

Olympic Medical Center Cancer Care Program Annual Report

2009



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Tumor Registry Data: 2008

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December 2009

Dear Colleagues, Staff and Community Friends,

Please accept this Annual Report of the Cancer Committee and the Cancer Program of Olympic Medical Center.

2009 was highlighted by the addition of new staff to the Olympic Medical Cancer Center in Sequim. New members of our team include a new Cancer Center Director, Tara Lock, a new medical oncologist, Dr. Christopher Williams, and new Medical Director for Radiation Oncology, Dr. Rena Zimmerman.

The committee once again applauds the outstanding work of the multi-talented epidemiologist Dr. Paul Stehr-Green in creating the current site specific report included in this publication.

The Seattle Cancer Care Alliance continues to show its support for cancer care in our community with the ongoing partnership to nurture clinical trial availability, tumor board based case discussions, quarterly lecture series and generous assistance in the OMC Foundation's October fund raising event, the Harvest of Hope Winemaker's Gala.

We thank the physician recruitment efforts of our hospital's administration for our new hires and ongoing plans to complete full staffing for the Cancer Center in 2010.

Please review this Annual Report created by Tumor Registrar Lara Whiteside, and if you have any thoughts about how to continue to improve our community's cancer care, contact any committee member.

Thank you one and all.

Thomas Kummet, MD MPH

Melanoma of the Skin in Clallam County, 1992-2006

Background

Approximately one in seventy Americans will develop melanoma in their lifetime.

Melanoma is a malignant tumor of melanocytes which are responsible for the production of the dark pigment melanin and are found predominantly in skin, but also in the bowel and the eye. Melanoma is the sixth most common cause of cancer in the United States, and accounts for the majority (about three-fourths) of skin cancer-related deaths. The incidence of melanoma is increasing 3% annually in the United States: 63,000 new cases are diagnosed annually, and approximately one in seventy Americans will develop melanoma in their lifetime. Approximately 8,000 deaths from malignant melanoma occur each year in the United States (along with another 2,500 deaths from non-melanoma skin cancers); worldwide, about 48,000 melanoma-related deaths occur annually.

Melanoma occurs more frequently in males and in Whites, especially those living at lower latitudes (sunnier climates) or those who use tanning salons. Despite many years of intensive laboratory and clinical research, the greatest chance of cure remains early surgical resection of thin tumors.

Number of melanoma cases in Clallam County

On average, about 33 persons (19 men and 14 women) are diagnosed with melanoma in Clallam County every year.

Between 1992 and 2006, a total of 493 newly diagnosed cases of melanoma¹ among residents of Clallam County was reported to the Washington State Cancer Registry² (WSCR), or a mean number of 32.9 cases annually.

¹ In this report, incident melanoma cases are defined by International Classification of Diseases-10th Revision (ICD-10) codes: C44.0-C44.9, including only histology codes 8720-8790.

² Data from the Washington State Cancer Registry (WSCR), maintained by the Washington State Department of Health, were available for years between 1992 and 2006 at the time this report was written.

