



# PVHMC Cancer Program Annual Report for 2016



**POMONA VALLEY HOSPITAL**

MEDICAL CENTER

THE ROBERT & BEVERLY LEWIS FAMILY CANCER CARE CENTER

# 2016 Cancer Committee Members

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## Table of Contents

2016 Cancer Committee	Inside Front Cover
Cancer Committee Report	1
New Cancer Cases 2016	6
Uterine Cancer Update	7
Lung Cancer Update	10
Definition of Terms	Inside Back Cover
Acknowledgements	Inside Back Cover

# Cancer Committee Report

by Sri G. Gorty, MD, Chair

The Cancer Program at Pomona Valley Hospital Medical Center (PVHMC) offers an integrated approach to all aspects of patient care. The unique opportunity to provide Radiation Oncology, Medical Oncology, Gynecology Oncology, Psychosocial Support and Breast Health Center (breast cancer imaging) under one roof at The Robert & Beverly Lewis Family Cancer Care Center allows patients to find support, quality care and multidisciplinary excellence in a positive and caring environment.

## Medical Oncology

In October many of our oncologists integrated their practices with the hospital; the hospital performs the business functions and the physicians continue to provide the highest quality, personalized medical care for their patients. The results are an even higher level of collaboration, shared decision-making and care that is based on evidence based guidelines. Medical oncologists are now linked to each other through an electronic medical record system. The oncology specific, state of the art system ensures the highest standard of care through access to National Comprehensive Cancer Network regimens (NCCN) and protocols which are being used by leading cancer institutes around the world.

Our medical oncologists continue to collaborate weekly by presenting new cancer cases at the Cancer Care Center pre-treatment conference. These conferences enable patients to have multiple opinions to develop the best treatment plan available based on NCCN Guidelines for that patient. Surgeons, pathologists and radiologists,

along with medical and radiation oncologists, nurses, clinical trials coordinator and therapists offer their knowledge and expertise to each individual's case.

Weekly Tumor Board conferences provide physicians an opportunity to present challenging cases to a multidisciplinary forum for review and recommendations. This team, in addition to the members stated above, also includes physicians from many different specialties and other health care professionals.

## Breast Health Center

The primary goal of the Breast Health Program at PVHMC is to deliver the highest quality care to our patients. We exclusively offer digital breast tomosynthesis mammography at our Pomona, Claremont, and Chino Hills sites. Digital breast tomosynthesis is a 3-dimensional mammogram, which allows the radiologist to examine the breast tissue in fine detail, 1 mm at a time. The technology has been shown in multiple studies to significantly increase the cancer detection rate and reduce recall rates relative to standard digital mammography. In 2016, an upgrade was implemented that now allows us to obtain a 2D plus 3D mammogram at half the previous radiation dosage.

The Breast Health Program at PVHMC has full American College of Radiology accreditation in mammography and stereotactic breast biopsy, demonstrating that our facility has achieved high practice standards in image quality, personnel qualifications, facility equipment, quality control procedures, and quality assurance programs.

We are a major partner with local community health

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clinics to provide screening and diagnostic mammography services for medically underserved patients over age 40, in conjunction with the state funded “Every Woman Counts” program.

The Breast Health Program at PVHMC also provides diagnostic breast imaging services to underinsured and uninsured patients under the age of 40, and men of any age, made possible by a community grant from the Los Angeles County Affiliate of Susan G. Komen.

We are dedicated to ensure that every woman in our community has timely access to our high quality breast care, helping women overcome barriers such as access to care, a lack of understanding or fear of the care process, fear of a positive diagnosis, financial barriers to treatment, and a myriad of additional psychosocial, emotional, and family concerns in the event of a positive diagnosis.

## Radiation Oncology

2016 was a busy and productive year providing more than 8,500 high quality radiation treatments to over 550 patients diagnosed with cancer and several benign conditions such as but not limited to adenomas, meningiomas and keloids. The top 4 diagnoses for this patient population is as follows:

- Breast Cancer
- Prostate Cancer
- GYN (cervical & uterine) Cancer
- Colo-Rectal Cancer

The two modes of radiation therapy that are offered by our department are as follows:

- Teletherapy - Linear accelerator based treatments
  - Accuray TomoTherapy HiArt Unit
  - Varian Trilogy with Rapid Arc & Cone Beam CT Unit
  - External Beam Treatment Options
    - Photons (x-rays)
    - Electrons
    - Intra-fraction tracking
    - 3D Conformal
    - IMRT with IGRT
    - SBRT with IGRT
    - Respiratory Gating & Deep Breath Hold
- Brachytherapy – Radioactive material based treatments
  - HDR
    - APBI for Select Early Stage Breast Cancer
    - Interstitial Implants for GYN Cancers
    - Intracavitary implants for GYN Cancers
  - Permanent Radioactive Seed Implants for Prostate Cancer
  - Radioactive Iodine Ablations for Thyroid Cancer and Hyperthyroidism
  - Radioactive Injections for Metastatic Bone Cancer



*Drs. Sri Gorty, MD (left) and Y. S. Ram Rao, MD*

- Radioactive Applications for Various Other Conditions

We look forward to providing our community with leading edge and high quality radiation medicine for decades to come.

## Lung Cancer Program

The Lung Cancer Program (LCP) at PVHMC was founded in January 2008. The LCP comprises a team of primary care physicians, radiologists, cardiothoracic surgeons, pulmonologists, medical oncologists, radiation oncologists, pathologists and a clinical trials coordinator. Our primary goal is to promote early diagnosis and to eliminate treatment delays by expediting patients through the health care process once a suspicious radiologic screening abnormality is identified. We work to replace late stage cancer diagnoses with earlier diagnoses, and thereby improve treatment outcomes.

