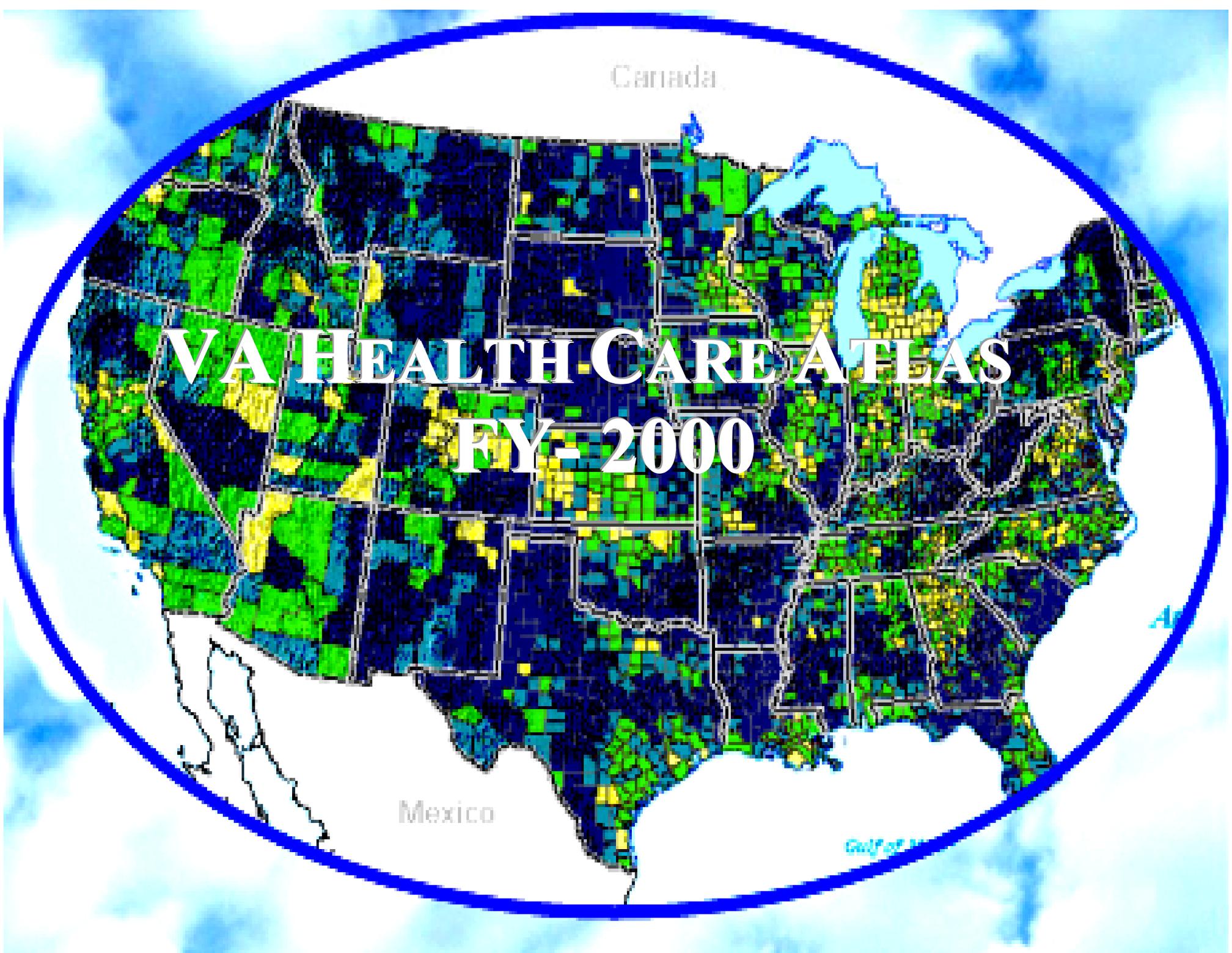


Canada

VA HEALTH CARE ATLAS FY-2000

Mexico

Gulf of Mexico



**Diagnostic Codes Used to Define Cohort
(Ischemic Heart Disease)**

ICD-9 code	Description
410	ACUTE MYOCARDIAL INFARCT*
4100	DISSECTION OF AORTA, UNSPECIFIED SITE
41000	ACUTE MYOCARDIAL INFARCTION, OF ANTEROLATERAL WALL, EPISODE OF CARE,
41001	ACUTE MYOCARDIAL INFARCTION, OF ANTEROLATERAL WALL, INITIAL EPISODE O
41002	ACUTE MYOCARDIAL INFARCTION, OF ANTEROLATERAL WALL, SUBSEQUENT EPISOD
4101	DISSECTION OF AORTA, THORACIC
41010	ACUTE MYOCARDIAL INFARCTION, OF OTHER ANTERIOR WALL, SUBSEQUENT EPISO
41011	ACUTE MYOCARDIAL INFARCTION, OF OTHER ANTERIOR WALL, INITIAL EPISODE
41012	ACUTE MYOCARDIAL INFARCTION, OF OTHER ANTERIOR WALL, SUBSEQUENT EPISO
4102	DISSECTION OF AORTA, ABDOMINAL
41020	ACUTE MYOCARDIAL INFARCTION, OF INFEROLATERAL WALL, EPISODE OF CARE U
41021	ACUTE MYOCARDIAL INFARCTION, OF INFEROLATERAL WALL, INITIAL EPISODE O
41022	ACUTE MYOCARDIAL INFARCTION, OF INFEROLATERAL WALL, SUBSEQUENT EPISO
