

Section 33 Veterans Affairs Adjustment

Purpose: A Department of Veterans Affairs (VA) policy led to concerns about underreporting of cases to some SEER registries for diagnosis years 2005 through 2009, primarily among adult males. Assuming that proportions of cancer cases among males diagnosed by VA hospitals are similar over time, correction factors were estimated for age-adjusted incidence rates in SEER 9 and SEER 17 regions.

Data for Analysis: VA underreporting correction factors were estimated for SEER 9 and SEER 17 groupings. Data to estimate VA underreporting were provided by the following SEER 9 registries: San Francisco-Oakland, Iowa, New Mexico, Seattle, and Atlanta. Based on information provided by the Connecticut and Hawaii registries, the extent of VA underreporting was considered to be similar to registries with more complete information. In Utah, no VA only reports were received, and in Detroit approximately 75% of VA cases were estimated to have been reported by the VA to the registry.

The SEER 17 registries with VA case data included five SEER 9 registries as well as San Jose-Monterrey, Los Angeles, Rural Georgia, Louisiana, and Greater California. Adjustment factors based on VA underreporting in these registries were applied to Kentucky and the Alaskan Native Registry. All cases reported by the New Jersey registry were considered to be reported by sources other than the VA.

Analytic Approach: Correction factors for male cases diagnosed from 2005 through 2009 were estimated with baseline VA hospital data from 2000 through 2003: Correction factor = (1-Reported VA only cases/All reported cases)/ (1-expected proportion VA only cases). The November 2011 submission file is the first to include diagnosis year (DY) 2009. The expected proportion of VA-only cases for DY 2009 in submission year (SY) 2011 is estimated from data on VA-only cases in DY 2000 to 2003, before VA reporting changed. DY 2004 was not considered a baseline or underreporting year:

$$\frac{[VA \text{ only } (DY 2000, SY 2002) + (DY 2001, SY 2003) + (DY 2002, SY 2004) + (DY 2003, SY 2005)]}{[(All \text{ cases } (DY 2000, SY 2002) + (DY 2001, SY 2003) + (DY 2002, SY 2004) + (DY 2003, SY 2005)]}$$
Underreporting of VA cases from DYs 2005 to 2009 was estimated from VA-only case proportions reported in the baseline SYs (Figure 1).

Figure 1. Matrix of VA only case proportions by submission and diagnosis year

		Diagnosis Year									
		2000	2001	2002	2003	2004*	2005	2006	2007	2008	2009
Submission Year	2002	1st									
	2003	2nd	1st								
	2004	3rd	2nd	1st							
	2005	4th	3rd	2nd	1st						
	2006	5th	4th	3rd	2nd						
	2007		5th	4th	3rd						
	2008			5th	4th						
	2009										
	2010										
	2011	2011 Submission File					5th	4th	3rd	2nd	1st

Baseline reference years 2000-2003

Years since first submission

*No correlation factor for diagnosis year 2004 was deemed necessary

Age-adjusted and Age- and Race-Specific VA Correction Factors: VA-adjusted correction factors for males in SEER 9 and SEER 17 registries were estimated from available VA underreporting data. VA age-adjusted correction factors were calculated for all races, whites, and blacks of all ages and within four age-specific groups: 0-24, 25-49, 50-74, and 75+ years of age. Few veterans diagnosed with cancer are under 20 years of age, and adjustment factors for this age group were set at 1.0.

