Ephrata Community Hospital

2013 Ephrata Cancer Program Annual Report
with Statistical Data from 2012
STRIVING TO MEET EVERY NEED - ALL THE TIME.

Compassion
Empathy
Caring

Quality
Efficiency
State-of-the-Art

In picture: Terry (patient) and Sue Steffy with Traci Wilcox, RN, OCN and Karen Comerford, RN, OCN.

In picture: Tracey Selvaggio, B.A., RT(R)(T), Chief Radiation Therapist.
Table of Contents

Cancer Committee Members .................................................. 2
The Year in Review ............................................................ 3
Cancer Program Overview .................................................... 4
Cancer Program Accreditations/Affiliations .............................. 5
Ephrata Cancer Center Physician Staff ................................... 7
Medical Oncology Services .................................................... 8
Radiation Oncology Services .................................................. 10
Clinical Trials/Genetic Testing ................................................. 12
General Surgery/Radiology ..................................................... 13
Pathology and Laboratory/Pharmacy ....................................... 14
Tumor Board Conferences ...................................................... 16
Comprehensive Breast Health Program ................................... 16
Center for Wound Healing & Hyperbaric Services .................. 17
Health Programs: Wellness Center ......................................... 17
Patient Financial Services ....................................................... 17
Community Outreach ............................................................ 18
Cancer Registry Report ........................................................ 21
Site Analysis: Lung Cancer ..................................................... 25
2012 Cancer Committee Members

Michael J. Lambo, M.D.
Radiation Oncology
Chairperson

Giridhar Adiga, M.D.
Medical Oncology
Cancer Registry Quality Coordinator

Sue Auxier, B.S.N, R.N.
Coordinator, Center for Women’s Health
Comprehensive Breast Care Program

Pamela Boland, RN
Vice President
Ephrata Community Hospital

Heather Brown, RN, OCN, CRNI
Clinical Nurse Manager

Karen Comerford, RN, OCN
Nurse Navigator
Community Outreach Coordinator

Huyen Cao, M.D.
Radiology

Kelly Edwards, B.S.
American Cancer Society

Lisa Forcellini, R.D. L.D.N.
Registered Dietitian

Cheryl L. Gardner, D.O., F.A.C.O.I.
Medical Oncology
Liaison Physician

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Senior Vice President of Medical Affairs
Medical Director

Joy Good
Cancer Registry

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Quality Improvement

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Registered Dietitian

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Social Services

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Steve Powell, R.Ph.
Pharmacy

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Psychosocial Services Coordinator

Patricia Windham, B.S.N., R.N.
Director, Inpatient Nursing Services
Ephrata Community Hospital
2012: A Year in Review

Throughout the years, the Ephrata Cancer Program has concentrated on expanding services while remaining focused on quality. In 2000, the Ephrata Cancer Center began providing cancer services with Medical Oncology and Radiation Oncology and has grown to include Hematology, Clinical Trials and Genetic Services. A number of purposes led to the inclusion of these services in our program.

To make it easier and more convenient for local physicians to refer patients for Hematological Services, the Cancer Center sought to centralize those services at the Center. To bring the best cutting edge treatment to the community, the organization chose to affiliate with Thomas Jefferson University Hospital Clinical Trials and Genetics Program. This affords our patients the opportunity to enroll in beneficial clinical research treatments they would not otherwise have access to. The Genetics Program allows specific patients and families the ability to meet with a specially trained Genetic Counselor who will review the patient’s family history and other factors and counsel them as they consider their decision on whether genetic testing is right for them. In addition to these services, the organization consistently strives to improve our technology to better meet the needs of our patients and staff.

Another important endeavor of the program included adding a Nurse Navigator to the staff compliment. This Nurse Navigator acts as the link and conduit for care management. Building this additional relationship assists in smoothing out the patient experience throughout their care.

Additionally, comprehensive patient binders were created to help patients understand and become more involved in their care. The binders cover site specific cancer information as well as general information to educate them on services of the Ephrata Community Hospital and the surrounding community.

We invite you to read about our statistics and our services that set us apart from other organizations.

Michael J. Lambo, M.D.
Ephrata Community Hospital
Cancer Committee Chair

This year, the Cancer Program focused on a number of important goals. Utilizing the 2012 Community Needs Assessment Survey, the Cancer Program began an outreach effort toward educating the community on the guidelines for colon cancer screening and the importance of the guidelines in detecting colon cancer early. This outreach was based on Lancaster County survey outcomes being below the acceptable benchmark. Educational seminars were scheduled concentrating on maximizing community attendance.
Cancer Program Overview

The Ephrata Cancer Program provides outpatient cancer care through the Ephrata Cancer Center. The Cancer Center includes Medical Oncology and Radiation Oncology. Through our tertiary clinical affiliation with Thomas Jefferson University Hospital, the Ephrata Cancer Center offers Clinical Trials and Genetic Counseling and Testing. Dedication to quality can be observed in all services across the organization’s network. By linking Ephrata Cancer Center’s services with the existing Ephrata Community Hospital’s (ECH) Surgical Program, Home Health, Diagnostic, Pathology and Laboratory services, the organization further gave the surrounding area complete care options.

A non-profit health services organization, Ephrata Community Hospital strives to administer the best quality care close to home. This is accomplished through a network of ECH facilities that provide the community with preventive services, primary care, diagnostic services, acute care, and rehabilitation services. The ECH network of outpatient centers includes the Brossman Center for Health, Cocalico Center for Health, Community Medical & Diagnostic Center, Cornerstone Center, Crossroads Center for Health, Center for Health at Garden Spot Village, Center for Health at Granite Run, Georgetown Center, Meadowbrook Center for Health, Rothsville Medical Center, and the Ephrata Diagnostic Center.
Why is it important to be a Commission on Cancer approved program? Only one in four hospitals that treat cancer receive this special approval. It recognizes the quality of comprehensive cancer care available and offers a commitment that patients will have access to all of the various medical specialists who are involved in the diagnosis and treatment of cancer.

Receiving care at the Ephrata Cancer Center ensures that patients will receive:
• Quality care close to home.
• Comprehensive care offering a range of state-of-the-art services and equipment.
• A multi-specialty team approach to coordinate the best treatment options available to cancer patients.

As a patient begins to think about treatment and ongoing care there is not a need to travel great distances from home because the care needed is right here in the Ephrata area.

Of course, no one can guarantee the outcome of any type of treatment, but a patient’s choice of an approved cancer treatment program means that they will receive the best diagnosis and treatment of cancer and that full consultative services will be available from all medical disciplines involved in diagnosing and treating cancer.

Patients can also be sure that their conditions will be watched carefully through a lifelong program of follow-up care.

Cancer Program Accreditations/Affiliations

COMMISSION ON CANCER

• Access to cancer-related information, education, and support.
• A cancer registry that collects data on type and stage of cancers and treatment results, and offers lifelong patient follow-up.
• Ongoing monitoring and improvement of care.
• Information about ongoing clinical trials and new treatment options.

