

## **CINA Deluxe Data Quality Profile**

**Date DQP produced:** January 24, 2018

**Variable examined:** Derived Summary Stage 2000 (NAACCR Data Item #: 3020)

**Filters:** Invasive cases only; excluded lymphoma, leukemia, DCO, and autopsy cases

**Diagnosis Years covered:** 2010-2014

**Cancer Sites:** Colorectal, lung, female breast, prostate, and cervix

**Database citation:** CINA Analytic File, 1995-2014, Expanded Races

**Number of Registries included:** 47 State Registries plus DC Cancer Registry (Three registries, Minnesota, Nevada, and New Mexico, that did not meet at least one year of the NAACCR data quality between years 2010 and 2014 were excluded.)

**Data Dictionary:** NAACCR Data Dictionary 16

(<http://www.naacr.org/LinkClick.aspx?fileticket=xSH32ZzIzGI%3d&tabid=133&mid=473>)

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### **Technical Notes:**

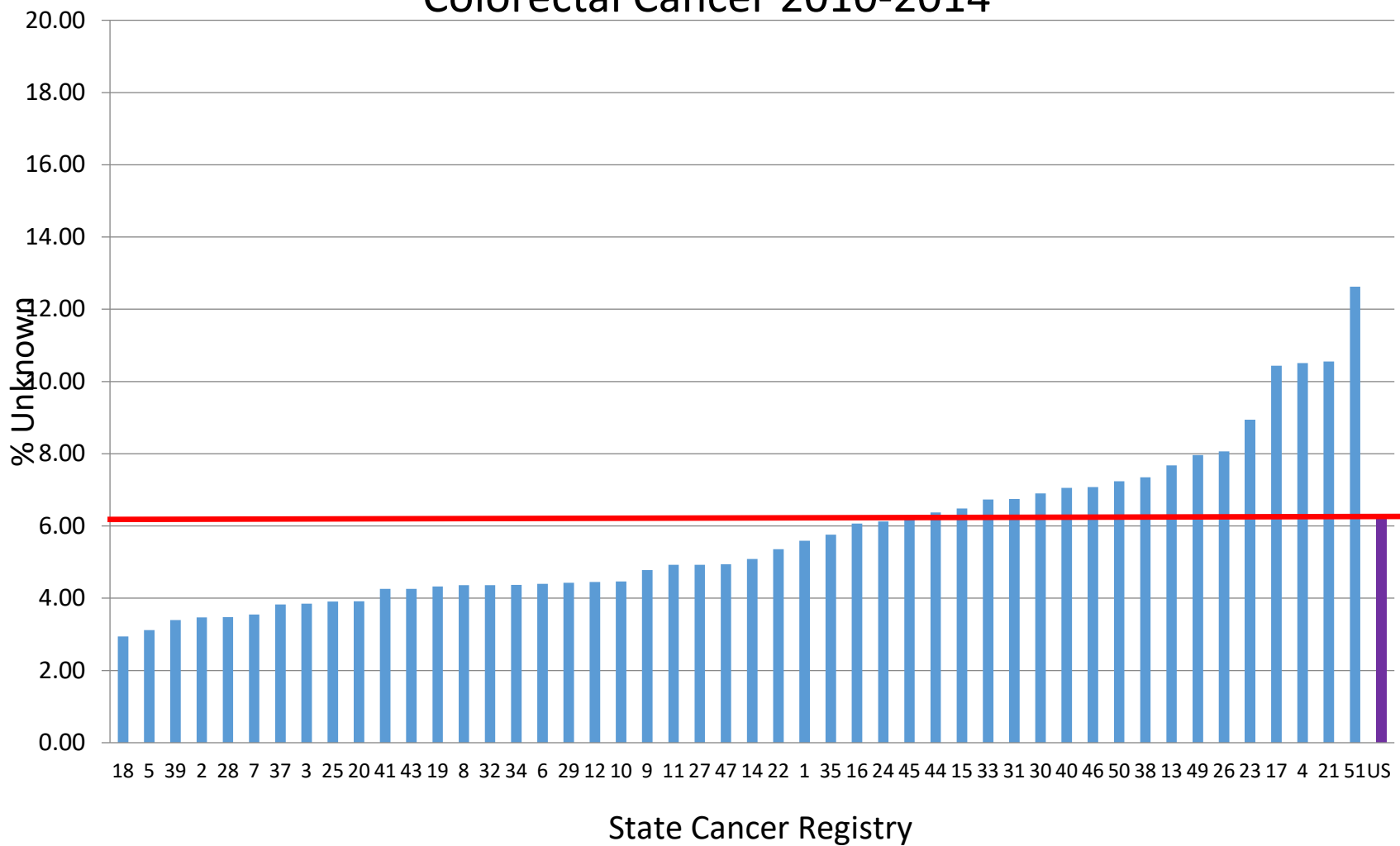
1. The percentage of unknown derived summary stage 2000 includes unknown (code 9) or blank values.
2. Upper Whisker: extends to largest data point within the boundary of  $Q3 + 1.5 * (Q3 - Q1)$ .
3. Diagnostic confirmation: Microscopic confirmed includes positive histology, positive cytology, and positive microscopic confirmation, method not specified.

