

MD Anderson Cancer Center at Cooper

2015 ANNUAL REPORT



Building on Our Success

Thanks to earlier detection, advanced treatment and supportive care, more Americans are surviving cancer than ever before. In fact, there are almost 14.5 million cancer survivors alive in the U.S. today, and that number will grow to nearly 19 million by 2024, according to a report by the American Cancer Society in collaboration with the National Cancer Institute.

While our efforts to end cancer — a mission we share with our partner MD Anderson Cancer Center in Houston, Texas, and other members of our global cancer network — may not be realized in our lifetime, advances in cancer prevention, detection and treatment have made it increasingly regarded as a chronic disease. This is a significant step forward, but one that brings new challenges that necessitate the medical community to support long-term survivors of cancer with education, screening for recurrence, and medical care that addresses secondary health concerns. Our new Survivorship Program, launched this year, was created to address these issues and extend our outstanding services to the increasing population of survivors we serve.

Throughout 2015, the physicians, nurses and staff of MD Anderson Cancer Center at Cooper have made significant contributions to improving the health and well-being of thousands of South Jersey residents facing cancer. Our achievements have included:

- Adding new diagnostic and treatment technologies to our arsenal of cancer-fighting tools.
- Welcoming outstanding new clinicians and staff to our team.
- Improving access and refining processes to improve our patients' experiences.
- Creating innovative new programs, including our Integrative Oncology Program and Survivorship Program, to enhance our patients' well-being and long-term health.
- Increasing our clinical research activity.
- Providing our community with cancer screening services and cancer prevention education.
- Educating the next generation of physicians, including our residents, fellows and medical students from Cooper Medical School of Rowan University.

In the 2015 Annual Report of MD Anderson Cancer Center at Cooper, we introduce you to our new physicians and surgeons, share several patient stories and a few of the year's highlights, and report some of our statistical information.

As we reflect on the outstanding accomplishments of the past year, it is exciting to see the progress we have made. Perhaps even more exciting is the continued focus on achieving our mission — to end cancer through innovative thinking, partnering with the best of the best, and a singular focus on providing the best possible care to our patients.



Generosa Grana, MD, FACP

Director, MD Anderson Cancer Center at Cooper
Head, Division of Hematology/Medical Oncology
Professor of Medicine, Cooper Medical School of Rowan University



Francis Spitz, MD

Deputy Director, MD Anderson Cancer Center at Cooper
Vice Chief, Department of Surgery
Head, Division of General Surgery
Professor of Surgery, Cooper Medical School of Rowan University

Cancer Registry Report: Data Enables Ongoing Improvements

The Cancer Registry at MD Anderson Cancer Center at Cooper is responsible for the accurate and timely collection of cancer-patient data, and other critical purposes, which is used for evaluation of patient outcomes. The Registry participates in the American College of Surgeon's (ACoS) Commission on Cancer (CoC) accredited program and the National Accreditation Program for Breast Centers (NAPBC). The CoC is responsible for establishing standards to ensure high-quality, multi-disciplinary and comprehensive cancer care delivery in hospitals throughout the United States, granting accreditation to only those facilities that have voluntarily committed to provide the best in cancer diagnosis and treatment and are able to comply with the rigorous standards.

The Registry reports specifics of diagnosis, stage of disease, medical history, patient demographics, laboratory data, tissue diagnosis, and medical, radiation and surgical methods of treatment for each cancer diagnosed at our facilities. The data is used to observe cancer trends and provide a

research base for studies into the possible causes of cancer, with the goal of reducing cancer incidence and death.

Registry data also serves as an ongoing resource to the Cancer Committee in determining the most effective allocation of resources, in identifying community education and outreach initiatives and in monitoring program quality.

The Registry provides vital statistics and information to clinicians and researchers as well as local, state and national cancer databases and cancer-related organizations. This contribution of information advances the body of knowledge in the field of cancer and ultimately has a positive impact on cancer patient care.

For Cooper's data to be comparable to those collected at other programs around the country, the registrars adhere to data rules established by the collecting and credentialing organizations. Keeping up with these changes can be challenging, but Cooper Cancer Registrars understand the significance of their work and are experts in their field.

Cancer Registry Department Staff

Peggy Carnuccio, CTR, *Manager*
Brian Palidar, CTR, *Cancer Registrar*
Annette Harley, CTR, *Cancer Registrar*
Karen Staller, CTR, *Cancer Registrar*
Melanie Martin, *Cancer Registrar*

Cooper University Hospital Cancer Committee*

REQUIRED Physician Members

Umur Atabek, MD
Cancer Liaison
Surgery
Todd Siegel, MD
Radiology
Generosa Grana, MD
Cancer Committee Chair
Cancer Conf. Coordinator
Hematology/Medical Oncology
Tamara LaCouture, MD
Radiation Oncology
Roland Schwarting, MD
Pathology

REQUIRED Non-Physician Members

Kristin Brill, MD
Breast Program
Margaret Carnuccio, CTR
Manager, Cancer Registry
Yinyin (Shirley) Yao, MS, CGC
Genetics Counselor
Jackie Ellis-Mullin, CTR
Cancer Registry QA Coordinator

Kim Krieger, BA, CCRP
Research Coordinator
Laura Mathern, MPH
PI Representative
Evelyn Robles-Rodriguez, APN-C
Community Outreach Coordinator
Barbara Sproge, MSN
Palliative Care Educator
Christine Winn, FACHE
SVP, Cancer Program
Ann Steffney, MSN, RN, OCN
Quality Improvement Coordinator
Carol Stratton, MSPT, ATC, CLT
Rehabilitation Services
Leslie Tarr, MSW, CSW, OSW-C
Social Worker & Psychosocial
Services Coordinator