Race, age, and sex characteristics of melanoma cases

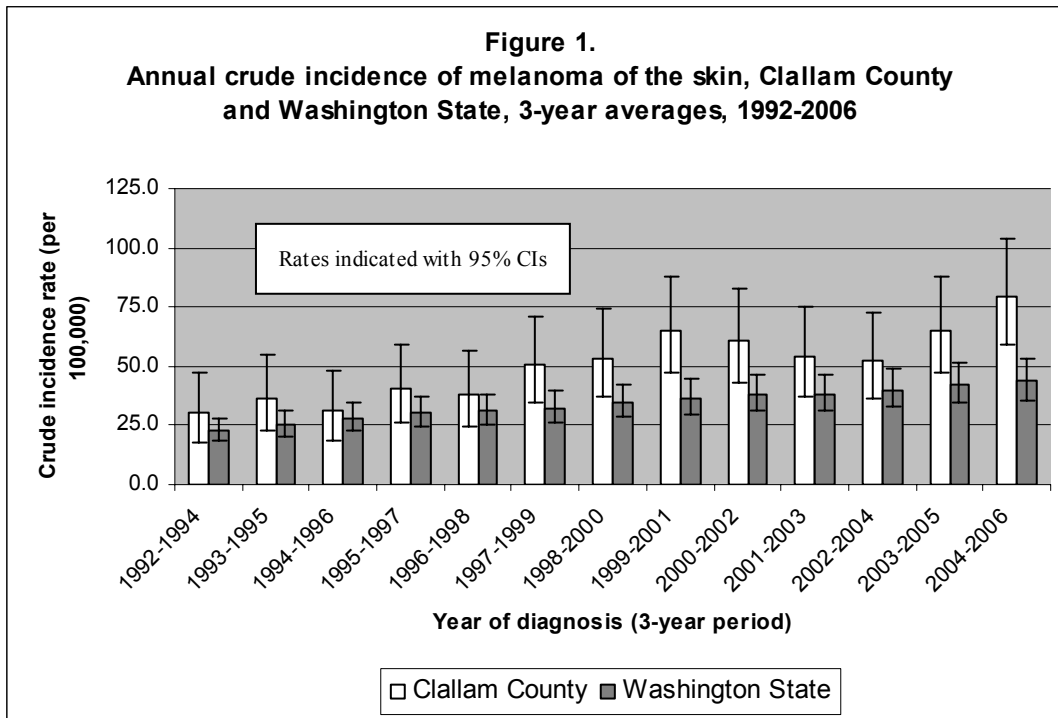
About one-half of melanoma cases in Clallam County are diagnosed in persons between the ages of 65 and 84 years; almost all are among Whites.

Between 1992 and 2006, all but four (489, or 99.2%) of the melanoma cases from Clallam County who are listed in the WSCR were White. Fourteen cases were under 35 years old, and only 25 (5.1%) were over 85 years old, at the time of diagnosis; just over one-half of the melanoma cases (252, or 51.1%) were diagnosed in Clallam County residents between the ages of 65 and 84 years. Over one-half (278, or 56.4%) of melanoma cases diagnosed in Clallam County between 1992 and 2006 occurred among males. Females were diagnosed with melanoma at a statistically significantly younger age compared to males: on average, females were diagnosed at 62.1±15.7 years of age and males at 66.4±13.1 years of age.

Incidence Rates

The annual age-adjusted incidence rates of melanoma in Clallam County are comparable to those in all of Washington State.

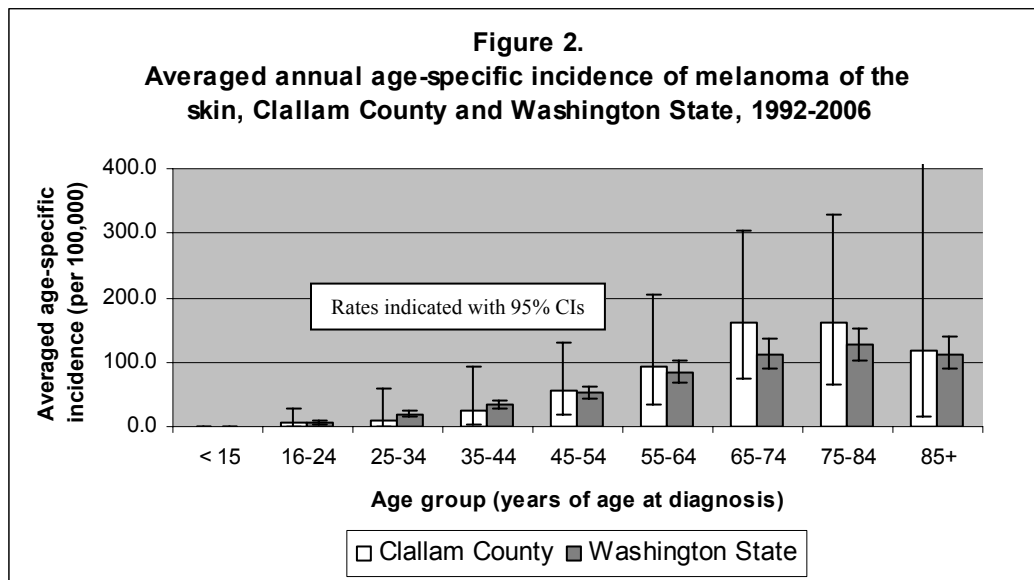
Based on data derived from the WSCR representing the time period between 1992 through 2006, the annual crude incidence rate of melanoma among Clallam County residents ranged from a low of 30.1 cases per 100,000 persons in 1992-1994 to a high of 79.3/100,000 in 2004-2006 (Figure 1). For this overall 15-year time period, the mean