4. Type of reporting source: Hospital includes hospital inpatient, radiation treatment centers/medical oncology centers, and other hospital outpatient units/surgery centers.
5. Urban/Rural 2013: The definition of metropolitan area is based on county using 2013 Rural/Urban Continuum Code. Metropolitan area include county metro area with population  $\geq$  1million, county metro area with population between 25,000 and 1 million, and county metro area with population  $<$ 25,000.

Table 1. Unknown derived summary stage 2000 by cancer site, Years 2010-2014 combined.

	Colorectum		Lung		Breast		Prostate		Cervix	
<b>Registry Level</b>										
25-75% Percentile (IQR)	4.3-7.0%		2.8-6.2%		1.0-2.8%		2.4-7.6%		3.3-7.4%	
Minimum	2.9%		1.9%		0.6%		0.9%		1.8%	
Mean	5.8%		5.1%		2.1%		5.9%		5.5%	
Median	5.0%		4.4%		1.5%		3.4%		4.3%	
Maximum	12.6%		14.5%		7.2%		21.4%		14.1%	
Upper Whisker <sup>1</sup>	11.0%		11.4%		5.6%		15.4%		13.6%	
# outside of upper whisker	1		3		3		4		2	
<b>All cases combined</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>
<b>Sex</b>										
Male	345,906	6.0	535,130	5.4	~	0.0	932,969	6.8	~	0.0
Female	318,196	6.4	478,134	5.2	1,099,914	2.4	~	0.0	59,685	6.4
<b>Race</b>										
White	545,545	5.9	869,522	5.3	912,467	2.2	726,816	5.8	45,555	5.9
Black	83,021	6.5	109,293	4.8	129,691	2.5	148,244	6.4	9,684	6.8
AI/AN	3,990	7.7	5360	7.3	5677	4.1	3713	10.2	541	7.9
Asian or Pacific Islander	24,247	6.4	25,175	5.3	41,896	2.2	19,825	8.2	2,822	4.6
Unknown	7,299	23.8	3,914	13.0	10,183	14.1	34,371	30.9	1,083	26.9
<b>Age</b>										
00-49 years	70,420	4.5	38,455	3.4	210,459	2.1	25,599	3.7	29,606	5.5
50-64 years	206,978	5.0	287,224	3.7	405,676	1.9	379,612	4.6	18,406	5.5
65-79 years	241,206	5.2	493,524	4.8	356,532	2.1	450,234	7.1	8,833	8.2
80+ years	145,498	10.4	194,061	9.4	127,247	5.1	77,524	17.3	2,840	15.1
<b>Dx Confirmation<sup>2</sup></b>										
Microscopic confirmed	647,990	5.2	922,437	3.3	1,090,366	2.0	912,445	5.9	58,589	5.4
Non-microscopic confirmed	11,022	30.2	71,967	11.5	5,557	29.5	10,825	21.6	423	23.9
Unknown	5,090	83.8	18860	78.7	3991	85.1	9699	77.4	673	78.2
<b>Type of reporting source<sup>3</sup></b>										
Hospital	645,224	5.0	988,404	3.8	1,076,238	1.8	827,289	4.3	57,885	4.8
Non-hospital	18,878	45.4	24,860	63.5	23,676	31.5	105,680	26.9	1,800	55.6
<b>Metro/Non-Metro 2013<sup>4</sup></b>										
Metro	543,800	6.1	817,634	5.1	937,641	2.3	780,926	7.0	50,352	6.3
Non-Metro	119,991	6.3	195,312	6.2	161,634	2.8	150,765	5.8	9,294	6.5
Unknown	311	25.1	318	20.4	639	22.5	1,278	28.8	39	46.2

Figure 1  
% Unknown Derived Summary Stage 2000 by Registry  
Colorectal Cancer 2010-2014



