



BOSTON MEDICAL CENTER
2005 CANCER PROGRAM ANNUAL REPORT:
FOCUS ON CERVICAL CANCER 2001-2005

EXCEPTION
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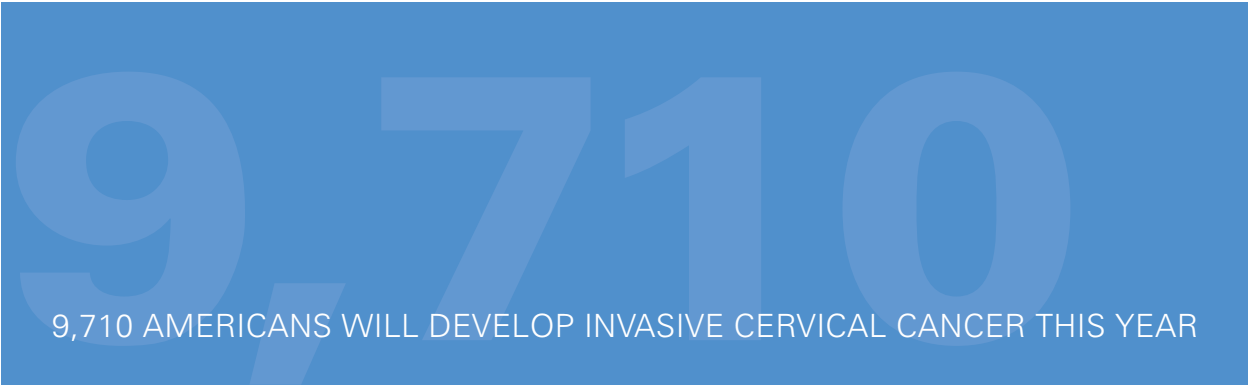
EXCEPTIONAL CARE

WITHOUT

EXCEPTION

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EXCEPTIONAL CARE



9,710 AMERICANS WILL DEVELOP INVASIVE CERVICAL CANCER THIS YEAR

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LETTER FROM THE CHAIR

Dear Friends,

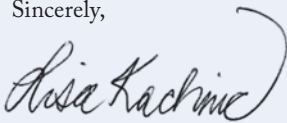
This year at Boston Medical Center (BMC), the news in cancer is big: 133,497 square feet to be precise, in the form of our new, state-of-the-art comprehensive cancer care center, named in honor of late Massachusetts Congressman John Joseph Moakley. When its doors opened this fall, the Moakley Building also opened a wonderful new chapter in the story of cancer care at BMC. By consolidating our disparate cancer services under one roof for the first time, the Moakley Building has transformed the patient experience and the quality of care, making it dramatically easier for BMC staff to coordinate every stage of a patient's treatment.

From its PET scanner and other leading-edge technologies to its inspiring, light-filled spaces, the Moakley Building represents the essence of our mission: to provide our diverse, often underserved, urban patient population with exceptional care without exception. As BMC President and CEO Elaine Ulian explains, "Our cancer patients receive the most advanced, coordinated, and dignified medical care available anywhere. We are proudly and passionately setting a new standard in a city known worldwide for its medical leadership."

Focusing on cervical cancer, this year's report highlights another transformative piece of news, in this case for the entire field of women's cancer: the advent of the highly effective new cervical cancer vaccine. Though cancer of the cervix is decreasing across the US-born population, it remains a real concern, especially for women born outside the US or who have a sporadic history of gynecological care – both common traits in patients at BMC. The vaccine represents both an exciting milestone for medicine and a life-saving practical development for the patients we serve.

From this groundbreaking new vaccine to the opening of the Moakley Building, from new equipment to new treatment techniques, this year marks a striking moment of hope and momentum in cancer care at BMC. As we put all these tools into action, we look forward to reporting next year on our results.

Sincerely,



Lisa Kachnic, MD
Chair, BMC Cancer Committee

CERVICAL CANCER AT BMC 2001-2005

To ensure quality patient care, the BMC Cancer Committee reviewed cervical cancer cases from 2001-2005. Only cases in which patients received either their diagnosis and/or first cancer-directed treatment at BMC were included. There were 63 invasive cervical cancer cases diagnosed at BMC during these years (Figure 1). This data will be compared to the National Cancer Database (NCDB), which contains 7,368 invasive cases for the years 2001-2005.

