Breast cancer patient Liv Arnold consults with members of her care team.
Dear Patients and Caregivers,

We believe all patients should have access to as much information as possible in order to make the most informed decisions about their care.

As part of that commitment, we are pleased to share with you this sixth annual edition of our Patient Treatment Results. Cancer Treatment Centers of America® (CTCA) was among the first cancer care providers in the nation to make treatment results available to the general public, and to our knowledge this is the most comprehensive presentation of treatment results now published by any cancer care provider. It reflects the quality of clinical care we have provided to patients from around the world at our five comprehensive care and research centers in Atlanta, Chicago, Philadelphia, Phoenix and Tulsa.

Five-year survival rates for CTCA® patients treated between 2000 and 2015 are provided for 11 cancer types. For reference purposes, we have also provided companion data for the same cancer types during the same dates as reported by the National Cancer Institute in its Surveillance, Epidemiology and End Results (SEER) Program, which is undertaken in collaboration with the American College of Surgeons and American Cancer Society.

The CTCA patient survival data appearing in this publication were independently analyzed and interpreted by Bert Spilker, MD, PhD, and Chengjie Xiong, PhD. Their biographical sketches are included in this publication. Neither is affiliated with, or employed by, CTCA.

Additionally, we have included data on various safety and quality of care measurements during treatment, critically important results that are not reported by most other cancer providers, as well as patient self-reports of quality of life and the overall patient experience data.

All data sources and survey methodologies are provided in their respective sections throughout the publication.

We hope you find this important information valuable, and we would be pleased to respond to any feedback or questions you may have about the results.

Thank you for your interest in Cancer Treatment Centers of America.

Sincerely,

Maurie Markman, MD
President, Medicine & Science
Cancer Treatment Centers of America
Comprehensive Cancer Care Network
# Table of Contents

**PATIENT TREATMENT RESULTS 2018 | 2019**

## SECTION 1

**About this Report**
- 3 Why We Publish Our Treatment Results
- 3 Our Commitment to Transparency
- 3 Our Beginnings and Beliefs
- 4 Accessibility, Services and Insurance
- 4 Sponsors of this Report
- 5 CTCA Patient Demographics

## SECTION 2

**Our Length of Life Results**
- 7 Independent Researchers’ Letter
- 8 Our Statistical Methodology
- 11 Breast Cancer
- 12 Colon Cancer
- 13 Esophageal Cancer
- 14 Kidney Cancer
- 15 Non-Small Cell Lung Cancer
- 16 Small Cell Lung Cancer
- 17 Ovarian Cancer
- 18 Pancreatic Cancer
- 19 Prostate Cancer
- 20 Rectal Cancer
- 21 Stomach Cancer

## SECTION 3

**Our Quality of Life Results**
- 23 Assessment Background and Methodology
- 25 Quality of Life Results by Cancer Type
- 30 Quality of Life Results by Facility and in Aggregate for Select Measures

## SECTION 4

**Our Patient Experience Results**
- 33 HCAHPS Inpatient Survey Background and Methodology
- 34 Inpatient Satisfaction Results
- 40 Outpatient and Ambulatory Surgery Satisfaction Survey Background, Methodology and Results
- 44 Outpatient Satisfaction Survey Background, Methodology and Results
- 50 Physician Transparency Star Rating Background, Methodology and Results

## SECTION 5

**Our Patient Safety and Quality Results**
- 51 Philosophy and Methodology
- 52 AHRQ Hospital Survey on the Culture of Patient Safety
- 54 Quality Metrics
- 58 Overall QOPI Quality Score & QOPI Metrics
- 62 MACRA Quality Measure Performance

## SECTION 6

**Our Clinical Leadership**
- 61 Medicine & Science Clinical Leadership
- 61 Enterprise Clinical Leadership
- 67 Cancer Institutes Leadership
- 69 Chiefs of Staff
- 70 Medicine & Science Executive Team

## SECTION 7

**Our Research**
- 73 Publications and Presentations
Our Vision
To be recognized and trusted by people living with cancer as the premier center for healing and hope.

Our Mission
CTCA® is the home of integrative and compassionate cancer care.

We never stop searching for and providing powerful and innovative therapies to heal the whole person, improve quality of life and restore hope.

Our Values
Hopeful
Compassionate
Empowering
Ethical
Responsive
Innovative
Team Spirited
About this Report

Our Length of Life Results

Our Quality of Life Results

Our Patient Experience Results

Our Patient Safety and Quality Results

Our Clinical Leadership

Our Research Publications
“The side effects I experienced were mostly minimal, but chemotherapy decreased my white blood cell count. I had two medications to help boost the white blood cell count, one of which I needed to self-inject at home. I was resistant because I’m uncomfortable with needles. But the infusion nurse showed me how to do it and I became more confident with each injection. Getting through this time showed me that I could do something that I thought I couldn’t.”

Nicolle Suratte | BREAST CANCER

No case is typical. You should not expect to experience these results.
Why We Publish our Treatment Results

At Cancer Treatment Centers of America® (CTCA), we believe in empowering patients. Patients deserve access to information—especially health outcomes, including survival, patient safety and quality care data as well as patient self-reported data on care experience and symptom management. When patients have access to information about the medical professionals and centers to whom they entrust their lives, they are able to make more informed decisions about their personalized care plans.

OUR COMMITMENT TO TRANSPARENCY

At CTCA®, we believe that transparency in the publication of our treatment results is vital to upholding our promise to patients and their families. Regardless of the outcome, it holds us accountable to continually improve the care we deliver. We engage leading independent research organizations, such as Bert Spilker & Associates, LLC, Press Ganey® and Healthcare Performance Improvement (HPI®) to conduct various analyses of our treatment results. We utilize valid and tested tools and participate in nationally recognized activities to further our commitment to safe, high quality care for the patients we serve.

OUR BEGINNINGS

In the early 1980s, Richard J Stephenson and his family suffered the loss of their mother, Mary Brown Stephenson, to cancer. When she died, her grieving son and his family asked, “What would it take to actually change the face of cancer?”

In 1988, CTCA was born, founded on what is now known as the Mother Standard® of care—a patient-centered approach that combines compassion with advanced technology and treatment options. The American International Hospital in Zion, Illinois, located between Chicago and Milwaukee, served as the first CTCA location. With Richard as chairman of the board, the cancer program became one of the first in the country to offer a full range of treatment services—surgery, chemotherapy and radiation therapy, as well as immunotherapy, nutrition, mind-body medicine and spiritual support.

In 1990, CTCA established a second hospital, located in the former City of Faith building in Tulsa, Oklahoma, establishing itself as a premier center of hope and healing for cancer patients.

As demand grew, the CTCA hospital in Zion was expanded twice. In 1991, CTCA broke ground on a five-story, 78,886-square-foot facility. Then in 2015, a six-story 168,078-square-foot inpatient tower became the centerpiece of a campus-wide modernization.

CTCA also expanded its presence in Tulsa by opening a brand-new state-of-the-art hospital in 2005. The stunning 195,845-square-foot center became Oklahoma’s only major hospital completely focused on treating cancer. Also in 2005, CTCA Philadelphia opened its doors, becoming the first CTCA hospital on the East Coast.

CTCA Phoenix, a modern 210,000-square-foot facility located in Goodyear, Arizona, (outside of Phoenix) joined the CTCA family of hospitals in 2008. In 2012, CTCA Atlanta began welcoming patients to its location near historic Newnan, Georgia.

A banner year for CTCA came in 2018, with the opening of three new Outpatient Care Centers: Downtown Chicago (located on the Magnificent Mile), North Phoenix and Scottsdale. The goal of the Outpatient Care Centers is to offer patients increased access to state-of-the-art technologies and personalized cancer care in locations convenient to where they work and live.

OUR BELIEFS

The CTCA Comprehensive Cancer Care Network of hospitals and outpatient care centers offers a wide spectrum of state-of-the-art cancer treatments—conventional and integrative—as part of our model of care, which treats every person differently based on their unique needs. For this reason, patients, physicians, employers and insurers can depend on CTCA to offer comprehensive, compassionate and truly personalized cancer care.

At CTCA, patients are served by a dedicated, multidisciplinary team of physicians, nurses, registered dietitians and other clinicians, all working together. These teams are comprised of individuals with extensive experience in treating cancer. Together they develop and implement an individualized treatment plan for each patient that honors the individual’s health and life goals.
Accessibility, Services and Insurance: Reducing the Stress of Cancer Care

ACCESSIBILITY

CTCA understands that speed and accessibility of care are important to patients and their caregivers, which is why we are dedicated to providing efficient, convenient cancer care for our patients while reducing their stress as much as possible.

Our hospitals and outpatient care centers are located in or near five major U.S. cities, which are geographically dispersed: Atlanta, Chicago, Philadelphia, Phoenix and Tulsa. Each city has an airport that is serviced by most major airlines. We assist many patients with travel arrangements, including lodging accommodations for themselves, their caregivers and families either on-site at our hospitals or in nearby hotels.

Some of our treatment services, such as chemotherapy, are available seven days a week for the convenience of patients and their caregivers. In fact, CTCA was among the first U.S. cancer care systems to offer weekend appointments.

HEALTH INSURANCE AND VERIFICATION

CTCA Patient Advocates verify the insurance and benefits of prospective patients, including in-network and out-of-network benefits, deductibles, plan coverage percentages and co-pays. The verification process typically takes just 24 hours. CTCA financial counselors are also available to patients and caregivers should they need assistance.

CTCA maintains contracts with many major national and regional insurers, employers and other health care companies that have approved patient access to CTCA hospitals. We treat patients who have both in-network and out-of-network benefits with these carriers.

SPONSORS OF THIS REPORT

Maurie Markman, MD
President
Medicine & Science

A nationally-renowned medical oncologist, Dr. Markman is President of Medicine and Science, a member of the Office of the Chairman and serves on the National Board of Directors at CTCA. Dr. Markman has more than 20 years of experience in cancer treatment and gynecologic research.

For his remarkable achievements in clinical practice and oncology research, Dr. Markman was recently named by OncLive® as an inductee of the 2018 Giants of Cancer Care® recognition program. In 2011, he received the esteemed American Society of Clinical Oncology (ASCO) Statesman Award. Presented annually, the Statesman Award recognizes individual ASCO members who have shown extraordinary volunteer service, dedication and commitment to ASCO, their hospital community and the patients they serve for at least 20 years.

Prior to joining CTCA, Dr. Markman served as the Vice President for Clinical Research and Chairman of the Department of Gynecologic Medical Oncology at MD Anderson Cancer Center in Houston. Prior to that, Dr. Markman served as Chairman of the Department of Hematology/Oncology and Director of the Taussig Cancer Center at the Cleveland Clinic Foundation, and Vice Chairman of the Department of Medicine at Memorial Sloan-Kettering Cancer Center in New York.

George Daneker Jr., MD
Chief Medical Officer
Medicine & Science

Dr. George Daneker brings nearly 30 years of surgical experience to his position as Chief Medical Officer at CTCA. With a career covering the breadth of surgical oncology, Dr. Daneker has had extensive experience in the management of patients with intra-abdominal cancers (liver, pancreas, bile duct, stomach, intestine, colorectal, adrenal), skin and soft tissue cancers (melanoma and sarcoma) and breast cancer. Board certified, he is also skilled at advanced, high-tech procedures, such as laparoscopic surgery and robotic procedures.

Dr. Daneker first joined the CTCA team in 2011 as a staff surgical oncologist at our Philadelphia, Pennsylvania hospital and later served as Chief of Staff at the Atlanta, Georgia hospital. Prior to working with CTCA, Dr. Daneker served as the Director of Surgical Oncology, Oncology Research and Robotic-Assisted General Surgery at St. Joseph’s Hospital (now Emory Healthcare) in Atlanta.

He has served as an adjunct faculty member of the School of Biology at Georgia Institute of Technology, adjunct professor at the Center for Cancer Research and Therapeutic Development at Clark Atlanta University, assistant professor in the Department of Surgery and Winship Cancer Center at Emory University School of Medicine and adjunct professor of biology at Georgia Tech and Morehouse School of Medicine.
CTCA Patient Demographics

JULY 1, 2016 - JUNE 30, 2017

Patient demographics are based on data provided by the tumor registry from July 1, 2016 - June 30 2017

New Patients\(^1\) **ANALYTIC AND NON-ANALYTIC**\(^2\)

<table>
<thead>
<tr>
<th></th>
<th>Analytic Patients</th>
<th>Non-Analytic Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>3,934</td>
<td>4,977</td>
</tr>
<tr>
<td>Percentage</td>
<td>44%</td>
<td>56%</td>
</tr>
</tbody>
</table>

Cancer Types **BY STAGE** Analytic Patients Only

<table>
<thead>
<tr>
<th>Stage</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>6%</td>
<td>224</td>
</tr>
<tr>
<td>Stage 0</td>
<td>N/A</td>
<td>1,266</td>
</tr>
<tr>
<td>Stage I</td>
<td>19%</td>
<td>764</td>
</tr>
<tr>
<td>Stage II</td>
<td>21%</td>
<td>804</td>
</tr>
<tr>
<td>Stage III</td>
<td>17%</td>
<td>670</td>
</tr>
<tr>
<td>Unknown</td>
<td>3%</td>
<td>111</td>
</tr>
<tr>
<td>Total</td>
<td>2%</td>
<td>224</td>
</tr>
</tbody>
</table>

New Patients\(^1\) **BY CANCER TYPE**

Analytic and Non-Analytic Patients

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Analytic Patients</th>
<th>Non-Analytic Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast</td>
<td>1,936</td>
<td>21.6%</td>
</tr>
<tr>
<td>Colon</td>
<td>670</td>
<td>7.5%</td>
</tr>
<tr>
<td>Esophageal</td>
<td>129</td>
<td>1.4%</td>
</tr>
<tr>
<td>Kidney</td>
<td>300</td>
<td>3.3%</td>
</tr>
<tr>
<td>Lung</td>
<td>1,014</td>
<td>11.3%</td>
</tr>
<tr>
<td>Ovarian</td>
<td>218</td>
<td>2.4%</td>
</tr>
<tr>
<td>Pancreatic</td>
<td>551</td>
<td>6.1%</td>
</tr>
<tr>
<td>Prostate</td>
<td>1,006</td>
<td>11.2%</td>
</tr>
<tr>
<td>Rectal</td>
<td>330</td>
<td>3.7%</td>
</tr>
<tr>
<td>Stomach</td>
<td>178</td>
<td>2.0%</td>
</tr>
<tr>
<td>Other</td>
<td>2,639</td>
<td>29.4%</td>
</tr>
</tbody>
</table>

---

1 The overall patient population includes patients evaluated across all CTCA hospitals, including those who received non-cancer directed therapy or received palliative care only.