To promote diagnosing lung cancer at the earliest of stages, PVHMC offers the public low cost and low dose CT Chest Screening, not requiring a physician referral. While not appropriate for everyone, current publications suggest that CT screening could reduce lung cancer mortality by 20% in heavy smokers through early detection of this lethal disease. We also provide smoking cessation literature.

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## GYN Oncology

Our GYN Oncology services continue to expand since Gynecologic Oncology Associates (GOA), a group of five board certified gynecologic oncologists, joined our medical staff in 2011. GOA continues to be a valuable asset to our community providing GYN oncology expertise to our patients. PVHMC can now serve women with gynecologic cancers right here. Our patients receive the most up to date in gynecologic cancer treatments. This includes minimally invasive laparoscopic or robotic surgery, ultra-precise radiation therapy utilizing TomoTherapy and Trilogy, both of which deliver IMRT treatments with IGRT and high dose rate brachytherapy which places the radiation directly at the site of the cancer, where the cancer was or where the cancer may recur in the pelvis.

## Palliative Care

Palliative Care is specialized medical care for people with serious illness. This type of care is focused on providing patients with relief from the symptoms, pain, and stress of a serious illness – whatever the diagnosis. The goal is to improve quality of life for both the patient and the family. Palliative care is provided by a team of doctors, nurses, chaplains, social workers and other specialists who work with the patient's other doctors to provide an extra layer of support in discussing goals of care, treatment options, pain and symptom management, and advance care planning. Palliative care can be provided at any age and at any stage in a serious illness, and can be provided together with curative treatment.

Palliative Care is not to be confused with Hospice Care. Palliative Care is pain and symptom management provided at any time during an illness, even while curative treatments are pursued. Hospice Care provides palliative care to terminally ill patients no longer seeking curative treatment.

## Clinical Trials

Clinical trials have been offered since 1995 under the leadership of Y. S. Ram Rao, MD, Director of Radiation Oncology and the Cancer Program. We have enrolled over 600 patients into NCI sponsored co-operative group clinical trials since 1995.

The Cancer Care Center continues to participate and actively enroll cancer patients onto clinical trials through the National Cancer Institute (NCI), other Cooperative Groups such as NRG, and occasionally Pharmaceutical Company sponsored clinical trials.

Each study design is created to focus on answering various scientific questions that will assist in discovering enhanced ways to prevent, diagnose and/or treat various cancers. All clinical trials are fully conducted in compliance with

the FDA guidelines including but not limited to, "Good Clinical Practice" guidelines (GCP).

Phase III and some Phase II Clinical Trials are made available to the community providing patients with easy access to the latest cancer research regimes. At any given time, there are more than a dozen clinical trials open to patients with various types and stages of cancer.

There are 9 types of cancer related clinical trials:

- Treatment trials test new treatments (like a new cancer drug, new approaches to surgery or radiation therapy, new combinations of treatments, or new methods such as gene therapy).
- Prevention trials test new approaches, such as medicines, vitamins, minerals, or other supplements that doctors believe may lower the risk of a certain type of cancer. These trials look for the best way to prevent cancer in people who have never had cancer or to prevent cancer from coming back or a new cancer occurring in people who have already had cancer.
- Screening trials test the best way to find cancer, especially in its early stages.
- Quality of Life trials (also called supportive care trials) explore ways to improve comfort and quality of life for cancer patients.
- Pain relief (palliative care) and pain progression (comparing relief after radiation and re-irradiation, comparing overall pain progression for symptomatic bone metastases).
- Psycho-Social (Gene Expression Meditative Movement and Cognitive Impairment (GMC) Study).
- Surplus Surgical Tissue and Biofluids Collection for research and some include, but not limited to, one or more of the following: RNA or DNA isolation and analysis, gene and protein expression, diagnostic device and biomarker development, tissue micro array construction, laboratory test and compound identification and validation tests. **This is a two part study both Retrospective and Prospective.**

All potential study patients are presented with the most recent version of the IRB Approved Consent Document for each specific trial. All consent documents contain the "Experimental Subject's Bill of Rights." (California law under Health & Safety Code Section 24172) and a "HIPAA," (Authorization) to Use or Disclose (Release) Identifiable Health Information for Research.

The Department of Health and Human Services (HHS) issued the Standards for Privacy of Individually Identifiable Health Information (the Privacy Rule) under the Health Insurance Portability and Accountability Act of 1996 (HIPAA) to provide the first comprehensive Federal protection for the privacy of personal health information.

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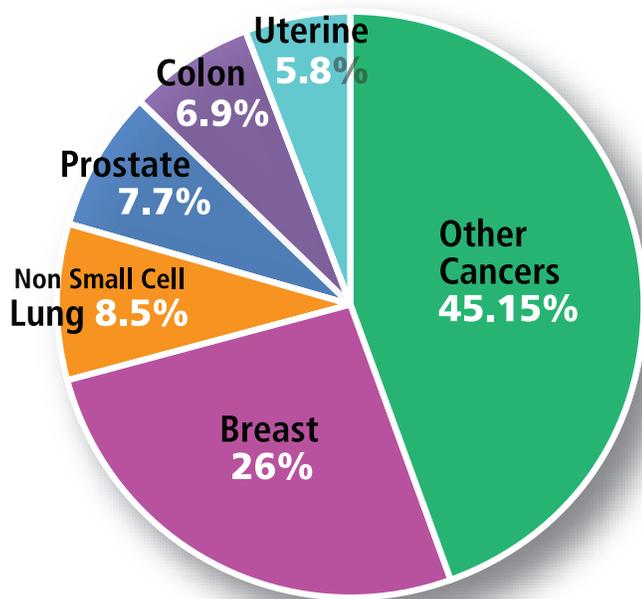
Potential study patients undergo the consenting process to its entirety before initiating any study related procedures or assessments. All potential study patients are reminded that their study participation is completely voluntary and they have the right to refuse study participation without any bias from our medical and ancillary staff.

