Mercy Cancer Center is dedicated to providing state-of-the-art comprehensive cancer care in an environment that envelops patients and family in a warm embrace of compassion. As an American College of Surgeon’s Commission on Cancer Accredited Cancer Center, Mercy Cancer Center is committed to improving survival and quality of life for cancer patients through standard setting, prevention, research, education and the monitoring of comprehensive quality of care. Each calendar year, Mercy’s cancer committee develops and disseminates a report of patient and program outcomes to the public. This report summarizes and highlights several of Mercy Cancer Center’s services and activities for calendar year 2016.

Each calendar year, a physician member of the cancer committee completes an in-depth analysis to assess and verify that cancer program patients are evaluated and treated according to evidence-based national treatment guidelines. This annual report includes an analysis of the incorporation of palliative care into the treatment of lung cancer cases at Mercy. Lung cancer results in more cancer deaths than any other type of cancer in the United States. Many patients with lung cancer present with advanced stage disease. Evidence has shown that the early incorporation of palliative care in patients with advanced lung cancer can significantly improve the quality of life and length of survival. This study reports on Mercy Cancer Center’s experience with palliative care and lung cancer.

The cancer committee, under the guidance of the Quality Improvement Coordinator, each year develops, analyzes, and documents studies that measure the quality of care and outcomes for cancer patients. This annual report includes two separate quality/outcome studies. One of the studies examines Mercy’s Colorectal Screening initiative. Mercy has committed to the Colorectal Roundtable pledge to screen 80% of eligible patients by the year 2018. This study reports on our screening initiative.

The second quality/outcome study included in this annual report is an analysis of the Timeliness of Lung Cancer Treatment at Mercy. With the addition of a lung cancer navigator and a lung cancer screening program, Mercy is committed to achieving excellence in lung cancer care. This study provides an analysis of the timeliness of care, an important component of excellent care.

Mercy Cancer Center is proud to be a member of the National Cancer Institute’s Community Oncology Research Program through our affiliation with CHI’s NCORP grant. We believe that participation in clinical research is important for our patients and for our center. This annual report contains a bibliography and link to the peer reviewed journal articles that members of our cancer team have authored in 2016. This annual report also summarizes the new analytic cancer cases for 2015. It highlights the large number and diverse variety of cancer cases seen at our center. Each year the statistics remind us of our responsibility to provide the highest quality of care possible. We are committed to quality and we are committed to the patient experience. In addition to our Commission on Cancer accreditation, Mercy Cancer Center has earned accreditation by the American College of Radiology in Radiation Oncology and by the National Accreditation Program for Breast Centers.

“None of us is as good as all of us.” Mercy Cancer Center is a team of dedicated professionals committed to quality care. We are proud to carry on the traditions of the Sisters of Mercy as we adhere to the values of reverence, integrity, compassion and excellence in everything we do. I hope that you find the information in this report educational and inspiring.

Sincerely,

Richard L. Deming, MD
Medical Director, Mercy Cancer Center
Chairman, Mercy Cancer Committee
## ANALYTIC CASE DISTRIBUTION (2015)

Summary by Body System and First Contact Year Report

<table>
<thead>
<tr>
<th>Body System</th>
<th>Cases (Percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral cavity &amp; pharynx</td>
<td>53 (2.7%)</td>
</tr>
<tr>
<td>Digestive system</td>
<td>326 (16.7%)</td>
</tr>
<tr>
<td>Respiratory system</td>
<td>311 (15.9%)</td>
</tr>
<tr>
<td>Bones &amp; joints</td>
<td>2 (0.1%)</td>
</tr>
<tr>
<td>Soft tissue</td>
<td>9 (0.5%)</td>
</tr>
<tr>
<td>Skin excluding basal &amp; squamous</td>
<td>60 (3.1%)</td>
</tr>
<tr>
<td>Breast</td>
<td>431 (22.0%)</td>
</tr>
<tr>
<td>Female genital system</td>
<td>164 (8.4%)</td>
</tr>
<tr>
<td>Male genital system</td>
<td>120 (6.1%)</td>
</tr>
<tr>
<td>Urinary system</td>
<td>134 (6.8%)</td>
</tr>
<tr>
<td>Brain &amp; other nervous system</td>
<td>47 (2.4%)</td>
</tr>
<tr>
<td>Endocrine system</td>
<td>61 (3.1%)</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>95 (4.9%)</td>
</tr>
<tr>
<td>Myeloma</td>
<td>31 (1.6%)</td>
</tr>
<tr>
<td>Leukemia</td>
<td>65 (3.3%)</td>
</tr>
<tr>
<td>Mesothelioma</td>
<td>1 (0.1%)</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>47 (2.4%)</td>
</tr>
</tbody>
</table>