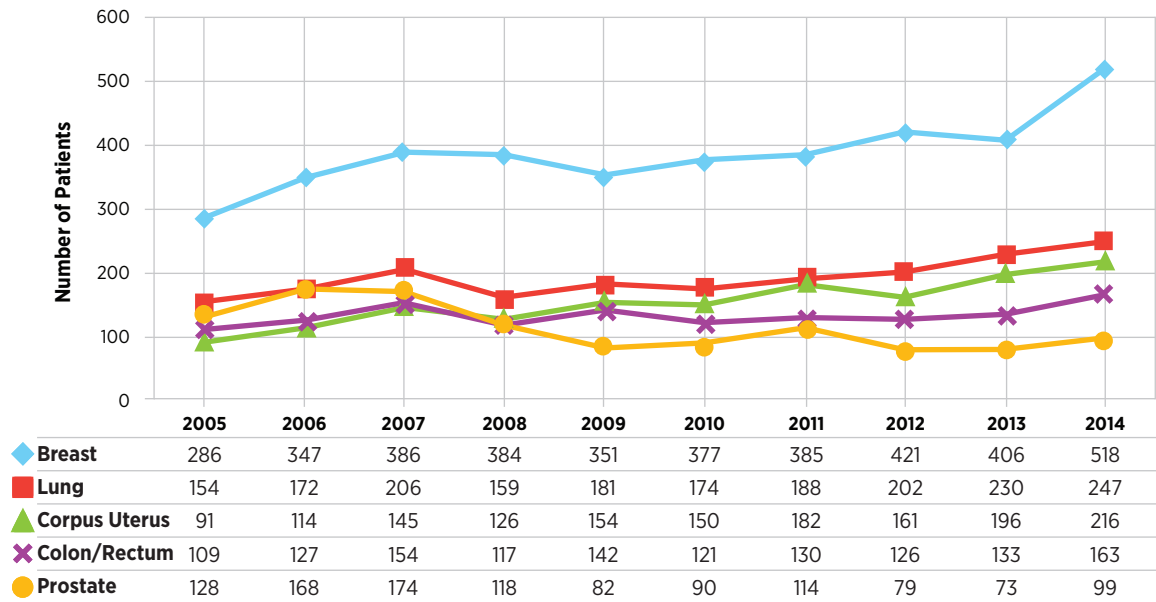
Other Attendees

Jessica Bennett, CPE
Chaplain, Pastoral Care
Susan Breslin, RN
Clinical Infusion Manager
Frank DelRossi, CSW
Outpatient Social Worker
Tondalya DeShields, RN
Oncology Outreach Program
Angela Frantz, RN
Breast Nurse Navigator
Virginia Girard, RN
Nursing Educator
Linda Goldsmith, RD
Outpatient Dietitian
Annette Harley, CTR
Cancer Registrar
Susan Hunter, APN
Hematology/Medical Oncology
Dianne Hyman, MSN
Breast Nurse Navigator
Frank Koniges, MD
Surgery
Lisa McLaughlin, MSW
Outpatient Social Work
Cori McMahon, PsyD
Behavioral Medicine,
Hematology/Medical Oncology
Alicia Michaux, RD
Outpatient Dietitian
Alice O'Brien, RN
Leuk/Lymph Nurse Navigator

Brian Palidar, CTR
Cancer Registrar
Beth Rachkis
Marketing/Communications
Dave Rodman
Oncology Pharmacist
Mary Rooney, RN
GU Nurse Navigator
Francis Spitz, MD
Surgery
Karen Staller, CTR
Cancer Registrar
Pat Stienes, RT
Radiology
Jackie Sutton, PharmD
Pharmacy
Nick Stamatiades
Sr. Director, Finance/Operations
Colleen Tegeler
Radiation Therapy
Colleen Thornton
American Cancer Society
Jackie Tubens, MSN
GI Nurse Navigator
David Warshal, MD
Gynecologic Oncology

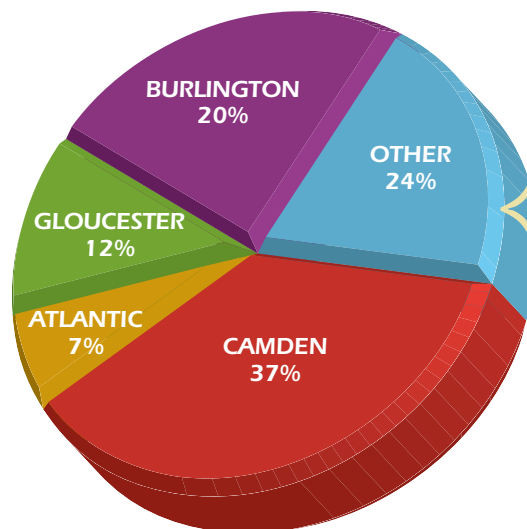
*Committee members at time of publication.

