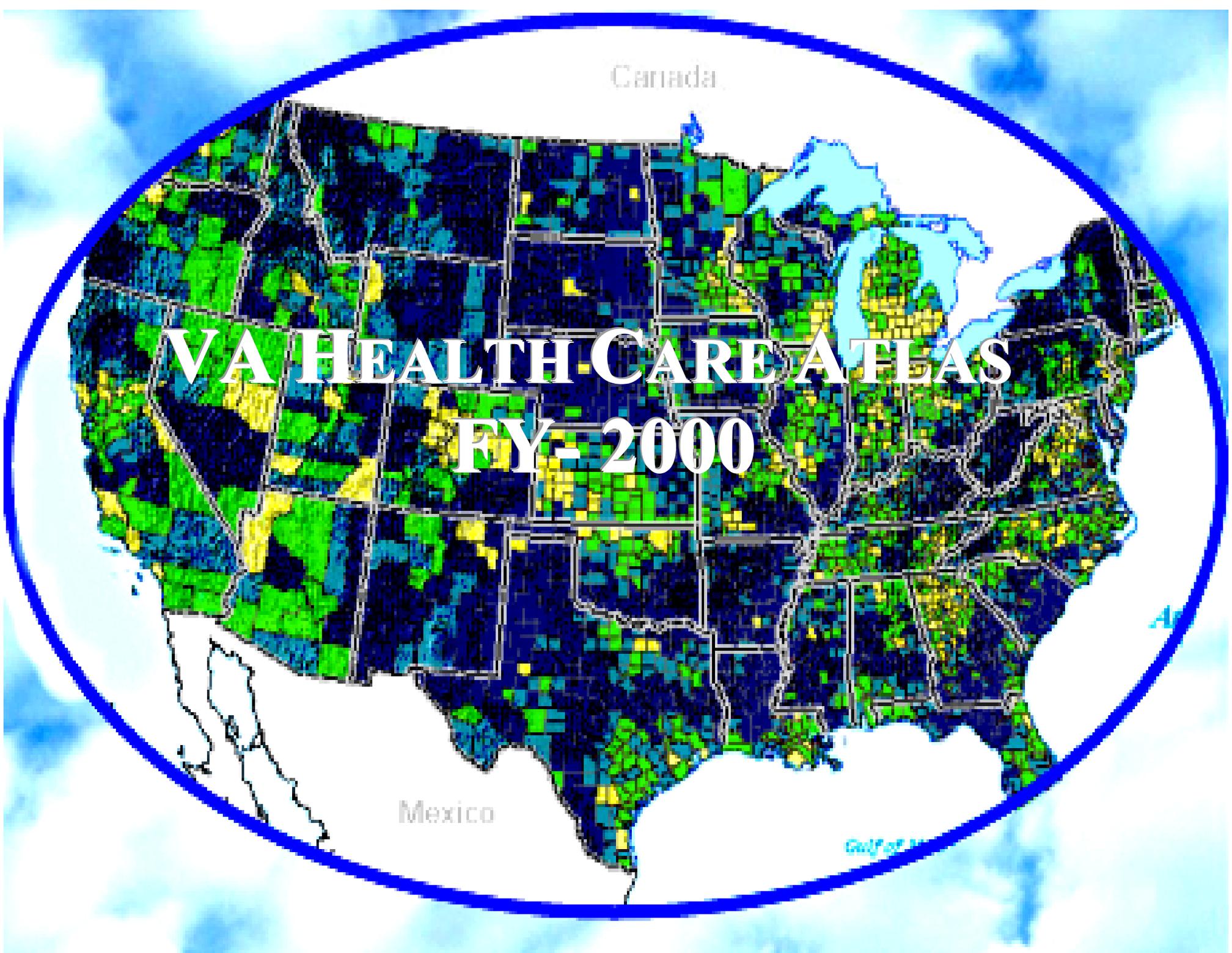


Canada

VA HEALTH CARE ATLAS FY-2000

Mexico

Gulf of Mexico



Diagnostic Codes Used to Define Cohort (Diabetes)

ICD-9 code	Description
250	DIABETES MELLITUS*
2500	DIABETES MELLITUS UNCOMP*
25000	DIABETES MELLITUS W/O MENTION OF COMPLICATION, TYPE II (NIDDM) (ADULT
25001	DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION; TYPE I (IDDM) (JUV
25002	DIABETES MELLITUS WITHOUT MENTION OF COMPLICATION, TYPE II (NIDDM)(AD
25003	DIABETES MELLITUS W/O MENTION OF COMPLICATION, TYPE I (IDDM)(JUVENILE
2501	DIABETES W KETOACIDOSIS*
25010	DIABETES WITH KETOACIDOSIS TYPE II (NIDDM) (ADULT ONSET)OR UNSPECIFIE
25011	DIABETES WITH KETOACIDOSIS TYPE I (IDDM) (JUVENILE TYPE), NOT STATED
25012	DIABETES W/ KETOACIDOSIS, TYPE II [NIDDM][ADULT ONSET TYPE] OR UNSPEC
25013	DIABETES W/ KETOACIDOSIS,TYPE I [IDDM][JUVENILE TYPE],UNCONTROLLED
2502	DIAB W HYPEROSMOLAR COMA*
25020	DIABETES WITH HYPEROSMOLARITY TYPE II (NIDDM) (ADULT ONSET) OR UNSPEC
25021	DIABETES WITH HYPEROSMOLARITY TYPE I (IDDM) (JUVENILE TYPE), NOT STAT
25022	DIABETES W/ HYPEROSMOLARITY, TYPE II [NIDDM][ADULT ONSET TYPE] OR UNS
25023	DIABETES W/ HYPEROSMOLARITY, TYPE I [IDDM][JUVENILE TYPE],UNCONTROLLE
2503	DIABETES WITH COMA NEC*
25030	DIABETES WITH OTHER COMA, TYPE II (NIDDM) (ADULT ONSET OR UNSPECIFIED
25031	DIABETES WITH OTHER COMA, TYPE I (IDDM) (JUVENILE TYPE), NOT STATED A
25032	DIABETES / OTHER COMA, TYPE II [NIDDM][ADULT ONSET TYPE] OR UNSPECIFIE
25033	DIABETES W/ OTHER COMA, TYPE I [IDDM][JUVENILE TYPE], UNCONTROLLED
2504	DIAB W RENAL MANIFEST*
25040	DIABETES WITH RENAL MANIFESTATIONS, TYPE II (NIDDM) (ADULT ONSET)OR U
25041	DIABETES WITH RENAL MANIFESTATIONS, TYPE I (IDDM) (JUVENILE TYPE), NO
25042	DIABETES W/ RENAL MANIFESTATIONS, TYPE II [NIDDM][ADULT ONSET TYPE]OR
25043	DIABETES W/ RENAL MANIFESTATIONS, TYPE I [IDDM][JUVENILE TYPE], UNCON
2505	DIAB W OPHTHALMIC MANIF*
25050	DIABETES WITH OPHTHALMIC MANIFESTATIONS, TYPE II (NIDDM) (ADULT ONSET
25051	DIABETES WITH OPHTHALMIC MANIFESTATIONS, TYPE I (IDDM) (JUVENILE TYPE
25052	DIABETES W/ OPHTHALMIC MANIFESTATIONS, TYPE II [NIDDM][ADULT ONSET] O
25053	DIABETES W/ OPHTHALMIC MANIFESTATIONS, TYPE I [IDDM][JUVENILE TYPE],U

Diabetes

ICD-9 code	Description
2506	DIAB W NEUROLOGIC MANIF*
25060	DIABETES WITH NEUROLOGICAL MANIFESTATIONS TYPE II (NIDDM) (ADULT ONSE
25061	DIABETES WITH NEUROLOGICAL MANIFESTATIONS TYPE I (IDDM) (JUVENILE TYP
25062	DIABETES W/ NEUROLOGICAL MANIFESTATIONS, TYPE II [NIDDDM TYPE][ADULT
25063	DIABETES W/ NEUROLOGICAL MANIFESTATIONS, TYPE I [IDDM][JUVENILE TYPE]
2507	DIABETES W CIRCULAT DIS*
25070	DIABETES WITH PERIPHERAL CIRCULATORY DISORDERS TYPE II (NIDDM) (ADULT
25071	DIABETES WITH PERIPHERAL CIRCULATORY DISORDERS TYPE I (IDDM) (JUVENIL
25072	DIABETES W/ PERIPHERAL CIRCULATORY DISORDERS, TYPE II [NIDDM][ADULT O
25073	DIABETES W/ PERIPHERAL CIRCULATORY DISORDERS, TYPE I [IDDM][JUVENILE]
2508	DIABETES W MANIFEST NEC*
25080	DIABETES WITH OTHER SPECIFIED MANIFESTATIONS TYPE II (NIDDM) (ADULT O
25081	DIABETES WITH OTHER SPECIFIED MANIFESTATIONS TYPE I (IDDM) (JUVENILE
25082	DIABETES W/ OTHER SPECIFIED MANIFESTATIONS, TYPE II [NIDDM][ADULT ONS
25083	DIABETES W/ OTHER SPECIFIED MANIFESTATIONS, TYPE I [IDDM][JUVENILE TY
2509	DIABETES W COMPLIC NOS*
25090	DIABETES WITH UNSPECIFIED COMPLICATION TYPE II (NIDDM) (ADULT ONSET O
25091	DIABETES WITH UNSPECIFIED COMPLICATION TYPE I (IDDM) (JUVENILE TYPE),
25092	DIABETES W/ UNSPECIFIED COMPLICATION, TYPE II [NIDDM][ADULT ONSET] OR
25093	DIABETES W/ UNSPECIFIED COMPLICATION, TYPE I [IDDM][JUVENILE TYPE],UN
3572	POLYNEUROPATHY IN DIABETES
3620	DIABETIC RETINOPATHY*
36201	BACKGROUND DIABETIC RETINOPATHY
36202	PROLIFERATIVE DIABETIC RETINOPATHY
3621	BACKGRND RETINOPATHY NEC*
36210	BACKGROUND RETINOPATHY, UNSPECIFIED
36211	HYPERTENSIVE RETINOPATHY
36212	EXUDATIVE RETINOPATHY
36213	CHANGES IN VASCULAR APPEARANCE OF RETINA
36214	RETINAL MICROANEURYSMS NOS
36215	RETINAL TELANGIECTASIA
36216	RETINAL NEOVASCULARIZATION NOS
36217	OTHER INTRARETINAL MICROVASCULAR ABNORMALITIES
36218	RETINAL VASCULITIS
36641	DIABETIC CATARACT

