

Section 33 Veterans Affairs Adjustment

Purpose: A Department of Veterans Affairs (VA) policy led to underreporting of cases to some SEER registries for diagnosis years 2005 through 2008, primarily among adult males. Assuming that proportions of cancer cases among males diagnosed by VA hospitals follow similar patterns over time, correction factors can be 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 these SEER-9 registries: San Francisco-Oakland, Iowa, New Mexico, Seattle, and Atlanta. Connecticut, Hawaii, Utah, and Detroit opted not to share VA case counts when reporting known VA cases. SEER-17 registries with data included San Jose-Monterrey, Los Angeles, Rural Georgia, Louisiana, and Greater California. Kentucky provided partial data. The Alaskan Native and New Jersey registries opted not to share VA case counts while reporting known VA cases. Of nine registries with usable data, VA underreporting was most pronounced for New Mexico and Los Angeles with some underreporting in Greater California, San Jose-Monterrey, and Iowa and relatively complete reporting in San Francisco-Oakland, Seattle-Puget Sound, Metropolitan Atlanta, and Louisiana.

Analytic Approach: Correction factors for male cases diagnosed from 2005 through 2008 were estimated with VA hospital data from 2000 through 2003: Correction factor = $(1 - \text{Reported VA only cases} / \text{All reported cases}) / (1 - \text{expected proportion VA only cases})$

The 2010 submission file is the first to include diagnosis year (DY) 2008. The expected proportion of cases reported only by the VA for DY 2008 in submission year (SY) 2010 is estimated from data on VA only cases for leading cancers of men, in years before VA reporting changed (e.g., DY 2000 through 2003, SY 2002 through 2005):

$$[\text{VA only (DY 2000,SY 2002)} + (\text{DY 2001,SY 2003}) + (\text{DY 2002,SY 2004}) + (\text{DY 2003,SY 2005})] / [(\text{All cases (DY 2000,SY 2002)}) + (\text{DY 2001,SY 2003}) + (\text{DY 2002,SY 2004}) + (\text{DY 2003,SY 2005})]$$

Underreporting of VA cases in preceding DYs 2005, 2006, and 2007 were also estimated from VA only case proportions reported in the baseline SYs (Figure 1).

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

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

Overall and Age- and Race-Specific VA Correction Factors: VA-adjusted correction factors for males in SEER 9 and SEER 13 Registries were estimated based on available VA underreporting data. Correction factors were calculated for All Races, Whites, and Blacks. These correction factors were estimated for all age groups combined, and further parsed for four age-specific groups: 0-24, 25-49, 50-74, and 75+ years of age.

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 case could create a surveillance artifact affecting delay-adjusted models. The VA cases from diagnosis years 2005 through 2007 were therefore redistributed in the 2010 submission file to reflect the expected delay distribution. VA delay-adjustments were integrated into SEER 9 and SEER 13 delay-adjusted models as described in the CSR technical notes at http://seer.cancer.gov/csr/1975_2008/technotes/reportingdelay.html and in an elaboration on the methods at <http://surveillance.cancer.gov/delay/vabacklog.html>.

VA Underreporting Effect on Trends: Effects of correction for VA underreporting on delay-adjusted incidence trends were modest (Table 1). After VA-adjustment a new segment was added to one of 15 delay-adjusted Joinpoint models: All Sites Combined (Black Race). The number of Joinpoint segments, their direction and statistical significance remained consistent for seven other Joinpoint models: All Sites Combined (All Races, White Race), cancers of the Prostate, Lung and Bronchus, Colon and Rectum, Kidney and Renal Pelvis, and Pancreas. Delay-adjusted Joinpoint models remained unchanged after VA adjustment for the remaining seven sites: Urinary Bladder cancer, Melanoma, Non-Hodgkin lymphoma, Leukemia, cancer of the Oral Cavity and Pharynx, Stomach, and Liver and Intrahepatic Bile Duct.