Top Five Cancer Sites TOTAL ANALYTIC CASES 2005-2014



Patient's County of Residence at Diagnosis 2014 ANALYTIC CASES

County	Count	Percent
Camden	912	37.15%
Burlington	487	19.84%
Gloucester	304	12.38%
Atlantic	170	6.92%
Other	582	23.71%
TOTAL		100.00%



Cape May	2.85%
Cumberland	4.73%
Mercer	1.34%
Middlesex	.20%
Monmouth	.29%
Ocean	1.71%
Salem	2.89%
Pennsylvania	2.76%
Florida	.24%
Delaware	.28%
Virginia	.08%
Maryland	.12%
Unknown County and/or State	6.22%

CANCER REGISTRY REPORT

MD Anderson Cancer Center at Cooper 2014 ANALYTIC CASE DISTRIBUTION – BY SITE, SEX, AJCC STAGE

Primary Site	Total Cases	Sex		AJCC Stage						
		Male	Female	Stage 0	Stage I	Stage II	Stage III	Stage IV	88	Unk
ORAL CAVITY & PHARYNX	51	33	18	0	8	5	5	33	0	0
Tongue	14	11	3	0	2	2	1	9	0	0
Salivary Glands	2	0	2	0	0	1	0	1	0	0
Floor of Mouth	3	2	1	0	1	0	0	2	0	0
Gum & Other Mouth	9	5	4	0	3	2	1	3	0	0
Nasopharynx	5	2	3	0	1	0	1	3	0	0
Tonsil	10	8	2	0	1	0	2	7	0	0
Oropharynx	4	2	2	0	0	0	0	4	0	0
Hypopharynx	4	3	1	0	0	0	0	4	0	0
DIGESTIVE SYSTEM	450	230	220	16	91	86	96	105	17	39
Esophagus	30	25	5	1	3	3	9	8	1	5
Stomach	36	22	14	2	9	5	6	11	1	2
Small Intestine	23	8	15	0	7	5	3	4	1	3
Colon Excluding Rectum	110	51	59	5	23	16	39	24	0	3
Cecum	24	10	14	0	4	4	8	7	0	1
Appendix	8	1	7	1	2	0	2	3	0	0
Ascending Colon	13	6	7	0	3	1	6	3	0	0
Hepatic Flexure	4	1	3	0	0	2	2	0	0	0
Transverse Colon	8	5	3	0	4	3	0	1	0	0
Splenic Flexure	4	3	1	0	0	0	2	2	0	0
Descending Colon	10	5	5	0	3	1	5	1	0	0
Sigmoid Colon	30	15	15	3	6	5	11	4	0	1
Large Intestine, NOS	9	5	4	1	1	0	3	3	0	1
Rectum & Rectosigmoid	53	24	29	1	18	10	9	10	2	3
Rectosigmoid Junction	15	9	6	1	4	2	4	2	0	2
Rectum	38	15	23	0	14	8	5	8	2	1
Anus, Anal Canal & Anorectum	19	4	15	6	1	5	2	2	0	3
Liver & Intrahepatic Bile Duct	33	25	8	0	10	2	7	9	1	4
Liver	30	24	6	0	9	2	7	7	1	4
Intrahepatic Bile Duct	3	1	2	0	1	0	0	2	0	0
Gallbladder	6	3	3	0	1	2	1	2	0	0
Other Biliary	20	9	11	0	5	9	1	2	2	1
Pancreas	92	51	41	1	11	28	7	30	0	15
Retroperitoneum	5	2	3	0	3	0	1	0	1	0
Peritoneum, Omentum & Mesentery	15	0	15	0	0	1	11	3	0	0
Other Digestive Organs	8	6	2	0	0	0	0	0	8	0
RESPIRATORY SYSTEM	291	139	152	6	66	28	46	135	1	9
Nose, Nasal Cavity & Middle Ear	3	2	1	1	0	0	0	2	0	0
Larynx	40	23	17	3	11	7	3	14	0	2
Lung & Bronchus	247	113	134	2	55	21	43	119	0	7
Trachea, Mediastinum & Other Respiratory Organs	1	1	0	0	0	0	0	0	1	0
BONES & JOINTS	19	8	11	0	12	5	0	2	0	0
Bones & Joints	19	8	11	0	12	5	0	2	0	0
SOFT TISSUE	40	19	21	0	17	5	12	0	2	4
Soft Tissue (including Heart)	40	19	21	0	17	5	12	0	2	4
SKIN EXCLUDING BASAL & SQUAMOUS	49	31	18	6	25	6	5	1	2	4
Melanoma -- Skin	46	30	16	6	25	5	5	1	0	4
Other Non-Epithelial Skin	3	1	2	0	0	1	0	0	2	0
BREAST	518	5	513	129	193	120	41	28	0	7
Breast	518	5	513	129	193	120	41	28	0	7

MD Anderson Cancer Center at Cooper
2014 ANALYTIC CASE DISTRIBUTION – BY SITE, SEX, AJCC STAGE (continued)