Highlights

Table 9.1

National Overview

In FY-2000, the VHA had over six hundred thousand (617,647) patients with either a primary or secondary diagnostic code of one or more of the Diabetes codes listed above. This number represents approximately nineteen percent (18.63%) of the total patient population during the fiscal year (Table 9.1). As with most patients seen in the VHA, the majority of patients were male (97.93%), with only 2.07% female.

The age distribution of Diabetic patients shows that 4.38% were under the age of 45, 17.18% were aged 45-54, 20.59% were between the ages of 55-64, 35.42% were aged 65-74 and 22.43% were 75 years of age or older. The proportion of Diabetes patients who were married was just over sixty percent nationally (62.44%). The “Means Test” categories show that about a third (33.11%) were Priority 1 - 3 (service-connected injured) veterans and about one-half 50.65% were Priority 5 (low income).

VISN Overview

The volume of patients with Diabetes ranged from a high of 61,691 individuals in the Sunshine network (VISN 8) to a low of 14,075 in the Central Plain network (VISN 14). Two networks had over twenty percent of their total patient population in this disease cohort: the Ohio network (VISN 10) and the Veterans in Partnership network (VISN 11). The Atlantic network (VISN 7) had the highest percentage of patients under the age of 45, with 6.23% in this age bracket. The New York/New Jersey network (VISN 3) had the largest proportion of patients in the over 75 age group with 28.49%.

Table 9.2

This table compares utilization by the Diabetes **primary** diagnosis group for all conditions with utilization by all VA patients for all conditions. Note that for this table, only patients who had a primary diagnosis of Diabetes were selected. If a patient had Diabetes as a secondary diagnosis only, he/she is not included. Further, for our primary diagnosis Diabetes group we examined all utilization that occurred during the fiscal year, both Diabetes-specific and all other non-Diabetes related medical care obtained.

As an example of what the data show and how to interpret the findings, examine the Stars and Stripes network (VISN 4). In this particular network, 16.16% of the total patients seen at a VA facility in fiscal year 2000 had a primary diagnosis of Diabetes. This group of patients accounted for 19.19% of the total bed-days of care in VISN 4, 24.5% of total discharges in VISN 4, and 25.12% of outpatient visits in VISN 4 made by all patients of VA health care services in the network for all medical conditions.

Table 9.3

Table 9.3 is similar to Table 9.2 except that patients who only had a **secondary** diagnosis of Diabetes are examined rather than patients who had a primary diagnosis. This table compares utilization by the Diabetes secondary diagnosis group for all health conditions they had during the year (i.e., includes both Diabetes-specific utilization and utilization for all other non-Diabetes care the patient may have received) with utilization by all VISN patients for all conditions.

Using the example of VISN 4, the data can be interpreted as follows: 3.74% of the patients in VISN 4 had at most a secondary diagnosis of Diabetes, but never a primary diagnosis. This group of patients accounted for 8.48% of the total bed-days of care, 7.97% of total discharges and 3.64% of outpatient visits utilized by all patients in the network for all conditions.

Table 9.4

Table 9.4 compares resource utilization specifically directed at treating Diabetes. In other words, we examine the utilization for which the primary diagnosis (DXLSF) was a defining diagnosis for the Diabetes cohort, with utilization for all conditions by all patients in each network.

For example, in VISN 4 16.16% of the patients had some utilization for which the primary diagnosis was Diabetes. Utilization specifically directed at treating the Diabetes accounted for 1.87% of all bed-days of care, 2.05% of all discharges, and 5.45% of all outpatient visits.

Table 9.5

Table 9.5 combines the information from Tables 9.2 and 9.4, comparing utilization by the Diabetes primary diagnosis group specifically directed at treating their condition with utilization by this same group for all conditions. For example, in VISN 4, 16.16% of the patients had some utilization for Diabetes. These patients accounted for 54,642 bed-days of care in FY-2000, of which 5,313 or about 10%, were utilized specifically for treating their Diabetes (i.e., primary diagnosis (DXLSF) of Diabetes). Similarly, 8.35% of the discharges for patients in the Diabetes primary diagnosis group resulted from inpatient stays to treat their disease, and 21.69% of the outpatient visits made by these patients were for specifically for the treatment of Diabetes.

Costs

Cost data are reported for utilization of VA services by veteran VA users with Diabetes are shown in Tables 9.6 and 9.7. Veterans with Diabetes are identified by a Diabetes diagnosis for at least one inpatient or outpatient service received. We separately report for veterans who had at least one primary diagnosis of Diabetes and veterans whose only diagnoses of Diabetes are secondary to another

diagnosis. Costs are for VA utilization include inpatient, outpatient, and pharmacy services for all causes, not just for Diabetes related use. That is, we report all VA costs for all causes for individuals identified as diabetics.

There were 617,571 individuals with at least one primary or secondary diagnosis of Diabetes for whom cost data were available, and these costs averaged \$7,709 per veteran. Breaking these costs down by whether or not the veteran had at least one primary diagnosis of Diabetes, we have an average cost of \$7,156 per veteran for those with at least one primary care diagnosis of Diabetes and \$10,270 per veteran for those with only secondary diagnoses of veterans. The higher cost for those with only a secondary diagnosis probably reflects the fact they have more severe comorbidities that result in higher utilization. For example, for those with only a secondary diagnosis of Diabetes, inpatient medical/surgical costs were 184% higher and other inpatient (e.g., psych) costs were 330% higher than for those with a primary diagnosis of Diabetes, while pharmaceutical and outpatient costs per veteran were only 74% and 79% of the costs for veterans with at least one primary diagnosis of Diabetes. Thus, it may be that during these other acute care inpatient episodes, Diabetes was also diagnosed as a secondary problem.

Focusing on those with at least one primary diagnosis of Diabetes, the \$7,156 costs per veteran are distributed as follows: 34.0% are for inpatient medical/surgical services, 11.9% are for other inpatient services, 34.9% are for outpatient services, and 19.2% are for pharmaceutical services. Across VISNs, overall costs per veteran with a primary diagnosis of Diabetes ranged from \$5,612 (VISN 8) to \$8,393 per veteran (VISN 3).

**Table 9.1:
Overall Prevalence Statistics – Diabetes , FY-2000**

Veterans Integrated Service Network	Total Number of Patients	Patients with Diabetes		Gender (%)		Age Group (%)					Marital Status (%)		Means Test Status (%)	
		N	(%)	M	F	<45	45-54	55-64	65-74	75+	Married	Not Married	Service Connected	Low Income
New England (1)	158,204	29,273	18.50	97.99	2.00	3.00	13.38	17.65	38.52	27.45	59.54	39.84	36.58	45.85
Upstate NY (2)	100,499	18,695	18.60	98.03	1.97	3.50	13.59	17.36	38.09	27.46	61.73	37.13	28.41	51.82
NY/NJ (3)	166,593	31,713	19.04	98.71	1.28	3.21	12.86	16.59	38.85	28.49	57.11	41.43	26.87	42.36
Stars and Stripes (4)	202,472	40,286	19.90	98.13	1.87	3.28	14.08	18.51	38.93	25.20	63.93	35.27	29.84	49.54
Capitol (5)	88,163	16,725	18.97	97.71	2.29	5.57	17.99	18.67	35.40	22.38	52.77	46.47	29.41	55.75
Mid-Atlantic (6)	161,081	31,455	19.53	97.58	2.41	5.81	20.68	21.54	33.52	18.45	65.02	33.89	41.80	46.58
Atlantic (7)	201,514	40,180	19.94	97.71	2.29	6.23	21.01	22.00	32.95	17.81	65.39	33.91	35.93	48.57
Sunshine (8)	308,906	61,691	19.97	98.08	1.92	3.45	14.19	20.73	37.20	24.43	68.24	29.98	35.71	50.68
Mid-South (9)	165,501	31,643	19.12	98.35	1.65	4.73	19.33	22.27	34.16	19.50	66.14	33.40	35.26	52.29
Ohio (10)	117,463	24,310	20.70	97.94	2.06	4.87	17.94	19.44	35.28	22.48	58.47	41.04	28.24	58.62
Vets in Partnership (11)	142,393	28,772	20.21	98.13	1.87	4.36	16.41	19.21	36.78	23.24	60.49	39.12	26.40	54.17
Great Lakes (12)	142,079	27,228	19.16	98.10	1.90	3.96	15.04	18.39	36.81	25.80	56.71	42.81	24.06	56.54
Upper Midwest (13)	96,279	15,806	16.42	97.88	2.12	3.38	14.12	18.19	38.43	25.88	63.77	34.71	31.57	44.41
Central Plains (14)	73,699	14,075	19.10	98.27	1.73	3.18	13.25	17.14	40.75	25.68	66.18	33.32	25.45	50.27
Heartland (15)	148,229	29,334	19.79	98.12	1.87	4.10	17.02	20.04	36.79	22.05	64.82	34.64	27.44	54.55
South Central (16)	294,286	55,166	18.75	97.84	2.16	4.96	20.42	23.14	32.79	18.69	64.44	34.02	34.82	54.25
Heart of Texas (17)	151,601	29,791	19.65	97.58	2.42	5.79	21.43	22.62	31.24	18.91	65.25	34.08	41.27	47.43
Southwest (18)	154,764	27,641	17.86	97.57	2.43	4.25	17.88	22.12	34.15	21.60	64.94	34.36	37.85	48.00
Rocky Mt. (19)	95,866	15,369	16.03	97.53	2.47	4.16	17.41	21.52	34.58	22.33	64.51	34.75	33.73	49.30
Northwest (20)	143,215	21,889	15.28	97.02	2.98	5.68	20.44	23.33	30.45	20.10	58.30	40.99	43.93	45.24
Sierra Pacific (21)	149,020	25,098	16.84	97.40	2.60	4.39	19.69	22.10	31.61	22.21	55.28	43.73	39.46	48.65
Desert Pacific (22)	178,204	29,685	16.66	97.56	2.44	5.61	20.74	25.89	30.40	17.34	49.12	49.85	34.52	53.72
National	3,314,672	617,647	18.63	97.93	2.07	4.38	17.18	20.59	35.42	22.43	62.44	36.64	33.11	50.65