JEFFERSON KIMMEL CANCER CENTER NETWORK

Ephrata Community Hospital is affiliated with Thomas Jefferson University Hospital and the Jefferson Cancer Network in Philadelphia. This affiliation provides our patients with access to genetic testing and clinical trials as well as the latest developments in cancer research, technology, and treatment. Physicians in the network consult with each other and patients have a greater opportunity to benefit from innovative treatment options closer to home. This affiliation also provides local access to education opportunities for the physicians and nursing staff at Ephrata Community Hospital.
The American College of Radiation Oncology (ACRO) Practice Accreditation Program began in 1995 and consists of standards of practice for Radiation Oncology. Accreditation is voluntary and is most often chosen because of a program’s commitment to quality. An audit of the practice is conducted to assure that ACRO standards of safe and effective radiation oncology practice are being followed. These standards are continually evaluated and updated to reflect present standards of practice.

Practice auditing includes:
• Evaluating equipment in relationship to disease sites treated, appropriate quantity of equipment for patient load, and function of equipment.
• Type of staff and quality of staff in terms of certification and educational commitment.
• Peer review against current accepted standards of practice according to the patient diagnosis.
• Site visit following online case submissions. Surveyors verify submitted data and clarify staff knowledge on any clinical issues involving reviewed cases.

Full accreditation is for a period of three years and demonstrates a program's commitment to quality in Radiation Oncology.
2012 Ephrata Cancer Center Physician Staff

Michael Lambo, M.D.
Radiation Oncologist
Board certified by the American Board of Radiology

Wilfred A. Layne, M.D.
Medical Director/
Medical Oncologist
Board certified in internal medicine, hematology and medical oncology

Suman Tiwari, M.D.
Radiation Oncologist
Board Certified by the American Board of Radiology

Cheryl L. Gardner, D.O.
Medical Oncologist
Board certified in internal medicine, hematology and medical oncology

So Hyang Park, M.D.
Medical Oncologist
Board certified in internal medicine, hematology and medical oncology

Giridhar Adiga, M.D
Medical Oncologist
Board certified in internal medicine, hematology and medical oncology
Medical Oncology services are available on both an inpatient and outpatient basis. Outpatient medical oncology care is provided at the Ephrata Cancer Center by physicians who are board certified in medical oncology, hematology, and internal medicine, as well as by oncology trained and certified nurses. In calendar year 2012, there were 5,579 physician office visits and 8,476 infusion treatments at the center.

Being sensitive to patient privacy, the Ephrata Cancer Center offers private rooms for physicians to complete patient examinations. In addition to the physical exam, the physicians begin to educate each patient about the disease, treatment options, and appropriate follow-up. The Ephrata Cancer Center nurses reinforce this education and the treatment plans.

Treatments are administered in a large, bright infusion area in the comfort of one of 17 recliners equipped with privacy curtains. The curtain allows family, friends, and loved ones privacy if they choose. There is also the option of two private treatment rooms. In addition to medical care, the nurses are also skilled at providing assessments, education and ongoing emotional support to patients and their families.

The physicians and nurses consult with ancillary support services, as necessary. These include, but are not limited to, nutrition, social, pastoral, rehabilitation, psychiatry, home care and hospice services. Referrals are also made to community agencies for additional support services. This ensures a comprehensive plan of care with our commitment to compassion and excellence in clinical care.

The Ephrata Cancer Center strives to provide the best in patient care with the personal touch our patients and families appreciate.

Heather Brown, R.N., O.C.N., C.R.N.I.
Clinical Nurse Manager
“The entire staff at the Ephrata Cancer Center goes above and beyond to give us the best care.”

Trisha Shaffer
Patient of Dr. Wilfred Layne, M.D.
Medical Oncology & Radiation Oncology Services

RADIATION ONCOLOGY SERVICES

In 2012, Radiation Oncology provided 175 Consultations, 375 Treatment Simulations, and 4,225 Treatments.

Radiation Oncology continues to improve our services by constantly evaluating areas where we can meet the needs of our community and exceed our customers’ expectations. Our current compliment of services include Intensity Modulated Radiation Therapy (IMRT), Image Guided Radiation Therapy (IGRT), 3-D Treatment Planning, and Prostate Seed Brachytherapy.

We understand that a cancer diagnosis is life changing and we are here to guide you through every step of the way. Our specialty team consists of board certified radiation oncologists, an oncology board certified nurse, a board certified medical dosimetrist, and board certified radiation therapists.

Additionally, patients receive daily quality care as they interact on-site with our highly skilled nutritionist, social workers, and support staff members. The Ephrata Cancer Center is proud to offer the community the best state-of-the-art treatment, close to home.

Kim Rock, R.T.T.
Chief Radiation Therapist

During the initial consultation, the radiation oncologist will work with you and your family in developing an individualized care plan. Next, the medical dosimetrist works behind the scenes, using the most advanced technology to develop a unique treatment plan that minimizes the effects of radiation. Once the radiation therapy treatment plan is complete, radiation therapists precisely deliver your daily treatment. In addition, they ease any concerns or questions you and your family may have. Lastly, during weekly visits, our nurse will be your foundation for symptom management and patient education regarding your specific regimen.
Using a multi-disciplinary approach, Radiation Therapy treatments are planned under the primary direction of the Radiation Oncologist with expertise from a Dosimetrist, Physicist, and Radiation Therapist.
**Clinical Trials/Genetic Testing**

Research is the vital component in finding answers to many of the diseases that confront us. The goal is not only to lengthen life expectancy but also to improve the quality of that life. The information gathered in clinical trials is important to the development of new and up-to-date treatments for cancer, thus research is being conducted at a furious pace. The clinical trials program is part of Ephrata Community Hospital's affiliation with Thomas Jefferson University Hospital.

A clinical trial follows a logical process which includes three phases. Phase I seeks to answer questions of safety such as the correct dose and side effects. Phase II looks at how the drug works and what cancers the drug is effective against. Phase III compares the new drug to the current standard treatment and requires a large number of participants. The cancer research program at Ephrata affords patients the opportunity to participate in Phase II and III clinical trials without having to travel, while assisting sponsors in reaching accrual goals at a faster rate. For a complete list of available clinical trials, visit www.ephratahospital.org/cancercare. Use the drop-down menu to learn more about clinical trials.

Genetic testing is an important component of cancer care, and is offered here at the Ephrata Cancer Center in cooperation with Thomas Jefferson University. Oncologists at the Ephrata Cancer Center evaluate patients for any genetic counseling needs. Those who would benefit from genetic counseling are referred to the genetic counselor from Thomas Jefferson University for an appointment. For patient convenience, patients will receive genetic counseling at the Ephrata Cancer Center. The genetic counselor will review the patient history as well as family history for cancer. If appropriate, genetic testing will be discussed. If genetic testing is performed, the genetic counselor will contact the patient directly with the results of the test. (It will take 4-6 weeks for the results to be available). Future monitoring recommendations for the patient and family will be discussed according to the patient and family history and genetic testing, if performed.

This is just another example of how the Ephrata Cancer Center brings quality care close to home.

*Diane Noll, R.N.*  
**Clinical Research Nurse**
General Surgery & Radiology

GENERAL SURGERY

Ephrata Community Hospital offers a large spectrum of surgical options for cancer patients. Patients and their primary care physicians can select the surgeon who has the knowledge and expertise for their specific disease.