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 2006 to 2008 are listed for all age groups and four age-specific groups (Table 2). Most correction factors were larger for DY 2008 than previous reporting years, for Blacks compared to Whites, and for men 50-74 and 75+ compared to younger aged men. Cancer-site specific correction factors for All Races, Whites and Blacks are presented in Tables 3 to 14 in descending order of incidence rates. Correction factors were consistent with those for All Cancer Sites Combined for Prostate (Table 3), Lung and Bronchus (Table 4), Colon and Rectum (Table 5), Urinary Bladder (Table 6), and Melanoma of the Skin (Table 7). Correction factors for Black males in the 75+ year age group appeared to be slightly greater than the overall VA correction factor in DY 2008 for non-Hodgkin lymphoma (Table 8) and 2007 for Kidney and Renal Pelvis (Table 9) and Leukemia (Table 10). VA correction factors for Black males 50-74 years of age were greater than the all cancer combined VA correction factor in DY 2008 for Oral and Pharynx (Table 11) and Pancreas cancer (Table 12). While VA-correction factors for Stomach Cancer were similar to overall correction factors (Table 13), those for Intrahepatic Bile Duct and Liver Cancer were elevated among Black males, ages 50-74 years, from DY 2006 to 2008 (Table 14).

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

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‡
All sites	All	1975-89	1.3§	1989-92	5.2§	1992-95	-4.8§	1995-00	0.4	2000-08	-0.8§		
All sites (VA-adjusted)	All					1992-95	-4.9§	1995-99	0.6	1999-08	-0.7§		
All sites	White	1975-89	1.4§	1989-92	5.0§	1992-95	-5.1§	1995-00	0.7	2000-08	-0.8§		
All sites (VA-adjusted)	White									2000-08	-0.7§		
All sites	Black	1975-81	2.8§	1981-89	0.7	1989-92	6.6§	1992-06	-1.5§	2006-08	2.1		
All sites (VA-adjusted)	Black			1981-89	0.6	1989-92	7.5§	1992-95	-2.8	1995-06	-1.3§	2006-08	1.8
Prostate	All	1975-88	2.6§	1988-92	16.5§	1992-95	-11.5§	1995-00	2.2	2000-08	-1.7§		
Prostate (VA-adjusted)	All									2000-08	-1.6§		
Lung and bronchus	All	1975-82	1.5§	1982-91	-0.5§	1991-08	-1.8§						
Lung and bronchus (VA-adjusted)	All					1991-08	-1.7§						
Colon and rectum	All	1975-85	1.1§	1985-91	-1.2§	1991-95	-3.2§	1995-98	2.0	1998-08	-2.9§		
Colon and rectum (VA-adjusted)	All					1991-95	-3.1§	1995-98	2.0	1998-08	-2.8§		
Urinary bladder	All	1975-86	0.9§	1986-08	0.1								
Urinary bladder (VA-adjusted)	All												
Melanoma of the skin	All	1975-86	5.5§	1986-08	3.0§								
Melanoma of the skin (VA-adjusted)	All												
Non-Hodgkin lymphoma	All	1975-91	4.2§	1991-08	0.4§								
Non-Hodgkin lymphoma (VA-adjusted)	All												
Kidney and renal pelvis	All	1975-06	1.8§	2006-08	6.6§								
Kidney and renal pelvis (VA-adjusted)	All	1975-04	1.8§	2004-08	4.1§								
Leukemia	All	1975-08	0.2§										
Leukemia (VA-adjusted)	All												
Oral cavity and pharynx	All	1975-83	-0.1	1983-01	-1.5§	2001-08	0.1						
Oral cavity and pharynx (VA-adjusted)	All												
Pancreas	All	1975-93	-0.9§	1993-03	0.3	2003-08	2.2§						
Pancreas (VA-adjusted)	All					2003-08	2.3§						
Stomach	All	1975-80	-0.1	1980-08	-1.8§								
Stomach (VA-adjusted)	All												
Liver and IBD	All	1975-08	3.7§										
Liver and IBD (VA-adjusted)	All												

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 2010 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).

§APC is statistically significantly different from zero ($P < .05$, two-sided Student t -test.).

|| APCs are same as delay-adjusted.

