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Examination of Preliminary Cancer Surveillance Data from the National Program of Cancer Registries, Diagnosis Year 2012

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Abstract

Background—The United States Cancer Statistics (USCS) are the official federal cancer statistics and contain the most complete and accurate data. Yet, the data are typically older than 24 months by the time they are published. The National Program of Cancer Registries (NPCR) contributes 96% of the data in USCS and has been collecting preliminary data since 2000, though the quality of these data has not been published. The objective of this analysis is to determine how accurately preliminary cancer data submitted by NPCR grantees predict cancer rates eventually published in USCS.

Methods—Cancer data were obtained for diagnosis year 2012 among all cancer sites combined and a subset of 20 cancer sites that were used to test completeness of case ascertainment. Age-adjusted incidence rates (IR), rate ratios (RR), and 95% CIs were calculated for data submitted in November 2013 (NPCR preliminary, or 12-month data)—794,413 cases—and compared to USCS, which uses data submitted in November 2014 (24-month data)—1,529,078 cases.

Results—For all cancer sites and all races combined, the incidence rates for the NPCR preliminary data were slightly lower than the rate obtained through USCS (401.3 vs 440.3), but showed comparability (RR = 0.91). Regardless of race, 75% of the cancer sites had rate ratios of at least 0.90. For hospitals or clinics, the site-specific RRs were high, but RRs were more variable for other non-hospital centers and were lower for cases obtained from death certificates and autopsies. More than half (56%) of the US population and 87% of cancer cases diagnosed in 2012 were represented by the states included in the preliminary data set.

Discussion—This is the first known study examining cancer incidence rates calculated using earlier cancer surveillance data than is traditionally used. The strengths of this analysis include the representativeness of the sample and comparability with the USCS data. Our results also show that, compared to other sources, early reporting from hospitals most accurately estimates cancer rates in USCS.

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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

Conclusion—Preliminary cancer data may accurately estimate the official federal cancer incidence rates for the 2012 diagnosis year and supports the possibility of using these data as an early preview of cancer incidence rates.

Keywords

cancer surveillance; National Program of Cancer Registries; preliminary data

Introduction

The National Program of Cancer Registries (NPCR) administered by the Centers for Disease Control and Prevention (CDC) supports central cancer registries (CCRs) in 45 states, the District of Columbia, Puerto Rico, and the United States Pacific Island Jurisdictions to routinely collect data on patient demographics, primary tumor site, tumor morphology, stage at diagnosis, first course of treatment, and outcomes. The National Cancer Institute (NCI)'s Surveillance, Epidemiology, and End Results (SEER) Program supports CCRs in the remaining 5 states and various substate regions, and provides additional support to select NPCR-supported CCRs. Together, NPCR and SEER cover the entire US population for cancer surveillance. NPCR and SEER combined cancer data are the source of the official federal statistics on cancer incidence, the United States Cancer Statistics (USCS).[1]

Each year, NPCR and SEER data on newly diagnosed cases, as well as updated data from previous diagnosis years, are submitted by CCRs to NPCR, SEER, or both. The entire longitudinal data set is resubmitted each year to allow for the capture of additional cases that were reported or to append updated information (eg, treatment or vital status information) received after the last data submission. CCRs are allowed a follow-up interval of 22 to 23 months after the close of the diagnosis year for submission to ensure completeness of case ascertainment and high-quality data. These data are used to publish USCS and are often referred to by CCRs as the *24-month data*. Hereafter, we refer to the 24-month data from both NPCR and SEER as *USCS data*.