The Hospital offers both inpatient and outpatient surgery settings for patient treatment. The majority of surgical procedures performed at Ephrata Community Hospital are done on an outpatient basis. That means that most patients have their surgery, recover, and go home on the same day.

The Day Surgery Center at Ephrata Community Hospital is making outpatient surgery easier for patients and their families. The Center has operating rooms equipped to handle a wide range of procedures, from tonsillectomies to laparoscopic and arthroscopic surgery to laser procedures on the eye. Physicians from every surgical specialty use the Day Surgery Center for care of patients of all ages.

The surgeons on staff work closely with the medical and radiation oncologists to ensure proper adjuvant treatment planning subsequent to cancer surgery. They attend Tumor Board Conferences on a regular basis to provide coordinated treatment recommendations for cancer patients.

Director of Surgical Services

RADIOLOGY

The Radiology Department of Ephrata Community Hospital offers a full range of services and is involved in the diagnosis, staging and management of patients with various cancers. The Department offers all diagnostic procedures including CT, MRI, Ultrasound, Nuclear Medicine, PET Imaging and Digital Mammography, which aid in the detection and follow-up evaluation of cancers and their treatment as well as assisting biopsy guidance. In 2009, radiology upgraded their MRI options to include a high field strength open MRI. This upgrade provided the freedom of an open MRI with an increase in diagnostic quality images.

Other Ephrata Community Hospital specialized services available include Stereotactic and Ultrasound-Guided Breast Biopsies as well as Sentinel Lymph Node Mapping, Breast MRI and MR-Guided Breast Biopsy.

Buddy Tomko, R.T.
Director of Imaging Services
Pathology/Lab Services & Pharmacy Services

PATHOLOGY & LAB SERVICES

A key role of our pathology and laboratory services is to screen for new malignancy, accurately diagnose and stage cancer and to provide information used in guiding treatment and follow-up.

The Ephrata Community Hospital (ECH) Laboratory maintains clinical excellence in a number of different ways. Certified by the College of American Pathologists, the lab follows set guidelines of operation to ensure quality control and spur continual quality improvement. Evaluation of most lymph node and bone marrow biopsies includes standard microscopic examination and flow cytometry with frequent use of molecular and cytogenetic studies all of which are coordinated here by staff pathologists for maximum accuracy.

Frequent Tumor Board Conferences foster close working relationships between pathologists, oncologists and other caregivers to optimize patient care. To expand the clinical laboratory services available, the hospital utilizes Central Pennsylvania Alliance Laboratory (ECH clinical affiliate laboratory) and other high quality reference laboratories to perform esoteric, molecular diagnostic, and cytogenetics tests.

Peter C. Côté, M.D.
Medical Director of Pathology and Laboratory Services

PHARMACY SERVICES

At the Ephrata Cancer Center, there is a pharmacist on site who is responsible for the acquisition, storage, preparation, distribution and control of drugs and drug-related products. The pharmacist also plays a key role in the interdisciplinary approach to care by meeting the staff informational needs related to drugs and drug therapy.

Most recently, the pharmacy area was renovated to meet all USP 797 guidelines for the preparation of sterile products. These guidelines ensure environment compliance with the highest standards for manufacture of IV and sterile products. This involves certification of the Laminar flow hoods used to prepare sterile products and also certification of the room they are prepared in. The goal of acquiring this certification is to provide the safest and highest quality products for our patients.

In addition, with a recently added retail license, the pharmacy has the ability to dispense oral chemotherapy drugs prescribed in place of or concurrent with traditional IV regimens.

Stephen J. Powell, R.Ph.
Pharmacy Manager
Ephrata Cancer Center
Laboratory Services are performed on-site by Certified Medical Laboratory Technicians using specialized equipment for consistency and quality.
TUMOR BOARD CONFERENCES

Ephrata Community Hospital offers two Tumor Board conferences monthly. The Tumor Board is a multi-disciplinary cancer conference open to all staff. Physicians are encouraged to request their patients, particularly problematic cases, be discussed during these conferences. The managing physicians discuss the patient’s care utilizing a team approach. The best course of treatment for the patient is mapped out according to NCCN guidelines and professional recommendations from experts in each discipline. Required representation includes Radiology, Pathology, Surgery, Medical Oncology, and Radiation Oncology.

Joy Good  
Cancer Registry Coordinator

COMPREHENSIVE BREAST CARE PROGRAM

The Comprehensive Breast Care program of Ephrata Community Hospital is here for women to be proactive in their breast health. Mammograms are still the best screening tool to help detect breast cancer at the earliest stages and are recommended by the American Cancer Society to begin at age 40. The benefit of regular mammograms is the ability to detect breast changes from one year to the next. Digital mammography, breast ultrasound and breast MRI are all available at ECH to provide comprehensive breast imaging. We offer breast cancer risk assessments in the Center for Women’s Health to provide another tool to enhance personal knowledge.

If a breast study reveals an abnormality, our Registered Nurse Breast Care Coordinators (BCC) are here to help the patient. They give information about the biopsy process and can schedule an appointment. Minimally invasive breast needle biopsies (many utilizing vacuum-assisted equipment) are performed by the radiologist or surgeon under local anesthesia with stereotactic, ultrasound or MRI guidance.

If a cancer is discovered, the BCC will continue to help the patient navigate throughout the system with care and confidence. Members of our multi-disciplinary breast care team include a surgeon, plastic surgeon, radiologist, medical oncologist, radiation oncologist, pathologist, OB/GYN, nurses and technologists. We balance medical expertise with an understanding of the individual’s personal needs. Breast surgeries, lumpectomy and mastectomy are offered including options for breast reconstruction. Sentinel lymph node mapping is performed by our skilled surgeons. Educational support continues post surgery, as well as before, during, and after treatment. A referral may be recommended to a medical oncologist and/or a radiation oncologist.

After the treatment plan is developed, the Ephrata Cancer Center nurse navigator works closely with the breast team to continue the personal touch as the patient moves forward in treatment. The ECH system provides specialty supplies such as bras and mastectomy supplies. Should lymphedema care be needed, our certified lymphedema therapist will manage this specialized aspect of the patient’s care. Breast cancer patients are invited to attend the monthly breast cancer support group where they may be on the ‘giving support’ or ‘receiving support’ portion of their individualized breast cancer journey.

Sue Auxier, B.S.N., R.N.  
Coordinator,  
Center for Women’s Health
**HEALTH PROGRAMS: WELLNESS CENTER**

The Wellness Center offers community education programs about a variety of health topics that affect our patient population. Health topics include nutrition, weight management, diabetes, and smoking cessation. Other services include community health fairs and screenings, fitness and health risk assessments, CPR & first aid and senior programs. The Wellness Center provides the community with access to many services and educational programs that might not otherwise be available locally.

