

Sutter Health Sacramento Sierra Region Cancer Services

2011 Annual Cancer Program Report on Colorectal Cancer



Sutter Health
Sacramento Sierra Region

With You. For Life.



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*A Note from the Regional Medical Director
and Regional Executive of Oncology*

Gregory Graves, M.D., Medical Director
Jennifer Maher, Regional Executive

Dear Colleagues and Friends,

As programs that have been approved by the American College of Surgeons (ACoS), we are pleased to present our 2011 Annual Report. This report features a statistical overview of the Sutter Health Sacramento Sierra Region (SHSSR) 2010 Cancer Registry data for three Sutter Health institutions. Our cancer registries are responsible for collecting comprehensive data on all patients, providing demographic, diagnostic, treatment, and long-term follow-up information. The most common cancers are described in more detail and their prevalence compared with trends seen across California and nationally.

We are proud of the continual efforts made to provide comprehensive care to our cancer patients including many advanced and specialized treatments such as blood and marrow transplantation, ablative surgery and complementary medicine. Our centers emphasize state-of-the-art diagnostic and therapeutic services provided conveniently in the patient's local community. On behalf of our cancer committees we extend our thanks to our outstanding communities, medical staff, employees, administration and volunteers for the continued support of our cancer programs.

We hope you enjoy and learn from our presentation of the SHSSR 2011 Annual Cancer Program Report on Colorectal Cancer and appreciate the extent of services available at the institutions detailed in this report.

For more information, please visit our website at www.suttercancer.org.

SHSSR Oncology Committees

The SHSSR Oncology Committees are multidisciplinary teams that represent physicians from the diagnostic and treatment specialties and non-physicians from administrative and supportive services. They meet monthly/quarterly to provide leadership in the cancer activities at each of the Sutter institutions. The Oncology Committees are involved in evaluating new technologies, establishing new programs, and improving all cancer-related activities in the region.



Harvey Wolkov, M.D.
Radiation Oncology, Chair

Gregory Graves, M.D.
*Cancer Center Medical Director,
Cancer Liaison Physician*

Joyce Eaker, M.D.
*Surgery, Cancer Liaison Physician
and Quality of Cancer Registry
Coordinator*

Claudia Crist
*Assistant Administrator,
Oncology & Orthopedics*

Mary Swimley
*Cancer Center Services Program
Development Manager,
Community Outreach Coordinator*

Dayna Lawrence
*Cancer Center Quality
Management Specialist, Quality
Improvement Coordinator*

Marilyn Diehl, CTR
*Cancer Registry, Quality of Cancer
Registry Coordinator*

Nitin Rohatgi, M.D.
Medical Oncology, Section Chair

Deepti Behl, M.D.
*Medical Oncology, Cancer
Conference Coordinator*

Monica Romo-Contreras, M.D.
Palliative Care

Stacy D' Andrea, M.D.
Gynecological Oncology

Sabra Granovsky, M.D.
Family Practice

Susannah Mourton, M.D.
Gynecological Oncology

Lorinda Soma, M.D.
Pathology

Dylan Witt, M.D.
Diagnostic Radiology

Jonathan Eandi, M.D.
Urology

Yung Yim, M.D.
Pediatric Oncology

Abbie Steinaway, R.N.
Oncology/BMT Nursing Director

Maude Blundell, M.S., CGC
Genetic Counselor

Linda Marks
*Medical Research Director,
Clinical Research Coordinator*

Sharyl Kooyer
Hospice Manager

Julie Abbott, L.C.S.W.
Psychosocial Services Coordinator

Aurelia (Rhea) Berry, R.N.
Case Management

Belinda Fry, R.N.
Infusion Center Director

Linda Lambert, R.N.
BMT Program Manager

Mary Pare, R.N.
Breast Cancer Navigator



**Sutter Medical Center,
Sacramento (SMCS)**

2800 L St.
Sacramento, CA 95816
(916) 454-6500



Sutter Roseville Medical Center (SRMC)

One Medical Plaza
Roseville, CA 95661
(916) 781-1617

Uma Gowda, M.D.
*Medical Director of Oncology,
Chair and Cancer Conference
Coordinator*

Yona Barash, M.D.
*Surgery, Medical Oncology,
Cancer Liaison Physician*

James McGregor, M.D.
Pain/Palliative Care

Donald Colbourn, M.D.
Medical Oncology

Sivakumar Reddy, M.D.
Medical Oncology

Penny VandeStreek, D.O.
Nuclear Medicine

Fred Weiland, M.D.
Nuclear Medicine

Sharon Dutton, M.D.
Radiation Oncology

Seth Rosenthal, M.D.
Radiation Oncology

David Olsen, M.D.
Pathology

Ron Rowberry, M.D.
Pathology

Kristie Bobolis, M.D.
Medical Oncology, Bioethics

Stan Zipster, M.D.
Diagnostic Radiology

Deborah Dix, M.S., R.N.
*Oncology/Cancer Services/Breast
Center Director and QI Coordinator*

Michelle Troja
*CTR and Quality of Cancer
Registry Data Coordinator*

Lori Earls
Clinical Nursing

Sophie Harnage
Clinical Nursing

Kristie Howlett
Clinical Nursing

Kirsten Babski, CCRP
Clinical Research

CJ Doran, L.C.S.W
Social Services

Amy Beazizo
*Clinical Manager Breast
Health Center and Community
Outreach Coordinator*

Kimberly VanYsseldyk
*Nurse Practitioner Genetics,
Breast Health Center*

Robert Lanflisi, M.D.

*Surgery, Chair, Cancer Liaison
Physician, Community Outreach
Coordinator*

Patricia Seid, M.D.

*Radiation Oncology, Medical
Director, Cancer Liaison Physician,
Oncology Committee Conference
Coordinator*

Kim Etcheberry, R.N., BSN, OCN

*Cancer Program Administrator,
Quality Improvement Coordinator*

Walailuk Chaiyarat, M.D.

Medical Oncology

Gurpreet Dhugga, M.D.

Palliative Care

James Krasno, M.D.

Pathology

Yelena Krijanovski, M.D.

Medical Oncology

Chainarong Limvarapuss, M.D.

Medical Oncology

Beverly McLeod, M.D.

*Medical Oncology, Cancer
Registry Quality Coordinator*

Haroon Mojaddidi, M.D.