annual crude incidence rate in Clallam County was 50.4/100,000. Although the crude annual incidence rates fluctuate from year-to-year in Clallam County (which probably reflects the unstable nature of these rate estimates due to the relatively small number of cases and normal year-to-year variations³), the crude annual incidence rates of melanoma have risen significantly throughout this 15-year time period in both Clallam County and in the entire state of Washington. Furthermore, the annual crude incidence of melanoma averaged over this entire 15-year period appeared to be higher among men compared with women in both Clallam County (59.0/100,000 versus 42.3/100,000, respectively) and Washington State (36.8/100,000 versus 32.3/100,000, respectively), but only the difference in Washington State was statistically significant.

During 1992-2006, just under one-third (144, or 29.2%) of the 493 melanoma cases diagnosed among Clallam County residents were reportedly diagnosed by Olympic Medical Center (OMC)-affiliated clinicians, and this proportion varied from 12.7% in 2005 to 63.9% in 1997⁴.

We compared the age-specific incidence of melanoma in Clallam County with all of the State of Washington using data derived from the WSCR for the entire time period spanning 1992-2006. The age-specific rate of melanoma increased significantly with increasing age through approximately 80 years of age for persons living in both Clallam County and in Washington State (Figure 2). Of note, the average age at diagnosis with

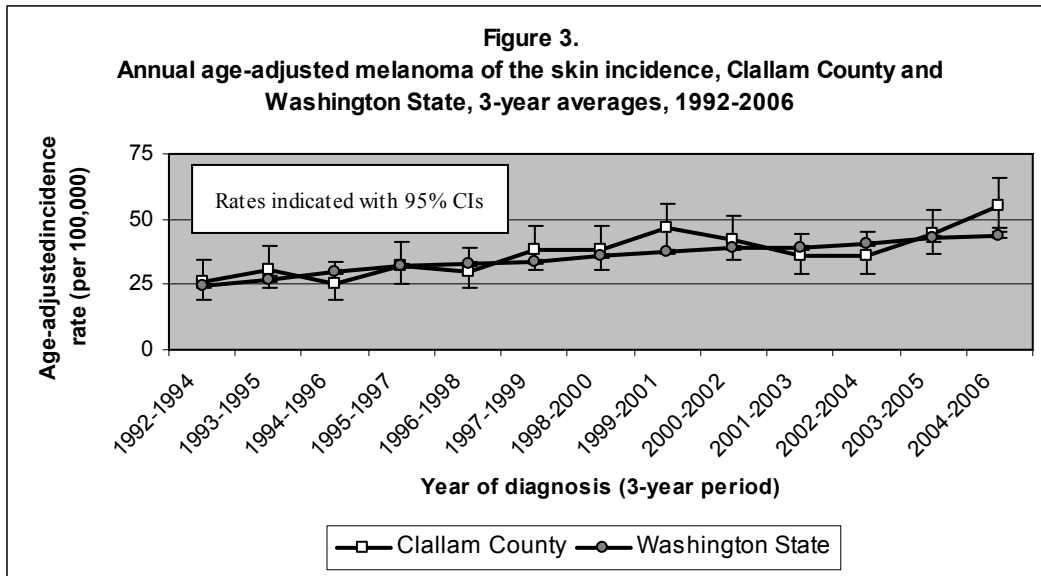


melanoma among Clallam County residents was significantly older than among all Washington State residents (64.6±14.4 versus 56.9±17.1 years of age, respectively), but only the 15-year mean age-specific incidence rate of melanoma among persons 65-74 years old in Clallam County was statistically significantly higher than the rate for similarly aged persons residing in Washington State; the differences for all other age groups were not statistically significant.

³ We have indicated the range of this year-to-year variability by including 95% Confidence Intervals (95% CIs) in all Figures.

⁴ Data from the OMC tumor registry were used to identify cases diagnosed locally.

