2014 CANCER CARE REPORT

Data collected in 2013 and reported in 2014

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Lakeland Health
Marie Yeager Cancer Center

Dear Colleague,

We are pleased to provide this update on recent accomplishments by Lakeland Health Oncology Services.


Edmund Paloyan, MD

The Lakeland Radiation Oncology and Medical Oncology departments collaborate with Lakeland's entire cancer team—physicians, nurses, patient navigators, and specialized support staff—to ensure patients receive accurate diagnoses and individualized treatments for the best possible cancer care. For the second year in a row, Lakeland Radiation Oncology and Lakeland Cancer Specialists ranked in the top ten percent in two key patient satisfaction metrics—overall rating of care and likelihood to recommend (per Press Ganey patient satisfaction surveys).


Benjamin Gielda, MD

The Radiation Oncology staff of Lakeland Health has a new member: **Benjamin Gielda, MD,** Radiation Oncologist. Dr. Gielda is seeing patients at Lakeland Medical Center, St. Joseph. Prior to joining Lakeland, Dr. Gielda cared for patients at Traverse Bay Radiation Oncology in Traverse City, Michigan. A board-certified radiation oncologist, he is proficient in prostate brachytherapy, along with intracranial and extracranial radiosurgery. Dr. Gielda has authored over 20 peer-reviewed publications, published a textbook chapter, and has diverse research interests including breast, lung, gynecologic, and brain cancers.

Lakeland is one of eleven hospitals and healthcare systems that have joined to form the Cancer Research Consortium of West Michigan (CRCWM) to bring the highest level of clinical trials from the National Cancer Institute (NCI) to the men, women, and children in our community.

Joining the Cancer Research Consortium of West Michigan doubles the number of clinical trials we are able to offer to our community members. This means that patients can stay close to home and participate in nationally recognized clinical trials. For more information about the Cancer Research Consortium of West Michigan visit www.crcwm.org.

We hope you find the information in this report helpful in understanding our community's cancer needs. We remain as dedicated as ever to provide a full spectrum of oncology services to achieve exemplary outcomes for our patients with cancer.

Sincerely,

E. Paloyan M.D.

Edmund Paloyan, MD
Medical Director of Oncology Services
Lakeland Health

Our mother liked you, trusted you, and had faith in you, sentiments that are shared by us as well. You always treated her and us with dignity and respect, and regard your patients as still being a part of life while there is a part of life still in them.

TrueBeam® System – Now at Lakeland

In a promising development for cancer patients, Lakeland has acquired TrueBeam, an innovative system that enables a radically different approach to treating cancer with image-guided radiotherapy. TrueBeam, from Varian Medical Systems, was engineered to deliver more powerful cancer treatments with pinpoint accuracy and precision.

It uniquely integrates new imaging and motion management technologies within a new design that makes it possible to deliver treatments more quickly. The system monitors and compensates for tumor motion, opening the door to new possibilities for the treatment of lung, breast, prostate, head, and neck, as well as other cancers that are treatable with radiotherapy.

Other benefits of the TrueBeam system include:

- **Faster Treatments** – Greater patient comfort by shortening treatments and improved precision with less time for tumor motion during dose delivery
- **Enhanced Precision** – The precision of the TrueBeam system is measured in increments of less than a millimeter and accuracy checks are performed every 10 milliseconds throughout the entire treatment
- **Faster Imaging at Lower Doses** – TrueBeam imaging technology can produce the three-dimensional images used to fine-tune tumor targeting in 60 percent less time and creates images using 25 percent less X-ray dose

The TrueBeam system allows Lakeland physicians to select the optimal treatment for every type of cancer – a breakthrough that lets us bring a wider spectrum of advanced radiotherapy treatment options to many more patients.

For more information on the TrueBeam system, visit www.lakelandhealth.org/truebeam

Lakeland Joins Michigan Radiation Oncology Quality Consortium

Lakeland Health has joined the Michigan Radiation Oncology Quality Consortium (MROQC), a collaborative group of specialists across the state of Michigan who work together on quality improvement projects to affect the radiation treatment experience for patients with breast or lung cancer.

MROQC's goal is to identify best practices in radiation therapy that minimize the side effects patients may experience from radiation treatment. MROQC has developed the infrastructure to link together and analyze information about how radiation therapy is delivered using information provided by partnered clinicians about patient outcomes, and information from the patient regarding side effects that occur during treatment.

Data is collected at hospitals across the state of Michigan, including Lakeland Medical Center, St. Joseph. By participating in this consortium, we will be able to identify better ways of matching treatment plans to each patient's unique characteristics to minimize the side effects experienced.

Thank you all for helping me through my treatment – your understanding, kindness, and smiles have made a terrifying time much less. Please know all you do every day is so appreciated by so many.