Surgery

Elizabeth Odumakinde, M.D.

Medical Oncology

Marissa Salvatin, RHIT, CTR

Cancer Registry

Richard Siefke, MSW

Psychosocial Services Coordinator

Karen Stilwell, R.N., MSN

*Oncology Nurse Navigator,
Oncology Nurse*

Eric Tao, M.D.

Diagnostic Radiology

Robin Allen, R.N.

Nursing

Dakota Allstadt, R.D.

Dietary/Nutrition

Carolyn Appenzeller, SMFW

Administration

Tracy Geddis, MHA

Administration

Maude Blundell, M.S., CGC

Genetic Counselor

Lalaine Durand, CCRP

Clinical Research Coordinator

Joanne Bays, R.N.

Case Management

Mark Riley, PharmD

Pharmacy

A Seidman, ACS

American Cancer Society



**Sutter Solano Medical
Center (SSMC)**

100 Hospital Dr.
Vallejo, CA 94589
(707) 554-4444

Clinical and Patient Support Services

This table displays the broad range of services available at three SHSSR Cancer Programs accredited by the American College of Surgeons (ACoS). Although this table is reflective of actual physical location of the service, all single site resources are available for referrals for patients within our region.

Services

	SMCS	SRMC	SSMC		SMCS	SRMC	SSMC
ACoS Accredited Cancer Center	Y	Y	Y	Infusion Therapy	Y	Y	Y
Blood and Marrow Transplants	Y			Interventional Radiology	Y	Y	Y
Brachytherapy	Y	Y	Y	Mammography	Y	Y	Y
Cancer Surgery	Y	Y	Y	Minimally Invasive Surgery	Y	Y	Y
Cancer Clinical Trials & Prevention Trials	Y	Y	Y	Nurse Navigator	Y	Y	Y
Cancer Education Programs	Y	Y	Y	Oncology Social Worker	Y	Y	Y
Cancer Support Groups	Y	Y	Y	Pediatric Cancer and Surgery	Y	Y	
Community Screenings for Cancer	Y	Y	Y	PET – Positron Emission Tomography on Site	Y	Y	
Indoor Pool for Patient/Rehabilitation		Y		Image-Guided Prostate Radiation Therapy	Y	Y	Y
Core Needle Biopsy – Ultrasound	Y	Y	Y	Radiation Oncology Service	Y	Y	Y
Core Needle Biopsy – Stereotactic	Y	Y	Y	Thermo Ablation on Site	Y		
Stereotactic Radiosurgery & Radiotherapy on Site	Y	Y		IMRT	Y	Y	Y
Ablation Surgery	Y	Y	Y	SPECT	Y	Y	
Gamma Knife on Site	Y			Tumor Board	Y	Y	Y
				Tumor Registry (In-House)	Y	Y	Y

Outpatient Services

	SMCS	SRMC	SSMC		SMCS	SRMC	SSMC
Valet Parking	Y	Y		Palliative Care	Y	Y	Y
Comprehensive Breast Center	Y	Y		Pain Management	Y	Y	Y
Cancer Treatment Center	Y	Y	Y	Dance Movement	Y		
Chemotherapy Treatment	Y	Y	Y	Music Therapy	Y	Y	
Home Care & Hospice	Y	Y	Y	Massage Therapy	Y		
Nutrition Services	Y	Y	Y	Pet Therapy	Y	Y	



Annual Summary of Program Activities



Sutter Medical Center, Sacramento

Gregory Graves, M.D.

Regional Medical Director of Oncology

Oncology Committee Clinical Liaison Physician

At SMCS, we continue to provide comprehensive, tumor site specific programs and services designed to address the physical, mental and emotional aspects of cancer care to patients and their caregivers.

2011 has been an active and rewarding year for SMCS. The cancer center further refined our specialty team approach started in 2006 by adding four additional physicians:

- ▶ Abby Gonik, M.D., Gynecologic Oncology
- ▶ Brian Kim, M.D., Medical Oncology and Hematology
- ▶ Elias Kiwan, M.D., Medical Oncology and Hematology
- ▶ Susannah Mourton, M.D., Gynecologic Oncology

Further achievements were made this year to include:

- ▶ Re-accreditation with ACoS for best practice in our registrar position requirements and our AIM, Palliative Care and Hospice programs.
- ▶ Blood and Marrow Transplant Program received National Marrow Donor Program (NMDP) certification and Center of Excellence status for most payors.
- ▶ ACCC publication featuring our CML patient management.
- ▶ Collaborated with Sutter Medical Foundation on an Integrative Medicine Group appointment series called "Journey Forward".
- ▶ Women's Imaging Center opened in the Capitol Pavilion.
- ▶ Initiation of outpatient breast surgery at the Capitol Pavilion.
- ▶ Infusion Center opened its 3rd facility on the 3rd floor of the cancer center.
- ▶ First Intrabeam treatments began on November 3, 2011.

Sutter Medical Center, Sacramento, *continued*

The cancer center staff continued to participate in numerous community activities in partnership with our local cancer organizations. SMCS's assistant administrator of Oncology and Orthopedics, raised over \$25,000 in ten weeks for the Leukemia and Lymphoma Society's and was subsequently named Woman of the Year. Sutter Cancer Center staff formed numerous teams and raised funds for the Leukemia and Lymphoma Society Light the Night, the American Cancer Society's Making Strides Against Breast Cancer, the Susan G. Komen Race for the Cure, and a clothing drive.

The Sutter Cancer Center held its annual community educational lecture. This year the lecture focused on cancer screening and prevention and was entitled Cancer Prevention and Screening: What's Really in it For Me?

Continuing education was provided to our staff on:

- ▶ Lung Cancer
- ▶ Management of Advanced Pancreatic Neuroendocrine Tumors
- ▶ Halaven Phase III Study
- ▶ New Therapy Shown to Improve Overall Survival in Metastatic Castration-Resistant Prostate Cancer
- ▶ Genomic Profiling in Stage II Colon Cancer
- ▶ Staging Conference

The Infusion Centers volume continued to grow with 22,268 patients seen in 2011; this is a 12% visit increase from 2010's 19,637 visits. In addition, the Apheresis Unit saw an increase of HPC collections in 2011 by 21% and 31% for OP TPE procedures.