**Table 9.2:
Overall Resource Utilization – Diabetes (Primary Diagnosis Group) Compared to All Users, FY-2000**

Veterans Integrated Service Network (VISN)	Total Patients		Total Patients Diabetes			Bed Days of Care			Discharges			Outpatient Visits		
	N	N	%	Total N	Diabetes N	%	Total N	Diabetes N	%	Total N	Diabetes N	%		
New England (1)	158,204	23,643	14.94	303,134	55,554	18.33	24,413	5,479	22.44	1,990,550	427,338	21.47		
Upstate NY (2)	100,499	15,196	15.12	120,203	26,323	21.90	11,871	2,762	23.27	1,093,796	238,572	21.81		
NY/NJ (3)	166,593	25,023	15.02	405,186	60,948	15.04	24,128	5,443	22.56	1,854,064	423,781	22.86		
Stars and Stripes (4)	202,472	32,717	16.16	284,688	54,642	19.19	24,122	5,917	24.53	1,846,937	463,927	25.12		
Capitol (5)	88,163	13,987	15.86	222,405	39,920	17.95	17,107	4,058	23.72	1,007,572	230,891	22.92		
Mid-Atlantic (6)	161,081	26,123	16.22	361,832	62,894	17.38	31,256	7,097	22.71	1,491,680	365,931	24.53		
Atlantic (7)	201,514	33,550	16.65	369,514	68,059	18.42	29,275	7,095	24.24	1,891,761	458,950	24.26		
Sunshine (8)	308,906	49,969	16.18	392,501	92,284	23.51	41,850	9,926	23.72	3,109,217	725,642	23.34		
Mid-South (9)	165,501	25,513	15.42	316,108	60,426	19.12	34,579	7,866	22.75	1,483,519	343,928	23.18		
Ohio (10)	117,463	19,686	16.76	191,574	42,523	22.20	18,945	4,588	24.22	1,327,847	315,247	23.74		
Vets in Partnership (11)	142,393	23,637	16.60	311,786	47,515	15.24	23,779	5,707	24.00	1,368,643	320,321	23.40		
Great Lakes (12)	142,079	21,776	15.33	334,130	60,512	18.11	30,157	6,651	22.05	1,715,017	376,601	21.96		
Upper Midwest (13)	96,279	13,057	13.56	107,644	24,641	22.89	16,092	3,687	22.91	934,533	187,204	20.03		
Central Plains (14)	73,699	11,272	15.29	76,697	15,872	20.69	9,898	2,253	22.76	674,604	146,928	21.78		
Heartland (15)	148,229	24,403	16.46	211,861	42,611	20.11	25,568	5,955	23.29	1,458,394	330,465	22.66		
South Central (16)	294,286	45,398	15.43	454,315	93,221	20.52	47,751	10,769	22.55	2,750,358	608,059	22.11		
Heart of Texas (17)	151,601	25,138	16.58	297,463	59,448	19.99	25,932	6,304	24.31	1,544,273	397,832	25.76		
Southwest (18)	154,764	23,580	15.24	167,362	37,666	22.51	23,822	5,312	22.30	1,574,259	361,967	22.99		
Rocky Mt. (19)	95,866	13,036	13.60	132,102	24,000	18.17	15,065	3,046	20.22	959,415	194,301	20.25		
Northwest (20)	143,215	18,859	13.17	181,076	36,569	20.20	24,296	5,397	22.21	1,488,150	302,642	20.34		
Sierra Pacific (21)	149,020	20,854	13.99	214,370	40,027	18.67	19,163	4,039	21.08	1,630,530	346,258	21.24		
Desert Pacific (22)	178,204	25,468	14.29	231,584	46,184	19.94	25,132	5,942	23.64	2,119,773	485,485	22.90		
National	3,314,672	507,996	15.33	5,687,535	1,091,839	19.20	544,201	125,293	23.02	35,314,892	8,052,270	22.80		

**Table 9.3:
Overall Resource Utilization – Diabetes (Secondary Diagnosis Group) Compared to All Users, FY-2000**

Veterans Integrated Service Network (VISN)	Total Patients		Total Patients Diabetes		Bed Days of Care			Discharges			Outpatient Visits		
	N	N	%	Total	Diabetes		Total	Diabetes		Total	Diabetes		
				N	N	%	N	N	%	N	N	%	
New England (1)	158,204	5,630	3.56	303,134	24,188	7.98	24,413	1,850	7.58	1,990,550	63,994	3.21	
Upstate NY (2)	100,499	3,499	3.48	120,203	10,816	9.00	11,871	942	7.94	1,093,796	38,281	3.50	
NY/NJ (3)	166,593	6,690	4.02	405,186	35,284	8.71	24,128	2,205	9.14	1,854,064	73,582	3.97	
Stars and Stripes (4)	202,472	7,569	3.74	284,688	24,137	8.48	24,122	1,922	7.97	1,846,937	67,178	3.64	
Capitol (5)	88,163	2,738	3.11	222,405	21,583	9.70	17,107	1,351	7.90	1,007,572	30,855	3.06	
Mid-Atlantic (6)	161,081	5,332	3.31	361,832	34,539	9.55	31,256	2,498	7.99	1,491,680	53,963	3.62	
Atlantic (7)	201,514	6,630	3.29	369,514	36,443	9.86	29,275	2,521	8.61	1,891,761	65,605	3.47	
Sunshine (8)	308,906	11,722	3.79	392,501	42,674	10.87	41,850	3,622	8.65	3,109,217	125,471	4.04	
Mid-South (9)	165,501	6,130	3.70	316,108	27,083	8.57	34,579	2,864	8.28	1,483,519	63,617	4.29	
Ohio (10)	117,463	4,624	3.94	191,574	18,727	9.78	18,945	1,548	8.17	1,327,847	54,713	4.12	
Vets in Partnership (11)	142,393	5,135	3.61	311,786	22,632	7.26	23,779	1,736	7.30	1,368,643	50,895	3.72	
Great Lakes (12)	142,079	5,452	3.84	334,130	29,523	8.84	30,157	2,578	8.55	1,715,017	72,382	4.22	
Upper Midwest (13)	96,279	2,749	2.86	107,644	8,574	7.97	16,092	1,098	6.82	934,533	28,137	3.01	
Central Plains (14)	73,699	2,803	3.80	76,697	6,125	7.99	9,898	748	7.56	674,604	29,088	4.31	
Heartland (15)	148,229	4,931	3.33	211,861	15,877	7.49	25,568	1,630	6.38	1,458,394	48,691	3.34	
South Central (16)	294,286	9,768	3.32	454,315	40,747	8.97	47,751	3,719	7.79	2,750,358	98,864	3.59	
Heart of Texas (17)	151,601	4,653	3.07	297,463	24,683	8.30	25,932	2,029	7.82	1,544,273	52,246	3.38	
Southwest (18)	154,764	4,061	2.62	167,362	10,990	6.57	23,822	1,454	6.10	1,574,259	47,306	3.00	
Rocky Mt. (19)	95,866	2,333	2.43	132,102	7,765	5.88	15,065	897	5.95	959,415	25,437	2.65	
Northwest (20)	143,215	3,030	2.12	181,076	11,650	6.43	24,296	1,322	5.44	1,488,150	34,825	2.34	
Sierra Pacific (21)	149,020	4,244	2.85	214,370	17,576	8.20	19,163	1,299	6.78	1,630,530	50,460	3.09	
Desert Pacific (22)	178,204	4,217	2.37	231,584	20,392	8.81	25,132	1,699	6.76	2,119,773	62,025	2.93	
National	3,314,672	109,651	3.31	5,687,535	492,008	8.65	544,201	41,532	7.63	35,314,892	1,237,615	3.50	

**Table 9.4:
Resource Utilization for Treatment of Diabetes (Primary Diagnosis Group) Compared to Overall Resource Utilization by All Users, FY-2000**

