

Provisional Report on New Hampshire Cancer Incidence and Mortality 2012-2014



New Hampshire State Cancer Registry
Division of Public Health Services
New Hampshire Department of Health and Human Services
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INTRODUCTION:

The New Hampshire State Cancer Registry (NHSCR) was established in 1985 as a statewide population-based cancer surveillance program that operates in accordance with state rules¹ under the Cancer Registries Amendment Act² to help us understand cancer better and use our resources to the best effect in prevention and treatment. The NHSCR complies with national guidelines³ and has achieved national recognition for the quality of their data.

The main purposes of the registry are: (1) to maintain an incidence reporting system for the estimation of cancer rates in New Hampshire (NH); (2) to provide information to help public health officials and agencies in the planning and evaluation of cancer prevention and control programs, and in cancer cluster investigations; and (3) to provide an informational resource for the investigation of cancer and its causes.

The NHSCR collects incidence data on all reportable cancer diagnoses among NH residents regardless of place of diagnosis or treatment. In addition to NH hospitals, physician practices, and free-standing surgery and radiation oncology centers, NHSCR also receives reports from the Central Veterans Administration office and several other states.

Data in this report were gathered from the New Hampshire State Cancer Registry 12 months after the end of the diagnosis year 2014, when data are expected to be at least 90% complete. The NH Department of Health and Human Services (DHHS) produces preliminary calculations of age adjusted incidence rates, counts and proportions by Surveillance, Epidemiology and End Results (SEER) site groups to monitor the top cancer sites within New Hampshire.

All incidence rates were calculated for invasive cancers (malignant cancers of all sites and in situ bladder cancers). To maintain the confidentiality and privacy of individuals represented in the data, we suppressed counts and rates when case counts were less than 5.

¹ NH DHHS, RSA 141-B, He-P 304 NH administrative rules
http://www.gencourt.state.nh.us/rules/state_agencies/he-p300.html),

² United States Public Law 102-515 (<http://www.cdc.gov/cancer/npcr/pdf/publaw.pdf>)

³ Guidelines and standards set by National Program for Cancer Registry (NPCR) (http://www.cdc.gov/cancer/npcr/pdf/npcr_standards.pdf) and the North American Association of Central Cancer Registries (NAACCR) (<http://naaccr.org/StandardsandRegistryOperations/VolumeII.aspx>).

SUMMARY:

Overall age adjusted cancer incidence rate in NH during the 2012-2014 time period (467 per 100,000, 95% CI= 460.7-473.2) was found to be significantly lower (503.2 per 100,000, 95% CI=496.6 – 509.9) than that of the preceding 3 years, 2009-2011.

Incidence rate of some cancers, like prostate, lung, and bladder cancers were found to be significantly lower during this period whereas only thyroid cancer was found to be significantly higher than that of the 2009-2011 time period.

Age adjusted mortality rate for all cancers (162.3, 95% CI=158.6-166.0) in NH was not found to be significantly lower (169.6, 95% CI=165.8–173.5) than that of the preceding 3 years (2009-2011).

The top 5 cancers among males during the 2012-2014 time period were prostate, lung, bladder, colorectal, and melanoma. In females, they were breast, lung, uterine, colorectal, and melanoma.

Over half of all cancer cases among NH residents were diagnosed (52.7%) in early stage (in situ and localized stage) during this time period which is higher than 2002-2006 (51.9%) and 2007-2011 (52.4%) time period.

CANCER INCIDENCE:

Between 2012 and 2014, an average of 7,669 new invasive cancer cases (3 year total=23,007) were diagnosed each year among New Hampshire (NH) residents. Female cancer cases slightly outnumbered male cases in NH.