### Figure 2

#### % Unknown Derived Summary Stage 2000 by Registry Lung Cancer 2010-2014

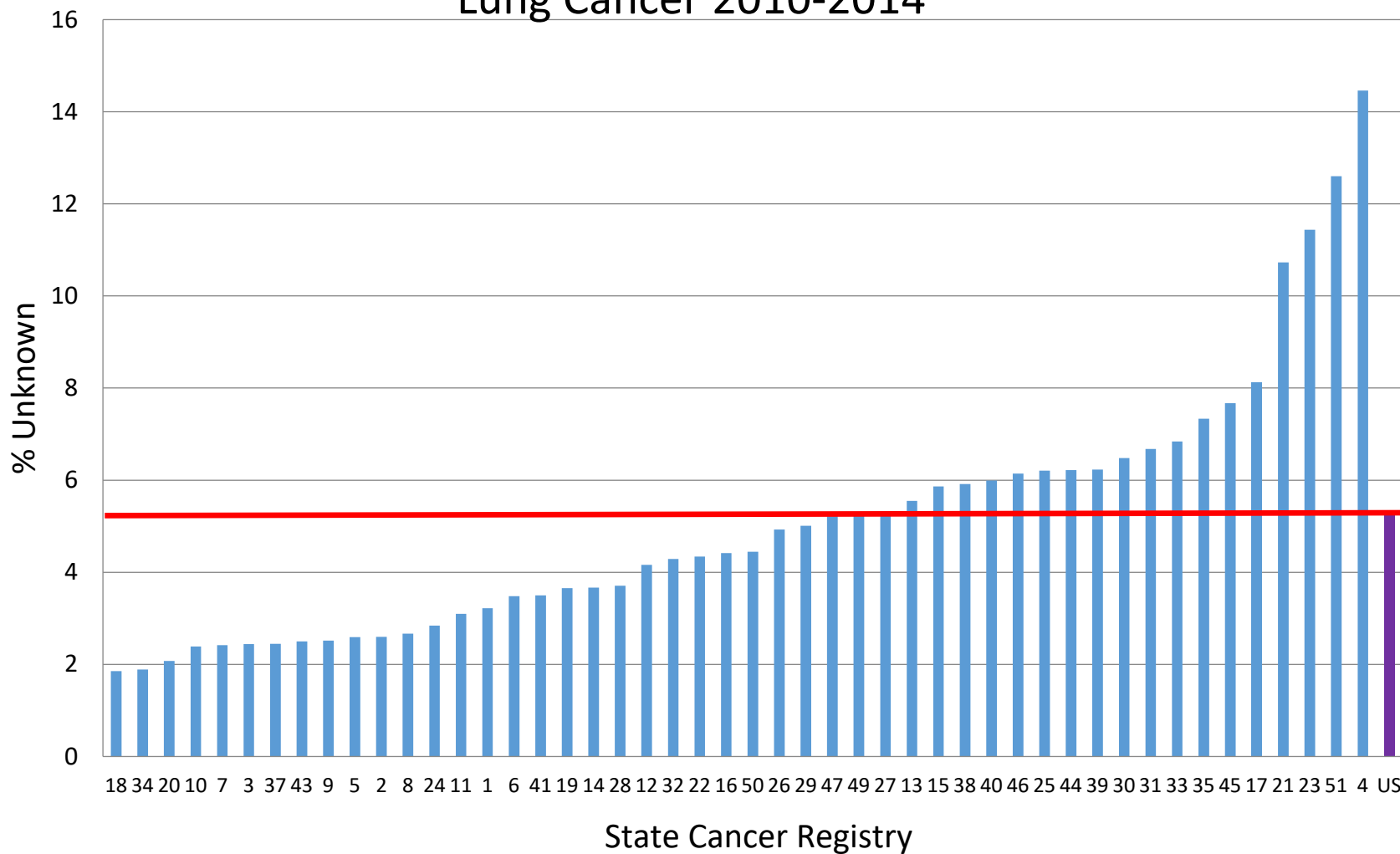


Figure 3  
% Unknown Derived Summary Stage 2000 by Registry  
Female Breast Cancer 2010-2014