In the statistical year of 2010, 1,875 patients received care at SMCS with 1,498 in analytic case volumes. Our site-specific tumor boards presented a total of 483 cases. Our top five diagnoses in 2010 were breast, lung, prostate, colon/rectal, and thyroid.

The Oncology Committee Goals for 2010 included:

- ▶ Increase of patient accruals to clinical trials by 10% from 2009.
- ▶ Achieve National Accreditation Program for Breast Centers.
- ▶ Re-accreditation with the Foundation for the Accreditation of Cellular Therapy.
- ▶ Pilot a geriatric oncology clinic for patients over 75 years of age.
- ▶ Provide a prostate and/or ovarian community event.

The momentum we have gained in 2011 allows us to continue to bring individualized care to our cancer patients into the future.

Sutter Roseville Medical Center

Uma Gowda, M.D.

Oncology Committee Chair

Medical Director of Oncology



The Sutter Cancer Center, Roseville has long supported a tradition of providing state-of-the-art, interdisciplinary cancer care close to home. As an integral partner in the family of cancer services within Sutter Health, SRMC provides comprehensive access to services for our patients, their families and the providers we serve.

In 2010, our cancer registry reported 1,347 patients seen at our facility, 909 of which were analytic patients. The most frequently seen cancers at our facility were breast 273, lung 136, colorectal 133, skin 85 and prostate 72. Our weekly tumor board presented 192 patients for review at tumor board and 70 patients were presented at our breast conference.

Our Oncology Committee Goals for 2010 included both studies of quality and outcomes and patient care improvements. In addition to participating in the regional analysis of colorectal cancers, our site completed an Analysis of the Impact of the USPSTF Recommendations for Breast Cancer Screening in Women 40-49. We evaluated women, ages 40-49, who underwent breast biopsy in our center, between 2006-2009. The objectives were to: 1) define the population identified with cancer or high risk/precancerous lesions, 2) define whether the patient presented from screening mammography vs. palpable lump, 3) define the stage at presentation, and 4) retrospectively apply the USPSTF guidelines to determine potential missed cancers. The review demonstrated 17.3% (26/150) of women diagnosed with cancer in our breast center from 2006 to 2009 were between the ages of 40-49. 10% (15/150) presented with palpable lumps, while 7.3% (11/150) of women were diagnosed following screening mammography. For women, ages 40 – 49, diagnosed with cancer, 42.3 % (11/26) presented with an abnormal screening mammogram. Screening mammography in women between ages 40 – 49, led to the identification of seven women at high risk for breast cancer. There was extensive discussion of the data and findings. The Cancer Committee agreed that they currently supported continuing the ACS guidelines for mammography, aware that this remains a subject of much conversation and debate. These findings were presented by members of our Breast Center Team and the National Consortium of Breast Center meeting.

Patient care improvements included creating standardized, pre-printed order sets for intraperitoneal chemotherapy for ovarian cancer and order sets for leukemia/lymphoma, testicular cancer and sarcoma. These order sets were developed to improve physician, nursing and pharmacy practice and ultimately improve patient safety and patient satisfaction with timeliness of treatment.

2011 saw the anniversary of the Prostate Seed Brachytherapy Implant Program. Seth Rosenthal, M.D., presented multiple presentations to the community and the medical staff about prostate cancer and the treatment regimens open to men with this disease. The Sutter Roseville Foundation purchased new ultrasound equipment to use for this procedure.

Our cancer program is well supported by an experienced and collaborative group of subspecialty physicians, as well as an entire team of professionals devoted to the diverse and various needs of cancer patients. 2011 was a very successful year for our cancer program. We continue to grow, expand, explore and improve to meet the needs of our patients.



Sutter Solano Medical Center

Patricia Seid, M.D.

Medical Director

SSMC operates Sutter Solano Cancer Center (SSCC), community cancer program committed to serving its local residents with a high level of specialized care, as well as providing an entry point to subspecialized care from tertiary affiliates when necessary. SSCC houses medical oncology, radiation oncology, outpatient infusion, clinical trials, and genetic counseling in one outpatient building. The top five diagnoses are breast, lung, prostate, colorectal and uterine cancers. In the statistical year 2010, over 470 cancer patients received care at SSMC, with 367 of these being analytic.

In 2011, SSCC focused on enhancing support services to cancer patients by increasing utilization of nurse navigation and social work services, as well as continuing to offer dietary consultation on a routine basis.

2011 represents the first full year of SSCC's Nurse Navigation Program. During this year the navigator was responsible for identifying and supporting every newly diagnosed breast cancer patient, as well as patients with other cancers with high needs. With the navigator focused on breast services, the center was able to reduce the average time from abnormal mammogram to biopsy by 33%, as well as to reduce the average time from breast biopsy to treatment by over 33%. This was achieved through direct navigation services, as well as identification of areas where best practices could be applied. For example, reflex testing from abnormal screening mammogram to diagnostic mammogram was implemented.

SSCC successfully increased clinical trial enrollment by 29% compared to 2010 and met the ACoS goal of enrolling 2% of patients. In addition, the cancer center supported education for certification of its clinical trials research assistant.

SSCC continued weekly multidisciplinary tumor boards during which 96% of cases presented were prospective. Monthly educational opportunities were offered to physicians and other clinicians. This included partnering with SMCS in providing lectures from neurosurgery and surgical oncology.

The radiation oncology department completed a significant software upgrade to Varian's Aria platform. One of the major benefits from the upgrade included transitioning to state-of-the-art treatment planning algorithm (AAA) which provides greater accuracy in calculating doses within the lung.

SSCC continued their close partnership with the local community in the following ways:

- ▶ Major sponsor of the American Cancer Society's Relay for Life events in Fairfield and Vallejo.
- ▶ Bi-weekly support groups and educational seminars for Sutter and non-Sutter patients and their families through the Cancer Support Community.
- ▶ Initiated new screening program for colorectal cancer by providing screening kits to eligible patients in the local area that were overdue for screening. A greater than 40% return rate was achieved through this program.
- ▶ Provided prostate cancer screening event in October, during which 46 men from the community were screened. SSCC coordinated follow up needs for uninsured patients with abnormal results.