VA Reporting Backlog and Delay Adjustment: Typically, most cases diagnosed by a VA hospital are expected to be reported in the first possible data submission year, with a small proportion of delayed case reporting in subsequent submission years. Because some VA reporting has resumed since VA underreporting first occurred the resulting backlog of VA cases could create a surveillance artifact affecting delay-adjusted models. Therefore, VA cases from diagnosis years 2005 through 2008 were therefore redistributed in the 2011 submission file to reflect the expected delay distribution. VA delay-adjustments were integrated into SEER 9 and SEER 13 delay-adjusted models described in CSR technical notes at http://seer.cancer.gov/csr/1975_2009_pops09/technotes/reportingdelay.html and at <http://surveillance.cancer.gov/delay/vabacklog.html>

VA Underreporting Effect on Trends: Effects of correcting for VA underreporting on delay-adjusted cancer incidence trends were modest. After VA-adjustment, four of 15 delay-adjusted joinpoint model results in Table 1 were identical: melanoma, non-Hodgkin lymphoma, leukemia, and pancreas. In eight of 15 models the number of joinpoint segments, year intervals, directions and statistical significance of annual percent change were consistent before and after VA adjustment: all sites (whites), all sites (blacks), prostate, lung and bronchus, colon and rectum, kidney and renal pelvis, oral cavity and pharynx, and liver and intrahepatic bile duct. The last joinpoint segment for all sites (all races) included one more year; however, the direction and statistical significance of annual percent change were identical before and after VA adjustment. There was one less segment in VA-adjusted joinpoint incident trend models for urinary bladder and stomach cancer. After adjustment, a statistically significant annual percent change was seen for urinary bladder cancer (0.3%).

Estimation of Missing VA Cases: The VA correction factors for all cancers combined among males (all races, whites, blacks) in SEER 9 and SEER 17 registries during diagnosis years 2005 to 2009 are listed for all age groups and four age-specific groups (Table 2). Correction factors are often larger for more recent compared to earlier diagnosis years. Cancer site-specific correction factors for all races, whites and blacks are presented in Tables 3 to 14 in descending order of incidence rates. Within the context of variation in age of diagnosis and small numbers by site, correction factors were in a similar range to those for all cancer sites combined for prostate (Table 3), lung and bronchus (Table 4), colon and rectum (Table 5), urinary bladder (Table 6), melanoma of the skin (Table 7), and non-Hodgkin lymphoma (Table 8). Compared to all sites combined, the VA correction factors for black males 50-74 years of age were slightly elevated for cancers of the kidney and renal pelvis (Table 9). The VA correction factors were similar to those for all cancers combined for leukemia (Table 10) and oral cavity and pharynx cancer (Table 11). Underreporting of VA cases among black men 50-74 years of age and 75 years and more was observed for pancreas cancer (Table 12). While VA correction factors for stomach cancer were similar to overall VA correction factors (Table 13), those for liver and intrahepatic bile duct cancer were elevated among black males aged 50-74 years, particularly for DY 2009 (Table 14).

Based on modest and diminishing effects of VA underreporting in the November 2011 submission file compared to the November submission files of 2007 through 2010, a VA Underreporting section will not be included in future editions of the SEER Cancer Statistics Review unless there is an uptick in VA underreporting in future years. The National Cancer Institute will; however, continue to monitor and respond to VA underreporting as it affects registry data quality assessment and to account for surveillance artifacts related to the resumption of VA case reporting that could affect delay-adjusted incidence models.

Table 1. Age- and Delay-Adjusted Incidence Trends, With and Without Adjustment for Veterans Administration Underreporting, 2005, 2006, 2007, 2008, and 2009. All Cancers Combined and Selected Cancer Sites, Males, All Races, SEER 9 Registries, 1975 to 2009.*