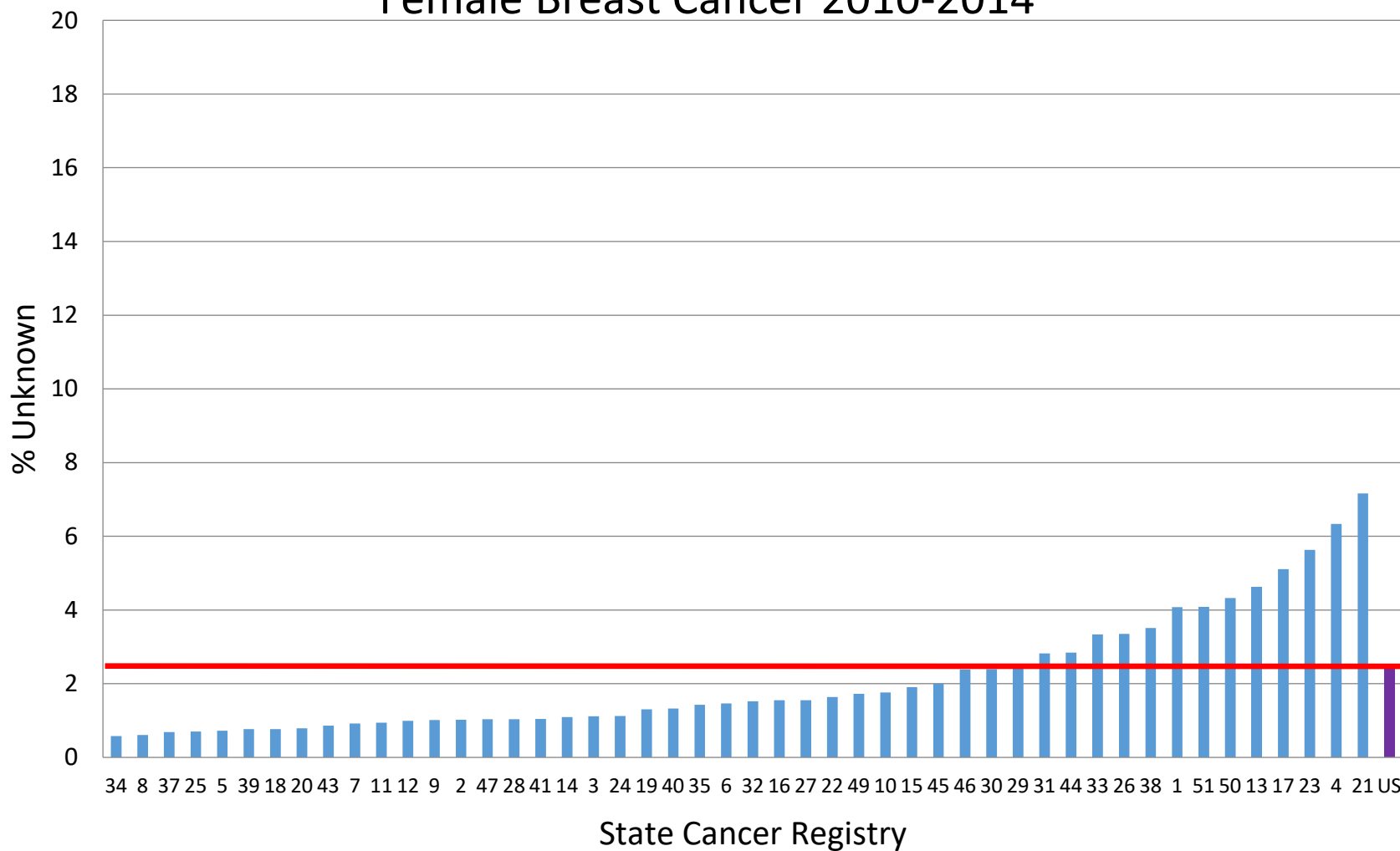


Figure 4  
% Unknown Derived Summary Stage 2000 by Registry  
Prostate Cancer 2010-2014