4103	DISSECTION OF AORTA, THORACOABDOMINAL
41030	ACUTE MYOCARDIAL INFARCTION, OF INFEROPOSTERIOR WALL, EPISODE OF CARE
41031	ACUTE MYOCARDIAL INFARCTION, OF INFEROPOSTERIOR WALL, INITIAL EPISODE
41032	ACUTE MYOCARDIAL INFARCTION, OF INFEROPOSTERIOR WALL, SUBSEQUENT EPIS
4104	ACUTE MYOCARDIAL INFARCTION OF OTHER INFERIOR WALL
41040	ACUTE MYOCARDIAL INFARCTION, OF OTHER INFERIOR WALL, EPISODE OF CARE
41041	ACUTE MYOCARDIAL INFARCTION, OF OTHER INFERIOR WALL, INITIAL EPISODE
41042	ACUTE MYOCARDIAL INFARCTION, OF OTHER INFERIOR WALL, SUBSEQUENT EPISO
4105	ACUTE MYOCARDIAL INFARCTION OF OTHER LATERAL WALL
41050	ACUTE MYOCARDIAL INFARCTION, OF OTHER LATERAL WALL, EPISODE OF CARE U
41051	ACUTE MYOCARDIAL INFARCTION, OF OTHER LATERAL WALL, INITIAL EPISODE O
41052	ACUTE MYOCARDIAL INFARCTION, OF OTHER LATERAL WALL, SUBSEQUENT EPISOD
4106	TRUE POSTERIOR WALL INFARCTION
41060	ACUTE MYOCARDIAL INFARCTION, TRUE POSTERIOR WALL INFARCTION, EPISODE
41061	ACUTE MYOCARDIAL INFARCTION, TRUE POSTERIOR WALL INFARCTION, INITIAL

