

Prevention



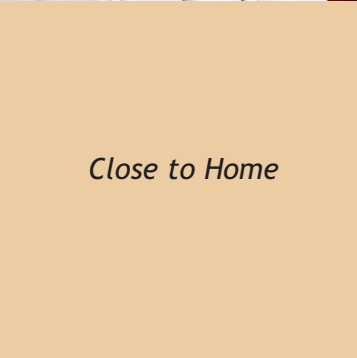
*Integrative
Medicine*



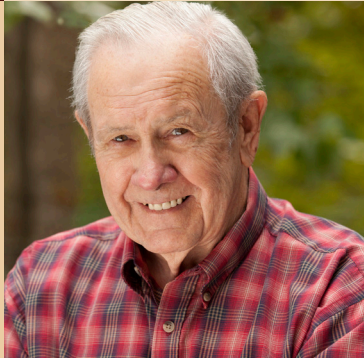
Innovation



*Personalized
Treatment*



Close to Home



*Multidisciplinary
Team Approach*



We take cancer personally.

We just don't treat cancer, we treat the cancer that affects you and your family.

RIVERSIDE CANCER SERVICES 2011 ANNUAL REVIEW



Joseph D. Laysner, MD, Chair	<i>Radiation Oncology</i>
Veronica Eisen, MD	<i>Cancer Liason Physician</i>
Cancer Liason Physician	
Michael Peyser, MD	<i>Surgical Oncology</i>
Steven Scott, MD	<i>Cardiothoracic Surgery</i>
Brian Billings, MD	<i>Colorectal Surgery</i>
William Irvin, MD	<i>GYN Oncology</i>
John Mattern, II, DO	<i>Medical Oncology</i>
Guy Tillinghast, MD	<i>Medical Oncology</i>
Mashour Yousef, MD	<i>Medical Oncology</i>
Michael Schwartz, MD	<i>Pathology</i>
Vicki Slattery	<i>Pharmacy</i>
Lori Gillespie, MD	<i>Radiation Oncology</i>
Curtis Stoldt, DO	<i>Radiology</i>
Scott Burgess, MD	<i>Urology</i>
Richard Rento, MD	<i>Urology</i>
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Gwen Hartzog	<i>Vice President, Nursing</i>
Keith Gregory	<i>Service Line Administrator, Oncology</i>
Paula Burcher	<i>Administrative Director, Radiology</i>
Beverly Voglewede	<i>Director, Radiation Oncology Services</i>
Michelle Wooten	<i>Dir. Med/Surg. Svcs/Oncology Services</i>
Heather Blair	<i>Physical Therapist, Rehab</i>
Kim Monroe	<i>Nurse Manager, 5-West, Hem/Onc</i>
Arlene Messina	<i>Director, Performance Improvement</i>
Reverend Dean Luther	<i>Director, Pastoral Care</i>
Ora Mae Jackson	<i>Protocol Manager</i>
Sophia Mikac	<i>Manager, Integrative Medicine</i>
Yvonne Pike	<i>Breast Cancer Patient Navigator</i>
Cyndee Willis	<i>Prostate Cancer Patient Navigator</i>
Terri Rose	<i>Lung Cancer Patient Navigator</i>
Harolette Kelley	<i>Colorectal Cancer Patient Navigator</i>
Charlene Thompson	<i>Social Worker, Care Management</i>
Jackie Ward	<i>Educator, Staff Development</i>
Sharron Nichols	<i>Nurse Manager, Riverside Hospice</i>
Ann Tatterson	<i>Director, Riverside Hospice Agencies</i>
Paige Williams	<i>Registered Dietician, Dietary</i>
Fran Holcomb	<i>Cancer Education/Outreach Nurse</i>
Jennifer Brown	<i>Cancer Registry Supervisor</i>
Pauline Shofner	<i>Cancer Registrar</i>
Carol Richards	<i>Cancer Registrar</i>
Jan Bennett	<i>Representative, American Cancer Society</i>





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*For additional information regarding Riverside Cancer Services, please call (800) 520-7006.
For comments or questions regarding this Annual Report or the Cancer Registry, please call (757) 594-3054.*

CANCER SERVICES

Cancer Services Annual Report 2011



On behalf of the Riverside Regional Medical Center Oncology Committee, I am proud to present the Riverside Regional Medical Center Cancer Center Annual Report.

Riverside has long maintained a commitment to be the leading provider for health services to cancer patients on the Peninsula.

In medical oncology, our program continues to expand with the addition of Dr. Magi Khalil. Under the guidance of Dr. Guy Tillinghast our research program has added several new protocols. Dr. Kimberly Schlesinger leads our breast cancer program which continues to expand. In radiology, Dr. Pettus, who has specialized training in breast cancer and mammography, joins Dr. Curtis Stoldt in our established and growing breast cancer center of excellence.

Radiation oncologist, Dr. Mark Chisam, has been appointed oncology service line physician chief. Our radiation oncology program remains comprehensive with its innovative neurosciences center, which houses the gamma knife program for CNS lesions and a growing program in stereotactic body radiotherapy. At the Cancer Care Center, extensive use is made of Intensity Modulated Radiation Therapy (IMRT) and Image Guided Radiation Therapy (IGRT). Brachytherapy is available for prostate as well as a variety of High Dose Radiation applications.

The Riverside Medical Group maintains a large presence in surgical oncology and general surgery with the recent addition of Dr. David Salzberg, who has extensive training in endoscopic surgical procedures. Advances in robotic surgery continue at Riverside with the purchase of a new robotic surgical assistant for use by GYN and urologic oncology programs.

The administration of Riverside Health System and Riverside Regional Medical Center has always supported our cancer program, and we thank them as well as all of the employees who have worked so hard within the program, often going well above the normal scope of responsibilities. As you look through the annual report, I hope the reader will gain an appreciation for the efforts made and the assurance that, if needed, Riverside Regional Medical Center will be there for all.