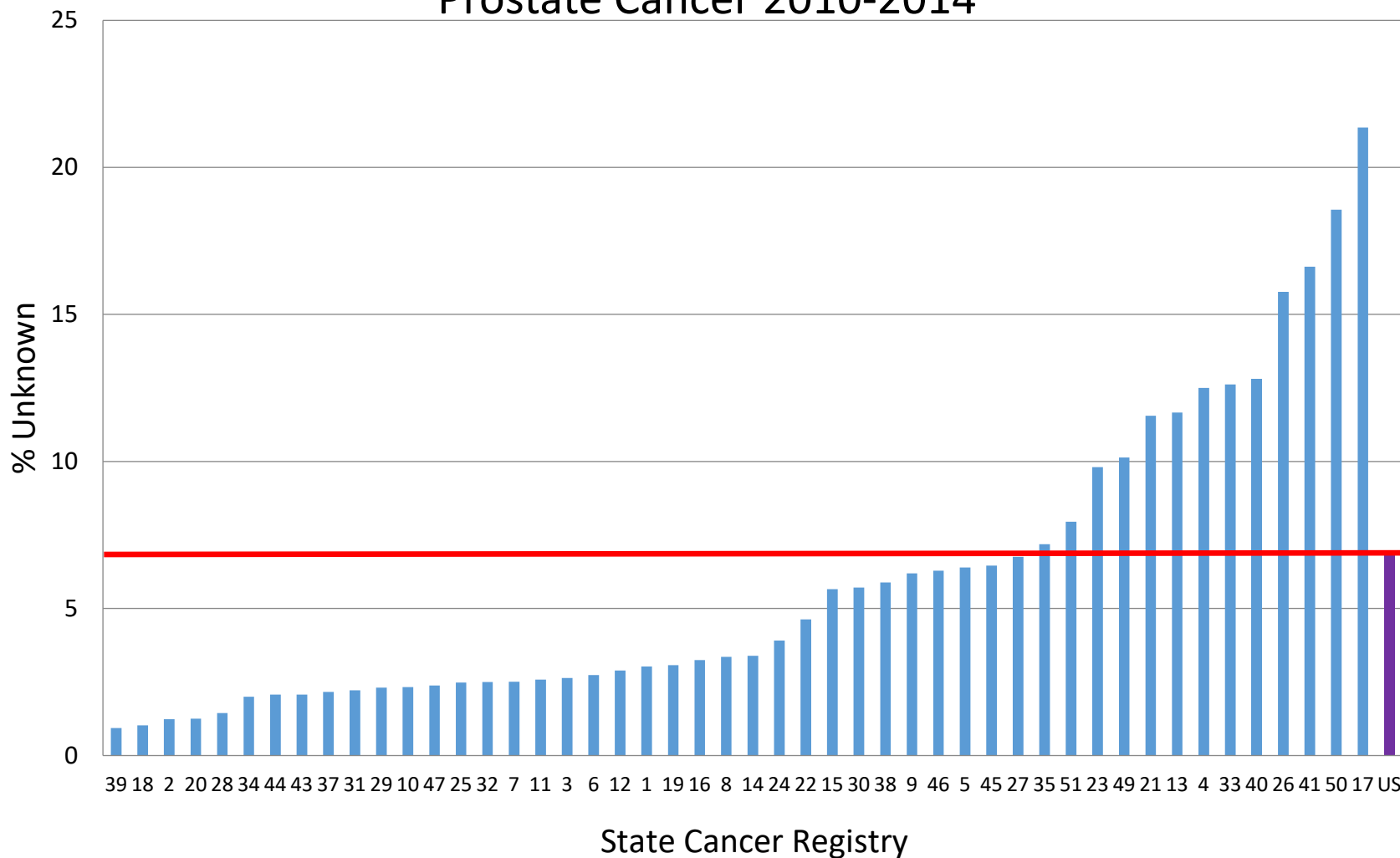


Figure 5  
% Unknown Derived Summary Stage 2000 by Registry  
Cervical Cancer 2010-2014

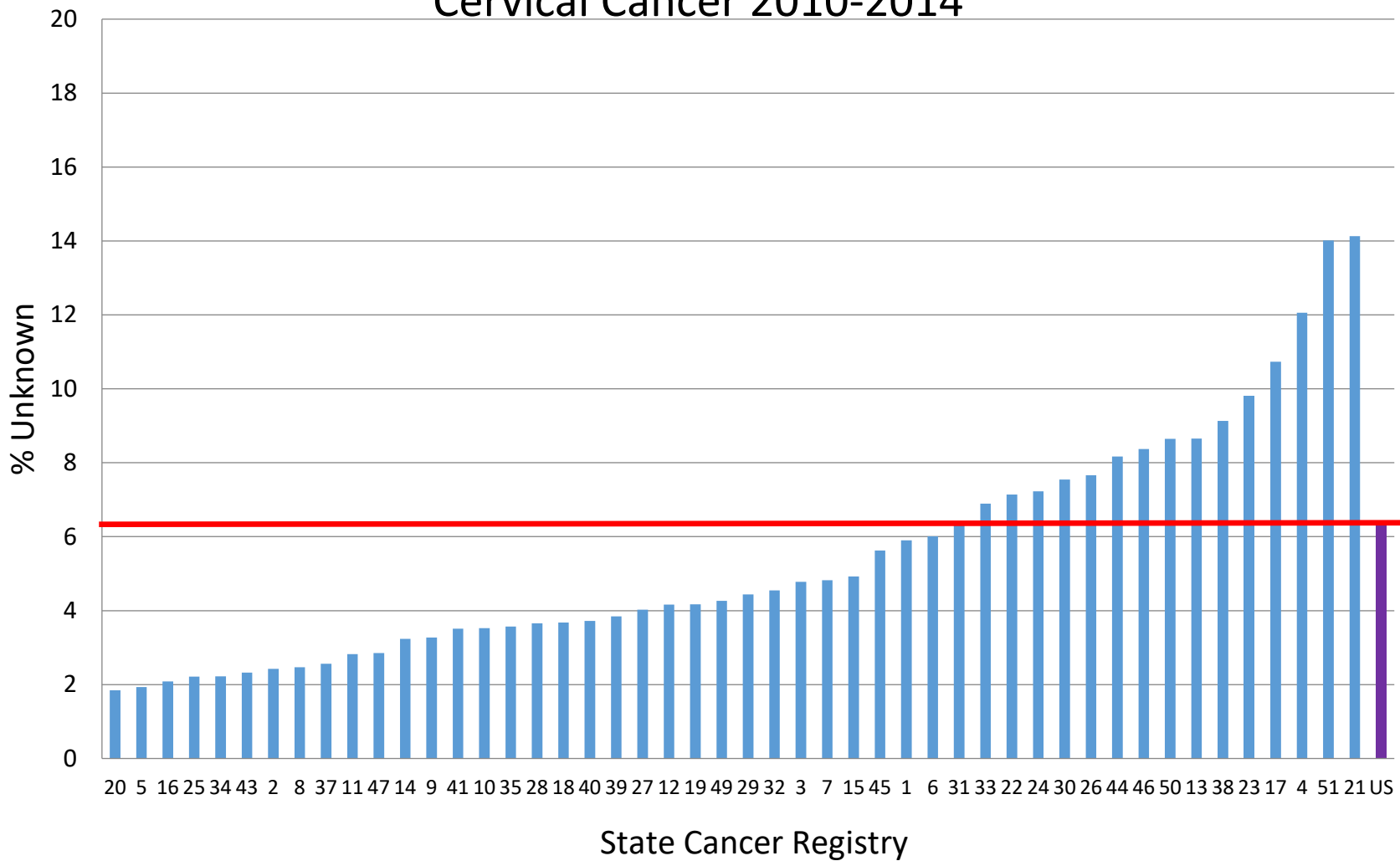




Table 2. Unknown derived summary stage 2000 by diagnosis year: Colorectal cancer 2010-2014