Steve Batchelor, M.S.
Director of Wellness Services

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**CENTER FOR WOUND HEALING & HYPERBARIC SERVICES**

Chronic wounds cause pain, discomfort, and limitations in activities of daily living for approximately three to five million Americans. The Center for Wound Healing and Hyperbaric Services at Ephrata Community Hospital applies proven wound care practices and advanced clinical approaches, including Hyperbaric Oxygen Therapy, to help heal patients who suffer from such chronic wounds. Hyperbaric Oxygen Therapy is a painless treatment that is used in conjunction with other procedures to speed the healing of patients with lower extremity and other unresolved wound issues. Hyperbaric oxygen therapy is also an approved treatment for other diagnoses such as bleeding from past radiation soft tissue injuries. The program provides expertise in prevention, evaluation, and management of wounds including surgical wounds, pressure ulcers, traumatic wounds, diabetic ulcers, and lower extremity wounds. Ostomy care is also available.

Manager of Wound Care/ Hyperbaric Services

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**PATIENT FINANCIAL SERVICES**

We are not just caring for the medical needs of our patients, but also ensuring that we have exhausted all efforts at obtaining financial assistance to help ease that burden as well.

Patient Financial Advocates at The Ephrata Cancer Center help patients navigate their treatment-related financial concerns. For patients with financial need who are concerned about large out-of-pocket expenses, our staff can provide access to a variety of resources. Medical Assistance enrollment can be expedited through a vendor representative available in–house. The ECH Cares Program is another option, offering discounts on out–of–pocket expenses based on household income. Patient Financial Advocates also work with the in–house pharmacist and outside pharmaceutical companies to identify potential free or replacement cancer drugs (some drugs are very expensive or have significantly high patient co–pays).

Patient Access Manager
Community Outreach

JANUARY 2012
Look Good, Feel Better
The American Cancer Society offered six sessions at the Ephrata Cancer Center.

FEBRUARY 2012
Oncology on Canvas
Lilly’s Oncology on Canvas artwork was displayed at the Cancer Center and at the Center for Women’s Health for one week. The 50 pieces of art were created by cancer patients or caregivers.

MARCH 2012
American Cancer Society – Relay for Life of Norlanco Meeting
Diane Noll, R.N., Clinical Trials Nurse, spoke about clinical trial options currently available.

APRIL 2012
Oral, Head and Neck Cancer Screening
Steven N. Dorf, D.O. and Joseph S. Annese, D.O. (Otolaryngology Physicians of Lancaster) conducted the screening. Eighteen people were screened, nine were recommended to follow-up, and one patient was recommended to follow-up with a dermatologist.

MAY 2012
Nutritional Cooking Demo at Lititz Public Library
Approximately 20 people attended this demo presented by Jessica Hildebrandt, M.S.R.D., Dietitian.

Skin Cancer Screening
George E. Groleau, M.D., dermatologist, conducted the skin cancer screening. Twenty-three people were screened. Six patients were referred to see a dermatologist and five patients were referred to see a dermatologist and have a biopsy done.

Garden Spot Village Employee Health Fair
Karen Comerford, R.N., O.C.N. & Dipti Patel, R.T. (T) spoke to approximately 150 employees as they came through the exhibit area. In addition, seventy-five Skin Cancer Prevention quizzes were distributed.

American Cancer Society Relay for Life Fundraising Event – Patient Bingo Party for Team “A Cure for Carol”
Karen Comerford, R.N., O.C.N. and Sue Auxier, R.N. staffed an education table that offered Breast Cancer Prevention, Diagnosis and Treatment information. Approximately 85 people attended this event.

JUNE 2012
Patient Celebration at the Stevens Fire Hall
Patients, their families, and the cancer center staff celebrated with food, music, crafts, and bingo.

Day in the Park
The Ephrata Cancer Center participates in the hospital’s Annual Day in the Park event. Unfortunately, this year’s event was cancelled due to flooding at the park. Activities geared toward educating the public under the age of 18 about prevention of cancer were planned, but were used at later events.

American Cancer Society Relay for Life – Norlanco
Karen Comerford, R.N., O.C.N. provided an education table on Friday evening and handed out approximately 25 Coloring Books made by the Cancer Center that educate young people on how to prevent cancer later in life.
### SEPTEMBER 2012
**Prostate Cancer Screening**
Paul J. Sisbarro, D.O. from Sisbarro Urological Specialists, Ltd. and Chris G. Theodoran, D.O. from Lancaster Urology performed this screening. Forty-one men were screened. Of those screened, four men had abnormal PSAs and 14 men had abnormal exams (13 BPH and one abnormal exam). No one had both an abnormal exam and an abnormal PSA.

### OCTOBER 2012
**Breast Care Awareness Event – “Living Well Through Mindfulness”**
This event was co-sponsored by the Center for Women’s Health and the Ephrata Cancer Center. It featured free clinical breast exams, sessions on yoga, massage, and guided imagery, and table displays from various departments and community organizations. It also featured two speakers – Jessica Hildebrandt, M.S., R.D. and Anthony J. Bazzan, M.D. Approximately 25-30 women from the community attended the event.

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### 2012 CANCER SUPPORT GROUP TOPICS

<table>
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<th>MONTH</th>
<th>Topic</th>
<th>Facilitator</th>
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<tbody>
<tr>
<td>JANUARY</td>
<td>Open Discussion</td>
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<td>FEBRUARY</td>
<td>Clinical Trials</td>
<td>Diane Noll, R.N. Ephrata Cancer Center</td>
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<td>MARCH</td>
<td>Nutrition Basics During Cancer Treatment &amp; Beyond</td>
<td>Jessica Hildebrandt, M.S., R.D. &amp; Lisa Forcellini, R.D., L.D.N. Registered Dietitians Ephrata Cancer Center</td>
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<td>MAY</td>
<td>No Matter Who You Are, We Can Help</td>
<td>Kelly Edwards American Cancer Society</td>
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<td>JULY</td>
<td>Open Discussion</td>
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<td>AUGUST</td>
<td>Skin and Oral Care for the Cancer Patient</td>
<td>Erika Hehnly, R.N., O.C.N. Traci Wilcox, R.N., O.C.N. Medical Oncology Nurses Ephrata Cancer Center</td>
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<tr>
<td>SEPTEMBER</td>
<td>Open Discussion</td>
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**Karen Comerford, R.N., O.C.N.**
Nurse Navigator
Facilitator, Outreach Program

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**OCTOBER**
**Tips for Caregivers**
Helen Lawson, M.S.W., L.S.W.
Wendy Mast, B.S.W.
Social Workers
Ephrata Community Hospital

**NOVEMBER**
**Open Discussion**

**DECEMBER**
**Holiday Celebration**
Patients and their families are grateful for the support and assistance our social worker provides when making decisions about their care and accessing outside services in the community.
A Cancer Registry is an information system designed for the collection, management and analysis of oncology data. The hospital maintains data on all patients diagnosed and/or treated for cancer at Ephrata Community Hospital and reports statistics to the Pennsylvania Cancer Registry and the National Cancer Data Base. The American College of Surgeons Commission on Cancer requires an established Cancer Registry for ACoS CoC approved cancer programs and state laws make cancer, including all central nervous system tumors, reportable diagnoses. Confidentiality of patient information is strictly maintained.

Standards for the Evaluation of Cancer Clinics and Registries was first published in 1950 by the ACoS Committee on the Treatment of Malignant Disease. The first surveys of cancer clinics were conducted in 1951. Since that time, the standards for cancer programs have been revised and expanded to reflect both the comprehensive scope of cancer programs and the continuous changes in the health care environment.

