH 2006	Analytic	Non-Analytic	Male	Female	AJCC Stage Analytical 0	I	II	III	IV	8	9
Prostate	22.26%	265	59	29	30	59	0	0	0	25	0	1	0	3
Lung & Bronchus	13.83%	318	44	37	7	22	22	0	6	1	7	16	1	6
Breast	13.52%	355	48	45	3	0	48	9	15	11	3	0	0	7
Colon	13.07%	176	23	23	0	10	13	4	3	4	5	5	0	2
Lymphomas	15.13%	119	18	15	3	10	8	0	4	5	1	1	1	3
Brain and Other Nervous Systems	33.33%	36	12	12	0	2	10	0	0	0	0	0	12	0
Rectum & Rectosigmoid	19.30%	57	11	11	0	7	4	3	1	1	2	1	1	2
Urinary Bladder	11.22%	98	11	9	2	10	1	3	1	0	1	1	0	3
Kidney & renal Pelvis	12.35%	81	10	10	0	8	2	0	4	0	2	2	0	2
Melanoma - Skin	19.57%	46	9	8	1	7	2	4	2	0	1	0	0	1
Leukemias	11.76%	68	8	3	5	6	2	0	0	0	0	0	3	0
Esophagus	23.33%	30	7	7	0	6	1	0	1	0	0	4	0	2
Pancreas	15.91%	44	7	5	2	2	5	0	0	1	0	1	0	3
Corpus & uterus	12.96%	54	7	6	1	0	7	0	1	0	1	0	1	3
Thyroid	9.09%	66	6	5	1	2	4	0	5	0	0	0	0	0
Cervix uteri	19.23%	26	5	5	0	0	5	2	0	1	0	1	0	1
Multiple Myeloma	21.74%	23	5	4	1	2	3	0	0	0	0	0	3	1
Stomach	10.81%	37	4	4	0	2	2	0	1	0	0	0	1	2
Other Endocrine (including Thymus)	>50%	<6	4	3	1	1	3	0	0	0	0	0	2	1
Gum & Other Mouth	50.00%	6	3	3	0	3	0	0	0	0	0	1	0	2
Liver & Intrahepatic Bile Duct	11.54%	26	3	3	0	2	1	0	0	0	0	1	0	2
Larynx	23.08%	13	3	3	0	0	3	0	2	0	0	0	0	1
Ovary	8.57%	35	3	3	0	0	3	0	1	0	0	0	0	2
Tongue	20.00%	10	2	1	1	2	0	0	1	0	0	0	0	0
Soft Tissue	11.11%	18	2	2	0	1	1	0	0	0	0	0	2	0
Testes	9.09%	22	2	1	1	2	0	0	0	1	0	0	0	0
Lip	>20%	<6	1	1	0	1	0	0	0	0	0	0	0	1
Salivary Glands	>20%	<6	1	1	0	1	0	0	1	0	0	0	0	0
Nasopharynx	16.67%	6	1	1	0	1	0	0	0	0	0	0	0	1
Hypopharynx	>20%	<6	1	1	0	0	1	0	0	0	0	0	0	1
Anus	12..50%	8	1	1	0	0	1	0	0	1	0	0	0	0
Miscellaneous	25.00%	53	13	11	2	9	7	0	0	0	0	0	11	1

2006 Male vs. Female Data for Top 3 Sites

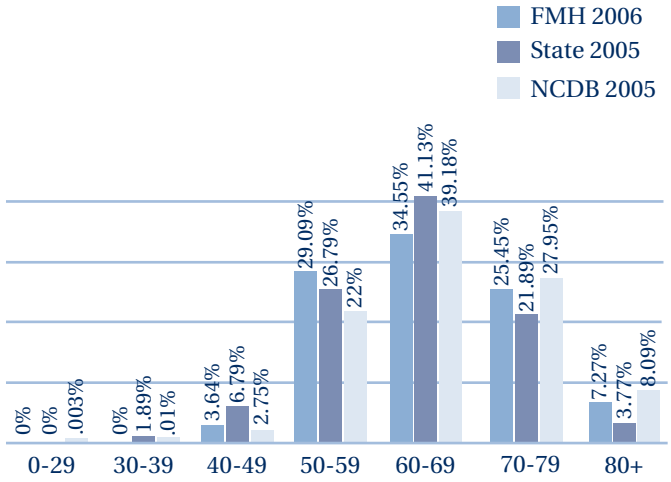


State numbers are from 2005 data.