## Cancer Registry

The Cancer Registry at PVHMC has collected cancer data for analysis, research and mandatory reporting to the California Cancer Registry since 1985. The Cancer Registry also contributes data to the American College of Surgeons (ACoS), Commission on Cancer, and National Cancer Data Base (NCDB) annually. The NCDB contains data from American College of Surgeons approved hospitals nationally. The physicians at PVHMC utilize benchmark reports from the NCDB to measure and evaluate patient care, treatment and survival of our cancer patients. Our computerized database contains 27,202 cancer patients.

In 2016 the Cancer Registry accessioned a total of 1,141 cancer cases. There were 897 analytic or new cases and 250 non-analytic or previously diagnosed and treated cases. We also perform lifetime annual follow-up on all analytic patients in our database as a requirement of the American College of Surgeons approved Cancer Programs.

The top five sites comprise a total of 492 cases or 54.85% of the total cancer cases seen at PVHMC for 2016. The top five cancers are: Breast (233 cases or 26%), Non-small cell lung (76 cases or 8.5%), Prostate (69 cases or 7.7%), Colon (62 cases or 6.9%), and Uterine cancer (52 cases or 5.8%). Other Cancers 45.15%.



Percentages of Total Cancer Cases at PVHMC

## Customer Satisfaction

Customer Satisfaction is always a top priority. Many of our patients who utilize the hospital based departments are surveyed regarding the service and their satisfaction. The surveys allow us timely feedback about our patients' experience. We also offer "Feedback Forms" throughout the Center that allows patients an immediate opportunity to express appreciation or concerns. All complements, suggestions and concerns are forwarded to the appropriate manager and department for recognition or follow-up as appropriate. In 2016, we continued to experience excellence in Customer Service.



## Support Programs

Support Services continue to offer a wide variety of support programs, workshops and wellness groups.

A workshop was held for patients and family members on "Do We Really Need to Talk About It?" on the importance of Advance Directives and other end-of-life issues. A special workshop for patients, called "Healthy Eating" was held to educate and support our cancer patients. We also celebrated survivors day with a special day workshop "Feeling Good with Essential Oils." It was a great day for connecting with others, recognizing supporters, honoring survivors, and celebrating life.

The PVHMC's Foundation's special fund was once again utilized to offer two different sessions of the "Living Well After Cancer" program in 2016. This program, in conjunction with The Claremont Club's goal is to help cancer survivors improve their fitness level, quality of life and self-esteem. We want them to know that life can improve after cancer treatment ends. The participants (men and women) experienced many forms of exercise specifically designed for them. They met a minimum of twice weekly for 13 weeks. In addition to weight training and cooking classes the program included yoga, Pilates, balance, and aqua classes.

We had 332 different support or wellness group meetings with an attendance of over 3,100. We also participated in community events and reviewed with our physicians the prostate cancer treatment guidelines. Once

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*Celebrating With Style Fashion Show and Luncheon*



*Ladies Plastic Golf Organization*

again, we also ended the year with our annual holiday open house where we celebrate the holidays with over 150 of our current and past patients.

## **Fundraising**

In addition to the ongoing support of The Robert and Beverly Lewis Family Cancer Care Center, donors supported the 13th Annual Celebrating with Style Fashion Show and Luncheon. Five cancer survivor models, all treated at the Cancer Care Center fashioned clothes from Susa's and Xerxes for Gents (both located in Claremont Village). Guests enjoyed a reception; theme basket raffle drawings; lunch; an emotional and up-lifting fashion show and a special Guardian Angel recognition for Dr. Ram Rao and Dr. Lori Vanyo.

Once again, we are very appreciative of Ladies Plastics Golf Organization holding their 17th annual Golf Tournament to benefit The Robert and Beverly Lewis Family Cancer Care Center's Breast Health fund. The board of LPGO presented a check in the amount of \$43,000 during the holidays, making their overall contribution from this annual event amounting to \$500,000.

In 2016, we provided 142 wigs for patients who have lost their hair due to chemotherapy. We are very proud to offer numerous educational and wellness programs to anyone touched by cancer "free of charge."