Table 1
Distribution of Total Cancer Cases by Primary Site

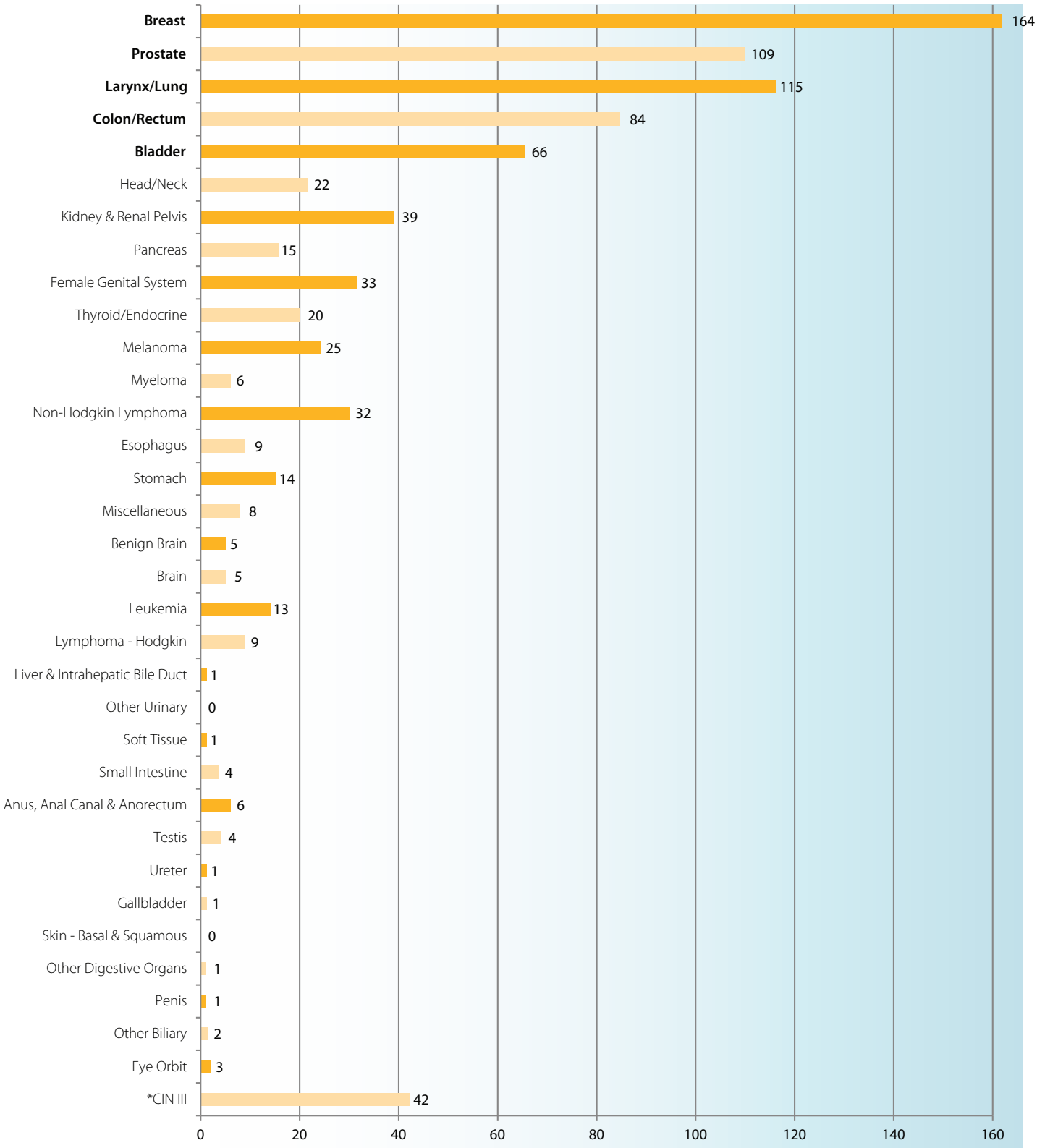


Table 2
Summary: By Body System and Gender

Primary Site	Total	Total %	Male	Male %	Female	Female %
Oral Cavity & Pharynx	**22**	**2.6%**	**16**	**4.0%**	**6**	**1.30%**
Tongue	5	0.60%	3	0.70%	2	0.04%
Salivary Glands	4	0.50%	3	0.70%	1	0.20%
Floor of Mouth	1	0.10%	1	0.20%	0	0.00%
Gum & Other Mouth	3	0.30%	1	0.20%	2	0.40%
Nasopharynx	2	0.20%	2	0.50%	0	0.00%
Tonsil	1	0.10%	1	.20%	0	0.00%
Oropharynx	3	0.30%	2	0.50%	1	0.20%
Hypopharynx	2	0.20%	2	0.50%	0	0.00%
Other Oral Cavity & Pharynx	1	0.10%	1	0.20%	0	0.00%
Digestive System	**137**	**15.90%**	**74**	**18.50%**	**63**	**13.70%**
Esophagus	9	1.00%	8	2.00%	1	0.20%
Stomach	14	1.60%	10	2.50%	4	0.90%
Small Intestine	4	0.50%	2	0.50%	2	0.40%
Colon Excluding Rectum	58	6.70%	21	5.20%	37	8.00%
Cecum	18		4		14	
Ascending Colon	11		4		7	
Hepatic Flexure	4		1		3	
Transverse Colon	5		4		1	
Splenic Flexure	2		0		2	
Descending Colon	3		1		2	
Sigmoid Colon	15		7		8	
Rectum & Rectosigmoid	26	3.00%	16	4.00%	10	2.20%
Rectosigmoid Junction	9		3		6	
Rectum	17		13		4	
Anus, Anal Canal & Anorectum	6	0.70%	4	1.00%	2	0.40%
Liver & Intrahepatic Bile Duct	1	0.10%	0	0.00%	1	0.20%
Gallbladder	1	0.10%	1	0.20%	0	0.00%
Other Biliary	2	0.20%	2	0.50%	0	0.00%
Pancreas	15	1.70%	10	2.50%	5	1.10%
Retroperitoneum	1	0.10%	0	0.00%	1	0.20%
Respiratory System	**115**	**13.3%**	**64**	**16.00%**	**51**	**11.10%**
Larynx	7	0.80%	6	1.50%	1	0.20%
Lung & Bronchus	108	12.50%	58	14.50%	50	10.80%
Bones & Joints	1	0.10%	1	0.20%	0	0.00%
Bones & Joints	1	0.10%	1	0.20%	0	0.00%
Soft Tissue	**1**	**0.10%**	**0**	**0.00%**	**1**	**0.20%**
Soft Tissue (including Heart)	1	0.10%	0	0.00%	1	0.20%
Skin (Excluding Basal & Squamous)	**26**	**3.00%**	**15**	**3.70%**	**11**	**2.40%**
Melanoma -- Skin	25	2.90%	15	3.70%	10	2.20%
Other Non-Epithelial Skin	1	0.10%	0	0.00%	1	0.20%

(continued on page 5)

Table 2 (continued)