In terms of invasive cervical cancer presentation, BMC compares favorably with the NCDB data (Figures 2-8), showing that more than 50 percent of our cases presented with early/localized disease (Figure 2). This is important because when found and treated early, cervical cancer can often be cured. As shown in Figure 8, the survival rates for all stages of cervical cancer compare favorably with the NCDB. This is encouraging since a disproportionate percentage of BMC patients are on Medicaid & Medicare.

In the future, the Boston Medical Center Cancer Committee will enhance its screening, prevention, outreach and treatment efforts to further decrease the incidence and severity of this disease.

WHEN FOUND
AND TREATED
EARLY,
CERVICAL CANCER
CAN OFTEN BE CURED

RESEARCH DATA

■ BOSTON MEDICAL CENTER
■ NATIONAL CANCER DATABASE

SRG = SURGERY
 RAD = RADIATION THERAPY
 CHM = CHEMOTHERAPY

Fig. 1 INVASIVE CERVICAL CANCER YEARS 2001-2005 AT BMC

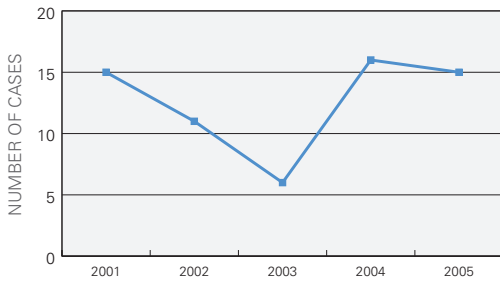


Fig. 2 CERVICAL CANCER STAGE AT DIAGNOSIS

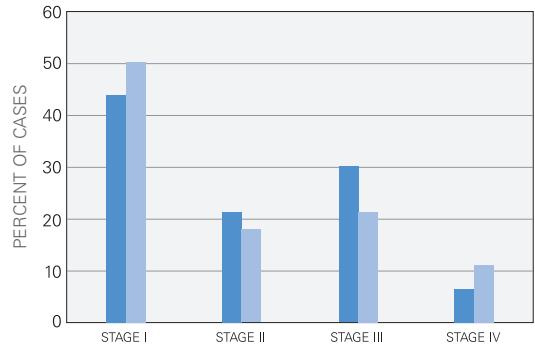


Fig. 3 CERVICAL CANCER AGE AT DIAGNOSIS

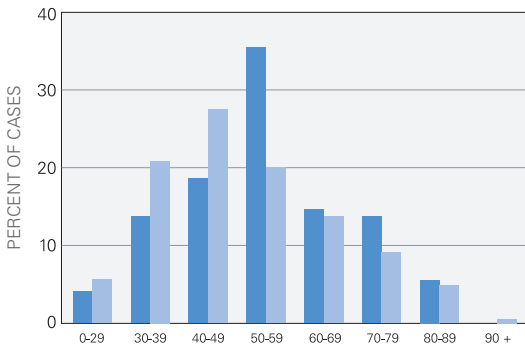
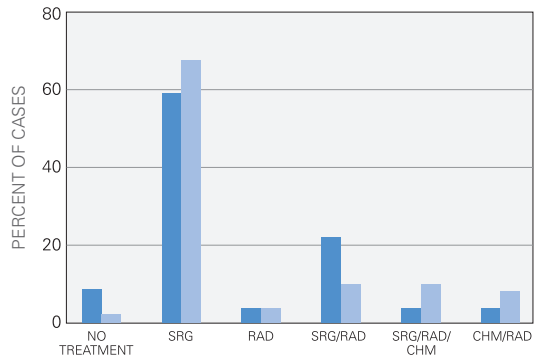


Fig. 4 CERVICAL CANCER TREATMENT STAGE I



■ BOSTON MEDICAL CENTER
■ NATIONAL CANCER DATABASE

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Fig. 5 CERVICAL CANCER TREATMENT STAGE II