Cancer Site	Race	Trend 1 Years	Trend 1 APC‡	Trend 2 Years	Trend 2 APC‡	Trend 3 Years	Trend 3 APC‡	Trend 4 Years	Trend 4 APC‡	Trend 5 Years	Trend 5 APC‡	Trend 6 Years	Trend 6 APC‡	2000-09 AAPC¶	2005-09 AAPC¶
All sites	All	1975-89	1.3§	1989-92	5.2§	1992-95	-4.8§	1995-00	0.4	2000-09	-0.8§			-0.8§	-0.8§
All sites (VA-adjusted)	All					1992-95	-4.9§	1995-99	0.6	1999-09	-0.6§			-0.6§	-0.6§
All sites	White	1975-89	1.4§	1989-92	5.0§	1992-95	-5.1§	1995-00	0.7	2000-09	-0.8§			-0.8§	-0.8§
All sites (VA-adjusted)	White									2000-09	-0.7§			-0.7§	-0.7§
All sites	Black	1975-81	2.8§	1981-89	0.6	1989-92	7.5§	1992-96	-2.6§	1996-09	-1.0§			-1.0§	-1.0§
All sites (VA-adjusted)	Black					1989-92	7.6§	1992-96	-2.8§	1996-09	-0.9§			-0.9§	-0.9§
Prostate	All	1975-88	2.6§	1988-92	16.5§	1992-95	-11.5§	1995-00	2.2	2000-09	-1.7§			-1.7§	-1.7§
Prostate (VA-adjusted)	All									2000-09	-1.6§			-1.6§	-1.6§
Lung and bronchus	All	1975-82	1.5§	1982-91	-0.5§	1991-09	-1.8§							-1.8§	-1.8§
Lung and bronchus (VA-adjusted)	All					1991-09	-1.7§							-1.7§	-1.7§
Colon and rectum	All	1975-85	1.1§	1985-91	-1.2§	1991-95	-3.2§	1995-98	2.1	1998-09	-2.9§			-2.9§	-2.9§
Colon and rectum (VA-adjusted)	All							1995-98	2.0	1998-09	-2.8§			-2.8§	-2.8§
Urinary bladder	All	1975-87	1.0§	1987-96	-0.5	1996-99	1.8	1999-09	-0.2					-0.2	-0.2
Urinary bladder (VA-adjusted)	All			1987-94	-0.4	1994-09	0.3§							0.3§	0.3§
Melanoma of the skin	All	1975-86	5.5§	1986-09	3.0§									3.0§	3.0§
Melanoma of the skin (VA-adjusted)	All													3.0§	3.0§
Non-Hodgkin lymphoma	All	1975-91	4.2§	1991-09	0.4§									0.4§	0.4§
Non-Hodgkin lymphoma (VA-adjusted)	All													0.4§	0.4§
Kidney and renal pelvis	All	1975-91	2.1§	1991-97	0.6	1997-09	2.7§							2.7§	2.7§
Kidney and renal pelvis (VA-adjusted)	All	1975-91	2.2§	1991-97	0.5	1997-09	2.8§							2.8§	2.8§
Leukemia	All	1975-09	0.2§											0.2§	0.2§
Leukemia (VA-adjusted)	All													0.2§	0.2§
Oral cavity and pharynx	All	1975-83	-0.1	1983-01	-1.5§	2001-09	0.2							0.0	0.2
Oral cavity and pharynx (VA-adjusted)	All					2001-09	0.4							0.2	0.4
Pancreas	All	1975-81	-1.8§	1981-85	1.2	1985-90	-2.2	1990-02	0.1	2002-09	1.9§			1.5§	1.9§
Pancreas (VA-adjusted)	All													1.5§	1.9§
Stomach	All	1975-80	-0.2	1980-09	-1.8§									-1.8§	-1.8§
Stomach (VA-adjusted)	All	1975-09	-1.7§											-1.7§	-1.7§
Liver and IBD	All	1975-84	2.2§	1984-09	3.9§									3.9§	3.9§
Liver and IBD (VA-adjusted)	All			1984-09	4.0§									4.0§	4.0§

VA Underreporting adjustment analyses are computed by age (0-24, 25-49, 50-74, 75+), race (all races, White, Black) and cancer site.

* SEER 9 Registries: Connecticut, Hawaii, Iowa, Utah, and New Mexico, metropolitan San Francisco, Detroit, Atlanta, and Seattle-Puget Sound.

Correction factors apply to the November 2011 SEER data submission.

† Joinpoint analyses with up to five joinpoints are based on rates per 100,000 persons and were age-adjusted to the 2000 US standard population (19 age groups – Census p25–1130).