Table 1: Invasive cancer sites among NH residents diagnosed between 2012 and 2014

Primary SEER Site	Female		Male		Total	
	Count*	%	Count*	%	Count*	%
Bladder	97	2.50	327	8.67	424	5.53
Brain and Other CNS	45	1.15	59	1.56	103	1.35
Breast (Female)	1211	31.04	--	--	1211	15.79
Cervical	32	0.83	--	--	32	0.42
Colorectal	287	7.36	302	8.00	589	7.68
Esophagus	21	0.53	88	2.33	108	1.41
Gall Bladder	10	0.26	4	0.11	15	0.19
Hodgkin Lymphoma	15	0.39	20	0.54	36	0.47
Kidney and Renal Pelvis	93	2.38	153	4.06	246	3.21
Larynx	12	0.31	43	1.13	55	0.71
Leukemia	85	2.19	134	3.55	220	2.86
Liver and Intrahepatic	19	0.49	72	1.91	91	1.19
Lung and Bronchus	532	13.63	491	13.03	1023	13.34
Melanoma of Skin	196	5.03	254	6.75	450	5.87
Multiple Myeloma	45	1.15	55	1.46	100	1.30
Non-Hodgkin Lymphoma	145	3.73	180	4.78	325	4.24
Oral Cavity and Pharynx	57	1.45	134	3.55	190	2.48
Ovary	97	2.48	--	--	97	1.26
Pancreas	93	2.39	101	2.68	194	2.53
Prostate	--	--	889	23.60	889	11.60
Stomach	32	0.81	53	1.41	85	1.10
Testis	--	--	43	1.14	43	0.56
Thyroid	183	4.70	61	1.63	245	3.19
Uterus	296	7.60	--	--	296	3.86
Total	3900	50.85	3769	49.15	7669	100.0

* Average annual case count

-- Sex-specific cancer

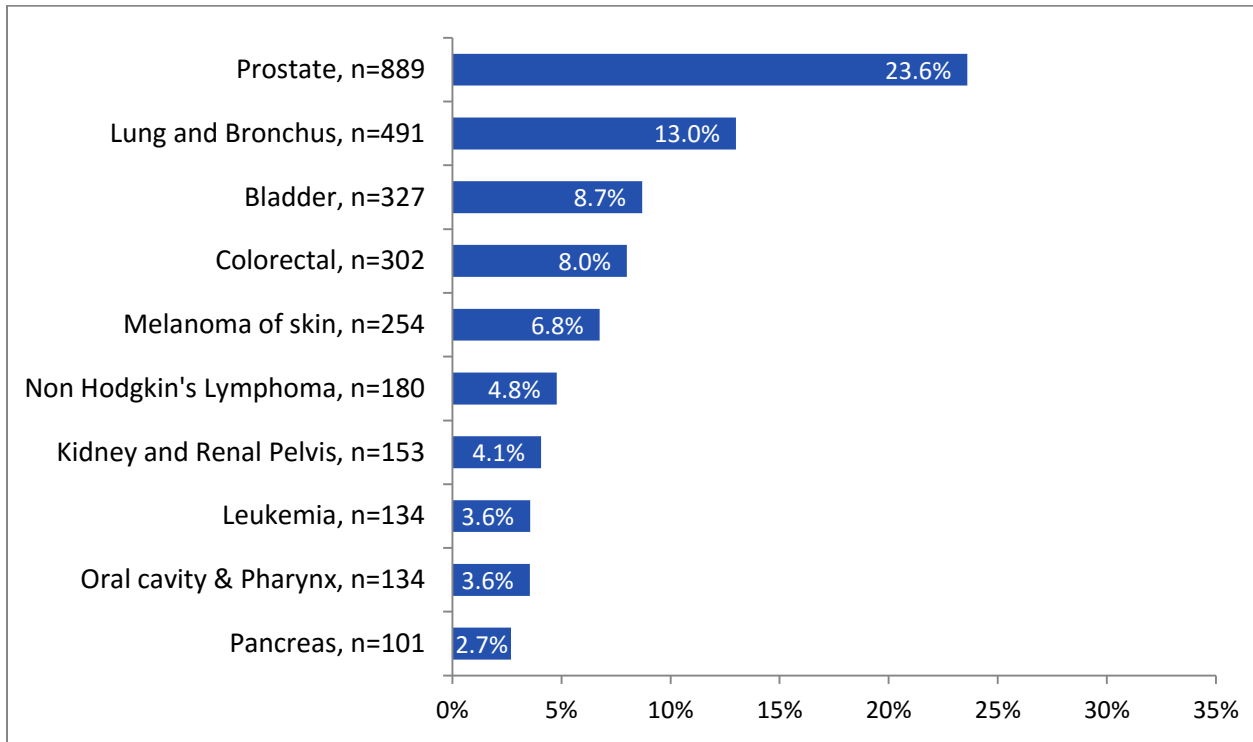
Source: NH State Cancer Registry, June 2016