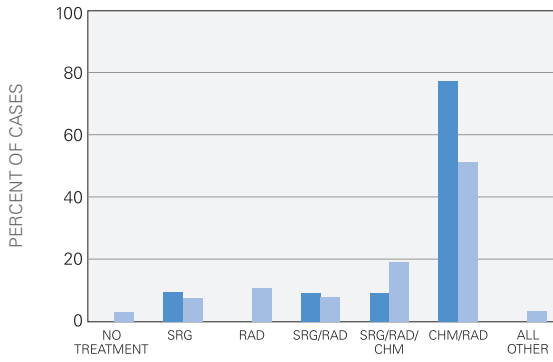


Fig. 6 CERVICAL CANCER TREATMENT STAGE III

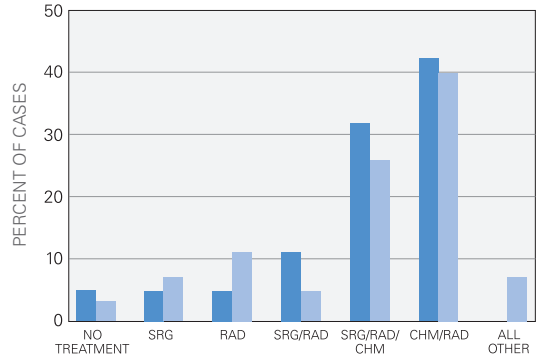


Fig. 7 CERVICAL CANCER TREATMENT STAGE IV

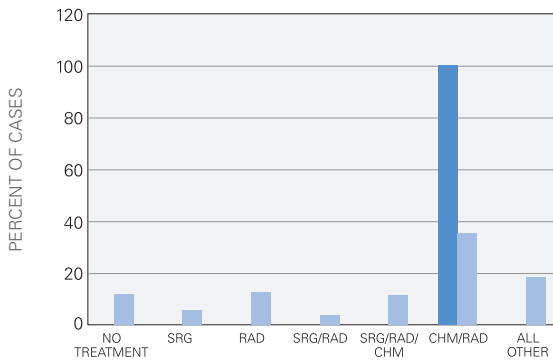
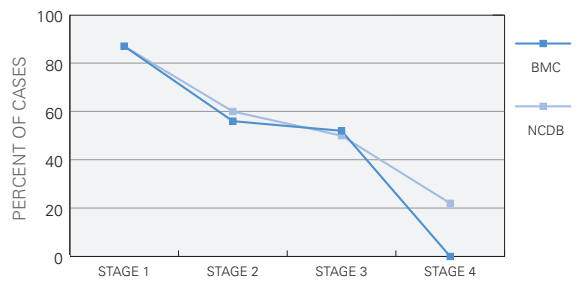


Fig. 8 CERVICAL CANCER 5 YEAR SURVIVAL RATE



CLINICAL TRENDS

PREVENTION
CARE DELIVERY
TREATMENT

PREVENTION

AMILESTONEVACCINECHANGES THE LANDSCAPE IN CERVICAL CANCER

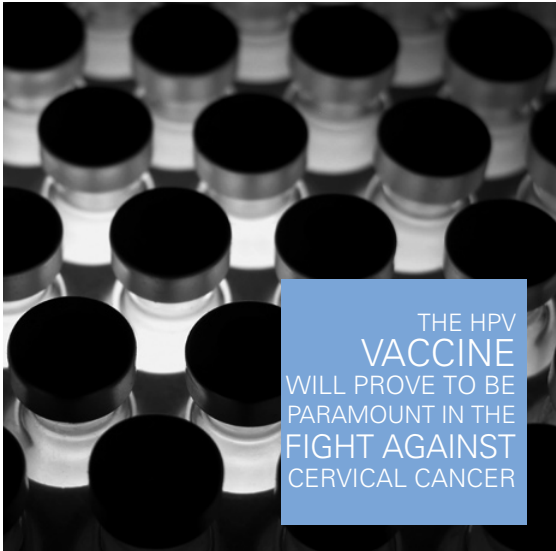
Cervical cancer is the second most common cause of cancer-related death in women worldwide. In the 1930s, the so-called “Pap” test first made it possible to screen for cervical cancer in its earliest stages; eventually it became the most widely used and most successful cancer screening method in the world, spurring a dramatic decline in malignancies and death. However, the incidence of cervical cancer remains significant for BMC’s vulnerable patient population. Social, cultural, financial and language barriers contribute to non-compliance with Pap screening.

Today, the fight against cervical cancer has vaulted forward with the advent of a new vaccine that can prevent the cancer altogether. Says Elizabeth Stier, MD, director of BMC’s colposcopy program, “the vaccine, which prevents infection from the two main viruses that cause cervical cancer (Human Papilloma Virus 16 and 18), represents the greatest innovation in gynecology in many years. This vaccine will be paramount for the prevention of cervical cancer in our disparate patient population.”