Joinpoint (JP) Regression Program, v 3.5. April 2011, National Cancer Institute.

‡ APC is based on delay-adjusted rates that were age-adjusted to the 2000 US standard population (19 age groups – Census p25–1130).

§ The APC/AAPC is significantly different from zero (p<.05).

¶ The AAPC is the Average Annual Percent Change and is based on the APCs calculated by Joinpoint.

|| APCs are same as delay-adjusted.

**Table 2. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for All Cancers Combined
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0044	1.0066	1.0079	1.0094	1.0079	1.0058	1.0085	1.0086	1.0095	1.0110
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0030	1.0036	1.0023	1.0030	1.0028	1.0036	1.0047	1.0039	1.0043	1.0053
Total	50-74	1.0054	1.0069	1.0081	1.0105	1.0085	1.0066	1.0097	1.0096	1.0110	1.0122
Total	75+	1.0034	1.0070	1.0094	1.0099	1.0087	1.0053	1.0078	1.0083	1.0086	1.0109
White	All Ages	1.0040	1.0063	1.0078	1.0091	1.0080	1.0046	1.0069	1.0069	1.0077	1.0089
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0032	1.0028	1.0026	1.0024	1.0035	1.0031	1.0031	1.0033	1.0024	1.0041
White	50-74	1.0048	1.0064	1.0079	1.0102	1.0085	1.0054	1.0080	1.0077	1.0092	1.0097
White	75+	1.0031	1.0074	1.0094	1.0096	1.0088	1.0040	1.0064	1.0068	1.0072	1.0092
Black	All Ages	1.0142	1.0162	1.0162	1.0191	1.0157	1.0228	1.0285	1.0283	1.0279	1.0373
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0012	1.0013	1.0022	1.0025	1.0010	1.0085	1.0134	1.0108	1.0148	1.0157
Black	50-74	1.0156	1.0161	1.0173	1.0209	1.0144	1.0211	1.0274	1.0277	1.0291	1.0358
Black	75+	1.0154	1.0208	1.0183	1.0201	1.0232	1.0305	1.0352	1.0346	1.0295	1.0474

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 3. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Prostate Cancer
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0046	1.0061	1.0070	1.0095	1.0085	1.0057	1.0080	1.0088	1.0110	1.0134
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0000	1.0014	1.0016	1.0000	1.0006	1.0028	1.0031	1.0086	1.0065
Total	50-74	1.0044	1.0049	1.0059	1.0090	1.0078	1.0057	1.0083	1.0088	1.0116	1.0131
Total	75+	1.0054	1.0094	1.0100	1.0114	1.0117	1.0060	1.0077	1.0093	1.0096	1.0151
White	All Ages	1.0046	1.0055	1.0074	1.0086	1.0092	1.0040	1.0060	1.0066	1.0078	1.0109
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0024	1.0007	1.0015
White	50-74	1.0044	1.0041	1.0060	1.0076	1.0086	1.0042	1.0064	1.0067	1.0083	1.0107
White	75+	1.0053	1.0091	1.0113	1.0122	1.0122	1.0037	1.0055	1.0069	1.0074	1.0126
Black	All Ages	1.0093	1.0155	1.0127	1.0170	1.0176	1.0218	1.0257	1.0281	1.0313	1.0376
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0060	1.0138	1.0152	1.0247	1.0266
Black	50-74	1.0100	1.0126	1.0131	1.0192	1.0169	1.0207	1.0251	1.0262	1.0350	1.0368
Black	75+	1.0089	1.0261	1.0139	1.0137	1.0242	1.0267	1.0291	1.0357	1.0215	1.0428