NPCR CCRs are also required to submit preliminary data for the diagnosis year that closed approximately 12 months before the date of submission (hereinafter referred to as *preliminary data*). However, to date, preliminary cancer data have not been published since completeness of case ascertainment and data quality have not been formally evaluated. Completeness of case ascertainment for USCS is currently calculated using methods established by North American Association of Central Cancer Registries (NAACCR).[2] At the time this analysis was conducted, NPCR data were only included in the USCS data set when the submitting registry's completeness of case ascertainment met 90% of the expected cases with a margin of error of ±5% along with other NPCR data standards: age, sex, and county (<3% missing), race (<5% missing), and death-certificate only (DCO) cases <5%.[1]

Other data systems, such as FoodNet and those from the National Center for Health Statistics, have published results using preliminary surveillance data.[3,4] One study from NCI discusses their cancer reporting-adjustment model that is used to estimate current cancer incidence rates and trends.[5] However, NCI's routine delay-adjusted rates produce estimated projections rather than scrutinizing observed data submitted at an earlier point in time.

The objective of this analysis is to compare the preliminary cancer data submitted by NPCR grantees to the official federal statistics, USCS.

Methods

Data Source

NPCR cancer data were obtained from CDC for diagnosis year 2012. We compared data submitted in November 2013 (NPCR preliminary data)—794,413 cases—to those resubmitted in November 2014 and appended to data obtained through a similar submission schedule from NCI's 5 SEER-only state CCRs for inclusion in USCS—1,529,078 cases. The NPCR preliminary data set was restricted to states that met NPCR's completeness of case ascertainment and data quality standards for inclusion in USCS, with the exception that we modified the completeness threshold to 80% from 90%, which is what is expected at 24 months. Preliminary data from the 5 SEER-only state CCRs, comprising about 4% of cases diagnosed in the United States each year, were not available for this analysis. The NPCR-funded states that met the preliminary data quality criteria included Alabama, California, Colorado, Delaware, Georgia, Florida, Idaho, Illinois, Kansas, Kentucky, Louisiana, Maine, Missouri, Mississippi, Montana, North Carolina, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Oklahoma, Oregon, Rhode Island, South Dakota, Vermont, Wisconsin, West Virginia, and Wyoming. These states represent 56% of the US population for 2012. As expected, most CCRs (51, including the District of Columbia and Puerto Rico) met 24-month data quality criteria for this same diagnosis year and included both NPCR and SEER-only registry data, representing 95% of the US population for 2012.[1]

For this analysis, we limited cancer sites to all sites combined plus 20 individual sites that were used to test completeness of case ascertainment: oral cavity and pharynx (oral); esophagus; stomach; colon and rectum (colorectal); liver and intrahepatic bile duct (liver); pancreas; lung and bronchus (lung); melanomas of the skin (melanomas); female breast; cervix uteri (cervical); corpus and uterus, NOS (uterine); ovary; prostate; urinary bladder (bladder); kidney and renal pelvis (kidney); brain and other nervous system (brain); Hodgkin lymphoma; non-Hodgkin lymphoma; myeloma; and leukemias. The preliminary data set covers more than half (56%) of the US population and 87% of cancer cases diagnosed in 2012. The comparison data set, USCS, covers 95% of the US population and 99% of the cancer cases diagnosed in 2012.

Statistical Analysis

SEER*Stat v. 8.3.2 was used to calculate age-adjusted incidence rates (IRs), rate ratios (RRs), and 95% CIs for both NPCR preliminary and USCS data by race (white, black, Asian/Pacific Islander [API]), cancer site, and reporting source.[6] We determined that the threshold of an RR between 0.90 and 1.10 indicated comparability between the preliminary and USCS data. This range was chosen for consistency because 90% completeness is the standard used for a state's data to be included in USCS. American Indian/Alaska Natives (AI/ANs) were excluded from the analysis by race because of small case counts. Type of reporting source, as reported to the CCRs, included hospital or clinic; other nonhospital center (radiation treatment or medical oncology center, hospital or private laboratory only,

physician's office/private medical practitioner, or other hospital outpatient unit or surgery center); DCO; and autopsy only.