2 Analytic patients are those who are diagnosed and/or received all or part of their first course of cancer treatment at CTCA. Non-analytic patients are those who received subsequent cancer treatment at CTCA due to progressive or recurrent disease.
CTCA Patient Demographics
JULY 1, 2016 - JUNE 30, 2017

New Patients\(^1\) BY GENDER
Analytic and Non-Analytic

<table>
<thead>
<tr>
<th>Gender</th>
<th>Analytic</th>
<th>Non-Analytic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>3,994</td>
<td>4,977</td>
</tr>
<tr>
<td>Female</td>
<td>8,971</td>
<td>3,934</td>
</tr>
</tbody>
</table>

Female: 55%
Male: 45%

New Patients\(^1\) BY AGE GROUP
Analytic and Non-Analytic

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Analytic</th>
<th>Non-Analytic</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-29</td>
<td>143</td>
<td>111</td>
</tr>
<tr>
<td>30-39</td>
<td>478</td>
<td>224</td>
</tr>
<tr>
<td>40-49</td>
<td>19%</td>
<td>N/A</td>
</tr>
<tr>
<td>50-59</td>
<td>6%</td>
<td>28%</td>
</tr>
<tr>
<td>60-69</td>
<td>21%</td>
<td>51%</td>
</tr>
<tr>
<td>70-79</td>
<td>1,363</td>
<td>1,951</td>
</tr>
<tr>
<td>80-89</td>
<td>568</td>
<td>1,097</td>
</tr>
<tr>
<td>90+</td>
<td>7</td>
<td>6</td>
</tr>
</tbody>
</table>

New Patients\(^1\) BY STATE
Analytic and Non-Analytic

[Map showing states with patient counts]
“I’m so thankful to CTCA for working with me and providing me a multidisciplinary team to integrate physical, emotional and spiritual aspects into my care. For me, today, cancer is like a chronic disease. I still have stage IV cancer, and I return to CTCA once a month for treatment. The disease probably will never go away, but I am learning to manage it and live with it gracefully. I am continuing to do the things that I normally would do every day.”

Fred Allen | PROSTATE CANCER

No case is typical. You should not expect to experience these results.
Dear Reader:

We analyzed the data provided by Cancer Treatment Centers of America® (CTCA) and the National Cancer Institute’s Surveillance, Epidemiology, and End Results (SEER) Program database from 2000 through 2015 for the purpose of compiling survival rates for eleven (11) cancers of interest. Our efforts employed the statistical guidelines that govern these types of analyses by leading practitioners. Although the lack of direct comparability of the two data sets imposes certain limitations on the interpretation of the results as stated elsewhere in this publication, we believe the analyses provide an accurate representation of survival rates for CTCA® patients.

Sincerely,

Bert Spilker, PhD, MD  Chengjie Xiong, PhD

BERT SPILKER, PHD, MD

Bert Spilker, PhD, MD, is the founder of Bert Spilker & Associates, LLC (BS&A), a consulting company working with more than 100 health care clients and contracting with over 150 experts on a variety of research areas of specialization.

Prior to forming BS&A, Dr. Spilker served as the Senior Vice President of Scientific and Regulatory Affairs for Pharmaceutical Research and Manufacturers of America (PhRMA) based in Washington, D.C. where he represented the U.S. pharmaceutical industry both nationally and internationally. Dr. Spilker also served as President and co-founder of Orphan Medical, Inc., a pharmaceutical company that developed and marketed medical products for patients with orphan/rare diseases.

He currently serves as Clinical Professor of Pharmacy Practice at the University of Minnesota and Adjunct Professor of Medicine and Clinical Professor of Pharmacy at the University of North Carolina at Chapel Hill.

Dr. Spilker completed his medical training in pharmacology and internal medicine at Cornell Medical College, State University of New York (Downstate Medical Center), University of California at San Francisco, University of Miami Medical School (PhD to MD Program) and Brown University Medical School.

CHENGJIE XIONG, PHD, MS

Chengjie Xiong, PhD, MS, studies novel statistical design of experiments and clinical trials, linear and nonlinear mixed models, longitudinal data analysis, survival analysis and reliability, diagnostic accuracy, advanced meta-analysis, categorical data analysis, order restricted statistical inferences, and their applications in medicine, public health, biology, education and engineering.

Dr. Xiong remains active in interdisciplinary research and has provided statistical consulting for academia, private industries and government agencies across the country, including directing the database management and statistical analyses for several National Institute of Health (NIH) funded projects.

He received a BS in Mathematics from Xiangtan University (China), an MS in Applied Mathematics from Peking University (China), and a PhD in Statistics from Kansas State University.
Statistical Methodology

DATA SELECTION

Two databases were considered for this study. The National Cancer Institute’s Surveillance, Epidemiology, and End Results (SEER) Program database and the National Cancer Database (NCDB).

The SEER database is an authoritative data set created for use as an epidemiological tool to monitor the incidence and mortality of cancer in the United States. SEER collects patient demographics, tumor characteristics and survival data from 17 regional registries throughout the U.S., representing 28 percent of the U.S. population.

The NCDB compiles cancer registry data from cancer programs in the U.S. and Puerto Rico, capturing approximately 75% of newly diagnosed cancers in these areas. It includes data on patient characteristics, tumor staging, tumor histology, type of first treatment, disease recurrence and survival using standardized coding definitions. It is commonly used to guide quality improvement and pursue investigator-initiated research questions. The NCDB provides insight into analytic cancer diagnoses and primary treatments. The main limitation of the data is that the cohorts are not population-based; they are identified from the hospitals at which the patients presented for diagnosis and/or treatment.

The SEER database was selected to conduct these analyses because of its comprehensive content and access to patient-level data (and because of restrictions imposed on the use of the NCDB database for comparative analysis and external reporting purposes).

The SEER comparison sample was chosen by the categories in categorical factors (e.g., cancer stages) with the CTCA cancer cohort and selecting the overlapping ranges in continuous factors (e.g., age at diagnosis) from the CTCA cancer cohort. These factors affect survival outcomes. The latest SEER Limited-Use Database (2016) was used to select the SEER comparison sample. The final survival analyses included only patients from both the CTCA and SEER databases whose following cancer characteristics were available from the two databases: SEER Summary Stages, primary tumor sites, cancer histologic types, gender and age at initial diagnosis. For example, if a specific SEER Summary Stage had only patients in one database, none of these patients were used in the analyses. To match the age at initial diagnosis, the range (i.e., minimum and maximum ages) was computed for each sample. Only patients whose age at initial diagnosis fell into the overlap of the two ranges from the CTCA and SEER samples were included in the comparative survival analyses.
METHODOLOGY

For both the CTCA and SEER samples, only cancer patients whose initial diagnosis occurred between 2000 and 2015 were analyzed. Cancer cases with missing information on either the date of initial diagnosis or date of last contact were deleted from the CTCA database because the survival time or censoring time for such patients could not be computed. Cancer patients with missing SEER Summary Stages were also excluded from the analyses. For patients with multiple cancers in the SEER and CTCA databases, only the first or primary cancer diagnosed was used for the survival comparisons. Patients with a histologic code (ICD-O-3) between 9590 and 9989 were excluded from the analyses because these histologic types are generally not included by SEER for any non-hematopoietic cancer types. Patients who did not receive treatment from CTCA were also excluded from the analyses.

The survival outcomes from the SEER database were provided by the SEER Limited-Use Data File as the number of completed months. These numbers were then converted to the number of years by dividing the number of total months by 12. Although the exact dates for the initial diagnosis and death were available in the CTCA database, the CTCA survival outcomes were computed using the same methodology as the SEER database; the number of completed months was computed by first dividing the exact days from the initial diagnosis to death, or last contact for those who remained alive, by 365.24 (as was done by SEER), then rounding down to the number of completed months, and finally dividing the result by 12. For those patients who were still alive or lost to follow-up at the time of entering the databases, survival time was treated as statistically censored at the difference between the date of last contact and the date of initial diagnosis.¹

The survival curve for each cancer type (defined as the probability of a cancer patient’s survival as a function of time from the initial diagnosis) was estimated by the Kaplan-Meier nonparametric product-limit estimator.¹ Three statistical tests were then used to compare the survival curves between the CTCA database and the SEER database.

Two of these tests, the log rank test and Wilcoxon test, are nonparametric and thus, valid to compare survival curves that have any shapes.¹ These tests are different, however, in their sensitivity (or the power) to detect survival differences. The log rank test is considered the most sensitive or powerful when the risk or the hazard of death between CTCA and SEER samples is approximately proportional, whereas the Wilcoxon test tends to be more sensitive when the ratio of hazards of death is higher at earlier times than at later ones. The third test, the likelihood ratio test, is the most restrictive of the three in the sense that it is appropriate to use only for special survival curves (called exponential distributions) whose hazards of death are constant across time.²

Ninety-five percent confidence interval (95% CI) estimates for the individual survival rates, as well as the difference in survival rates between the CTCA and SEER samples at specific time points after diagnosis, were based on the estimated survival curves and the relevant asymptotic normal distributions. All these analyses were implemented using the standard SAS package of statistical tests (i.e., SAS/PROC LIFETEST).³ Adjusted analyses were also done (results not shown) using the stratified log rank test and the Wilcoxon test as well as Cox’s proportional hazards models to compare the survival outcomes between the CTCA and SEER samples after adjusting for the effects of age at diagnosis, gender (except for breast and prostate cancers), race, marital status at diagnosis, insurance status at diagnosis and year of initial diagnosis. The technical details of these statistical analyses are available from CTCA.

LIMITATIONS

These analyses have some limitations. First, although a large sample of patients was available from the SEER program across many geographic regions in the U.S., both samples, including the sample from CTCA, are convenience samples. This precludes the assumption of a causal interpretation of the statistical inferences. Second, although some types of matching, as described earlier, were implemented to select the appropriate SEER and CTCA comparison samples, the distributions of important covariates such as age at initial diagnosis, gender, race, marital status at diagnosis, insurance status at diagnosis and year of initial diagnosis were not exactly the same between the CTCA sample and SEER sample. Hence, even with the adjusted analyses, possible confounding of these factors to the analyses and results may not be ruled out. Further, many factors (e.g., household income, mobility, etc.) other than those considered in the analyses and available from the databases may have contributed to the actual survival outcomes. As a result of these factors, the possible confounding of the results of these analyses may not be ruled out. Finally, the survival analyses were based on the statistical comparisons of the rate of death from all possible causes, not solely cancer-specific death. These data are not included in the CTCA data set and, therefore, not available for statistical comparison.

Visit cancercenter.com/ctca-results for further information about the methodology used to calculate the CTCA results and read about the analysis limitations.
Length of Life Results

**BREAST CANCER**

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for breast cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of breast cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

- This analysis included breast cancer patients from CTCA who had primary tumor sites (as coded by ICD-O-2 (1973+)) from C500 to C509, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.
- Breast cancer patients with distant (metastatic) disease from the SEER database and breast cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

### BREAST CANCER SURVIVAL RATE

Patients Diagnosed with Distant (Metastatic) Cancer Between 2000-2015

CTCA (n=632) and SEER* (n=38,935)

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for colon cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of colon cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

• This analysis included colon cancer patients from CTCA who had primary tumor sites (as coded by ICD-O-2 (1973+)) from C180 to C189, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.

• Colon cancer patients with distant (metastatic) disease from the SEER database and colon cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
Length of Life Results

ESOPHAGEAL CANCER SURVIVAL RATE

Patients Diagnosed with Distant (Metastatic) Cancer Between 2000-2015
CTCA (n=291) and SEER* (n=15,311)

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for esophageal cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of esophageal cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

- This analysis included esophageal cancer patients from CTCA who had primary tumor sites (as coded by ICD-O-2 (1973+)) from C150 to C159, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.

- Esophageal cancer patients with distant (metastatic) disease from the SEER database and esophageal cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
Length of Life Results

**KIDNEY CANCER**

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for kidney cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of kidney cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

- This analysis included kidney cancer patients from CTCA who had primary tumor site (as coded by ICD-O-2 (1973+)) of C649, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.

- Kidney cancer patients with distant (metastatic) disease from the SEER database and kidney cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

**KIDNEY CANCER SURVIVAL RATE**

Patients Diagnosed with Distant (Metastatic) Cancer Between 2000-2015

CTCA (n=228) and SEER* (n=20,824)

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
Length of Life Results

NON-SMALL CELL LUNG CANCER

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for non-small cell lung cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of non-small cell lung cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

• This analysis included non-small cell lung cancer patients from CTCA who had primary tumor sites (as coded by ICD-O-2 (1973+)) from C340 to C343 or from C348 to C349, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.

• Non-small cell lung cancer patients with distant (metastatic) disease from the SEER database and non-small cell lung cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

NON-SMALL CELL LUNG CANCER SURVIVAL RATE

Patients Diagnosed with Distant (Metastatic) Cancer Between 2000-2015
CTCA (n=2,336) and SEER* (n=283,704)

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
Length of Life Results

SMALL CELL LUNG CANCER

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for small cell lung cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of small cell lung cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

- This analysis included small cell lung cancer patients from CTCA who had primary tumor sites (as coded by ICD-O-2 (1973+)) from C340 to C343 or from C348 to C349, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.

- Small cell lung cancer patients with distant (metastatic) disease from the SEER database and small cell lung cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
Length of Life Results

OVARIAN CANCER

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for ovarian cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of ovarian cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

- This analysis included ovarian cancer patients from CTCA who had primary tumor site (as coded by ICD-O-2 (1973+)) of C569, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.

- Ovarian cancer patients with distant (metastatic) disease from the SEER database and ovarian cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

OVARIAN CANCER SURVIVAL RATE

Patients Diagnosed with Distant (Metastatic) Cancer Between 2000-2015
CTCA (n=237) and SEER* (n=40,893)

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
Length of Life Results

PANCREATIC CANCER

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for pancreatic cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of pancreatic cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

• This analysis included pancreatic cancer patients from CTCA who had primary tumor sites (as coded by ICD-O-2 (1973+)) from C250 to C254 or from C257 to C259, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.

• Pancreatic cancer patients with distant (metastatic) disease from the SEER database and pancreatic cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

PANCREATIC CANCER SURVIVAL RATE

Patients Diagnosed with Distant (Metastatic) Cancer Between 2000-2015
CTCA (n=1,555) and SEER* (n=64,946)

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
Length of Life Results

**PROSTATE CANCER**

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for prostate cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of prostate cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

- This analysis included prostate cancer patients from CTCA who had primary tumor site (as coded by ICD-O-2 (1973+)) of C619, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.
- Prostate cancer patients with distant (metastatic) disease from the SEER database and prostate cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

**PROSTATE CANCER SURVIVAL RATE**

Patients Diagnosed with Distant (Metastatic) Cancer Between 2000-2015
CTCA (n=321) and SEER* (n=34,487)

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
Length of Life Results

**RECTAL CANCER**

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for rectal cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of rectal cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

- This analysis included rectal cancer patients from CTCA who had primary tumor site (as coded by ICD-O-2 (1973+)) of C209, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.