Thank you,

Joseph D. Layser, MD
Chair, Riverside Oncology Committee
Medical Director, Riverside Cancer Care Center
Radiation Oncologist

Message from the Cancer Liaison Physician

We are faced with an exciting time in cancer medicine when the highest standards of care we have long held ourselves to will be shared across the country. This will ensure that the highest level of evidence based medicine reaches every community that we serve. I look forward to serving as a Cancer Physician Liaison (CLP) in this community full of highly trained experts. In this role I will help ensure that the information that is gathered and reported to the national database on the patients we have the privilege to serve is then used to analyze and improve cancer services in our community. In addition, I will serve as messenger to and from the Commission on Cancer and partner with American Cancer Society to expand support programs to our patients while better meeting their needs. As the role of the CLP continues to expand I look forward to working with the cancer experts across our system to take our commitment to the next level. As I begin my term, I would like to thank Dr. Michael Peyser for his faithful years of excellent service.



Veronica Eisen, MD
Radiation Oncologist
Cancer Liaison Physician



Cancer Risk Reduction through Prevention and Early Detection Methods



Fran Holcomb, RN
BSN, OCN
Cancer Education/
Outreach Nurse

KNOWLEDGE IS POWER

Cancer Outreach Activities

Wellness is a concept that is truly on the forefront of health care. In cancer, it means educating individuals on how to avoid cancers that are largely preventable and performing early detection testing to find cancer at its earliest, most treatable stage. Each year Riverside offers a diverse number of cancer education and screening events throughout the communities we serve. In 2011 we touched 1039 community members through our screenings and health information events.

- Pap smear and Clinical breast examination clinics for 470 women during 18 regional clinics
- Female Reproductive Cancer and Health Awareness Talk
- Women's Health Symposium
- Breast and Colon Health Awareness Talk
- Pain Management for the Oncology Nurse, Conference
- Great American Smokeout activities
- Colon Cancer Awareness talk and outreach activities
- Clinical Trials talk for patients and caregivers
- Monthly Nutrition & Activity classes for the Patient & Caregiver Before, During & After Cancer Treatment

Community Highlight Event during 2011 was the Men's Health Event with NFL Hall of Famer and prostate cancer survivor Mike Haynes. A total of 172 men received prostate screenings during this and two other area events.

Breast and Cervix Grant Programs

Riverside is a recipient of the Breast and Cervical Cancer Early Detection (EWL) grant which is a program of the Centers of Disease Control and Prevention and managed locally

by the Virginia Department of Health. The EWL program offers underserved women, aged 45 to 64, a chance to receive a free Pap smear, clinical breast examination and mammogram and provides diagnostic follow-up and cancer treatment. The Susan G. Komen for the Cure®, Tidewater Affiliate also funds a grant given to Riverside that provides mammograms to women not meeting the eligibility requirements for EWL. Together the grants provided over 538 mammograms and 208 pap smears in during the 2010-2011 fiscal year.

Community Partnerships

Not only does Cancer Services promote education, but it joins other organizations to reach a larger portion of the populations. Each year Riverside Cancer Services collaborates with a number community partners to promote cancer prevention and early detection awareness issues. Some of our partnerships in 2011 include the work we do with the area free clinics, the local health departments, and Brentwood Family Practice to provide free Pap smears and clinical breast examinations for women in our community. Women who are not age eligible for our breast and cervical grant programs are offered a free Pap smear and clinical breast examination as well as a chance to talk with other health care professional about other women's health issues. Eighteen women's clinics were held during 2011. We also are involved in collaborative partnerships with the American Cancer Society and the Leukemia and Lymphoma Society, partnering to work on national and regional cancer initiatives each Society is mandated to achieve annually.

Riverside also promotes cancer related events through the community. This year we participated and in part sponsored a number of area events of our community partners:

- American Cancer Society, Relay For Life events
- Beyond Boob's 10K Run for Breast Cancer
- Junior League of Hampton Roads, Trot for Teal: Women's Reproductive Awareness 5K run
- American Leukemia and Lymphoma Society, Light the Night- Peninsula



Partner Spotlight

The Junior League of Hampton Roads, Inc. (JLHR) is an organization of women committed to promoting voluntarism through educational and charitable events. In 2009 the JLHR made Female Reproductive Cancers their 3 to 5 year signature project. Partnering with Riverside Health System to support education related activities in relation to female reproductive cancers, the *“Take the Time Know the Signs”* campaign was launched. This campaign focuses not only on increasing the understanding of risk factors, knowing the signs and symptoms, and the importance of annual screening but raises awareness and hope that early detection is the best chance for survival. The JLHR provides support to the Gynecological and Breast cancer support groups, as well the staff of the Riverside Cancer Care Center.

In 2011 *Take the Time Know the Signs: Handbags for Hope* became the latest project in the partnership. The event features 48 art pieces made from handbags by patients, caregivers, JLHR members, health care providers, local artists and anyone touched by a female reproductive cancer. Each art piece has a story told by the maker which outlines information about the piece or their cancer experience. The art pieces also promote the message of prevention early detection and survivorship. The exhibit was taken to thirteen different communities events throughout Tidewater. Volunteers and oncology nurses were present at each event to provide additional information.

Survivorship programs and support groups

Riverside recognizes the value of people being able to share thoughts and feelings with others who have similar experiences. At Riverside several support groups are available to provide that needed support for the cancer patient and their families. Each month a number of cancer support programs gather to meet at the Cancer Care Center. All of the support groups are led by trained facilitators.

Support Services

- Breast Cancer Support Group
- Teal Magnolias: Female Reproductive cancer support group
- Blue Hope: Colon & Digestive cancer support group
- Inspiration: Lung cancer support group
- Leukemia and Lymphoma cancer support group
- Peninsula Lost Chord Club
- Look Good Feel Better
- Riverside/ACS Nutrition and Physical Activity During and After Cancer Treatment



Cancer Resource Library

The Cancer Resource Library has been available to members in our community since 1990. The Library offers the community, patient or their family members a place to learn more about the cancer experience or cancer prevention/early detection measures. Staff is available to guide visitors through the vast materials available to them or assistance in finding information on the Internet.

In November 2011 Riverside was selected by the American Cancer Society as the first and only Peninsula location for an ACS Cancer Resource Center. Staffed with trained and certified volunteers, the Cancer Resource Center is a designated space for cancer patients, families and caregivers to receive information and support. Riverside offers one of the 40 centers planned to be opened nationally in 2011.