Prostate

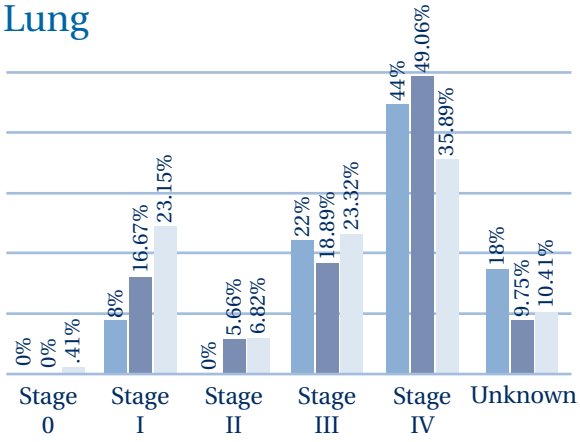


AJCC Stage at Diagnosis

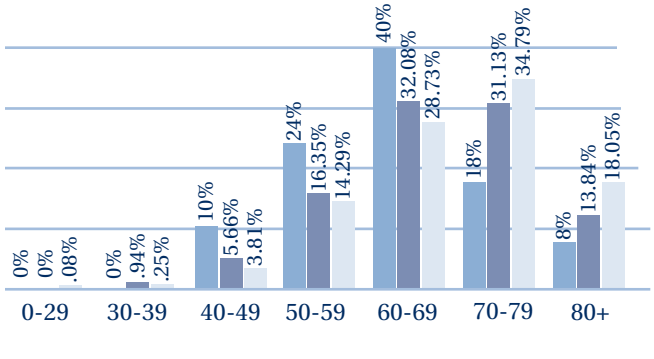


Incidence by Age

Lung

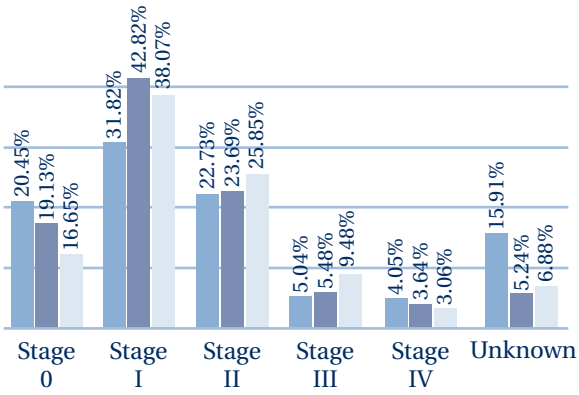


AJCC Stage at Diagnosis



Incidence by Age

Breast



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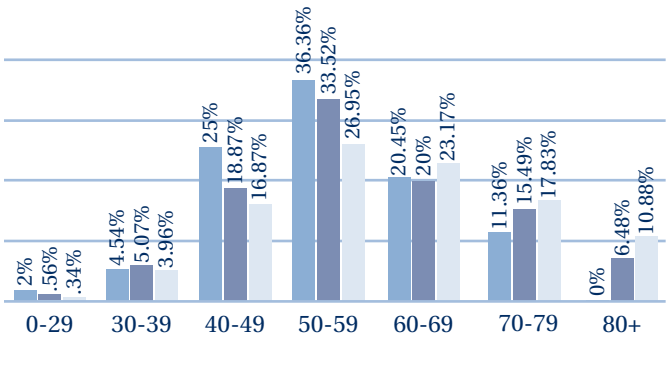


Incidence by Age

2007 Primary Cancer Sites

Number of Cases Presented at The Cancer Conferences by Site 2007

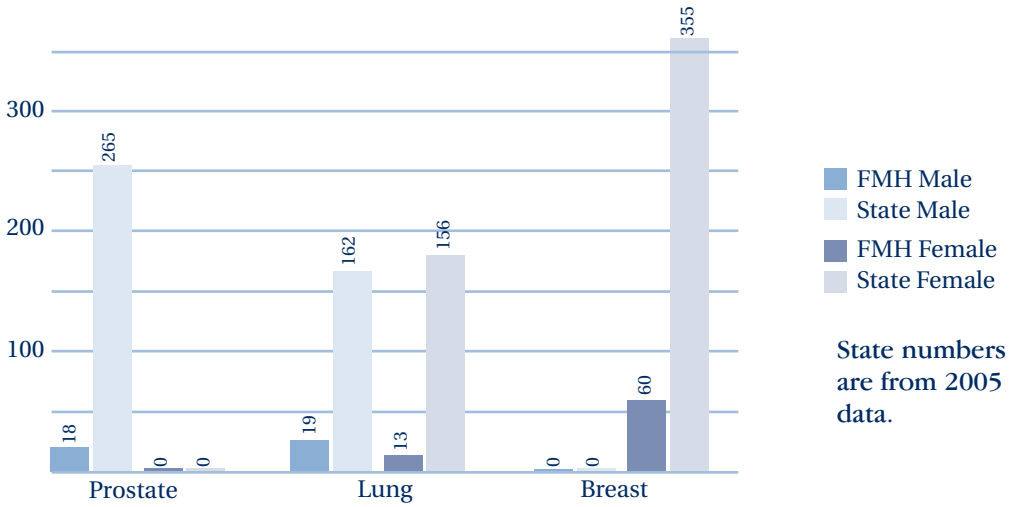
	# Presented	Total Diagnosed
Breast	35	60
Bladder	2	4
Leukemia, Lymphoma, MDS & Hodgkins Disease	8	19
Head & Neck	3	11
Sarcoma	1	4

	# Presented	Total Diagnosed
Lung	5	32
Liver	2	2
Colorectal	2	24
Melanoma	1	4
Thyroid	1	7
Stomach	4	5
Cervix Uteri	2	5

Total number of analytical cases for 2007=237
Total number of cases presented at Cancer Conference in 2007 = 67