Primary Site	Total Cases	Sex		AJCC Stage						
		Male	Female	Stage 0	Stage I	Stage II	Stage III	Stage IV	88	Unk
FEMALE GENITAL SYSTEM	378	0	378	7	208	30	72	39	3	19
Cervix Uteri	54	0	54	0	21	6	9	9	0	19
Corpus & Uterus, NOS	216	0	216	0	157	14	24	13	1	7
Corpus Uteri	205	0	205	0	151	14	22	10	1	7
Uterus, NOS	11	0	11	0	6	0	2	3	0	0
Ovary	67	0	67	0	14	6	33	14	0	0
Vagina	5	0	5	1	1	0	1	1	0	1
Vulva	29	0	29	6	13	3	2	1	2	2
Other Female Genital Organs	7	0	7	0	2	1	3	1	0	0
MALE GENITAL SYSTEM	107	107	0	0	21	62	10	12	0	2
Prostate	99	99	0	0	15	60	10	12	0	2
Testis	6	6	0	0	4	2	0	0	0	0
Penis	1	1	0	0	1	0	0	0	0	0
Other Male Genital Organs	1	1	0	0	1	0	0	0	0	0
URINARY SYSTEM	95	68	27	24	31	9	11	15	0	5
Urinary Bladder	51	40	11	23	11	5	4	7	0	1
Kidney & Renal Pelvis	41	26	15	1	18	3	7	8	0	4
Ureter	3	2	1	0	2	1	0	0	0	0
BRAIN & OTHER NERVOUS SYSTEM	90	32	58	0	0	0	0	0	89	1
Brain	28	17	11	0	0	0	0	0	28	0
Cranial Nerves/Other Nervous System	62	15	47	0	0	0	0	0	61	1
ENDOCRINE SYSTEM	140	38	102	0	63	8	12	4	50	3
Thyroid	88	22	66	0	63	8	11	3	0	3
Other Endocrine including Thymus	52	16	36	0	0	0	1	1	50	0
LYMPHOMA	95	51	44	0	26	7	8	34	0	20
Hodgkin Lymphoma	12	7	5	0	3	1	2	3	0	3
Non-Hodgkin Lymphoma	83	44	39	0	23	6	6	31	0	17
NHL - Nodal	45	24	21	0	7	2	6	23	0	7
NHL - Extranodal	38	20	18	0	16	4	0	8	0	10
MYELOMA	33	8	25	0	0	0	0	0	33	0
Myeloma	33	8	25	0	0	0	0	0	33	0
LEUKEMIA	52	28	24	0	0	0	0	0	51	1
Lymphocytic Leukemia	27	15	12	0	0	0	0	0	26	1
Acute Lymphocytic Leukemia	9	6	3	0	0	0	0	0	9	0
Chronic Lymphocytic Leukemia	17	9	8	0	0	0	0	0	17	0
Other Lymphocytic Leukemia	1	0	1	0	0	0	0	0	0	1
Myeloid & Monocytic Leukemia	20	12	8	0	0	0	0	0	20	0
Acute Myeloid Leukemia	14	9	5	0	0	0	0	0	14	0
Chronic Myeloid Leukemia	6	3	3	0	0	0	0	0	6	0
Other Leukemia	5	1	4	0	0	0	0	0	5	0
Other Acute Leukemia	2	0	2	0	0	0	0	0	2	0
Aleukemic, Subleukemic & NOS	3	1	2	0	0	0	0	0	3	0
MESOTHELIOMA	5	3	2	0	0	0	0	3	2	0
Mesothelioma	5	3	2	0	0	0	0	3	2	0
KAPOSI SARCOMA	1	1	0	0	0	0	0	0	1	0
Kaposi Sarcoma	1	1	0	0	0	0	0	0	1	0
MISCELLANEOUS	41	22	19	0	0	0	0	0	41	0
Miscellaneous	41	22	19	0	0	0	0	0	41	0
Total	2,455	823	1,632	188	761	371	318	411	292	114

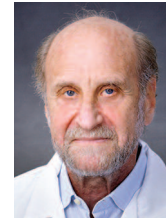
MD Anderson Cancer Center at Cooper Welcomes Our New Physicians and Surgeons



Steven Bonawitz, MD
Plastic and Reconstructive Surgery
 Clinical Focus: Breast reconstruction, head and neck reconstruction, craniofacial/facial reconstruction, reconstructive microsurgery



Kevin J. Callahan, DO
Hematology/Medical Oncology
 Clinical Focus: Lung cancer, general oncology, benign hematology



Jaime Caro, MD
Hematology/Medical Oncology
 Clinical Focus: General oncology



Jed-Sian Cheng, MD, MHP
Urology
 Clinical Focus: Cancers of the prostate, kidney, bladder, testis and penis



Katherine Hansen, DO
Breast Surgery
 Clinical Focus: Breast cancer, high-risk patients



Samuel Hardy, MD
Palliative Care
 Clinical Focus: Symptom management for oncology patients, malignant bone pain, cancer anorexia/cachexia



Michael Kwatt, MD
Surgery
 Clinical Focus: Colorectal cancer



Sun Yong Lee, MD, FACS
Breast Surgery
 Clinical Focus: Breast cancer, high-risk patients



Catherine Loveland-Jones, MD, MS
Breast Surgery
 Clinical Focus: Breast cancer, high-risk patients



Pallav K. Mehta, MD
Hematology/Medical Oncology
 Clinical Focus: Breast cancer, integrative oncology



Jamin Morrison, MD
Hematology/Medical Oncology
 Clinical Focus: Gastrointestinal cancer, general oncology



Andrew Newman, MD
Plastic and Reconstructive Surgery
 Clinical Focus: Breast reconstruction, head and neck reconstruction, Mohs reconstruction



Christian Squillante, MD
Hematology/Medical Oncology
 Clinical Focus: Genitourinary cancers, thyroid malignancies, general oncology

Measuring Quality: A Record of Strong Performance

How do patients know if they are receiving good quality healthcare?

How do physicians and nurses identify the steps that need to be taken for better patient outcomes?

And how do insurers and employers determine whether they are paying for the best care that science, skill, and compassion can provide?

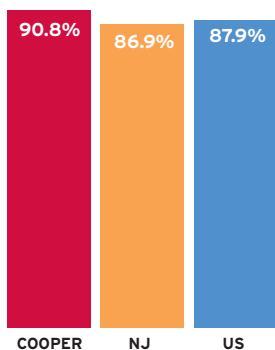
Performance measures

Performance measures give the health care community a way to assess quality of care provided against recognized standards. While quality measures come from many sources, those endorsed by the National Quality Forum (NQF) are widely viewed as among the best. An NQF endorsement reflects rigorous scientific and evidence-based review, input from patients and their families, and the perspectives of people throughout the health care industry.