Tree Branch Boutique

Women suffering from the effects of cancer treatment are welcomed to come to our boutique for free wig fittings or to receive a hat or scarf. Our trained staff is on hand to assist women in choosing a wig or help in learning how to tie head-scarves. This room also accommodates a place for ACS trained volunteers to meet patients in need of a wig fitting or wig cutting. All head coverings are free and donated by various community groups, the ACS or the Junior League of Hampton Roads.

Riverside Foundation

The Tree of Life Cancer Care Fund

The Riverside Tree of Life Cancer Care Fund supports patient programs, research and community outreach and prevention programs.

Utilization of the fund from January 1, 2011 - October 31, 2011 included:

- \$3,306.87 used to provide immediate assistance to over twenty (20) indigent Riverside cancer patients
- Assistance included medical supplies from Academy of Lymphatic Studies and pain prescriptions at local pharmacies
- In June 2011, Tree of Life disbursement used to set-up Petty Cash Cancer Fund at RRMC Radiation Oncology

The Mark Ellis Endowment Fund

In memory of Dr. Mark Ellis, this endowment fund was established to support the needs of Peninsula Cancer Institutes existing services and future growth related to Integrative Medicine Program, clinical research and patient navigation.

Both funds are comprised of charitable donations from individuals and organizations that share Riverside's vision and commitment to quality services in our community. You can contribute to these vital programs securely online at www.riversideonline.com/Foundation.

Clinical Trials

Riverside/Peninsula Cancer Institute established a research program to provide our patients access to the latest clinical trials. Our goal is to educate and inform patients each patient about their decision regarding treatment options, which sometimes includes a discussion about clinical trials.

Clinical trials ensure that the use of a new treatment is beneficial. Once the value of the treatment is established, it becomes the standard of care and provides benefit to all patients.

Riverside/ Peninsula Cancer Institute participates in Phase II-IV clinical trials. Each of these phases focuses on the efficacy, or effectiveness, of the treatment being studied. We currently have NCI studies open as well as network, university and pharmaceutical studies. Targeted chemotherapy trials currently offered include:

- Breast
- Melanoma
- Colon
- Ovarian
- Lung
- Prostate
- Hematological conditions

Participating in a clinical trial can have many benefits. Clinical trials offer patients an opportunity to try new therapies or existing

therapies in combinations that may not otherwise be available to them. Each patient is carefully monitored during and after treatment and the information gathered from the study improves our knowledge about cancer and the development of new therapies.

Future growth of our clinical research program includes a partnership with Radiation Therapy Oncology Group (RTOG), expanding the scope of the types of trials offered to include radiation therapy.

For further information on clinical trials, please visit www.riverisdeonline.com.



Ora Mae Jackson
RN, OCN
Protocol Manager



Integrative Medicine



Sophia Mikac, RN
BSN, OCN
Manager
Integrative Medicine

Integrative Medicine at Riverside/Peninsula Cancer Institute (PCI) is the combination of evidence based complementary therapies with state of the art cancer treatment. Complementary therapies combined with standard cancer treatments show enhanced quality of life outcomes. This approach allows us to treat the whole person, mind, body and spirit, not just their disease.

The Integrative Medicine team is comprised of certified oncology nurses, palliative care coordinators, certified massage therapists, a certified lymphedema therapist, registered yoga instructor, registered dietician, music therapy coordinator and pet therapy.

Nurse Coordinator

The process begins with patient's introduction to our nurse coordinator who assesses their needs based on their diagnosis and treatment plan. Based on the assessment and patient interview, other team members will be included in the customized care plan. Then the patient is given a teaching session where the treatment plan is reviewed and questions and anxieties are addressed. The nurse will also coordinate patient appointments with radiation oncology, surgeons and diagnostic testing as needed.

Dietician

Patients with compromised appetites or poor nutritional status are referred to this service, which is not offered within many cancer programs around the country. Our dietician holds national certification in oncology providing education and consultation regarding food, diet, supplementation and chemotherapy.

Social Services

All social services are addressed with a wealth of resources to help our patients with transportation, work related issues, family counseling and palliative care. Our palliative care coordinator also serves as a liaison with Home Care and Hospice in the community.

Massage Therapy

Our massage therapists provide both private full-body massage appointments and hand or foot massage given during chemotherapy treatment and are included in the treatment plan for each of our patients. There are many studies supporting the benefits of massage for the person with cancer. Documented benefits include stress and anxiety reduction, decrease in pain, and a decrease in possible side effects from medical treatments such as nausea, fatigue, constipation, and peripheral neuropathy. Patients report that their time in the massage room is restorative and healing in itself.

Music Therapy

Music therapy is offered to patients using an iPod loaded with their personal selections. This allows our patients to relax and escape from the clinic environment.

Pet Therapy

Pet Therapy is provided by our wonderful community of volunteers who bring their certified therapy dogs to visit. Exposure to pets is proven to provide comfort and reduce stress.

Yoga Therapy

Mindful Yoga is a weekly program designed to meet the needs of patients wherever they are in their healing. The atmosphere in the yoga class promotes relaxation and rejuvenation.

It includes breathing techniques for stress reduction, guided imagery, and yoga poses that increase flexibility and stamina.

At Riverside/ Peninsula Cancer Institute, we embrace every cancer patient as an individual. Integrative Medicine allows us be patient focused and promote healing,

truly providing a comprehensive approach to cancer care. These services are provided by Riverside Health System at no additional cost to the patient. The Mark E. Ellis Endowment Fund was created to provide support for these important services. You can contribute to this fund securely online at www.riversideonline.com/Foundation.



Oncology Patient Navigation



Yvonne Pike, M.Ed.
Supervisor
Breast Cancer Navigator

In the fall of 2005 Riverside Health System became one of the first in the area to start an Oncology Patient Navigation program. At that time it was recognized that the cancer experience for patients and their caregivers was a complex one. Many who have walked that journey certainly could tell a story of powerful feelings, physical demands, lifestyle changes, and financial challenges. At the same time, cancer care has become more complex complicated. Patients can encounter a whole new world- complete with its own language, an ever-changing map for treatment, and multiple healthcare professionals to see. With Navigation, Riverside strives to help our patients and families to maneuver all of these aspects of cancer care, adding no cost to the patient.