All Sites	% of State Cases	State 2005	FMH 2006	Analytic	Non-Analytic	Male	Female	AJCC Stage Analytical 0	I	II	III	IV	8	9
Breast	16.90%	355	60	59	1	0	60	12	22	14	3	2	0	6
Lung & Bronchus	10.06%	318	32	32	0	19	13	0	10	1	6	13	0	2
Prostate	6.79%	265	18	13	5	18	0	0	0	9	0	3	0	1
Colon	9.65%	176	17	17	0	7	10	8	2	1	2	4	0	0
Lymphomas	10.92%	119	13	13	0	6	7	0	3	2	3	4	0	1
Miscellaneous	15.09%	53	8	8	0	2	6	0	0	0	0	0	8	0
Pancreas	15.91%	44	7	7	0	4	3	0	1	2	0	3	0	1
Thyroid	10.61%	66	7	7	0	2	5	0	3	1	0	1	0	2
Larynx	46.15%	13	6	6	0	6	0	0	2	0	0	4	0	0
Rectum & Rectosigmoid	10.52%	57	6	6	0	4	2	3	2	0	1	0	0	0
Cervix uteri	19.23%	26	5	5	0	0	5	1	0	4	0	0	0	0
Kidney & renal Pelvis	6.17%	81	5	5	0	4	1	0	4	0	0	0	1	0
Stomach	13.51%	37	5	5	0	3	2	0	2	0	1	2	0	0
Melonoma - Skin	8.70%	46	4	3	1	1	3	0	2	0	0	0	0	1
Other Endocrine (including Thymus)	<80%	>6	4	3	1	1	3	0	0	0	0	0	3	0
Soft Tissue	22.22%	18	4	4	0	4	0	0	0	0	1	2	0	1
Urinary Bladder	4.08%	98	4	4	0	2	2	3	0	0	0	1	0	0
Corpus & uterus	5.66%	54	3	3	0	0	3	0	3	0	0	0	0	0
Esophagus	10.00%	30	3	3	0	2	1	0	1	0	1	1	0	0
Leukemias	4.41%	68	3	3	0	2	1	0	0	0	0	0	3	0
Multiple Myeloma	13.04%	23	3	3	0	2	1	0	0	0	0	0	3	0
Tongue	30.00%	10	3	3	0	3	0	0	0	0	0	2	0	1
Brain & Other Nervous Systems	11.11%	36	4	4	0	0	4	0	0	0	0	0	4	0
Liver & Intraheptic Bile Duct	7.69%	26	2	2	0	2	0	0	1	0	1	0	0	0
Ovary	5.71%	35	2	1	1	0	2	0	1	0	0	0	0	2
Small Intestine	15.38%	13	2	2	0	2	0	0	0	0	0	1	1	0
Anus	12.50%	8	1	1	0	0	1	0	1	0	0	0	0	0
Nasopharynx	16.67%	6	1	1	0	0	1	0	1	0	0	0	0	0
Oropharynx	<20%	>6	1	1	0	1	0	0	0	0	0	1	0	0
Testes	4.55%	22	1	1	0	1	0	0	1	0	0	0	0	0

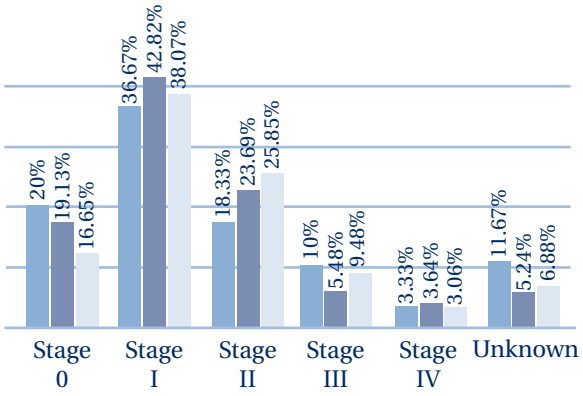
2007 Male vs. Female Data for Top 3 Sites



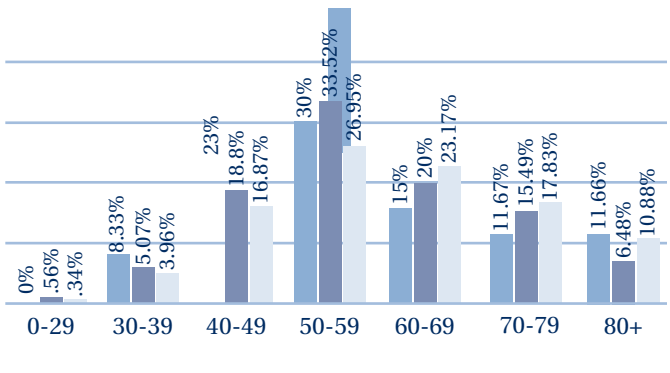
State numbers are from 2005 data.