Today, approximately 1,500 healthcare facilities in the United States provide cancer programs certified by the ACoS Commission on Cancer. This number represents 50% of the general medical-surgical hospitals in the United States and Puerto Rico and provides care to more than 70% of patients who are newly diagnosed with cancer each year. In May of 2005, the Ephrata Community Hospital cancer program received accreditation by the ACoS CoC with designation as a Community Hospital Cancer Program and was awarded the Outstanding Achievement Award. In addition, ECH received the National Accreditation Program for Breast Centers (NAPBC) accreditation award in May 2013. The NAPBC recently hit a national milestone – 500 NAPBC-accredited breast centers.

Ephrata Community Hospital is an affiliate of the Jefferson Kimmel Cancer Center Network – working together to provide advanced medicine and superior care, education and research. Established in 1993, as the Jefferson Cancer Network, JKCCN continues to provide its member hospitals access to the latest developments in cancer research, technology and treatment to offer patients at member hospitals the opportunity to participate in clinical trials utilizing state-of-the-science approaches to preventing, diagnosing and treating cancer. Physicians have the advantage of each other’s consultative knowledge and patients have a greater opportunity to benefit from innovative treatment options close to home.

To facilitate a thorough and accurate evaluation of the Ephrata Community Hospital Cancer Program, a Survey Application Record (SAR) is updated annually and an on-site survey is performed every three years by a physician surveyor trained by the ACoS CoC. A portion of the data collected in the SAR describing the facility’s resources and services is automatically shared with the American Cancer Society. This information is made available to cancer patients, caregivers and the general public enabling them to make more informed decisions about options for cancer prevention, diagnosis, treatment modalities and subsequent follow-up care.

In the year 2012, 412 new cases were accessioned into the ECH Cancer Registry database. These cases include 376 analytic, cases diagnosed and/or treated at ECH, and 36 non-analytic, cases diagnosed and treated elsewhere with a
To date, over 7000 cases are registered in the ECH cancer registry database. Thirteen complete years of statistical data are available as a valuable resource for patient care evaluation studies, outcomes analyses as well as survival data, to improve and enhance patient care, to complete quality improvement audits and to participate in research and comparison studies with the National Cancer Data Base, the Pennsylvania Cancer Registry and the American Cancer Society.

ECH Top Sites 2012: Breast 20.7%; Colorectal 12.7%; Lung 10.2%; Prostate 7.5%; NHL 5.8%; Bladder 5.4% and Endometrial 4.6%.

ECH Top Systems 2012:
Digestive 21.9%; Breast 20.7%; Respiratory 10.7%; Male Genital 8.0%; Female Genital 6.8%; Lymphoma 6.5% and Urinary 5.8%.

Lifetime follow-up is an important aspect of the Cancer Registry. Current patient follow-up serves as a reminder to physicians and patients to schedule regular clinical examinations and provides accurate survival information. In compliance with the ACoS CoC, accurate surveillance information is documented annually regarding recurrence, subsequent treatment and patient status. The ECH Cancer Registry exceeds the minimum requirements established by the Commission on Cancer for patient follow-up.

A Certified Cancer Registrar staffs the Cancer Registry. The registrar attends annual conferences in order to maintain certification and participates as a member of the National Cancer Registrars Association, the Pennsylvania Association of Cancer Registrars, the Pennsylvania Society of Oncology and Hematology, and the American Health Information Management Association.

The registrar ensures that timely, accurate and complete data are incorporated and maintained on all types of reportable cancers diagnosed and/or treated at Ephrata Community Hospital and participates in managing and analyzing clinical cancer information for the purpose of education, research and outcomes analyses for site-specific studies, administrative reports, program enhancements and quality improvements. The registrar assists with Cancer Conferences and Cancer Committee meetings and collaborates with the Cancer Committee in completing the Annual Report, the Survey Application Record and the National Cancer Database Call for Data.

A multidisciplinary staff of physicians, nurses and ancillary personnel attend the monthly Tumor Board conferences. In 2012, 35% (123 analytic cases) were presented: total cases included 60 (72%) female breast cancer cases diagnosed and/or treated at Ephrata Community Hospital/Ephrata Cancer Center. All case presentation were prospective. Continuing Medical Education (CME’s), Category I, credits are offered for attendance at conferences.

The Annual Report utilizes data from 2012, specifically examines the diagnosis and treatment of Lung Cancer, and provides comparative data from the Pennsylvania Cancer Registry, the American Cancer Society and the National Cancer Data Base. In addition, the Annual Report summarizes the goals, objectives and accomplishments of the hospital’s cancer program for 2012.

Respectfully submitted,

Mary H. Phillips, A.R.T., R.H.I.T., C.T.R.,
Cancer Program/Cancer Registry Consultant
Ephrata Community Hospital
Top Sites - 2012
Male vs. Female

<table>
<thead>
<tr>
<th>SITE</th>
<th>MALE</th>
<th>SITE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate</td>
<td>16.5%</td>
<td>Breast</td>
<td>37.0%</td>
</tr>
<tr>
<td>Colorectal</td>
<td>15.9%</td>
<td>Colorectal</td>
<td>10.0%</td>
</tr>
<tr>
<td>Lung</td>
<td>13.2%</td>
<td>Corpus &amp; Uterus nos</td>
<td>8.3%</td>
</tr>
<tr>
<td>Urinary Bladder</td>
<td>8.2%</td>
<td>Lung</td>
<td>7.8%</td>
</tr>
<tr>
<td>Lymphoma</td>
<td>6.6%</td>
<td>Thyroid</td>
<td>7.0%</td>
</tr>
<tr>
<td>Pancreas</td>
<td>4.9%</td>
<td>Lymphoma</td>
<td>6.1%</td>
</tr>
<tr>
<td>Melanoma</td>
<td>4.4%</td>
<td>Melanoma</td>
<td>3.0%</td>
</tr>
<tr>
<td>Leukemia</td>
<td>4.4%</td>
<td>Urinary Bladder</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

Note: Male = % of male cancer diagnoses. Female = % of female cancer diagnoses.