	2010		2011		2012		2013		2014	
<b>Registry Level</b>										
25-75% Percentile (IQR)	4.2-7.1%		4.3-7.0%		4.4-6.8%		4.2-7.2%		3.6-7.1%	
Minimum	1.8%		2.5%		1.8%		2.6%		1.5%	
Mean	5.8%		5.9%		5.9%		5.8%		5.6%	
Median	5.5%		5.2%		5.2%		4.8%		4.8%	
Maximum	12.2%		13.8%		14.1%		13.3%		14.1%	
Upper Whisker <sup>1</sup>	11.3%		11.1%		10.4%		11.6%		12.4%	
# outside of upper whisker	1		2		5		1		1	
<b>All cases combined</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>
<b>Sex</b>										
Male	68,620	6.2	69,091	6.3	68,876	6.0	69,277	5.8	70,042	5.8
Female	64,564	6.5	63,936	6.6	63,089	6.4	63,141	6.2	63,466	6.2
<b>Race</b>										
White	110,004	6.1	109,656	6.1	108,566	5.9	108,471	5.7	108,848	5.6
Black	16,624	6.6	16,474	6.9	16,403	6.4	16,731	6.3	16,789	6.2
AI/AN	770	6.4	762	7.5	794	7.7	841	9.4	823	7.5
Asian or Pacific Islander	4,635	6.7	4,808	6.6	4,750	6.0	4,906	6.0	5,148	6.5
Unknown	1,151	24.5	1,327	26.9	1,452	22.0	1,469	22.5	1,900	23.4
<b>Age</b>										
00-49 years	13,910	4.8	13,787	4.8	14,000	4.4	13,997	4.3	14,726	4.5
50-64 years	40,223	5.1	40,748	5.4	40,878	4.8	41,724	4.9	43,405	5.0
65-79 years	48,355	5.2	48,070	5.3	48,155	5.2	48,232	4.9	48,394	5.0
80+ years	30,696	10.5	30,422	10.4	28,932	10.6	28,465	10.2	26,983	10.1
<b>Dx Confirmation<sup>2</sup></b>										
Microscopic confirmed	129,918	5.3	129,770	5.4	128,620	5.0	129,154	5.0	130,528	5.2
Non-microscopic confirmed	2,125	30.4	2,179	31.4	2,210	31.9	2,309	29.8	2,199	27.5
Unknown	1141	87.3	1078	86.9	1135	84.2	955	79.8	781	78.9
<b>Type of reporting source<sup>3</sup></b>										
Hospital	129,201	5.2	128,976	5.2	128,150	5.0	128,901	4.9	129,996	5.0
Non-hospital	3,983	44.0	4,051	45.6	3,815	46.8	3,517	46.9	3,512	43.7
<b>Metro/Non-Metro 2013<sup>4</sup></b>										
Metro	108,885	6.3	108,920	6.4	107,963	6.1	108,266	5.9	109,766	5.9
Non-Metro	24,239	6.4	24,054	6.5	23,930	6.4	24,094	6.1	23,674	6.3
Unknown	60	23.3	53	18.9	72	38.9	58	22.4	68	19.1

Table 3. Unknown derived summary stage 2000 by diagnosis year: Lung cancer 2010-2014

	2010		2011		2012		2013		2014	
<b>Registry Level</b>										
25-75% Percentile (IQR)	3.5-6.8%		3.3-6.9%		2.8-6.6%		2.3-5.9%		2.2-5.0%	
Minimum	2.2%		1.4%		1.2%		1.6%		0.8%	
Mean	5.8%		5.6%		5.4%		4.5%		3.9%	
Median	5.2%		5.1%		4.6%		4.1%		3.4%	
Maximum	19.7%		14.6%		20.8%		13.5%		11.1%	
Upper Whisker <sup>1</sup>	11.9%		12.4%		12.3%		11.3%		9.3%	
# outside of upper whisker	3		3		3		1		2	
<b>All cases combined</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>
<b>Sex</b>										
Male	107,083	6.2	107,075	6.0	107,451	5.6	107,350	5.0	106,171	4.2
Female	94,022	6.3	94,449	5.8	96,337	5.3	96,958	4.7	96,368	3.9
<b>Race</b>										
White	173,292	6.3	173,379	5.9	174,788	5.5	174,977	4.8	173,086	4.1
Black	21,495	5.5	21,682	5.1	22,193	5.2	21,983	4.4	21,940	3.7
AI/AN	1037	8.1	1032	7.8	1051	7.4	1115	7.4	1,125	5.9
Asian or Pacific Islander	4,649	6.3	4,824	5.9	5,069	5.3	5,379	4.9	5,254	4.1
Unknown	632	17.7	607	17.0	687	12.8	854	11.5	1,134	9.6
<b>Age</b>										
00-49 years	8,778	4.1	8,180	3.6	7,668	3.2	7,276	3.0	6,553	2.7
50-64 years	56,991	4.4	57,562	4.1	57,852	3.8	57,447	3.3	57,372	2.9
65-79 years	96,200	5.6	96,569	5.3	99,010	5.0	100,458	4.4	101,287	3.7
80+ years	39,136	11.0	39,213	10.5	39,258	9.8	39,127	8.6	37,327	7.0
<b>Dx Confirmation<sup>2</sup></b>										
Microscopic confirmed	182,706	3.9	183,511	3.7	184,850	3.3	185,865	3.1	185,505	2.7
Non-microscopic confirmed	13,923	13.4	13,933	12.7	14,705	11.5	15,071	10.9	14,335	9.0
Unknown	4,476	82.0	4,080	80.2	4,233	81.6	3,372	76.0	2,699	69.9
<b>Type of reporting source<sup>3</sup></b>										
Hospital	195,357	4.5	196,164	4.3	198,532	3.9	199,419	3.5	198,932	3.1
Non-hospital	5,748	66.5	5,360	65.5	5,256	66.0	4,889	60.1	3,607	56.9
<b>Metro/Non-Metro 2013<sup>4</sup></b>										
Metro	162,377	6.0	162,397	5.6	164,170	5.3	165,232	4.7	163,458	3.9
Non-Metro	38,661	7.2	39,083	7.0	39,524	6.2	39,032	5.6	39,012	4.8
Unknown	67	22.4	44	34.1	94	23.4	44	15.9	69	8.7