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 4. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Cancers of the Lung and Bronchus
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0069	1.0108	1.0130	1.0137	1.0090	1.0112	1.0133	1.0129	1.0128	1.0130
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0046	1.0070	1.0090	1.0000	1.0053	1.0097	1.0082	1.0093	1.0034	1.0080
Total	50-74	1.0072	1.0123	1.0150	1.0156	1.0090	1.0133	1.0143	1.0150	1.0154	1.0134
Total	75+	1.0068	1.0093	1.0109	1.0126	1.0093	1.0085	1.0123	1.0105	1.0101	1.0128
White	All Ages	1.0069	1.0098	1.0109	1.0126	1.0090	1.0088	1.0106	1.0100	1.0101	1.0099
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0030	1.0034	1.0031	1.0000	1.0034	1.0059	1.0049	1.0041	1.0010	1.0056
White	50-74	1.0064	1.0110	1.0125	1.0156	1.0090	1.0111	1.0112	1.0118	1.0129	1.0098
White	75+	1.0080	1.0089	1.0096	1.0103	1.0095	1.0061	1.0103	1.0083	1.0074	1.0103
Black	All Ages	1.0104	1.0250	1.0326	1.0219	1.0328	1.0275	1.0393	1.0391	1.0329	1.0472
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0118	1.0137	1.0000	1.0000	1.0129	1.0133	1.0149	1.0062	1.0131
Black	50-74	1.0121	1.0286	1.0389	1.0212	1.0386	1.0292	1.0417	1.0418	1.0325	1.0494
Black	75+	1.0086	1.0206	1.0242	1.0251	1.0267	1.0268	1.0389	1.0379	1.0361	1.0469

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 5. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Colon and Rectum Cancer
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0070	1.0069	1.0087	1.0074	1.0070	1.0067	1.0088	1.0083	1.0082	1.0100
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0213
Total	25-49	1.0013	1.0013	1.0013	1.0028	1.0013	1.0019	1.0024	1.0028	1.0019	1.0044
Total	50-74	1.0083	1.0071	1.0102	1.0102	1.0079	1.0071	1.0101	1.0093	1.0095	1.0116
Total	75+	1.0066	1.0081	1.0083	1.0049	1.0073	1.0072	1.0085	1.0082	1.0079	1.0091
White	All Ages	1.0055	1.0059	1.0078	1.0081	1.0066	1.0057	1.0070	1.0067	1.0075	1.0080
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0251
White	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0006	1.0006	1.0015
White	50-74	1.0065	1.0064	1.0095	1.0119	1.0080	1.0064	1.0088	1.0080	1.0098	1.0093
White	75+	1.0053	1.0065	1.0072	1.0054	1.0065	1.0060	1.0063	1.0064	1.0062	1.0078
Black	All Ages	1.0079	1.0095	1.0152	1.0100	1.0130	1.0167	1.0267	1.0229	1.0238	1.0249
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0115	1.0000	1.0000	1.0266	1.0253	1.0085	1.0043	1.0043	1.0100	1.0208
Black	50-74	1.0094	1.0093	1.0146	1.0097	1.0116	1.0136	1.0196	1.0216	1.0139	1.0271
Black	75+	1.0053	1.0121	1.0202	1.0067	1.0124	1.0228	1.0417	1.0297	1.0431	1.0226

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 6. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Urinary Bladder Cancer
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0032	1.0064	1.0055	1.0075	1.0085	1.0034	1.0055	1.0049	1.0057	1.0073
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0000	1.0078	1.0000	1.0089	1.0030	1.0037	1.0080	1.0017	1.0053
Total	50-74	1.0038	1.0052	1.0054	1.0062	1.0067	1.0057	1.0060	1.0061	1.0073	1.0092
Total	75+	1.0029	1.0080	1.0054	1.0091	1.0099	1.0014	1.0051	1.0036	1.0047	1.0057
White	All Ages	1.0033	1.0060	1.0044	1.0069	1.0081	1.0033	1.0049	1.0047	1.0058	1.0068
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0048	1.0000	1.0044	1.0000	1.0054	1.0052	1.0042	1.0058	1.0019	1.0041
White	50-74	1.0039	1.0040	1.0038	1.0057	1.0070	1.0049	1.0052	1.0061	1.0071	1.0084
White	75+	1.0026	1.0081	1.0049	1.0084	1.0094	1.0017	1.0048	1.0033	1.0049	1.0055
Black	All Ages	1.0049	1.0000	1.0000	1.0029	1.0029	1.0071	1.0174	1.0062	1.0059	1.0163
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	50-74	1.0097	1.0000	1.0000	1.0063	1.0061	1.0102	1.0293	1.0085	1.0126	1.0233
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0000	1.0049	1.0056	1.0046	1.0000	1.0101