Results

Table 1 shows the IRs, RRs, and 95% CIs for the preliminary data compared to USCS by cancer site and race. For all sites, all races combined, the IR for the NPCR preliminary data was slightly lower than the rate obtained through USCS (401.3 vs 440.3), but showed comparability (RR = 0.91). Regardless of race, 75% (15/20) of cancer sites had RRs of at least 0.90. Those below this threshold were liver (0.83), pancreas (0.88), prostate (0.89), myeloma (0.86), and leukemias (0.85). The site-specific RRs among whites followed a similar pattern as seen in all races combined; however, more sites fell below a RR of 0.90 for both blacks and APIs.

Table 2 illustrates the IRs, RRs, and 95% CIs for the preliminary data compared to USCS by cancer site and type of reporting source. For hospitals or clinics, the site-specific RRs were relatively high, ranging from 0.88 to 0.96 for all sites except melanomas (RR = 0.64) and brain (RR = 0.35). The site-specific RRs for nonhospital centers were more variable, ranging from as high as 1.17 for Hodgkin lymphoma to as low as 0.21 for brain cancers, with 60% of the sites having a RR above 0.90. IRs obtained from DCO and autopsy only cases were substantially lower in the preliminary data as compared to USCS data.

Table 3 shows the percent of USCS case counts represented by preliminary data. Overall, the preliminary data represent 52% of the official federal case counts (Table 3), corresponding to a 56% total US population coverage from the registries included in the NPCR preliminary data set (data not shown). There is variation by cancer site, with the highest representation for uterine cancer (56%) and lowest for liver cancer (47%) and leukemias (48%).

Discussion

This is the first known analysis examining cancer incidence rates calculated using cancer surveillance data that are submitted earlier than is traditionally used for USCS. For those states that met NPCR's standards for 80% completeness and other quality measures, the preliminary data may produce cancer incidence rates comparable to those obtained in USCS for diagnosis year 2012 (within 10% variation from USCS). Among all races combined as well as for whites, the majority of the cancer sites examined had RRs above the threshold of comparability. Furthermore, 52% of RRs for cases reported by hospitals and 48% of RRs by nonhospital centers were within the threshold of comparability.

However, despite the comparability of the preliminary data, some parameters need to be considered when using the preliminary data. Special focus should be paid to liver, pancreas, myeloma, and leukemias because the rates are significantly lower than expected at 24 months. Liver and pancreas cancers are highly fatal and often found as DCOs, which are usually delayed in reporting. Additionally, myeloma and leukemias are rare, so there is a less robust comparison among low case counts.

This examination of preliminary data reveals cautionary examples for comparison of cancer rates by race. Cancer rates for all sites in the preliminary data are higher among whites than blacks; however, in USCS, the opposite is the case, where blacks have higher rates than whites. Furthermore, case counts among AI/ANs were too low in the preliminary data set to be used for racial comparisons in this analysis. Rate ratios among blacks and APIs were also more likely to fall below 0.9 than among whites, who showed similar patterns to all races combined. These data shed light on the need to improve timely data capture of nonwhite populations at 12 months.

Our results show that, compared to other sources, early reporting from hospitals most accurately estimates cancer incidence rates in USCS. Regardless of reporting source, the 2 sites that exhibited rate ratios far below 0.90, melanomas and brain cancer, are typically diagnosed and treated outside of the hospital setting, which leads to reporting delays due to obtaining additional information on laboratory reports. For example, primary treatment for uterine cancer is surgery and the RR by hospital source is 95%, indicating timely reporting from those sources. By contrast, while the USCS data quality standards allow for DCOs of less than 5%, 3 sites were the closest to that cutoff in the USCS data: liver at 5%, pancreas at 4%, and brain at 4%. DCOs are not typically added by the CCRs until all other sources have reported. While both lymphoma and leukemias are often diagnosed and treated in the outpatient setting, the RRs of preliminary data compared to USCS are similar between lymphoma and leukemias by reporting source; however, without considering reporting source, the RR for leukemias is lower compared to lymphoma (0.85 vs 0.90). This may indicate that overall capture of lymphoma cases at 12 months is better compared to leukemia cases and may be due to lymphoma more likely being diagnosed pathologically, which is a primary source of early reporting for the CCRs. Furthermore, there are 2 cancer sites with rate ratios above 1.10 reported by nonhospital centers: female breast (1.15) and non-Hodgkin lymphoma (1.17). These sites had higher rates in the preliminary data compared to the USCS data, which may, in part, be related to more cases received through electronic reporting. Overall, reporting of cases diagnosed and treated in the outpatient setting has been lacking over the past few years, but has shown improvement recently based on other unpublished analyses. [7] Although the absolute difference in rates between the preliminary data and USCS was greater than 10 among all sites combined and prostate cancer, the RR for those sites is approximately 0.90, indicating comparability in the data.