Table 4. Unknown derived summary stage 2000 by diagnosis year: Female breast cancer 2010-2014

	2010		2011		2012		2013		2014	
<b>Registry Level</b>										
25-75% Percentile (IQR)	1.3-2.7%		1.0-2.7%		0.9-2.9%		0.8-2.6%		0.7-2.7%	
Minimum	0.4%		0.4%		0.0%		0.3%		0.4%	
Mean	2.3%		2.1%		2.1%		2.0%		1.9%	
Median	1.7%		1.7%		1.5%		1.3%		1.1%	
Maximum	8.9%		7.3%		2.9%		8.5%		6.3%	
Upper Whisker <sup>1</sup>	4.9%		5.2%		5.8%		5.4%		5.6%	
# outside of upper whisker	2		2		4		5		4	
<b>All cases combined</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>
<b>Race</b>										
White	174,875	2.6	180,239	2.4	182,771	2.2	186,721	2.1	187,861	2.0
Black	24,316	3.0	25,544	2.6	25,800	2.6	26,848	2.3	27,183	2.2
AI/AN	993	4.0	1,138	3.4	1,095	3.9	1,218	3.9	1,233	4.9
Asian or Pacific Islander	7,545	2.5	7,951	2.2	8,396	2.1	8,904	2.3	9,100	1.9
Unknown	1,663	12.0	1,695	14.0	1,958	15.0	2,272	15.4	2,595	13.4
<b>Age</b>										
00-49 years	41,961	2.3	42,547	2.0	42,087	2.0	42,081	2.1	41,783	2.0
50-64 years	77,475	2.1	80,345	2.0	80,882	1.9	82,829	1.9	84,145	1.8
65-79 years	64,352	2.6	67,805	2.2	71,357	2.1	75,585	2.0	77,433	1.9
80+ years	25,604	5.8	25,870	5.6	25,694	5.3	25,468	4.6	24,611	4.3
<b>Dx Confirmation<sup>2</sup></b>										
Microscopic confirmed	207,262	2.2	214,578	2.0	218,046	1.9	224,130	1.9	226,350	1.9
Non-microscopic confirmed	1,180	36.0	1,088	31.8	1,130	26.5	1,094	29.3	1,065	23.2
Unknown	950	88.0	901	86.3	844	86.5	739	84.4	557	76.8
<b>Type of reporting source<sup>3</sup></b>										
Hospital	204,448	2.1	211,931	1.8	215,310	1.7	221,191	1.6	223,358	1.5
Non-hospital	4,944	29.5	4,636	32.5	4,710	31.9	4,772	32.1	4,614	31.9
<b>Metro/Non-Metro 2013<sup>4</sup></b>										
Metro	178,063	2.7	184,189	2.4	187,403	2.3	193,150	2.2	194,836	2.0
Non-Metro	31,103	3.1	32,277	2.8	32,483	2.8	32,750	2.6	33,021	2.9
Unknown	226	15.9	101	27.7	134	39.6	63	17.5	115	13.9

Table 5. Unknown derived summary stage 2000 by diagnosis year: Prostate cancer 2010-2014