We also compared the age-adjusted⁵ incidence rates of melanoma in Clallam County with all of Washington State using data derived from the WSCR. The annual age-adjusted incidence rates of melanoma in Clallam County did not differ from those for all of Washington State throughout the time period from 1992-2006, and there was a statistically significant increasing temporal trend in annual age-adjusted incidence of melanoma over the 15-year time period in both Clallam County and in Washington State (Figure 3). As with crude incidence rates, the annual age-adjusted melanoma incidence



rates averaged over the entire 15-year time period were statistically significantly higher among males versus females in all of Washington State (41.2/100,000 versus 31.6/100,000, respectively), but not in Clallam County (43.8/100,000 versus 31.6/100,000, respectively).

Risk Factors

Exposure to ultraviolet radiation (from sunlight or artificial tanning beds) is responsible for the development of most melanoma cases.

Although exposure to ultraviolet radiation (especially in the UVA spectrum) is the most important etiologic factor in the development of malignant melanoma, other risk factors include:

- Fair complexion (e.g., blond or red hair, blue eyes, freckling on the upper back)

⁵ Age-adjustment is a statistical technique that permits comparison of the occurrence of a health event (in this case, melanoma) between/among populations with different age distributions. The rates shown here were adjusted to the total United States 2000 population. OF NOTE, age-adjusted rates do not represent a measure of the absolute burden of disease, but merely permit relative comparisons between/among different populations!

- History of 3 or more blistered sunburns prior to age 20
- History of 3 or more years of an outdoor summer job as a teenager
- Large number (> 50) and/or large sized moles
- Occupation working outside
- History of actinic keratosis

Diagnosis

In Clallam County and all of Washington State, more than 9 out of 10 melanoma cases are diagnosed before the tumor has spread beyond the initial site.

Malignant melanoma usually appears as an irregularly colored or deep black mole on a region of the skin that is exposed to sunlight, although malignant melanoma can develop in skin areas without sun exposure. Symptoms of malignant melanoma include characteristic changes to moles, or nevi, on the skin:

- Mixed color, rather than one consistent color such as brown, tan, or black
- Size larger than 6 mm
- Rapid change in size or shape
- Presence of satellite lesions
- Irregular shape, with jagged or notched edges

Definitive diagnosis of melanoma almost always involves excisional biopsy of the lesion and pathologic examination of the tissue. Lactate dehydrogenase (LDH) tests are often used to screen for metastases; although many patients with metastases (even end-stage) have a normal LDH, high LDH often indicates metastatic spread of the disease to the liver. It is also not uncommon for patients diagnosed with melanoma to have chest X-rays and, in some cases computed tomography (CT), positron emission tomography (PET), magnetic resonance imaging, and/or PET/CT scans. Sentinel lymph node biopsies and pathologic examination of the lymph nodes are sometimes performed to assess spread to the lymph nodes. A diagnosis of melanoma is supported by the presence of the S-100 protein marker.

For the most recent three years (i.e., 2004-2006) for which data are available from the WSCR on stage at diagnosis, there was no difference in the stage at which melanoma cases were diagnosed in Clallam County residents versus those in the rest of Washington State (Table 1).

Table 1. Melanoma of the Skin, stage at diagnosis, Whites in Clallam County and Washington State, 2004-2006											
Location	Number of Cases	<i>In situ</i>		Localized		Regional		Distant		Unstaged	
Clallam County	158	74	46.8%	72	45.6%	7	4.4%	5	3.2%	0	0.0%
Rest of Washington State	7,761	3,216	41.4%	3,950	50.9%	360	4.6%	127	1.6%	108	1.4%

Prevention and Treatment

Of the Clallam County residents diagnosed with melanoma by OMC-affiliated physicians in 2004-2006, all received their initial course of treatment at OMC—usually consisting of surgery, and sometimes accompanied by chemo- or immunotherapy.