One of the ways MD Anderson Cancer Center at Cooper assesses the quality of the care we give to our cancer patients is to compare our performance in NQF standards to those of other hospitals in New Jersey and the United States.

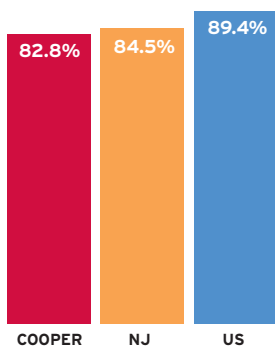
NQF has established six measures for quality care in breast, colon and rectal cancer. Below you will find how MD Anderson Cancer Center at Cooper compares to other hospitals in New Jersey and across the U.S. in these critical performance measures.

Performance for NQF Breast Cancer Measures



National standard for breast-conserving surgery and radiation therapy

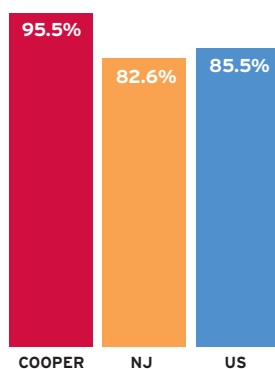
Radiation therapy is administered within one year (365 days) of diagnosis for women under the age of 70 receiving breast-conserving surgery for breast cancer. MD Anderson Cancer Center at Cooper's compliance with this standard was at 91%, compared to the state norm of 87% and the national norm of 88%.



National standard for chemotherapy in hormone-receptor-negative breast cancer patients

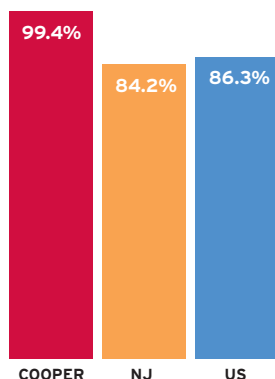
Combination chemotherapy is considered or administered within 4 months (120 days) of diagnosis for women under 70 with AJCC T1cN0M0, or Stage II or III hormone-receptor-negative breast cancer. MD Anderson Cancer Center at Cooper's compliance with this standard was at 83%, compared to the state norm of 85% and national norm of 89%.

Performance for NQF Breast Cancer Measures (continued)



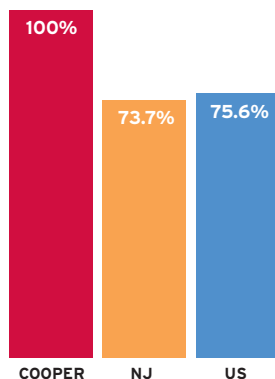
National standard for tamoxifen or third-generation aromatase inhibitor in hormone-receptor-positive breast cancer patients

Tamoxifen or third-generation aromatase inhibitor is considered or administered within one year (365 days) of diagnosis for women with AJCC T1cN0M0, or Stage I hormone-receptor-positive breast cancer. MD Anderson Cancer Center at Cooper's compliance with this standard was at 96%, compared to the state norm of 83% and the national norm of 86%.



National standard for image or palpation guided needle biopsy (core of FNA) is performed to establish diagnosis of breast cancer

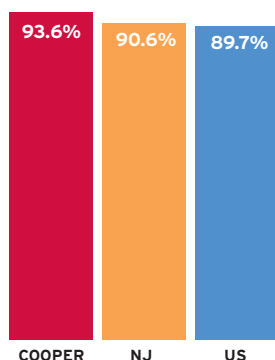
MD Anderson Cancer Center at Cooper's compliance with this standard was at 99%, compared to the state norm of 84% and the national norm of 86%.



National standard for evaluating radiation therapy is considered or administered following any mastectomy within 1 year (365 days) of diagnosis of breast cancer for women with >=4 positive lymph nodes

MD Anderson Cancer Center at Cooper's compliance with this standard was at 100%, compared to the state norm of 74% and the national norm of 76%.

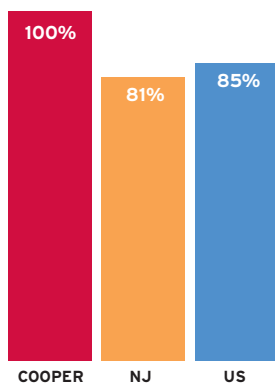
Performance for Colon and Rectal Cancer NQF Measures



National standard for regional lymph nodes in surgically resected patients

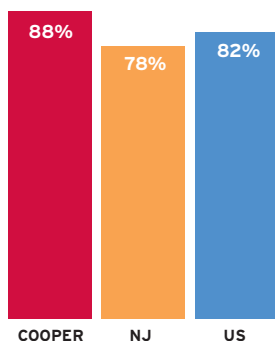
At least 12 regional lymph nodes are removed and pathologically examined for resected colon cancer. The compliance rate for MD Anderson Cancer Center at Cooper was at 94%, compared to the state norm of 91% and the national norm of 90%.

Performance for Colon and Rectal Cancer NOF Measures (continued)



National standard for adjuvant chemotherapy for node-positive patients

Adjuvant chemotherapy is considered or administered within 4 months (120 days) of diagnosis for patients under the age of 80 with AJCC stage III (lymph node positive) colon cancer. The compliance rate for MD Anderson Cancer Center at Cooper was at 100%, compared to the state norm of 81% and the national norm of 85%.