*Thank you to our community family for your ongoing support in our efforts to raise funds for The Robert and Beverly Lewis Family Cancer Care Center.*

# New Cancer Cases 2016

Pomona Valley Hospital Medical Center

SITE GROUP	Total Cases	Class		Sex		Stages					Unk	N/A*	Missing
		A	N/A	M	F	0	I	II	III	IV			
<b>Oral Cavity/Pharynx</b>	<b>17</b>	<b>12</b>	<b>5</b>	<b>15</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>
Tongue	4	4	0	4	0	0	0	0	0	4	0	0	0
Salivary Glands, Major	2	2	0	2	0	0	0	2	0	0	0	0	0
Mouth, Other & Nos	1	0	1	0	1	0	0	0	0	0	0	0	0
Tonsil	4	4	0	4	0	0	0	0	3	1	0	0	0
Oropharynx	3	1	2	3	0	0	0	0	1	0	0	0	0
Nasopharynx	2	1	1	2	0	0	0	0	0	1	0	0	0
Pharynx & Ill-Defined	1	0	1	0	1	0	0	0	0	0	0	0	0
<b>Digestive System</b>	<b>205</b>	<b>167</b>	<b>38</b>	<b>108</b>	<b>97</b>	<b>10</b>	<b>29</b>	<b>32</b>	<b>30</b>	<b>44</b>	<b>13</b>	<b>9</b>	<b>0</b>
Esophagus	9	5	4	7	2	0	0	0	2	3	0	0	0
Stomach	22	20	2	14	8	1	3	4	4	5	3	0	0
Small Intestine	5	4	1	3	2	1	0	1	0	2	0	0	0
Colon	78	62	16	39	39	7	13	13	10	15	3	0	0
Rectum/Rectosigmoid	28	23	5	12	16	1	4	2	4	6	5	1	0
Anus, Anal Canal, Anorectum	1	1	0	1	0	0	0	1	0	0	0	0	0
Liver	20	15	5	13	7	0	2	1	3	2	1	6	0
Gallbladder	5	5	0	2	3	0	0	1	2	1	1	0	0
Bile Ducts	5	5	0	1	4	0	1	1	0	2	0	1	0
Pancreas	30	25	5	15	15	0	6	8	3	8	0	0	0
Peritoneum, Omentum, Mesent	1	1	0	1	0	0	0	0	1	0	0	0	0
Other Disgestive	1	1	0	0	1	0	0	0	0	0	0	1	0
<b>Respiratory &amp; Intrathoracic System</b>	<b>108</b>	<b>84</b>	<b>24</b>	<b>50</b>	<b>58</b>	<b>1</b>	<b>20</b>	<b>10</b>	<b>17</b>	<b>34</b>	<b>0</b>	<b>2</b>	<b>0</b>
Nasal Cavity, Sinus, Ear	2	2	0	0	2	0	0	0	2	0	0	0	0
Larynx	2	2	0	1	1	0	2	0	0	0	0	0	0
Lung/Bronchus-Small Cell	3	3	0	2	1	0	0	0	1	2	0	0	0
Lung/Bronchus-Non Small Cell	100	76	24	46	54	1	17	10	14	32	0	2	0
Pleura	1	1	0	1	0	0	1	0	0	0	0	0	0
<b>Hematopoietic</b>	<b>77</b>	<b>43</b>	<b>34</b>	<b>44</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>41</b>	<b>0</b>
Hemeretic	52	32	20	33	19	0	0	0	1	1	0	30	0
Myeloma	20	11	9	7	13	0	0	0	0	0	0	11	0
Other Hematopoietic	5	0	5	4	1	0	0	0	0	0	0	0	0
<b>Bone</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Soft Tissue</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Skin</b>	<b>26</b>	<b>19</b>	<b>7</b>	<b>16</b>	<b>10</b>	<b>1</b>	<b>8</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>
Melanoma of Skin	24	17	7	15	9	1	7	3	0	3	3	0	0
Other Skin CA	2	2	0	1	1	0	1	0	0	0	1	0	0
<b>Breast</b>	<b>255</b>	<b>233</b>	<b>22</b>	<b>0</b>	<b>255</b>	<b>43</b>	<b>83</b>	<b>67</b>	<b>25</b>	<b>5</b>	<b>10</b>	<b>0</b>	<b>0</b>
<b>Female Genital</b>	<b>109</b>	<b>90</b>	<b>19</b>	<b>0</b>	<b>109</b>	<b>3</b>	<b>46</b>	<b>8</b>	<b>23</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>0</b>
Cervix In Situ Ca	1	0	1	0	1	0	0	0	0	0	0	0	0
Cervix Uteri	22	15	7	0	22	0	4	4	6	1	0	0	0
Corpus Uteri	56	52	4	0	56	0	39	2	9	1	1	0	0
Uterus Nos	2	0	2	0	2	0	0	0	0	0	0	0	0
Ovary	22	17	5	0	22	0	2	1	8	3	3	0	0
Vagina	1	1	0	0	1	0	0	1	0	0	0	0	0
Vulva	5	5	0	0	5	3	1	0	0	0	0	1	0
<b>Male Genital</b>	<b>119</b>	<b>74</b>	<b>45</b>	<b>119</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>36</b>	<b>13</b>	<b>16</b>	<b>2</b>	<b>0</b>	<b>0</b>
Prostate	113	69	44	113	0	0	5	36	10	16	2	0	0
Testis	4	4	0	4	0	0	1	0	3	0	0	0	0
Penis	2	1	1	2	0	0	1	0	0	0	0	0	0
<b>Urinary Tract</b>	<b>56</b>	<b>48</b>	<b>8</b>	<b>44</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>10</b>	<b>4</b>	<b>6</b>	<b>1</b>	<b>0</b>	<b>0</b>
Bladder	27	25	2	24	3	11	5	7	0	2	0	0	0
Kidney and Renal Pelvis	29	23	6	20	9	2	9	3	4	4	1	0	0
<b>Ophthalmic</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>
<b>Brain and Other Nervous System</b>	<b>59</b>	<b>35</b>	<b>24</b>	<b>17</b>	<b>42</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>35</b>	<b>0</b>
Brain**	16	12	4	11	5	0	0	0	0	0	0	12	0
Other Nervous System	43	23	20	6	37	0	0	0	0	0	0	23	0
<b>Thyroid and Other Endocrine</b>	<b>49</b>	<b>39</b>	<b>10</b>	<b>20</b>	<b>29</b>	<b>0</b>	<b>20</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>1</b>	<b>6</b>	<b>0</b>
Thyroid	37	33	4	10	27	0	20	3	6	3	1	0	0
Other Endocrine**	12	6	6	10	2	0	0	0	0	0	0	6	0
<b>Hodgkin/Non-Hodgkin Lymphoma</b>	<b>46</b>	<b>37</b>	<b>9</b>	<b>27</b>	<b>19</b>	<b>0</b>	<b>7</b>	<b>8</b>	<b>6</b>	<b>12</b>	<b>4</b>	<b>0</b>	<b>0</b>
Hodgkin's Disease	6	5	1	1	5	0	1	2	1	1	0	0	0
Non-Hodgkin's Lymphoma	40	32	8	26	14	0	6	6	5	11	4	0	0
<b>Unknown or Ill-Defined</b>	<b>13</b>	<b>9</b>	<b>4</b>	<b>7</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>0</b>
<b>TOTALS</b>	<b>1147</b>	<b>897</b>	<b>250</b>	<b>470</b>	<b>677</b>	<b>71</b>	<b>235</b>	<b>180</b>	<b>131</b>	<b>136</b>	<b>39***</b>	<b>105*</b>	<b>0</b>