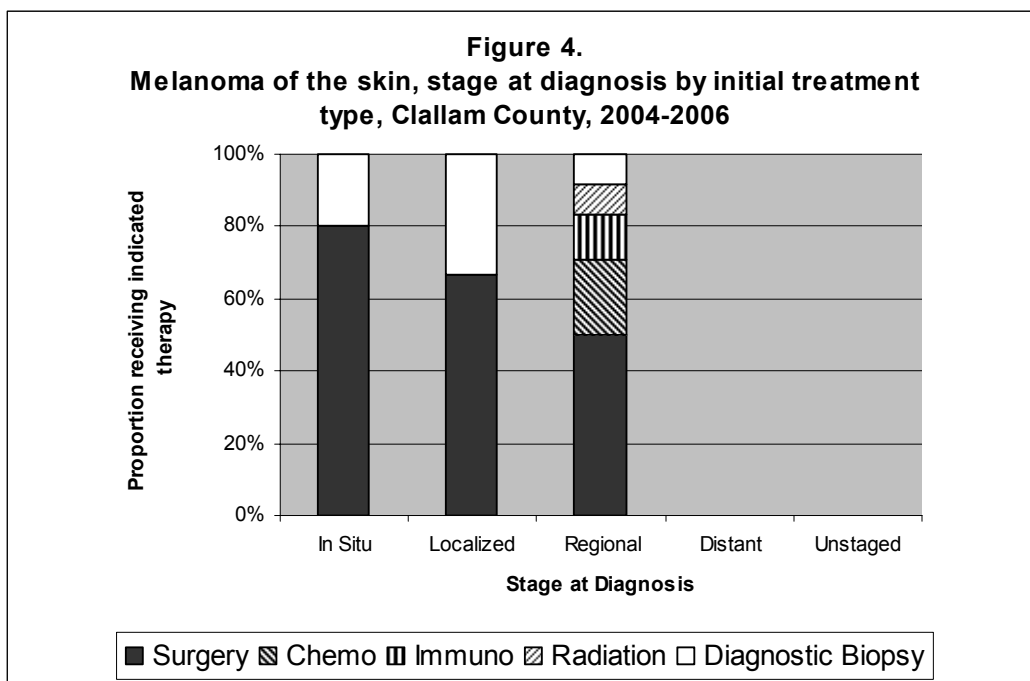
Prevention of malignant melanoma focuses on limiting exposure to ultraviolet rays (especially in the UVA spectrum) in sunlight by minimizing exposure to sunlight between 10 AM and 4 PM (when the sun's rays are strongest), wearing clothing and/or using sunscreen that blocks UVA rays if out in the sun for more than 30 minutes, and performing regular skin self-examinations.

Standard treatment for melanoma includes surgery, chemotherapy, biologic therapy, and radiation therapy, as well as combinations of these modalities. Surgery is the primary treatment for all stages of melanoma, and may include local excision (with or without removal of lymph nodes), lymphadenectomy, and/or sentinel lymph node biopsy.

Of the 41 melanoma cases who were diagnosed and/or received their first course of treatment at OMC in 2004-2006⁶, all but five (87.8%)—all of whom underwent a diagnostic biopsy—received at least one form of treatment as part of their initial course; of these 36 cases, 6 (16.7%) commenced more than one form of treatment (Figure 4). Most (34, or 94.4% of cases who commenced at least one initial course of treatment at OMC) underwent surgery, followed by 5 (13.9%) who commenced a course of chemotherapy, 3 (8.3%) who commenced immunotherapy, and two (5.6%) who underwent radiation treatment.

Of the 6 cases who commenced more than one initial course of treatment (other than a diagnostic biopsy), 5 (83.3%) underwent surgery, in addition to commencing chemotherapy (3 cases), immunotherapy (3 cases), and/or radiation treatment (1 case).

⁶ Data from the OMC tumor registry were used to examine cases receiving their initial course of treatment at OMC during 2003-2005.