National standard for radiation therapy of stage III rectal cancer

Radiation therapy is considered or administered within 6 months (180 days) of diagnosis for patients under the age of 80 with clinical or pathologic AJCC T4N0M0 or Stage III receiving surgical resection for rectal cancer. The compliance rate for MD Anderson Cancer Center at Cooper was at 88%, compared to the state norm of 78% and the national norm 82%.



Spotlight on Ovarian Cancer



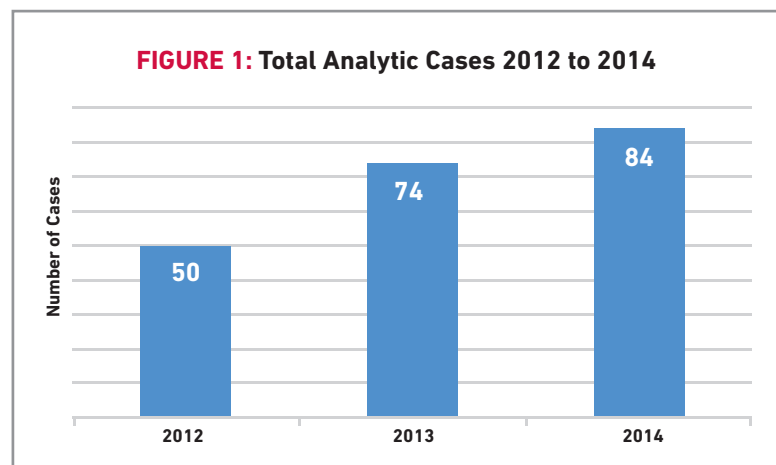
David P. Warshal, MD, FACOG

Vice Chief, Department of
Obstetrics & Gynecology
Head, Division of Gynecologic Oncology
Director, Gynecologic Cancer Center
MD Anderson Cancer Center at Cooper

The term ovarian cancer classically refers to a heterogeneous group of malignancies that include epithelial, stromal and germ cell cancers. Epithelial ovarian malignancies (EOM) are responsible for 90% of ovarian cancers. The majority of EOMs are high grade serous carcinomas that are histologically and biologically similar to tubal and primary peritoneal cancers. Given the similarities in prognosis and response to treatment, the three are generally considered to be a single entity. In fact, recent studies of BRCA 1 and 2 positive women undergoing risk-reducing bilateral salpingo-oophorectomies have suggested that intraepithelial and early invasive tubal cancers may serve as occult precursor lesions to ovarian and possibly peritoneal cancers. We will therefore include all three sites in this report.

Epidemiology

Ovarian cancer is the second most common gynecologic cancer and the most lethal. It is estimated that in 2015, 21,290 women will be diagnosed with ovarian cancer in the United States and 14,179 individuals will die of their disease. The most recent SEER data estimates an annual risk of 12.7 ovarian cancers per 100,000 women. The incidence is highest in Caucasians (13.4 per 100K) vs. Hispanics (11.3 per 100K) and African Americans (9.8 per 100K). Tumor Registry data from 2010 to 2014 reports on 321 analytic cases involving women with ovarian cancer who received care at Cooper University Health Care. Seventy-five percent of these women were white, while 15% were black, 5% Hispanic and the remainder a variety of other ethnicities. Figure 1 illustrates the number of analytic cases by year which rose from a low of 50 in 2012 to 84 in 2014.



Nationally, the average age at the time of diagnosis of ovarian cancer is 63 years old, with a lifetime risk of 1.4%. The average age at the time of diagnosis for our patients is 60 years with a range of 24 to 96 years. The median age is 61.

Risk Factors

Risk factors for ovarian cancer can be divided into three broad categories. Hormonal or reproductive risk factors include early menarche, late menopause, infertility, and nulliparity. It is hypothesized that incessant ovulation is the common denominator that links these factors. The presence of endometriosis is associated with the development of clear cell and endometrioid ovarian cancers. Germline genetic mutations account for approximately 15% of ovarian cancers, with the vast majority associated with BRCA1 and BRCA2 mutations. The lifetime risk for developing ovarian cancer for carriers of a BRCA 1 or 2 mutation is up to 40% and 25%, respectively. The average age of diagnosis is 50 for individuals with a BRCA1 mutation and 60 with a BRCA2 mutation. The general population has a 1 in 400 risk of harboring a BRCA mutation. Of note in our South Jersey population, Ashkenazi Jews (of Eastern European extraction) have a 10-fold increased risk of carrying 1 of 3 “founder” mutations. Other hereditary syndromes associated with an increased risk for developing ovarian cancer include Lynch, Peutz-Jeghers, Gorlin and Li-Fraumeni syndromes. Environmental risk factors such as use of talc on the perineum, a diet high in fat, and smoking appear to mildly increase the risk for ovarian cancer.

Conversely, factors that reduce the risk for developing ovarian cancer include use of oral contraceptives, multiparity, breast feeding, hysterectomy, bilateral tubal ligation and bilateral salpingo-oophorectomy. Studies are underway evaluating the role of bilateral salpingectomy in young women carrying a BRCA mutation who are not interested in reproduction but would like to preserve their ovaries for hormonal reasons.