Lymphoma: Table includes lymphoma cases coded to lymphatic and extranodal sites.

\* Not Applicable: Benign tumors, Hematopoietic malignancies and tumors and histopathology in a particular primary site not included in AJCC TNM staging scheme

\*\* Benign tumors: Collection and reporting has been a requirement of the American College of Surgeons and/or the State of California

\*\*\* Unknown stage: ACoS, CoC allow 10% or less of the analytic case load to be unstaged. Starting 1/1/2006, analytic Class 0 cases (diagnosed at our hospital but received all 1st course of treatment elsewhere) are no longer required to be TNM staged. The table reflects a total of 39 cases for 2016. 8 Class 0 cases were subtracted thus leaving 31 cases divided by 897 analytical cases = 3.4% unstaged cases (less than 10%).



# 2016 Uterine Cancer Update

by John V. Brown III, MD • Division of Gynecologic Oncology

Uterine cancer is the most common cancer of the female genital tract, accounting for an estimated 61,380 new cases in the United States and nearly 10,920 deaths [1]. The majority of patients present with early stage disease, which coincides with a favorable outcome, in contrast to high risk subtypes that exhibit a proclivity for recurrent disease [2].

There are numerous risk factors that may contribute to the development of uterine cancer, including medications (tamoxifen), diabetes, obesity, age, a history of ovarian cancer, breast cancer, endometrial hyperplasia or polycystic ovarian cancer syndrome, and treatment with pelvic radiotherapy [3]. In patients for whom any of the aforementioned clinical risk factors are relevant, they should report any changes in their menstrual cycle or postmenopausal vaginal bleeding to their health care provider.

Standard comprehensive staging in uterine cancer essentially encompasses a hysterectomy, bilateral salpingo-oophorectomy, collection of pelvic washings, and a selected pelvic and para-aortic lymph node dissection [4]. Pathologic factors such as histology, grade, depth of myometrial invasion, lymphovascular space invasion, lymph node involvement, and extra-uterine disease are all associated with the patient's clinical outcome.

Surgical staging is conducted abdominally or endoscopically (e.g., conventional laparoscopy or robotic-assisted surgery). Robotic surgery employs a

high definition camera with 3-dimensional picture generation that facilitates surgical access and is associated with reduced blood loss, fewer complications and shorter hospital stay duration [5]. Robotic surgery has been conducted at Pomona Valley Hospital Medical Center (PVHMC) for several years and more recently, the surgical technology has incorporated an infrared camera to perform sentinel lymph node biopsies which decreases surgical morbidity [6]. At PVHMC, patients present with a higher incidence of stage I disease (78% vs. 68%) when compared to the National Cancer Database (NCDB) (see Table 1). While the exact reason for this remains unclear, ready access to health care providers in the PVHMC community resulting in early diagnosis may be the reason[7].

The gynecologic oncology service at PVHMC has been dedicated to improving the outcomes for women diagnosed with gynecologic cancers. The number of uterine cancer cases has steadily increased from 2014 to 2016. When compared to the NCDB, PVHMC patients were similar with regard to age at diagnosis although there was a slightly lower concentration of PVHMC patients who were diagnosed between age 70-79 (see Table 2). It is possible that referral patterns for Medicare patients account for this discrepancy [8].