Veterans Integrated Service Network (VISN)	Total Patients		Total Patients Diabetes		Bed Days of Care			Discharges			Outpatient Visits		
	N	%	N	%	Total	Diabetes		Total	Diabetes		Total	Diabetes	
					N	N	%	N	N	%	N	N	%
New England (1)	158,204	14.94	23,643	14.94	303,134	3,370	1.11	24,413	319	1.31	1,990,550	78,657	3.95
Upstate NY (2)	100,499	15.12	15,196	15.12	120,203	2,382	1.98	11,871	195	1.64	1,093,796	51,164	4.68
NY/NJ (3)	166,593	15.02	25,023	15.02	405,186	5,060	1.25	24,128	476	1.97	1,854,064	75,203	4.06
Stars and Stripes (4)	202,472	16.16	32,717	16.16	284,688	5,313	1.87	24,122	494	2.05	1,846,937	100,640	5.45
Capitol (5)	88,163	15.86	13,987	15.86	222,405	1,673	0.75	17,107	237	1.39	1,007,572	43,617	4.33
Mid-Atlantic (6)	161,081	16.22	26,123	16.22	361,832	5,231	1.45	31,256	565	1.81	1,491,680	82,689	5.54
Atlantic (7)	201,514	16.65	33,550	16.65	369,514	6,640	1.80	29,275	724	2.47	1,891,761	98,128	5.19
Sunshine (8)	308,906	16.18	49,969	16.18	392,501	7,990	2.04	41,850	754	1.80	3,109,217	141,541	4.55
Mid-South (9)	165,501	15.42	25,513	15.42	316,108	5,787	1.83	34,579	684	1.98	1,483,519	75,162	5.07
Ohio (10)	117,463	16.76	19,686	16.76	191,574	3,937	2.06	18,945	406	2.14	1,327,847	60,439	4.55
Vets in Partnership (11)	142,393	16.60	23,637	16.60	311,786	5,516	1.77	23,779	590	2.48	1,368,643	72,645	5.31
Great Lakes (12)	142,079	15.33	21,776	15.33	334,130	3,935	1.18	30,157	501	1.66	1,715,017	71,553	4.17
Upper Midwest (13)	96,279	13.56	13,057	13.56	107,644	1,775	1.65	16,092	274	1.70	934,533	40,839	4.37
Central Plains (14)	73,699	15.29	11,272	15.29	76,697	1,472	1.92	9,898	188	1.90	674,604	28,184	4.18
Heartland (15)	148,229	16.46	24,403	16.46	211,861	4,042	1.91	25,568	586	2.29	1,458,394	72,007	4.94
South Central (16)	294,286	15.43	45,398	15.43	454,315	10,564	2.33	47,751	1,038	2.17	2,750,358	132,202	4.81
Heart of Texas (17)	151,601	16.58	25,138	16.58	297,463	3,416	1.15	25,932	393	1.52	1,544,273	78,989	5.11
Southwest (18)	154,764	15.24	23,580	15.24	167,362	4,357	2.60	23,822	527	2.21	1,574,259	79,330	5.04
Rocky Mt. (19)	95,866	13.60	13,036	13.60	132,102	2,061	1.56	15,065	256	1.70	959,415	43,208	4.50
Northwest (20)	143,215	13.17	18,859	13.17	181,076	2,219	1.23	24,296	356	1.47	1,488,150	63,439	4.26
Sierra Pacific (21)	149,020	13.99	20,854	13.99	214,370	3,283	1.53	19,163	313	1.63	1,630,530	65,804	4.04
Desert Pacific (22)	178,204	14.29	25,468	14.29	231,584	4,447	1.92	25,132	643	2.56	2,119,773	94,175	4.44
National	3,314,672	15.33	507,996	15.33	5,687,535	94,470	1.66	544,201	10,519	1.93	35,314,892	1,649,615	4.67

**Table 9.5:
Resource Utilization for Treatment of Diabetes Compared to Overall Utilization by the Diabetes Cohort (Primary Diagnosis Group), FY-2000**

Veterans Integrated Service Network (VISN)	Total Patients	Total Patients Diabetes		Bed Days of Care			Discharges			Outpatient Visits		
				Total	Diabetes		Total	Diabetes		Total	Diabetes	
	N	N	%	N	N	%	N	N	%	N	N	%
New England (1)	158,204	23,643	14.94	55,554	3,370	6.07	5,479	319	5.82	427,338	78,657	18.41
Upstate NY (2)	100,499	15,196	15.12	26,323	2,382	9.05	2,762	195	7.06	238,572	51,164	21.45
NY/NJ (3)	166,593	25,023	15.02	60,948	5,060	8.30	5,443	476	8.75	423,781	75,203	17.75
Stars and Stripes (4)	202,472	32,717	16.16	54,642	5,313	9.72	5,917	494	8.35	463,927	100,640	21.69
Capitol (5)	88,163	13,987	15.86	39,920	1,673	4.19	4,058	237	5.84	230,891	43,617	18.89
Mid-Atlantic (6)	161,081	26,123	16.22	62,894	5,231	8.32	7,097	565	7.96	365,931	82,689	22.60
Atlantic (7)	201,514	33,550	16.65	68,059	6,640	9.76	7,095	724	10.20	458,950	98,128	21.38
Sunshine (8)	308,906	49,969	16.18	92,284	7,990	8.66	9,926	754	7.60	725,642	141,541	19.51
Mid-South (9)	165,501	25,513	15.42	60,426	5,787	9.58	7,866	684	8.70	343,928	75,162	21.85
Ohio (10)	117,463	19,686	16.76	42,523	3,937	9.26	4,588	406	8.85	315,247	60,439	19.17
Vets in Partnership (11)	142,393	23,637	16.60	47,515	5,516	11.61	5,707	590	10.34	320,321	72,645	22.68
Great Lakes (12)	142,079	21,776	15.33	60,512	3,935	6.50	6,651	501	7.53	376,601	71,553	19.00
Upper Midwest (13)	96,279	13,057	13.56	24,641	1,775	7.20	3,687	274	7.43	187,204	40,839	21.82
Central Plains (14)	73,699	11,272	15.29	15,872	1,472	9.27	2,253	188	8.34	146,928	28,184	19.18
Heartland (15)	148,229	24,403	16.46	42,611	4,042	9.49	5,955	586	9.84	330,465	72,007	21.79
South Central (16)	294,286	45,398	15.43	93,221	10,564	11.33	10,769	1,038	9.64	608,059	132,202	21.74
Heart of Texas (17)	151,601	25,138	16.58	59,448	3,416	5.75	6,304	393	6.23	397,832	78,989	19.85
Southwest (18)	154,764	23,580	15.24	37,666	4,357	11.57	5,312	527	9.92	361,967	79,330	21.92
Rocky Mt. (19)	95,866	13,036	13.60	24,000	2,061	8.59	3,046	256	8.40	194,301	43,208	22.24
Northwest (20)	143,215	18,859	13.17	36,569	2,219	6.07	5,397	356	6.60	302,642	63,439	20.96
Sierra Pacific (21)	149,020	20,854	13.99	40,027	3,283	8.20	4,039	313	7.75	346,258	65,804	19.00
Desert Pacific (22)	178,204	25,468	14.29	46,184	4,447	9.63	5,942	643	10.82	485,485	94,175	19.40
National	3,314,672	507,996	15.33	1,091,839	94,470	8.65	125,293	10,519	8.40	8,052,270	1,649,615	20.49

Diabetes

**Table 9.6:
FY-2000 Cost of Diabetes (Primary Diagnosis)**

Veterans Integrated Service Network (VISN)	No. of Patients	Outpatient		Inpatient Med/Surg		Inpatient Other		Pharmacy		Total
		\$	%	\$	%	\$	%	\$	%	
New England (1)	23717	74,187,814	39.01%	60,838,396	31.99%	23,824,783	12.53%	31,315,653	16.47%	190,166,647
Upstate NY (2)	15262	37,434,895	37.40%	31,424,189	31.39%	12,528,168	12.52%	18,711,758	18.69%	100,099,010
NY/NJ (3)	25129	75,018,827	35.57%	72,344,481	34.30%	25,286,320	11.99%	38,261,737	18.14%	210,911,366
Stars and Stripes (4)	32797	64,856,842	31.50%	66,296,205	32.20%	26,453,327	12.85%	48,255,715	23.44%	205,862,089
Capitol (5)	14038	37,597,425	33.40%	43,761,757	38.87%	14,787,643	13.14%	16,427,837	14.59%	112,574,662
Mid-Atlantic (6)	26247	57,331,388	33.28%	59,050,199	34.27%	19,389,953	11.25%	36,521,155	21.20%	172,292,694
Atlantic (7)	33697	74,640,262	35.66%	70,140,456	33.51%	21,359,936	10.21%	43,144,114	20.62%	209,284,768
Sunshine (8)	50252	107,162,590	38.00%	82,621,447	29.29%	33,011,901	11.70%	59,238,817	21.00%	282,034,755
Mid-South (9)	25600	55,603,310	31.04%	69,093,505	38.57%	13,864,734	7.74%	40,562,169	22.64%	179,123,718
Ohio (10)	19758	47,776,042	35.99%	40,431,072	30.46%	23,048,127	17.36%	21,490,121	16.19%	132,745,362
Vets in Partnership (11)	23771	61,105,937	36.94%	48,748,614	29.47%	21,611,111	13.07%	33,940,726	20.52%	165,406,388
Great Lakes (12)	21883	62,550,413	35.23%	60,261,147	33.94%	26,442,834	14.89%	28,279,945	15.93%	177,534,339
Upper Midwest (13)	13104	30,059,203	30.96%	39,973,991	41.17%	9,958,260	10.26%	17,100,887	17.61%	97,092,341
Central Plains (14)	11334	22,560,161	34.46%	20,111,931	30.72%	4,819,818	7.36%	17,981,184	27.46%	65,473,093
Heartland (15)	24499	51,957,265	36.48%	48,672,581	34.17%	15,457,218	10.85%	26,336,846	18.49%	142,423,909
South Central (16)	45605	97,292,395	34.05%	98,019,893	34.31%	28,261,474	9.89%	62,156,109	21.75%	285,729,871
Heart of Texas (17)	25261	50,223,982	28.95%	63,523,353	36.62%	23,682,277	13.65%	36,054,789	20.78%	173,484,400
Southwest (18)	23711	48,899,696	36.12%	47,872,557	35.36%	14,199,089	10.49%	24,420,145	18.04%	135,391,487
Rocky Mt. (19)	13106	26,239,709	31.25%	33,431,315	39.81%	7,621,181	9.08%	16,684,101	19.87%	83,976,306
Northwest (20)	18925	49,579,459	34.78%	51,877,946	36.39%	17,389,946	12.20%	23,703,070	16.63%	142,550,421
Sierra Pacific (21)	20957	57,991,908	36.07%	50,199,790	31.23%	26,194,254	16.29%	26,375,491	16.41%	160,761,443
Desert Pacific (22)	25576	78,011,415	37.10%	76,381,450	36.33%	23,915,202	11.37%	31,962,239	15.20%	210,270,306
National	507990	1,268,080,939	34.88%	1,235,076,275	33.98%	433,107,554	11.91%	698,924,607	19.23%	3,635,189,375