TOP 10 CANCERS INCIDENCE BY SEX:

Males:

Among males, the top 3 cancers, i.e. prostate, lung & bronchus and bladder cancers accounted for 45% of all male cancer cases.

Figure 1: Top 10 invasive cancer sites in NH males diagnosed between 2012 and 2014*

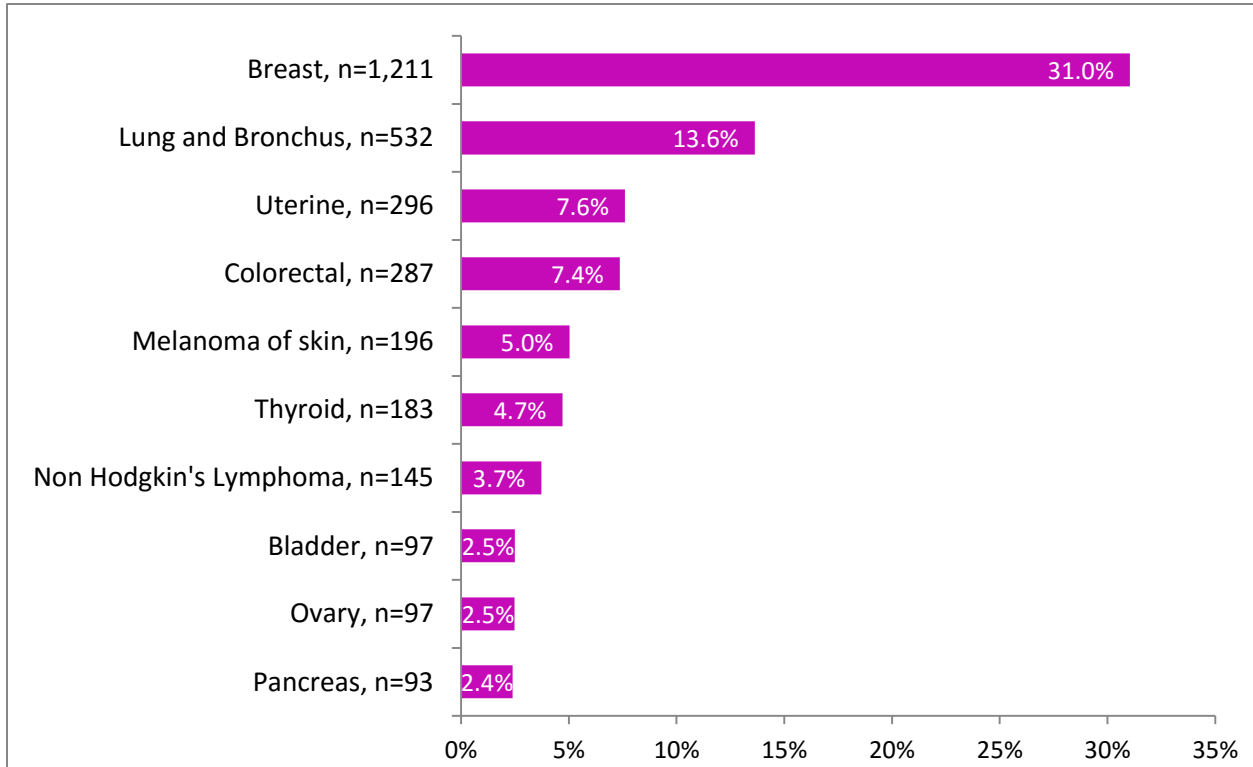


*Based on the average annual case count
Source: NH State Cancer Registry, June 2016

Females:

Among females, the top 3 cancers i.e. breast, lung & bronchus, and uterine cancers accounted for 52% of all female cancer diagnoses.