Ischemic Heart Disease

ICD-9 code	Description
41062	ACUTE MYOCARDIAL INFARCTION, TRUE POSTERIOR WALL INFARCTION, SUBSEQUENT EPISODE
4107	SUBENDOCARDIAL INFARCTION
41070	ACUTE MYOCARDIAL INFARCTION, SUBENDOCARDIAL INFARCTION, EPISODE OF CARE
41071	ACUTE MYOCARDIAL INFARCTION, SUBENDOCARDIAL INFARCTION, INITIAL EPISODE
41072	ACUTE MYOCARDIAL INFARCTION, SUBENDOCARDIAL INFARCTION, SUBSEQUENT EPISODE
4108	ACUTE MYOCARDIAL INFARCTION OF OTHER SPECIFIED SITES
41080	ACUTE MYOCARDIAL INFARCTION, OF OTHER SPECIFIED SITES, EPISODE OF CARE
41081	ACUTE MYOCARDIAL INFARCTION, OF OTHER SPECIFIED SITES, INITIAL EPISODE
41082	ACUTE MYOCARDIAL INFARCTION, OF OTHER SPECIFIED SITES, SUBSEQUENT EPISODE
4109	ACUTE MYOCARDIAL INFARCTION OF UNSPECIFIED SITE
41090	ACUTE MYOCARDIAL INFARCTION, UNSPECIFIED SITE, EPISODE OF CARE UNSPECIFIED
41091	ACUTE MYOCARDIAL INFARCTION, UNSPECIFIED SITE, INITIAL EPISODE OF CARE
41092	ACUTE MYOCARDIAL INFARCTION, UNSPECIFIED SITE, SUBSEQUENT EPISODE OF CARE
411	OTHER ACUTE ISCHEMIC HEART DISEASE*
4110	POSTMYOCARDIAL INFARCTION SYNDROME
4111	INTERMEDIATE CORONARY SYNDROME
4118	OTHER ACUTE/SUBACUTE FORMS OF ISCHEMIC HEART DISEASE - DO NOT USE
41181	ACUTE CORONARY OCCLUSION WITHOUT MYOCARDIAL INFARCTION
41189	OTHER ACUTE AND SUBACUTE FORMS OF ISCHEMIC HEART DISEASE
412	OLD MYOCARDIAL INFARCTION
414	OTHER CHRONIC ISCHEMIC HEART DISEASE*
4140	CORONARY ATHEROSCLEROSIS
41400	CORONARY ATHEROSCLEROSIS OF UNSPECIFIED TYPE OF VESSEL, NATIVE OR GRAFT
41401	CORONARY ATHEROSCLEROSIS OF NATIVE CORONARY VESSEL
41402	CORONARY ATHEROSCLEROSIS OF AUTOLOGOUS VEIN BYPASS GRAFT
41403	CORONARY ATHEROSCLEROSIS OF NONAUTOLOGOUS BIOLOGICAL BYPASS GRAFT
41404	CORONARY ATHEROSCLEROSIS OF ARTERY BYPASS GRAFT
41405	CORONARY ATHEROSCLEROSIS OF UNSPECIFIED TYPE OF BYPASS GRAFT
4141	ANEURYSM OF HEART*
41410	ANEURYSM OF HEART (WALL)
41411	ANEURYSM OF CORONARY VESSELS
41419	OTHER ANEURYSM OF HEART
4148	OTHER SPECIFIED FORMS OF CHRONIC ISCHEMIC HEART DISEASE
4149	CHRONIC ISCHEMIC HEART DISEASE, UNSPECIFIED

Highlights

Table 10.1

National Overview

In FY-2000, the VHA had 609,913 patients with either a primary or secondary diagnostic code of Ischemic Heart Disease (IHD). This number represents approximately 18 percent (18.4%) of the total patient population during the fiscal year (Table 10.1). The vast majority of patients were male (98.7%), with only 1.3% female. As expected, older age groups are more highly represented than younger ages. Less than 2% of IHD patients were in the age bracket under 45, 11.1% were aged 45-54, and 17.6% were between the ages of 55-64; by contrast, 38.4% of IHD patients were aged 65-74 and an additional 31.2% were 75 years of age or older. The proportion of patients who were married is similar to that of the total veteran patient population, with approximately two-thirds of patients married and one-third of patients in the “not married” category. The “Means Test” categories show that about one-third were Priority 1 - 3 (service-connected injured) veterans and about one-half were Priority 5 (low income).

VISN Overview

The volume of patients with IHD ranged from a high of 60,530 individuals in South Central network (VISN 16) to a low of 15,184 in the Rocky Mountain Network (VISN 19). As a proportion of all patients, over one-fifth of the total patient population had a diagnostic code of IHD in the following networks: New England (20.2%), Upstate New York (20.4%), Stars and Stripes (20.5%), Ohio (22.0%), Veterans in Partnership (21.9%), Central Plains (21.4%), Heartland (20.8%), and South Central (20.6%). Clearly, IHD is a high volume, common condition among the VHA patient population in some areas of the country. VISNs with relatively low

percentages of IHD patients in their total patient population include: the Desert Pacific (12.2%), the Northwest (14.7%) and Rocky Mountain (15.8%) networks. These differences may be reflective of the demographic profile of patients that reside in different geographic regions – the Desert Pacific network, for example, has a relatively large proportion of its veteran population under the age of 65 (see Veteran Population chapter, Table 1.1).

In general, the VISNs showed similar overall patterns as the national data; that is, IHD patients were primarily male and in older age brackets.