- Rectal cancer patients with distant (metastatic) disease from the SEER database and rectal cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

**RECTAL CANCER SURVIVAL RATE**

Patients Diagnosed with Distant (Metastatic) Cancer Between 2000-2015

CTCA (n=243) and SEER* (n=15,179)

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
Length of Life Results

STOMACH CANCER

The chart below reflects the Cancer Treatment Centers of America® (CTCA) and SEER survival rates for stomach cancer patients with distant (metastatic) disease who were diagnosed between 2000 and 2015. It includes estimates of the percentage of stomach cancer patients with distant (metastatic) disease who survived for six months to five years after the initial diagnosis, as recorded in the CTCA® and SEER databases.

- This analysis included stomach cancer patients from CTCA who had primary tumor sites (as coded by ICD-O-2 (1973+)) from C160 to C169, were diagnosed from 2000 to 2015 (including 2000 and 2015) and received at least part of their initial course of treatment at CTCA. All patients included in the analysis were considered analytic patients by CTCA.

- Stomach cancer patients with distant (metastatic) disease from the SEER database and stomach cancer patients with distant (metastatic) disease from the CTCA database were included in the analysis. In addition, the analysis excluded patients whose medical records were missing any of the following information:
  - SEER Summary Stages
  - Primary tumor sites
  - Cancer histologic types
  - Date of initial diagnosis
  - Age at initial diagnosis
  - Gender
  - Race

**STOMACH CANCER SURVIVAL RATE**

Patients Diagnosed with Distant (Metastatic) Cancer Between 2000-2015

CTCA (n=372) and SEER* (n=22,990)

*The SEER data represent national results over a large number of institutions and have been included for illustrative purposes. They are not intended to represent a controlled study and/or a perfect analysis of the CTCA data because of variability in the sample sizes of the two databases, the clinical condition(s) of the patients treated and other factors.
“During a routine scan in August 2017, a previous spot where the cancer had spread to my right lung had started growing. I went in the next day for a biopsy. It was very scary trying to imagine what the next few days, weeks or months might look like. My medical oncologist called the day the results arrived, and she had already reached out to specialists and had multiple options ready for me, available the next week. I chose to receive stereotactic body radiation therapy (SBRT) in October 2017 for 10 days on metastatic tumors in my left and right lungs.”
Our Quality of Life Results

Assessment Background and Methodology

Cancer Treatment Centers of America® (CTCA) was among the first U.S. cancer hospitals to use quality of life metrics as part of its routine assessment of patient well-being and quality of care. Research demonstrates Patient Self-Reported Outcome (PSRO) data are a valuable part of a patient’s treatment plan. Several studies validate the potential of routine assessment data in improving both the precision and degree of patient-centered care – making sure the right care is delivered to the right patients at the right time. The benefits of PSRO data not only include better health-related quality of life and fewer emergency room visits, but also improvements in health service outcomes and survival.1,2,3

CTCA® patients self-report their symptoms and quality of life concerns as part of our patient evaluation process. This process includes a symptom assessment, called the Symptom Inventory Tool (SIT), that patients complete in correspondence with their treatment cycle, not more frequently than every 21 days. Upon arrival, patients complete the electronically administered SIT using a tablet computer. CTCA team members utilize these results as part of their patient assessment and evaluation process. These two complementary processes (patient self-assessment and reflection, and analyzing the data as a starting point for discussion) help CTCA care teams readily identify when patients may benefit from referral and/or more directed intervention to help them cope with their symptoms, side effects and quality of life concerns. The data also exist real-time within the electronic health record. Greater than 94 percent of patients voluntarily participate in the SIT assessments.


IN SECTION 3

• CTCA measures and intervenes on 27 different indicators of quality of life (symptoms and activities of daily life) for treating patients.
• Between July 1, 2016 and June 30, 2018 more than 9,220 patients completed both baseline and return self-assessments.
• Graphs on pages 25-29 reflect a change in score for patients by cancer type who self-reported at least one symptom as severe at baseline in comparison to their return visit.
• Graphs on pages 30 and 31 reflect CTCA aggregate and facility patient self-reported outcome data for four (4) key areas across cancer types.
Assessment Background and Methodology - continued

The SIT includes 27 items: 13 core symptom questions (box 1) and six questions related to issues that interfere with patients’ everyday functioning (box 2). These 19 questions mirror the MD Anderson Symptom Inventory (MDASI) tool used by many U.S. hospitals. MDASI, which assesses both the severity and impact of patients’ symptoms and quality of life issues, has been psychometrically validated and tested. It is also endorsed by the National Cancer Institute. CTCA has added eight (8) questions to the patient assessment process that our medical and care teams consider clinically relevant (box 3).

The graphs on the following pages illustrate CTCA patients’ self-reported symptom burden for nine (9) key areas by type of cancer for patients at their new patient evaluation (baseline) in comparison to their next return visit when scoring a particular symptom or activity area as severe at baseline. For patients with severe baseline scores (7 or greater on a 1 to 10 scale with 1 being “non-existent” and 10 being “as bad as one can imagine/greatly interfered”), a two-point change in score is clinically relevant and significant, with respect to the symptom getting better, remaining constant or getting worse. The data reflect more than 9,220 patients completing a second return assessment from baseline between July 1, 2016 and June 30, 2018, with 2,417 deemed severe.

### BOX 1: CORE SYMPTOMS

- Pain
- Fatigue
- Nausea
- Disturbed sleep
- Distress
- Shortness of breath
- Memory
- Appetite
- Drowsy
- Dry mouth
- Sadness
- Vomiting
- Numbness

### BOX 2: INTERFERENCE ISSUES

- General activity
- Mood
- Work
- Relationships
- Walking
- Enjoyment of life

### BOX 3: ADDITIONAL AREAS OF FOCUS

- Constipation
- Swelling
- Mouth soreness
- Bleeding
- Sexual interest
- Family response
- Sense of hope
- Quality of life
Our Quality of Life Results
BY CANCER TYPE | JULY 1, 2016 - JUNE 30, 2018

**BREAST CANCER**
% of Patients with Severe Symptoms on Baseline vs. Return

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Better</th>
<th>No Clinical Change</th>
<th>Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>57.2</td>
<td>48.8</td>
<td>33.1</td>
</tr>
<tr>
<td>Fatigue</td>
<td>65.0</td>
<td>64.8</td>
<td>8.8</td>
</tr>
<tr>
<td>Nausea</td>
<td>67.1</td>
<td>61.8</td>
<td>4.0</td>
</tr>
<tr>
<td>Distress</td>
<td>62.2</td>
<td>62.2</td>
<td>5.7</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>67.5</td>
<td>65.6</td>
<td>2.8</td>
</tr>
<tr>
<td>Appetite</td>
<td>62.5</td>
<td>62.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Mood</td>
<td>71.9</td>
<td>71.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Work</td>
<td>67.5</td>
<td>67.5</td>
<td>5.1</td>
</tr>
<tr>
<td>Enjoyment of life</td>
<td>71.9</td>
<td>71.9</td>
<td>2.0</td>
</tr>
</tbody>
</table>

**COLON CANCER**
% of Patients with Severe Symptoms on Baseline vs. Return

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Better</th>
<th>No Clinical Change</th>
<th>Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>59.1</td>
<td>57.5</td>
<td>34.5</td>
</tr>
<tr>
<td>Fatigue</td>
<td>78.7</td>
<td>78.7</td>
<td>7.9</td>
</tr>
<tr>
<td>Nausea</td>
<td>78.7</td>
<td>78.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Distress</td>
<td>65.3</td>
<td>65.3</td>
<td>7.1</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>76.3</td>
<td>76.3</td>
<td>5.3</td>
</tr>
<tr>
<td>Appetite</td>
<td>63.8</td>
<td>63.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Mood</td>
<td>68.0</td>
<td>68.0</td>
<td>2.7</td>
</tr>
<tr>
<td>Work</td>
<td>65.6</td>
<td>65.6</td>
<td>5.4</td>
</tr>
<tr>
<td>Enjoyment of life</td>
<td>72.6</td>
<td>72.6</td>
<td>3.2</td>
</tr>
</tbody>
</table>

[Graph showing percentage of patients with severe symptoms on baseline vs. return for Breast Cancer and Colon Cancer]
Our Quality of Life Results

BY CANCER TYPE | JULY 1, 2016 - JUNE 30, 2018

ESOPHAGEAL CANCER
% of Patients with Severe Symptoms on Baseline vs. Return

KIDNEY CANCER
% of Patients with Severe Symptoms on Baseline vs. Return
**LUNG CANCER**

% of Patients with Severe Symptoms on Baseline vs. Return

- **Pain**: Better 8.3% - No Clinical Change 34.3% - Worse 57.4%
- **Fatigue**: Better 6.7% - No Clinical Change 43.2% - Worse 50.2%
- **Nausea**: Better 7.0% - No Clinical Change 21.1% - Worse 71.8%
- **Distress**: Better 5.5% - No Clinical Change 29.0% - Worse 65.4%
- **Shortness of breath**: Better 6.2% - No Clinical Change 32.3% - Worse 61.5%
- **Appetite**: Better 5.7% - No Clinical Change 29.1% - Worse 65.1%
- **Mood**: Better 3.0% - No Clinical Change 22.5% - Worse 74.6%
- **Work**: Better 3.1% - No Clinical Change 30.1% - Worse 66.8%
- **Enjoyment of life**: Better 4.3% - No Clinical Change 23.9% - Worse 71.8%

**OVARIAN CANCER**

% of Patients with Severe Symptoms on Baseline vs. Return

- **Pain**: Better 7.3% - No Clinical Change 34.1% - Worse 58.5%
- **Fatigue**: Better 7.1% - No Clinical Change 42.9% - Worse 50.0%
- **Nausea**: Better 4.3% - No Clinical Change 30.4% - Worse 65.2%
- **Distress**: Better 4.9% - No Clinical Change 22.0% - Worse 73.2%
- **Shortness of breath**: Better 0.0% - No Clinical Change 32.0% - Worse 68.0%
- **Appetite**: Better 0.0% - No Clinical Change 31.3% - Worse 68.8%
- **Mood**: Better 6.7% - No Clinical Change 23.3% - Worse 70.0%
- **Work**: Better 2.2% - No Clinical Change 23.9% - Worse 73.9%
- **Enjoyment of life**: Better 0.0% - No Clinical Change 27.0% - Worse 73.0%
Our Quality of Life Results
BY CANCER TYPE | JULY 1, 2016 - JUNE 30, 2018

### PANCREATIC CANCER

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Better</th>
<th>No Clinical Change</th>
<th>Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>60.0</td>
<td>46.6</td>
<td>47.9</td>
</tr>
<tr>
<td>Fatigue</td>
<td>68.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td>68.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distress</td>
<td>78.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>75.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appetite</td>
<td>56.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mood</td>
<td>75.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work</td>
<td>70.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment of life</td>
<td>70.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### PROSTATE CANCER

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Better</th>
<th>No Clinical Change</th>
<th>Worse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>54.4</td>
<td>42.6</td>
<td>51.6</td>
</tr>
<tr>
<td>Fatigue</td>
<td>83.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nausea</td>
<td>59.4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distress</td>
<td>58.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>63.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appetite</td>
<td>59.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mood</td>
<td>59.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work</td>
<td>59.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enjoyment of life</td>
<td>59.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
RECTAL CANCER
% of Patients with Severe Symptoms on Baseline vs. Return

STOMACH CANCER
% of Patients with Severe Symptoms on Baseline vs. Return

OUR QUALITY OF LIFE RESULTS | 29
Our Quality of Life Results

BY FACILITY AND IN AGGREGATE | JULY 1, 2016 - JUNE 30, 2018

The graphs above and on the following page reflect CTCA facility as well as aggregate patient self-reported outcomes (PSRO) data for four key areas related to our ability to treat our patients' symptoms between July 1, 2016 and June 30, 2018.
“I underwent genetic testing and the results determined that my cancer was not linked to a known genetic mutation. I was glad for my children’s future health to learn this, but my mindset was, ‘I don’t care how I got it; I just want to stop it.’ I met with my doctors and many treatment options were presented to me. I chose the one that felt right for me and opted for chemotherapy followed by a double mastectomy.”
Our Patient Experience Results

HCAHPS Inpatient Survey Background and Methodology

Cancer Treatment Centers of America® (CTCA) participates in and monitors its ratings on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, developed by the U.S. Department of Health and Human Services, and is administered by a third party, Press Ganey®. The HCAHPS survey is a national, standardized, publicly-reported survey of patients’ perspectives on their inpatient hospital care.

Until HCAHPS, many hospitals collected information on patient satisfaction for their own internal use, with no national standard for collecting and publicly reporting information about patient experience of care that allowed valid comparisons to be made across hospitals locally, regionally and nationally.

Through the relationship that CTCA® has with Press Ganey, a nationally recognized, independent third party, surveys are administered to all eligible adult patients between 48 hours and six weeks after their discharge from a CTCA hospital. Press Ganey works with more than 26,000 healthcare organizations and is considered an industry leader. As a result of our strategic relationship with Press Ganey, CTCA has access to the largest comparative database containing real-time data from more hospitals than any other HCAHPS vendor in the nation.

IN SECTION 4

- CTCA engages independent third parties Press Ganey and Binary Fountain® to administer and analyze patient experience surveys, gathering feedback from eligible patients using validated, and in some cases, federally-mandated survey instruments.

- The inpatient survey data reported in this section were gathered between July 1, 2017 and June 30, 2018 and represent a total of 1,143 completed HCAHPS surveys across all CTCA locations. The Press Ganey National Cohort includes 2,371 acute care hospitals and the Top Peer Oncology Provider cohort includes 11 cancer specialty hospitals.

- The outpatient ambulatory surgery survey data reported in this section were gathered between November 1, 2017 and June 30, 2018. CTCA patients completed 558 Outpatient and Ambulatory Surgery Consumer Assessment of Healthcare Providers and Systems (OAS CAHPS) surveys over the course of eight months. The Press Ganey National Cohort includes 2,566 hospital outpatient surgery departments and ambulatory surgery centers.

- The outpatient survey data reported in this section were gathered between July 1, 2017 and June 30, 2018 and represent a total of 10,073 completed outpatient oncology surveys across all CTCA locations. The Press Ganey National Cohort includes 314 oncology centers and the Top Peer Oncology Provider cohort includes 16 cancer specialty hospitals.