The vaccine is suitable for all non-pregnant girls and women ages 11-26. Because it cannot prevent 100 percent of cervical cancers, patients will still require a Pap smear every year, but we expect a sharp drop in the rate of abnormal Pap results—and therefore a significant reduction in costly follow-up testing and referrals for colposcopies.

To be fully effective, the vaccine requires a three-shot series: the initial baseline dose and additional shots two months and six months later. Such follow-up can present a barrier to some of our patients; fortunately, as Dr. Stier explains, “the manufacturers have gone out of their way to show that even one dose helps.”

Endometrial cancer is more common and ovarian cancer more lethal, but cervical cancer continues to represent a serious health risk, with peaks appearing for women in their early 40s and then in their 60s. Although we won’t know the true impact of the vaccine for another 20 to 30 years when today’s young women reach the prime age for this cancer, it’s thrilling to imagine that this once-common malignancy may one day be gone for good.



MORE EFFECTIVE
INTEGRATION
OF OUR CANCER SERVICES
MEANS
MORE EFFECTIVE CARE
FOR OUR PATIENTS

CARE DELIVERY

THE GOLD STANDARD IN COMPREHENSIVE, COORDINATED CARE Although the new Moakley Building physically unites our cancer services for the first time, it's only the latest BMC initiative to support the highest standards in coordinated patient care. For instance, our gynecologic oncology multidisciplinary tumor board meets every two weeks, bringing together top medical staff from gynecological oncology, radiation oncology, medical oncology, radiology, and pathology, as well as residents and medical students. The Moakley Building was designed so that now it is practical for these providers to see patients together, as well.

BMC has taken a number of other steps to address special issues related to women and cancer. One example: our new Pap smear notification system. The system serves health care providers in two ways: (1) by giving them a monthly report listing any new irregular Pap results for patients in their care, and (2) by restructuring BMC's chartless medical record system, so that a patient's entire Pap history — every test date and result — appears on a single page, eliminating the need to scroll through a woman's entire medical record.

BMC also has developed an innovative program to support the special gynecological needs of women with cancer, from breast cancer patients with vaginal bleeding or menopausal symptoms, who can't be offered traditional hormone therapies, to patients who've received radiation to their pelvis. BMC is one of only a few institutions with a gynecologist, Elizabeth Stier, MD, focused on women with non-gynecologic malignancies, and on issues of female sexuality in oncology patients.

TREATMENT

TAILORING TREATMENT TO DECREASE MORBIDITY & IMPROVE OUTCOMES For BMC patients, the consolidation of cancer services in the Moakley Building is not only a convenience, it has the potential to help save lives. It does this by improving access to the latest technologies, and by making it easier for patients to comply with their full course of treatment.

For example, in the Moakley Building, BMC doctors have access to the latest cutting-edge imaging and radiation delivery equipment. PET/CT and 4-dimensional



VARIAN INC. TRILOGY IMAGE-GUIDED
RADIATION DELIVERY SYSTEM

ADVANCED
AND
INTEGRATED TECHNOLOGY
IMPROVES
TREATMENT OUTCOMES

CT imaging allow physicians to diagnose more accurately, stage, treat and then monitor a patient's cancer. As John Durfee, MD, of Gynecological Oncology explains, "In planning a patient's treatment, we need to decide whether to go forward with surgery, radiation, chemoradiation, or all three. These extraordinary new imaging devices help us tailor our surgery and radiation plans to the precise stage and nature of the patient's disease, rather than relying on educated guesses. And with the technology in the Moakley Building, we're able to do the imaging ourselves."

BMC is also the only center in Boston to have a radiation delivery machine fitted with image-guided technology. With on-board imaging, volumetric CT information is readily available to improve tumor targeting in difficult cases. Furthermore, radiation delivery can be adapted on a real-time basis to account for respiratory motion and any changes in a patient's anatomy. "With this system, we have the most sophisticated and versatile radiation delivery technology available. It enables us to precisely treat the tumor while sparing the important surrounding normal structures," notes Ariel Hirsch, MD, of Radiation Oncology. "These advancements should help us to decrease a patient's side effects from treatment, and hopefully improve local control and survival."