Figure 2: Top 10 invasive cancer sites in NH females diagnosed 2012 through 2014*



*Based on the average annual case count
Source: NH State Cancer Registry, June 2016

CANCER INCIDENCE RATES:

The overall age-adjusted cancer incidence rate for NH residents from 2012 through 2014 was 467.0 per 100,000 (95% CI= 460.7 – 473.2). Males experienced a significantly higher cancer incidence rate than females (490.5 vs. 453.5 per 100,000).

Table 2: Age-adjusted incidence rates by primary cancer sites in NH residents, 2012-2014

Primary SEER site	Female			Male			Total		
	Rate per 100,000	(95% CI)		Rate per 100,000	95% CI		Rate per 100,000	95% CI	
		lower limit	upper limit		lower limit	upper limit		lower limit	upper limit
Bladder	11.0	9.7	12.3	44.7	41.8	47.6	26.0	24.6	27.5
Brain & other CNS	5.8	4.7	6.8	8.1	6.8	9.3	6.8	6.0	7.6
Breast (female)	140.9	136.2	145.7	--	--	--	--	--	--
Cervical	4.4	3.5	5.3	--	--	--	--	--	--
Colorectal	32.4	30.2	34.7	40.1	37.4	42.8	36.2	34.5	38.0
Esophagus	2.1	1.6	2.7	11.5	10.0	12.9	6.5	5.7	7.2
Gall Bladder	1.2	0.8	1.8	0.6	0.3	1.1	1.0	0.7	1.3
Hodgkin's Disease	2.4	1.7	3.2	3.1	2.4	4.0	2.7	2.2	3.3
Kidney & Renal pelvis	10.7	9.4	11.9	19.6	17.7	21.4	14.9	13.8	16.0
Larynx	1.3	0.9	1.8	5.5	4.5	6.5	3.2	2.7	3.7
Leukemia	10.6	9.2	12.0	18.5	16.7	20.4	14.2	13.1	15.4
Liver & Intrahepatic Bile Duct	2.1	1.6	2.7	8.6	7.4	9.8	5.1	4.5	5.8
Lung & Bronchus	60.1	57.1	63.1	66.0	62.5	69.5	62.1	59.8	64.3
Melanoma of Skin	23.8	21.8	25.8	34.1	31.6	36.6	28.1	26.5	29.6
Multiple Myeloma	5.0	4.1	5.8	7.2	6.0	8.3	6.0	5.3	6.7
Non-Hodgkin's Lymphoma	16.5	14.9	18.1	24.4	22.2	26.5	20.0	18.7	21.3
Oral cavity & Pharynx	6.4	5.4	7.4	16.1	14.5	17.7	11.0	10.1	11.9
Ovary	11.2	9.8	12.5	--	--	--	--	--	--
Pancreas	10.6	9.3	11.8	12.9	11.4	14.5	11.7	10.8	12.7
Prostate	--	--	--	104.7	100.6	108.8	--	--	--
Stomach	3.7	3.0	4.5	6.9	5.8	8.0	5.1	4.5	5.7
Testis	--	--	--	7.2	5.9	8.4	--	--	--
Thyroid	25.4	23.2	27.7	8.5	7.2	9.8	17.1	15.8	18.3
Uterus	32.1	30.0	34.3	--	--	--	--	--	--
All Malignant Cancers	453.5	445.0	462.0	490.5	481.1	499.9	467.0	460.7	473.2

All incidence rates are age-adjusted to the 2000 US standard population

NH population estimates were obtained from Census 2010 decennial census and 2010-2014 intercensal population estimates