Ephrata Community Hospital
2012 and 2008-2012
Comparison Data - Top Sites
c/w
United States, Pennsylvania, National Cancer Data Base

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Breast</td>
<td>20.7%</td>
<td>21.2%</td>
<td>13.8%</td>
<td>14.0%</td>
<td>13.8%</td>
<td>18.3%</td>
</tr>
<tr>
<td>Colorectal</td>
<td>12.7%</td>
<td>11.0%</td>
<td>8.8%</td>
<td>8.3%</td>
<td>9.7%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Lung</td>
<td>10.2%</td>
<td>10.6%</td>
<td>13.8%</td>
<td>13.6%</td>
<td>14.0%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Prostate</td>
<td>7.3%</td>
<td>7.9%</td>
<td>14.8%</td>
<td>12.9%</td>
<td>12.9%</td>
<td>10.9%</td>
</tr>
<tr>
<td>Urinary Bladder</td>
<td>5.4%</td>
<td>5.5%</td>
<td>4.5%</td>
<td>5.1%</td>
<td>5.1%</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

EPHRATA COMMUNITY HOSPITAL
SITE DISTRIBUTION - A FIVE-YEAR COMPARISON
YEAR OF DIAGNOSIS 2008-2012

<table>
<thead>
<tr>
<th>Year 2008</th>
<th>Year 2009</th>
<th>Year 2010</th>
<th>Year 2011</th>
<th>Year 2012</th>
<th>Year 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total - All Sites</td>
<td>412</td>
<td>444</td>
<td>407</td>
<td>468</td>
<td>504</td>
</tr>
<tr>
<td>Breast</td>
<td>20.7%</td>
<td>Breast</td>
<td>20.9%</td>
<td>Breast</td>
<td>16.5%</td>
</tr>
<tr>
<td>Colorectal</td>
<td>12.7%</td>
<td>Colorectal</td>
<td>11.5%</td>
<td>Colorectal</td>
<td>12.5%</td>
</tr>
<tr>
<td>Lung</td>
<td>10.2%</td>
<td>Lung</td>
<td>8.8%</td>
<td>Lung</td>
<td>11.5%</td>
</tr>
<tr>
<td>Prostate</td>
<td>7.3%</td>
<td>Prostate</td>
<td>7.7%</td>
<td>Prostate</td>
<td>7.1%</td>
</tr>
<tr>
<td>Bladder</td>
<td>5.4%</td>
<td>Bladder</td>
<td>4.1%</td>
<td>Bladder</td>
<td>7.4%</td>
</tr>
<tr>
<td>NHL</td>
<td>5.8%</td>
<td>NHL</td>
<td>4.3%</td>
<td>NHL</td>
<td>5.9%</td>
</tr>
<tr>
<td>Endometrium</td>
<td>4.6%</td>
<td>Endometrium</td>
<td>5.4%</td>
<td>Endometrium</td>
<td>6.6%</td>
</tr>
</tbody>
</table>

ECH Top Five Cancer Sites
Year 2012

- Breast: 21%
- Colorectal: 13%
- Lung: 6%
- Prostate: 7%
- NHL: 4.3%
- All Other: 10%
## EPHRATA COMMUNITY HOSPITAL
### SITE DISTRIBUTION AND COMPARISON DATA
#### 2012

<table>
<thead>
<tr>
<th>Primary Site</th>
<th>Total</th>
<th>Male</th>
<th>Female</th>
<th>Analytic</th>
<th>Non-Analytic</th>
<th>ECH 2012 Actual</th>
<th>PA 2012 Projected</th>
<th>USA 2012 Projected</th>
<th>NCDB 2011 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Cavity &amp; Pharynx</td>
<td>11</td>
<td>7</td>
<td>4</td>
<td>9</td>
<td>2</td>
<td>2.7%</td>
<td>2.6%</td>
<td>2.5%</td>
<td></td>
</tr>
<tr>
<td>Digestive System</td>
<td>90</td>
<td>54</td>
<td>36</td>
<td>86</td>
<td>4</td>
<td>21.9%</td>
<td>17.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Esophagus</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0.7%</td>
<td>1.1%</td>
<td>1.1%</td>
<td></td>
</tr>
<tr>
<td>Stomach</td>
<td>7</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>0</td>
<td>1.7%</td>
<td>1.3%</td>
<td>1.3%</td>
<td></td>
</tr>
<tr>
<td>Small Intestine</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0.7%</td>
<td></td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>Colon</td>
<td>36</td>
<td>17</td>
<td>19</td>
<td>34</td>
<td>2</td>
<td>8.8%</td>
<td>6.3%</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>Rectum/Rectosigmoid</td>
<td>16</td>
<td>12</td>
<td>4</td>
<td>16</td>
<td>0</td>
<td>3.9%</td>
<td>2.5%</td>
<td>1.9%</td>
<td></td>
</tr>
<tr>
<td><em>Total - Colorectal</em></td>
<td>52</td>
<td>29</td>
<td>23</td>
<td>50</td>
<td>2</td>
<td>12.7%</td>
<td>8.3%</td>
<td>8.8%</td>
<td>8.1%</td>
</tr>
<tr>
<td>Liver/Intrahepatic Bile Duct</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>1.2%</td>
<td>1.7%</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>Other Biliary</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0.5%</td>
<td></td>
<td>0.6%</td>
<td></td>
</tr>
<tr>
<td>Pancreas</td>
<td>14</td>
<td>9</td>
<td>5</td>
<td>14</td>
<td>0</td>
<td>3.4%</td>
<td>2.6%</td>
<td>2.7%</td>
<td>2.7%</td>
</tr>
<tr>
<td>Other Digestive Organs</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>0.9%</td>
<td></td>
<td>0.3%</td>
<td></td>
</tr>
<tr>
<td>Respiratory System</td>
<td>44</td>
<td>25</td>
<td>19</td>
<td>42</td>
<td>2</td>
<td>10.7%</td>
<td>14.4%</td>
<td>14.9%</td>
<td></td>
</tr>
<tr>
<td>Larynx/Other Respiratory</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0.4%</td>
<td>0.8%</td>
<td>1.1%</td>
<td></td>
</tr>
<tr>
<td>Lung/Bronchus</td>
<td>42</td>
<td>24</td>
<td>18</td>
<td>40</td>
<td>2</td>
<td>10.2%</td>
<td>13.6%</td>
<td>13.8%</td>
<td>12.5%</td>
</tr>
<tr>
<td>Bones/Joints</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0.2%</td>
<td></td>
<td>0.2%</td>
<td></td>
</tr>
<tr>
<td>Soft Tissue</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0.2%</td>
<td></td>
<td>0.7%</td>
<td></td>
</tr>
<tr>
<td>Skin - Melanoma and</td>
<td>15</td>
<td>8</td>
<td>7</td>
<td>13</td>
<td>2</td>
<td>3.6%</td>
<td>3.9%</td>
<td>4.7%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Other Non-Epithelial</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.3%</td>
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</tr>
<tr>
<td>Breast</td>
<td>85</td>
<td>0</td>
<td>85</td>
<td>83</td>
<td>2</td>
<td>20.7%</td>
<td>14.0%</td>
<td>13.8%</td>
<td>18.3%</td>
</tr>
<tr>
<td>Female Genital System</td>
<td>28</td>
<td>0</td>
<td>28</td>
<td>26</td>
<td>2</td>
<td>6.8%</td>
<td></td>
<td>5.4%</td>
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</tr>
<tr>
<td>Cervix Uteri</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>1.0%</td>
<td>0.7%</td>
<td>0.7%</td>
<td></td>
</tr>
<tr>
<td>Corpus &amp; Uterus NOS</td>
<td>19</td>
<td>0</td>
<td>19</td>
<td>18</td>
<td>1</td>
<td>4.6%</td>
<td>3.6%</td>
<td>2.9%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Ovary</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1.0%</td>
<td>1.4%</td>
<td>1.4%</td>
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</tr>
<tr>
<td>Other Female Genital</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0.2%</td>
<td></td>
<td>0.4%</td>
<td></td>
</tr>
<tr>
<td>Male Genital System</td>
<td>33</td>
<td>33</td>
<td>0</td>
<td>20</td>
<td>13</td>
<td>8.0%</td>
<td></td>
<td>15.4%</td>
<td></td>
</tr>
<tr>
<td>Prostate</td>
<td>30</td>
<td>30</td>
<td>0</td>
<td>17</td>
<td>13</td>
<td>7.3%</td>
<td>12.9%</td>
<td>14.8%</td>
<td>10.9%</td>
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<tr>
<td>Testis</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0.7%</td>
<td>0.5%</td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>Urinary System</td>
<td>24</td>
<td>15</td>
<td>9</td>
<td>20</td>
<td>4</td>
<td>5.8%</td>
<td>8.6%</td>
<td>8.6%</td>
<td></td>
</tr>
<tr>
<td>Urinary Bladder</td>
<td>22</td>
<td>15</td>
<td>7</td>
<td>19</td>
<td>3</td>
<td>5.4%</td>
<td>5.1%</td>
<td>4.5%</td>
<td>4.2%</td>
</tr>
<tr>
<td>Kidney &amp; Renal Pelvis</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0.5%</td>
<td>3.5%</td>
<td>4.0%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Brain &amp; Other CNS</td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>9</td>
<td>0</td>
<td>2.2%</td>
<td>1.3%</td>
<td>1.4%</td>
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</tr>
<tr>
<td>Endocrine System:Thyroid</td>
<td>20</td>
<td>4</td>
<td>16</td>
<td>19</td>
<td>1</td>
<td>4.9%</td>
<td>4.2%</td>
<td>3.6%</td>
<td>3.0%</td>
</tr>
<tr>
<td><em>(Including Thymus)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lymphoma</td>
<td>26</td>
<td>12</td>
<td>14</td>
<td>24</td>
<td>2</td>
<td>6.3%</td>
<td></td>
<td>4.8%</td>
<td></td>
</tr>
<tr>
<td>Hodgkin</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0.5%</td>
<td>0.6%</td>
<td>0.6%</td>
<td></td>
</tr>
<tr>
<td>Non-Hodgkin</td>
<td>24</td>
<td>10</td>
<td>14</td>
<td>22</td>
<td>2</td>
<td>5.8%</td>
<td>4.4%</td>
<td>4.2%</td>
<td></td>
</tr>
<tr>
<td><em>Nodal</em></td>
<td>15</td>
<td>5</td>
<td>10</td>
<td>13</td>
<td>2</td>
<td>3.6%</td>
<td></td>
<td></td>
<td>2.7%</td>
</tr>
<tr>
<td><em>Extranodal</em></td>
<td>9</td>
<td>5</td>
<td>4</td>
<td>9</td>
<td>0</td>
<td>2.2%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Myeloma</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>1.0%</td>
<td>1.3%</td>
<td>1.3%</td>
<td></td>
</tr>
<tr>
<td>Leukemia</td>
<td>10</td>
<td>8</td>
<td>2</td>
<td>8</td>
<td>2</td>
<td>2.4%</td>
<td>2.5%</td>
<td>2.9%</td>
<td></td>
</tr>
<tr>
<td>Miscellaneous/All Other</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>0</td>
<td>2.2%</td>
<td>7.9%</td>
<td>2.1%</td>
<td>3.0%</td>
</tr>
<tr>
<td>NCDB - All Other Sites</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>23.7%</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td>412</td>
<td>182</td>
<td>230</td>
<td>376</td>
<td>36</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>
Lung cancer refers to malignancies that originate in the airways or pulmonary parenchyma. Lung cancer is the second most common cancer in both men and women excluding skin cancer and is the leading cause of cancer deaths. More people die of lung cancer than of colon, breast, and prostate cancers combined. In 2013, there will be approximately 228,190 new cases of lung cancer diagnosed and 159,480 lung cancer deaths predicted in the United States. From 2005 to 2009, lung cancer incidence rates decreased by 1.9% per year in men and by 0.5% per year in women. Lung cancer is projected to remain the leading cause of cancer deaths for many decades despite decreasing incidence and death rate in the United States.