Summary: By Body System and Gender

Primary Site	Total	%	Male	Male %	Female	Female %
Breast	**164**	**19.00%**	**0**	**0.00%**	**164**	**35.60%**
Breast	164	19.00%	0	0.00%	164	35.60%
Female Genital System	**75**	**8.70%**	**0**	**0.00%**	**75**	**16.30%**
Cervix Uteri	44	5.10%	0	0.00%	44	9.50%
Corpus & Uterus, NOS	23	2.70%	0	0.00%	23	5.00%
Ovary	4	0.50%	0	0.00%	4	0.90%
Vulva	3	0.30%	0	0.00%	3	0.70%
Other Female Genital Organs	1	0.10%			1	0.20%
Male Genital System	**114**	**13.20%**	**114**	**28.40%**	**0**	**0.00%**
Prostate	109	12..60%	109	27.20%	0	0.00%
Testis	4	0.50%	4	1.00%	0	0.00%
Penis	1	0.10%	1	0.20%	0	0.00%
Urinary System	**106**	**12.30%**	**64**	**16.00%**	**42**	**9.10%**
Urinary Bladder	66	7.70%	45	11.20%	21	4.60%
Kidney & Renal Pelvis	39	4.50%	19	4.70%	20	4.30%
Ureter	1	0.10%	0	0.00%	1	0.20%
Eye & Orbit	**3**	**0.30%**	**0**	**0.00%**	**3**	**0.70%**
Eye & Orbit	3	0.30%	0	0.00%	3	0.70%
Brain & Other Nervous System	**10**	**1.20%**	**8**	**2.00%**	**2**	**0.40%**
Brain	5	.60%	3	0.70%	2	0.40%
Cranial Nerves Other Nervous System	5	.60%	5	1.20%	0	0.00%
Endocrine System	**20**	**2.30%**	**10**	**2.50%**	**10**	**2.20%**
Thyroid	18	2.10%	8	2.00%	10	2.20%
Other Endocrine including Thymus	2	0.20%	2	0.50%	0	0.00%
Lymphoma	**41**	**4.80%**	**17**	**4.20%**	**24**	**5.20%**
Hodgkin Lymphoma	9	1.00%	1	0.20%	8	1.70%
Non-Hodgkin Lymphoma	32	3.70%	16	4.00%	16	3.50%
NHL - Nodal	22		9		13	
NHL - Extranodal	10		7		3	
Myeloma	**6**	**0.70%**	**3**	**0.70%**	**3**	**0.70%**
Myeloma	6	0.70%	3	0.70%	3	0.70%
Leukemia	**13**	**1.50%**	**9**	**2.20%**	**4**	**0.90%**
Lymphocytic Leukemia	**4**	**0.50%**	**2**	0.50%	**2**	0.40%
Chronic Lymphocytic Leukemia	**3**		**1**		**2**	
Other Lymphocytic Leukemia	**1**		**1**		**0**	
Myeloid & Monocytic Leukemia	9	1.00%	7	1.70%	2	0.40%
Acute Myeloid Leukemia	3		3		0	
Chronic Myeloid Leukemia	6		4		2	
Miscellaneous	**8**	**0.90%**	**6**	**1.50%**	**2**	**0.40%**
Miscellaneous	**8**	**0.90%**	**6**	1.50%	**2**	0.40%
Total	**862**		**401**		**461**	

Statistical Summary and Review of Registry Data 2013

In 2013, 862 cases were added to the Lakeland Health Cancer Registry. Of these cases, 737 were analytic cases, which means that they were diagnosed and received first course treatment at Lakeland. The number of male patients was 398 (53.9%), while the number of female patients was 339 (46.1%.)

Patients diagnosed at age at 60 years or older accounted for 65.9% of cases, 3.5% were younger than 29 years and the remainder ages 30 through 59 accounted for 30.6%. The mean age of cancer patients accessioned in 2013 was 63.