In the United States, the management of endometrial cancer includes a hysterectomy and bilateral salpingo-oophorectomy, and when indicated, a lymphadenectomy

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TABLE 1

Corpus Uteri Cancer ■ Stage at Diagnosis ■ NCDB vs PVHMC								
Stage at Diagnosis	NCDB		PVHMC					
	NCDB 2014	% of Total NCDB	PVHMC 2014	% of Total PVHMC	PVHMC 2015	% of Total PVHMC	PVHMC 2016	% of Total PVHMC
0	294	1%	-	-	-	-	-	-
I	28,916	68%	28	65%	28	58%	40	78%
II	1,987	5%	4	9%	2	4%	2	4%
III	5,027	12%	1	2%	5	10%	9	16%
IV	2,871	7%	2	5%	4	8%	1	2%
Unknown	3,276	8%	8	19%	8	17%	-	-
N/A	66	0%	-	-	1	2%	-	-
<b>Totals</b>	<b>42,437</b>	<b>100%</b>	<b>43*</b>	<b>100%</b>	<b>48*</b>	<b>100%</b>	<b>52*</b>	<b>100%</b>

\* Includes all analytical cases.

to further characterize the extent of disease and determine the manner in which adjuvant therapy should be delivered [9]. The type of adjuvant therapy often reflects the patient's age, disease stage, histology, and depth of invasion. Most patients with early stage disease do not require any additional therapy and do very well. In patients whose disease has involved the lymph nodes, studies have shown that multimodality therapy (e.g., surgery, chemotherapy and radiotherapy) is associated with improved survival [10]. Patients at PVHMC are more likely (20% vs. 10%) to undergo multimodal therapy when compared to the national average (See Table 3). The five-year overall uterine cancer survival rates at PVHMC are slightly higher (76.2% to 69%) than the national average (Table 4) which might be secondary to the greater incidence of early stage disease and the increased use of multimodality

therapy. However, it should be noted that the number of cases diagnosed at PVHMC is relatively small compared to the national population.

In summary, endometrial cancer is the most common gynecologic malignancy, but most patients are diagnosed with early stage disease and have a favorable prognosis. The presence of a gynecologic oncology subspecialty service at PVHMC has resulted in a steady increase in the number of patients with endometrial cancer. Those patients are diagnosed with disease at an earlier stage than the national average and the vast majority undergo robotic surgery, which is associated with improved surgical outcomes [5]. Finally, five year survival rates for endometrial cancer patients at PVHMC exceed the national average, but the number of patients cared for at PVHMC preclude a definite conclusion.

**TABLE 2**

Corpus Uteri Cancer ■ Age at Diagnosis ■ NCDB vs PVHMC								
Age Group	NCDB		PVHMC					
	NCDB 2014	% of Total NCDB	PVHMC 2014	% of Total PVHMC	PVHMC 2015	% of Total PVHMC	PVHMC 2016	% of Total PVHMC
Under 20	4	0%	-	-	-	-	-	-
20-29	205	0%	-	-	-	-	1	2%
30-39	1,165	3%	7	16%	3	6%	1	2%
40-49	3,538	8%	3	7%	2	4%	7	14%
50-59	11,318	27%	13	30%	20	42%	17	32%
60-69	15,348	36%	14	33%	11	23%	21	40%
70-79	7,718	18%	6	14%	10	21%	5	10%
80-89	2,779	7%	-	-	2	4%	-	-
90+	362	1%	-	-	-	-	-	-
<b>Totals</b>	<b>42,437</b>	<b>100%</b>	<b>43*</b>	<b>100%</b>	<b>48*</b>	<b>100%</b>	<b>52*</b>	<b>100%</b>

\* Includes all analytical cases.

**TABLE 3**

Corpus Uteri Cancer ■ Treatment ■ NCDB vs PVHMC								
Treatment at Diagnosis	NCDB 2014		PVHMC 2014		PVHMC 2015		PVHMC 2016	
	# Cases	%	# Cases	%	# Cases	%	# Cases	%
Surgery Only	24,239	57%	25	58%	23	49%	29	58%
Surgery and Radiation	5,528	13%	7	16%	9	19%	7	14%
Surgery and Chemotherapy	4,129	10%	3	7%	3	6%	2	4%
Surgery, Chemotherapy, & Radiation	4,421	10%	6	14%	9	19%	10	20%
Other Treatment	2,636	6%	1	2%	-	-	1	2%
No 1st Course Treatment	1,484	4%	1**	2%	3**	6%	1**	2%
<b>TOTAL</b>	<b>42,437</b>	<b>100%</b>	<b>43</b>	<b>100%</b>	<b>47</b>	<b>100%</b>	<b>50</b>	<b>100%</b>

\*\* Reflects cases diagnosed at PVHMC, but patient has not sought any further treatment due to personal, spiritual or other reasons (including treatment recommended but patient refused or unknown, patient expired or went into Hospice). This is based on exhaustive research to physicians offices and other facilities. Excludes Analytic Class of Case 0 cases (diagnosed here, and treated elsewhere).

**TABLE 4**

<b>PVHMC Five-Year Survival Table for Corpus Uteri Cases</b> <i>Diagnosed in 2005-2010 – Comprehensive Community Cancer Program - PVHMC</i>							
Stage	Cases	At dx	1 year	2 years	3 years	4 years	5 years
0	1	100	100.0	100.0	100.0	100.0	100.0
I	79	100	97.4	96.2	92.4	89.8	88.6
II	12	100	91.6	83.3	83.3	83.3	83.3
III	10	100	90.0	70.0	40.0	40.0	30.0
IV	5	100	80.0	60.0	60.0	20.0	20.0
<b>Overall</b>	<b>107</b>	<b>100%</b>	<b>94.0%</b>	<b>87.2%</b>	<b>82.2%</b>	<b>78.8%</b>	<b>76.2%</b>

*\*Based on the TNM Stage 6th Edition which reflects updated changes to tumor staging based on previous research.*

**References**

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# 2016 Lung Cancer Update

by Krishna Reddy, MD • Medical Oncology Services, PVHMC

Lung Cancer is of enormous concern and interest, for the oncologic professionals, since it is the most common cause of cancer mortality worldwide, both in men and women. In 2012, there were over 1.8 million people afflicted by Lung Cancer worldwide, with about 1.6 million deaths reported. In the United States, there are about 225,000 new cases of Lung Cancer, and over 160,000 deaths reported annually. It is well recognized that the incidence of Lung Cancer has risen dramatically. Around 1953, Lung Cancer became the most common cause of cancer death among men. And in 1985 it became the leading cause of cancer deaths in women. Almost one-half Lung Cancer deaths occur in women and twice as many deaths as Breast Cancer.