Colorectal Cancer (2001 – 2010)

Focus for Sutter Health Sacramento Sierra Region (SHSSR)

According to the American Cancer Society Facts and Figures for 2010, colon cancer is the third most common cancer among men and women and 91% of colorectal cases are diagnosed in individuals 50 or older. Colorectal cancer was the fourth most common cancer treated at all three facilities included in this report. In an effort to enhance the overall care provided to cancer patients, the Oncology Committees of each affiliate committed to a collaborative analysis of colorectal data to assess and compare colorectal cancer characteristics and outcomes for patients in our counties.

Age at Diagnosis by Site: FIGURE 1

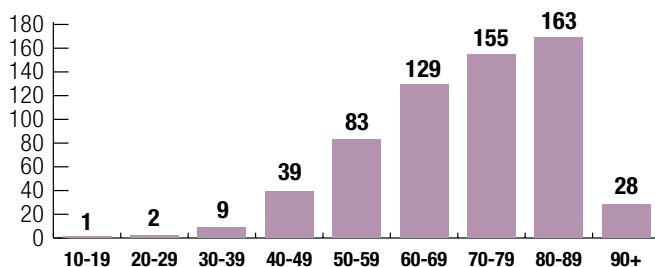
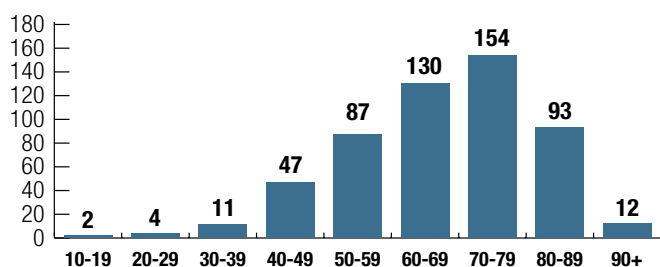
The median age for colon cancer was 70-79 for both genders. Colon cancer is diagnosed at a slightly older age in females than males.

Rectal cancer shows a median age range for both genders was 60-69. Women's median age was older than males for rectal cancers. Males showed as many diagnosed in 40-49 range as in 70-79 range, with a median age slightly above 59. Females

showed a much higher number occurred in 70-79 range with a median in the high 60-69 range.

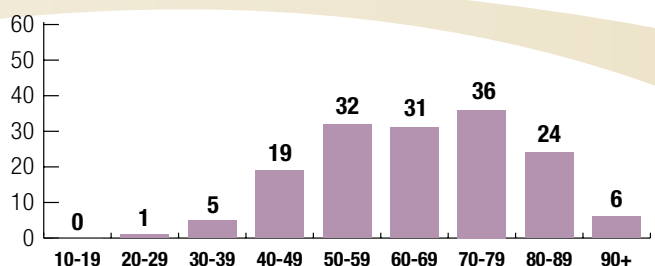
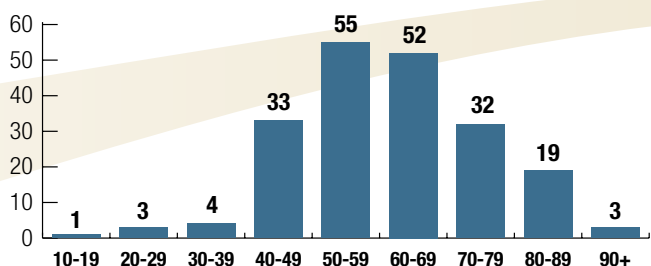
Colorectal cancer for both males and females showed that 87.9% were diagnosed after the age of 50. This is a 2.1% decline from data reviewed in 2008. Overall, SHSSR affiliates median age is higher than the general population where the average age at diagnosis is 65.