Table 10.2

This table compares utilization by the Ischemic Heart Disease (IHD) **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 IHD were selected. If a patient had IHD as a secondary diagnosis only, he/she is not included. Further, for our primary diagnosis IHD group we examined all utilization that occurred during the fiscal year, both IHD-specific and all other non-IHD related medical care obtained. As an example of what the data show and how to interpret the findings, examine the New England network (VISN 1). In this particular network, 14.43% of the total patients seen at a VA facility in fiscal year 2000 had a primary diagnosis of IHD. This group of patients accounted for 17.33% of the total bed-days of care in VISN 1, 27.79% of total discharges in VISN 1, and 18.72% of outpatient visits in VISN 1 made by all patients of VA health care services in the network for all medical conditions. The key findings of interest are in VISNs where there

Ischemic Heart Disease

are relatively low percentages of IHD patients, but the percentage of resources used is relatively high.

For example, in the Desert Pacific network (VISN 22) patients with a primary diagnosis of IHD accounted for 8.44% of the total patient population. However, these IHD patients accounted for almost 22% of all discharges in the VISN. In many of the VISNs, the percentage of discharges attributed to IHD appears high relative to the percentage IHD of the total patients. These data illustrate the costliness and resource intensity of this disease.

Table 10.3

Table 10.3 is similar to Table 10.2 except that patients who only had a **secondary** diagnosis of IHD are examined rather than patients who had a primary diagnosis. This table compares utilization by the IHD secondary diagnosis group for all health conditions they had during the year (i.e., includes both IHD-specific utilization and utilization for all other non-IHD care the patient may have received) with utilization by all VISN patients for all conditions.

Using the example of VISN 1, the data can be interpreted as follows: 5.8% of the patients in VISN 1 had at most a secondary diagnosis of IHD, but never a primary diagnosis. This group of patients accounted for 11.73% of the total bed-days of care, 10.65% of total discharges and 6.09% of outpatients visits utilized by all patients in the network for all conditions.

Table 10.4

Table 10.4 compares resource utilization specifically directed at treating IHD. In other words, we examine the utilization for which the primary diagnosis (DXLSF) was a defining diagnosis for the IHD, with utilization for all conditions by all patients in each network.

For example, in VISN 1 14.43% of the patients had some utilization for which the primary diagnosis was IHD. Utilization specifically

directed at treating the IHD accounted for 4.24% of all bed-days of care, 6.88% of all discharges, and 2.26% of all outpatient visits.

Table 10.5

Table 10.5 combines the information from Tables 10.2 and 10.4, comparing utilization by the Ischemic Heart Disease primary diagnosis group specifically directed at treating their IHD with utilization by this same group for all conditions. For example, in VISN 1 14.43% of the patients had some utilization for IHD. These patients accounted for 52,541 bed-days of care in FY-2000, of which 12,850, or about 24.46%, were utilized specifically for treating their IHD (i.e., primary diagnosis (DXLSF) of IHD). Similarly, 24.76% of the discharges for patients in the IHD primary diagnosis group resulted from inpatient stays to treat their IHD, and 12.06% of the outpatient visits made by these patients were for specifically for the treatment of IHD.

Costs

Cost data are reported for utilization of VA services by VA patients with IHD in Table 10.6 and Table 10.7. Veterans with IHD are identified by an IHD diagnosis for at least one inpatient or outpatient service received. We separately report for veterans who had at least one primary diagnosis of IHD and veterans whose only diagnoses of IHD are secondary to another diagnosis. Costs are for VA utilization and include inpatient, outpatient, and pharmacy services for all causes, not just for IHD-specific use. That is, we report all VA costs for all causes for individuals identified as having Ischemic Heart Disease.

There were 609,819 individuals with at least one primary or secondary diagnosis of IHD for whom cost data were available, and these costs averaged \$8,450 per veteran. Breaking these costs down by whether or not the veteran had at least one primary diagnosis of IHD, we have an average cost of \$8,183 per veteran for those with at least one primary care diagnosis of IHD and \$9,001 per veteran for those patients with only secondary diagnoses. Focusing on those

with at least one primary diagnosis of IHD, the \$8,183 costs per veteran are distributed as follows: 45.72% are for inpatient medical/surgical services, 8.12% are for other inpatient services, 31.53% are for outpatient services, and 14.63% are for pharmaceutical services. Across VISNs, overall costs per veteran with a primary diagnosis of IHD ranged from \$5,842 (VISN 14) to \$10,947 (VISN 22) per veteran.