Symptoms

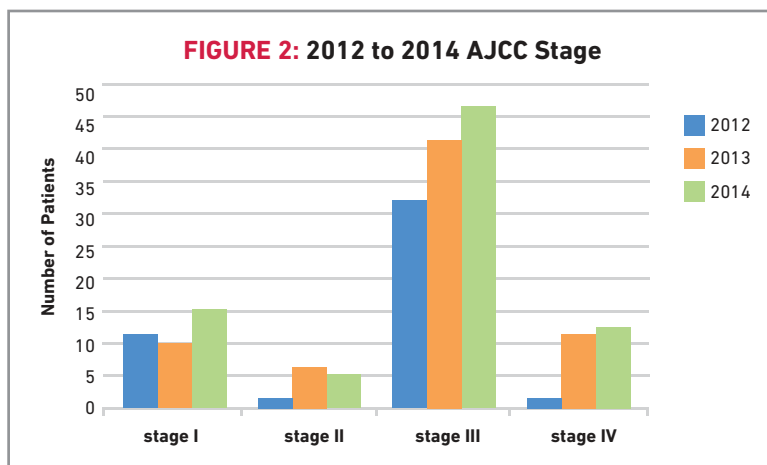
Until recently, the early stages of ovarian cancer have been considered silent, with few or no associated symptoms. Furthermore, there are no good screening tests to identify ovarian cancer at an early stage. It is often not until ovarian cancer patients develop marked abdominal distention, nausea and emesis, or significant pain — symptoms often associated with advanced disease — that the diagnosis is made. Consequently, 2/3 to 3/4 of ovarian cancer patients will have advanced disease at the time of their diagnosis. Recent studies have identified a set of symptoms that may allow for earlier diagnosis. These include abdominal bloating, pelvic pressure or pain, early satiety, and urinary frequency or urgency. It is hoped that making women and their physicians aware of this association will allow for earlier diagnosis.

Review of the stage of our ovarian cancer patients at the time of their diagnosis is consistent with national data. Only 24% of women have stage I disease at the time of diagnosis while 65% have either stage III or IV disease. Three percent of patients were of unknown stage. Figure 2 illustrates the stages of disease from 2012 to 2014.

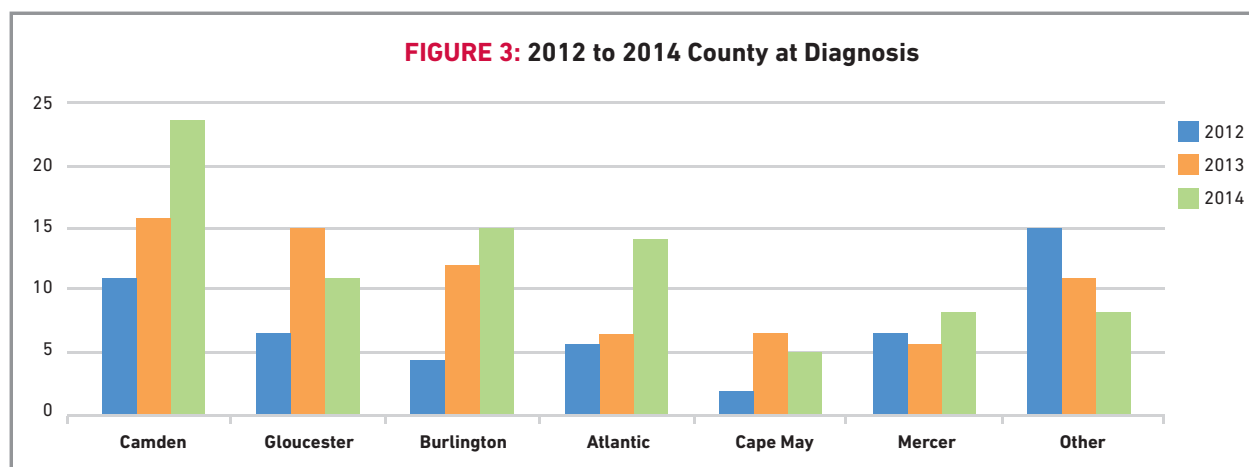
Greater than 55% of our patients resided in Camden, Burlington or Gloucester counties at the time of their diagnosis. The remainder traveled from more distant New Jersey counties, and 4% came from Pennsylvania. Figure 3 shows distribution by county for cases diagnosed 2012 to 2014.

High-grade serous histology accounts for approximately 75% of all identified epithelial ovarian cancers. Endometrioid, clear cell, mucinous and low-grade serous histologies, in this order, account for the vast majority of the remainder. Our population is comparable to the national data in that 66% of our epithelial cancers were serous, 12% were endometrioid, 8% clear cell, 7% mucinous and 8% mixed. Six patients had non-epithelial cancers.

Ovarian cancer is the second most common gynecologic cancer and the most lethal. It is estimated that in 2015, 21,290 women will be diagnosed with ovarian cancer in the United States and 14,179 individuals will die of their disease.



Spotlight on Ovarian Cancer (continued)



Treatment

Patients generally present with ovarian cancer in one of two ways. MD Anderson Cooper's Division of Gynecologic Oncology is often referred patients discovered to have an ovarian mass. Symptoms, personal and family histories, physical findings, and laboratory and radiographic studies are assessed when formulating a management plan. For a proportion of these cases, surgical removal of the mass results in the intraoperative discovery of ovarian cancer. When limited or no gross extra-ovarian disease is evident, surgical staging that includes removal of pelvic and para-aortic lymph nodes, partial omentectomy and the collection of peritoneal and cytologic samples is performed. These patients will generally have stage I or II disease, though approximately 1/3 of these individuals will have stage III ovarian cancers based on their staging studies.

As noted above, the majority of patients with ovarian cancer will present with findings indicative of advanced ovarian cancer. Based on two recent randomized phase 3 studies evaluating the role of neoadjuvant chemotherapy, the management of these patients has undergone a paradigm shift. These studies reveal that, after establishing a diagnosis of ovarian cancer, subjects who received 3 cycles of chemotherapy followed by surgery and 3 more cycles of chemotherapy had similar survival and fewer surgical complications than those who received the standard treatment of surgery followed by 6 cycles of chemotherapy. If an adequate response to treatment is not demonstrated following 3 cycles of neoadjuvant chemotherapy, surgery may be omitted.