Total: 1,957
Identify the problem
As an entity, Mercy Cancer Center has signed the pledge with the National Colorectal Cancer Roundtable to participate in the 80% by 2018 initiative for colon cancer screening. Our challenge, or problem, was to increase our efforts to reach this challenging goal. We chose to look at our colonoscopy rates within the Mercy Clinics system.

Define how the study was conducted
The target population is Iowans between the ages of 50-75. A dedicated scheduler was hired to proactively follow up and schedule colorectal screenings. Initially one pilot clinic was utilized to evaluate effectiveness between mailings and phone calls.

Conduct study
There was a need to create a collaborative relationship between the Mercy Gastroenterology Clinic and Mercy’s primary care providers in order for us to achieve and sustain increased colon cancer screening rates. A goal was set initially to reach 6,000 patients with an anticipated 1,200 undergoing screening colonoscopies. Patients were reached through a combination of phone calls and letters by mail. Of those contacted, 71% had already completed their recommended screenings. For the first 3 months of this study, patients were contacted only by letter, due to unavailability of staffing to make phone calls. This resulted in 1,267 letters being mailed. During the subsequent 5 months, patients received a phone call (3,668 patients). Due to a significant improvement in response rates through phone calls, this became the sole method used moving forward in the study.

Analysis summary of study findings/results
An average of 230 patients per week were contacted which resulted in approximately 10 screening tests scheduled per week.

23% of eligible patients scheduled via phone versus 1% through a letter.

Although this is an ongoing initiative, data analyzed through June 6, 2016, showed 242 screenings scheduled with 113 completed screenings resulting in three diagnoses of colon cancer.

The follow-up steps on this project are to continue to contact primary care patients who are eligible for the screening and get them set up with either the colonoscopy or the Cologuard kit with a goal of reaching the 80% and increasing the numbers of cancer cases that are caught early.

Data results comparison following completion with national benchmark or guidelines
Screening recommendations were based on the USPSTF (US Preventive Task Force) guidelines using colonoscopy as the standard method of screening followed by Cologuard kits and FIT tests in patients who were unable to undergo the test due to medical or technical reasons or inability to tolerate the prep.

Recent statistics from the CDC suggest that one in three adults between the ages of 50 and 75 has not yet been tested for colorectal cancer as recommended by the USPSTF. Despite research that confirms colon cancer screening actually saves lives, rates remain too low and unnecessary deaths occur as a result of preventable colorectal cancers.

As such, the goal for screening should be 100% of the eligible population. However, this is a lofty and insurmountable goal in the short term. The national average is 88% and our current goal is set at 80% of our population by the year 2018 based on our commitment and partnership with the ACS.
Background
Palliative care provides those with a serious or chronic illness—from the time of diagnosis throughout the course of treatment—care that optimizes quality of life by anticipating, preventing, and managing suffering. It is delivered by an interdisciplinary team of physicians, nurses, social workers, chaplains, pharmacists and other practitioners to address the physical, intellectual, emotional, social, and spiritual needs of patients and their families.

The seminal paper published in the NEJM by Temel, et al in August of 2010 entitled, Early Palliative Care for Patients with Metastatic Non–Small-Cell Lung Cancer, provided level one evidence for the benefit of palliative care in Stage IV non-small cell lung cancer. The study concluded, “Among patients with metastatic non–small-cell lung cancer, early palliative care led to significant improvements in both quality of life and mood. As compared with patients receiving standard care, patients receiving early palliative care had less aggressive care at the end of life but longer survival.” As a result, the inclusion of early palliative care for stage IV lung cancer has been included in national treatment guidelines.