Ischemic Heart Disease

**Table 10.1:
Overall Prevalence Statistics – Ischemic Heart Disease, FY-2000**

Veterans Integrated Service Network	Total Number of Patients	Patients with IHD		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	31,998	20.23	98.51	1.49	1.17	8.86	14.50	40.28	35.19	63.77	35.70	36.01	43.63
Upstate NY (2)	100,499	20,507	20.41	98.48	1.52	1.10	8.93	15.14	39.29	35.55	64.51	34.50	27.57	51.86
NY/NJ (3)	166,593	32,192	19.32	99.21	0.79	0.84	6.53	11.80	40.57	40.26	65.41	33.48	26.89	36.48
Stars and Stripes (4)	202,472	41,517	20.51	98.86	1.14	1.08	8.44	14.90	41.62	33.95	68.49	30.70	27.02	48.68
Capitol (5)	88,163	15,844	17.97	98.55	1.45	2.44	11.30	15.61	39.20	31.44	59.44	39.63	28.84	54.91
Mid-Atlantic (6)	161,081	29,365	18.23	98.77	1.23	1.93	13.31	19.62	38.01	27.13	69.15	29.77	39.18	48.81
Atlantic (7)	201,514	34,945	17.34	98.92	1.08	1.99	13.17	19.32	38.74	26.77	70.05	29.37	32.91	49.60
Sunshine (8)	308,906	57,432	18.59	98.57	1.43	1.25	9.17	16.92	37.72	34.94	69.98	28.66	36.36	45.77
Mid-South (9)	165,501	32,514	19.65	99.09	0.91	1.89	14.56	20.31	37.25	25.98	69.42	30.12	33.68	53.35
Ohio (10)	117,463	25,834	21.99	98.59	1.41	2.15	12.43	17.01	38.43	29.99	63.13	36.46	26.50	58.57
Vets in Partnership (11)	142,393	31,221	21.93	98.82	1.18	1.69	11.53	16.71	39.82	30.25	64.88	34.77	24.65	53.68
Great Lakes (12)	142,079	26,901	18.93	98.74	1.26	1.48	9.43	15.39	39.54	34.15	61.73	37.86	23.02	53.62
Upper Midwest (13)	96,279	15,900	16.51	99.03	0.97	0.81	8.78	15.21	41.34	33.87	69.95	28.84	27.83	42.59
Central Plains (14)	73,699	15,794	21.43	99.13	0.87	1.23	8.00	14.47	42.98	33.31	71.13	28.35	23.16	47.98
Heartland (15)	148,229	30,887	20.84	99.02	0.98	1.69	11.75	17.42	39.55	29.59	69.89	29.62	25.39	53.51
South Central (16)	294,286	60,530	20.57	98.61	1.39	3.34	15.43	21.54	35.01	24.68	67.16	31.63	33.60	54.26
Heart of Texas (17)	151,601	28,291	18.66	98.34	1.65	2.39	14.09	20.39	34.73	28.40	68.10	31.21	39.22	48.53
Southwest (18)	154,764	27,617	17.84	98.20	1.80	1.75	10.83	19.18	38.02	30.22	68.07	31.21	36.59	47.33
Rocky Mt. (19)	95,866	15,184	15.84	98.54	1.46	1.42	10.97	18.51	37.72	31.39	67.71	31.76	31.49	49.80
Northwest (20)	143,215	21,043	14.69	98.15	1.85	1.97	13.52	20.90	34.89	28.73	61.24	38.20	40.59	47.94
Sierra Pacific (21)	149,020	24,262	16.28	98.30	1.70	1.63	11.58	18.14	33.93	34.73	59.96	39.08	39.28	46.75
Desert Pacific (22)	178,204	21,788	12.23	98.25	1.75	2.02	13.04	23.05	33.58	28.31	52.86	46.19	35.41	51.20
National	3,314,672	609,913	18.40	98.70	1.30	1.70	11.09	17.60	38.37	31.24	66.71	32.50	31.45	49.60

**Table 10.2:
Overall Resource Utilization – Ischemic Heart Disease (Primary Diagnosis Group) Compared to All Patients, FY-2000**