2007 Primary Cancer Sites

Breast



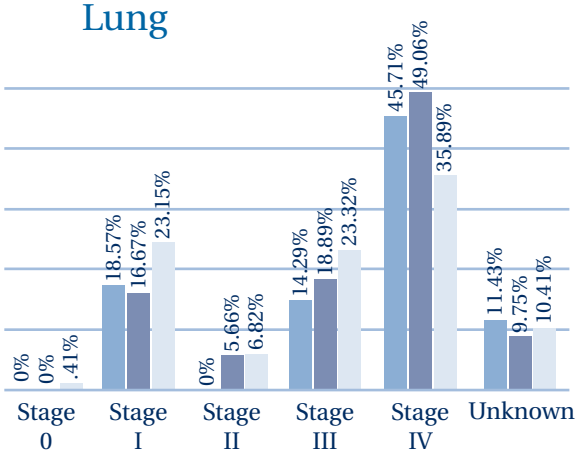
AJCC Stage at Diagnosis



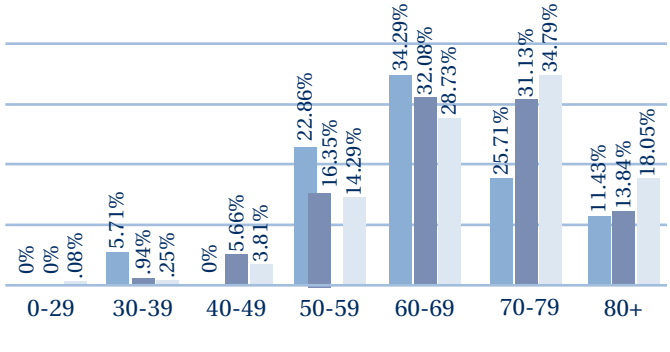
Incidence by Age

FMH 2007
State 2005
NCDB 2005

Lung

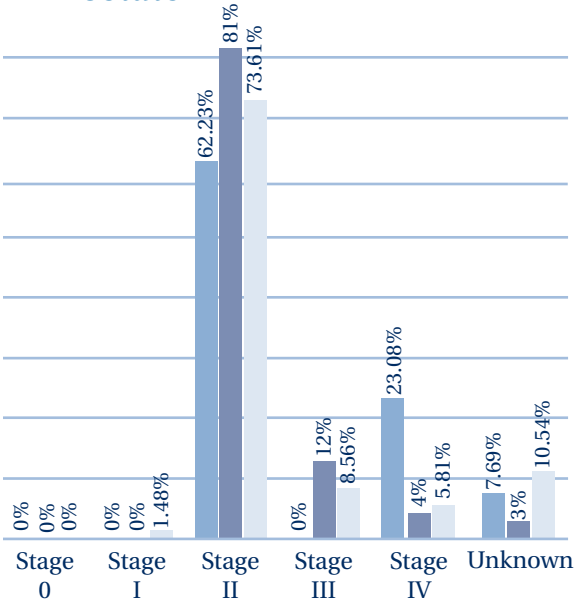


AJCC Stage at Diagnosis

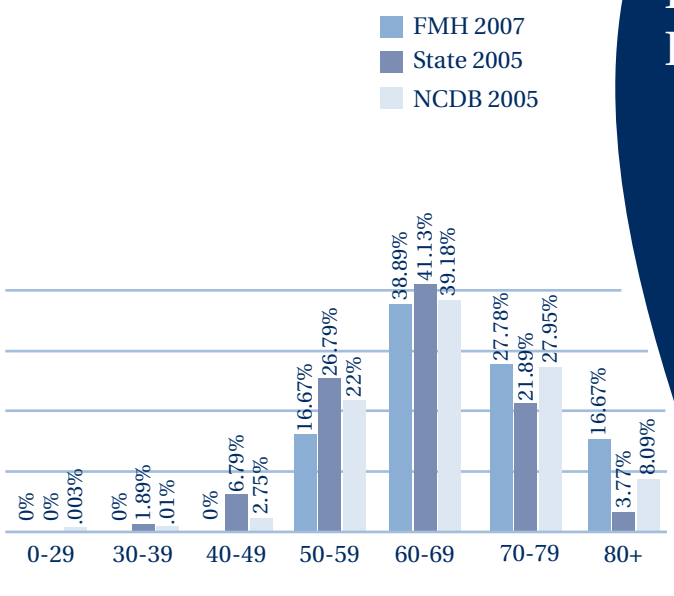


Incidence by Age