- CTCA launched a Physician Transparency Star Ratings program in January 2018, providing greater insight into the quality of patients’ experiences with our medical oncologists, radiation oncologists and gynecologic oncologists. The data, collected between July 1, 2017 and June 30, 2018, are an aggregation of two questions specific to physicians’ patient care using an outpatient satisfaction survey.
Our Patient Experience Results

**INPATIENT**

CTCA Inpatient Satisfaction Results

Overall, when patients are asked if they would recommend a CTCA hospital to family and friends as well as whether they considered their experience with CTCA as among the best hospitals, with 1,143 completed responses, our hospitals ranked within the top 2% of hospitals across the nation using data from July 1, 2017 through June 30, 2018.

Patients who reported YES, they would **DEFINITELY RECOMMEND A CTCA HOSPITAL**

<table>
<thead>
<tr>
<th></th>
<th>Percent of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTCA</td>
<td>92.6%</td>
</tr>
<tr>
<td>Press Ganey National</td>
<td>72.4%</td>
</tr>
<tr>
<td>Top Peer Oncology Providers</td>
<td>86.8%</td>
</tr>
</tbody>
</table>

Patients who gave their **CTCA HOSPITAL A RATING OF 9 OR 10** on a scale from 0 (lowest) to 10 (highest)

<table>
<thead>
<tr>
<th></th>
<th>Percent of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTCA</td>
<td>91.0%</td>
</tr>
<tr>
<td>Press Ganey National</td>
<td>72.3%</td>
</tr>
<tr>
<td>Top Peer Oncology Providers</td>
<td>81.8%</td>
</tr>
</tbody>
</table>

CTCA ranks in the 98th percentile among the 2,371 hospitals in the Press Ganey National cohort. CTCA ranks at the top among the Top 11 Peer Oncology Providers¹. This performance is based upon 1,143 completed surveys across CTCA.

---

¹ The HCAHPS survey compiles nationwide data, and the Center for Medicare and Medicaid Services (CMS) adjusts for geographic region and certain patient demographics. As such, the results appearing on the CMS website (http://www.medicare.gov/hospitalcompare/search.html) are delayed in being released to the public. Therefore, data from patients surveyed in this timeframe will not appear on the CMS website for approximately one year, and may differ slightly.
CTCA HCAHPS inpatient data are compared to the respective American Hospital Association region and the national data cohort. The data reported are reflective of the most current available and based on the date patient surveys were received.\textsuperscript{2,3} The applicable AHA regions are:

- **AHA Region 2: CTCA Philadelphia**  
  New Jersey, New York and Pennsylvania

- **AHA Region 4: CTCA Atlanta**  
  Alabama, Florida, Georgia, Mississippi, Puerto Rico, South Carolina and Tennessee

- **AHA Region 5: CTCA Chicago**  
  Illinois, Indiana, Michigan, Ohio and Wisconsin

- **AHA Region 7: CTCA Tulsa**  
  Arkansas, Louisiana, Oklahoma and Texas

- **AHA Region 8: CTCA Phoenix**  
  Arizona, Colorado, Idaho, Montana, New Mexico, Utah and Wyoming

The information displayed in the graphs on the following pages is reported using frequency scores representing the percentage of patients rating their experience in the affirmative top box (definitely/always) in response to all care dimensions for which questions were posed. Additional details on the HCAHPS survey questions can be found in the key on page 39.

\textsuperscript{2} The scores included for CTCA Phoenix are not reported to CMS because Cancer Treatment Centers of America, CTCA Phoenix did not participate in Medicare/Medicaid programs during this time period. However, Press Ganey (at our request) administers the HCAHPS survey to discharged CTCA Phoenix patients and then reports the results to CTCA.

\textsuperscript{3} The Top 11 Peer Oncology Providers include: City of Hope Comprehensive Cancer Center, Dana-Farber Cancer Institute, Fox Chase Cancer Center, Moffitt Cancer Center, James Cancer Hospital and Solove Research Institute, MD Anderson Cancer Center, Memorial Sloan Kettering Cancer Institute, Roswell Park Comprehensive Cancer Center, Seattle Cancer Care Alliance, University of Miami Hospital and USC Norris Comprehensive Cancer Center.

In alignment with the CTCA commitment to the Mother Standard\textsuperscript{®} of care, our hospitals’ patient experience results are consistently higher than the national and regional norms.

**THE MOTHER STANDARD\textsuperscript{®} OF CARE**

The Mother Standard of care is a philosophy that makes the following promise: CTCA physicians, clinicians and stakeholders will provide patients with the same warmth, unconditional support and respect that we would extend to our own mothers, fathers, sisters, brothers and loved ones.

In adhering to the Mother Standard of care, we give people fighting cancer new options, hope and an improved quality of life.
Our Patient Experience Results

INPATIENT

CTCA ATLANTA | HCAHPS Survey on Inpatient Satisfaction

CTCA CHICAGO | HCAHPS Survey on Inpatient Satisfaction
Our Patient Experience Results
INPATIENT | JULY 1, 2017 - JUNE 30, 2018

CTCA TULSA | HCAHPS Survey on Inpatient Satisfaction

CTCA ALL HOSPITALS | HCAHPS Survey on Inpatient Satisfaction

Percent of Patients

CTCA Tulsa
Press Ganey National
Press Ganey Regional

CTCA All Hospitals
Press Ganey National
Top Peer Oncology Providers
### HCAHPS Survey Key

<table>
<thead>
<tr>
<th>Graph Labels</th>
<th>Survey Questions (and Domains)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Recommend</td>
<td>• Patients who would definitely recommend the hospital</td>
</tr>
</tbody>
</table>
| (2) Nurses         | • Nurses treated you with courtesy and respect  
                                 • Nurses listened carefully to you  
                                 • Nurses explained in a way you understood                                                   |
| (3) Doctors        | • Doctors treated you with courtesy and respect  
                                 • Doctors listened carefully to you  
                                 • Doctors explained in a way you understood                                                   |
| (4) Received help  | • After using call button, received help as soon as you wanted it  
                                 • Received help with toileting as soon as you wanted it                                        |
| (5) Pain           | • Staff talked about how much pain you had  
                                 • Staff talked about how to treat your pain                                                    |
| (6) Medicine       | • Told you what new medicine was for  
                                 • Staff described medicine side effects                                                       |
| (7) Environment    | • Cleanliness of hospital environment                                                          |
| (8) Quiet          | • Quietness of hospital environment                                                            |
| (9) Discharge      | • Staff talked about whether you had help when you left  
                                 • Staff provided Information regarding symptoms or problems to look for                    |
| (10) Care transitions | • Hospital staff took preferences into account  
                                 • Good understanding of managing own health  
                                 • Understood purpose of taking medicine                                                        |
| (11) Overall       | • Patients who rated the hospital 9-10                                                          |

*New HCAHPS pain questions went into effect January 1, 2018. Therefore, the domain is reflective of January 1, 2018 - June 30, 2018 patient encounters.*
Our Patient Experience Results

OUTPATIENT AND AMBULATORY SURGERY

OAS CAHPS Survey Background and Methodology

Cancer Treatment Centers of America® (CTCA) voluntarily collects data on the quality of our ambulatory surgical outpatients’ experiences using a nationally standardized and validated instrument. The Outpatient and Ambulatory Surgery Consumer Assessment of Healthcare Providers and Systems (OAS CAHPS) survey measures the patient experience with surgeries performed at hospital-based outpatient surgery departments. Beginning in November 2017, the survey was administered to all patients on behalf of CTCA by Press Ganey, an independent federally-certified research organization, within two weeks following their outpatient surgery or procedure.

Similar to the inpatient instrument, this survey contains questions that cover topics such as access to care, communications, experience with the facility and interactions with facility staff.

CTCA AMBULATORY SURGERY PATIENT SATISFACTION RESULTS

The information displayed on the following pages is reported using frequency scores representing the percentage of patients rating their experience in the affirmative top box (definitely/always) in response to all care dimensions for which questions were posed. Additional details on OAS CAHPS survey questions can be found in the key on page 43.

CTCA ranks in the 97th percentile among the 2,566 hospitals in the Press Ganey National cohort. Performance is based upon the completion of 558 surveys across CTCA.4

Patients who reported YES, they would DEFINITELY RECOMMEND THEIR HOSPITAL

Patients who gave their HOSPITAL A RATING OF 9 OR 10 on a scale from 0 (lowest) to 10 (highest)

CTCA ranks in the 95th percentile among the 2,566 hospitals in the Press Ganey National cohort.4

---

4 Top Peer Oncology Provider cohort is unavailable for OAS Survey at this time.
Our Patient Experience Results

OUTPATIENT AND AMBULATORY SURGERY | NOVEMBER 1, 2017 - JUNE 30, 2018

CTCA PHOENIX | Ambulatory Surgery Satisfaction

<table>
<thead>
<tr>
<th>Percentage of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommend (1)</strong></td>
</tr>
<tr>
<td><strong>Communication (2)</strong></td>
</tr>
<tr>
<td><strong>Facility/Personal Treatment (3)</strong></td>
</tr>
<tr>
<td><strong>Discharge (4)</strong></td>
</tr>
<tr>
<td><strong>Overall (5)</strong></td>
</tr>
<tr>
<td>CTCA Phoenix</td>
</tr>
<tr>
<td>Press Ganey National</td>
</tr>
<tr>
<td>Press Ganey Regional</td>
</tr>
</tbody>
</table>

CTCA TULSA | Ambulatory Surgery Satisfaction

<table>
<thead>
<tr>
<th>Percentage of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommend (1)</strong></td>
</tr>
<tr>
<td><strong>Communication (2)</strong></td>
</tr>
<tr>
<td><strong>Facility/Personal Treatment (3)</strong></td>
</tr>
<tr>
<td><strong>Discharge (4)</strong></td>
</tr>
<tr>
<td><strong>Overall (5)</strong></td>
</tr>
<tr>
<td>CTCA Tulsa</td>
</tr>
<tr>
<td>Press Ganey National</td>
</tr>
<tr>
<td>Press Ganey Regional</td>
</tr>
</tbody>
</table>

CTCA ALL HOSPITALS | Ambulatory Surgery Satisfaction*

<table>
<thead>
<tr>
<th>Percentage of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommend (1)</strong></td>
</tr>
<tr>
<td><strong>Communication (2)</strong></td>
</tr>
<tr>
<td><strong>Facility/Personal Treatment (3)</strong></td>
</tr>
<tr>
<td><strong>Discharge (4)</strong></td>
</tr>
<tr>
<td><strong>Overall (5)</strong></td>
</tr>
<tr>
<td>CTCA All Hospitals</td>
</tr>
<tr>
<td>Press Ganey National</td>
</tr>
</tbody>
</table>

*Top Peer Oncology Provider cohort is unavailable for OAS Survey at this time.
## OAS CAHPS Survey Key

<table>
<thead>
<tr>
<th>Graph Labels</th>
<th>Survey Questions (and Domains)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Recommend</td>
<td>• Patients who would definitely recommend the hospital</td>
</tr>
<tr>
<td>(2) Communication</td>
<td>• Provided all needed information about procedure&lt;br&gt;• Instructions to prepare for procedure were easy to understand&lt;br&gt;• Staff explained procedure in way that was easy to understand&lt;br&gt;• Information on anesthesia and its side effects were easy to understand</td>
</tr>
<tr>
<td>(3) Facility/Personal Treatment</td>
<td>• Check-in process ran smoothly&lt;br&gt;• Facility cleanliness&lt;br&gt;• Clerks and receptionists were helpful&lt;br&gt;• Clerks and receptionists treated you with courtesy and respect&lt;br&gt;• Staff treated you with courtesy and respect&lt;br&gt;• Staff ensured you were comfortable</td>
</tr>
<tr>
<td>(4) Discharge</td>
<td>• Received written discharge instructions&lt;br&gt;• Prepared for what to expect during recovery&lt;br&gt;• Received information on:&lt;br&gt;  • subsequent pain&lt;br&gt;  • subsequent nausea&lt;br&gt;  • subsequent bleeding&lt;br&gt;  • what to do if there are signs of infection</td>
</tr>
<tr>
<td>(5) Overall</td>
<td>• Patients who rate the hospital 9-10</td>
</tr>
</tbody>
</table>
Our Patient Experience Results

OUTPATIENT

Outpatient Survey Background and Methodology
Cancer Treatment Centers of America® (CTCA) voluntarily collects data on the quality of our outpatients’ experiences with their care using a survey customized to the oncology patient’s needs and administered by a third party to ensure the validity and reliability of the findings. Press Ganey administers the outpatient survey to all eligible patients within one week of the completion of any CTCA® appointment for service. On average, over 800 completed surveys are returned per month, providing CTCA hospitals with valuable feedback. Between July 1, 2017 and June 30, 2018, CTCA patients completed 10,073 outpatient oncology surveys.

CTCA OUTPATIENT SATISFACTION RESULTS
The data presented in the charts on pages 45-48 are “on average” scores using a 5-point Likert scale, in which an individual response is converted from very poor (0) to very good (100) and averaged. Comprehensive data are presented by cancer type for each key dimension of care based on what we know to be important to our patients.

CTCA performs above the mean in comparison to the 314 hospitals and 16 Top Peer Oncology Providers in the data set. This performance is based upon a total of 10,073 surveys completed across CTCA.