The strengths of this analysis are the representativeness of the sample where 56% of the US population and 87% of cancer cases diagnosed in 2012 were represented by the states included in the preliminary data set. The comparison data set, USCS, covers 95% of the US population and 99% of the cancer cases diagnosed in 2012.

Some limitations of this study include narrow focus to 1 year of data for consideration and no consideration of ethnicity due to low case counts resulting in IRs and RRs that were considered unreliable. We have noticed, based on previous, unpublished analyses, that the number of cases reported as preliminary data varies slightly by year due to competing resources at the CCR and external factors (such as coding and staging changes). Future research is warranted into variations between diagnosis years. Furthermore, the preliminary data that we examined for this analysis did not include the 5 state CCRs that are funded

exclusively by NCI's SEER program, which could contribute to lower comparability as inclusion may increase the IRs and RRs, though state CCRs funded solely by NCI represent only 4% of all cancer cases and the population in the United States. However, further evaluation whether a combined NPCR+SEER data set for preliminary data would be more comparable to the USCS data may be warranted given the availability of these data at NCI. Although the NCI data represent a small percentage of cases, the distribution of cancer sites in that data set may have an impact on the cancer sites evaluated in this study. Lastly, we did not attempt any mathematical modeling to determine the relationship between preliminary and USCS data. Future work in this area could help inform the ongoing development of delay-adjustment models or additional projection methodologies that could be applied to preliminary data in addition to methodologies currently applied to the 24-month data.

Similar to other natality and mortality surveillance systems, our analyses showed that publication of preliminary cancer incidence rates may be possible. Ultimately, utilization of preliminary data may improve timeliness of cancer data reporting while taking into consideration registry processes such as reporting sources having 6 months to report a case and the registry doing quality checks and linkages before submission to NPCR. Based upon the dynamic nature of cancer registration and that the preliminary incidence rates are lower than the official incidence rates, rates and counts based upon the most complete data as published in USCS need to remain the data source for program planning and other related activities. CDC will work with our USCS collaborating partners to determine whether preliminary rates from all partners can be published through USCS in the future. In conclusion, the preliminary data received by CCRs at NPCR appear to be a relatively accurate source of early cancer incidence rates.

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Table 1

Age-Adjusted Cancer Incidence Rates Obtained from Preliminary Data Compared to USCS Data for Diagnosis Year 2012 by Cancer Site and Race