**Table 2. Adjustment Factors for Veteran's Administration Underreporting in 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0079	1.0095	1.0109	1.0127	1.0091	1.0123	1.0122	1.0150
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0035	1.0030	1.0027	1.0031	1.0047	1.0051	1.0053	1.0059
Total	50-74	1.0092	1.0103	1.0110	1.0139	1.0105	1.0144	1.0138	1.0172
Total	75+	1.0082	1.0113	1.0142	1.0138	1.0088	1.0122	1.0134	1.0146
White	All Ages	1.0083	1.0099	1.0114	1.0132	1.0077	1.0102	1.0103	1.0129
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0038	1.0027	1.0030	1.0028	1.0039	1.0032	1.0044	1.0039
White	50-74	1.0094	1.0105	1.0113	1.0146	1.0089	1.0121	1.0116	1.0148
White	75+	1.0089	1.0120	1.0150	1.0143	1.0073	1.0108	1.0115	1.0128
Black	All Ages	1.0141	1.0154	1.0168	1.0194	1.0295	1.0385	1.0358	1.0416
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0012	1.0013	1.0012	1.0013	1.0094	1.0176	1.0162	1.0182
Black	50-74	1.0161	1.0169	1.0191	1.0219	1.0302	1.0389	1.0375	1.0414
Black	75+	1.0159	1.0253	1.0282	1.0197	1.0356	1.0451	1.0517	1.0496

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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0082	1.0093	1.0096	1.0126	1.0099	1.0128	1.0126	1.0157
Total	0-24	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	1.0017	1.0014	1.0062	1.0075	1.0090
Total	50-74	1.0086	1.0090	1.0098	1.0121	1.0107	1.0142	1.0131	1.0161
Total	75+	1.0105	1.0123	1.0140	1.0149	1.0104	1.0124	1.0149	1.0154
White	All Ages	1.0090	1.0096	1.0102	1.0127	1.0074	1.0101	1.0097	1.0125
White	0-24	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	1.0008	1.0016
White	50-74	1.0091	1.0094	1.0102	1.0116	1.0080	1.0110	1.0106	1.0124
White	75+	1.0114	1.0124	1.0157	1.0169	1.0083	1.0103	1.0127	1.0140
Black	All Ages	1.0105	1.0167	1.0124	1.0194	1.0293	1.0381	1.0366	1.0421
Black	0-24	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	1.0061	1.0288	1.0325	1.0315
Black	50-74	1.0136	1.0165	1.0196	1.0225	1.0322	1.0392	1.0351	1.0436
Black	75+	1.0113	1.0241	1.0185	1.0139	1.0339	1.0372	1.0537	1.0393

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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0082	1.0132	1.0152	1.0163	1.0129	1.0159	1.0157	1.0181
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0049	1.0048	1.0072	1.0000	1.0085	1.0060	1.0107	1.0077
Total	50-74	1.0091	1.0148	1.0166	1.0185	1.0153	1.0180	1.0172	1.0210
Total	75+	1.0080	1.0129	1.0162	1.0151	1.0091	1.0158	1.0154	1.0153
White	All Ages	1.0086	1.0133	1.0139	1.0162	1.0106	1.0130	1.0126	1.0152
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0032	1.0035	1.0034	1.0000	1.0057	1.0034	1.0060	1.0049
White	50-74	1.0090	1.0143	1.0143	1.0191	1.0131	1.0138	1.0141	1.0184
White	75+	1.0094	1.0132	1.0150	1.0141	1.0073	1.0135	1.0123	1.0121
Black	All Ages	1.0105	1.0265	1.0343	1.0283	1.0332	1.0466	1.0452	1.0400
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0120	1.0139	1.0000	1.0191	1.0143	1.0315	1.0203
Black	50-74	1.0121	1.0389	1.0689	1.0315	1.0335	1.0508	1.0515	1.0419
Black	75+	1.0087	1.0166	1.0322	1.0258	1.0357	1.0421	1.0443	1.0390

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 2005-2008
Age-Adjusted/Specific Incidence Rates for Colon and Rectum Cancer
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