-- Sex specific cancer

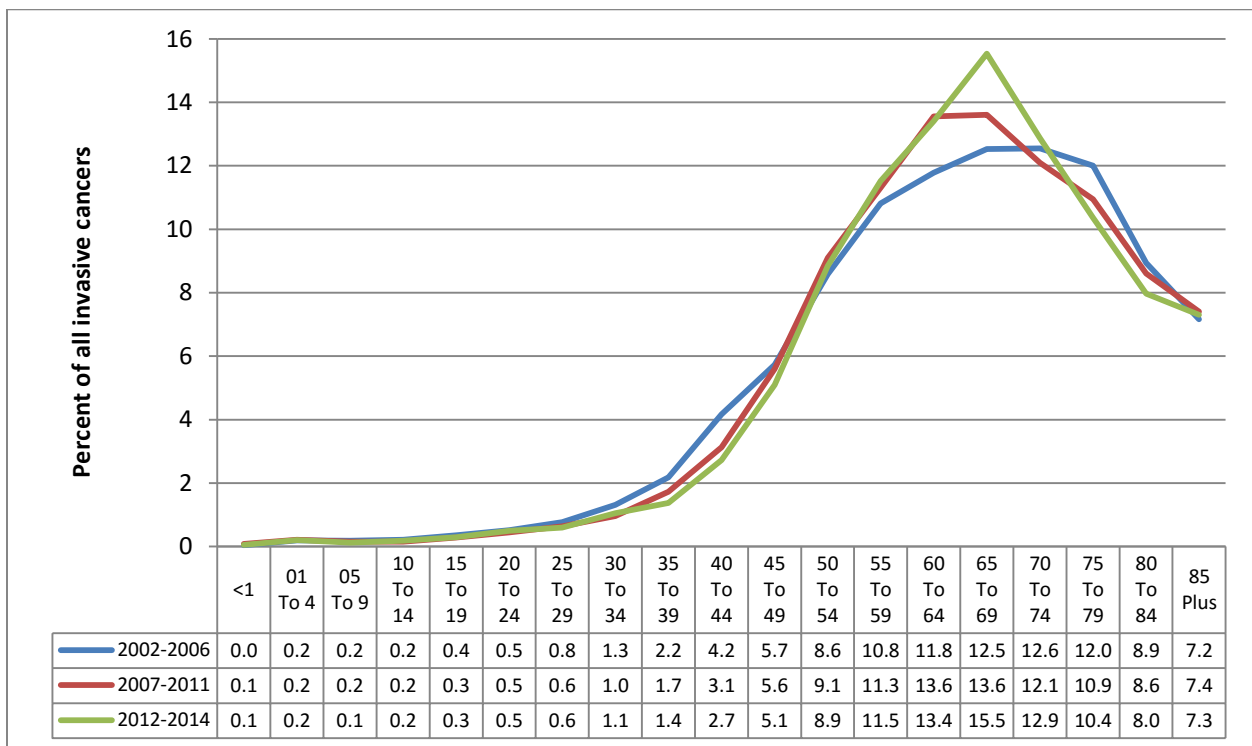
Source: NH State Cancer Registry, June 2016

NH population estimates were obtained from Census 2010 decennial census and 2010-2014 intercensal population estimates

AGE DISTRIBUTION OF INVASIVE CANCERS:

Between 2002 and 2006, highest numbers of cancers were diagnosed at age 70-74 years (12.6%) whereas between 2012 and 2014, highest numbers of cancers were diagnosed at age 65-69 years (15.5%).

Figure 3: Age distribution of invasive cancers diagnosed in NH in 2002-2006, 2007-2011 and 2012-2014 time periods