Prostate



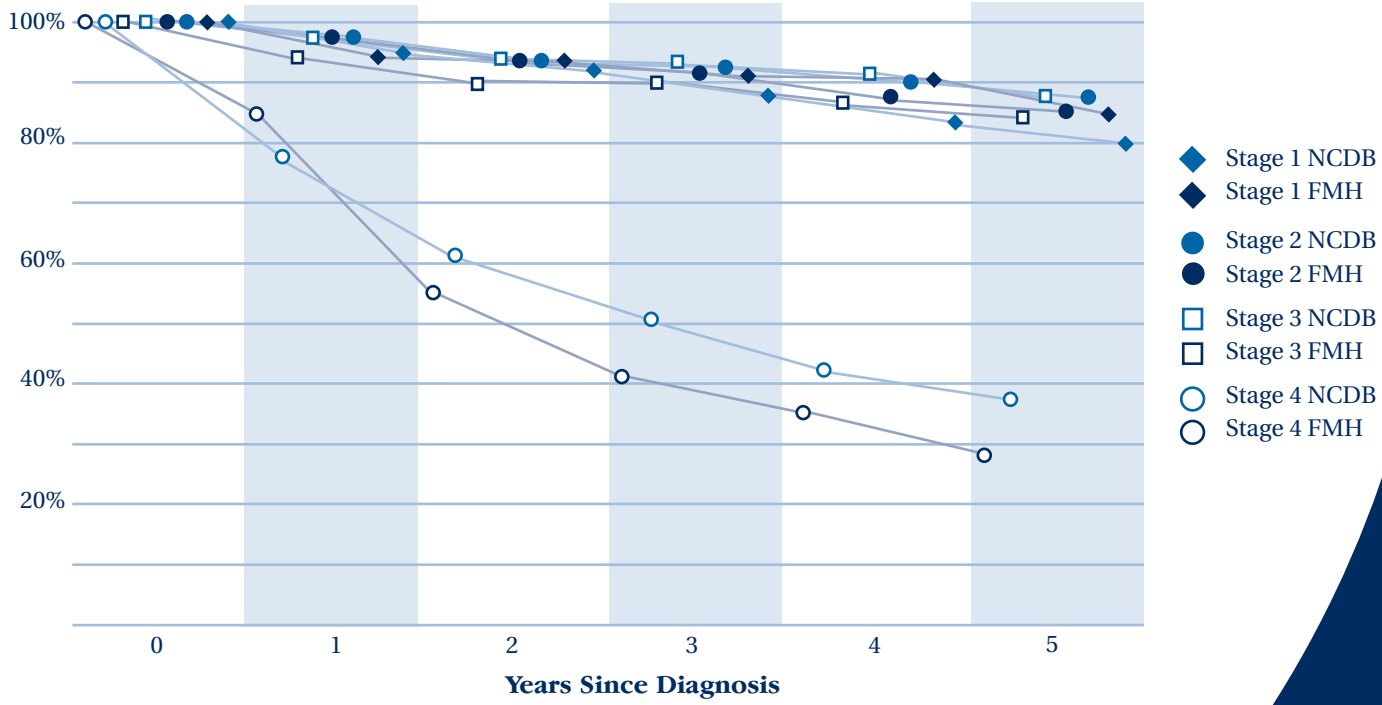
AJCC Stage at Diagnosis



Incidence by Age

Survival Rates for Top 3 Sites 2006-2007*

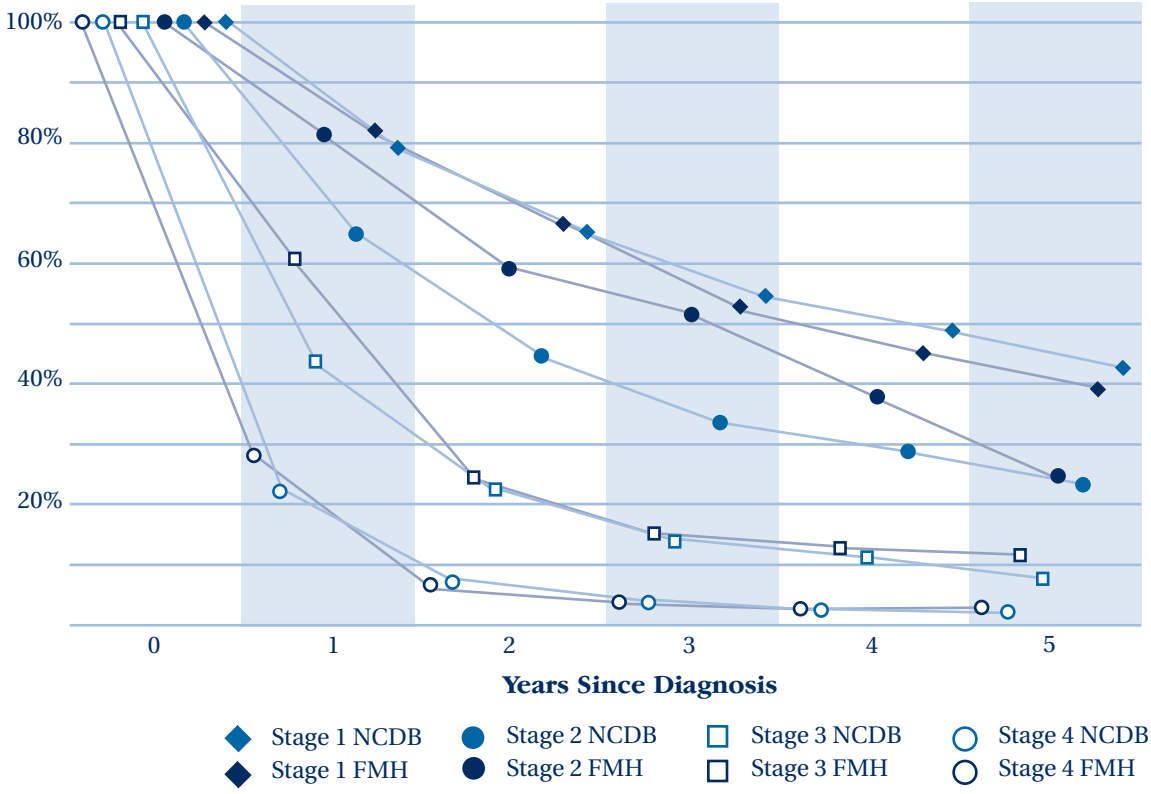
Prostate



*Alaska Cancer Registry Data is unavailable

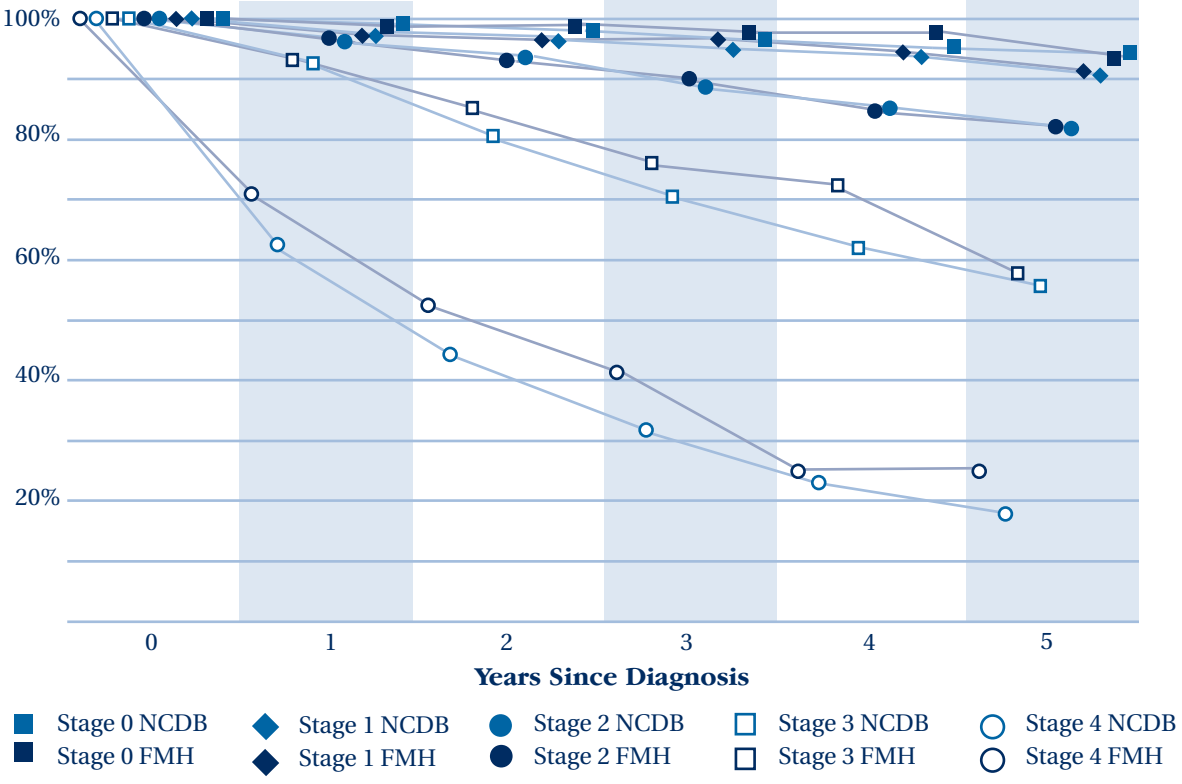
Survival Rates for Top 3 Sites 2006-2007*