Table 3a

2013 Ratio of Male to Female Patients

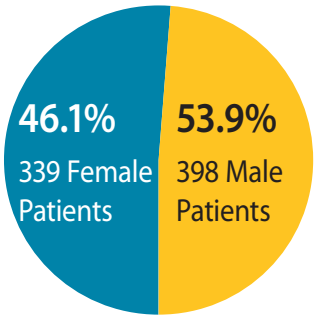


Table 3b

2013 Age Distribution

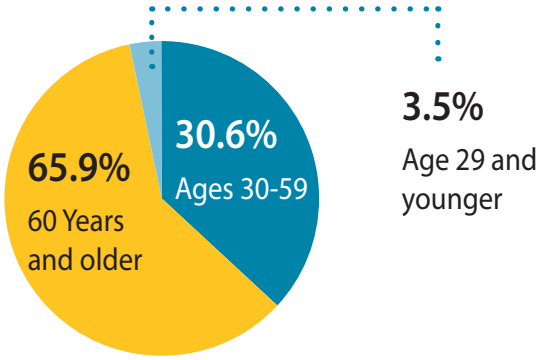


Table 4

Percent Distribution of Lakeland Hospitals' 2013 Cancer Cases by Age Decade

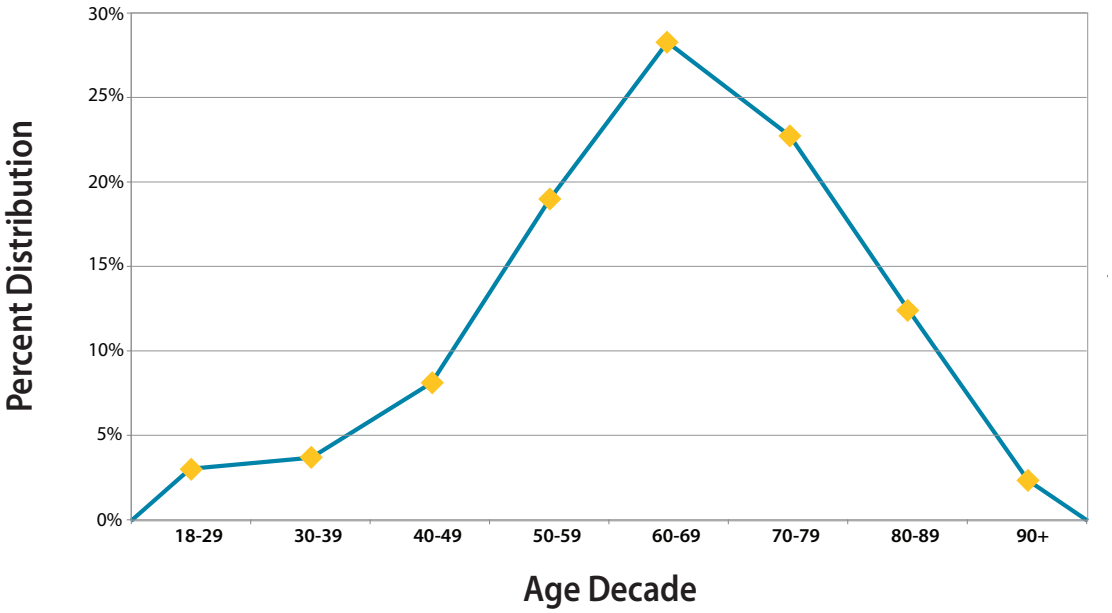


Table 5

Site Distribution by Stage for the Four Most Common Cancer Sites at Lakeland Hospitals*

	Cases	Stage 0	Stage I	Stage II	Stage III	Stage IV	Not Staged
Female Breast	163	35	65	32	18	12	1
Lung	108	0	18	9	25	56	0
Colorectal	84	4	17	28	18	17	0
Prostate	109	0	30	56	17	5	1

**Excludes cases ineligible for staging.*

Table 6

Comparison of Four Most Common Cancer Sites Lakeland Hospitals, Michigan and United States

Lakeland Hospitals				Michigan*		United States	
Site	Rank	Cases	% of Total	Rank	% of Total	Rank	% of Total
Female Breast	1	164	19%	3	13%	2	13.96%
Lung	3	108	12.5%	2	14%	3	13.5%
Colorectal	4	84	10%	4	8%	4	8.2%
Prostate	2	109	12.6%	1	15%	1	13.98%

**American Cancer Society's Publication: 2014 – Facts and Figures (Estimated New Cancer Cases by State page 5).*

Table 7a

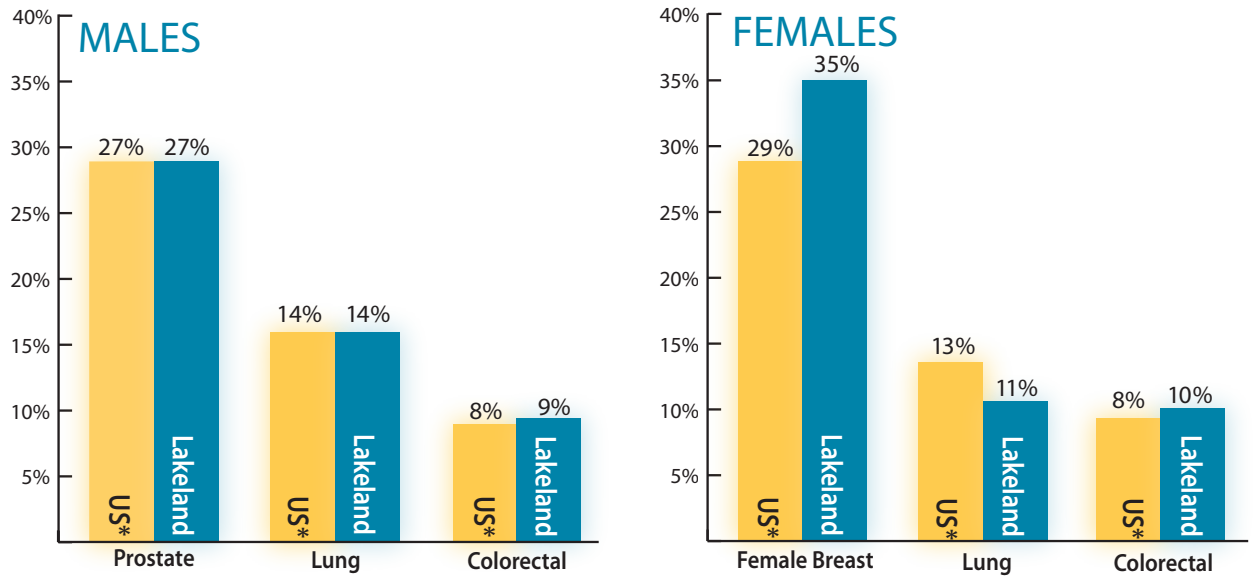
Comparison of Percent Distribution of Lakeland Hospitals' 2013 Cancer Cases and United States Data by Gender and Lakeland's Four Most Common Cancer Sites

Male Cancer Cases: 401			Female Cancer Cases: 461	
Site	United States*	Lakeland	United States*	Lakeland
Female Breast	NA	NA	29%	35%
Lung	14%	14%	13%	11%
Colorectal	8%	9%	8%	10%
Prostate	27%	27%	NA	NA

**American Cancer Society's Publication: 2014 – Facts and Figures (Estimated New Cancer Cases by State page 10).*

Table 7b

Comparison of Percent Distribution of Lakeland Hospitals' 2013 Cancer Cases and United States Data by Gender and Lakeland's Four Most Common Cancer Sites



American Cancer Society's Publication: 2014 – Facts and Figures (Estimated New Cancer Cases by Sex page 10).