---

5 The Top 16 Peer Oncology Providers include: City of Hope Comprehensive Cancer Center, Dana-Farber Community Cancer Care, Dana-Farber Londonderry, Dana-Farber Longwood, Dana-Farber Milford, Dana-Farber South Shore, Dana-Farber St. Elizabeth’s, Fox Chase Cancer Center, Moffitt Cancer Center, James Cancer Hospital and Solove Research Institute, MD Anderson Cancer Center, Memorial Sloan Kettering Cancer Institute, Roswell Park Comprehensive Cancer Center, Seattle Cancer Care Alliance, Sylvester Comprehensive Cancer Center and USC Norris Comprehensive Cancer Center.
BREAST CANCER | Outpatient Oncology Satisfaction for all CTCA Hospitals

<table>
<thead>
<tr>
<th>Component</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend</td>
<td>96.2</td>
</tr>
<tr>
<td>Scheduling</td>
<td>90.3</td>
</tr>
<tr>
<td>Registration</td>
<td>92.9</td>
</tr>
<tr>
<td>Facility</td>
<td>94.9</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>92.8</td>
</tr>
<tr>
<td>Radiation</td>
<td>93.4</td>
</tr>
<tr>
<td>Nursing</td>
<td>94.6</td>
</tr>
<tr>
<td>Personal care</td>
<td>92.5</td>
</tr>
<tr>
<td>Overall</td>
<td>95.5</td>
</tr>
</tbody>
</table>

COLON CANCER | Outpatient Oncology Satisfaction for all CTCA Hospitals

<table>
<thead>
<tr>
<th>Component</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend</td>
<td>95.8</td>
</tr>
<tr>
<td>Scheduling</td>
<td>88.9</td>
</tr>
<tr>
<td>Registration</td>
<td>93.1</td>
</tr>
<tr>
<td>Facility</td>
<td>94.1</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>92.9</td>
</tr>
<tr>
<td>Radiation</td>
<td>90.9</td>
</tr>
<tr>
<td>Nursing</td>
<td>94.8</td>
</tr>
<tr>
<td>Personal care</td>
<td>92.6</td>
</tr>
<tr>
<td>Overall</td>
<td>95.2</td>
</tr>
</tbody>
</table>

ESOPHAGEAL CANCER | Outpatient Oncology Satisfaction for all CTCA Hospitals

<table>
<thead>
<tr>
<th>Component</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend</td>
<td>93.8</td>
</tr>
<tr>
<td>Scheduling</td>
<td>88.9</td>
</tr>
<tr>
<td>Registration</td>
<td>92.2</td>
</tr>
<tr>
<td>Facility</td>
<td>93.8</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>91.2</td>
</tr>
<tr>
<td>Radiation</td>
<td>89.2</td>
</tr>
<tr>
<td>Nursing</td>
<td>93.1</td>
</tr>
<tr>
<td>Personal care</td>
<td>90.3</td>
</tr>
<tr>
<td>Overall</td>
<td>94.3</td>
</tr>
</tbody>
</table>
Our Patient Experience Results

OUTPATIENT

KIDNEY CANCER | Outpatient Oncology Satisfaction for all CTCA Hospitals

<table>
<thead>
<tr>
<th>Service</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend (1)</td>
<td>97.0</td>
</tr>
<tr>
<td>Scheduling (2)</td>
<td>90.4</td>
</tr>
<tr>
<td>Registration (3)</td>
<td>94.1</td>
</tr>
<tr>
<td>Facility (4)</td>
<td>95.2</td>
</tr>
<tr>
<td>Chemotherapy (5)</td>
<td>93.1</td>
</tr>
<tr>
<td>Radiation (6)</td>
<td>93.4</td>
</tr>
<tr>
<td>Nursing (7)</td>
<td>95.9</td>
</tr>
<tr>
<td>Personal care (8)</td>
<td>93.9</td>
</tr>
<tr>
<td>Overall (9)</td>
<td>96.7</td>
</tr>
</tbody>
</table>

LUNG CANCER | Outpatient Oncology Satisfaction for all CTCA Hospitals

<table>
<thead>
<tr>
<th>Service</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend (1)</td>
<td>96.8</td>
</tr>
<tr>
<td>Scheduling (2)</td>
<td>89.3</td>
</tr>
<tr>
<td>Registration (3)</td>
<td>93.1</td>
</tr>
<tr>
<td>Facility (4)</td>
<td>94.5</td>
</tr>
<tr>
<td>Chemotherapy (5)</td>
<td>93.1</td>
</tr>
<tr>
<td>Radiation (6)</td>
<td>93.3</td>
</tr>
<tr>
<td>Nursing (7)</td>
<td>95.1</td>
</tr>
<tr>
<td>Personal care (8)</td>
<td>92.8</td>
</tr>
<tr>
<td>Overall (9)</td>
<td>96.1</td>
</tr>
</tbody>
</table>

OVARIAN CANCER | Outpatient Oncology Satisfaction for all CTCA Hospitals

<table>
<thead>
<tr>
<th>Service</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommend (1)</td>
<td>96.5</td>
</tr>
<tr>
<td>Scheduling (2)</td>
<td>90.6</td>
</tr>
<tr>
<td>Registration (3)</td>
<td>94.4</td>
</tr>
<tr>
<td>Facility (4)</td>
<td>94.6</td>
</tr>
<tr>
<td>Chemotherapy (5)</td>
<td>92.9</td>
</tr>
<tr>
<td>Radiation (6)</td>
<td>89.7</td>
</tr>
<tr>
<td>Nursing (7)</td>
<td>94.7</td>
</tr>
<tr>
<td>Personal care (8)</td>
<td>93.0</td>
</tr>
<tr>
<td>Overall (9)</td>
<td>96.2</td>
</tr>
</tbody>
</table>
PANCREATIC CANCER | Outpatient Oncology Satisfaction for all CTCA Hospitals

PROSTATE CANCER | Outpatient Oncology Satisfaction for all CTCA Hospitals

RECTAL CANCER | Outpatient Oncology Satisfaction for all CTCA Hospitals
Our Patient Experience Results

OUTPATIENT | JULY 1, 2017 - JUNE 30, 2018

STOMACH CANCER  | Outpatient Oncology Satisfaction for all CTCA Hospitals

![Bar chart showing average scores for various aspects of patient care, including recommend, scheduling, registration, facility, chemotherapy, radiation, nursing, personal care, and overall satisfaction.]
## OUTPATIENT ONCOLOGY SATISFACTION KEY

<table>
<thead>
<tr>
<th>GRAPH LABELS</th>
<th>SURVEY QUESTIONS (AND DOMAINS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Recommend</td>
<td>• Likelihood of recommending services</td>
</tr>
</tbody>
</table>
| (2) Scheduling | • Reached office staff on phone with ease  
             | • Wait time between calling and first scheduled appointment  
             | • Courtesy and concern shown by staff who made appointment |
| (3) Registration | • Registration process ease  
                  | • Wait in registration area |
| (4) Facility | • Facility cleanliness  
               | • Found way around facility with ease  
               | • Waiting area comfort  
               | • Changing room privacy |
| (5) Chemotherapy | • Wait time in chemo area  
                   | • Explained what to expect during chemo  
                   | • Chemo staff’s concern for comfort  
                   | • Chemo staff’s courtesy  
                   | • Explained how to manage chemo side effects  
                   | • Comfort of the chemo treatment area |
| (6) Radiation | • Wait time in radiation therapy area  
                | • Explained what to expect during radiation therapy  
                | • Radiation therapy staff’s concern for comfort  
                | • Radiation therapy staff’s courtesy  
                | • Explained how to manage radiation therapy side effects |
| (7) Nursing | • Nurses’ concern for questions and worries  
              | • Nurses’ responsiveness to your needs  
              | • Quality of care received from nurse(s)  
              | • Attention to pain control  
              | • Caring manner of the nurses  
              | • Nurses answered your questions |
| (8) Personal care | • Emotional needs were addressed  
                    | • Kept family informed about what to expect  
                    | • Sensitivity to difficulties and inconvenience  
                    | • Inclusion in treatment decisions  
                    | • Home care instructions  
                    | • Concern for privacy |
| (9) Overall | • Care given at this facility |
Our Patient Experience Results

PHYSICIAN TRANSPARENCY STAR RATING | JULY 1, 2017 - JUNE 30, 2018

Physician Transparency Star Rating Survey Background and Methodology

CTCA voluntarily launched a Physician Transparency Star Ratings program in collaboration with third party research organizations Press Ganey® and Binary Fountain®. This program provides greater insight into the quality of patients' experiences with CTCA medical oncologists, radiation oncologists and gynecologic oncologists.

The data displayed on the CTCA website (cancercenter.com) are aggregations of two questions specific to physicians' patient care using the outpatient satisfaction survey. Data from the answers to the two questions are collected by Press Ganey and converted by Binary Fountain into a one to five-star rating, with one star being the lowest possible rating and five stars being the highest. Once a minimum of 30 responses are received by a physician, results are made available online. All patient comments are also posted online as written by the patient, whether they are positive or negative, after being de-identified for confidentiality and patient privacy.

The average star rating for CTCA providers is 4.81 out of 5.0, which is based upon a volume of 4,563 ratings among 51 individual physicians over the course of 12 months. This is above the 4.69 average national star rating of other hospitals in the research organization’s database. The distribution of star ratings across CTCA physicians is reflected below with 74.5% of CTCA physicians rated 4.8 stars or above on the 5-star scale. The data below reflect ratings collected between July 1, 2017 and June 30, 2018.

<table>
<thead>
<tr>
<th>Star Score Range</th>
<th>Star Rating</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.8 - 5.0 Stars</td>
<td>⭐⭐⭐⭐⭐</td>
<td>74.5% of CTCA Physicians</td>
</tr>
<tr>
<td>4.4 - 4.7 Stars</td>
<td>⭐⭐⭐⭐</td>
<td>23.5% of CTCA Physicians</td>
</tr>
<tr>
<td>4.0 - 4.3 Stars</td>
<td>⭐⭐⭐</td>
<td>2.0% of CTCA Physicians</td>
</tr>
<tr>
<td>&lt; 4.0 Stars</td>
<td>⭐⭐</td>
<td>0% of CTCA Physicians</td>
</tr>
</tbody>
</table>
About this Report

Our Length of Life Results

Our Quality of Life Results

Our Patient Experience Results

Our Patient Safety and Quality Results

Our Clinical Leadership

Our Research Publications
“After completing diagnostic testing at CTCA, I found out my cancer was stage III. In April 2016, I started six weeks of chemotherapy and radiation to fight the cancer. I continued to work part-time every day from 6 to 11 a.m. I would then go to CTCA to complete my treatments. In August 2016, I underwent a total gastrectomy, which removed my stomach and part of my esophagus, then reattached the small intestines to my remaining esophagus. I was off the feeding tube two days after surgery. I was determined to get up and get moving during my recovery, which I felt went well.”
Safe Care, Quality Care

IN SECTION 5

• CTCA utilizes the six aims of the Institute of Medicine (IOM) as a framework for our definition of quality care.

• CTCA has embraced principles consistent with the establishment of a “high reliability organization” utilizing evidence-informed strategies to mitigate the risk of preventable harm.

• CTCA hospitals utilize the Agency for Healthcare Research and Quality (AHRQ) Hospital Survey on the Culture of Patient Safety.

• All five CTCA hospitals are among the just over 300 U.S.-based oncology practices that have achieved three-year Quality Oncology Practice Initiative (QOPI) certification. This certification recognizes select oncology practices that achieve a minimum overall composite quality score of 75% and comply with 28 safety standards.

Our Philosophy and Methodology

COLLABORATIVE, RELIABLE PROCESSES AND SYSTEMS

At Cancer Treatment Centers of America® (CTCA), quality care does not simply happen, it is built and nurtured. Quality is the outcome of a set of consciously designed, reliable procedures and systems that connect people, processes, knowledge and technology in the delivery of high quality, safe care. The CTCA® quality program is grounded in the following principles:

• Collaborative partnerships across CTCA are essential to individual and collective improvement.

• Improvement and clinical innovation is achieved through the conscious deployment of methodologies, technologies and tools.

• Evidence-informed practice, guidelines and/or expert opinion are central to learning and transferring knowledge.

• Providers and patients alike are empowered to serve as champions for improvement.

CTCA utilizes the six aims of the Institute of Medicine (IOM) as a framework for our definition of quality care. According to these aims, health care should be:

1. SAFE: Avoid injuries to patients from the care intended to help them.

2. EFFECTIVE: Base patient services on scientific, evidence-informed knowledge of the benefits.

3. PATIENT CENTERED: Provide care in a respectful manner that is responsive to individual preferences, needs and values.

4. TIMELY: Reduce waits and delays for both those who receive and those who give care.

5. EFFICIENT: Avoid waste, including waste of equipment, supplies, ideas and energy.

6. EQUITABLE: Be consistent in the quality of care, which should not vary due to individual differences such as gender, age, race/ethnicity, geographic location or socio-economic status.
Safe Care, Quality Care

**AHRQ HOSPITAL SURVEY ON THE CULTURE OF PATIENT SAFETY**

**Safety, Our First Commitment**

The We ARE (Accountable, Reliable and Empowered) Safe initiative establishes a framework to create a culture of safety for CTCA patients. As an organization committed to eliminating preventable harm through the detection and correction of system weaknesses, we have implemented high-reliability strategies such as self checking (Stop-Think-Act-Review), peer checking, communication tools (Situation-Background-Assessment-Recommendation), Leader Rounding and Daily Safety Check-ins. In this effort, CTCA has engaged Press Ganey Healthcare Performance Improvement (HPI), a national leader in patient safety, which works with over 600 hospitals across the U.S. Further, CTCA is committed to the National Patient Safety Goals established by The Joint Commission, which accredits more than 19,000 health care organizations and programs nationally.

To assess our success in establishing a culture committed to patient safety, CTCA hospitals utilize the Agency for Healthcare Research and Quality (AHRQ) Hospital Survey on the Culture of Patient Safety, a validated staff survey considered among the top-cited and most well-respected instruments in the country. On average, over 700 hospitals utilize the instrument annually, constituting a comparative data set of over 447,000 responses.

Conducting the survey every 24 months and contributing to the national database, CTCA hospitals' most recent Patient Safety Grade is presented below in comparison to the AHRQ 2016 national norms for nine key dimensions.