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 7. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Melanoma of the Skin
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0039	1.0034	1.0064	1.0056	1.0067	1.0052	1.0042	1.0053	1.0060	1.0064
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0009	1.0005	1.0000	1.0000	1.0000
Total	50-74	1.0060	1.0041	1.0075	1.0061	1.0091	1.0055	1.0043	1.0047	1.0065	1.0068
Total	75+	1.0033	1.0045	1.0087	1.0083	1.0064	1.0073	1.0065	1.0090	1.0087	1.0090
White	All Ages	1.0037	1.0032	1.0063	1.0059	1.0060	1.0050	1.0043	1.0052	1.0067	1.0063
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0010	1.0005	1.0000	1.0000	1.0007
White	50-74	1.0055	1.0038	1.0073	1.0064	1.0085	1.0053	1.0042	1.0046	1.0067	1.0066
White	75+	1.0034	1.0046	1.0089	1.0093	1.0056	1.0072	1.0068	1.0090	1.0104	1.0088
Black	All Ages	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	50-74	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 8. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Non-Hodgkin Lymphoma
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0043	1.0035	1.0053	1.0065	1.0084	1.0051	1.0036	1.0041	1.0053	1.0064
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0007	1.0020	1.0020	1.0013	1.0015
Total	50-74	1.0074	1.0052	1.0097	1.0086	1.0135	1.0092	1.0057	1.0067	1.0073	1.0091
Total	75+	1.0023	1.0031	1.0020	1.0073	1.0063	1.0020	1.0016	1.0016	1.0049	1.0056
White	All Ages	1.0036	1.0032	1.0051	1.0079	1.0070	1.0043	1.0032	1.0035	1.0052	1.0051
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0000	1.0000	1.0019	1.0000	1.0000	1.0008	1.0009	1.0016	1.0000	1.0008
White	50-74	1.0058	1.0041	1.0084	1.0089	1.0106	1.0075	1.0052	1.0051	1.0069	1.0078
White	75+	1.0026	1.0036	1.0023	1.0106	1.0060	1.0018	1.0017	1.0023	1.0055	1.0038
Black	All Ages	1.0119	1.0087	1.0144	1.0067	1.0152	1.0111	1.0060	1.0117	1.0192	1.0220
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0113	1.0051
Black	50-74	1.0254	1.0175	1.0329	1.0139	1.0303	1.0221	1.0116	1.0242	1.0213	1.0207
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0254	1.0478

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 9. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Cancers of the Kidney and Renal Pelvis
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0077	1.0096	1.0121	1.0081	1.0106	1.0065	1.0086	1.0106	1.0074	1.0127
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0048	1.0024	1.0021	1.0019	1.0029	1.0061	1.0040	1.0068	1.0100
Total	50-74	1.0091	1.0079	1.0093	1.0070	1.0091	1.0078	1.0089	1.0126	1.0079	1.0153
Total	75+	1.0084	1.0162	1.0222	1.0137	1.0195	1.0057	1.0094	1.0103	1.0069	1.0091
White	All Ages	1.0090	1.0086	1.0105	1.0067	1.0093	1.0044	1.0077	1.0077	1.0058	1.0095
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0031	1.0020	1.0063	1.0085
White	50-74	1.0099	1.0082	1.0088	1.0058	1.0084	1.0057	1.0085	1.0088	1.0052	1.0108
White	75+	1.0113	1.0141	1.0184	1.0123	1.0173	1.0038	1.0085	1.0084	1.0070	1.0076
Black	All Ages	1.0209	1.0243	1.0126	1.0106	1.0158	1.0348	1.0354	1.0338	1.0276	1.0604
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0081	1.0090	1.0138	1.0000	1.0153
Black	50-74	1.0345	1.0286	1.0117	1.0108	1.0191	1.0385	1.0433	1.0365	1.0330	1.0772
Black	75+	1.0000	1.0289	1.0222	1.0147	1.0173	1.0395	1.0294	1.0401	1.0297	1.0452