Table 8

Comparison of Percent Distribution of Lakeland Hospitals' 2013 Cancer Cases by Gender

Female	Male
Thyroid - 6 (2%)	Oral Cavity & Pharynx - 21 (6%)
Lung & Bronchus - 54 (15%)	Lung & Bronchus - 61 (18%)
Breast - 140 (40%)	Pancreas - 13 (4%)
Kidney & Renal Pelvis - 12 (3%)	Kidney & Renal Pelvis - 19 (5%)
Ovary - 4 (1%)	Urinary Bladder - 37 (11%)
Uterine Corpus - 12 (3%)	Colon & Rectum - 56 (16%)
Colon & Rectum - 30 (8%)	Prostate - 61 (18%)
Non-Hodgkin Lymphoma - 8 (2%)	Non-Hodgkin Lymphoma - 5 (1%)
Melanoma of the Skin - 2 (1%)	Melanoma of the Skin - 6 (2%)
Leukemia - 3 (1%)	Leukemia - 1 (0%)
All Other Sites - 83 (23%)	All Other Sites - 68 (20%)

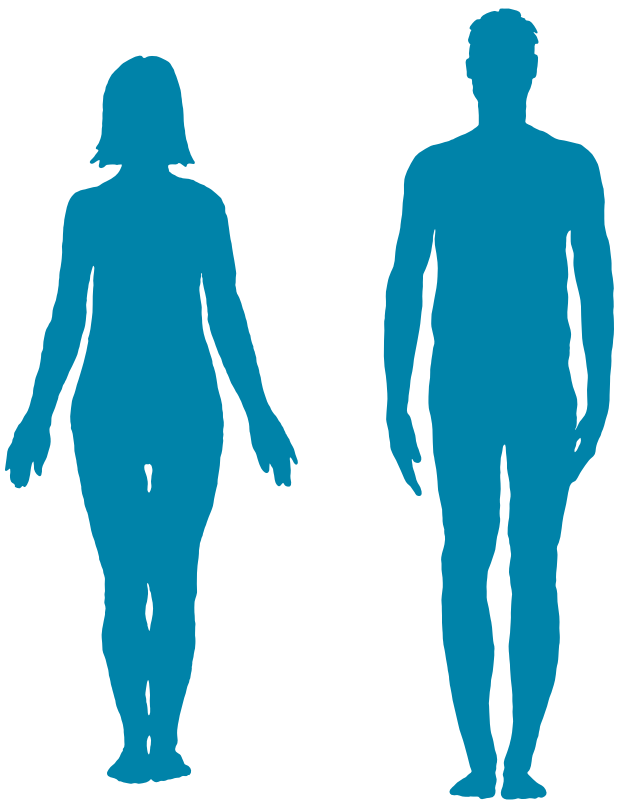


Table 8a

Distribution of Lakeland Cancer Cases by County

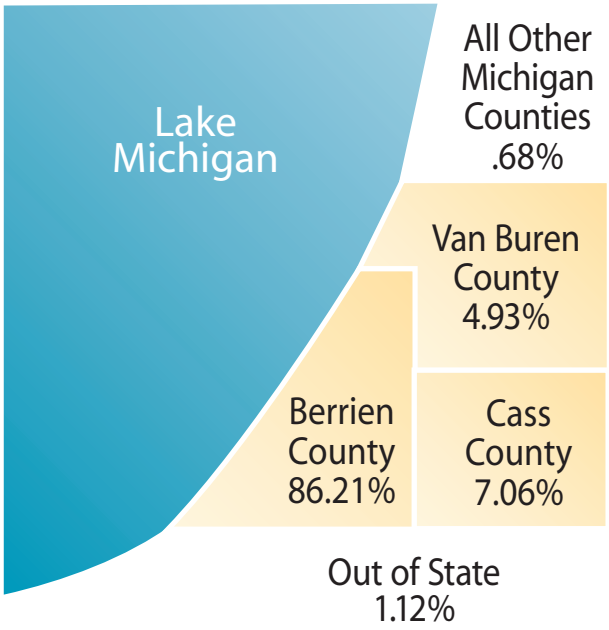


Table 8b

Distribution of Lakeland Cancer Cases by Cities in Berrien County

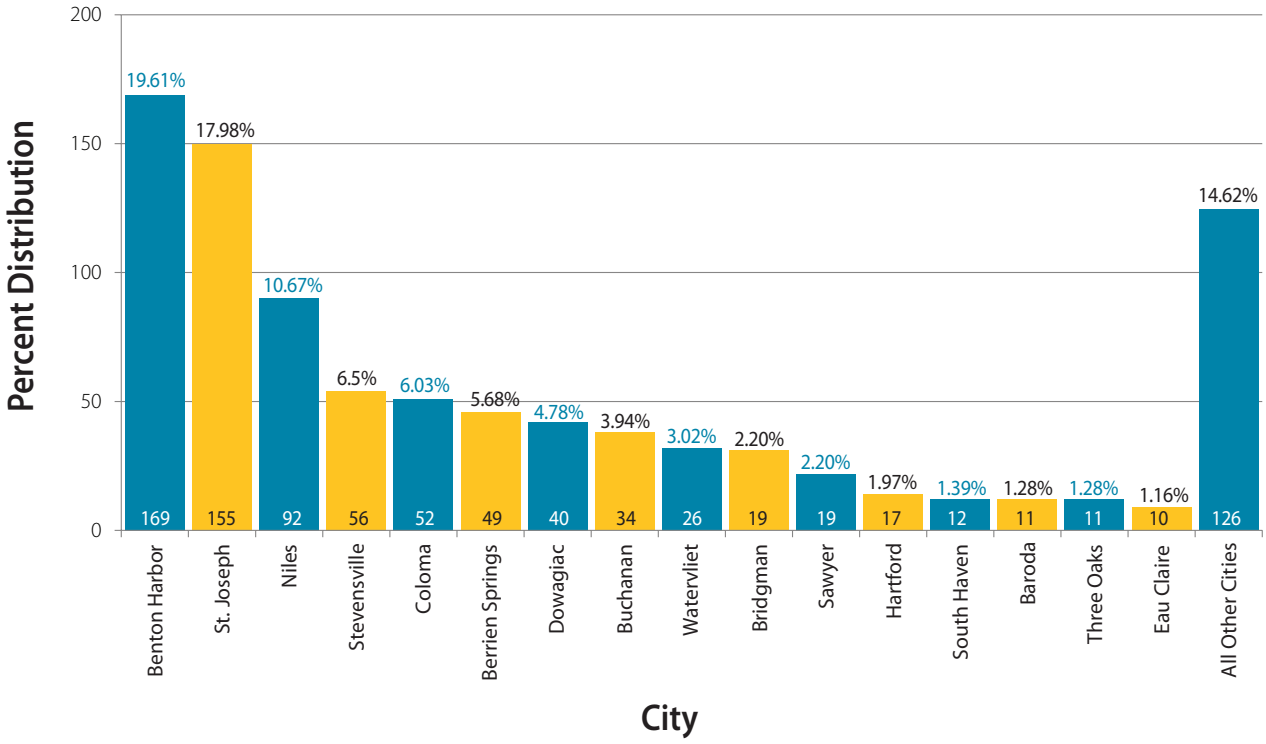


Table 9

2013 Community Outreach Activity Summary

Activities Provided	Results	Follow-up	Identified Community Need	Specific activities performed	Effectiveness of Activity
Breast Cancer Screening	162 COPS 82 Niles 63 WCH	1 positive breast cancer dx	Yes	Susan G. Komen Pink Saturdays & Compassion Card Grant	Very Effective; Continue to enhance minority participation
Colon Cancer Screening	822 Distributed 525 Returned	25 positive	Yes	OC-Light Screening Kits distributed free of charge in March	Very Effective
Prostate Cancer Screening	99 SJ 26 Niles	9 with >4.0 PSA	No	DRE PSA	Effective; Need to enhance follow-up
Skin Cancer Screening	-	-	-	-	Cancer Committee requests implement again in 2014
Oral Cancer Screening	4 screened	1 for additional studies; negative	No	Oral Checks/ Oral Surgeon at CARE Fair	Participation lacking
Lung Cancer Screening	4	1 nodule id'd	Yes	Low dose CT Scans	Very Effective; Need to find funding assistance to enhance minority participation

Key:

COPS: Center for Outpatient Services, St. Joseph

WCH: Lakeland Hospital, Watervliet

SJ: Lakeland Medical Center, St. Joseph

NILES: Lakeland Hospital, Niles

Thank you for helping others and myself with all the behind-the-scenes work that comes with getting everyone their medicine. You guys are fantastic!

Lakeland Medical Center, St. Joseph and Lakeland Hospital, Niles — Cancer Care Committee

2013 Study of Quality

Primary Brain Malignancies

A cancer committee member noted that there were several patients who had brain malignancies participating in cancer support activities. The purpose of this study is to examine the prevalence of brain malignancies in the community served by Lakeland facilities and the demographic distribution, as well as the methods used to workup, diagnose and treat these patients as compared to NCCN guidelines.

Study Data:

There were 24 total cases listing brain malignancy as a primary site, with 21 of these being analytic cases from the Tumor Registry data files. These patients were diagnosed and/or had their first course of treatment at one of Lakeland's facilities during the time period from 2010 through 2012.