**PATIENT SAFETY CULTURE COMPOSITE SCORES**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>National 2016</th>
<th>All CTCA 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Teamwork within Units</td>
<td>84</td>
<td>82</td>
</tr>
<tr>
<td>2. Mgmt Promoting Pt. Safety</td>
<td>79</td>
<td>78</td>
</tr>
<tr>
<td>3. Organizational Learning</td>
<td>73</td>
<td>73</td>
</tr>
<tr>
<td>4. Mgmt Support for Pt. Safety</td>
<td>72</td>
<td>72</td>
</tr>
<tr>
<td>5. Perception of Pt. Safety</td>
<td>68</td>
<td>66</td>
</tr>
<tr>
<td>6. Feedback About Error</td>
<td>68</td>
<td>68</td>
</tr>
<tr>
<td>7. Communication Openness</td>
<td>67</td>
<td>67</td>
</tr>
<tr>
<td>8. Frequency of Events Reported</td>
<td>71</td>
<td>67</td>
</tr>
<tr>
<td>9. Teamwork Across Units</td>
<td>62</td>
<td>61</td>
</tr>
</tbody>
</table>

*All CTCA 2016  National 2016*
<table>
<thead>
<tr>
<th>GRAPH LABELS</th>
<th>QUESTIONS INCLUDED IN PATIENT SAFETY CULTURE COMPOSITE SCORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Teamwork within Units</td>
<td>• People support one another</td>
</tr>
<tr>
<td></td>
<td>• We work together as a team</td>
</tr>
<tr>
<td></td>
<td>• Treat each other with respect</td>
</tr>
<tr>
<td></td>
<td>• When busy, others help out</td>
</tr>
<tr>
<td>(2) Supervisor/Manager Expectations &amp; Actions</td>
<td>• Says a good word when a job is done according to safety procedures</td>
</tr>
<tr>
<td>Promoting Patient Safety</td>
<td>• Considers staff suggestions for improving patient safety</td>
</tr>
<tr>
<td></td>
<td>• Wants us to work faster, even if it means taking shortcuts*</td>
</tr>
<tr>
<td>(3) Organizational Learning—Continuous</td>
<td>• We are actively doing things to improve patient safety</td>
</tr>
<tr>
<td>Improvement</td>
<td>• Mistakes have led to positive changes here</td>
</tr>
<tr>
<td></td>
<td>• After we make changes to improve patient safety, we evaluate their effectiveness</td>
</tr>
<tr>
<td>(4) Management Support for Patient Safety</td>
<td>• Management provides climate that promotes patient safety</td>
</tr>
<tr>
<td></td>
<td>• Management shows that safety is priority</td>
</tr>
<tr>
<td></td>
<td>• Management interested in safety only after adverse event*</td>
</tr>
<tr>
<td>(5) Overall Perceptions of Patient Safety</td>
<td>• Just by chance serious mistakes don't happen*</td>
</tr>
<tr>
<td></td>
<td>• Safety is never sacrificed to get more work done</td>
</tr>
<tr>
<td></td>
<td>• We have patient safety problems in this unit*</td>
</tr>
<tr>
<td></td>
<td>• Procedures and systems good at preventing errors</td>
</tr>
<tr>
<td>(6) Feedback &amp; Communication About Error</td>
<td>• Given feedback about changes on event reports</td>
</tr>
<tr>
<td></td>
<td>• Informed about errors in units</td>
</tr>
<tr>
<td></td>
<td>• Discuss ways to prevent errors again</td>
</tr>
<tr>
<td>(7) Communication Openness</td>
<td>• Staff speak up if something affects patient care</td>
</tr>
<tr>
<td></td>
<td>• Staff questions those with more authority</td>
</tr>
<tr>
<td></td>
<td>• Staff are afraid to ask questions*</td>
</tr>
<tr>
<td>(8) Frequency of Events Reported</td>
<td>• Mistake made, but caught, how often reported</td>
</tr>
<tr>
<td></td>
<td>• Mistake made, but no potential to harm, how often reported</td>
</tr>
<tr>
<td></td>
<td>• Mistake made could harm, but does not, how often reported</td>
</tr>
<tr>
<td>(9) Teamwork Across Units</td>
<td>• Hospital units do not coordinate well with each other*</td>
</tr>
<tr>
<td></td>
<td>• There is good cooperation among hospital units that need to work together</td>
</tr>
<tr>
<td></td>
<td>• It is often unpleasant to work with staff from other hospital units*</td>
</tr>
<tr>
<td></td>
<td>• Hospital units work well together to provide the best care for patients</td>
</tr>
</tbody>
</table>

*Inverse Questions: lower score preferred
Safe Care, Quality Care

QUALITY METRICS

Ongoing Measurement Through a Quality Dashboard

Using robust data from various external and internal sources, information is leveraged across CTCA hospitals to drive performance. Although not an exact match to publicly reported data, more timely internal data create transparency at all organizational levels and supports real-time improvement. Through a dashboard approach, CTCA continuously monitors and assesses a variety of metrics related to the IOM aims with respect to care outcomes, processes and structures. The list of metrics changes as CTCA views the metrics of interest from multiple angles, including those of our patients, clinicians, the board of directors of the CTCA hospitals and the employer and payer communities. The following measures are examples of our current focus areas.

INFECTION PREVENTION

The prevention of hospital-acquired infections is a national priority. CTCA conducts Central Line Associated Bloodstream Infection (CLABSI) and Catheter Associated Urinary Tract Infection (CAUTI) surveillance in all inpatient care areas utilizing surveillance definitions from the Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN). CTCA has implemented a number of CLABSI and CAUTI prevention efforts to reduce the number of infections and sustain evidence-informed practices for central line and urinary catheter insertion and maintenance as evidenced by our performance.
INPATIENT COMPLICATIONS, LENGTH OF STAY AND SAFETY

CTCA hospitals utilize Crimson Continuum of Care (CCC) software, an industry-leading solution, to aggregate our source system data to produce meaningful metrics, providing visibility into our coded data for purposes of benchmarking and supporting improvement. The CCC database has over 1,000 hospital members and represents approximately one-third of all inpatient admissions in the U.S. The tool uses a severity-adjusted methodology based on the 3M™ All Patients Refined Diagnosis Related Groups (APR DRG) grouper to compare only clinically-relevant cases.

The inpatient complications of care rate depicts the percentage of inpatient cases with a complication code, excluding complications that were already present on admission (POA) or related to pre-existing conditions upon admission to the hospital. By excluding complications that were POA, this measure provides results that more directly reflect quality of care. These codes are useful for screening for adverse events that patients experience as a result of exposure to the health care system, which are likely amenable to prevention by changes at the system or provider level. CTCA continues to take appropriate action to ensure our patients are provided safe and high quality care at all times.

The graph to the right displays the average length of stay for an inpatient admission. Monitoring trends and improving processes related to management of patients have reduced the number of days our patients stay in the hospital without sacrificing quality or patient safety.
PATIENT SAFETY AND ADVERSE EVENTS COMPOSITE

The Patient Safety and Adverse Events Composite, known as PSI 90, is a composite score that provides an overview of hospital-level quality as it relates to a set of potentially preventable hospital-related events associated with harmful outcomes for patients. Included in this measure are events such as developing a stage 3-4 pressure ulcer, postoperative hemorrhage and postoperative sepsis. Our commitment to safety and eliminating patient harm has led to an overall reduction in our composite score.

MEDICATION SAFETY

Medication management technologies, if implemented effectively, can greatly reduce the likelihood of errors in the prescribing and administering processes. Two such methodologies used by CTCA hospitals include Computerized Provider Order Entry (CPOE) and Bar Code Medication Administration (BCMA). The use of a CPOE system can significantly reduce errors related to handwriting or transcription. BCMA by nursing at the point-of-care ensures that patients are receiving the correct medications at the correct time by electronically validating and documenting medications using scanning technology. CTCA monitoring of BCMA includes all locations where medications are administered, with the exception of surgery and interventional radiology, where sterile fields may be in place.
NURSING-SENSITIVE INDICATORS

CTCA utilizes numerous nursing-sensitive indicators to assess for patient safety and quality. Two measures monitored include patient falls and hospital acquired pressure ulcers (HAPU). CTCA continuously assesses risk for falling and puts into place prevention efforts to keep each patient safe. The pressure ulcer metric explores the relationship between nursing assessments performed, interventions used and pressure ulcer development. The development of a HAPU places the patient at risk for other adverse events and increases resource consumption and health care costs. In most at-risk patients, interventions to reduce pressure and shear, and to mitigate other patient risk factors (immobility, incontinence, impaired nutrition, etc.) will decrease development. CTCA targets a rate of “0” for both metrics - striving for no pressure ulcers or falls occurring in our facilities.

FALLS | Moderate or > Injury

HOSPITAL ACQUIRED PRESSURE ULCER | Stage 2 or >

*Based upon performance of all hospitals (n=1,757) participating in the National Database of Nursing Quality Indicators (NDNQI), FY18Q1 data
Quality Oncology Practice Initiative (QOPI)

In response to the IOM report that identified major gaps in both quality and safety of patient care, the American Society of Clinical Oncology (ASCO) created the Quality Oncology Practice Initiative (QOPI) launched in 2006. Developed under the guidance of an expert panel of oncologists, the program provides a process for standardized assessment of care and reliable information to help focus improvement activities. Currently, approximately 1,000 U.S.-based oncology practices are registered in QOPI of which just over 300 are certified. All five CTCA® hospitals have achieved and maintain QOPI certification.

Oncology practices that wish to achieve a three-year certification from QOPI must meet stringent criteria. This begins with an assessment of performance against 28 quality metrics, calculating a composite overall score and submitting data on 170+ measures. To achieve QOPI certification, a practice must achieve an overall quality score of 75% or higher and comply with 28 safety standards. QOPI measures fall into the following categories: core, disease-specific and domain-specific. Core measures include areas such as staging, pathology testing and pain. Domain-specific measures include symptom management and care at the end of life. Disease-specific modules include breast, colorectal and non-small cell lung cancer. The following graph reflects performance for the most current data submission period, according to certification and maintenance requirements.
## SELECT KEY QOPI METRICS

The select key quality metrics shared below reflect the performance of CTCA hospitals in aggregate.

### QOPI MEASURES: Core | Symptom | Toxicity | All Cancers

<table>
<thead>
<tr>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action taken to address emotional well-being</td>
</tr>
<tr>
<td>Plan of care for pain documented</td>
</tr>
<tr>
<td>Smoking status/tobacco use documented</td>
</tr>
</tbody>
</table>

### QOPI MEASURES: Disease Specific

<table>
<thead>
<tr>
<th>Disease</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-small Cell Lung Cancer (NSCLC):</td>
<td>Adjuvant chemotherapy recommended</td>
</tr>
<tr>
<td>NSCLC:</td>
<td>Performance status documented</td>
</tr>
<tr>
<td>Colorectal: Anti-EGFR MoAb not received</td>
<td>100.0</td>
</tr>
<tr>
<td>Colorectal:</td>
<td>Adjuvant chemotherapy recommended - rectal</td>
</tr>
<tr>
<td>Colorectal:</td>
<td>Adjuvant chemotherapy recommended - colon</td>
</tr>
<tr>
<td>Colorectal:</td>
<td>CEA within 4 months of resection</td>
</tr>
<tr>
<td>Breast:</td>
<td>Combination chemotherapy recommended</td>
</tr>
<tr>
<td>Breast:</td>
<td>Test for Her-2/neu</td>
</tr>
<tr>
<td>Breast:</td>
<td>Complete staging</td>
</tr>
</tbody>
</table>

### Key

- **a.** Action taken to address problems with emotional well-being by the second office visit
- **b.** Plan of care for moderate/severe pain documented on either of the two most recent office visits
- **c.** Smoking status/tobacco use documented in the past year
- **d.** Adjuvant chemotherapy recommended for patients with American Joint Committee on Cancer (AJCC) stage II or III NSCLC
- **e.** Performance status documented for patients with initial Adjuvant chemotherapy recommended AJCC stage IV or distant metastatic NSCLC
- **f.** Anti-EGFR MoAb therapy not received by patients with KRAS and NRAS mutation
- **g.** Adjuvant antineoplastic treatment recommended within 9 months of diagnosis for patients with AJCC stage II or III rectal cancer
- **h.** Adjuvant antineoplastic treatment recommended within 4 months of diagnosis for patients with AJCC stage III colon cancer
- **i.** CEA within 4 months of curative resection for colorectal cancer
- **j.** Combination chemotherapy recommended within 4 months of diagnosis for women under 70 with AJCC stage IA (T1c) and IB-III ER/PR negative breast cancer
- **k.** Tamoxifen or AI recommended within 1 year of diagnosis for patients with AJCC stage IA (T1c) and 1B - III ER or PR positive breast cancer
- **l.** Test for Her-2/neu overexpression or gene amplification
- **m.** Complete staging for women with invasive breast cancer (cancer stage, HER2 and ER/PR status)
The following QOPI metrics reflect quality project-specific outcomes.

**CHEMOTHERAPY INTENT DISCUSSION**
Higher Score Preferred

The measure is intended to capture that all patients prescribed chemotherapy via any route understand the intent of that therapy and that curative, adjuvant or disease control is documented.

**ORAL CHEMOTHERAPY MONITORED**
Higher Score Preferred

As the use of oral chemotherapy increases so does the need to routinely assess patient adherence following the start of therapy and toxicity. This includes clear documentation of the review of the regimen drug, dose, schedule and tolerance with the patient.

**INFERTILITY RISK DISCUSSED**
Higher Score Preferred

For those patients of child-bearing potential and who have not undergone treatment previously, it is important to discuss the effects of chemotherapy on fertility prior to the administration. Related conversation regarding preservation options should also occur.
Patients who are in end-stage of their disease should be counseled, recognizing it can be extremely emotional and overwhelming. When appropriate, there may come a time for referral into hospice. This measure is intended to ensure appropriate discussion occurs on a timely basis to maximize the benefits of such enrollment.

Including all forms of chemotherapy, this measure is intended to address quality of life concerns for patients at the end of life when aggressive treatment is no longer appropriate.
MACRA Reporting

The 2015 Medicare Access and CHIP Reauthorization Act (MACRA) established a quality program that incentivizes clinicians for providing high-value care. The program became operational in calendar year 2017. Deemed a transition year, CTCA participated in the program by submitting the maximum number of metrics reportable. Performance is shown below in aggregate for CTCA in comparison to its selected federally-approved Qualified Clinical Data Registry (QCDR). The Physician Compare website (https://www.medicare.gov/physiciancompare) will eventually make MACRA data public.
About this Report

Our Length of Life Results

Our Quality of Life Results

Our Patient Experience Results

Our Patient Safety and Quality Results

Our Clinical Leadership

Our Research Publications
“Although I knew that CTCA was where I wanted to go for treatment, I was afraid of losing my tongue. Losing my tongue would take away one of my greatest passions, singing. With all my fears, concerns and hopes in mind, my care team presented me with several treatment options. The option I chose involved removing the tumor, followed by an immediate reconstruction of my tongue, then undergoing radiation therapy and chemotherapy. This was a well-coordinated effort between my medical oncologist, otolaryngologist and reconstructive microsurgeon.”