Site	*All Races*			*White*			*Black*			*Asian/Pacific Islander*		
	Preliminary Rate	**USCS Rate**	**Rate Ratio (95% CI)**	**Preliminary Rate**	**USCS Rate**	**Rate Ratio (95% CI)**	**Preliminary Rate**	**USCS Rate**	**Rate Ratio (95% CI)**	**Preliminary Rate**	**USCS Rate**	**Rate Ratio (95% CI)**
All cancer sites	401.3	440.3	0.91 (0.91–0.91)	403.6	440.4	0.92 (0.91–0.92)	399.7	446.1	0.90 (0.89–0.90)	261.0	285.7	0.91 (0.90–0.93)
Oral cavity and pharynx	10.3	11.2	0.92 (0.90–0.93)	10.6	11.5	0.92 (0.90–0.94)	8.4	9.1	0.92 (0.87–0.97)	7.1	7.7	0.92 (0.84–1.01)
Esophagus	4.1	4.5	0.90 (0.88–0.93)	4.2	4.7	0.90 (0.87–0.92)	3.7	4.1	0.91 (0.84–0.99)	1.8	2.0	0.88 (0.73–1.06)
Stomach	6.3	6.6	0.95 (0.93–0.97)	5.6	5.8	0.96 (0.94–0.98)	9.4	10.2	0.92 (0.87–0.98)	10.4	10.5	0.99 (0.92–1.08)
Colon and rectum	36.3	38.9	0.93 (0.92–0.94)	35.5	38.0	0.93 (0.92–0.94)	42.4	45.5	0.93 (0.91–0.96)	28.9	30.8	0.94 (0.90–0.98)
Liver and intrahepatic bile duct	6.4	7.7	0.83 (0.82–0.85)	5.8	7.0	0.83 (0.81–0.85)	7.7	10.0	0.77 (0.73–0.81)	10.9	12.7	0.86 (0.80–0.92)
Pancreas	10.8	12.3	0.88 (0.87–0.89)	10.7	12.1	0.88 (0.87–0.90)	12.7	15.1	0.84 (0.80–0.88)	7.9	9.3	0.85 (0.78–0.93)
Lung and bronchus	54.3	60.4	0.90 (0.89–0.91)	55.2	61.0	0.90 (0.90–0.91)	55.3	63.3	0.87 (0.85–0.89)	32.0	35.0	0.92 (0.88–0.96)
Melanomas of the skin	18.3	19.9	0.92 (0.91–0.93)	21.2	22.6	0.94 (0.92–0.95)	0.8	0.9	0.93 (0.92–0.95)	1.0	1.2	0.86 (0.68–1.09)
Female breast	116.4	122.2	0.95 (0.95–0.96)	117.8	123.3	0.96 (0.95–0.96)	112.2	120.1	0.93 (0.92–0.95)	84.8	89.7	0.95 (0.91–0.98)
Cervix	7.1	7.4	0.96 (0.93–0.99)	6.9	7.1	0.97 (0.93–1.00)	8.9	9.0	0.99 (0.92–1.06)	5.8	6.1	0.94 (0.83–1.08)
Corpus and uterus, NOS	24.4	24.9	0.98 (0.97–0.99)	24.8	25.3	0.98 (0.96–0.99)	23.9	23.1	1.03 (0.99–1.08)	17.1	17.3	0.99 (0.91–1.06)
Ovary	10.4	11.3	0.92 (0.89–0.94)	10.8	11.6	0.93 (0.90–0.95)	8.1	9.3	0.87 (0.81–0.94)	8.2	8.7	0.94 (0.84–1.05)
Prostate	94.2	105.3	0.89 (0.89–0.90)	85.3	95.6	0.89 (0.88–0.90)	151.4	169.4	0.89 (0.88–0.91)	46.9	54.5	0.86 (0.82–0.91)
Urinary bladder	18.3	20.2	0.91 (0.90–0.92)	19.7	21.5	0.92 (0.91–0.93)	9.8	11.3	0.87 (0.82–0.92)	7.4	8.6	0.87 (0.79–0.95)
Kidney and renal pelvis	14.3	15.9	0.90 (0.89–0.92)	14.6	16.0	0.91 (0.90–0.93)	14.9	16.9	0.88 (0.84–0.92)	6.8	7.3	0.93 (0.85–1.02)
Brain and other nervous system	5.8	6.5	0.90 (0.88–0.92)	6.3	6.9	0.91 (0.89–0.94)	3.5	4.1	0.85 (0.78–0.92)	3.3	3.6	0.93 (0.81–1.05)
Hodgkin lymphoma	2.4	2.6	0.94 (0.91–0.98)	2.6	2.7	0.94 (0.91–0.98)	2.4	2.6	0.92 (0.84–1.02)	1.0	1.1	0.93 (0.74–1.16)
Non-Hodgkin lymphoma	16.8	18.5	0.91 (0.90–0.92)	17.4	19.0	0.92 (0.90–0.93)	12.2	13.5	0.90 (0.86–0.94)	11.3	12.5	0.90 (0.84–0.97)
Myeloma	5.4	6.3	0.86 (0.84–0.88)	4.9	5.6	0.87 (0.85–0.89)	10.4	12.4	0.84 (0.80–0.88)	2.6	3.2	0.81 (0.70–0.94)
Leukemias	11.2	13.2	0.85 (0.83–0.86)	11.6	13.5	0.86 (0.85–0.88)	9.0	10.5	0.86 (0.81–0.90)	6.2	7.5	0.82 (0.75–0.90)