For the many patients who require both chemotherapy and radiation, the Moakley Building also represents a huge practical step forward, bringing together in one building all the doctors and facilities they require. Because of a range of difficult life circumstances, patients who turn to BMC have often suffered a lifetime of inadequate or sporadic medical care — which means that we encounter a higher-than-average rate of locally advanced cancers that require multidisciplinary treatment. Roughly 90 percent of our cervical cancer patients, for example, receive a standard package of chemotherapy with radiation. For these patients — many of whom also struggle with factors such as poverty, lack of transportation, and limited English skills — coordinating their care and helping them resolve these practical challenges is indispensable to defeating their cancer.

OUTREACH AND SUPPORT

SUPPORT



DR. MICHAEL STONE, BMC CHIEF OF SURGICAL ONCOLOGY, WITH BMC PATIENT AND BREAST CANCER SURVIVOR, MARIE PIERRE AND HER HUSBAND FRITZ



BMC CANCER SUPPORT GROUP

At BMC, perhaps the most important, least appreciated aspect of our work is the intense focus on outreach and support: the activities that help patients recognize their health care needs, learn how to gain access to BMC services, and cope with the practical and psychological challenges of their disease.

Through BMC's Cancer Education and Early Detection Community Outreach Program, last spring the hospital conducted the third in an ongoing annual series of increasingly successful community cancer screenings. Testing was free and comprehensive, designed to detect breast, prostate, head and neck, and skin cancer. We also used the opportunity to take participants' blood pressure, test glucose and cholesterol levels, and determine how we could help them gain access to insurance or connect with a primary health care provider. Says organizer Kathy Finn, RN, "The screenings run from 8AM to noon, with breakfast and a live band. Over three years, attendance has climbed from 25 people to 180, and we expect that will continue. The most gratifying part is that we are truly saving lives; three members of our new prostate cancer support group, for instance, were diagnosed at one of our screenings."

BMC is supplementing these annual screenings with a new quarterly lecture series, some specifically geared for cancer survivors, and some designed to educate the broader population about cancer prevention and detection. This fall, for instance, we offered a morning of lectures on breast, gynecological, prostate, head and neck, and colon cancers, as well as nutrition and smoking cessation.

Such outreach programs bring patients into the hospital — but helping them manage the complex, emotionally challenging process of cancer treatment is an altogether harder problem, especially for those with multiple jobs, little family support, or limited English language or literacy skills. Inspired by this challenge, BMC is participating in the Patient Navigation Research Program (PNRP), funded by the National Cancer Institute. One of just nine PNRP sites across the country, BMC is evaluating the



AN IMPORTANT
ASPECT OF
CANCER TREATMENT
IS PROVIDING
PATIENTS
WITH THE MEANS TO
RESOURCES
AND SERVICES
AVAILABLE

effect on cancer care outcomes of providing “patient navigators” — specially trained human guides who can help patients navigate the ins and outs of their cancer diagnosis and care. The East Boston Neighborhood, Codman Square and Greater Roslindale Medical and Dental community health centers all now have Cervical Navigators, who will follow all women who receive abnormal Paps at their respective centers. The aim: to reduce the time from diagnosis to treatment, to increase patient satisfaction, to lower the cost of care, and to improve patient compliance and outcome.

And while we hope that these navigators can help patients make the most of their treatment, we also provide an innovative array of services to ease the strain of cancer care, especially for our distinctive patient population. For instance, a BMC nutritionist sees all patients at risk for poor nutrition, and can then refer them to BMC’s extensive food bank. We also offer complete social work and specialized psychiatric services specifically for patients with cancer. And through a newly awarded grant, we have begun to provide massage therapy for patients undergoing chemotherapy, as a way of decreasing side effects and improving their quality of life.

Finally, no amount of professional effort can substitute for the remarkable healing powers of mutual support among cancer patients. In addition to a Cancer Survivors Program and Annual Cancer Survivors Celebration, BMC currently sponsors monthly support groups for patients with newly diagnosed breast and ovarian cancer, metastatic breast cancer, prostate cancer, and head and neck cancer, with plans to add a colon cancer support group later this year. Responding to the specific needs of our community, we also plan to launch two separate cancer support groups for Haitian Creole-speaking men and women patients — the only such groups in Boston.