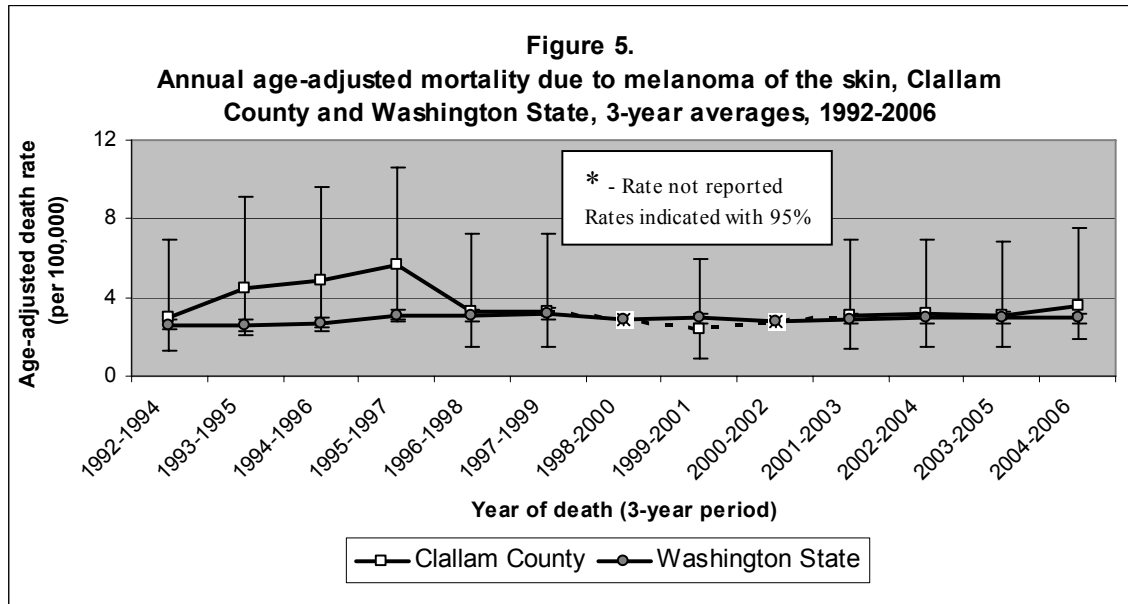
Survival

The annual age-adjusted death rates due to melanoma among Clallam County residents have remained steady over the last 15 years, comparable to those for all of Washington State.

Of the 493 Clallam County residents listed in the WSCR as having been diagnosed with melanoma between 1992 and 2006, more than four-fifths (412, or 83.6%) were alive at the time of last follow-up, although follow-up periods varied from case to case. The data from the WSCR show that the 3-year mean annual age-adjusted mortality rate due to melanoma⁷ remained steady among all Washington State residents during the time period between 1992 and 2006 (the mean 15-year age-adjusted mortality rate was 2.9/100,000). Over this same time period, the mean 15-year age-adjusted mortality rate among Clallam County residents was 3.5/100,000; the 3-year mean annual age-adjusted mortality rates among Clallam County residents were not statistically significantly different from those for all of Washington State at any time during this time period (Figure 5).

Males appear to die more frequently than females from melanoma of the skin. During 2002-2006 (i.e., the most recent 5-year period for which data are available), male residents of Clallam County had a non-statistically significantly higher age-adjusted

⁷ In this report, melanoma deaths are defined by ICD-9 codes 172.0-172.9 for 1998 and prior, and ICD-10 code C43 for 1999 onward.



mortality rate than female residents (4.8/100,000 versus 2.1/100,000, respectively), which are similar to the age-adjusted mortality rates for all of Washington State (4.1/100,000 for males versus 2.0/100,000 for females, which were statistically significantly different).

Additional Information

For additional information on melanoma, please refer to the following resources:

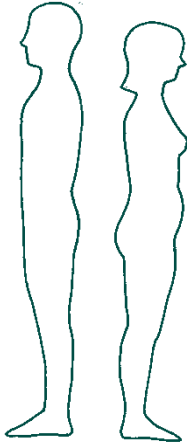
- American Cancer Society: http://www.cancer.org/docroot/LRN/LRN_0.asp?dt=39
- Mayo Clinic: <http://mayoclinic.com/health/melanoma/DS00439>
- MD Anderson Cancer Center: <http://www.mdanderson.org/patient-and-cancer-information/care-centers-and-clinics/care-centers/melanoma-skin/index.html>
- National Cancer Institute: <http://www.cancer.gov/cancertopics/types/melanoma>
- Seattle Cancer Care Alliance: <http://www.seattlecca.org/diseases/melanoma-overview.cfm>
- WebMD: <http://www.webmd.com/melanoma-skin-cancer/default.htm>

For general information on cancer incidence and mortality, risk factors, or prevention strategies, please refer to the following resources:

- American Cancer Society: <http://www.cancer.org/docroot/home/index.asp> or call 1-800-ACS-2345
- Centers for Disease Control and Prevention: <http://www.cdc.gov/cancer/>
- Fred Hutchinson Cancer Research Center: <http://www.fhcr.org/science/>
- National Cancer Institute: <http://www.cancer.gov/> or call 1-800-4CANCER
- Washington State Department of Health: <http://www.doh.wa.gov/cc/>

Olympic Medical Center 2008 Cancer Cases

The statistics below identify the location of the cancer at diagnosis. They represent the number of cases first diagnosed or first treated at Olympic Medical Center facilities. These numbers do not represent the entire population of Clallam County with cancer. There are cases of cancer diagnosed and/or treated in other areas, though the person may live in Clallam County. These cases are not included in these numbers.

2008 Cancer Incidence (Selected Sites) by Site and Sex* (522 Cases)									
	Male Cases					Female Cases			
	National		Local			National		Local	
	745,180	100%	256	100%		692,000	100%	266	100%
Breast	1990	1%	5	2%	Breast	182,460	26%	95	36%
Prostate	186,320	25%	71	28%	Prostate	NA	NA	NA	NA
Lung	114,690	15%	38	15%	Lung	100,330	14%	38	14%
Colorectal	79,270	11%	27	11%	Colorectal	74,610	11%	31	12%
Lymphoma/Leukemia	76,220	10%	28	11%	Lymphoma/Leukemia	62,310	9%	17	6%
Urinary	85,870	11%	29	11%	Urinary	39,620	6%	13	5%
Melanoma	34,950	5%	3	1%	Melanoma	27,530	4%	2	0.5%
Oral	25,310	3%	11	4%	Oral	10,000	2%	2	0.5%
Uterus	NA	NA	NA	NA	Uterus	51,170	7%	14	5%
Ovary	NA	NA	NA	NA	Ovary	21,650	3%	11	4%
Stomach	13,190	2%	5	2%	Stomach	8,310	1%	1	1%
Pancreas	18,770	3%	3	1%	Pancreas	18,910	3%	6	2%
All other	108,600	14%	36	14%	All other	95,100	14%	36	14%

*Data from American Cancer Society, Inc. & OMC Tumor Registry

Tumor Board Conferences

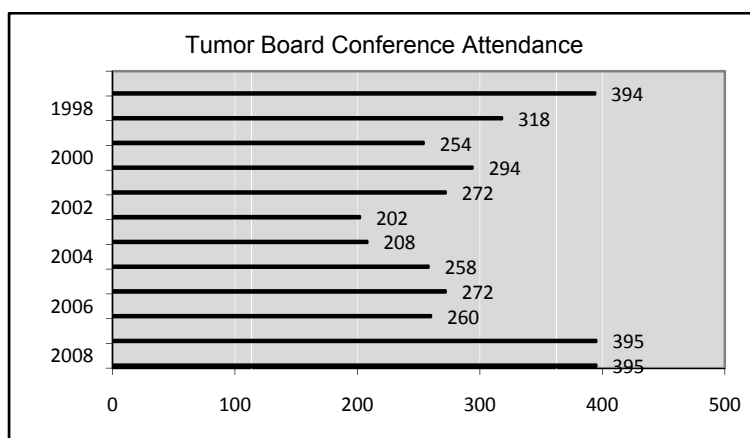
Tumor board conferences are held on the second Wednesday and the fourth Tuesday of each month via televideo with Olympic Medical Center, Seattle Cancer Care Alliance, Virginia Mason Medical Center – Seattle, Olympic Medical Cancer Center – Sequim, Forks Community Hospital and the Neah Bay Clinic. These conferences are open to all physicians and health-care professionals. The total attendance for 2008 was 395.

In 2008, ninety (90) prospective cases were presented at the conference including breast, prostate, colorectal, lung, melanoma, sarcoma, stomach, testis, kidney, head & neck, and bladder.

The conference format provides attending physicians the benefit of

input from a wide range of specialists in developing a patient treatment plan. It allows newly diagnosed patients access to multidisciplinary evaluation, ensures accurate American Joint Commission on Cancer (AJCC) staging of their

disease, and offers treatment options all at no charge to the patient. Cases may be submitted for presentation by calling the Tumor Registry at (360)582-5805 or by fax at (360) 582-2820.