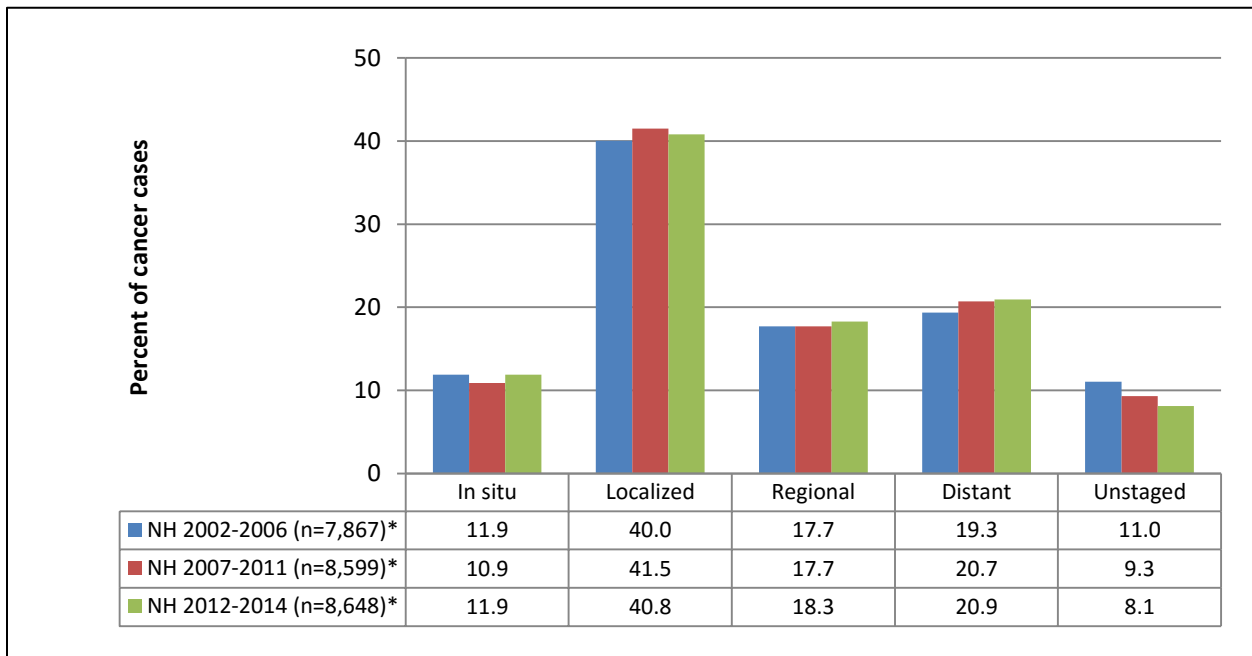


Source: NH State Cancer Registry, June 2016

STAGE AT DIAGNOSIS OF CANCER:

For staging purposes, we used all reportable cancer cases (in situ, localized, regional, distant and un-staged) in Figure 4. Over half of all cancers (52.7%) in NH residents between 2012 and 2014 were diagnosed at an early stage (in situ and localized) and this number was slightly higher than the corresponding numbers for 2002-2006 (51.9%).

Figure 4: Stage at diagnosis of all reportable cancers among NH residents by sex diagnosed between 2012 and 2014



* Average annual case count during each time period
 Source: NH State Cancer Registry, June 2016

CANCER MORTALITY:

Between 2012 and 2014, an average of 2,566 New Hampshire residents died each year of cancer (3 year total = 7,669). Males outnumbered females in cancer mortality.

Table 3: Invasive cancer mortality among NH residents between 2012 and 2014

Primary SEER site	Female		Male		Total	
	Count*	%	Count*	%	Count*	%
Bladder	19	1.56	60	4.42	79	3.07
Brain and Other CNS	29	2.41	45	3.34	74	2.90
Breast (Female)	174	14.34	--	--	174	6.79
Cervical	11	0.90	--	--	11	0.43
Colorectal	111	9.13	0	0.00	205	7.99
Esophagus	17	1.40	65	4.79	82	3.18
Hodgkin Lymphoma	2	0.16	3	0.20	5	0.18
Kidney and Renal Pelvis	20	1.64	45	3.36	65	2.55
Larynx	3	0.27	9	0.69	13	0.49
Leukemia	34	2.82	61	4.52	95	3.72
Liver and Intrahepatic	19	1.59	65	4.79	84	3.27
Lung and Bronchus	343	28.21	366	27.16	709	27.64
Melanoma of Skin	14	1.18	27	2.00	41	1.61
Multiple Myeloma	22	1.78	24	1.78	46	1.78
Non-Hodgkin Lymphoma	37	3.02	45	3.34	82	3.18
Oral Cavity and Pharynx	11	0.93	29	2.15	40	1.57
Ovary	61	5.04	--	--	61	2.39
Pancreas	82	6.77	97	7.19	179	6.99
Prostate	--	--	126	9.36	126	4.92
Stomach	11	0.90	24	1.80	35	1.38
Testis	--	--	2	0.12	2	0.06
Thyroid	2	0.19	2	0.15	4	0.17
Uterus	40	3.26	--	--	40	1.55
Total	1216	47.41	1349	52.59	2566	100.0