COLON %



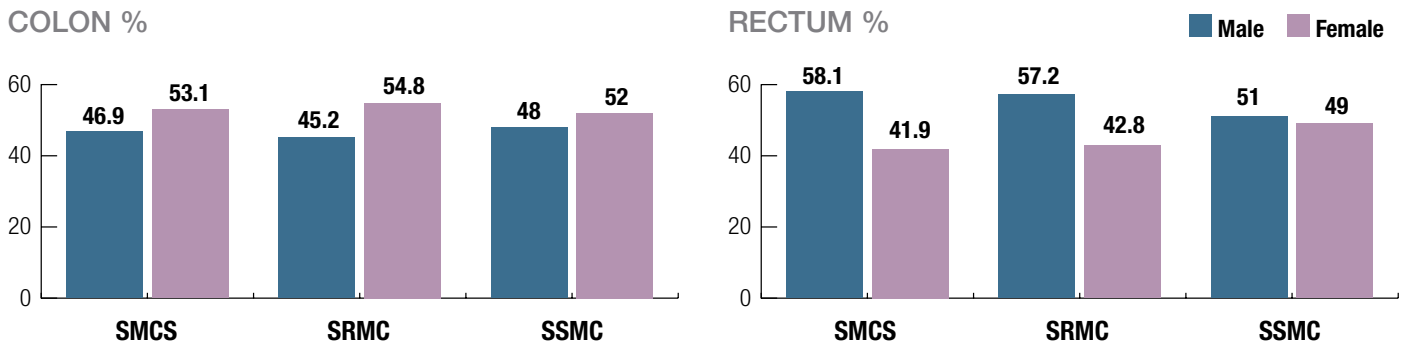
■ Male ■ Female

RECTUM %



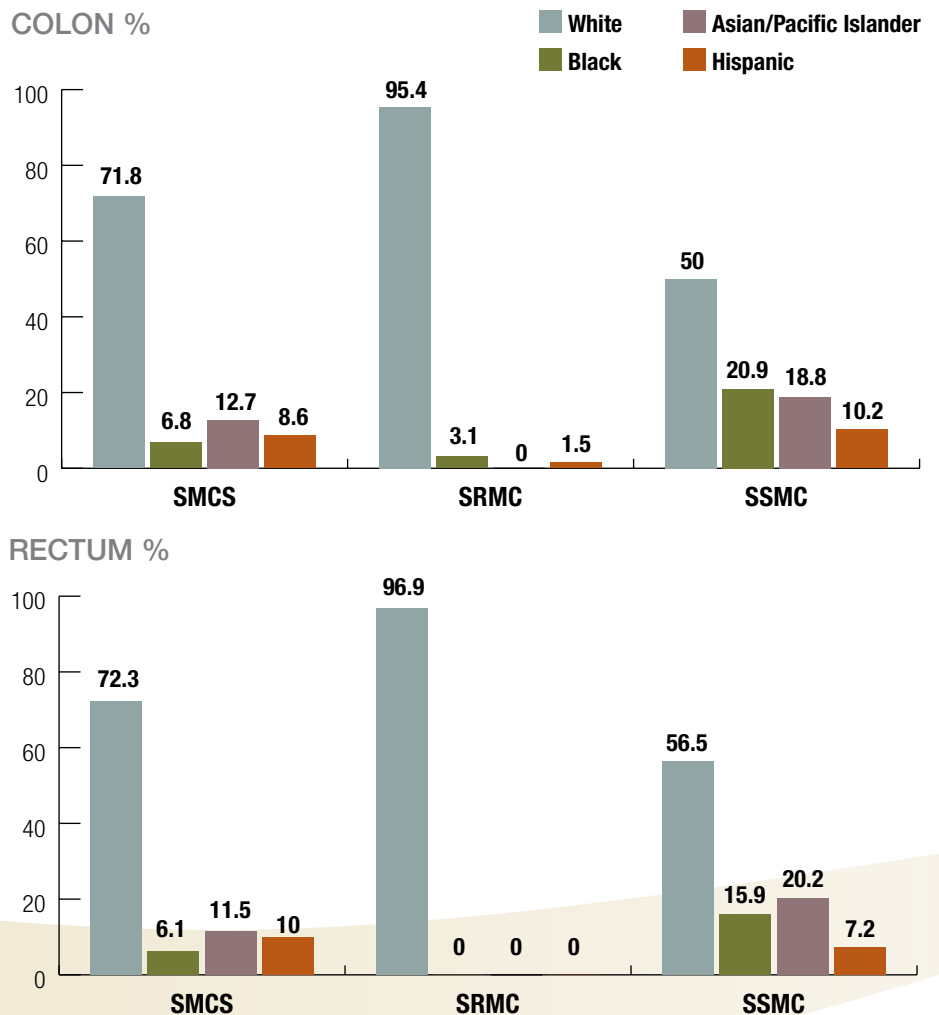
Gender Ratio by Site: FIGURE 2

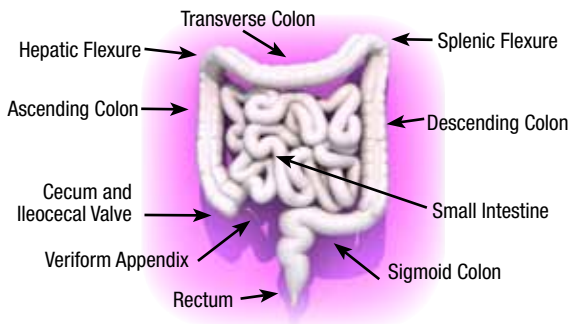
Looking at colon cancer, females outnumbered males 53% vs. 47%. A trend in the opposite direction was seen in rectal cancer, where females were outnumbered 45% vs. 55% for males.



Race/Ethnicity: FIGURE 3

Colon and rectal cancer showed nearly identical patterns of race distribution, with differences among institutions probably reflecting the demographics of the patient populations served. Overall, 74% of SHSSR colorectal cancer patients were Caucasian. SSMC has the lowest percentage of Caucasian (50-56.5%) due to a large African-American and Asian population. SMCS and SRMC had a higher percentage of Caucasian, reflecting a lower percentage of African-American and Asian population.