Mercy Medical Center, and specifically Mercy Cancer Center, has been a strong advocate for providing patient-centered palliative care services to those cancer patients who would benefit. As we continue to grow and expand the palliative care program we undertook this study to determine our “current state” as related to stage IV lung cancer.

Results
We reviewed all analytic stage IV lung cancer patients at Mercy for the calendar year 2015. We analyzed the patient characteristics based on gender, race, age at diagnosis, insurance status and county of residence. For the purpose of this study, we utilized the following county designation:

Primary 3 county service area includes: Dallas, Polk, and Warren. Secondary 6 county service area includes these additional counties: Boone, Marshall, Marion, Jasper, Story, and Madison.

There were 110 analytic stage IV lung cancer patients at Mercy in the calendar year 2015. 92 of the 110 patients received at least part of their treatment at Mercy. 18 of the 110 patients received all their treatment outside of Mercy.

Twenty of the patients with stage IV lung cancer at Mercy in 2015 had at least one contact with palliative care services. This represents 18% of the total Stage IV lung cancer patients and 21.7% of those patients receiving at least part of their treatment at Mercy in 2015.

Discussion
When we analyzed the characteristics of the group that received palliative care as compared to the group that did not receive palliative care, we found no significant difference between the two groups in regards to gender, race, insurance status or county of residence. We did find a slight difference in the two groups as related to age at diagnosis. Specifically, patients younger than 50 and patients older than 65 received palliative care services to a lesser extent compared to those patients in the 50-64 age group. 37.5% of patients in the 50-64 year old age group were seen by palliative care.

The nature of the record keeping precluded us from accurately determining the source of referral for the 20 patients that were seen by our palliative care team.

Summary and Recommendations
This study serves as a one-year (2015) snapshot of the adoption of palliative care in stage IV lung cancer. The low rate of referral to palliative care (18% of all patients) indicates significant room for approval. This study will serve as the basis for a Standard 4.6 Quality Improvement for next year. We will convene a group of providers and professionals involved in lung cancer care and palliative care to assess the barriers and make recommendations to improve the utilization of palliative care services for our patients with Stage IV lung cancer. That quality improvement ultimately will allow more patients to benefit from services of our palliative care team.

By Dr. Richard Deming
PALLIATIVE CARE IN STAGE IV LUNG CANCER PATIENTS
(Standard 4.6)
110 STAGE IV LUNG CANCER BREAKDOWN

**Sex**
- Male: 54 patients (49%)
- Female: 56 patients (51%)

**Race**
- White: 106 patients (96.4%)
- Black: 4 patients (3.6%)
- All Non-Spanish, Non-Hispanic: 0 patients (0.0%)

**Age at Diagnosis (Range 37-94)**
- 30-39: 1 patient (1%)
- 40-49: 5 patients (4.5%)
- 50-59: 24 patients (22%)
- 60-69: 28 patients (25%)
- 70-79: 36 patients (33%)
- 80-89: 14 patients (13%)
- 90+: 2 patients (1.5%)

**County at Diagnosis**
- Patients from Missouri: 2 patients (1.5%)
- Patients from counties within the primary service area: 63 patients (57.5%)
- Patients from counties within the secondary service area: 11 patients (10%)
- Patients from the rest of Iowa: 34 patients (31%)
- Patients from 27 different counties within Iowa: 34 (31%)

**Insurance**
- No Insurance: 1 patient (1%)
- Commercial: 39 patients (35.5%)
- Medicaid: 12 patients (11%)
- VA: 5 patients (4.5%)
- Medicare: 52 patients (47%)
- Unknown: 1 patient (1%)

**County Distribution**
- Primary service area (Polk County): 12 (60%)
- Secondary service area (Madison County): 1 (5%)
- Tertiary service area: 7 patients (35%)

**Age Distribution**
- 50-59: 9 patients (45%)
- 60-69: 3 patients (15%)
- 70-79: 6 patients (30%)
- 80-89: 2 patients (10%)

**Insurance Distribution**
- Commercial: 7 patients (35%)
- Medicaid: 4 patients (20%)
- Medicare: 8 patients (40%)
- VA: 1 patient (5%)

Only two of the 20 patients received none of their treatment at Mercy.