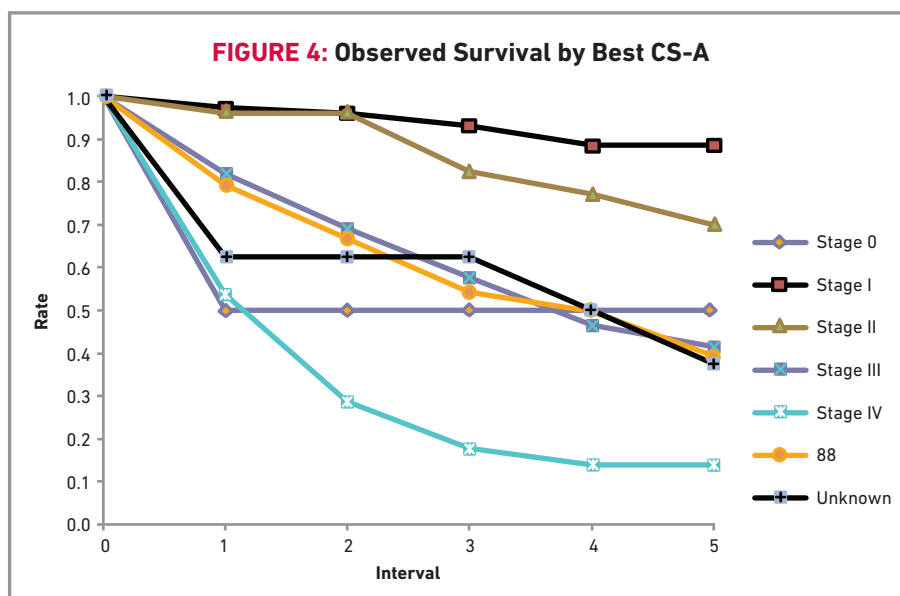
When the initial evaluation of these patients indicates that surgical removal of all gross disease (debulking) is unlikely, we now initiate treatment using this neoadjuvant chemotherapy approach. For individuals whose disease may be amenable to optimal debulking, we employ an MD Anderson protocol for which patients undergo laparoscopy for further evaluation of their disease state, followed by debulking surgery if this appears feasible.

Review of our MD Anderson Cooper experience from 2014, which was prior to full implementation of our neoadjuvant protocol, finds that 55 (66%) of our patients underwent primary surgery followed by chemotherapy. Tumor registry records indicate that 15 (18%) patients were managed surgically and either did not require adjuvant chemotherapy or did not receive it through our institution. Ten patients (12%) received chemotherapy without surgery, whereas 2 individuals were diagnosed with ovarian cancer but received no treatment through our center.

Survival Data

As reported by the American Cancer Society, the relative 5-year survival rates for patients with ovarian cancer are as follows: stage I - 90%, stage II - 70%, stage III - 39% and stage IV - 17%. Figure 4 illustrates the Kaplan-Meier survival curves for our index cases from 2006 to 2010. Cooper tumor registry data reveals the following relative 5-year survival by stage for our ovarian cancer patients: stage I - 98%, stage II - 82%, stage III - 52% and stage IV - 17%. Apart from our stage IV data that is identical to the national data, relative 5 years survival by stage for our patients appears to exceed national standards.

Spotlight on Ovarian Cancer (continued)



Comprehensive Care at MD Anderson Cancer Center at Cooper

The MD Anderson Cooper **Gynecologic Cancer Program** is one of the region's leading providers of innovative prevention, detection and treatment for women with gynecologic cancers. Our program provides all available treatment options including surgery, chemotherapy and radiation therapy. Counseling, complementary medicine therapies and other support services are available to assist women and their families in coping with their cancer.

Through our partnership with MD Anderson Cancer Center, one of the nation's leading cancer centers, patients have access to the same cancer treatment plans delivered at MD Anderson in Houston, Texas, as well as access to the latest generation of diagnostic and treatment technologies and groundbreaking clinical trials.

Each of our patients is under the care of a team of specialists that meets regularly to determine and implement the optimal treatment regimen. This specialized team consists of:

- Gynecologic oncologists
- Radiation oncologists
- Pathologists
- Radiologists
- Interventional radiologists
- Palliative care specialists
- Nurse practitioners
- Nurse navigators
- Clinical research coordinators
- Other medical professionals and support staff

The multidisciplinary team works collaboratively to provide each patient with a comprehensive evaluation of their cancer and an individualized treatment plan. In addition, we work closely with our colleagues at MD Anderson in Houston and consult with them during our weekly tumor board meeting, where patient cases are discussed and treatment recommendations are determined by the entire team. This collaboration continues throughout the patient's treatment process with ongoing monitoring and re-evaluation. This unique approach leads to well-coordinated, quality patient care and superior patient satisfaction.

Most gynecologic cancers require multifaceted treatment plans. Our skilled physicians offer minimally invasive and robotic surgery in addition to the standard surgical procedures, chemotherapy, technologically advanced radiation therapies, innovative hormonal treatments and a variety of investigational protocols.

Our gynecologic oncologists are experts in gynecological chemotherapy and offer traditional chemotherapy as well as intraperitoneal chemotherapy (for advanced ovarian cancer). They monitor patients closely for any side effects and prescribe medications to minimize discomfort.

The Gynecologic Cancer Program offers multiple office locations throughout South Jersey and in Bucks County, Pennsylvania.



Making Cancer History®

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