The Navigator ideally meets a patient and his/her closest supporters as soon as possible after diagnosis. Referrals to Navigation can come from physicians and others on the healthcare team, from community organizations, and increasingly from patients who have had Navigation experiences themselves. The internet and community resource directories have also led patients and family members themselves to seek more information and support from a Navigator. Regardless of how a patient is connected with Navigation, it is always our goal to become part of that patient's healthcare team and to remain available when a challenge or questions related to the cancer experience arises. The intent is not to duplicate services already very effectively provided, but to help direct the patient to the appropriate professional or resource when needed. Our Navigation program includes healthcare professionals with

the education, knowledge, and experience to meet the needs of our oncology population with compassion and skill. Riverside has developed our Navigation program along disease-specific lines. Beginning with a Breast Cancer Navigator in 2005, the program has added Navigators to help patients with prostate, lung, and colorectal cancers (now being expanded to include any digestive cancer.) This has allowed the seasoned professional to stay current in a specific oncology area, to interact more effectively with others on the healthcare team, and to hone a good knowledge of medical and community resources meeting the needs of our populations. We have also remained alert to unmet needs in our program and, consequently, often work with patients who have cancer diagnoses not covered by the existing Navigation programs. Additionally, each Navigator serves as a resource to the community at large- whether that involves answering a request for information or referrals, spearheading a support group or health fair, or speaking to a community organization. Navigation strives to identify the barriers met by individual patients and their loved ones- and to help find ways these can be resolved. Often the process can be improved and the burden lessened.

Riverside Oncology Navigation has assisted more than 2400 patients and their families. Looking forward, our goal is to have a Patient Navigator available to each type of cancer patient diagnosed or treated in our health system. For information about the Oncology Patient Navigator Program log on to www.riversideonline.com/services/cancer/local-resources.cfm.

Review of 2010 Accessions



The Riverside Regional Cancer Registry was established in 1979 and currently holds over 37,000 patient records. The registry is an essential component of the American College of Surgeons approved cancer programs. As a cornerstone of the cancer program, the cancer registry provides medical and administrative staff with information to monitor cancer incidence at Riverside Regional Medical Center (RRMC).

Data from our hospital based registry is provided to state and national databases each month, contributing to national benchmarks and development of treatment guidelines in cancer care. Every patient who is diagnosed and/ or treated at RRMC has annual long term follow up for outcomes analysis reports. To stay informed of new data capturing requirements, cancer registry staff participate in ongoing education to ensure accurate and complete data collection is achieved.

The top 5 cancer sites during 2010 were (in descending order) breast, prostate, lung, colorectal and bladder. These sites combined accounted for over 63% of the total analytic caseload. Caseload growth continues for several sites; however breast cancer had the most increase with over 17%.

As stated earlier each patient who interacts with RRMC during their first course of treatment if followed for outcomes analysis. Due to the extraordinary efforts of the cancer registry staff successful follow up since our 1979 reference year is over 93%, exceeding the target of 80%.