Veterans Integrated Service Network (VISN)	Total Patients		Total Patients IHD			Bed Days of Care			Discharges			Outpatient Visits		
	N	N	%	Total	IHD		Total	IHD		Total	IHD			
				N	N	%	N	N	%	N	N	%		
New England (1)	158,204	22,829	14.43	303,134	52,541	17.33	24,413	6,784	27.79	1,990,550	372,585	18.72		
Upstate NY (2)	100,499	13,955	13.89	120,203	25,165	20.94	11,871	3,125	26.32	1,093,796	195,978	17.92		
NY/NJ (3)	166,593	21,379	12.83	405,186	49,331	12.17	24,128	5,291	21.93	1,854,064	291,012	15.70		
Stars and Stripes (4)	202,472	30,131	14.88	284,688	47,595	16.72	24,122	6,380	26.45	1,846,937	336,221	18.20		
Capitol (5)	88,163	11,553	13.10	222,405	32,587	14.65	17,107	4,047	23.66	1,007,572	162,427	16.12		
Mid-Atlantic (6)	161,081	18,818	11.68	361,832	57,193	15.81	31,256	7,865	25.16	1,491,680	254,004	17.03		
Atlantic (7)	201,514	22,869	11.35	369,514	52,461	14.20	29,275	7,019	23.98	1,891,761	277,684	14.68		
Sunshine (8)	308,906	37,435	12.12	392,501	78,113	19.90	41,850	11,196	26.75	3,109,217	502,188	16.15		
Mid-South (9)	165,501	22,069	13.33	316,108	62,250	19.69	34,579	9,892	28.61	1,483,519	280,215	18.89		
Ohio (10)	117,463	19,392	16.51	191,574	40,384	21.08	18,945	5,396	28.48	1,327,847	273,773	20.62		
Vets in Partnership (11)	142,393	19,918	13.99	311,786	43,588	13.98	23,779	6,602	27.76	1,368,643	247,325	18.07		
Great Lakes (12)	142,079	18,488	13.01	334,130	57,160	17.11	30,157	7,807	25.89	1,715,017	285,760	16.66		
Upper Midwest (13)	96,279	9,338	9.70	107,644	21,762	20.22	16,092	3,676	22.84	934,533	111,961	11.98		
Central Plains (14)	73,699	9,519	12.92	76,697	15,027	19.59	9,898	2,562	25.88	674,604	106,820	15.83		
Heartland (15)	148,229	19,761	13.33	211,861	37,328	17.62	25,568	6,382	24.96	1,458,394	237,711	16.30		
South Central (16)	294,286	41,440	14.08	454,315	114,011	25.10	47,751	15,706	32.89	2,750,358	557,784	20.28		
Heart of Texas (17)	151,601	20,270	13.37	297,463	53,298	17.92	25,932	7,162	27.62	1,544,273	287,102	18.59		
Southwest (18)	154,764	18,925	12.23	167,362	36,716	21.94	23,822	6,491	27.25	1,574,259	282,282	17.93		
Rocky Mt. (19)	95,866	10,430	10.88	132,102	23,621	17.88	15,065	3,706	24.60	959,415	145,383	15.15		
Northwest (20)	143,215	13,375	9.34	181,076	33,605	18.56	24,296	5,647	23.24	1,488,150	202,686	13.62		
Sierra Pacific (21)	149,020	17,096	11.47	214,370	32,669	15.24	19,163	4,329	22.59	1,630,530	258,029	15.82		
Desert Pacific (22)	178,204	15,036	8.44	231,584	35,784	15.45	25,132	5,445	21.67	2,119,773	275,806	13.01		
National	3,314,672	411,680	12.42	5,687,535	1,002,189	17.62	544,201	142,510	26.19	35,314,892	5,944,736	16.83		

Table 10.3:
Overall Resource Utilization – Ischemic Heart Disease (Secondary Diagnosis Group) Compared to All Patients, FY-2000