Lung



*Alaska Cancer Registry Data is unavailable

Breast



Introduction

Fairbanks Memorial Hospital continues its dedication to being the region's paramount provider of cancer care services and a leader in cancer education, prevention, detection, and treatment. Patients come to Fairbanks Memorial for:

- Quality care close to home
- Comprehensive care offering a range of state-of-the-art services and equipment
- A multi-specialty cancer team approach to coordinate the best treatment options
- Information about cancer clinical trials, education and support
- Lifelong patient follow-up through an oncology registry that collects data on tumor type, stage of cancers and treatment results
- Ongoing monitoring and improvement of care.

However, over the last few years, one thing has become noticeably missing from our cancer program: a positron emission tomography scanner.

Introduction to PET/CT Scanning

Positron Emission Tomography (PET) scans are helpful in detecting sites of cancer as well as providing more complete information regarding the extent of cancer throughout the body, permitting improved decision making regarding treatment of patients with known disease. PET scans also are problem-solver for patients with confusing or contradictory results on conventional imaging studies and can help reduce the need for diagnostic surgical procedures.

PET scanning differs from CT (computer tomography) or MR (magnetic resonance imaging), because PET gives information about the function of an area of the body, rather than just taking a picture of it. Currently, it is the only tool in which can identify if a tumor is benign or malignant.

A PET/CT combines the two valuable scans. The PET scan identifies the metabolic signal of actively growing cancer cells while the CT presents a complete picture of the internal anatomy that reveals the size, location and shape of abnormal growths. Although alone the two images each give essential information in regards to the cancer, collectively the images provide complete information on the location and metabolism of the cancer.

Uses in Oncology

Treatment Planning and Staging

Our physicians report to several organizations which set the guidelines for treatment of all cancer patients. One such organization is the National Comprehensive Cancer Network (NCCN). Their guidelines suggest a PET scan or PET/CT be part of the staging work up for the following sites: Myelomas, Non-Hodgkin's/Hodgkin's Lymphoma, Non-Small/Small Cell Lung, Colorectal, Ovarian, Esophageal, Head and Neck, Gastric, Melanomas, Soft Tissue Sarcomas, Testicular (stage

II-IV), and Thyroid cancers. Three of these sites are considered part of the top five sites at Fairbanks Memorial Hospital. They consist of almost one third (32.3%) total cancer patient population for 2007.

According to a recent article in the *British Journal of Radiology,* utilization of "PET/CT leads to improved lesion detection and localization as well as a faster learning curve for all those involved." (Ell, P.J., 32-36) The article goes into further detail to show how PET/CT has proven numerous times to be superior to other imaging modalities in most tumors.

Lymphomas

A PET/CT is far superior to CT alone in the staging and diagnosis of nodal and extranodal disease in patients with lymphomas. Often these nodes are overlooked due to normal appearance in size on the CT alone. The PET scan will identify these nodes and cause an upstage of the malignancy, which could cause a change in the treatment plan. In this article, 40% of the cases discussed were upstaged do to the PET/CT in comparison to simply the CT alone.

The article goes on further to discuss the uses of the PET/CT scan during chemotherapy treatment for lymphoma patients. Using a PET scan as a predictive measurement has been proven to gage the patient's response to treatment in comparison to the post treatment PET scan patients at Fairbanks Memorial are currently receiving. This is especially noted in Hodgkin's disease and Non-Hodgkin's lymphoma.

Non-small Cell Lung Cancer

Several published studies in regards to non-small cell lung cancer have proven PET/CT scans have averted one of five patients from unnecessary surgeries. The use of the scan has caused an upstage in the patient's diagnosis by indicating skeletal or soft tissue involvement which rules the patient out for surgery.

Colorectal Cancer

The usage of the PET/CT in colorectal cancers deems more necessary in its significance in staging recurrent disease. The uptake in the imaging is far superior to that of other scans alone, especially when looking for recurrent disease from a scar, local recurrence, liver involvement, or a patient with rising tumor markers. A study conducted over a 5 year time frame concluded that 35% of the patient's treatment plans changed after the PET/CT results.

The top site for colorectal cancer to metastasize to is the liver. Typically the PET/CT scan is the only modality in which small deposits can be seen. The author further states "a case could now be made that PET/CT should be the first imaging modality to be employed in the staging and re-staging of colorectal cancer."

Myeloma

In patients with multiple myeloma, a PET/CT has proven to be notably more advanced in the detection of bony deposits than that of the conventional bone scan. The use of two tracers, F-FDG and F-labeled fluoride ion, in the scan will discover soft tissue and skeletal involvement. Although more information is needed in forms of research, according to data from other studies, such as those for non-small lung cancer, "F-Fluoride scanning of the skeleton [should] come to replace the conventional bone scan."

Head and Neck

According to an article published in *Clinical Position Imaging*, the ability to distinguish normal physiologic uptake in the striated muscles in comparison with malignant lesions in patients with head and neck cancer is far superior to that of any additional scan. Not only did the identification of these lesions aid in the appropriate staging of the cancer, but also helped in the localization of the tumor for surgical and radiological management.

Uses in follow-up care

It is well noted in several articles, studies, and magazines, patients who receive PET/CT scans in follow-up care have a higher chance of discovering a recurrence of the cancer long before a CT alone.