The one year relative lung cancer survival has increased from 37% in 1975-1979 to 44% in 2005-2008. Only about 15% of lung cancers are diagnosed at an early stage, for which the five year survival rate is 53.5%. However, the five year survival rate for all stages combined continues to be dismal at about 16.6%. The five year survival for small cell lung cancer is lower than that for non small cell lung cancer.

RISK FACTORS

The primary risk factor for the development of lung cancer is cigarette smoking, which is estimated to account for approximately 90 percent of all lung cancers. Factors that increase the risk of developing lung cancer in smokers include the extent of smoking and exposure to other carcinogenic factors, such as asbestos. Risk increases with both quantity and duration of smoking. Cigar and pipe smoking also increase risk. Environmental Radon gas exposure is estimated to be the second leading cause of lung cancer. Other risk factors include exposure to second-hand smoke, asbestos, certain metals (chromium, cadmium, arsenic), some organic chemicals, radiation, air pollution, diesel exhaust, and paint. Occupational exposures such as rubber manufacturing, paving, roofing, and chimney sweeping may increase lung cancer risk. Medical history of tuberculosis may be associated with increased risks. Genetic factors may affect both the risk for and prognosis from lung cancer.

PREVENTION AND SCREENING

Majority of patients with lung cancer are diagnosed at an advanced stage that is not amenable to cure. Smoking is the single most important preventable cause of lung cancer. Even though percentage of smokers has decreased since 1983, about 43.8 million adults were current smokers in 2011. There has been no major change in the smoking rate among high school males (20%) and females (16%) between 2003 and 2011. Smoking rate remains high necessitating aggressive smoking cessation measures. The best way to prevent lung cancer is never to start smoking and promote smoking cessation.

Clinical outcome for non-small cell lung cancer is directly related to stage at the time of diagnosis, ranging from over 60% five year survival for stage I disease, to less than 5% for stage IV disease. The purpose of screening is to identify the presence of cancer in an early asymptomatic stage which may increase the overall cure rate and allow more limited surgical resection to achieve cure.

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Screening with annual chest x-ray has not been shown to reduce lung cancer mortality. While screening for lung cancer has the potential benefits, it may also be associated with potential harms. Benign abnormalities may be detected that require further evaluation including invasive procedures with associated complications and anxiety. Radiation exposure from serial imaging and overdiagnosis are other concerns. The National Lung Screening Trial (a randomized trial) demonstrated reduced lung cancer mortality in a high risk population who were screened with low dose computed tomography (LDCT). This has led to guidelines and recommendations from multiple professional organizations.

The U.S. Preventive Services Task Force in its draft statement recommends annual screening for lung cancer with LDCT in persons at high risk for lung cancer based on age and smoking history. American Cancer Society guideline recommends that clinicians with access to high-volume, high-quality lung cancer screening and treatment centers should initiate a discussion about screening with apparently healthy patients aged 55 years to 74 years who have at least a 30-pack-year smoking history and who currently smoke or have quit within the past 15 years, and who are in relatively good health. American Society for Clinical Oncology, American College of Chest Physicians, National Comprehensive Cancer Network, and American Lung Association have similar recommendations. The American Association for Thoracic Surgery recommends screening for individuals up to 79 years of age with a 30 pack-year history of smoking.