Tumor Registry

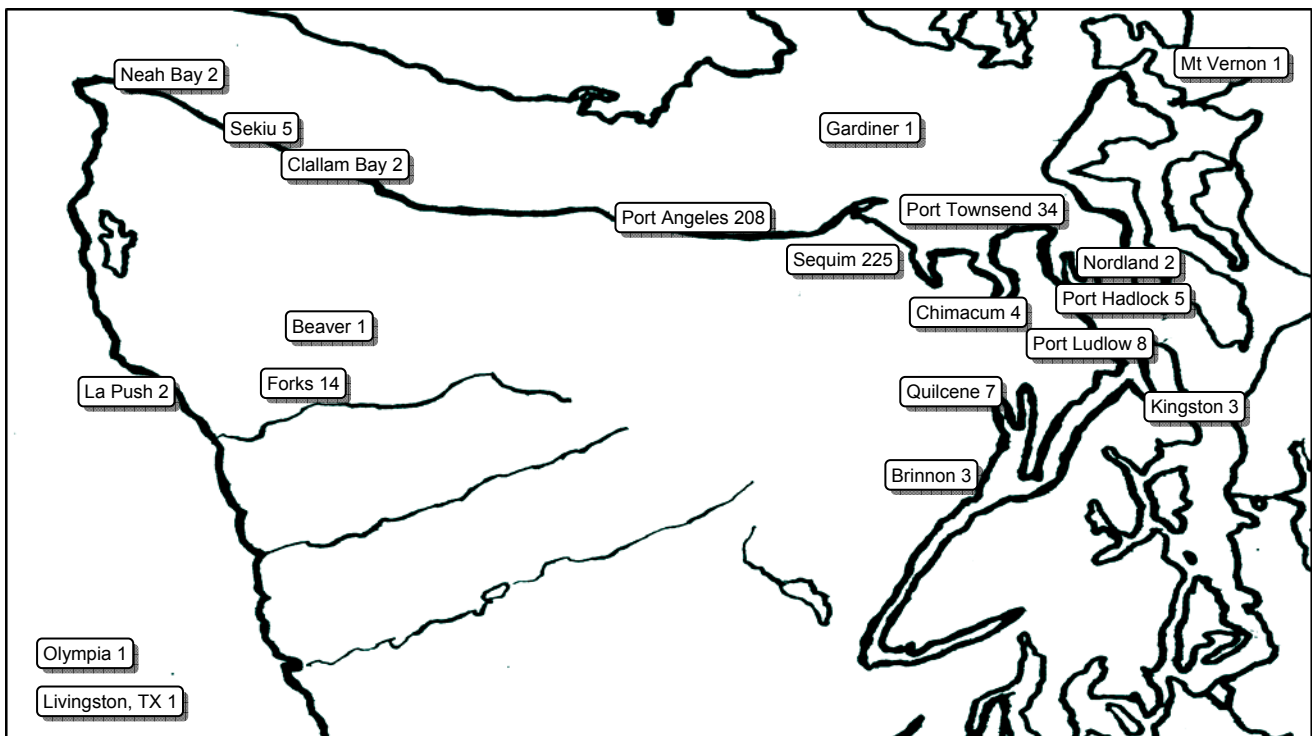
Lara Whiteside, CTR

The registry is a data collection system designed for the management and analysis of data on cancer cases diagnosed and/or treated at Olympic Medical Center and in physicians' offices. Data collected and maintained by the registry is available for use by medical staff, hospital administration and other health care providers for audits, special studies, and statistical analysis. This enables

physicians and administration to evaluate successful care and survival rates, facilitates patient follow-up, and identifies demographic information that can be of use in planning for the future. The registry contributes data annually to the American College of Surgeons, Commission on Cancer, Community Clinical Oncology Program (CCOP), National Cancer Data Base, Cancer Surveillance Sys-

tem, and the Washington State Cancer Registry. The registry began its services on January 1, 1987. The registry has an overall follow-up rate of 90%, well above the Commission on Cancer required rate of 80%. To obtain data or for further information, please contact the Tumor Registry at (360) 582-5605.

Geographic Distribution of OMC 2008 Cases (Total Cases: 522)



Front illustration from photo courtesy of Will Parsinen