Esophagus

In follow-up care, no other tool is more successful in detecting recurrence in the esophagus than the PET scan. In the Journal of Gastrointestinal Surgery November 2008 issue, a study shows "a FDG-Pet was more accurate than CT (91% vs. 81%)…with a sensitivity of 100%." It was not only more accurate in locoregional recurrence but also distant metastases (96.2% vs. 84.9% and 92.5% vs. 84.9% respectively).

Ovary/Uterus

A study published in the *Nuclear Medicine Community* states the role of PET/CT is not only vital in the diagnosis of ovarian cancer, but also proves to be the best method for detecting residual and recurrent disease as well as distant metastasis. "PET/CT should be an integral part in evaluation of patients with high-risk ovarian cancer or rising values of tumor markers (CA-125), prior to selection of the most appropriate therapy."

In December of 2008, *Cancer Treatment Review* presented an article about the importance of PET/CT in cervical carcinomas. The results of the article include the thought that "PET/CT is an effective imaging technique in the lymph node staging of locally advanced cervix carcinoma with negative CT findings." The study goes further to state, "PET provides meaningful information for the early evaluation of therapeutic response and long-term follow-up."

Stomach

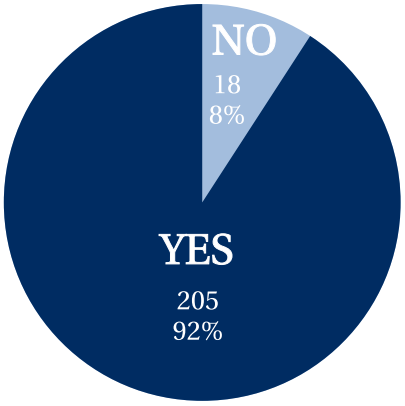
Recurrent cancer is significant concern for patients who have recently been treated for gastric carcinomas. *Abdominal Imaging* recently discussed a study regarding using PET/CT as the ultimate measure for recurrence in patients with gastric cancers. The article acknowledges PET/CT is the most helpful at "confirming the presence of recurrence particularly in patients who were highly suspicious of recurrence, because of its high positive predictability." The use of this technology only increased the chances of finding true recurrence in patients with surgically removed gastric carcinomas.

Registry Data

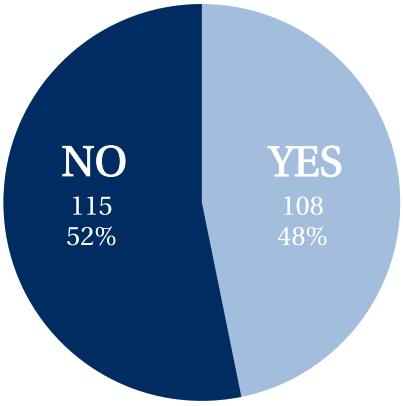
Looking into the registry's 2007 data alone, out of 223 patients, 18, or 8%, of our patients received PET scans for their selected cancer. The sites patients needed PET scans were lung, colon, head and neck, thyroid, lymph nodes, and breast. Three of our top four sites needed PET scans in order to help in the planning, treatment, or monitoring the status of the disease.

This data however is skewed due to a limited availability of a PET scan. A patient must currently travel down to Anchorage to acquire this test at the closest distant, which is a little more than 300 miles.

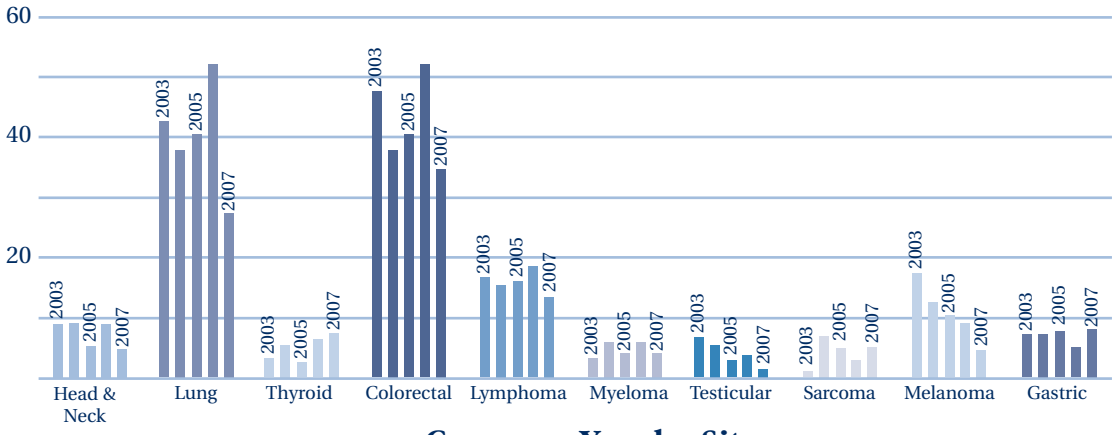
If the number of patients who were recommended a PET/CT scan during the work up for treatment according to the standards used by the National Comprehensive Cancer Network, then 108, or 48%, of our 223 patients might have had a PET scan recommended.



2007 Analytic Cases



2007 NCCN Guidelines for FMH Patients



Cases per Year by Site

Recent trends of our patient population have shown stable number of analytic cases at our facility over the last 5 years for the top sites a PET scan is used in the treatment. Nearly 50% of our cases can benefit from this technology.

Uses in Radiation Therapy Treatment

Fairbank Memorial Hospital announced the addition of intensity modulated radiation therapy (IMRT) at Fairbanks Cancer Treatment Center. IMRT remains one of the most significant technical advances in radiation therapy since the advent of the medical linear accelerator. IMRT is not just an add on to the current radiation therapy process, but represents a new paradigm that requires knowledge of multi-modality imaging, internal organ motion, tumor control probabilities, normal tissue complication probabilities, three-dimensional dose calculation and optimization and dynamic beam delivery of non-uniform beams. This new process of planning and treatment delivery shows significant potential for further improvement in the therapeutic ratio and reducing toxicity.