**HISTOLOGIC TYPES**

Lung cancer results from sequential accumulation of genetic and epigenetic changes. Multiple mechanisms involving cellular pathways of activation and inhibition are involved in the pathogenesis of lung cancer.

Lung cancers are classified as either small cell lung cancer (SCLC) or non-small cell lung cancer (NSCLC) based on the histologic features and response to conventional therapies. NSCLC, which includes 3 cell types (adenocarcinoma, squamous cell and large cell carcinoma) accounts for most (~80%) of the lung cancers. Adenocarcinoma is the most common type of NSCLC in the United States. Lung cancer is further divided into various subtypes and variants based on molecular and tumor genetic profiling. Specific mutations may cause a lung tumor to respond differentially to targeted therapeutic agents; for example, the presence of an epidermal growth factor receptor (EGFR) mutation will indicate the response to therapy with EGFR tyrosine kinase inhibitors (TKIs). Lung cancer is now considered a heterogeneous group of diseases and mutational profiling is becoming a routine practice.

**CLINICAL FEATURES, DIAGNOSIS AND STAGING**

Lung cancer may not cause any symptoms in its earliest stages. This makes prevention and early detection (cancer screening) important. Signs and symptoms of lung cancer typically occur when the disease is advanced. Common symptoms
include persistent new cough or changes in a chronic cough, coughing blood, shortness of breath, chest pain, hoarseness and unexplained weight loss. Symptoms due to metastasis depends on the site and extent of metastatic lesions.

A number of diagnostic tests are used to identify and assess extent of the disease. A definitive diagnosis requires pathologic examination. Various methods of pathologic examination include sputum cytology, pleural fluid cytology, bronchoalveolar lavage and tissue sampling. Biopsy is generally required to establish accurate diagnosis and to test for tumor genetics.

Once the diagnosis is established, it is important to assess extent of disease (Staging). Various tests and procedures used for staging includes mediastinoscopy, thoracentesis, computed tomography (CT), Magnetic resonance imaging (MRI) and positron emission tomography (PET) scans. TNM (tumor node and metastasis) staging system is used which categorizes lung cancer into 4 stages depending on the extent of spread. Stage I represents cancer limited to the lung and less than 5 cm in size. Stages II or III depends on size and lymph node involvement. Stage IV represents cancer spread to the pleura, other lung or outside of lungs. Small cell lung cancer is sometimes staged as being limited (to one lung area) or extensive stage, which helps in assessing the benefit of radiation therapy. Information from pathology, tumor genetic testing and staging are essential to assess prognosis, plan appropriate treatment and response to treatment.

**MANAGEMENT**

Management of lung cancer requires a multidisciplinary approach. Various specific treatment modalities include surgery, radiation therapy, chemotherapy and targeted therapies. Supportive services including palliative care is utilized depending on clinical needs.

For localized non-small cell lung cancers, surgery is usually the treatment of choice. Adjuvant chemotherapy is given after surgery in select patients to improve survival. Radiation therapy and chemotherapy are commonly used for locally advanced stage disease sometimes with surgery.

Metastatic lung cancer is usually treated with chemotherapy or targeted therapy. Several chemotherapy agents either alone or in combination offer multiple therapeutic choices for patients with advanced NSCLC. Targeted therapy refers to medications used to selectively target molecular pathways responsible for or substantially contribute for malignant behavior of cells. Currently approved targeted agents include EGFR inhibitors (erlotinib, gefitinib, afatinib cetuximab), vascular endothelial growth factor inhibitors (bevacizumab) and inhibitor of EML4-ALK (crizotinib).

Chemotherapy alone or combined with radiation is the usual treatment of choice for small cell lung cancer depending on the stage of disease.

continued on next page
Site Analysis: Lung Cancer
by Giridhar Adiga, M.D.

**RECENT DEVELOPMENTS**

Science is advancing in all aspects of lung cancer from diagnosis to treatment. Research on ways to help people quit smoking as well genetics of smoking behavior are ongoing. Various regulatory measures to discourage smoking are being adopted. Newer diagnostic modalities such as Virtual bronchoscopy and Fluorescence bronchoscopy may offer advantages in some clinical situations. New molecular diagnostics are being developed. Lung cancer screening using LDCT scan is increasingly being adopted for high risk individuals.

Newer surgical techniques include minimally invasive video assisted thoracoscopic surgery and robotic-assisted surgery. Discovery of EGFR and other driver mutations has resulted in development of treatments against specific molecular pathways. New genetic and molecular tests to identify best treatment options and predict response of treatment are being developed.

Rapidly expanding knowledge on genetic and molecular biology of cancer have revealed multiple molecular subsets of cancer and new potential therapeutic targets. This has also resulted in shift in the design of oncology treatment trials. In "basket studies", effect of a drug is tested on a single driver mutation in a variety of cancer types. Umbrella studies are designed to test the effect of different drugs on different mutations in a single type of cancer. Research is also underway in other fronts including developing new targeted therapies, new combinations as well as vaccine and immune based treatments.

**LUNG CANCER STATISTICS AT EPHRATA CANCER CENTER**

In the time period of 2008 to 2012, there were a total of 214 new cases of lung cancer representing 11% of all cases. In 2012, there were 40 new cases of lung cancer representing 10.6% of all new cases in 2012. In 2012, majority of lung cancers were diagnosed in advanced stages IIIb or stage IV together accounting for 67% of cases. This is similar to 5 year data from 2008 to 2012 where collectively Stages IIIb and IV accounted for 61.47% of all lung cancer cases.

In 2012, adenocarcinoma continued to be the predominant histology accounting for 35% of cases. Small cell carcinoma accounted for 20% and squamous cell carcinoma accounting for 17.5%. Histologic distribution in 2012 was similar to the five year average from 2008 to 2012. Overall, lung cancer statistics are similar to regional and national trends.

Ephrata Community Hospital Cancer Program offers a comprehensive array of services for lung cancer. This includes state-of-the-art endobronchial ultrasound, PET scan, video assisted thoracoscopic surgery, a range of genetic and molecular testing, modern chemotherapy, targeted therapy based on genetic mutation testing, intensity modulated radiation therapy, genetic counseling, financial, psychosocial and smoking cessation counseling.

Nurse navigator service is available to help from diagnosis through treatment. Low dose CT scan for lung cancer screening is available at Wellspan cancer program. Eligible patients may participate in any of the several research clinical trials available.

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Site Analysis: Lung Cancer
by Giridhar Adiga, M.D.

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Sex distribution compared NCDB (2000-2010):
Site Analysis: Lung Cancer
by Giridhar Adiga, M.D.

STAGE OF DISEASE (2012)

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*ECH 2012 Data. NCDB 2011 Data.
LUNG CANCER DISTRIBUTION BY HISTOLOGY 2012

- SCLC: 20%
- NSCLC: 60%
- OTHER: 10%
- UNK: 10%
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**FIRST COURSE OF TREATMENT 2012**

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Site Analysis: Lung Cancer
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To support our patients, community volunteers and organizations provide hand-knitted scarves, hats, shawls and other items free of charge. The Cancer Program is grateful for all the support!