Jennifer Brown, BS, CTR
Cancer Registry Supervisor

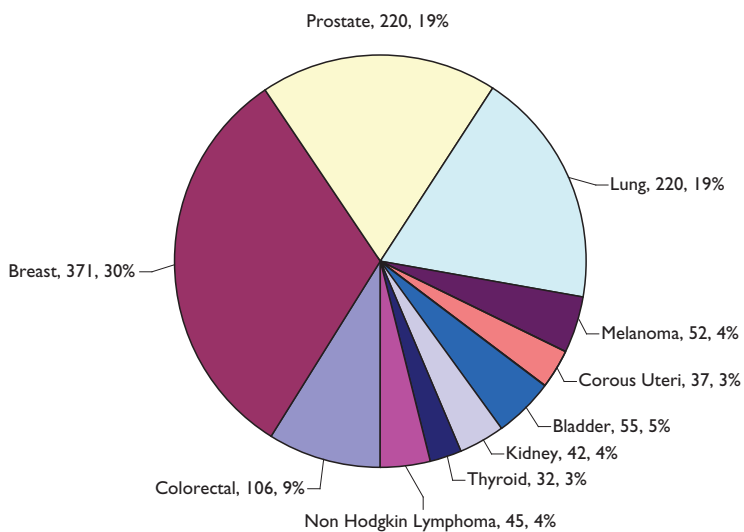
2010 STATISTICS

Primary Site	Cases	%	Sex		Class of Cases		Stage Distribution - Analytic Cases Only							
			M	F	Analytic	Non-Analytic	0	I	II	III	IV	88	Unk	Blank/Inv
ORAL CAVITY & PHARYNX	50	2.6%	36	14	41	9	1	8	4	11	16	0	1	0
Lip	3	0.2%	2	1	2	1	0	1	1	0	0	0	0	0
Tongue	13	0.7%	8	5	12	1	0	4	0	5	3	0	0	0
Salivary Glands	6	0.3%	4	2	4	2	0	1	0	1	2	0	0	0
Floor of Mouth	3	0.2%	3	0	3	0	0	1	0	0	2	0	0	0
Gum & Other Mouth	4	0.2%	3	1	3	1	0	1	1	0	0	0	1	0
Nasopharynx	4	0.2%	3	1	3	1	0	0	1	2	0	0	0	0
Tonsil	9	0.5%	6	3	8	1	1	0	1	1	5	0	0	0
Oropharynx	5	0.3%	5	0	4	1	0	0	0	1	3	0	0	0
Hypopharynx	3	0.2%	2	1	2	1	0	0	0	1	1	0	0	0
DIGESTIVE SYSTEM	240	12.7%	149	91	203	37	3	29	49	57	54	5	6	0
Esophagus	18	1.0%	14	4	15	3	0	0	7	4	3	0	1	0
Stomach	22	1.2%	15	7	21	1	0	5	6	5	3	0	2	0
Small Intestine	4	0.2%	2	2	4	0	0	0	1	2	1	0	0	0
Colon Excluding Rectum	95	5.0%	60	35	74	21	1	13	18	27	13	1	1	0
Rectum & Rectosigmoid	39	2.1%	24	15	32	7	1	4	9	11	7	0	0	0
Anus, Anal Canal & Anorectum	10	0.5%	6	4	9	1	1	2	3	1	0	0	2	0
Liver & Intrahepatic Bile Duct	10	0.5%	8	2	8	2	0	2	1	1	2	2	0	0
Gallbladder	6	0.3%	4	2	6	0	0	0	0	1	5	0	0	0
Other Biliary	3	0.2%	2	1	3	0	0	1	1	0	1	0	0	0
Pancreas	26	1.4%	12	14	25	1	0	2	3	3	17	0	0	0
Retroperitoneum	2	0.1%	0	2	2	0	0	0	0	1	1	0	0	0
Peritoneum, Omentum & Mesentery	3	0.2%	0	3	2	1	0	0	0	1	1	0	0	0
Other Digestive Organs	2	0.1%	2	0	2	0	0	0	0	0	0	2	0	0
RESPIRATORY SYSTEM	275	14.5%	166	109	234	41	1	43	19	58	110	1	2	0
Nose, Nasal Cavity & Middle Ear	3	0.2%	3	0	3	0	0	0	0	0	3	0	0	0
Larynx	11	0.6%	10	1	10	1	0	6	0	2	2	0	0	0
Lung & Bronchus	260	13.7%	153	107	220	40	1	37	19	56	105	0	2	0
Trachea, Mediastinum & Other Respiratory Organs	1	0.1%	0	1	1	0	0	0	0	0	0	1	0	0
SOFT TISSUE	13	0.7%	9	4	8	5	0	2	1	2	3	0	0	0
Soft Tissue (including Heart)	13	0.7%	9	4	8	5	0	2	1	2	3	0	0	0
SKIN EXCLUDING BASAL & SQUAMOUS	72	3.8%	42	30	56	16	17	22	9	5	1	0	2	0
Melanoma — Skin	68	3.6%	38	30	52	16	17	22	8	4	1	0	0	0
Other Non-Epithelial Skin	4	0.2%	4	0	4	0	0	0	1	1	0	0	2	0
BASAL & SQUAMOUS SKIN	1	0.1%	1	0	1	0	0	1	0	0	0	0	0	0
Basal/Squamous cell carcinomas of Skin	1	0.1%	1	0	1	0	0	1	0	0	0	0	0	0
BREAST	403	21.3%	5	398	371	32	73	133	98	43	18	1	5	0
Breast	403	21.3%	5	398	371	32	73	133	98	43	18	1	5	0

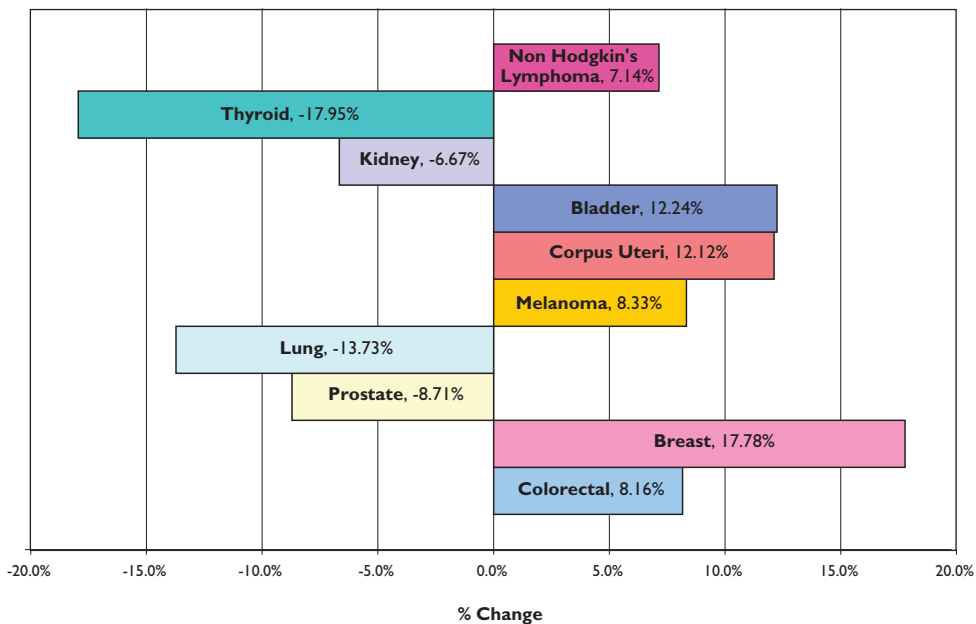
Primary Site	Cases	%	Sex		Class of Cases		Stage Distribution - Analytic Cases Only							
			M	F	Analytic	Non-Analytic	0	I	II	III	IV	88	Unk	Blank/Inv
FEMALE GENITAL SYSTEM	92	4.9%	0	92	65	27	1	36	5	13	10	0	0	0
Cervix Uteri	19	1.0%	0	19	14	5	0	5	3	3	3	0	0	0
Corpus & Uterus, NOS	45	2.4%	0	45	37	8	0	25	2	4	6	0	0	0
Ovary	11	0.6%	0	11	6	5	0	2	0	3	1	0	0	0
agina	2	0.1%	0	2	1	1	0	0	0	1	0	0	0	0
Vulva	14	0.7%	0	14	6	8	1	3	0	2	0	0	0	0
Other Female Genital Organs	1	0.1%	0	1	1	0	0	1	0	0	0	0	0	0
MALE GENITAL SYSTEM	297	15.7%	297	0	220	77	0	2	187	19	12	0	0	0
Prostate	297	15.7%	297	0	220	77	0	2	187	19	12	0	0	0
URINARY SYSTEM	126	6.7%	87	39	103	23	36	36	7	5	18	0	1	0
Urinary Bladder	72	3.8%	50	22	55	17	32	10	4	1	8	0	0	0
Kidney & Renal Pelvis	46	2.4%	31	15	42	4	0	24	3	4	10	0	1	0
Ureter	6	0.3%	4	2	4	2	2	2	0	0	0	0	0	0
Other Urinary Organs	2	0.1%	2	0	2	0	2	0	0	0	0	0	0	0
EYE & ORBIT	2	0.1%	2	0	0	2	0	0	0	0	0	0	0	0
Eye & Orbit	2	0.1%	2	0	0	2	0	0	0	0	0	0	0	0
BRAIN & OTHER NERVOUS SYSTEM	58	3.1%	33	25	45	13	0	0	0	0	0	45	0	0
Brain	22	1.2%	15	7	18	4	0	0	0	0	0	18	0	0
Cranial Nerves Other Nervous System	36	1.9%	18	18	27	9	0	0	0	0	0	27	0	0
ENDOCRINE SYSTEM	45	2.4%	10	35	39	6	0	20	1	7	4	7	0	0
Thyroid	34	1.8%	5	29	32	2	0	20	1	7	4	0	0	0
Other Endocrine including Thymus	11	0.6%	5	6	7	4	0	0	0	0	0	7	0	0
LYMPHOMA	83	4.4%	50	33	56	27	0	13	9	6	26	1	1	0
Hodgkin Lymphoma	15	0.8%	11	4	11	4	0	5	3	3	0	0	0	0
Non-Hodgkin Lymphoma	68	3.6%	39	29	45	23	0	8	6	3	26	1	1	0
MYELOMA	46	2.4%	28	18	26	20	0	0	0	0	0	26	0	0
Myeloma	46	2.4%	28	18	26	20	0	0	0	0	0	26	0	0
LEUKEMIA	31	1.6%	18	13	18	13	0	0	0	0	0	18	0	0
Lymphocytic Leukemia	16	0.8%	9	7	7	9	0	0	0	0	0	7	0	0
Myeloid & Monocytic Leukemia	12	0.6%	7	5	9	3	0	0	0	0	0	9	0	0
Other Leukemia	3	0.2%	2	1	2	1	0	0	0	0	0	2	0	0
MESOTHELIOMA	15	0.8%	12	3	12	3	0	2	2	1	6	0	1	0
Mesothelioma	15	0.8%	12	3	12	3	0	2	2	1	6	0	1	0
MISCELLANEOUS	42	2.2%	30	12	32	10	0	0	0	0	0	32	0	0
Miscellaneous	42	2.2%	30	12	32	10	0	0	0	0	0	32	0	0
Total	1,891		975	916	1,530	361	132	347	391	227	278	136	19	0