Incidence and Mortality:

An estimated 24,620 new cases of primary malignant brain and CNS tumors are expected to be diagnosed in the United States in 2013 (13,630 in males and 10,990 in females). This estimate is based on an application of age-sex-race-specific incidence rates from the 2013 CBTRUS Statistical Report using SEER and NPCR data to project US population estimates for the respective age-sex-race groups. Brain and other nervous system cancer represents 1.4% of all new cancer cases in the United States. Of the 702 analytic cases at Lakeland in 2012, nine were brain malignancies, representing 1.3% of all new cancer cases. Per data from the American Cancer Society, an estimated 13,700 deaths will be attributed to primary malignant brain and CNS tumors in the United States in 2012.

Causes, Risk factors and Prevention:

Unlike the more common cancers, most brain tumors are not associated with any known risk factors and have no obvious cause. But there are a few factors that may raise the risk of brain tumors. The best known environmental risk factor is radiation exposure, most often from some type of radiation therapy. Today most radiation induced brain tumors are caused by radiation to the head to treat another cancer occurring most often in patients who received radiation to the brain as children as part of the treatment for leukemia. These brain tumors usually develop 10-15 years after the radiation. Radiation therapy to the head is only given after carefully weighing the possible benefits and risks. There are rare cases where brain and spinal cord cancers run in families, some of which have well defined disorders such as Neurofibromatosis type 1 or 2, Tuberous sclerosis, Von Hippel-Lindau disease, Li-Fraumeni syndrome or Immune system disorders. There has also been much debate over the effects of cell phone use and the risk of brain tumors.

The risks are being studied and it will take many years to reach any firm conclusions. To date most of the larger studies have not found an increased risk. Some studies have linked exposure to vinyl chloride, petroleum products and certain other chemicals to increased risk of brain tumors but other studies have not reached the same conclusions. Other risk factors being studied (but with no convincing evidence linking them to brain tumors) are exposure to aspartame, electromagnetic fields from power lines and transformers, and infection with certain viruses.

At this time there are no widely recommended tests used to screen for brain and spinal cord tumors. Most brain tumors are found when a person sees a doctor because of signs or symptoms they are experiencing. In most cases, the patient's survival is determined by their age, tumor type, and its location, not by how early it is detected. But as with any disease, earlier detection and treatment is likely to be helpful.

Thanks so much for always being so pleasant and taking time to make appointments fit to our schedules. We so much enjoy your pleasant personality.