**Treatment**
19 of the 110 patients received all their treatment outside of Mercy with 10 of those patients residing in either a primary or secondary service county (6-Polk, 1-Story, 1-Marion).

Total of 110 stage IV lung cancer patients seen at Mercy in 2015. Of those patients, 20 had contact with palliative care services or 18%.

The 20 patients seen by palliative care
1 patient expired before any treatment could be administered. All the remaining patients in this group received some type of treatment.

**Sex**
- Male: 10 patients (50%)
- Female: 10 patients (50%)

All 20 patients were white, non-Spanish.
STUDIES OF QUALITY – TIMELINESS OF LUNG CANCER TREATMENT

By Dr. Richard Deming

Background

Three years ago, Mercy Cancer Center, in collaboration with Mercy Radiology, CIC Associates and Mercy Primary Care, developed a lung cancer screening program. During the process of evaluating our screening results, we had the opportunity to track lung cancer patients more closely from the beginning of the diagnosis through the end of treatment and in the process, understand the issues related to timeliness of treatment. It also became apparent to us, through the cases presented at our Multidisciplinary Cancer Lung Cancer Conference, that there is a great deal of variability in the timeliness of treatment among patients who present with symptoms as opposed to those patients with lung cancer who are detected by screening. It was also observed anecdotally that patients who had the benefit of a lung cancer navigator moved through the system from diagnosis to treatment more efficiently with fewer delays. These two observations led to a recommendation that we conduct a Study of Quality in which we analyze the Timeliness of Lung Cancer treatment to establish Mercy Cancer Center’s experience with the understanding that this study could serve as a basis for recommendations for improvement in the future.

We reviewed all of the analytic cases on Non-small cell Lung cancer at Mercy Cancer Center in calendar year 2015. There were a total of 243 primaries lung cancers in 240 patients (three patients had 2 biopsy proven lung primaries per patient). We analyzed the cases with respect to various demographic variables and with respect to which patients had interaction with the lung cancer navigator. When we analyzed the characteristics of the group that received palliative care as compared to the group that did not receive palliative care, we found no significant difference between the two groups in regards to gender, race, insurance status or county of residence. We did find a slight difference in the two groups as related to age at diagnosis. Specifically, patients younger than 50 and patients older than 60 received palliative care services to a lesser extent compared to those patients in the 50-59 age group. 37.5% of patients in the 50-59 year old age group were seen by palliative care.

Continued...
Results

Sex
Male: 132 patients
Female: 108 patients

Age (Age range 31-99)
30-39: 2
40-49: 8
50-59: 35
60-69: 74
70-79: 78
80-89: 40
90-99: 3
No pattern noted around age as to contact with navigation. Appears to be fairly evenly distributed.

Contact with Navigation services
No: 118 patients
Yes: 122 patients
Overall, 51% were seen by the Lung Cancer Navigator

Race
Asian: 2
Black: 7
Other: 3
White: 228
All reported as non-Hispanic
No pattern noted around race as to contact with navigation.

Insurance
Commercial: 96; 57% seen by navigator
Managed Medicare: 15; 60% seen by navigator
Medicare, NOS: 14; 28% seen by navigator
Medicare/Medicaid: 13; 23% seen by navigator
Medicare/Supplement: 11; 35% seen by navigator
VA: 17; 35% seen by navigator

No pattern noted around race as to contact with navigation.
Half of the different races in each category had contact.

Days to Biopsy
If imaging performed elsewhere, case not included in analysis. Total number of cases included in review: 129.

Benchmark:
25%: 5 days
50%: 16 days
75%: 43 days

Number of days: 0-97 days
0-6 days: 35 patients, 27%
7-16 days: 37 patients, 27%
17-45 days: 50 patients, 39%
46+ days: 7 patients, 5%
MEDIAN is 13 days

Our quartile information:
25%: 7 days
50%: 13 days
75%: 18 days

All patients treated with chemo had a Bi performed at Mercy or elsewhere prior to treatment.