**Table 9.7:
FY-2000 Cost of Diabetes (Secondary Diagnosis)**

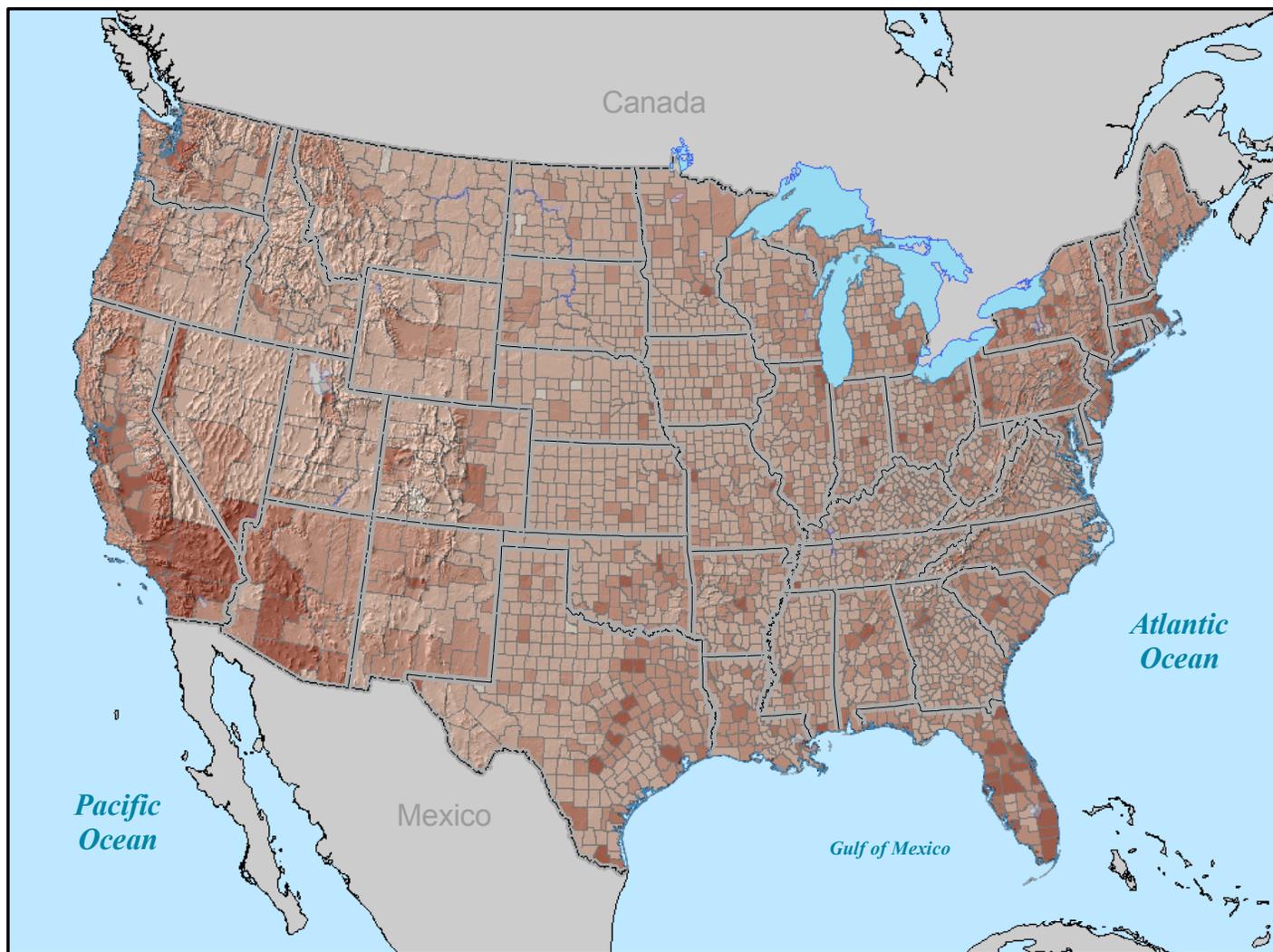
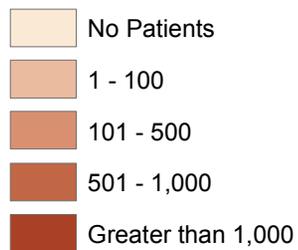
Veterans Integrated Service Network	No. of Patients	Outpatient		Inpatient Med/Surg		Inpatient Other		Pharmacy		Total
		\$	%	\$	%	\$	%	\$	%	\$
New England (1)	5,642	11,413,168	20.65%	22,985,757	41.59%	16,575,868	29.99%	4,291,267	7.76%	55,266,061
Upstate NY (2)	3,515	6,091,787	18.55%	12,412,715	37.80%	11,167,026	34.01%	3,164,824	9.64%	32,836,352
NY/NJ (3)	6,713	14,239,462	17.25%	36,151,053	43.80%	24,883,552	30.15%	7,267,323	8.80%	82,541,389
Stars and Stripes (4)	7,584	9,544,712	15.72%	24,613,560	40.54%	19,314,917	31.82%	7,234,190	11.92%	60,707,379
Capitol (5)	2,735	5,262,817	13.56%	18,764,180	48.35%	12,563,546	32.38%	2,215,469	5.71%	38,806,012
Mid-Atlantic (6)	5,346	9,051,890	15.23%	24,869,362	41.84%	19,964,222	33.59%	5,551,486	9.34%	59,436,960
Atlantic (7)	6,657	11,681,550	17.32%	31,283,620	46.39%	17,827,716	26.44%	6,637,460	9.84%	67,430,347
Sunshine (8)	11,764	20,987,847	22.34%	37,334,874	39.73%	24,244,401	25.80%	11,397,966	12.13%	93,965,089
Mid-South (9)	6,148	11,329,454	19.85%	28,522,576	49.98%	10,722,258	18.79%	6,498,684	11.39%	57,072,971
Ohio (10)	4,641	8,835,983	19.38%	16,440,603	36.06%	16,316,276	35.79%	3,997,538	8.77%	45,590,399
Vets in Partnership (11)	5,165	15,424,702	27.07%	20,222,962	35.49%	15,403,537	27.03%	5,929,130	10.41%	56,980,332
Great Lakes (12)	5,479	12,999,681	20.60%	26,670,645	42.26%	18,103,803	28.68%	5,339,663	8.46%	63,113,793
Upper Midwest (13)	2,761	4,684,652	16.28%	15,188,186	52.80%	6,184,993	21.50%	2,708,947	9.42%	28,766,778
Central Plains (14)	2,821	4,633,774	23.65%	7,956,478	40.61%	3,702,238	18.90%	3,299,061	16.84%	19,591,551
Heartland (15)	4,945	7,655,298	21.46%	16,223,330	45.48%	7,484,858	20.98%	4,309,371	12.08%	35,672,856
South Central (16)	9,806	17,446,435	20.51%	38,114,406	44.80%	18,841,598	22.15%	10,678,277	12.55%	85,080,716
Heart of Texas (17)	4,669	7,292,228	14.51%	24,916,981	49.58%	13,442,333	26.75%	4,605,355	9.16%	50,256,898
Southwest (18)	4,082	6,939,630	22.70%	13,808,969	45.17%	6,648,375	21.75%	3,176,212	10.39%	30,573,186
Rocky Mt. (19)	2,342	3,924,378	18.65%	10,409,321	49.46%	4,565,048	21.69%	2,147,013	10.20%	21,045,760
Northwest (20)	3,013	5,966,197	18.23%	15,935,151	48.68%	8,152,499	24.91%	2,678,244	8.18%	32,732,091
Sierra Pacific (21)	4,259	8,969,551	18.17%	17,701,410	35.86%	18,531,104	37.54%	4,165,230	8.44%	49,367,294
Desert Pacific (22)	4,238	10,607,542	18.11%	30,550,386	52.15%	13,500,954	23.05%	3,917,583	6.69%	58,576,465
National	109581	214,982,738	19.10%	491,076,525	43.64%	308,141,122	27.38%	111,210,293	9.88%	1,125,410,678