NOS, not otherwise specified; USCS, United States Cancer Statistics.

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Table 2

Age-Adjusted Cancer Incidence Rates Obtained from Preliminary Data Compared to USCS Data for Diagnosis Year 2012 by Cancer Site and Type of Reporting Source

Site	Hospital or Clinic			Other Nonhospital Center[1]			Death Certificate Only			Autopsy Only		
	Preliminary Rate	USCS Rate	Rate Ratio (95% CI)	Preliminary Rate	USCS Rate	Rate Ratio (95% CI)	Preliminary Rate	USCS Rate	Rate Ratio (95% CI)	Preliminary Rate	USCS Rate	Rate Ratio (95% CI)
All cancer sites	344.8	413.0	0.84 (0.83–0.84)	54.9	69.6	0.79 (0.78–0.79)	1.51	7.80	0.19 (0.19–0.20)	0.13	0.23	0.56 (0.48–0.64)
Oral cavity and pharynx	8.9	10.0	0.89 (0.87–0.91)	1.4	1.4	1.00 (0.95–1.05)	0.02	0.10	0.16 (0.11–0.23)	^	^	
Esophagus	3.5	4.0	0.88 (0.85–0.90)	0.5	0.5	1.07 (0.99–1.15)	0.03	0.11	0.24 (0.18–0.32)	^	^	
Stomach	5.7	6.0	0.96 (0.94–0.98)	0.5	0.5	0.97 (0.90–1.05)	0.02	0.11	0.16 (0.11–0.23)	^	0.01	
Colon and rectum	33.7	37.2	0.91 (0.90–0.91)	2.4	3.0	0.80 (0.78–0.83)	0.11	0.55	0.21 (0.18–0.24)	^	0.01	
Liver and intrahepatic bile duct	6.0	6.7	0.89 (0.87–0.91)	0.4	0.5	0.75 (0.69–0.81)	0.07	0.41	0.16 (0.13–0.19)	0.01	0.01	0.62 (0.36–1.05)
Pancreas	10.0	11.0	0.92 (0.90–0.93)	0.7	0.8	0.79 (0.74–0.84)	0.10	0.57	0.17 (0.15–0.19)	0.01	0.01	0.86 (0.49–1.52)
Lung and bronchus	49.2	53.8	0.91 (0.91–0.92)	4.7	4.7	0.99 (0.97–1.00)	0.35	1.92	0.18 (0.17–0.20)	0.02	0.04	0.60 (0.43–0.84)
Melanomas of the skin	11.3	17.6	0.64 (0.63–0.65)	7.0	17.0	0.41 (0.41–0.42)	0.02	0.08	0.26 (0.19–0.36)	^	^	
Female breast	98.6	70.4	0.93 (0.92–0.94)	17.6	15.3	1.15 (1.13–1.17)	0.17	0.70	0.24 (0.21–0.28)	^	0.01	
Cervix	6.4	3.4	0.96 (0.93–1.00)	0.7	0.7	1.02 (0.93–1.12)	0.01	0.07	0.16 (0.09–0.29)	^	^	
Corpus and uterus, NOS	22.6	12.8	0.95 (0.93–0.96)	1.8	1.7	1.08 (1.02–1.15)	0.03	0.14	0.23 (0.17–0.33)	^	^	
Ovary	9.9	5.7	0.94 (0.91–0.96)	0.4	0.4	0.88 (0.78–0.99)	0.06	0.25	0.22 (0.17–0.28)	^	^	
Prostate	67.4	35.5	0.88 (0.87–0.89)	26.4	26.7	0.99 (0.97–1.00)	0.35	1.59	0.22 (0.17–0.28)	0.03	0.05	0.68 (0.44–1.06)
Urinary bladder	15.2	17.0	0.89 (0.88–0.91)	3.1	3.0	1.01 (0.98–1.05)	0.03	0.19	0.18 (0.14–0.24)	^	^	
Kidney and renal pelvis	13.7	15.4	0.89 (0.88–0.91)	0.5	0.6	0.95 (0.88–1.02)	0.05	0.19	0.25 (0.20–0.31)	0.02	0.03	0.63 (0.43–0.93)
Brain and other nervous system	5.6	16.1	0.35 (0.34–0.35)	0.2	1.0	0.21 (0.19–0.23)	0.04	0.25	0.16 (0.13–0.21)	^	0.01	
Hodgkin lymphoma	2.1	2.3	0.91 (0.87–0.94)	0.3	0.3	1.17 (1.05–1.29)	0.00	0.01	0.28 (0.12–0.66)	^	^	
Non-Hodgkin lymphoma	14.5	15.9	0.91 (0.90–0.92)	2.3	2.4	0.95 (0.92–0.98)	0.04	0.18	0.20 (0.15–0.25)	^	0.01	
Myeloma	4.7	5.3	0.89 (0.87–0.91)	0.7	0.8	0.88 (0.82–0.94)	0.03	0.17	0.18 (0.14–0.23)	^	^	
Leukemias	9.9	11.1	0.90 (0.88–0.91)	1.2	1.7	0.67 (0.64–0.71)	0.08	0.36	0.23 (0.20–0.27)	^	0.00	