Chemo/SURF 1st Treatment – 49 Patients
Number of days: 1-58 days
Be performed here:
0-20 days: 15 patients, 31%
21-33 days: 10 patients, 21%
34-53 days: 7 patients, 14%
54+ days: 7 patients, 14%
MEDIAN is 13 days

Our quartile information:
25%: 7 days
50%: 13 days
75%: 18 days

Chemo 1st Treatment – 20 patients
Number of days: 0-40 days
0-20 days: 15 patients, 75%
21-33 days: 2 patients, 10%
34-53 days: 3 patients, 15%
MEDIAN is 12 days

Our quartile information:
25%: 7 days
50%: 13 days
75%: 18 days

Radiation 1st Treatment – 75 Patients
Number of days: 0-167 days
Be performed here:
0-20 days: 10 patients, 13%
21-33 days: 9 patients, 12%
34-53 days: 13 patients, 17%
54+ days: 16 patients, 21%
MEDIAN is 34 days

Our quartile information:
25%: 15 days
50%: 34 days
75%: 54 days

Chemo/XRT 1st Treatment – 49 Patients
Number of days: 1-58 days
Be performed here:
0-20 days: 15 patients, 31%
21-33 days: 10 patients, 21%
34-53 days: 7 patients, 14%
54+ days: 7 patients, 14%
MEDIAN is 13 days

Our quartile information:
25%: 7 days
50%: 13 days
75%: 18 days

Surgery 1st Treatment – 50 Patients
Number of days: 0-119 days
Be performed here:
0-20 days: 2 patients, 4%
21-33 days: 9 patients, 18%
34-53 days: 21 patients, 42%
54+ days: 10 patients, 20%
MEDIAN is 34 days

Our quartile information:
25%: 15 days
50%: 34 days
75%: 54 days

2 patients were treated with surgery without having a prior biopsy. No Bi performed. (Counted number of days from 1st contact to start of treatment)
0-20 days – 2 patients – 4% “0 days and 9 days”

Days Biopsy to Treatment
Benchmarks obtained from Oncology Advisory Board

Benchmark:
25%: 20 days
50%: 33 days
75%: 53 days

Number of days: 1-58 days
0-20 days: 15 patients, 75%
21-33 days: 2 patients, 10%
34-53 days: 3 patients, 15%
MEDIAN is 11 days

Our quartile information:
25%: 10 days
50%: 17 days
75%: 23 days

Chemo/RT 1st Treatment – 49 Patients
Number of days: 1-58 days
Be performed here:
0-20 days: 15 patients, 31%
21-33 days: 10 patients, 21%
34-53 days: 7 patients, 14%
54+ days: 7 patients, 14%
MEDIAN is 13 days

Our quartile information:
25%: 7 days
50%: 13 days
75%: 18 days

Bx performed elsewhere:
0-20 days: 2 patients, 4%
21-33 days: 2 patients, 4%
34-53 days: 3 patients, 4%
54+ days: 3 patients, 4%
MEDIAN is 27 days

Our quartile information:
25%: 10 days
50%: 27 days
75%: 38 days

2 patients were treated with surgery without having a prior biopsy. No Bi performed. (Counted number of days from 1st contact to start of treatment)
0-20 days – 2 patients – 4% “0 days and 5 days”

Chemo/XRT 1st Treatment – 49 Patients
Number of days: 1-58 days
Be performed here:
0-20 days: 15 patients, 31%
21-33 days: 10 patients, 21%
34-53 days: 7 patients, 14%
54+ days: 7 patients, 14%
MEDIAN is 13 days

Our quartile information:
25%: 7 days
50%: 13 days
75%: 18 days

Bx performed elsewhere:
0-20 days: 2 patients, 4%
21-33 days: 2 patients, 4%
34-53 days: 3 patients, 4%
54+ days: 3 patients, 4%
MEDIAN is 27 days

Our quartile information:
25%: 10 days
50%: 27 days
75%: 38 days

2 patients were treated with surgery without having a prior biopsy. No Bi performed. (Counted number of days from 1st contact to start of treatment)
0-20 days – 2 patients – 4% “0 days and 5 days”

Continued...
Discussion

240 patients with non-small cell lung cancer were diagnosed or received the first course of treatment at Mercy Cancer Center in calendar year 2015. Only 51% of the patients had the benefit of contact with our lung cancer navigator. There was no difference in access to the lung cancer navigator’s services based on gender, age, race, or insurance status.