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 10. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Leukemia
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0066	1.0062	1.0069	1.0072	1.0094	1.0061	1.0052	1.0071	1.0069	1.0104
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0012	1.0013	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0038	1.0000	1.0000	1.0000	1.0000	1.0026	1.0000	1.0012	1.0039
Total	50-74	1.0075	1.0081	1.0079	1.0136	1.0163	1.0068	1.0048	1.0073	1.0076	1.0127
Total	75+	1.0094	1.0065	1.0094	1.0042	1.0070	1.0084	1.0074	1.0111	1.0097	1.0128
White	All Ages	1.0057	1.0061	1.0073	1.0054	1.0079	1.0051	1.0046	1.0062	1.0058	1.0075
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0015	1.0016
White	50-74	1.0054	1.0078	1.0090	1.0100	1.0120	1.0065	1.0048	1.0066	1.0065	1.0089
White	75+	1.0089	1.0073	1.0090	1.0032	1.0080	1.0064	1.0070	1.0095	1.0079	1.0101
Black	All Ages	1.0174	1.0000	1.0000	1.0040	1.0224	1.0159	1.0103	1.0039	1.0057	1.0361
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0317	1.0000	1.0000
Black	50-74	1.0154	1.0000	1.0000	1.0086	1.0217	1.0052	1.0000	1.0000	1.0134	1.0373
Black	75+	1.0312	1.0000	1.0000	1.0000	1.0331	1.0394	1.0277	1.0000	1.0000	1.0546

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 11. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Cancers of the Oral Cavity and Pharynx
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0077	1.0066	1.0118	1.0093	1.0087	1.0104	1.0105	1.0129	1.0140	1.0155
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0050	1.0036	1.0049	1.0107	1.0090
Total	50-74	1.0098	1.0102	1.0165	1.0140	1.0113	1.0142	1.0146	1.0185	1.0183	1.0191
Total	75+	1.0075	1.0024	1.0078	1.0023	1.0076	1.0043	1.0046	1.0035	1.0050	1.0104
White	All Ages	1.0084	1.0056	1.0108	1.0077	1.0073	1.0091	1.0080	1.0113	1.0114	1.0122
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0037	1.0012	1.0026	1.0087	1.0061
White	50-74	1.0103	1.0094	1.0166	1.0113	1.0108	1.0126	1.0117	1.0166	1.0143	1.0153
White	75+	1.0090	1.0000	1.0031	1.0026	1.0027	1.0040	1.0030	1.0030	1.0056	1.0077
Black	All Ages	1.0000	1.0325	1.0277	1.0301	1.0306	1.0154	1.0385	1.0259	1.0381	1.0348
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0092	1.0000	1.0238	1.0271
Black	50-74	1.0000	1.0504	1.0397	1.0447	1.0330	1.0217	1.0547	1.0383	1.0455	1.0359
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0537	1.0000	1.0000	1.0000	1.0211	1.0390