RRMC 2010 Top 10 Analytic Cancer Sites

(diagnosed and /or treated at RRMC) accounting for 1180 of analytic cases seen in 2010



Analytic Caseload: % Change 2009- 2010 (diagnosed and /or treated at RRMC)



Lung Cancer

Trends in Lung Cancer: *Hitting Close to Home*

Since our last update in the 2007 Annual Report, lung cancer has remained the number one cause of cancer death in both men and women. Fortunately, lung cancer mortality rates in the U.S. continue to decline, a result of the trend toward smoking cessation seen over the past four decades. Recently published data from the American Cancer Society (Cancer Facts & Figures 2011) estimates that 221,130 new cases of lung cancer will be diagnosed in the U.S. in 2011 and 156,940 deaths will occur due to the disease. Closer to home, it is estimated that over 5000 people in Virginia will be diagnosed with lung cancer this year. In males, Virginia ranks 22nd out of the 50 states for highest per capita incidence of lung cancer, yet it is 17th in the rate of lung cancer deaths. Similarly, the state will rank 33rd for incidence in females, but 26th in the rate of deaths.

How advanced a cancer is at the time of diagnosis is termed the stage. While the overall five-year lung cancer survival for all stages combined is only 16%, the chance of surviving five years rises to 53% when the cancer is detected at an early, or localized, stage. Clearly, as in other malignancies, the outlook for survival is related both to how early the cancer is diagnosed and access to the appropriate treatment. The relatively high lung cancer death rate in Virginia in the context of the somewhat lower number of people diagnosed may indicate that lung cancer is being detected in Virginians at a more advanced stage. We have found that the distribution of stages diagnosed at Riverside Regional Medical Center (RRMC) parallels the national data (Figure 1). Still, the higher death rate in Virginia is a call to action. At Riverside Regional, we are doing our part to

make sure that all the people of our region have access to the best preventive care, the earliest detection, and state-of-the-art lung cancer treatment.

Lung Cancer Prevention: *You Don't Have to Move to Utah*

In Virginia, 71 people out of every 100,000 are diagnosed with lung cancer each year, compared to only 30 out of every 100,000 Utah residents. Why? The answer is that the annual per capita cigarette consumption in Utah is 27 packs, compared to 69 packs in Virginia (CDC, 2010 data). There is no longer any debate. Smoking causes lung cancer. We do not yet have a cure for lung cancer, but we have a way to prevent most of it: smoking cessation. New aids to stop smoking are available, including medications and mechanical devices. The support group technique has been shown to be highly effective when compared to going it alone. It is Riverside's policy that every hospital inpatient and every patient who is cared for by an RMG physician is assessed and counseled regarding the dangers of smoking.

Lung Cancer Screening: *Almost Ready for Prime Time*

How can we diagnose lung cancer earlier in its course? 2011 saw the publication of the National Lung Screening Trial (NLST) results, a study which randomized 65,000 heavy smokers to either low-dose screening computed tomography (CT) or chest x-rays alone. The CT group had a 20% reduction in deaths related to lung cancer. The CT scans had a 96% false positive rate, however, meaning that only 4% of patients with abnormal scans truly had lung cancer. The other 96% were subjected to unnecessary expense, risk, and anxiety related to biopsies and other testing.



Steven Scott, MD, FACS
Riverside Thoracic and
Cardiovascular

The study concluded that 320 smokers would have to be scanned to prevent one cancer death. The expense of a nationwide screening program would be tremendous, which is one reason that screening has not yet been widely implemented. At Riverside we are monitoring the debate surrounding this study and hope for a cost-effective and safe way to screen for lung cancer.