		2005	2006	2007	2008	2005	2006	2007	2008
Race	Age at Diagnosis	Factor SEER-9	Factor SEER-9	Factor SEER-9	Factor SEER-9	Factor SEER-17	Factor SEER-17	Factor SEER-17	Factor SEER-17
Total	All Ages	1.0096	1.0083	1.0108	1.0090	1.0090	1.0111	1.0110	1.0125
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0014	1.0014	1.0014	1.0014	1.0021	1.0026	1.0037	1.0031
Total	50-74	1.0121	1.0097	1.0121	1.0115	1.0102	1.0147	1.0129	1.0151
Total	75+	1.0086	1.0095	1.0093	1.0075	1.0092	1.0096	1.0103	1.0115
White	All Ages	1.0089	1.0074	1.0106	1.0105	1.0080	1.0086	1.0093	1.0112
White	0-24	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	1.0007	1.0007	1.0015	1.0015
White	50-74	1.0115	1.0088	1.0136	1.0143	1.0098	1.0125	1.0117	1.0147
White	75+	1.0087	1.0080	1.0087	1.0083	1.0076	1.0065	1.0084	1.0091
Black	All Ages	1.0079	1.0080	1.0172	1.0115	1.0241	1.0304	1.0272	1.0315
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0115	1.0111	1.0000	1.0269	1.0087	1.0046	1.0089	1.0153
Black	50-74	1.0095	1.0093	1.0161	1.0123	1.0201	1.0253	1.0262	1.0227
Black	75+	1.0054	1.0122	1.0200	1.0068	1.0330	1.0456	1.0367	1.0497

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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0054	1.0086	1.0096	1.0112	1.0047	1.0081	1.0076	1.0094
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0000	1.0086	1.0000	1.0033	1.0042	1.0054	1.0000
Total	50-74	1.0053	1.0073	1.0098	1.0095	1.0064	1.0093	1.0097	1.0118
Total	75+	1.0066	1.0106	1.0109	1.0134	1.0030	1.0080	1.0056	1.0080
White	All Ages	1.0059	1.0084	1.0091	1.0114	1.0045	1.0072	1.0074	1.0092
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0052	1.0055	1.0049	1.0000	1.0056	1.0070	1.0044	1.0000
White	50-74	1.0059	1.0070	1.0095	1.0111	1.0056	1.0089	1.0091	1.0112
White	75+	1.0060	1.0115	1.0108	1.0124	1.0032	1.0073	1.0057	1.0082
Black	All Ages	1.0050	1.0000	1.0030	1.0059	1.0076	1.0183	1.0057	1.0160
Black	0-24	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
Black	50-74	1.0099	1.0081	1.0128	1.0129	1.0145	1.0259	1.0289	1.0286
Black	75+	1.0000	1.0000	1.0279	1.0000	1.0052	1.0000	1.0172	1.0051

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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0051	1.0046	1.0060	1.0064	1.0057	1.0054	1.0062	1.0092
Total	0-24	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	1.0005	1.0000	1.0006	1.0006
Total	50-74	1.0067	1.0050	1.0101	1.0077	1.0058	1.0047	1.0074	1.0111
Total	75+	1.0060	1.0087	1.0098	1.0085	1.0084	1.0093	1.0091	1.0109
White	All Ages	1.0048	1.0045	1.0061	1.0066	1.0055	1.0055	1.0061	1.0098
White	0-24	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	1.0005	1.0000	1.0007	1.0007
White	50-74	1.0061	1.0045	1.0092	1.0076	1.0057	1.0043	1.0077	1.0114
White	75+	1.0061	1.0089	1.0100	1.0096	1.0087	1.0102	1.0091	1.0125
Black	All Ages	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
Black	25-49	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
Black	75+	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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0044	1.0024	1.0055	1.0093	1.0060	1.0041	1.0053	1.0073
Total	0-24	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	1.0007	1.0029	1.0035	1.0021
Total	50-74	1.0068	1.0071	1.0115	1.0131	1.0095	1.0072	1.0074	1.0092
Total	75+	1.0035	1.0022	1.0043	1.0091	1.0036	1.0025	1.0051	1.0076
White	All Ages	1.0036	1.0023	1.0050	1.0103	1.0048	1.0038	1.0040	1.0075
White	0-24	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	1.0009	1.0010	1.0017	1.0008
White	50-74	1.0063	1.0039	1.0108	1.0122	1.0075	1.0067	1.0072	1.0092
White	75+	1.0040	1.0038	1.0050	1.0130	1.0044	1.0031	1.0047	1.0085
Black	All Ages	1.0121	1.0127	1.0146	1.0136	1.0116	1.0120	1.0216	1.0356
Black	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Black	25-49	1.0000	1.0141	1.0000	1.0000	1.0000	1.0122	1.0063	1.0120
Black	50-74	1.0260	1.0259	1.0329	1.0283	1.0231	1.0206	1.0297	1.0292
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0000	1.0142	1.0614	1.0781