2013 Study of Quality - Continued

Primary Brain Malignancies

Demographics							
Age	**Total**	**Male**		**Living**		**Black**	**White**
0-29	1	1	0	1	0	0	1
30-39	0	0	0	0	0	0	0
40-49	1	1	0	1	0	1	0
50-59	6	3	3	5	1	0	6
60-69	5	3	2	0	5	0	5
70-79	6	2	4	0	6	1	5
80-89	2	0	2	0	2	0	2
Totals	**21**	**10**	**11**	**7**	**14**	**2**	**19**

The highest incidence of brain malignancies occurred between ages 50 and 79. 7% were between the ages 50-59, 36% between ages 60-69, 43% between ages 70-79, and 14% between ages 80-89. The mean age at diagnosis was 63. There was almost equal distribution between male and female patients with 52% females and 48% males. Race distribution was 90% White and 10% African American.

Presenting Symptoms	
Slurred Speech	8
Headache	7
Balance Problems	5
Confusion	5
Seizures	4
Personality or Behavior Changes	4
Drowsiness	2
Blurred Vision	2

Some patients presented with more than one symptom

Imaging	
MRI	19
CT	13

Some patients had both CT and MRI performed

Treatment	Number of Patients
None	1
Biopsy w/ Radiation	2
Biopsy w/ Radiation and Chemotherapy	2
Surgery alone	3
Surgery w/ Radiation	2
Surgery w/ Radiation and Chemotherapy	11
Total	**21**

Histologies

Of the 21 analytic cases, 16 were glioblastoma multiforme, 2 were anaplastic astrocytoma, 1 was lymphoma, 1 was malignant melanoma, and 1 was unknown.

Biomarker and Genetic Testing

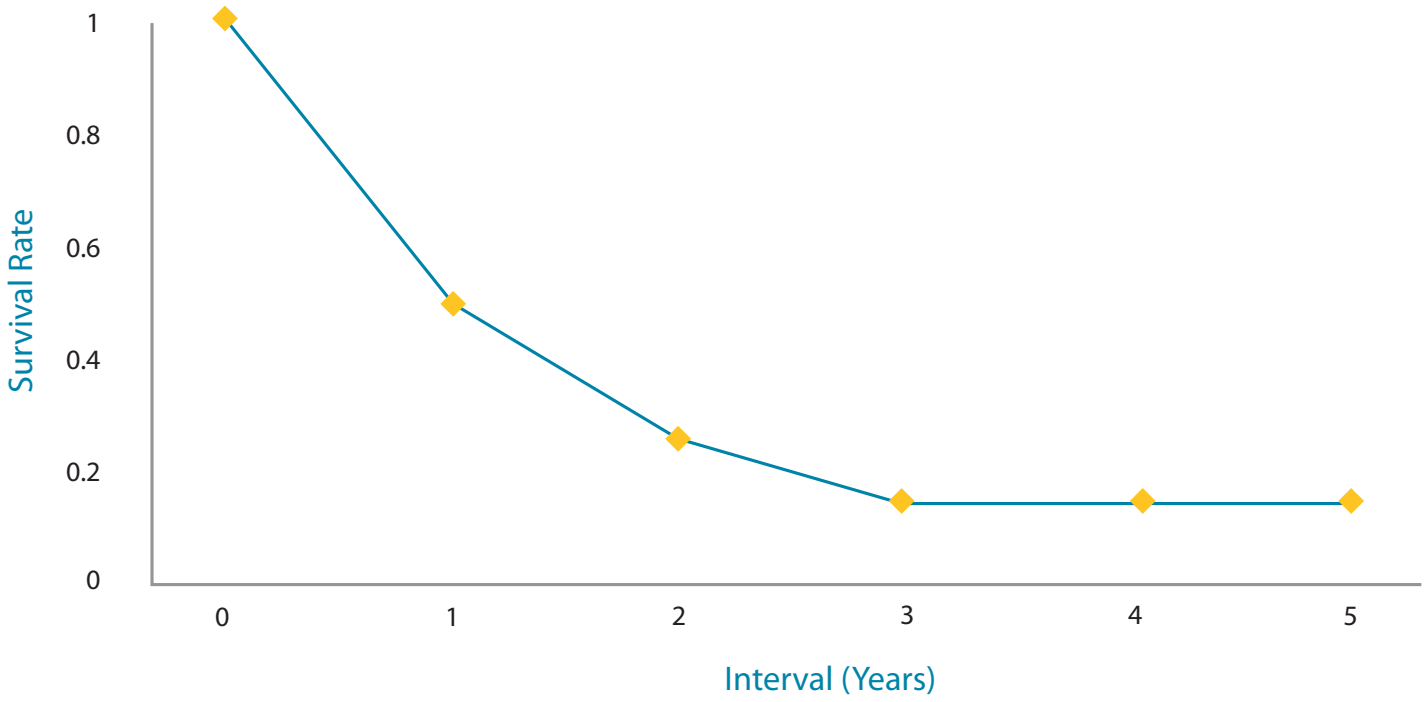
MGMT testing was performed on five of the 21 patients. None of the cases were checked for 1p19q co-deletion.

I was diagnosed with breast cancer in 2012. I have been in remission for over one year. You saved my life. I trust the Marie Yeager Cancer Center with my continued care.

2013 Study of Quality - Continued

Primary Brain Malignancies

Observed Survival Report



I am so thankful for a loving, caring doctor like the one at Lakeland Cancer Specialists and for the warmth and friendliness of those who work at Lakeland Health. Thank you and God bless.

Commission on Cancer

Treatment Guidelines Resource List:

1. American Cancer Society
   www.cancer.org
2. American Head and Neck Society
   www.headandneck.org
3. American Society of Clinical Oncology
   www.asco.org
4. Association of Community Cancer Centers
   www.assoc-cancer-ctrs.org
5. College of American Pathologist
   www.cap.org
6. The National Cancer Institute
   www.cancer.gov
7. The National Comprehensive Cancer Network
   www.nccn.org
8. Oncology Nursing Society
   www.ons.org
9. Society of Surgical Oncology
   www.surgonc.org

Reference: Medical Definitions

AJCC - TNM Staging System
T: Extent of the primary tumor.
N: Presence or absence of regional lymph node involvement.
M: Presence or absence of disease spread to distant sites (metastasis).