Lung Cancer Treatment: *To Cut (or Radiate) is to Cure*

When lung cancer is diagnosed, options for treatment include surgery, radiation therapy, chemotherapy, palliative (comfort) care, or combinations of these. The types of treatment initially used at Riverside Regional as compared to national data are shown in Figure 2. Patients diagnosed with non-small cell lung cancer (NSCLC), the most common type, may benefit from surgical treatment if the cancer felt to be at an early stage (stage I or II). Studies have shown that 5-year survival rates as high as 60-80% can be achieved with surgery in stage I NSCLC. A critical part of the surgery is the lymph node dissection, where nodes within the chest cavity are removed and examined for spread of cancer. This helps establish the pathologic stage of the cancer, and the status of the lymph nodes often determines whether or not the patient will be advised to have postoperative (adjuvant) chemotherapy. Radiation therapy is another option to treat lung cancer. It can be given as external beam radiation therapy, where daily radiation of a relatively low dose is given to the area of the tumor over a number of weeks. Stereotactic radiation, also called radiosurgery, has become available in the past decade. The technique focuses high dose radiation on the tumor with fewer treatment sessions. Some suspect that stereotactic radiation may be as effective as surgery at eradicating the primary lung cancer when it is at an early stage. This was suggested at

this year's meeting of the American Society of Radiation Oncology based on a study done in Amsterdam. While surgery is still the standard of care for early stage lung cancer, some lung cancer patients with severe lung disease are considered too high risk for surgical treatment. At Riverside, the availability of radiosurgery has given us a very effective treatment option for those patients. The Riverside and University of Virginia Radiosurgery Center, located on the campus of Riverside Regional Medical Center, has treated 87 such patients over the past three years.

Lung Cancer Chemotherapy: *On Target*

Chemotherapy is the standard treatment for the type of lung cancer termed small cell lung cancer and for non-small cell lung cancer which has advanced to stage III or IV. It is also used, usually in combination with radiation, in patients with early stage lung cancer who are at prohibitive surgical risk. Advances in our understanding of how cancer cells work on a molecular level are revolutionizing the field of medical oncology. Years ago, all people with lung cancer were largely given a standard regimen of chemotherapy drugs. Today, chemotherapy is individualized, based on the characteristics of the patient's tumor. Some receive targeted therapies based on molecular testing of the cancer cells. Examples of drugs which are targeted to specific molecular characteristics include bevacizumab (Avastin), erlotinib (Tarceva), and the new drug crizotinib (Xalkori). Through participation in clinical trials, Riverside lung cancer patients can have access to some of the ongoing studies investigating these therapies.

Taking Cancer Personally

A diagnosis of cancer is a devastating and life-altering event, and meeting the spiritual, psychological, and social needs of the patient should be included in the treatment plan. The

services of Lung Cancer Patient Navigator Terrie Rose, R.N., are available free of charge to patients and their families. Terrie founded the Lung Cancer Support Group, and she has access to other resources for those struggling with the challenges of cancer. More importantly, she is someone the patient can call to ask questions or just talk. When the cancer is not curable, the focus turns to helping the patient to live with the cancer. Palliative care techniques are offered by our

specialists, and Riverside Hospice is available for end of life care. As mentioned before, access to healthcare is a factor in cancer survival. Through participation in Project Care and other programs for the underprivileged, our health system is making sure that socioeconomic factors do not act as barriers. As the science of diagnosing and treating lung cancer advances at an increasingly rapid pace, we must never forget that we are treating people, not just tumors.

Figure 1: 2008 Stage of Non-Small Cell Lung Cancer at Diagnosis, RRM vs. National Cancer Data Base

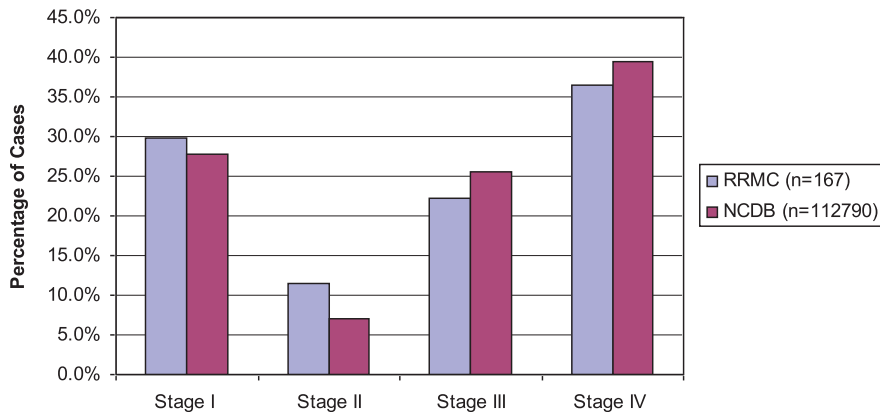
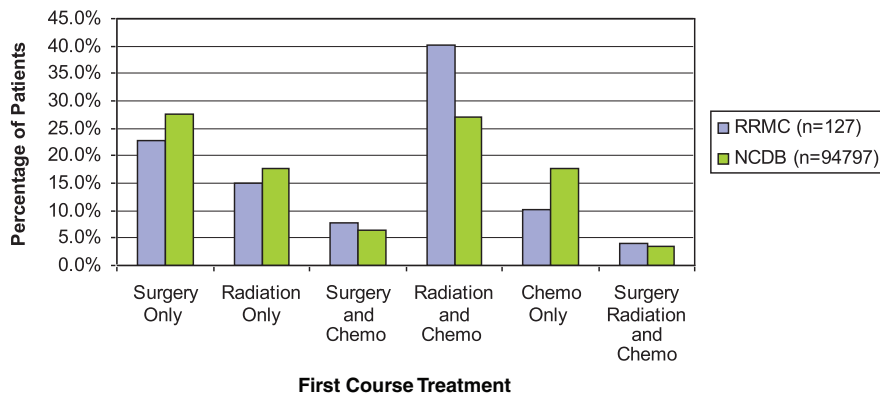


Figure 2: 2008 Comparison of First Course Treatment, RRM vs. NCDB



Interventional Oncology

Image guided minimally invasive targeted therapies for cancer



Janice Newsom, MD
Vascular Interventional
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Over the past few years, Riverside Health System has seen an explosion in cancer care and provided high quality treatments for a record number of cancer patients. There is no single treatment for all forms of cancer, and physicians must choose what is appropriate for each patient from the range of options available. In battling this ever varied and diverse class of disease, an equally diverse treatment approach is needed.