	2010		2011		2012		2013		2014	
<b>Registry Level</b>										
25-75% Percentile (IQR)	2.1-8.0%		2.1-7.8%		2.1-7.6%		2.0-8.6%		1.7-8.1%	
Minimum	0.7%		0.5%		0.3%		0.6%		0.3%	
Mean	5.7%		5.7%		5.7%		6.3%		6.1%	
Median	3.9%		3.4%		4.0%		3.1%		3.5%	
Maximum	23.8%		24.5%		17.6%		23.7%		24.6%	
Upper Whisker <sup>1</sup>	17.0%		16.2%		15.9%		18.5%		17.7%	
# outside of upper whisker	2		3		2		4		3	
<b>All cases combined</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>
<b>Race</b>										
White	161,836	6.0	165,328	5.6	138,529	5.2	135,002	6.3	126,121	5.7
Black	31,220	6.2	32,189	5.9	28,960	6.1	28,621	7.4	27,254	6.3
AI/AN	795	11.1	783	10.2	732	10.2	730	10.3	673	8.9
Asian or Pacific Islander	4,116	7.4	4,481	7.8	3,845	8.1	3,886	9.6	3,497	7.9
Unknown	6,919	25.2	7,415	30.9	6,572	32.3	6,463	34.5	7,002	31.7
<b>Age</b>										
00-49 years	6,065	3.3	6,095	3.5	5,136	3.5	4,444	4.4	3,859	4.4
50-64 years	83,514	4.0	86,726	4.2	72,820	4.3	70,104	5.5	66,448	5.1
65-79 years	97,640	7.0	99,869	6.9	86,143	6.6	85,745	7.9	80,837	7.3
80+ years	17,667	19.2	17,506	17.9	14,539	17.0	14,409	17.0	13,403	14.8
<b>Dx Confirmation<sup>2</sup></b>										
Microscopic confirmed	200,565	5.7	205,871	5.6	174,430	5.4	170,577	6.7	161,002	6.3
Non-microscopic confirmed	2,078	28.1	2,043	24.7	2,169	21.1	2,323	17.7	2,212	17.4
Unknown	2,243	79.7	2,282	77.8	2,039	77.6	1,802	76.4	1,333	73.6
<b>Type of reporting source<sup>3</sup></b>										
Hospital	181,812	4.3	185,752	3.9	158,855	4.0	155,032	4.9	145,838	4.5
Non-hospital	23,074	26.0	24,444	27.1	19,783	26.1	19,670	28.5	18,709	26.7
<b>Metro/Non-Metro 2013<sup>4</sup></b>										
Metro	170,752	6.8	175,741	6.7	149,703	6.5	146,701	7.9	138,029	7.3
Non-Metro	33,878	5.9	34,211	5.9	28,692	5.7	27,825	5.8	26,159	5.5
Unknown	256	34.0	244	25.4	243	44.4	176	38.1	359	12.3

Table 6. Unknown derived summary stage 2000 by diagnosis year: Cervical cancer 2010-2014

	2010		2011		2012		2013		2014	
<b>Registry Level</b>										
25-75% Percentile (IQR)	2.8-7.8%		3.3-8.8%		3.0-7.5%		2.6-7.1%		2.3-7.0%	
Minimum	0.0%		0.0%		0.0%		0.0%		0.0%	
Mean	6.1%		6.0%		5.7%		4.9%		4.8%	
Median	4.4%		4.7%		4.8%		4.5%		3.5%	
Maximum	26.7%		16.0%		18.5%		14.0%		13.3%	
Upper Whisker <sup>1</sup>	15.3%		16.9%		14.2%		13.8%		14.1%	
# outside of upper whisker	3		0		3		1		0	
<b>All cases combined</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>	<b>Total Count</b>	<b>% Unk</b>
<b>Race</b>										
White	9,069	6.8	9,225	6.6	9,053	5.6	8,917	5.3	9,291	4.9
Black	2,081	7.0	1,902	7.9	1,916	7.7	1,946	6.2	1,839	5.2
AI/AN	107	4.7	115	9.6	116	6.0	106	14.2	97	5.2
Asian or Pacific Islander	547	4.9	537	5.2	574	4.9	577	3.5	587	4.4
Unknown	188	27.7	168	21.4	237	27.0	217	28.6	273	28.2
<b>Age</b>										
00-49 years	6,041	5.9	5,977	6.2	5,888	5.5	5,737	5.0	5,963	5.0
50-64 years	3,672	6.2	3,593	6.0	3,691	5.5	3,648	5.1	3,802	4.6
65-79 years	1,708	10.2	1,777	8.2	1,738	8.1	1,825	7.5	1,785	7.1
80+ years	571	15.4	600	18.3	579	15.4	553	14.3	537	11.5
<b>Dx Confirmation<sup>2</sup></b>										
Microscopic confirmed	11,752	6.0	11,732	6.0	11,671	5.3	11,549	5.0	11,885	4.7
Non-microscopic confirmed	73	17.8	71	28.2	91	24.2	91	25.3	97	23.7
Unknown	167	80.2	144	79.2	134	81.3	123	74.8	105	73.3
<b>Type of reporting source<sup>3</sup></b>										
Hospital	11,612	5.5	11,579	5.4	11,543	4.8	11,420	4.4	11,731	4.0
Non-hospital	380	53.7	368	57.9	353	56.7	343	55.1	356	54.5
<b>Metro/Non-Metro 2013<sup>4</sup></b>										
Metro	10,081	7.1	10,074	7.0	10,098	6.2	9,973	5.9	10,126	5.4
Non-Metro	1,903	6.9	1,866	7.0	1,790	6.9	1,784	5.8	1,951	5.7
Unknown	8	37.5	7	57.1	8	37.5	6	33.3	10	60.0