Literature indicates that Lung Cancer deaths are declining in men, and have plateaued in women, due to decrease in smoking. The term Lung Cancer or Bronchogenic Carcinoma, refers to cancers that arise in the airways or lung parenchyma. Approximately 95% of all Lung Cancers are classified as either Small Cell Lung Cancer (SCLC) or Non-Small Cell Lung Cancer (NSCLC), with the latter regarded as the most common of all Lung Cancer types.

At PVHMC, the incidence of NSCLC over the last 3 years (2014, 2015 & 2016) has increased slightly across all ages, genders and stages, for a total of 214 analytic

NSCLC cases diagnosed at PVHMC. The age and gender distribution of NSCLC patients at PVHMC is shown in Tables 1 and 2, compared to the most recent data available from the National Cancer Database (NCDB).

The comparison of Stage at Diagnosis is shown in Table 3. Our data seems to approximate with NCDB data in most categories. NSCLC is rarely reported below the age of 40. The incidence of NSCLC is slightly higher in males; however there has also been a slight increase in NSCLC incidence in females since the last lung cancer update previously reported in 2011. Overall the majority of occurrences were in the late stages (III & IV).

At PVHMC Cancer Care Center we utilize evidence based national treatment guidelines in our discussions and treatment planning of our cancer patients. Each newly diagnosed cancer patient is discussed at our Pre-Treatment meeting, which is held every Monday afternoon at the Cancer Care Center. Cases are also presented at the Thursday afternoon Cancer Conference meeting, and both are multidisciplinary with various physician and non-physician specialists in attendance. The treatment modalities used in the management of patient with NSCLC at PVHMC in comparison to NCDB is shown in Table 4. In the last 3 years, PVHMC has treated approximately 190 analytic NSCLC patients. In general, surgical resection offers the best opportunity for long-term survival and cure

*continued >*

**TABLE 1**

Lung NSCC ■ Age at Diagnosis ■ NCDB vs PVHMC								
Age Group	NCDB		PVHMC					
	NCDB 2014	% of Total NCDB	PVHMC 2014	% of Total PVHMC	PVHMC 2015	% of Total PVHMC	PVHMC 2016	% of Total PVHMC
Under 20	14	0%	-	-	-	-	-	-
20-29	122	0%	-	-	-	-	-	-
30-39	547	0%	-	-	-	-	1	1%
40-49	3,919	3%	2	3%	3	5%	5	7%
50-59	20,552	17%	11	15%	10	16%	16	21%
60-69	37,671	30%	26	35%	23	36%	18	24%
70-79	41,460	33%	20	27%	18	28%	18	24%
80-89	18,537	15%	11	15%	10	16%	17	22%
90+	1,531	1%	4	5%	-	-	1	1%
<b>Totals</b>	<b>124,380</b>	<b>100%</b>	<b>74*</b>	<b>100%</b>	<b>64*</b>	<b>100%</b>	<b>76*</b>	<b>100%</b>

\* Includes all analytical cases.

in patients with resectable NSCLC. Patients with Stage I or II NSCLC should be treated with complete resection whenever possible. Post-operative adjuvant chemotherapy, improves survival in patients with Pathologic Stage II disease and probably in Stage IB disease.

Patients with Stage I or II disease who are not candidate for surgical resection or who refuse surgery may be candidates for non-surgical local therapy, such as SBRT (Stereotactic Body Radiation Therapy) or alternatives include RFA (Radiofrequency Ablation) and Cryoablation. For patients with stage III disease prior to definitive therapy, concurrent chemoradiotherapy is preferred. The role of surgery following chemoradiotherapy is an area of active investigation. Surgical resection may be feasible in carefully selected patient with T3 or T4 lesion with negative mediastinal lymph nodes.

Patients with Stage IV disease are generally treated with systemic therapy or symptom based palliative approach. Molecularly targeted therapy and chemo and immunotherapy based approach seem to prolong survival without compromising quality of life. Intense efforts are underway to expand innovative therapies to combat the overall dismal prognosis of Lung Cancer.

The Five-Year Survival Data at PVHMC are shown in Table 5. TNM stage (Tumor, Node, Metastasis) at presentation has the greatest impact on prognosis. Survival decreased gradually from 46.9% for Stage I to 2.5% for Stage IV disease. Overall Five-Year Survival is at 18.1%. Our data appears to correlate well with published data for clinical stage. Survival is better for pathologically staged patients, stage for stage. Future efforts hopefully will improve overall survival.

**TABLE 2**

Lung NSCC ■ Gender ■ NCDB vs PVHMC								
Gender	NCDB		PVHMC					
	NCDB 2014	% of Total NCDB	PVHMC 2014	% of Total PVHMC	PVHMC 2015	% of Total PVHMC	PVHMC 2016	% of Total PVHMC
Male	64,124	52%	43	58%	29	45%	38	49%
Female	60,256	48%	31	42%	35	55%	38	51%
<b>Totals</b>	<b>124,380</b>	<b>100%</b>	<b>74*</b>	<b>100%</b>	<b>64*</b>	<b>100%</b>	<b>76*</b>	<b>100%</b>

\* Includes all analytical cases.