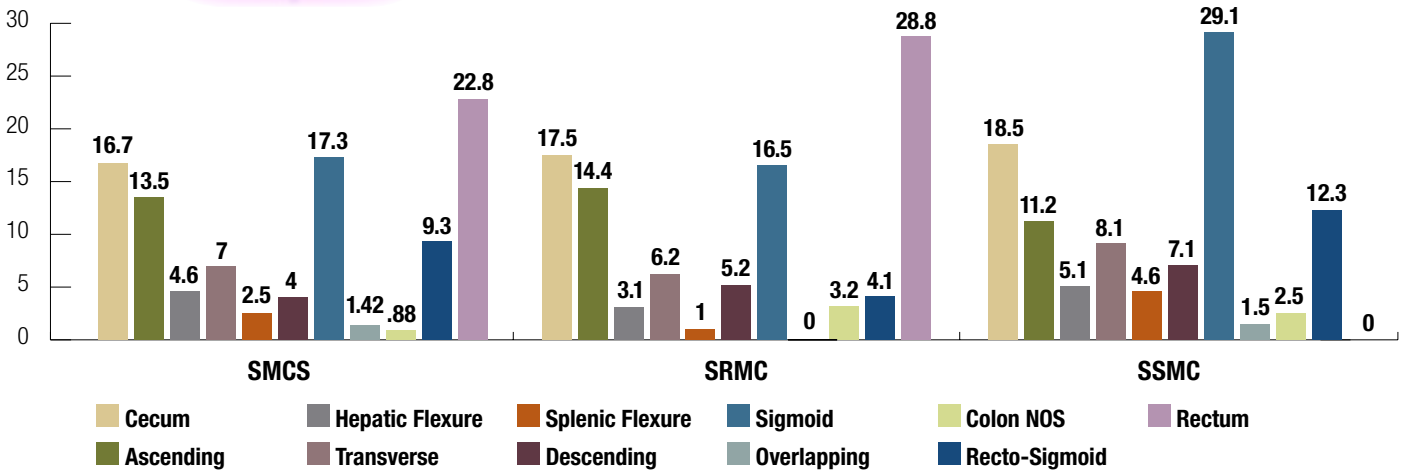




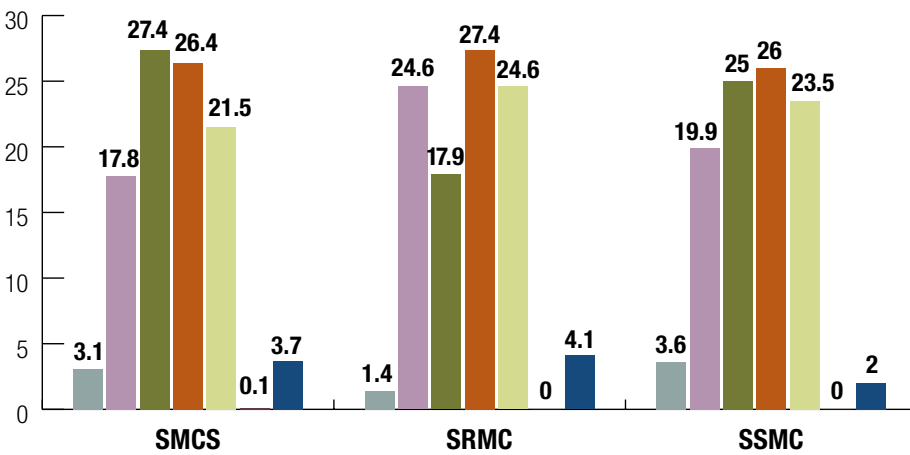
Site Distribution: FIGURE 4

Overall, sigmoid was 20% with rectum and cecum both in the 17% range. A combination of rectal, rectal-sigmoid, sigmoid, and descending can make up 52.2% of the cancers.

Cancers of the cecum, ascending, transverse, and hepatic flexure totaled 41.9%.



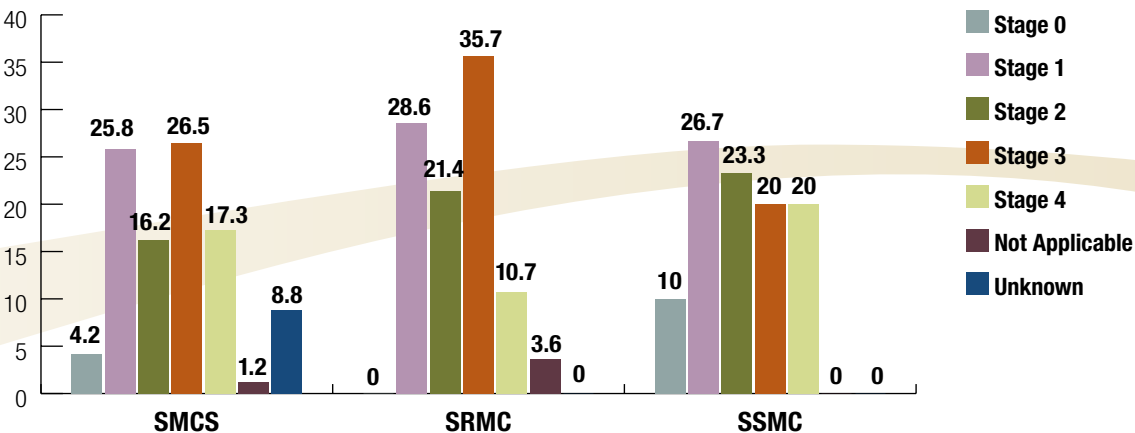
COLON %



Stage at Diagnosis by Site: FIGURE 5

A review of stage at diagnosis shows little variability among the SHSSR institutions and is consistent with literature. Overall, invasive colon cancers were diagnosed more commonly at stage 2 at (23.4%), while most invasive rectal tumors were diagnosed at stage 1 (27.0%) and 23.2% of Sutter colon cancers patients and 16.0% of rectal cancer patients presented with stage 4.

RECTUM %



Treatment Modalities: FIGURE 6

Treatment modalities utilized in the treatment of colorectal cancer were generally similar in the SHSSR institutions. Data shows 58% of colon cancer patients were treated with surgery alone and 29% with a combination of surgery and chemotherapy.

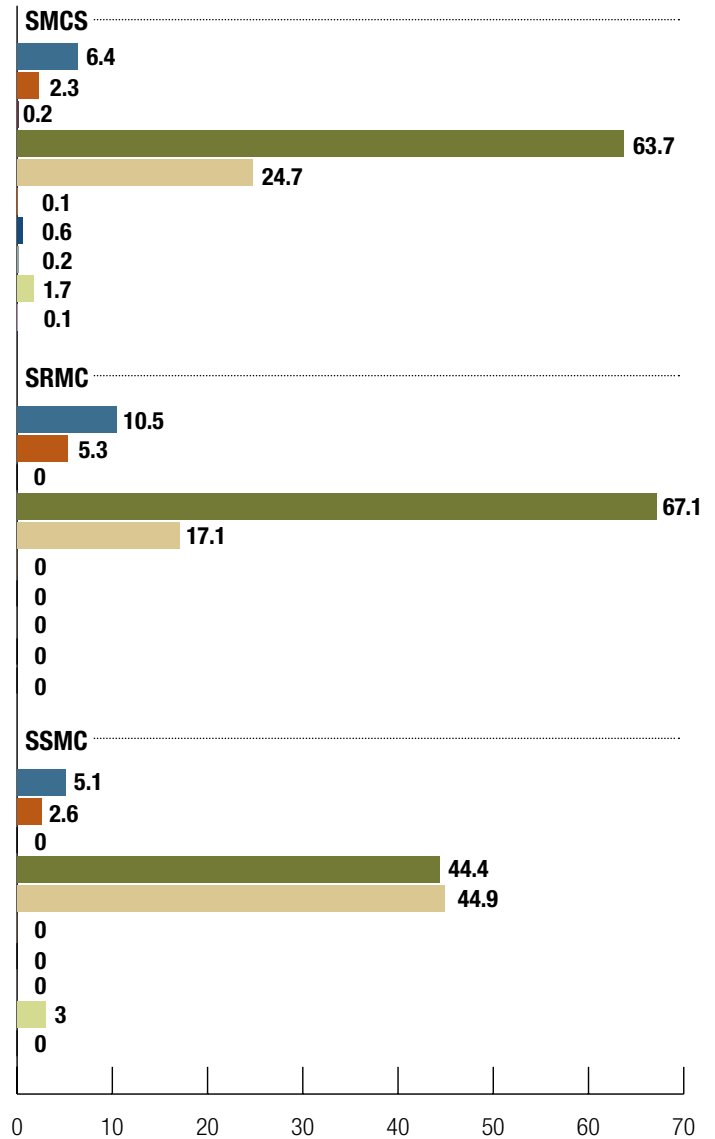
The data shows that SSMC utilizes surgery and chemotherapy to a larger extent than SMCS and SRMC, where surgery alone predominates. We presume that per NCCN guidelines stage I colon cancers are treated with surgery alone and stage III or higher would generally include chemotherapy. SSMC analyzed stage II colon cancer data further, which revealed a surprisingly high proportion of stage II colon cancer patients with high risk features. Specifically, 43 of 49 (88%) stage II patients had at least one high risk feature (grade 3 or 4, <12 LN removed, LVI, PNI, obstruction). More than one half of these patients had more than one adverse feature present. This would explain the apparent increased utilization of chemotherapy at SSMC compared to SMCS and SRMC. This type of difference may also explain a lower survival rate at SSMC when compared to SMCS and SRMC stage for stage.