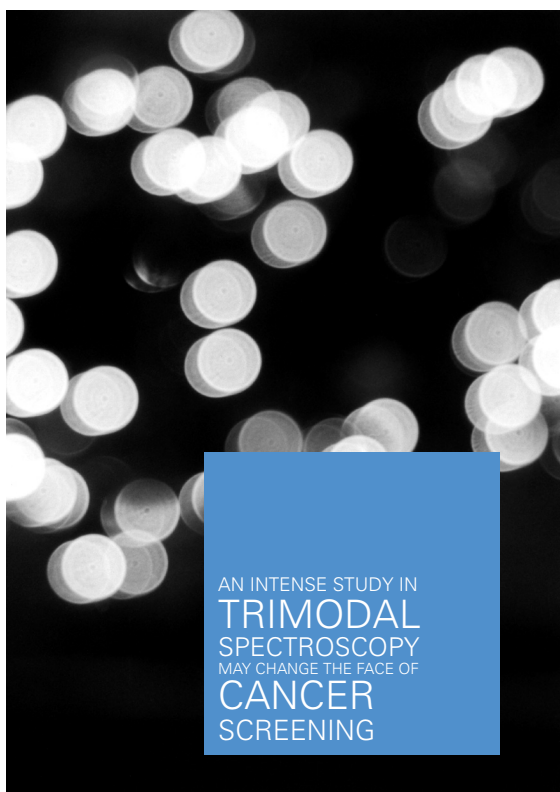
RESEARCH

CUTTING-EDGE DETECTION AND THERAPEUTIC STRATEGIES

At BMC, the focus is on patients first — but a key part of our commitment to exceptional care without exception is pursuing extensive front-line research, often centered on our experiences as a busy urban hospital serving the underserved.

For example, in keeping with the relatively high rate of BMC patients presenting with severe cervical dysplasia (Stage Zero cervical cancer), we are enthusiastically involved in a unique “trimodal spectroscopy” study with biomedical engineers at the Massachusetts Institute of Technology. Our goal is to develop a prototype instrument that can detect pre-invasive cervical disease with mucosal testing and a visual exam alone, offering a cheaper, and potentially more reliable alternative, to the physically uncomfortable, comparatively invasive and expensive colposcopies.

Over the past decade, the introduction of systemic chemotherapy in combination with pelvic radiotherapy has resulted in improved survival for patients with locally advanced cervical cancer. More recently, investigators have shown that angiogenesis (new blood vessel formation) appears to play a prominent role in cervical cancer development and progression. As such, therapeutic strategies incorporating anti-angiogenic agents are being investigated. BMC is participating in an exciting cooperative national research study (Radiation Therapy Oncology Group 0417), evaluating the role of a new anti-angiogenic agent, bevacizumab, in combination with definitive pelvic radiotherapy and cisplatin chemotherapy in untreated patients with locally advanced cervical carcinoma. BMC will continue to be at the forefront of novel research initiatives in order to maximize the prevention, detection and treatment of patients with cancer of the cervix.



CANCER REGISTRY DATA

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Under the direction of Health Information Management at BMC, the Cancer Data Registry (CDR) contains data on 8,034 cancer patients from Jan. 1, 1999, through Dec. 31, 2005, with a total of 1,037 analytic cases entered into the registry for the year 2005. The registry continues to maintain the follow-up rate at 90 percent required by the American College of Surgeons (ACoS). Data is stored on-line by using the MRS/IMPAC cancer registry system.

Of the total cancer numbers of cases accessioned in 2005, 462 were male, 483 were female and 2 were transgender. The four major sites continue to be lung, breast, prostate and colorectal. Of the 150 (15 percent) cases of breast cancer diagnosed, 119 (12 percent) cases were invasive cancers. There were 140 (14 percent) new cases of lung cancer diagnosed in 2005. There were 120 (12 percent) newly diagnosed prostate cancers. Following, with 109 cases (11 percent), were colorectal cancers. In addition, at BMC's request, the CDR staff collected 58 cases of Monoclonal Gammopathy.

The CDR participates in the National Cancer Data Base (NCDB) Call for Data, the Harvard School of Public Health Women's Health Study, and the Department of Public Health/Massachusetts Cancer Registry, as well as taking independent requests for special studies from the information collected and added to the CDR.

The CDR generates TNM staging forms for applicable sites. The CDR complies with the required registry data review by the physician advisor for quality control. In addition, the staff is responsible for working with the Boston Medical Center Cancer Committee on coordinating implementation of ACoS guidelines.