*Average annual number of deaths

-- Sex-specific cancer

Source: NH WISDOM. URL: <https://wisdom.dhhs.nh.gov/wisdom/> Accessed on June 10, 2016

CANCER MORTALITY RATES:

The overall age-adjusted cancer mortality rate for NH residents from 2012 to 2014 was 162.3 per 100,000 (95% CI = 158.6 –166.0). Males experienced a significantly higher cancer mortality rates than females (195.9 vs. 139.0 per 100,000).

Table 4: Age-adjusted mortality rates by primary cancer sites in NH residents, 2012-2014

Primary SEER site	Female			Male			Total		
	Rate per 100,000	(95% CI)		Rate per 100,000	95% CI		Rate per 100,000	95% CI	
		lower limit	upper limit		lower limit	upper limit		lower limit	upper limit
Bladder	2.10	1.59	2.73	9.40	7.99	10.80	5.12	4.46	5.78
Brain & other CNS	3.41	2.73	4.20	6.16	5.08	7.23	4.66	4.03	5.29
Breast (female)	19.98	18.22	21.74	--	--	--	--	--	--
Cervical	1.36	0.93	1.90	--	--	--	--	--	--
Colorectal	12.46	11.08	13.83	13.73	12.08	15.38	13.06	12.01	14.11
Esophagus	1.85	1.38	2.43	8.70	7.43	9.96	4.99	4.36	5.63
Hodgkin's Disease	0.29	0.11	0.64	0.42	0.18	0.83	0.34	0.19	0.58
Kidney & Renal pelvis	2.23	1.71	2.88	6.25	5.17	7.34	4.07	3.49	4.65
Larynx	0.40	0.19	0.74	1.37	0.91	1.98	0.81	0.58	1.12
Leukemia	3.96	3.17	4.74	9.16	7.80	10.53	6.15	5.42	6.87
Liver & Intrahepatic Bile Duct	2.26	1.71	2.92	8.29	7.08	9.50	5.06	4.42	5.70
Lung & Bronchus	39.64	37.18	42.11	52.37	49.18	55.57	44.77	42.84	46.71
Melanoma of Skin	1.74	1.26	2.34	4.21	3.34	5.23	2.73	2.24	3.22
Multiple Myeloma	2.50	1.93	3.19	3.60	2.82	4.53	2.98	2.47	3.49
Non-Hodgkin's Lymphoma	4.14	3.35	4.93	6.80	5.63	7.98	5.25	4.58	5.92
Oral cavity & Pharynx	1.34	0.93	1.88	3.58	2.87	4.42	2.39	1.96	2.83
Ovary	6.93	5.91	7.95	--	--	--	--	--	--
Pancreas	9.33	8.14	10.51	13.37	11.78	14.96	11.23	10.26	12.19
Prostate	--	--	--	20.45	18.35	22.55	--	--	--
Stomach	1.28	0.88	1.80	3.52	2.76	4.42	2.24	1.81	2.68
Testis	--	--	--	0.29	0.09	0.67	--	--	--
Thyroid	0.25	0.10	0.51	0.34	0.12	0.73	0.29	0.15	0.49
Uterus	4.51	3.68	5.33	--	--	--	--	--	--
All Malignant Cancers	139.0	134.4	143.7	195.9	189.7	202.1	162.3	158.6	166.0

All incidence rates are age-adjusted to the 2000 US standard population

-- Sex-specific cancer

Source: NH WISDOM. URL: <https://wisdom.dhhs.nh.gov/wisdom/> Accessed on June 10, 2016

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