For rectal cancer, 29% of patients were treated with surgery alone and another 29% with some type of combination therapy.

“With evidence based colorectal screening, symptom management and multidisciplinary treatment planning we will continue to improve patient survival.”

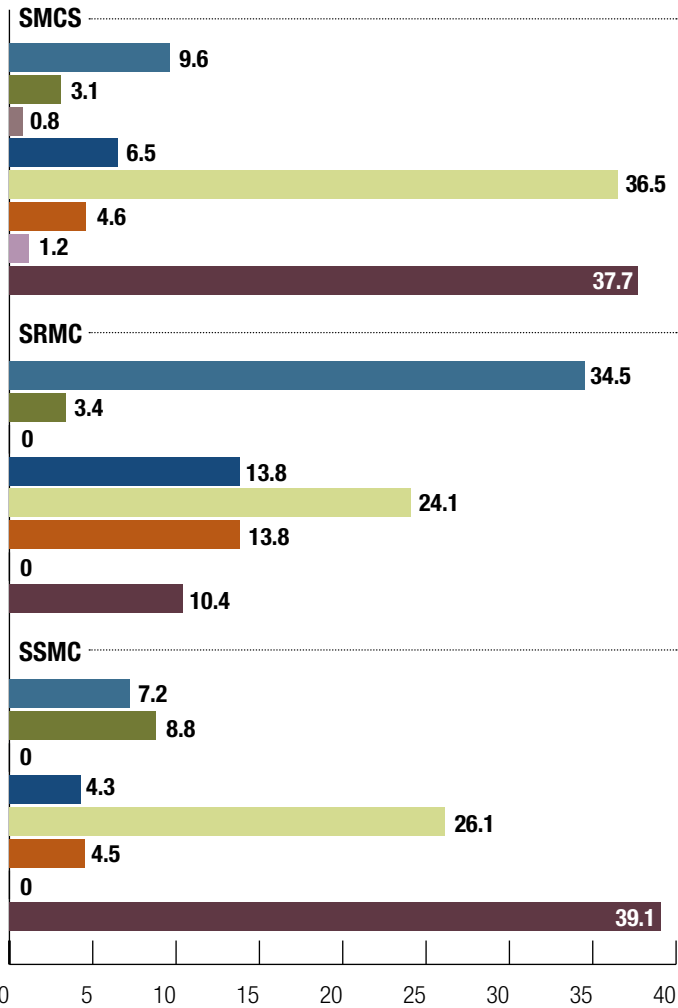
— GREGORY GRAVES, M.D.,
Regional Medical Director of Oncology

COLON %



	SMCS	SRMC	SSMC
None	6.4	10.5	5.1
Surg/Chem	2.3	5.3	2.6
Surg/Rad/Chem	0.2	0	0
Chem	63.7	67.1	44.4
Surg/Chem/Other	24.7	17.1	44.9
Surg/Rad/Immun	0.1	0	0
Rad/Chem	0.6	0	0
Surg/Chem/Immun	0.2	0	0
Surgery	1.7	0	3
Surg/Rad	0.1	0	0

RECTUM %



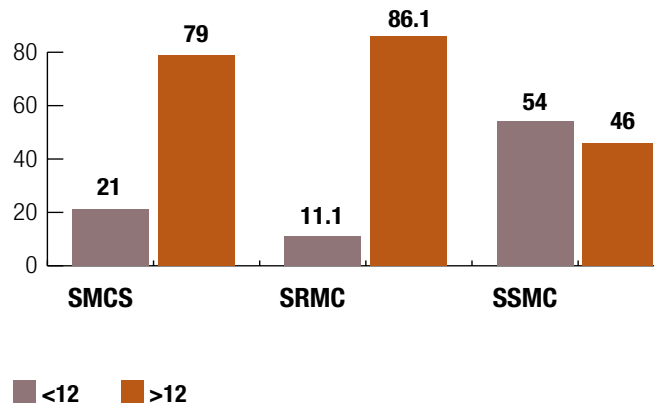
	SMCS	SRMC	SSMC
None	9.6	34.5	7.2
Chem	3.1	3.4	8.8
Rad	0.8	0	0
Rad/Chem	6.5	13.8	4.3
Surgery	36.5	24.1	26.1
Surg/Chem	4.6	13.8	4.5
Surg/Rad	1.2	0	0
Surg/Rad/Chem	37.7	10.4	39.1

Number of Nodes Harvested: FIGURE 7

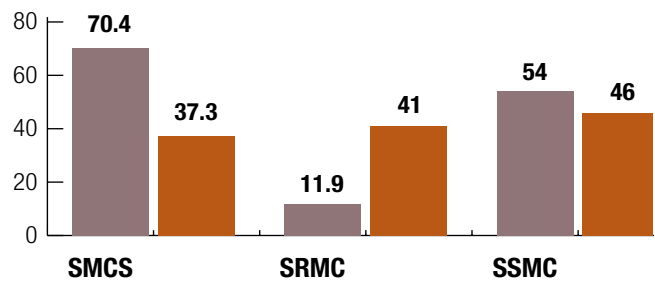
National average shows that 75% of nodes are harvested. Among the three SHSSR institutions, data shows 70% of colon cancer patients had 12 or more nodes harvested. In rectal cancer patients, only 41% harvested 12 or more nodes.

In 2002, SSMC's number of specimen with <12 nodes was 83%. Since that time, the institution has focused to maximize the number of nodes found both during surgery and during pathologic processing. In 2008, data in CP3R shows the percentage decreased dramatically to 17%. However, data from earlier years continues to skew SSMC's overall percentage.