No case is typical. You should not expect to experience these results.
Our Clinical Leadership

Medicine & Science Clinical Leadership

Maurie Markman, MD  President of Medicine & Science
- MD—New York University School of Medicine, New York, NY
- MS—Health Policy & Management, New York University Graduate School of Public Administration, New York, NY
- Internship/Residency: New York University Bellevue Hospital, New York, NY
- Fellowships: Hematology/Oncology, National Cancer Institute, Rockville, MD, and Johns Hopkins University Sidney Kimmel Comprehensive Cancer Center, University, Baltimore, MD
- Certifications: Internal Medicine; Medical Oncology; Hematology; Diplomate, American Board of Internal Medicine; Graduate Certificate, Advanced Study in Bioethics, Rockville, MD, Department of Philosophy, Cleveland, OH

George W. Daneker, Jr., MD  Chief Medical Officer
- MD—University of Maryland School of Medicine, Baltimore, MD
- Internship/Residency: General Surgery, University of Cincinnati Medical Center, Cincinnati, OH
- Fellowships: Tumor Biology, Harvard Medical School/Beth Israel Deaconess Medical Center, Boston, MA; Surgical Oncology & Cell Biology, and The University of Texas MD Anderson Cancer Center, Houston, TX
- Certifications: American Board of Surgery; Advanced Management, University of Chicago Booth School of Business, Chicago, IL
- Academic Associations: Adjunct Professor of Surgery, Morehouse School of Medicine, Atlanta, GA; Adjunct Professor of Biology, Georgia Institute of Technology, Atlanta, GA

Katherine Anderson, ND  Chief, Division of Naturopathic Medicine
- ND—Canadian College of Naturopathic Medicine, Toronto, ON
- MBA—Oklahoma State University, Stillwater, OK
- Residency: Naturopathic Medicine, Cancer Treatment Centers of America Tulsa Comprehensive Care and Research Center, Tulsa, OK

Jason Beland, MD  Chair, Department of Radiology
- MD—Northwestern University Feinberg School of Medicine, Chicago, IL
- Internship/Residency: Internal Medicine, Evanston Hospital, Evanston, IL; Diagnostic Radiology, University of North Carolina Hospitals, Chapel Hill, NC
- Fellowship: Neuroradiology, Emory University Hospital, Atlanta, GA
- Certification(s): Diagnostic Radiology and Neuroradiology, American Board of Radiology

Kathryn Cantera, DPT, CLT  Chief, Division of Oncology Rehabilitation Services
- DP—Widener University, Chester, PA
- Certification(s): Licensed Physical Therapist; Certified Lymphedema Therapist
Our Clinical Leadership

Enterprise Clinical Leadership | Department Chairs & Division Chiefs

Mashiul Chowdhury, MD  Chief, Division of Infectious Disease, Department of Medicine
- MD—Dhaka Medical College, Dhaka, Bangladesh
- Internship/Residency: Mercy Catholic Medical Center, Darby, PA
- Fellowship: Infectious Disease, MCP Hahnemann University (Drexel University College), Philadelphia, PA
- Certification(s): Infectious Diseases; Diplomat, American Board of Internal Medicine

Pamela Crilley, DO  Chair, Department of Medical Oncology
- DO—Philadelphia College of Osteopathic Medicine, Philadelphia, PA
- Internship/Residency: Internal Medicine, Delaware Valley Medical Center (Aria Bucks Hospital), Bristol, PA
- Fellowship: Hematology/Oncology, Drexel University College of Medicine, Hahnemann University Hospital, Philadelphia, PA
- Certification(s): Medical Oncology and Internal Medicine, American Board of Internal Medicine
- Academic Associations: Professor of Medicine, Drexel University College of Medicine, Philadelphia, PA

Sharon Day, RD  Chief, Division of Nutrition Services
- MBA—Arizona State University, Phoenix, AZ
- Internship: Dietetics, University of Wisconsin School of Medicine and Public Health, Madison, WI
- Certification(s): Registered Dietitian; Certified Nutrition Support Clinician; Certified Specialist in Oncology Nutrition

Jeffrey Hoag, MD  Vice Chair, Department of Medicine
- MD—Virginia Commonwealth University School of Medicine, Richmond, VA
- MS—Physiology and Biophysics, Virginia Commonwealth University School of Medicine, Richmond, VA
- Internship/Residency: Internal Medicine, Virginia Commonwealth University Hospital, Richmond, VA
- Fellowship: Pulmonary Medicine/Critical Care Medicine, Johns Hopkins University, Baltimore, MD
- Certification(s): Internal Medicine, Pulmonary Medicine, Critical Care Medicine, and Hospice & Palliative Care Medicine, American Board of Internal Medicine
- Academic Associations: Associate Professor of Medicine, Drexel University College of Medicine, Philadelphia, PA

Arturo Loaiza-Bonilla, MD  Vice Chair, Department of Medical Oncology
- MD—Universidad Nacional de Colombia, Bogotá, Colombia
- MSED—Master of Science, Medical Education, University of Pennsylvania, Penn Graduate School of Education, Philadelphia, PA
- Internship/Residency: Internal Medicine, Harbor Hospital Center (MedStar Harbor Hospital), Johns Hopkins Hospital, Baltimore, MD
- Fellowship: Hematology and Oncology, Sylvester Comprehensive Cancer Center at University of Miami Miller School of Medicine, Miami, FL
- Certification(s): Diplomate, American Board of Internal Medicine; Medical Oncology & Hematology, American Board of Internal Medicine
### Nathan Neufeld, DO  
**Chief, Division of Pain Management, Department of Surgical Oncology**
- **DO**—Touro University Nevada, College of Osteopathic Medicine, Henderson, NV
- **Internship/Residency:** Physical Medicine and Rehabilitation, Johns Hopkins University School of Medicine, Baltimore, MD
- **Fellowships:** Administrative Fellowship, Patient Safety and Quality, Johns Hopkins University School of Medicine, Baltimore, MD; Clinical Fellowship, Interventional Pain Medicine, Johns Hopkins University School of Medicine, Baltimore, MD
- **Certification(s):** American Board of Physical Medicine and Rehabilitation; Pain Medicine, American Board of Anesthesiology; American Board of Medical Quality

### Anthony Perre, MD  
**Chief, Division of Outpatient Medicine, Department of Medicine**
- **MD**—Medical College of Pennsylvania (Drexel University College of Medicine), Philadelphia, PA
- **Internship/Residency:** Internal Medicine, Medical College of Pennsylvania (Drexel University College of Medicine), Philadelphia, PA
- **Certification(s):** American Board of Internal Medicine

### Scott Price, MD  
**Vice Chair, Department of Radiology**
- **MD**—University of Maryland School of Medicine, Baltimore, MD
- **Internship/Residency:** Radiology, Duke University Medical Center, Durham, NC
- **Fellowship:** Interventional Radiology, University of Pennsylvania Medical Center, Philadelphia, PA
- **Certification(s):** Diagnostic Radiology, American Board of Radiology; National Board of Medical Examiners

### Julian Schink, MD  
**Chief, Division of Gynecologic Oncology, Department of Surgical Oncology**
- **MD**—The University of Texas Health Science Center at San Antonio, San Antonio, TX
- **Internship/Residency:** Obstetrics and Gynecology, Northwestern University Feinberg School of Medicine, Chicago, IL
- **Fellowship:** Gynecologic Oncology, UCLA Medical Center, Los Angeles, CA
- **Certification(s):** Obstetrics and Gynecology, Gynecologic Oncology, American Board of Obstetrics and Gynecology

### Neil Seeley, MD  
**Chief, Division of Anesthesia, Department of Surgical Oncology**
- **MD**—University of Colorado School of Medicine, Denver, CO
- **Internship/Residency:** Naval Hospital, Pensacola, FL; Anesthesia, University of California, San Francisco, CA
- **Certification(s):** American Board of Anesthesiology
Our Clinical Leadership

Enterprise Clinical Leadership | Department Chairs & Chiefs

Bradford A. Tan, MD  Chair, Department of Pathology and Laboratory Medicine
- MD—Cebu Institute of Medicine, Cebu City, Philippines
- Internship/Residency: Anatomic and Clinical Pathology, University of Illinois Metropolitan Group Hospitals, Chicago, IL
- Certification(s): Anatomic Pathology, Clinical Pathology and Cytopathology, American Board of Pathology

Pankaj Vashi, MD  Chair, Department of Medicine
- MD—University of Mumbai, Mumbai, India
- Internship/Residency: Goa Medical College, Goa, India; Internal Medicine, Hurley Medical Center, Flint, MI
- Fellowship: Gastroenterology, University of Michigan, Ann Arbor, MI
- Certification(s): Gastroenterology and Internal Medicine, American Board of Internal Medicine

David Visco, MD  Chief, Division of Hospital Medicine, Department of Medicine
- MD—Ross University School of Medicine, Dominica, West Indies
- Internship/Residency: Internal Medicine, MCP Hahnemann University (Drexel University College of Medicine), Philadelphia, PA
- Fellowship: Pulmonary and Critical Care Medicine, Drexel University College of Medicine, Philadelphia, PA
- Certification(s): Pulmonary Disease, Critical Care Medicine, Sleep Medicine and Internal Medicine, American Board of Internal Medicine; Diplomate, American Board of Internal Medicine; Fellow, American College of Chest Physicians
- Academic Associations: Adjunct Clinical Assistant Professor of Medicine, Drexel University College of Medicine, Philadelphia, PA

Alan Yahanda, MD  Chair, Department of Surgery
- MD—Johns Hopkins University, Baltimore, MD
- Internship/Residency: General Surgery, Johns Hopkins Hospital, Baltimore, MD
- Fellowships: Pediatric Surgery Research, The Johns Hopkins Hospital, Baltimore, MD; Surgical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX
- Certification(s): General Surgery, American Board of Surgery; Surgical Oncology, Society of Surgical Oncology
- Academic Associations: Adjunct Clinical Professor of Surgery, Morehouse School of Medicine, Atlanta, GA
Breast Cancer Institute Directors

Ricardo H. Alvarez, MD
- MD—Universidad Nacional de La Plata, Facultad de Medicina, La Plata, Argentina
- MSc—Master of Science, Cancer Biology, University of Texas Graduate School of Biomedical Sciences, Houston, TX
- Internship/Residency: Internal Medicine & Medical Oncology Residency, Centro Oncológico de Excelencia, Gonnet, Argentina; Internal Medicine, MD Anderson Cancer Center UTHealth Graduate School of Biomedical Sciences, Houston, TX
- Fellowships: Hematology/Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX
- Certification(s): Internal Medicine and Medical Oncology, American Board of Internal Medicine
- Academic Associations: Clinical Assistant Professor of Medicine, Augusta University, Augusta, GA

Elizabeth Min Hui Kim, MD
- MD—Oregon Health and Science University School of Medicine, Portland, OR
- MPH—Johns Hopkins University, Bloomberg School of Public Health, Baltimore, MD
- Internship/Residency: General Surgery, St. John Providence Hospital, Southfield, MI
- Fellowships: Breast Surgical Oncology, combined Massachusetts General Hospital, Brigham and Women’s Hospital and Dana Farber Cancer Institute, Boston, MA
- Certification(s): Diplomate, American Board of Surgery; General Surgery

Marnee Spierer, MD
- MD—Columbia University, Vagelos College of Physicians and Surgeons, New York, NY
- Internship/Residency: Internal Medicine, Saint Barnabas Medical Center, Livingston, NJ; Radiation Oncology, Memorial Sloan Kettering Cancer Center, New York, NY
- Certification(s): Radiation Oncology, American Board of Radiology
- Academic Associations: Clinical Assistant Professor, Department of Interdisciplinary Oncology, University of Arizona College of Medicine, Phoenix, AZ

Gastrointestinal Cancer Institute Directors

Hatem Halabi, MD
- MD—American University of Beirut, Lebanon
- Internship/Residency: General Surgery, Medical College of Virginia/Virginia Commonwealth University, Richmond, VA
- Fellowships: Surgery, The Medical Informatics and Telemedicine/Applications Consortium (Telemedicine), Richmond, VA; Surgical Oncology, The Institute for Cancer Care at Mercy Health Services, Baltimore, MD
- Certification(s): American Board of Surgery
- Academic Associations: Adjunct Clinical Assistant Professor, Rosalind Franklin University of Medicine and Science, North Chicago, IL

Toufic Kachaamy, MD
- MD—American University of Beirut, Lebanon
- Internship/Residency: Internal Medicine, Duke University School of Medicine, Durham, NC
- Fellowships: Advanced Endoscopy, Mayo Clinic College of Medicine & Science, Phoenix, AZ; Gastroenterology, Medical College of Virginia/Virginia Commonwealth University, Richmond, VA
- Certification(s): Gastroenterology, American Board of Internal Medicine
Our Clinical Leadership

Genitourinary Cancer Institute Director

Sean Cavanaugh, MD
- MD—Texas Tech University Health Sciences Center School of Medicine, Lubbock, TX
- Internship/Residency: General Pediatrics, University of Texas Health Science Center at San Antonio, San Antonio, TX; Radiation Oncology, University of Texas Health Science Center at San Antonio, San Antonio, TX
- Certification(s): American Board of Radiology

Lung Institute Directors

Peter Baik, DO
- DO—Kirksville College of Osteopathic Medicine, Kirksville, MO
- Internship/Residency: Brown Family Residency Program, Pawtucket, RI; General Surgery, St. Barnabas Hospital, Bronx, NY; General Surgery, Arrowhead Regional Medical Center, Colton, CA; Cardiothoracic Surgery, University of Miami Miller School of Medicine, Miami, FL
- Fellowship: Minimally Invasive Esophageal and Thoracic Surgery, Swedish Medical Center, Seattle, WA
- Certification(s): General Surgery, American Osteopathic Board of Surgery; Cardiothoracic Surgery, American Osteopathic Board of Surgery
- Academic Associations: Adjunct Clinical Assistant Professor, Oklahoma State University College of Osteopathic Medicine, Tulsa, OK; Adjunct Clinical Assistant Professor in Surgery, Arkansas College of Osteopathic Medicine, Fort Smith, AR

Rabih Bechara, MD
- MD—American University of Beirut, Lebanon
- Internship/Residency: Internal Medicine, Emory University School of Medicine, Atlanta, GA
- Fellowships: Pulmonary and Critical Care, Emory University School of Medicine, Atlanta, GA; Interventional Pulmonology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA
- Certification(s): Interventional Pulmonology, American Association for Bronchology and Interventional Pulmonology; American Board of Internal Medicine; American Board of Pulmonary Medicine; American Board of Critical Care Medicine
- Academic Associations: Professor of Medicine, Morehouse School of Medicine, Atlanta, GA; Professor of Medicine, Augusta University, Medical College of Georgia School of Medicine, Augusta, GA

Kamal Patel, MD
- MD—Chicago Medical School, Rosalind Franklin University of Medicine and Science, North Chicago, IL
- MS—Applied Physiology, Chicago Medical School, Rosalind Franklin University of Medicine and Science, North Chicago, IL
- Internship/Residency: Family Practice, Mount Sinai Hospital, Chicago, IL; Radiation Oncology, Oregon Health & Science University Hospitals, Portland, OR
- Certification(s): American Board of Radiology
- Academic Associations: Clinical Assistant Professor, Department of Radiology, Chicago Medical School, Rosalind Franklin University of Medicine and Science, North Chicago, IL