Due to the fact that we were analyzing 2015 patients, we were not able to make an accurate determination of survival statistics at this time.

Summary and Recommendations

Compared to benchmark data from the Oncology Advisory Board, Mercy Cancer Center’s lung cancer patients are being treated in a timely manner. Patients who undergo surgery or who have radiation as part of their first course of treatment have a longer delay from biopsy to treatment than patients receiving chemotherapy alone. This is likely a result of radiation treatment planning for those patients receiving radiation. For patients undergoing surgery, the delay is likely due to the necessary pre-op workup and surgical scheduling concerns.

Only 51% of our lung cancer patients are currently being seen by our lung cancer navigator.

We recommend that we re-exam our 2015 lung cancer patient data with respect to survival after 2 years have transpired. This will allow us to determine possible survival differences related to the timeliness of treatment and navigation services.

We recommend increased utilization of lung cancer navigation at the time of diagnosis. This study will serve as a basis for a more detailed Quality Improvement measure in the future.
Dr. Richard Deming – Radiation Oncologist

Results of NCCTG N0275 (Alliance) – a phase II trial evaluating resection followed by adjuvant radiation therapy for patients with desmoplastic melanoma


View the full article at: http://onlinelibrary.wiley.com/doi/10.1002/cam4.783/full

Dr. Jan Franko – Surgical Oncologist

Prognosis of patients with peritoneal metastatic colorectal cancer given systemic therapy: an analysis of individual patient data from prospective randomized trials from the Analysis and Research in Cancers of the Digestive System (ARCAD) database


View the full article at: http://www.sciencedirect.com/science/article/pii/S1470204516305009

The following peer reviewed articles were written, in part, by members of our oncology staff in 2016 and published in various oncology journals. We are proud of the contributions and research the oncologists at Mercy are making to improve cancer care for patients everywhere.

Dr. Richard Deming – Radiation Oncologist

Results of NCCTG N0275 (Alliance) – a phase II trial evaluating resection followed by adjuvant radiation therapy for patients with desmoplastic melanoma


View the full article at: http://onlinelibrary.wiley.com/doi/10.1002/cam4.783/full

Effect of Radiosurgery Alone vs. Radiosurgery With Whole Brain Radiation Therapy on Cognitive Function in Patients With 1 to 3 Brain Metastases


View the full article at: http://jamanetwork.com/journals/jama/fullarticle/2536637?utm_campaign=articlePDF&utm_medium=articlePDFlink&utm_source=articlePDF&utm_content=jama.2016.3839

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Continued...
Dr. Tara Graff – Medical Oncologist
Allogeneic transplantation provides durable remission in a subset of DLBCL, patients relapsing after autologous transplantation
View the full article at: https://www.ncbi.nlm.nih.gov/pubmed/26989808

Dr. Roscoe Morton – Medical Oncologist
A Pathway Through the Bundle Jungle
View the full article at: https://www.ncbi.nlm.nih.gov/pubmed/27173604

Repeated measures analyses of dermatitis symptom evolution in breast cancer patients receiving radiotherapy in a phase 3 randomized trial of mometasone furoate vs placebo (N06C4 [alliance])
View the full article at: https://www.ncbi.nlm.nih.gov/pubmed/27173604

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OUR SERVICES

Mercy Cancer Center is proud to offer the following services to our patients and their families:

• Comprehensive team of oncology specialists
• Radiation Oncology
• Medical Oncology
• Gynecologic Oncology
• Surgical Oncology
• Katzmann Breast Center
• Clinical trials and research
• Nurse navigators
• Cancer resource center
• Nutritional counseling and support
• Lung Screening Program

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