Diabetes

Map 9.1



Number of Patients



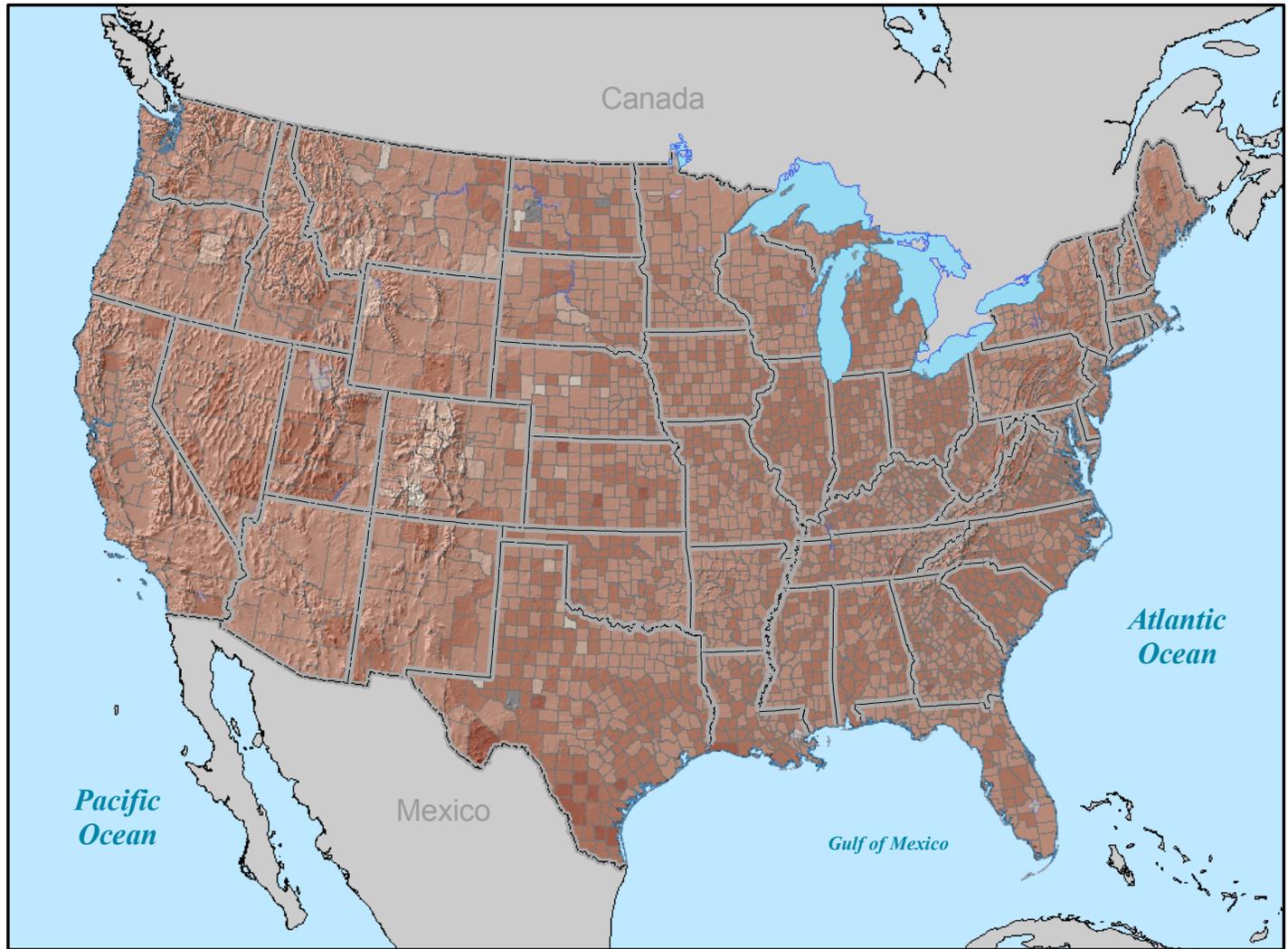
Number of VA Patients with Diabetes by County FY-2000

VA Health Care Atlas
HSR&D SDR 01-175

Source: VA Medical SAS Databases, FY-00

Created in ArcGIS 8 using ArcMap

Map 9.2



Percent of Patients

-  No Patients
-  .1 - 10.0%
-  10.1 - 20.0%
-  20.1 - 30.0%
-  Greater than 30%

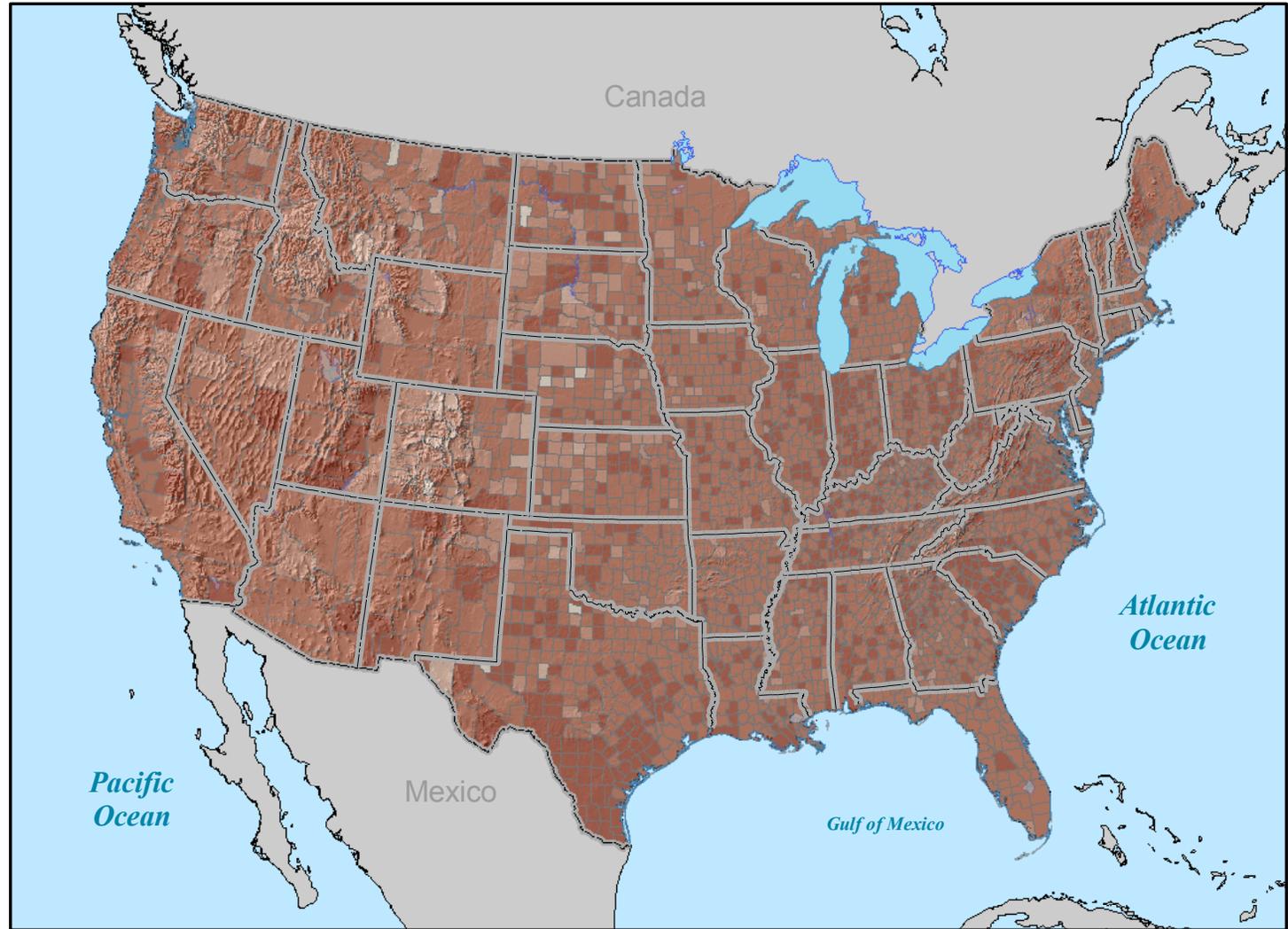
Percent of VA Patients with Diabetes by County FY-2000