**TABLE 3**

Lung NSCC ■ Stage at Diagnosis ■ NCDB vs PVHMC								
Stage at Diagnosis	NCDB		PVHMC					
	NCDB 2014	% of Total NCDB	PVHMC 2014	% of Total PVHMC	PVHMC 2015	% of Total PVHMC	PVHMC 2016	% of Total PVHMC
0	669	1%	1	1%	-	-	2	3%
I	33,985	27%	14	19%	12	19%	14	18%
II	11,679	9%	9	12%	6	9%	9	12%
III	24,286	20%	18	24%	5	8%	15	20%
IV	50,111	40%	24	32%	34	53%	33	43%
Unknown	3,510	3%	8	11%	6	9%	1	1%
N/A	140	0%	-	-	1	2%	2	3%
<b>Totals</b>	<b>124,380</b>	<b>100%</b>	<b>74*</b>	<b>100%</b>	<b>64*</b>	<b>100%</b>	<b>76*</b>	<b>100%</b>

\* Includes all analytical cases.

*continued* ➤

TABLE 4

Lung NSCC ■ Treatment ■ NCDB vs PVHMC								
Treatment at Diagnosis	NCDB 2014		PVHMC 2014		PVHMC 2015		PVHMC 2016	
	# Cases	%	# Cases	%	# Cases	%	# Cases	%
Surgery Only	24,656	205	5	8%	9	16%	5	7%
Radiation Only	19,720	16%	10	16%	14	25%	14	20%
Chemotherapy Only	14,388	12%	10	16%	4	7%	4	6%
Surgery and Radiation	791	1%	-	-	-	-	-	-
Surgery and Chemotherapy	5,964	5%	1	2%	1	2%	-	-
Radiation and Chemotherapy	25,663	21%	12	19%	9	16%	10	15%
Surgery, Chemotherapy, & Radiation	3,160	3%	2	3%	3	5%	3	4%
Other Treatment	6,277	5%	1	2%	-	-	1	1%
No 1st Course Treatment	23,761	19%	23**	36%	17**	30%	32**	46%
<b>TOTAL</b>	<b>124,380</b>	<b>100%</b>	<b>64</b>	<b>100%</b>	<b>57</b>	<b>100%</b>	<b>69</b>	<b>100%</b>

\*\* Reflects cases diagnosed at PVHMC, but patient has not sought any further treatment due to personal, spiritual or other reasons (including treatment recommended but patient refused or unknown, patient expired or went into Hospice). This is based on exhaustive research to physicians offices and other facilities. Excludes Analytic Class of Case 0 cases (diagnosed here, and treated elsewhere).

TABLE 5

PVHMC Five-Year Survival Table for Lung NSCC Cases**							
Diagnosed in 2005-2010 – Comprehensive Community Cancer Program - PVHMC							
Stage	Cases	At dx	1 year	2 years	3 years	4 years	5 years
0	4	100	50.0	25.0	0.0	0.0	0.0
I	66	100	83.3	66.6	59.0	51.5	46.9
II	34	100	85.2	76.4	61.7	61.7	55.7
III	81	100	49.0	28.9	17.6	12.5	10.0
IV	156	100	19.8	8.9	5.7	2.5	2.5
<b>Overall</b>	<b>341</b>	<b>100%</b>	<b>46.2%</b>	<b>32.0%</b>	<b>24.5%</b>	<b>20.3%</b>	<b>18.1%</b>

\*\*Based on the TNM Stage 6th Edition which reflects updated changes to tumor staging based on previous research.



# DEFINITION OF TERMS

<b>Age of Patient</b>	Recorded in completed years at the time of diagnosis for analytic cases or the age of the patient at the time they were first seen at this hospital for non-analytic patients.
<b>Class of Case</b>	Analytic: Patients with a malignant neoplasm (or benign brain or CNS tumor diagnosed in 2001 or after), newly diagnosed and/or received all or part of their 1st course of treatment at Pomona Valley Hospital Medical Center.  Non-Analytic: Patients who have been previously diagnosed and treated for a malignancy (or benign brain or CNS tumor after 2001) elsewhere who receive treatment at PVHMC for progressive, recurrent or metastatic disease.
<b>Stage Of Disease</b>	Analytic cancer cases at PVHMC are staged according to the American Joint Commission on Cancer (AJCC), 6th Edition Cancer Staging manual as required by the American College of Surgeons, Commission on Cancer. The AJCC, TNM Classification Systems is based on the premise that cancer of similar types (histology) or site of origin share similar patterns of growth. There are no AJCC TNM Staging Classifications for malignant brain and CNS tumors or hematopoietic diseases. These cases are designated as not applicable (N/A) under stages on the New Cancer Cases 2006 table. This system expresses the anatomic extent of disease based on: T = tumor size, and/or tumor invasion, N = node involvement, M = metastases, spread to distant sites (lung, liver, bone, brain, etc.)  A Stage Group, i.e. I, II, III, IV is assigned after the TNM elements have been determined.
<b>Survival Rate</b>	The proportion of patients surviving a particular interval from the time of diagnosis, expressed in terms of percentage, and then computed.
<b>Treatment</b>	Refers to the first course of planned treatment after initial diagnosis.

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