NOS, not otherwise specified; USCS, United States Cancer Statistics.

[1] Includes radiation treatment or medical oncology center, hospital or private laboratory only, physician's office/private medical practitioner, or other hospital outpatient unit or surgery center.

^ This number has been suppressed because there were fewer than 16 cases.

Table 3

Percent of USCS Case Count Represented by Preliminary Data for Diagnosis Year 2012 by Site

Site	Preliminary Case Count	USCS Case Count	Percent
All cancer sites	794,413	1,529,078	52
Oral cavity and pharynx	20,849	39,879	52
Esophagus	8,243	15,993	52
Stomach	12,372	22,623	55
Colon and rectum	71,681	134,784	53
Liver and intrahepatic bile duct	13,277	28,012	47
Pancreas	21,581	43,213	50
Lung and bronchus	108,179	210,828	51
Melanomas of the skin	35,574	67,753	53
Female breast	121,531	224,147	54
Cervix	6,598	12,042	55
Corpus and uterus, NOS	26,617	47,570	56
Ovary	10,867	20,785	52
Prostate	90,791	177,489	51
Urinary bladder	36,219	69,974	52
Kidney and renal pelvis	28,449	55,231	52
Brain and other nervous system	11,044	21,490	51
Hodgkin lymphoma	4,380	8,273	53
Non-Hodgkin lymphoma	32,839	63,419	52
Myeloma	10,835	21,829	50
Leukemias	21,396	44,396	48

NOS, not otherwise specified; USCS, United States Cancer Statistics.