Analytic Case
Patients who are diagnosed and / or receive first course of treatment at Lakeland HealthCare during the current year.

Annual Report
Yearly publication describing the activities of an organization. A cancer program's annual report includes statistics on types of cancer diagnosed and treated at a healthcare facility.

Cancer Care Committee
An organized group of physicians and non-physicians that directs the long-range plans and general activities of the cancer program.

Cancer Program
All departments and services in a healthcare facility involved in diagnosis, treatment and rehabilitation of cancer patients.

Cancer Registry
Formerly called Tumor Registry, the department within the hospital designed to collect and analyze data on cancer patients, and to follow their medical progress for purposes of treatment evaluation.

Distant
Has spread to sites remote from site of origin, or is systemic in origin.

First Course Treatment
The initial cancer-directed treatment or series of treatments, usually initiated within four months of diagnosis.

Follow -Up
An organized system of long-term surveillance of patients.

Metastasis (plural metastases)
Any tumor spread to a part of the body away from the site of origin.

Non-Analytic Case
Patients who received subsequent treatment at Lakeland HealthCare for recurrent or persistent disease after receiving first course treatment at another facility.

Oncology
Medical term for the study of tumors and malignancies.

Protocol
A formalized treatment plan, detailing treatment dosage and schedule.

Regional
Has spread to adjacent tissue or lymph nodes.

SEER Summary Staging System
In situ: Non-invasive, confined to site of origin.
Local: Invasive and is confined to site of origin.

Service Area
The geographic region from which patients come to a healthcare facility.

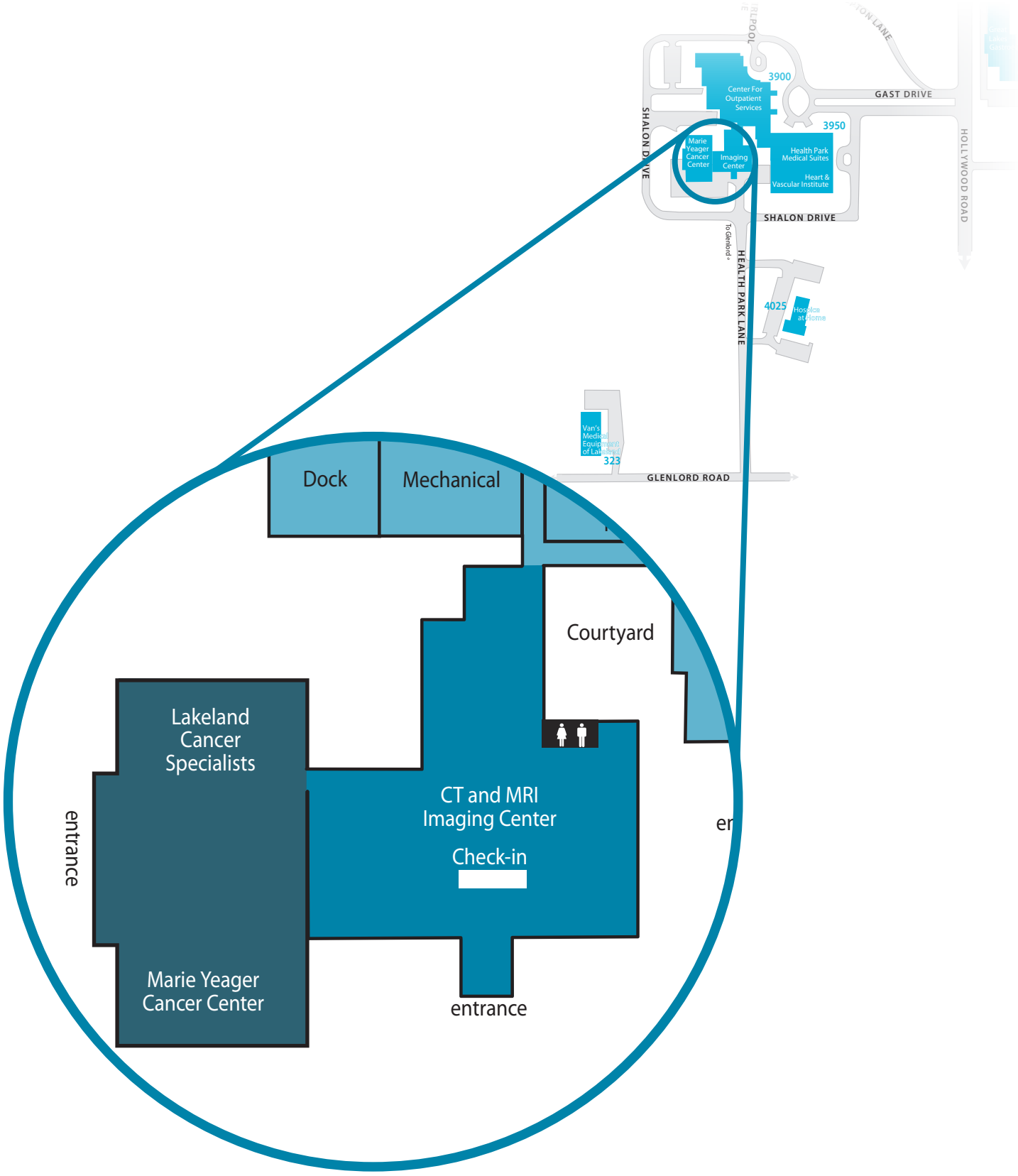
Stage
The extent to which the disease has spread.

How is Cancer Staged?

Staging is the process of describing the extent or spread of the disease from the site of origin.

The TNM staging system assesses tumors in three ways: extent of the primary tumor (T), absence or presence or regional lymph node involvement (N), and the absence or presence distant metastases (M). Once the T, N, and M are determined a stage of I, II, III, or IV is assigned with stage I being early stage and IV being advanced.

Lakeland Health
Marie Yeager Cancer Center and Health Park Map



Lakeland Health

Marie Yeager Cancer Center

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