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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0095	1.0103	1.0133	1.0100	1.0086	1.0124	1.0151	1.0127
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0052	1.0025	1.0022	1.0041	1.0115	1.0098	1.0083
Total	50-74	1.0103	1.0071	1.0090	1.0075	1.0094	1.0124	1.0154	1.0134
Total	75+	1.0125	1.0247	1.0229	1.0196	1.0086	1.0155	1.0146	1.0139
White	All Ages	1.0108	1.0109	1.0125	1.0076	1.0069	1.0103	1.0110	1.0098
White	0-24	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	1.0025	1.0070	1.0114	1.0101
White	50-74	1.0106	1.0089	1.0061	1.0047	1.0082	1.0095	1.0104	1.0089
White	75+	1.0162	1.0236	1.0208	1.0174	1.0069	1.0142	1.0116	1.0121
Black	All Ages	1.0212	1.0179	1.0127	1.0133	1.0362	1.0406	1.0428	1.0545
Black	0-24	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	1.0084	1.0000	1.0073	1.0000
Black	50-74	1.0349	1.0287	1.0198	1.0155	1.0418	1.0594	1.0760	1.0690
Black	75+	1.0000	1.0000	1.0227	1.0153	1.0409	1.0109	1.0897	1.0496

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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0072	1.0070	1.0064	1.0062	1.0082	1.0063	1.0086	1.0108
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0040	1.0000	1.0000	1.0000	1.0041	1.0013	1.0039
Total	50-74	1.0095	1.0099	1.0041	1.0079	1.0099	1.0059	1.0098	1.0114
Total	75+	1.0086	1.0071	1.0116	1.0079	1.0086	1.0117	1.0178	1.0154
White	All Ages	1.0072	1.0069	1.0056	1.0072	1.0072	1.0062	1.0071	1.0098
White	0-24	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	1.0016	1.0033	1.0033
White	50-74	1.0088	1.0086	1.0024	1.0094	1.0096	1.0049	1.0078	1.0105
White	75+	1.0096	1.0080	1.0115	1.0088	1.0083	1.0103	1.0139	1.0138
Black	All Ages	1.0175	1.0000	1.0000	1.0129	1.0167	1.0020	1.0169	1.0369
Black	0-24	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	1.0155	1.0138	1.0150	1.0000
Black	50-74	1.0154	1.0000	1.0253	1.0273	1.0056	1.0000	1.0345	1.0512
Black	75+	1.0312	1.0000	1.0352	1.0000	1.0258	1.0303	1.0929	1.0454

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 2005-2008
Age-Adjusted/Specific Incidence Rates for Cancers of the Oral Cavity and Pharynx
SEER 9 & 17 Registries: Males Only, By Age Group, By Race**

		2005	2006	2007	2008	2005	2006	2007	2008
Race	Age at Diagnosis	Factor SEER-9	Factor SEER-9	Factor SEER-9	Factor SEER-9	Factor SEER-17	Factor SEER-17	Factor SEER-17	Factor SEER-17
Total	All Ages	1.0078	1.0059	1.0105	1.0107	1.0125	1.0130	1.0175	1.0167
Total	0-24	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	1.0066	1.0101	1.0076	1.0075
Total	50-74	1.0116	1.0099	1.0152	1.0154	1.0177	1.0177	1.0215	1.0230
Total	75+	1.0052	1.0000	1.0053	1.0051	1.0037	1.0061	1.0056	1.0065
White	All Ages	1.0085	1.0053	1.0110	1.0078	1.0110	1.0098	1.0141	1.0119
White	0-24	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	1.0054	1.0079	1.0053	1.0043
White	50-74	1.0134	1.0089	1.0157	1.0114	1.0165	1.0140	1.0169	1.0165
White	75+	1.0065	1.0000	1.0029	1.0028	1.0044	1.0022	1.0042	1.0051
Black	All Ages	1.0000	1.0313	1.0401	1.0307	1.0219	1.0465	1.0382	1.0465
Black	0-24	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	1.0122	1.0394	1.0000	1.0121
Black	50-74	1.0000	1.0681	1.0455	1.0454	1.0262	1.0535	1.0474	1.0649
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0232	1.0234	1.0169	1.0000