Patricia Rich, MD
- MD—University of Miami Miller School of Medicine, Miami, FL
- Internship/Residency: Internal Medicine, University of Miami, Jackson Memorial Hospital, Miami, FL
- Fellowship: Hematology/Oncology, University of South Florida, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL
- Certification(s): Internal Medicine, American Board of Internal Medicine; Medical Oncology, American Board of Internal Medicine
- Academic Associations: Adjunct Clinical Assistant Professor, Morehouse School of Medicine, Atlanta, GA
Precision Medicine

Ankur R. Parikh, DO  Medical Director of Precision Medicine  
- DO—Kirkville College of Osteopathic Medicine, Kirkville, MO  
- Internship/Residency: Internal Medicine, Riverside Methodist Hospital, Columbus, OH  
- Fellowship: Hematology/Oncology, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD  
- Certification(s): Medical Oncology, Hematology & Internal Medicine, American Board of Internal Medicine  

Chiefs of Staff

Jeffrey Hoag, MD  CTCA Philadelphia  
- MD—Virginia Commonwealth University School of Medicine, Richmond, VA  
- MS—Physiology and Biophysics, Virginia Commonwealth University School of Medicine, Richmond, VA  
- Internship/Residency: Internal Medicine, Virginia Commonwealth University Hospital, Richmond, VA  
- Fellowship: Pulmonary Medicine/Critical Care Medicine, Johns Hopkins University, Baltimore, MD  
- Certification(s): Internal Medicine, Pulmonary Medicine, Critical Care Medicine, and Hospice & Palliative Care Medicine, American Board of Internal Medicine  
- Academic Associations: Associate Professor of Medicine, Drexel University College of Medicine, Philadelphia, PA  

Daniel Nader, DO  CTCA Tulsa  
- MD—University of Health Sciences (Kansas City University of Medicine and Biosciences), Kansas City, MO  
- Internship/Residency: Internal Medicine, Naval Medical Center, San Diego, CA  
- Fellowship: Pulmonary Medicine, Naval Medical Center, San Diego, CA  
- Certification(s): Pulmonary Disease and Internal Medicine, American Board of Internal Medicine  
- Academic Associations: Associate Professor, Oklahoma State University College of Osteopathic Medicine, Tulsa, OK  

Marnee Spierer, MD  CTCA Phoenix  
- MD—Columbia University, Vagelos College of Physicians and Surgeons, New York, NY  
- Internship/Residency: Internal Medicine, Saint Barnabas Medical Center, Livingston, NJ; Radiation Oncology, Memorial Sloan Kettering Cancer Center, New York, NY  
- Certification(s): Radiation Oncology, American Board of Radiology  
- Academic Associations: Clinical Assistant Professor, Department of Interdisciplinary Oncology, University of Arizona College of Medicine, Phoenix, AZ  

Bradford A. Tan, MD  CTCA Chicago  
- MD—Cebu Institute of Medicine, Cebu City, Philippines  
- Internship/Residency: Anatomic and Clinical Pathology, University of Illinois Metropolitan Group Hospitals, Chicago, IL  
- Certification(s): Anatomic Pathology, Clinical Pathology and Cytopathology, American Board of Pathology
Chiefs of Staff - continued

Alan Yahanda, MD  CTCA Atlanta

- MD—Johns Hopkins University, Baltimore, MD
- Internship/Residency: General Surgery, Johns Hopkins Hospital, Baltimore, MD
- Fellowships: Pediatric Surgery Research, The Johns Hopkins Hospital, Baltimore, MD; Surgical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX
- Certification(s): General Surgery, American Board of Surgery; Surgical Oncology, Society of Surgical Oncology
- Academic Associations: Adjunct Clinical Professor of Surgery, Morehouse School of Medicine, Atlanta, GA

Medicine & Science Executive Team

Roxana Aleksic, MBA
Assistant Vice President of Operations

Alora L. Brock, MBA
Vice President of Clinical Transformation

Jaclynne Brown, MED
Vice President of Strategic Communications and Marketing

Bellinda Conte, MS
Vice President of Research & Clinical Integration

Diane Denny, DBA, MHA, CPHQ, CPPS
Vice President of Quality, Patient Safety & Clinical Outcomes

Robert Hauser, PharmD, PhD
Vice President Clinical Analytics & HEOR

Carolyn Lammersfeld, MBA, MS, RD
Vice President of Integrative Oncology

Susan Zook
Senior Vice President, Precision Medicine
CTCA Physicians by the Numbers

52 Number of Specialties (Listed below)

Allergy & Immunology  Hospice & Palliative Medicine  Psychology
Anesthesiology  Infectious Diseases  Pulmonary Disease
Cardiology  Internal Medicine  Pulmonary/Critical Care
Cardiovascular Disease  Interventional Pulmonology  Radiation Oncology
Chiropractic  Medical Oncology  Radiology, Diagnostic
Colon & Rectal Surgery  Naturopathic Medicine  Radiology, Therapeutic
Critical Care Medicine  Nephrology  Radiology, Vascular & Interventional
Dermatology  Neurological Surgery  Rehabilitation & Physical Medicine
Emergency Medicine  Neurology  Rheumatology
Endocrinology  Neuropsychology  Sleep Medicine
Family Medicine  Ophthalmology  Surgical Oncology
Gastroenterology  Orthopedic Surgery  Teleradiology
General Surgery  Otolaryngology  Thoracic & Cardiac Surgery
Genetics  Pain Management  Thoracic Surgery
Gynecological Oncology  Pathology  Urology
Gynecology  Psychiatry  Vascular Surgery
Hematology  Plastic Surgery  
Hospital Medicine  Podiatry  

41 Medical Oncologists & Hematologists
27 Surgical Oncologists
21 Radiation Oncologists
49 Radiology (Diagnostic, Therapeutic, Vascular & Interventional)

991 Total active medical staff and allied health
About this Report

Our Length of Life Results

Our Quality of Life Results

Our Patient Experience Results

Our Patient Safety and Quality Results

Our Clinical Leadership

Our Research Publications
“My experience with immunotherapy was completely different than my experience with chemotherapy. I did not experience any negative side effects from immunotherapy. The side effects I have experienced have all been positive: returning to normal energy levels, resuming normal activities, working hard, feeling like I can kick a soccer ball around with my stepsons, playing fetch with the dog, going for a walk with my wife.”

Stephen Hook | Hodgkin Lymphoma
Our Research Publications & Presentations

**ADVANCES IN TREATMENT OPTIONS**


- Christian Hyde, Shannon Kinser, Christopher Croft, Patricia Schantz, Kayla Brown, Rajendra Vazirani, Jikun Wei, Ioana Bonta. Fractionated Radiosurgery Alone for Thirty-seven Brain Metastases: Not Everything that can be Counted Counts. *Cureus*. December 2017. [Case Report]

- Sean Cavanaugh, Steven Crawford, Joseph Dick, Patricia Schantz, Tiffany Tsui, John Swanson. Updated Retrospective Dose Volume Histogram Analysis of High Dose Rate Prostate Brachytherapy Patients with Hydrogel Spacer Implantation. 2017 American Society of Therapeutic Radiation Oncology (ASTRO) Annual Meeting. September 2017. [Poster Presentation]

- Dennis Buck, Tristan Smith, Wilbur Montana. An Uncommon Presentation of a Metachronous Testicular Primary Nonseminoma and Seminoma Separated by Two Decades and a Testicular Cancer Literature Review. *Case Reports in Oncology*. September 2017. [Case Report]


Our Research Publications & Presentations

ADVANCES IN TREATMENT OPTIONS
- CONTINUED


• Patricia Rich, Christopher Parks, Rabih Bechara. Hyperthermic Intrathoracic Extracorporeal Chemotherapy (HITEC). International Association for the Study of Lung Cancer (IASLC). December 2016. [Poster Presentation]


• Shayma Kazmi. Evaluation of Novel Blood-Based Biomarkers with Atezolizumab Monotherapy in 1L Advanced or Metastatic NSCLC (B-F1RST). International Association for the Study of Lung Cancer (IASLC). December 2016. [Poster Presentation]


• Ravi Prakash, Pankaj Vashi. Large Bowel Obstruction Following Endoscopic Spray Cryotherapy for Palliation of Rectal Cancer Bleeding. AGC Case Reports Journal. May 2017/October 2016. [Case Report]

• Ioana Bonta, Christopher Parks, Rabih Bechara, Patricia Rich. Pleural Effusion Characteristics and Relationship with Outcomes in Cancer Patients. International Association for the Study of Lung Cancer (IASLC). December 2016. [Poster Presentation]

ADVANCES IN THE MANAGEMENT OF DISEASE COMPLICATIONS

• Rahul Mehta, Jeffrey Hoag, Amit Borah, Emil Abramian. Closure of a Bronchopleural Fistula Complicating Cryoprobe Biopsy of the Lung. Respirology Case Reports. April 2018. [Case Report]


ADVANCES IN DIAGNOSTIC OPTIONS


• Revathi Suppiah, Bruce Gershenhorn, Maurie Markman. A Case Report Demonstrating the Potential Clinical Relevance of Liquid Tumor Biopsies in Lung Cancer. Case Reports in Oncology. November 2016. [Case Report]

PATIENT SAFETY AND QUALITY IMPROVEMENT


• Kerri Mack, Robyn Dunbar, Cheryl Clements, Margie Bonawitz, Joanne McGovern. Taking HAP (Hospital-Acquired Pneumonia) off the Map with a Routine Screen. Institute of Healthcare Improvement (IHI) National Forum. December 2017. [Poster Presentation]


PATIENT SAFETY AND QUALITY IMPROVEMENT - CONTINUED


QUALITY OF LIFE, SYMPTOM MANAGEMENT AND SUPPORTIVE CARE


TECHNOLOGY AND INNOVATION


Cancer Treatment Centers of America® (CTCA) comprehensive care and research centers are accredited and recognized by several renowned professional health care organizations that assess and monitor the quality of patient care. The voluntary accreditations and certifications highlighted were earned by all CTCA® centers unless otherwise specified.

**THE JOINT COMMISSION**

The Joint Commission’s Gold Seal of Approval® for Hospital Accreditation reflects a commitment to providing safe and effective patient care and a willingness to voluntarily undergo rigorous, unannounced onsite surveys. Accreditation requires compliance with standards related to areas such as patient rights, environment of care, infection prevention, leadership and medication management.

**QUALITY ONCOLOGY PRACTICE INITIATIVE (QOPI)**

The QOPI Certification Program, an affiliate of the American Society of Clinical Oncology (ASCO), recognizes outpatient practices that meet the benchmarks for breast, colorectal, non-small cell lung, non-Hodgkin lymphoma, gynecologic and prostate cancers. This seal designates those practices that scored high on key QOPI quality measures and met rigorous chemotherapy safety standards established by ASCO and the Oncology Nursing Society.

**COMMISSION ON CANCER (COC)**

The COC recognizes cancer care programs for their commitment to providing comprehensive, high-quality, multidisciplinary patient-centered care. COC Program Standards require facilities to create meaningful processes for implementation of patient-centered care.

**NATIONAL ACCREDITATION PROGRAM FOR BREAST CANCERS (NAPBC)**

Accreditation by the NAPBC is granted only to those centers that are voluntarily committed to providing the highest standards of care to patients with diseases of the breast. NAPBC requires a rigorous evaluation in a number of areas, including program leadership, use of evidence-based practices, surgery, imaging and quality improvement process. CTCA Chicago, CTCA Atlanta, CTCA Phoenix and CTCA Tulsa currently maintain this accreditation; CTCA Philadelphia anticipates accreditation in 2019.

**AMERICAN COLLEGE OF RADIOLOGY IMAGING ACCREDITATION (ACR)**

ACR accreditation indicates that providers adhere to the highest level of image quality and safety by documenting the requirements for equipment, medical personnel and quality assurance. All CTCA centers have earned accreditation in radiation oncology along with various imaging modalities, including mammography, CT, PET, ultrasound, nuclear medicine, MRI, and, as appropriate, breast MRI, breast ultrasound and stereotactic breast biopsy.
STEM CELL TRANSPLANT AND CELL THERAPY PROGRAM FACT ACCREDITATION

The Foundation for the Accreditation of Cellular Therapy (FACT), an internationally recognized accrediting body for hospitals that perform stem cell transplants, designates the threshold for excellence in cellular therapy including bone marrow or cord blood transplant. FACT recognizes excellence with respect to clinical care, donor management, apheresis collection, processing, storage, transportation, autologous administration and cell release. CTCA Chicago and CTCA Philadelphia have earned the FACT accreditation.

COLLEGE OF AMERICAN PATHOLOGISTS ACCREDITATION (CAP)

The CAP Laboratory Accreditation Program accredits the entire spectrum of laboratory test disciplines with the most scientifically rigorous customized checklist requirements. Serving as the gold standard, this accreditation ensures compliance to laboratory standards and safety measures and maintenance of staff proficiency. All CTCA centers are CAP accredited; the laboratory at CTCA Chicago and CTCA Philadelphia are also CAP-accredited biorepository programs. These laboratories collect, process and store biospecimens to support future scientific investigation.

MAGNET RECOGNITION

Awarded by the American Nurses Credentialing Center (ANCC), Magnet status is considered the highest honor a hospital can achieve for its nursing programs. Of the nearly 5,000 hospitals in the United States, fewer than nine percent have earned Magnet Recognition. CTCA Chicago has achieved this designation with each of the remaining centers in the process of attaining accreditation.

CERTIFIED QUALITY BREAST CENTER OF EXCELLENCE (NQMBC)

The NQMBC Program evaluates breast programs using various quality indicators in the areas of imaging, surgery, cancer registry, pathology, radiation and patient satisfaction. This certification is currently maintained by CTCA Chicago.

To order additional copies of the 2018 /2019 Patient Treatment Results book, please contact Jennifer Flores.
Jennifer.Flores@ctca-hope.com
About Cancer Treatment Centers of America® Global, Inc.

Cancer Treatment Centers of America Global, Inc. (CTCA) is a comprehensive cancer care network of hospitals and outpatient care centers in Atlanta, Chicago, Philadelphia, Phoenix and Tulsa. Specializing in the treatment of adult cancer patients, CTCA® offers an integrative approach to care that combines surgery, radiation, chemotherapy, and immunotherapy with advancements in precision cancer treatment and supportive therapies designed to manage side effects and enhance quality of life both during and after treatment. CTCA also offers a range of clinical trials for cancer patients with the objective of revealing new treatments supported by scientific and investigational research. CTCA patient satisfaction scores consistently rank among the highest for all cancer care providers in the country.

HOSPITALS

CTCA Atlanta  CTCA Chicago  CTCA Philadelphia  CTCA Phoenix  CTCA Tulsa

OUTPATIENT CARE CENTERS

Outpatient Care Center Downtown Chicago  Outpatient Care Center North Phoenix  Outpatient Care Center Scottsdale

For more information, visit cancercenter.com.