VA Health Care Atlas
HSR&D SDR 01-175

Source: VA Medical SAS Databases, FY-00
Created in ArcGIS 8 using ArcMap

Diabetes

Map 9.3



Percent

-  No Visits
-  .1 - 10.0%
-  10.1 - 20.0%
-  20.1 - 30.0%
-  Greater than 30.0%

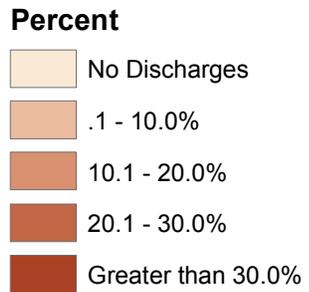
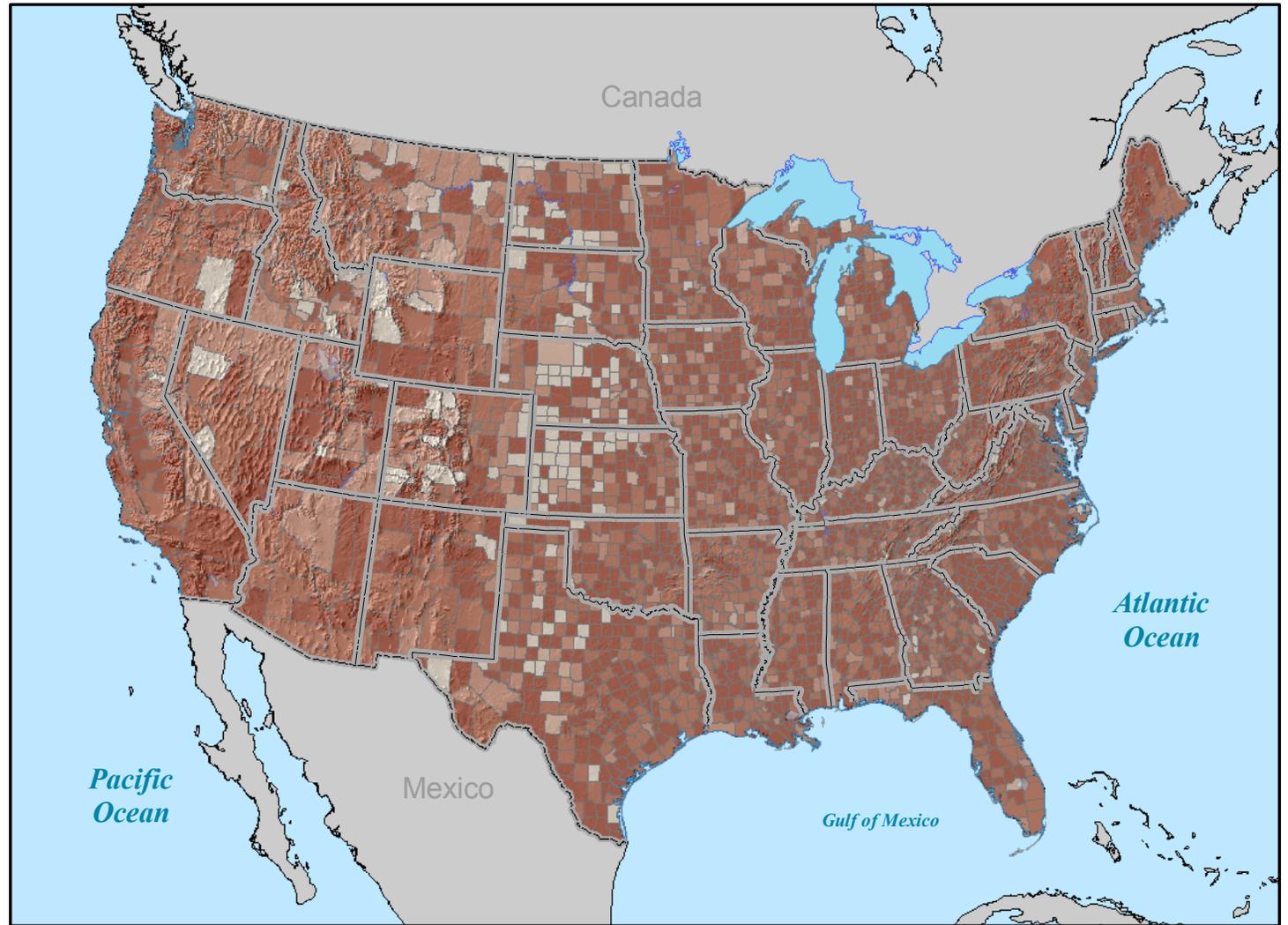
**Percent Disease-Specific Visits of Total Visits (Diabetes)
by County FY-2000**

VA Health Care Atlas
HSR&D SDR 01-175

Source: VA Medical SAS Databases, FY-00

Created in ArcGIS 8 using ArcMap

Map 9.4

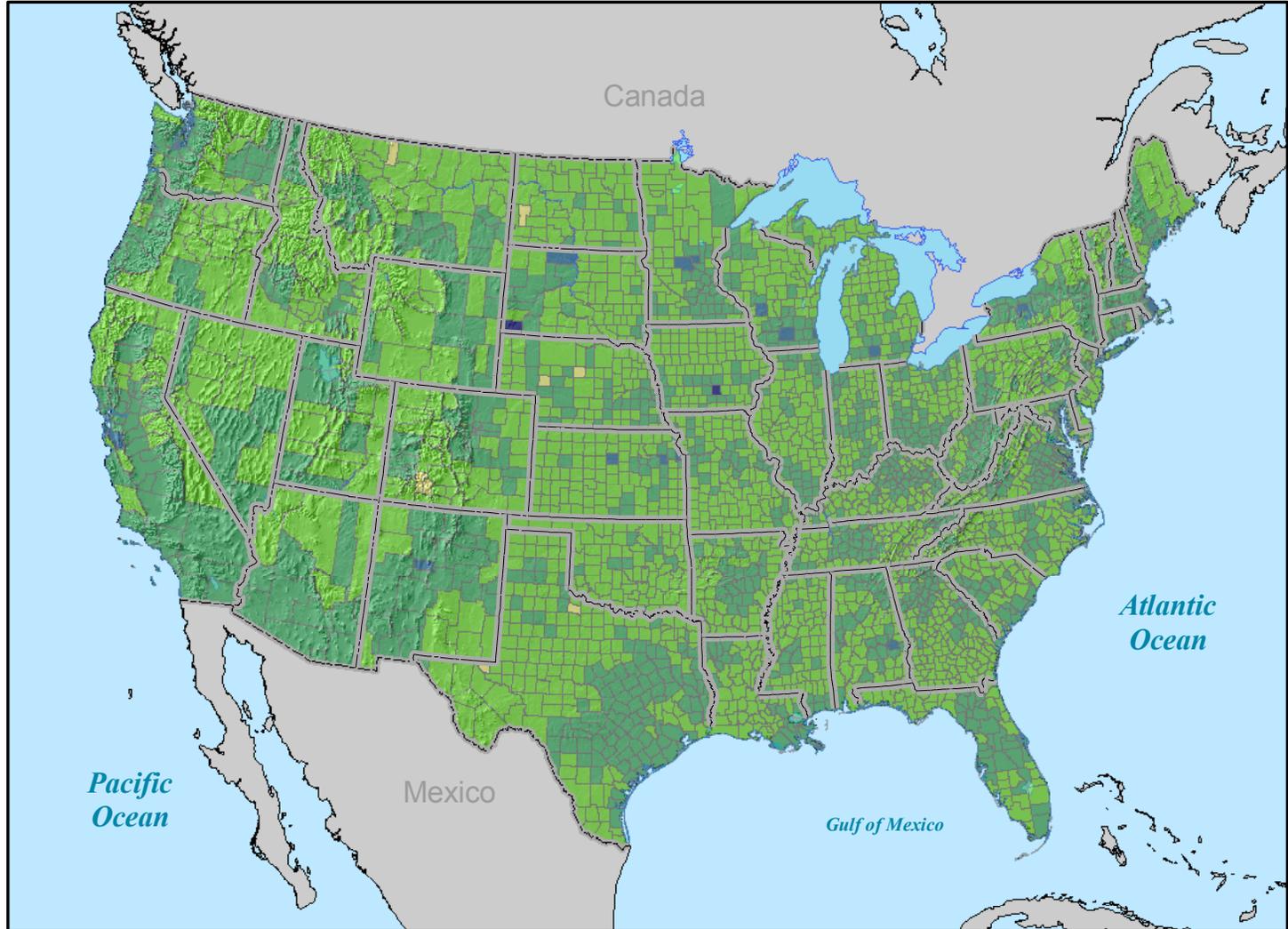
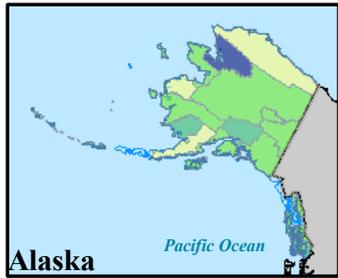


Percent Disease-Specific Discharges of Total Discharges (Diabetes) by County FY-2000

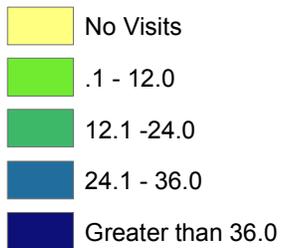
VA Health Care Atlas
HSR&D SDR 01-175
Source: VA Medical SAS Databases, FY-00
Created in ArcGIS 8 using ArcMap