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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0027	1.0025	1.0016	1.0028	1.0059	1.0074	1.0059	1.0099
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0000	1.0081	1.0000	1.0000	1.0036	1.0030	1.0032	1.0062
Total	50-74	1.0025	1.0022	1.0010	1.0029	1.0064	1.0085	1.0103	1.0124
Total	75+	1.0033	1.0000	1.0015	1.0029	1.0070	1.0060	1.0074	1.0071
White	All Ages	1.0017	1.0008	1.0013	1.0007	1.0035	1.0057	1.0053	1.0062
White	0-24	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	1.0079	1.0041
White	50-74	1.0017	1.0000	1.0000	1.0000	1.0036	1.0059	1.0068	1.0078
White	75+	1.0040	1.0000	1.0017	1.0018	1.0062	1.0063	1.0057	1.0045
Black	All Ages	1.0057	1.0000	1.0000	1.0096	1.0091	1.0182	1.0134	1.0680
Black	0-24	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	1.0217
Black	50-74	1.0111	1.0000	1.0000	1.0167	1.0241	1.0331	1.0565	1.0965
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0000	1.0242	1.0504	1.0265

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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0047	1.0047	1.0055	1.0072	1.0052	1.0063	1.0066	1.0105
Total	0-24	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
Total	50-74	1.0046	1.0060	1.0043	1.0073	1.0059	1.0069	1.0071	1.0084
Total	75+	1.0059	1.0061	1.0103	1.0087	1.0052	1.0070	1.0141	1.0154
White	All Ages	1.0068	1.0049	1.0091	1.0054	1.0043	1.0053	1.0065	1.0052
White	0-24	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
White	50-74	1.0047	1.0049	1.0043	1.0032	1.0045	1.0053	1.0036	1.0047
White	75+	1.0110	1.0086	1.0171	1.0093	1.0070	1.0073	1.0106	1.0069
Black	All Ages	1.0000	1.0038	1.0035	1.0000	1.0097	1.0111	1.0147	1.0343
Black	0-24	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
Black	50-74	1.0000	1.0075	1.0080	1.0000	1.0079	1.0234	1.0310	1.0240
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0066	1.0159	1.0303	1.0531

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 2005-2008
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	2005 Factor SEER-17	2006 Factor SEER-17	2007 Factor SEER-17	2008 Factor SEER-17
Total	All Ages	1.0074	1.0092	1.0129	1.0132	1.0107	1.0141	1.0125	1.0198
Total	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total	25-49	1.0109	1.0166	1.0060	1.0153	1.0057	1.0062	1.0049	1.0081
Total	50-74	1.0084	1.0142	1.0149	1.0168	1.0138	1.0201	1.0207	1.0248
Total	75+	1.0037	1.0073	1.0000	1.0035	1.0066	1.0081	1.0051	1.0116
White	All Ages	1.0135	1.0160	1.0219	1.0248	1.0130	1.0157	1.0149	1.0195
White	0-24	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
White	25-49	1.0102	1.0190	1.0101	1.0243	1.0061	1.0064	1.0074	1.0121
White	50-74	1.0184	1.0254	1.0311	1.0333	1.0170	1.0217	1.0232	1.0255
White	75+	1.0095	1.0095	1.0049	1.0049	1.0116	1.0118	1.0067	1.0077
Black	All Ages	1.0155	1.0263	1.0165	1.0186	1.0239	1.0284	1.0213	1.0684
Black	0-24	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
Black	50-74	1.0220	1.0357	1.0235	1.0253	1.0409	1.0430	1.0649	1.0855
Black	75+	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0179	1.0247

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