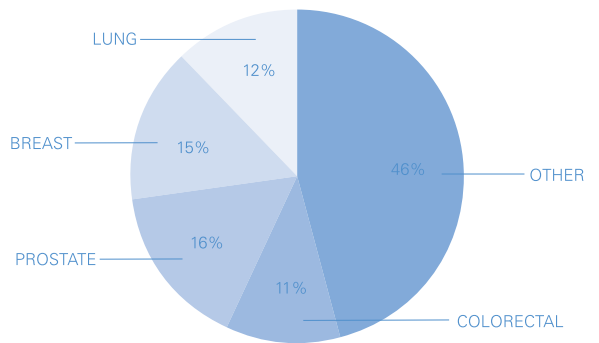
TOP CANCER SITES IN 2005

TOP CANCER SITES	BOSTON MEDICAL CENTER		MASSACHUSETTS	AMERICAN CANCER SOCIETY
	PATIENTS	% OF TOTAL	% OF TOTAL	% OF TOTAL
LUNG	140	14	12	13
BREAST	119	12	15	16
PROSTATE	120	12	16	17
COLORECTAL	109	11	11	11

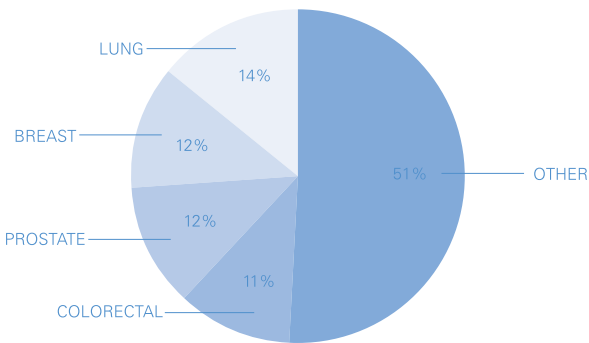
TOP CANCER SITES

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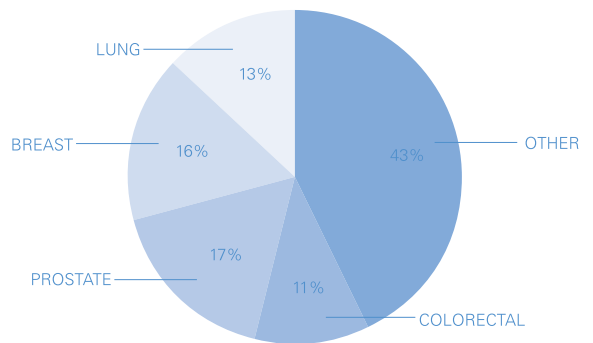
MASSACHUSETTS TOP CANCER SITES 2005



BOSTON MEDICAL CENTER TOP CANCER SITES 2005



AMERICAN CANCER SOCIETY TOP CANCER SITES 2005



BMC CANCER COMMITTEE MEMBERS

Rev. William Alberts	Pastoral Care
Jack Ansell, MD	Hematology Oncology
Meg Aranow	Information Technology
David Baribeault, RPh, BCOP	Pharmacy
Tracy Battaglia, MD	Women's Health
Becky Brown, RN	Hematology Oncology - Clinical Trials
LaChelle Capalla, MSW	Social Work
Vivian Corey, RHIT	Health Information Management
Carolyn Cotsonas	Strategic Planning
Marie-France Demierre, MD	Dermatology
John Durfee, MD	Obstetrics and Gynecology
Douglas Faller, MD	Cancer Center
Kathleen Finn, RN	Hematology Oncology - Clinical Trials
Linda Frattura, CIP	Community Outreach
Katherine Gere, RN	Hematology Oncology
Gregory Grillone, MD	Otolaryngology
Vina Harvey	American Cancer Society
Brenda Joseph, CTR	Cancer Registry
Lisa Kachnic, MD, CHAIR	Radiation Oncology
Thomas King, MD	Pathology
Diane Lassonde	Radiation Oncology
Louis Liou, MD	Urology
Jochen Lorch, MD	Hematology Oncology
David McAneny, MD	Surgical Oncology
Denise Mehegan	Quality Improvement
Jane Mendez, MD	Surgical Oncology
Alexander Norbash, MD	Radiology
Rita Owens-Mitchell	Cancer Registry
Jennifer Rosen, MD	Surgical Oncology
Michael Stone, MD	Surgical Oncology
Minh Tam Truong, MD	Radiation Oncology
Gail Wilkes, RN	Cancer Care
Kimberly Wood, RN	Hematology Oncology
Renana Yanai-Anter, MSW	Social Work
Ken Zaner, MD	Hematology Oncology