Diabetes

Map 9.5



Number



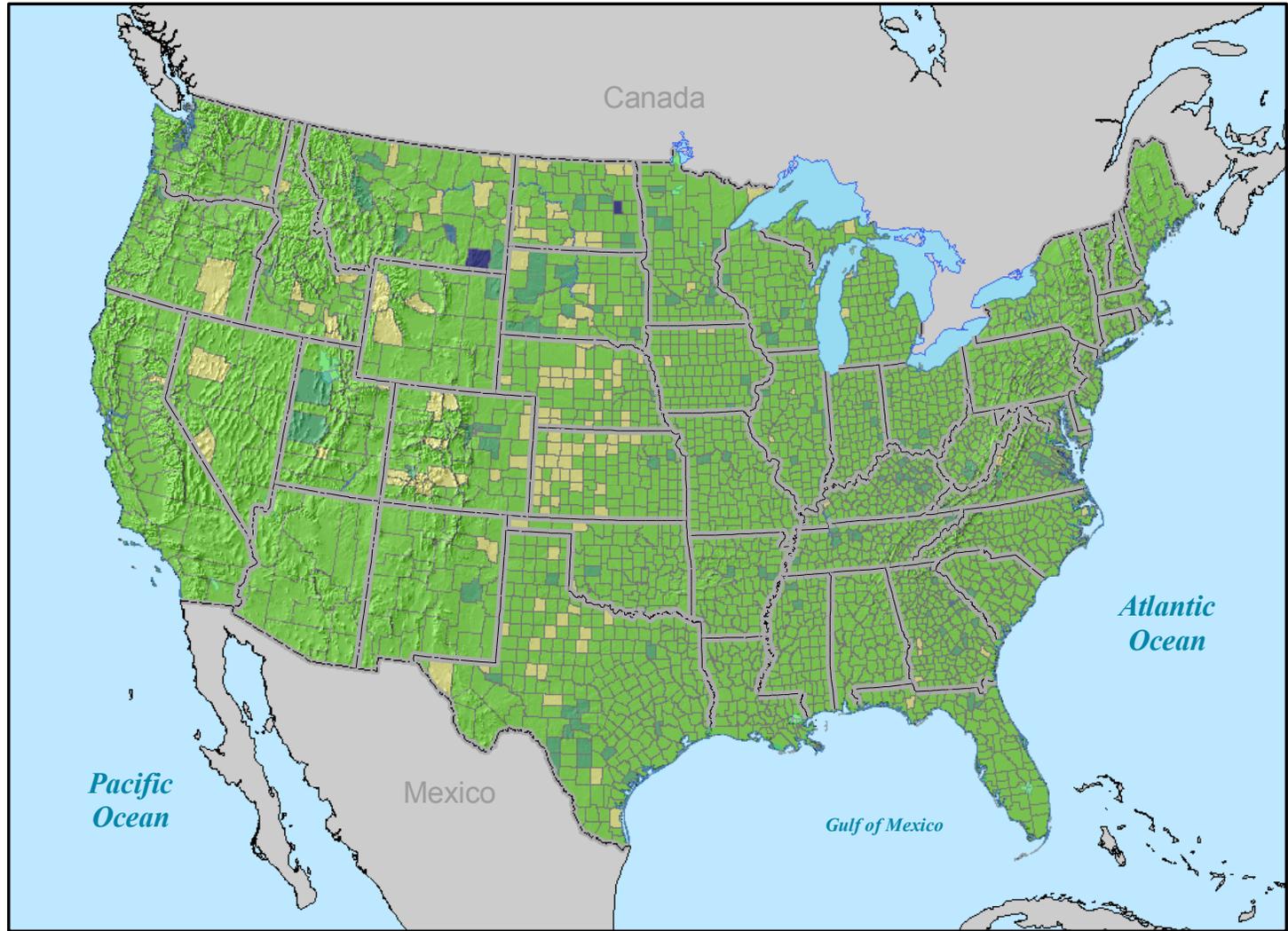
Average Number of Visits for Patients with Diabetes by County FY-2000

VA Health Care Atlas
HSR&D SDR 01-175

Source: VA Medical SAS Databases, FY-00

Created in ArcGIS 8 using ArcMap

Map 9.6



Number per 1,000

-  No Discharges
-  1 - 500
-  501 - 1000
-  1001 - 1500
-  Greater than 1500

**Disease Specific Discharges per 1,000 Patients with Diabetes
by County FY-2000**

VA Health Care Atlas
HSR&D SDR 01-175

Source: VA Medical SAS Databases, FY-00
Created in ArcGIS 8 using ArcMap

For More Information

One of the main reasons diabetes mellitus was chosen to be part of the QUERI initiative is because of its prevalence among veterans and the nation. Diabetes affects an estimated 10-16 million people in the United States. Microvascular diabetes complications are the leading cause of blindness, end stage renal disease, and amputation in the western world. Further, middle-aged persons with diabetes have two to four times the risk of macrovascular disease (e.g., coronary artery disease and stroke) and overall mortality compared to similar persons without diabetes.

The Diabetes Mellitus Quality Enhancement Research Initiative (QUERI-DM) was created to employ the QUERI process to improve the quality of care and health outcomes of veterans with diabetes, as well as to produce critical information on disseminating and implementing practices that are deemed essential for effective diabetes care.

QUERI-DM is located at the HSR&D Center of Excellence in Ann Arbor, Michigan and is co-chaired by Rod Hayward, MD (Research Coordinator) and Leonard Pogach, MD (Clinical Coordinator). Researchers or other interested parties are encouraged to contact the QUERI-DM Coordinator to learn more about VHA's current research foci and ongoing projects in the area of Diabetes:

Sarah Krein, PhD, RN
Center Administrative Coordinator (11H)
Center for Practice Management and Outcomes Research
PO Box 130170
VA Ann-Arbor Health Care System
Ann Arbor, Michigan 48113-0170
Telephone: 734/769-7100 x 6224
FAX: 734/761-2939
E-mail: Sarah.Krein@med.va.gov
Web Site: http://www.hsrd.ann-arbor.med.va.gov/queri/queri_index.htm

A summary of QUERI-DM activities is provided below. These descriptions were extracted from the Fact Sheets available on the Web site: <http://www.hsrd.research.va.gov/queri.cfm>.

Research Focus and Translation Activities

Since its inception in 1998, QUERI-DM has focused on evaluating the implementation of diabetes care guidelines system-wide and examining the impact of this implementation on costs and health outcomes. The primary objective of the QUERI-DM translation plan is to decrease the number of veterans with diabetes who are at high risk for preventable morbidity and mortality by reducing the number with: sub-optimal blood pressure (BP) control (systolic > 140mmHg or diastolic > 90mmHg); substantial elevations of LDL cholesterol (LDL > 140mg/dL); and substantial elevations in HbA1c > (9.0%). Reasons for targeting these 3 areas include:

- The HAIG (Healthcare Analysis and Information Group) FY98 Diabetes Costs and Outcomes Report, produced in collaboration with QUERI-DM, shows that a considerable number of veterans' care outcomes deviate from diabetes guidelines.
- Epidemiological evidence and simulation models indicate that improving these aspects of care is medically feasible, cost-effective, and that even modest improvements should result in significant improvements in outcome.
- Targeting these areas will produce the most rapid and sustainable benefits for veterans and can easily be incorporated into other QUERI projects to produce short- and long-term impacts.

In addition to broad-scale dissemination efforts being conducted by the Office of Quality and Performance (OQP) and the HAIG, QUERI-DM engaged primary care providers from one VISN in a focused education and cooperative feedback intervention. The results to date show that over the past several years there has been great progress in improving care and outcomes for veterans with diabetes

throughout the VA system. The education/feedback intervention is associated with improvements in primary care providers' knowledge about the importance of BP control among patients with diabetes and, in conjunction with current broad-scale dissemination activities, may promote even greater progress in decreasing the number of individuals with poor BP and lipid control. Observed improvements, both nationally and in the intensive intervention, translate into the prevention of more than 15,000 heart attacks and as many as 10,000 lives saved. Here are a few of the other exciting areas of QUERI-DM research:

- *TRIAD-VA*: Translating Research into Action for Diabetes in the VA (TRIAD-VA) is designed to provide a better understanding of the effectiveness of different systems and organizational features of health care delivery within the VHA to improve the processes and outcomes of care for veterans with diabetes. Further, by collaborating with the Centers for Disease Control and Prevention (CDC), which is conducting the same study with six managed care organizations, this project will allow the direct comparison of structural and organizational factors and health care outcomes in VHA with private sector health care organizations and the community-based populations for which they provide care.
- *Impact of Quality Management Intervention on Foot Care Outcomes*: Project objectives include describing facility-level variations in structural features, amputation rate, ulcer rate, quality of clinician-provided diabetes foot care and patient-reported foot care practices. The results of this study will provide important information for VA facilities about strategies for modifying or constructing programs that promote optimal care and improve outcomes for veterans with high-risk foot conditions.
- *Aspirin use and counseling about aspirin among veterans with diabetes*: Low dose aspirin therapy is a simple, inexpensive therapy

that significantly lowers cardiovascular risk among patients with diabetes. Data from a VA pilot test of the Diabetes Quality Improvement Program survey, conducted in collaboration with OQP, show that VA clinicians are doing well in counseling their diabetes patients about aspirin therapy, and that more than 70 percent of veterans with diabetes report using aspirin on a daily basis. Being counseled and using aspirin are both strongly associated with whether a patient has a pre-existing coronary condition. However, because almost all persons with diabetes are at high risk for cardiovascular events or death, clinicians need to remember to include counseling about aspirin therapy as a care priority for all patients with diabetes.

- *Evaluating new or current approaches to implementing key care practices and the impact on patient outcomes*: This is a high priority area of research for QUERI-DM. Projects currently underway include: Proactive Diabetes Case Management, Improving Diabetes Care Via Automated Telephone
- *Retinopathy risk stratification model to determine risk level and required diagnostic schedule for diabetes patients to minimize rates of vision loss and maximize cost effectiveness*. [See Vijan et al., JAMA 283(7), 2000]
- *Automated program evaluation and patient education/tracking toolkit to assist facility-level diabetes education programs*. [Can be downloaded from the QUERI-DM website] Assessment and Patient Education, Developing and Implementing a Quality Measure for Glycemic Control, and Disease Management and Educational Intervention Outcomes in High-Risk Diabetes. Some of the patient outcomes being assessed are glycemic control and the subsequent effect on longer-term microvascular complications; control of blood pressure and lipids and the effect on cardiovascular events; and patient satisfaction, health status and self-care practices.