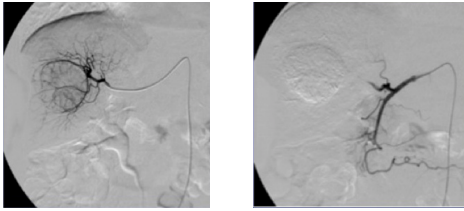
With that in mind, we have organized a multidisciplinary team of hardworking clinicians utilizing a wide arsenal of therapy combinations to ensure all aspects of care are addressed. At least once during their lifetime, every cancer patient will be seen by a diagnostic radiologist and many will come across an interventionalist. The expertise of a good diagnostic radiologist and skilled imaging professionals are critical to delineate the type and extent of cancer, as well as selecting and planning the best treatment and following its effects. Today, image guided tissue biopsy is the standard for diagnosing and sub-typing disease in the body. Determination of the type, stage and grade of the cancer can help to define the prognosis and choose the most suitable therapies.

While diagnostic and interventional radiologist have been an active part of the team for decades, recent advances in technology have opened exciting possibilities for fighting cancer. The application of image guided, minimally invasive targeted therapies in patients with cancer, has progressed so much, the term “Interventional Oncology” has been coined to cover the range of procedures. Most treatments are performed in conjunction with traditional methods such as surgery, systemic

chemotherapy and/or radiation, but there are advances unique to interventional oncology (IO).

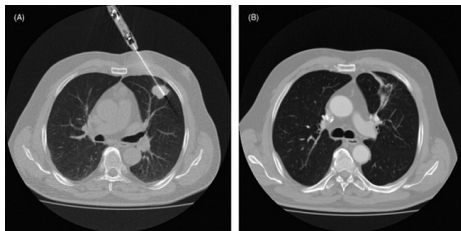
Cancer Treatment

Interventional radiologists have long developed techniques for blocking off or embolizing the blood supply to various parts of the body. This is done by placing a small catheter into the femoral artery through a small nick in the groin and feeding it under image guidance to the problem area. The catheter can be placed directly into the artery supplying the tumor then deliver various tiny clotting agents to stop the blood flow to a tumor, causing it to shrink and die. Chemotherapy can be injected through the catheter directly into the tumor prior to blocking off the blood flow. This is known as transcatheter arterial chemoembolization (TACE). More recently, Transarterial chemoembolization uses the same process, but the clotting agents (beads) are impregnated with the cancer fighting drugs. Since the drugs are delivered directly into the tumor, rather than systemically, a higher and more tailored dose can be used. These chemo-drug eluting beads can remain active in the tumor for weeks, treating the tumor and blocking the blood supply simultaneously. This procedure minimizes the dose to other non-cancerous organs, avoiding widespread toxicities. It is most commonly used for liver tumors, especially when the liver has multiple masses. In addition to being the worldwide standard for treating unresectable hepatocellular carcinoma (HCC), TACE is also used for treating metastatic liver disease. This is primarily spread from colorectal, neuroendocrine or breast cancers.



Mass in liver before TACE Shrunken mass after TACE

Another minimally invasive treatment is Radiofrequency ablation (RFA), which uses heat to kill tumors. Heat is a very effective means of killing cells. Above 50 degrees Celsius, protein is permanently and irreversibly damaged. Under image-guidance, a needle is inserted into the tumor and the device is activated. High frequency alternating current emits intense heat destroying the cancerous cells. The tumor and several centimeters (target 2 cm) of adjacent tissue are heated to destroy the target. RFA is commonly used in the treatment of inoperable cancer of the kidney, lung, liver, and bone. Breast, thyroid and neuroendocrine tumors can also be treated. RFA is an excellent treatment choice for small tumors



RFA needle in a lung nodule

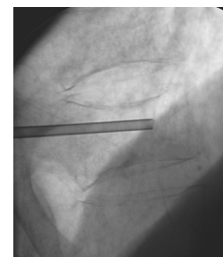
<5 cm and if there are few tumors present. RFA can be done during open surgery, laparoscopy or percutaneously (through the skin). The treatment targets the tumor only without

affecting the surrounding healthy tissue. It has been proven to be safe and effective and can be easily repeated. It is used for both primary and metastatic tumors.

Pain Relief (Palliation)

Oncology is a field that is continually making breakthroughs in treatment and survival is improving in many cancer diseases. The majority of cancer patients now live longer and longer with a higher quality of life. As interventional oncology continues to expand, many more patients will need the benefits of palliative care where the primary goals are pain relief and preservation and/or restoration of function.

Osseous (bone) metastases are the most common tumor of the spine and the most common cause of cancer related pain. Approximately 30% of cancer patients will develop symptomatic skeletal metastases. Carcinoma of the breast, prostate, and lung account for more than 80% of metastatic bone disease. Treatment of spinal metastases is generally palliative (relief of pain). Percutaneous vertebral augmentation procedures (Kyphoplasty and Vertebroplasty) are useful for pain palliation and reducing functional disability. During this procedure, a needle is placed through the skin into the spinal area using Fluoroscopy (live x-ray video) guidance. Bone cement is injected into the fractured bone for stabilization. Traditional or stereotactic radiation can be done before or after vertebral augmentation/stabilization.



Compression fracture of lumbar spine



After cement placement

Interventional oncology offers the opportunity to preserve the patient's quality of life significantly with various palliative procedure options. Another palliative care option is the placement of tunneled catheters in the chest or abdomen to drain extra fluid that collects in the chest or abdomen. Drainage of this fluid helps to alleviate chest or abdominal pain, difficulty breathing, and feelings of early satiety (fullness). The catheter provides drainage of the fluid at home, which allows patients to enjoy as many out of hospital days as possible.

Image Guided Therapies

Additional procedures offered for our cancer

patients include image guided nerve blocks/ablation, central venous access (chest and arm ports), percutaneous feeding tubes, percutaneous biliary drainages and stents, and inferior vena cava filters.

Riverside is pleased to offer our oncology community cutting edge minimally invasive, image guided therapies. By combining existing treatments with medical innovation, more sophisticated therapies are being devised. The use of Interventional Oncology procedures provides more options to the patient and the physicians in their arsenal to fight cancer and improve quality of life.





Cancer Services

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