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 12. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Pancreatic Cancer
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0025	1.0022	1.0028	1.0030	1.0012	1.0051	1.0069	1.0061	1.0059	1.0075
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0000	1.0000	1.0084	1.0000	1.0034	1.0029	1.0000	1.0028	1.0056
Total	50-74	1.0035	1.0031	1.0030	1.0038	1.0012	1.0051	1.0071	1.0072	1.0076	1.0087
Total	75+	1.0016	1.0014	1.0029	1.0014	1.0013	1.0053	1.0072	1.0056	1.0040	1.0063
White	All Ages	1.0008	1.0014	1.0020	1.0017	1.0007	1.0029	1.0054	1.0050	1.0041	1.0039
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0037
White	50-74	1.0000	1.0012	1.0024	1.0020	1.0000	1.0022	1.0051	1.0053	1.0053	1.0043
White	75+	1.0020	1.0018	1.0018	1.0016	1.0016	1.0042	1.0065	1.0053	1.0033	1.0033
Black	All Ages	1.0057	1.0000	1.0000	1.0094	1.0028	1.0087	1.0146	1.0149	1.0201	1.0612
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0174
Black	50-74	1.0111	1.0000	1.0000	1.0164	1.0054	1.0157	1.0097	1.0149	1.0334	1.0564
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0237	1.0168	1.0000	1.0755

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 13. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Stomach Cancer
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0036	1.0028	1.0053	1.0034	1.0080	1.0035	1.0048	1.0071	1.0058	1.0100
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	50-74	1.0025	1.0023	1.0059	1.0052	1.0097	1.0029	1.0059	1.0063	1.0064	1.0093
Total	75+	1.0057	1.0039	1.0058	1.0020	1.0079	1.0050	1.0044	1.0097	1.0065	1.0131
White	All Ages	1.0053	1.0022	1.0074	1.0027	1.0077	1.0033	1.0036	1.0059	1.0037	1.0057
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	50-74	1.0019	1.0000	1.0040	1.0031	1.0063	1.0021	1.0032	1.0046	1.0039	1.0056
White	75+	1.0105	1.0055	1.0132	1.0028	1.0108	1.0056	1.0048	1.0091	1.0043	1.0072
Black	All Ages	1.0000	1.0038	1.0034	1.0074	1.0074	1.0059	1.0116	1.0100	1.0169	1.0373
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	50-74	1.0000	1.0075	1.0079	1.0161	1.0165	1.0000	1.0173	1.0084	1.0167	1.0358
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0000	1.0131	1.0075	1.0134	1.0203	1.0448

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.

**Table 14. Adjustment Factors for Veteran's Administration Underreporting in 2005-2009
Age-Adjusted/Specific Incidence Rates for Cancers of the Liver and Intrahepatic Bile Duct
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

Race	Age at Diagnosis	2005 Factor SEER-9	2006 Factor SEER-9	2007 Factor SEER-9	2008 Factor SEER-9	2009 Factor SEER-9	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17	2009 Factor SEER-17
Total	All Ages	1.0060	1.0091	1.0064	1.0101	1.0096	1.0091	1.0121	1.0085	1.0104	1.0151
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0104	1.0105	1.0056	1.0225	1.0129	1.0036	1.0058	1.0021	1.0073	1.0098
Total	50-74	1.0063	1.0111	1.0078	1.0090	1.0104	1.0115	1.0154	1.0101	1.0114	1.0168
Total	75+	1.0035	1.0035	1.0034	1.0095	1.0064	1.0062	1.0065	1.0069	1.0092	1.0127
White	All Ages	1.0098	1.0129	1.0145	1.0172	1.0214	1.0096	1.0133	1.0113	1.0126	1.0152
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0094	1.0176	1.0000	1.0117	1.0234	1.0028	1.0088	1.0000	1.0036	1.0157
White	50-74	1.0126	1.0160	1.0152	1.0182	1.0276	1.0118	1.0170	1.0132	1.0157	1.0165
White	75+	1.0046	1.0046	1.0189	1.0173	1.0041	1.0079	1.0065	1.0110	1.0081	1.0121
Black	All Ages	1.0155	1.0263	1.0165	1.0143	1.0333	1.0231	1.0278	1.0221	1.0221	1.0747
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	50-74	1.0220	1.0357	1.0234	1.0196	1.0404	1.0344	1.0378	1.0300	1.0296	1.0892
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0312

Adjustments are based on means of 4 proportions of VA cases from prior submissions of DX years 2000-2003.