COLON %



RECTUM %



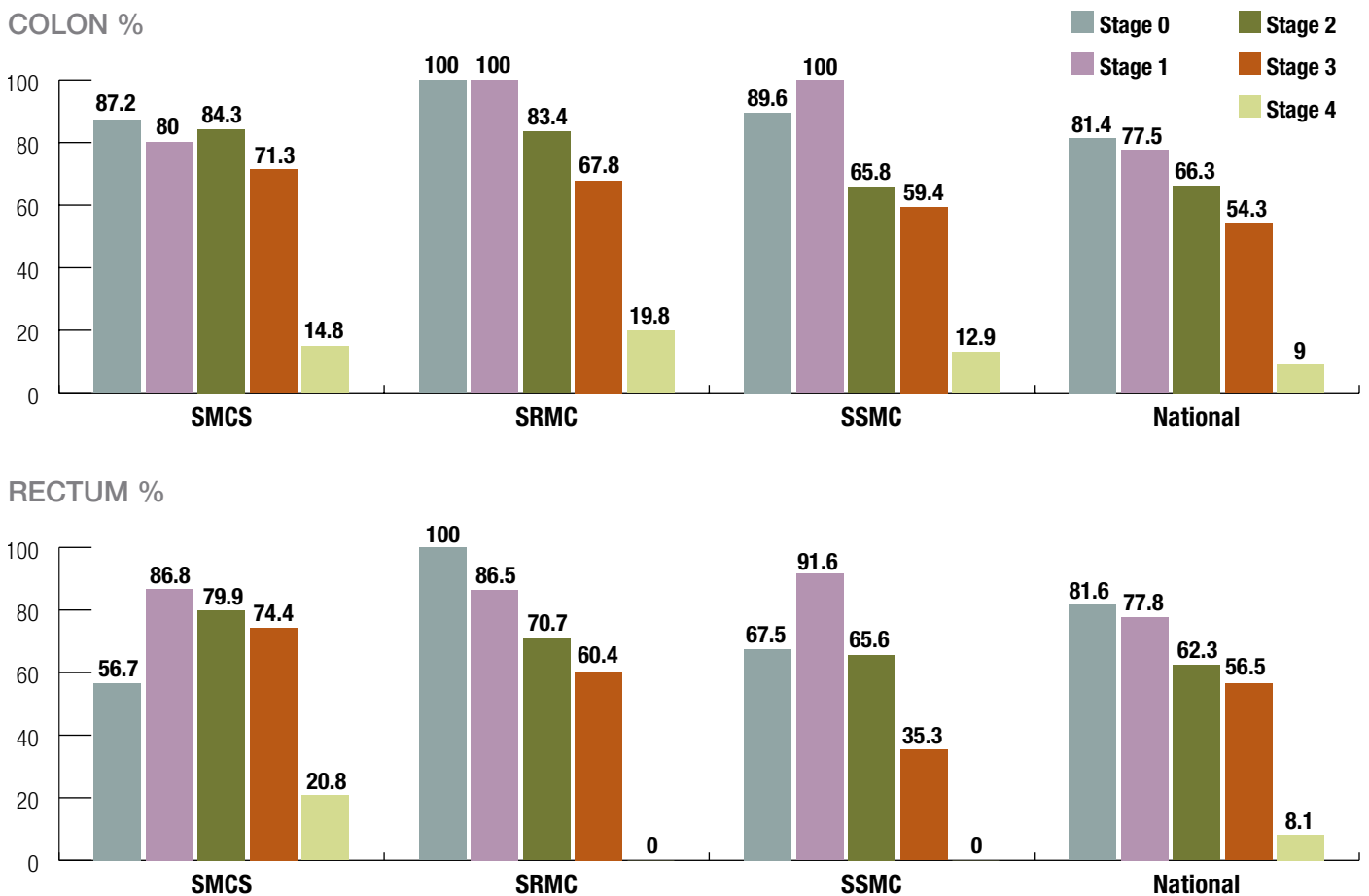
Five-Year Survival: FIGURE 8

Overall, the average five-year survival rate for all stages within the SHSSR for colon cancer is 69.1% in comparison to the National average of 54.9%.

The overall average within the SHSSR for rectal is 59.7% in comparison to the National average of 58.6%.

Stage for stage, all sites compare favorably to national averages. However, amongst the three sites evaluated, SSMC has somewhat lower survival statistics. This can be explained by differences within stage as described in Figure 6. Additionally, as noted in Figure 3, SSMC has a much higher ethnic diversity. This includes a relatively high proportion of African American

patients, who are known to have a 20% higher mortality rate from colorectal cancers compared to Whites. SSMC also cares for a relatively large percentage of patients without insurance or without a primary care physician which leads to more cancers presenting through the emergency department because of symptoms such as obstruction. Such socioeconomic factors likely contribute to an overall lower survival stage for stage. Because of this, SSMC launched an outreach service in 2010 whereby SSMC partnered with local primary care physicians to identify patients who were overdue for colorectal screening and provide them with a fecal occult blood test kits.



Numbers of Patients Evaluated Per Institutions, Site, and Total:

Institution	Colon	Rectal	Total
SMCS	881	260	1,141
SRMC	73	28	101
SSMC	196	69	265

SHSSR reviews relative data which must be interpreted with caution. The relative survival rate facilitates comparisons of

survival data from different groups of patients by taking into consideration the likelihood that patients in a given age group will die from causes unrelated to their cancer. Relative survival adjusts the actual observed survival rates of a given patient population for the population's age and gender structure relative to a "standard" U.S. population. This adjustment does not take into account factors such as race and socioeconomic status, which are known to affect survival rates for persons with colorectal cancer.

Conclusion

Colon cancer continues to impact the lives of our patients. SHSSR institutions in Sacramento, Roseville and Solano have demonstrated results consistent with national data. We are committed to working with our oncology and primary care partners to continue to improve results and the lives of the patients we serve.





Sutter Health
Sacramento Sierra Region

With You. For Life.

SHSSR ACoS Accredited Institutions

Sutter Medical Center, Sacramento

2800 L St.
Sacramento, CA 95816
(916) 454-6500

Sutter Roseville Medical Center

One Medical Plaza
Roseville, CA 95661
(916) 781-1617

Sutter Solano Medical Center

100 Hospital Dr.
Vallejo, CA 94589
(707) 554-4444

sutterauburnfaith.org