After implementation, IMRT is used to improve and enhance treatment of Head & Neck and Prostate cancer. It is also being used in other sites such as; Breast, Lung, primary Brain, Sarcomas.

Implemented through the use of a powerful computer, the 'inverse planning' process allows for an escalated total dose to the tumor or 'target volume'. In addition, IMRT also spares surrounding normal tissue better than previous modalities. One of the ways this is achieved is through smaller margins around the tumor volume. Because of these tight margins, in the case of prostate treatment, the gland is localized daily by a pre-treatment ultrasound procedure. A prostate immobilizer device is also placed in the rectum to position the gland or the prostatic bed. The use of the prostate immobilizer was added to the facility in 2008. This process brings the daily treatment to within one half centimeter accuracy.

According to an article in *Medical Physics*, without a precise delimitation of the tumor's gross volume, the quality of the dosimetry will be affected. By combining the use of the PET/CT into the treatment planning, a more precise location of the tumor is known and helps focus on the tumor alone, making the plan that much more accurate.

Uses Other Than for Oncology

As technology advances, so does the use for equipment, especially in the world of medicine. Many years ago, the only use for PET scans was thought to be for cancer; however, now the range of uses varies from cardiology to neurology.

Cardiology

With more than a third of the American population suffering from heart disease, the number of patients needing cardiologic attention has grown tremendously. Fairbanks Memorial Hospital is addressing this concern with the Sally Porter Heart Center which is currently under construction. By using PET scanning in cardiology, patients can be diagnosed with coronary artery disease, myocardium problems, etc. PET is considered the standard of care for patients with reduced left ventricular activity. By adding a PET/CT scan to our imaging equipment, we not only increase our ability to diagnose, but also to manage these diseases that affects millions of Americans.

Neurology

PET scanning has been linked to helping physicians in several psychiatric areas to include schizophrenia, Alzheimer's disease, dementia, and neurological disorders after brain injuries. With PET's ability to view the metabolic activity of the body, the uses in neurology become endless for researchers. An article published in *Clinical Neuroimaging of North America* believes many psychiatric orders biological bases will be deciphered using PET scans which will help in the patient's clinical management. The article continues "it is foreseeable that PET will be becoming increasingly involved in the development of new psychiatric medicines."

Research at Fairbanks Memorial Hospital

Recently, Fairbanks Memorial Hospital continues with Virginia Mason Medical Center and Fred Hutchison in a collaborative effort to increase availability of clinical trials to Alaskans. It is an effort that allows the community to have more opportunities in front of them as the fields of clinical research and trials continue to expand. Under the Collaborative Community Oncology Program there are currently 75 clinical trials open to enrollment.

Currently, there are several studies available now to patients if PET scanning is available such as PET scan in Treating Patients with Metastatic Prostate Cancer (Clinical Trials.gov) which our patients must travel to Anchorage if they want to participate.

Conclusion

As the planning, treatments, staging, and outcomes continually change within the world of cancer, keeping up with the technological advances and best

methods becomes utmost important. A PET scan not only allows our physicians one of the necessary tools needed, but also allows our patient to receive all essential planning and follow up requirements with the convenience of being closer to home.

Three of our top five analytic sites have proven studies showing the PET scans have helped either in the treatment or diagnostic staging of patients and more are continually producing the same response.

Not only will it help our cancer patients, but will also be utilized by neurology and cardiology in better diagnosis and management in these diseases.

By placing a PET/CT scan at Fairbanks Memorial Hospital, patients are given the opportunity to have diagnosis and treatment courses closer to home. A PET/CT scan is a vital tool in the fight against cancer.

Cancer Committee

The Cancer Committee has been chaired by Dr. J. Michael Carroll for 30 years and is the policymaking body of the FMH Cancer Program meeting once a quarter. Dr. Andrew Evanger is serving his fourth year as the Cancer Program Liaison. The Cancer Committee provides leadership to plan, initiate, stimulate, and assess all cancer related activities at Fairbanks Memorial Hospital. The Committee is made up of a multidisciplinary team comprised of physicians from several disciplines and allied health professionals from many different departments in the hospital who serve cancer patients.

Cancer Committee Members:

Karl Baurick, MD, OB/GYN

Kendrick Blais, DO Family Practice

Jim Button, PharmD Pharmacy

J Michael Carroll, MD, Medical Oncologist

John Cotter, Administration

Leah Driscoll, Oncology Data Center

Andrew Evanger, MD Pathology

Thomas Hammond, MD, Otolaryngology

Richard Hattan, MD, Radiologist

Jennifer Helmer, RD Nutritional Services

John Huffer, MD Urology

Jon Lieberman, MD General Surgery

Mary MacFarlane, MD Pediatrics

Sue Magruder, RN Pain Management

Amanda McDade, A.C.S. Representative

Holly Proell, P.T. Physical Therapy

Billy Raulston, RN Performance Improvement

Murray Richmond, Chaplain

Nevelyn Schooler, Oncology Data Center

Essam Shihadeh, MD Radiation Oncology

Hannah Smith, RN Oncology Research Nurse

Sheron Smoyer, LSW Patient Quality Resources

Stephen Sutley, DDS Oral and Maxillofacial Surgery

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The 2008 Oncology Data Center Annual Report was prepared by Leah Driscoll. Questions regarding this report or requests for additional information may be directed to the Oncology Data Center at 907-458-5458.

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Questions regarding this report can be directed to:
Oncology Data Center, Fairbanks Memorial Hospital
1640 Cowles St. Suite 2, Fairbanks, Alaska, 99701
(907) 458-5458 • (888) 678-5458

Oncology Data Center Staff
Pamela Warren PhD, CTR/CRP
Leah Driscoll and Nevelyn Schooler
Oncology Data Specialists