Veterans Integrated Service Network (VISN)	Total Patients	Total Patients IHD		Bed Days of Care			Discharges			Outpatient Visits		
		N	N	%	Total	IHD	%	Total	IHD	%	Total	IHD
	N	N	%	N	N	%	N	N	%	N	N	%
New England (1)	158,204	9,169	5.80	303,134	35,555	11.73	24,413	2,599	10.65	1,990,550	121,283	6.09
Upstate NY (2)	100,499	6,552	6.52	120,203	22,365	18.61	11,871	1,963	16.54	1,093,796	85,652	7.83
NY/NJ (3)	166,593	10,813	6.49	405,186	42,561	10.50	24,128	2,927	12.13	1,854,064	119,453	6.44
Stars and Stripes (4)	202,472	11,386	5.62	284,688	35,327	12.41	24,122	3,127	12.96	1,846,937	121,897	6.60
Capitol (5)	88,163	4,291	4.87	222,405	28,231	12.69	17,107	1,808	10.57	1,007,572	53,014	5.26
Mid-Atlantic (6)	161,081	10,547	6.55	361,832	44,523	12.30	31,256	3,958	12.66	1,491,680	123,256	8.26
Atlantic (7)	201,514	12,076	5.99	369,514	53,417	14.46	29,275	4,075	13.92	1,891,761	134,591	7.11
Sunshine (8)	308,906	19,997	6.47	392,501	61,766	15.74	41,850	6,112	14.60	3,109,217	248,296	7.99
Mid-South (9)	165,501	10,445	6.31	316,108	45,782	14.48	34,579	4,906	14.19	1,483,519	118,651	8.00
Ohio (10)	117,463	6,442	5.48	191,574	28,865	15.07	18,945	2,443	12.90	1,327,847	83,802	6.31
Vets in Partnership (11)	142,393	11,303	7.94	311,786	39,563	12.69	23,779	3,342	14.05	1,368,643	123,712	9.04
Great Lakes (12)	142,079	8,413	5.92	334,130	38,509	11.53	30,157	3,637	12.06	1,715,017	113,729	6.63
Upper Midwest (13)	96,279	6,562	6.82	107,644	19,950	18.53	16,092	2,760	17.15	934,533	80,813	8.65
Central Plains (14)	73,699	6,275	8.51	76,697	14,156	18.46	9,898	1,607	16.24	674,604	68,610	10.17
Heartland (15)	148,229	11,126	7.51	211,861	26,396	12.46	25,568	3,485	13.63	1,458,394	123,680	8.48
South Central (16)	294,286	19,090	6.49	454,315	60,426	13.30	47,751	6,090	12.75	2,750,358	206,212	7.50
Heart of Texas (17)	151,601	8,021	5.29	297,463	41,820	14.06	25,932	3,098	11.95	1,544,273	104,034	6.74
Southwest (18)	154,764	8,692	5.62	167,362	21,956	13.12	23,822	2,883	12.10	1,574,259	113,608	7.22
Rocky Mt. (19)	95,866	4,754	4.96	132,102	13,605	10.30	15,065	1,648	10.94	959,415	63,915	6.66
Northwest (20)	143,215	7,668	5.35	181,076	24,593	13.58	24,296	3,398	13.99	1,488,150	102,697	6.90
Sierra Pacific (21)	149,020	7,166	4.81	214,370	21,277	9.93	19,163	1,999	10.43	1,630,530	91,776	5.63
Desert Pacific (22)	178,204	6,752	3.79	231,584	25,712	11.10	25,132	2,786	11.09	2,119,773	109,752	5.18
National	3,314,672	198,233	5.98	5,687,535	746,355	13.12	544,201	70,651	12.98	35,314,892	2,512,433	7.11

Table 10.4:
Resource Utilization for Treatment of Ischemic Heart Disease (Primary Diagnosis Group) Compared to Overall Resource Utilization by All Patients, FY-2000

Veterans Integrated Service Network (VISN)	Total Patients		Total Patients IHD		Bed Days of Care			Discharges			Outpatient Visits		
					Total	IHD		Total	IHD		Total	IHD	
	N		N	%	N	N	%	N	N	%	N	N	%
New England (1)	158,204		22,829	14.43	303,134	12,850	4.24	24,413	1,680	6.88	1,990,550	44,924	2.26
Upstate NY (2)	100,499		13,955	13.89	120,203	5,282	4.39	11,871	857	7.22	1,093,796	25,842	2.36
NY/NJ (3)	166,593		21,379	12.83	405,186	11,782	2.91	24,128	1,410	5.84	1,854,064	40,948	2.21
Stars and Stripes (4)	202,472		30,131	14.88	284,688	9,399	3.30	24,122	1,597	6.62	1,846,937	53,075	2.87
Capitol (5)	88,163		11,553	13.10	222,405	5,946	2.67	17,107	903	5.28	1,007,572	19,881	1.97
Mid-Atlantic (6)	161,081		18,818	11.68	361,832	15,147	4.19	31,256	2,503	8.01	1,491,680	38,671	2.59
Atlantic (7)	201,514		22,869	11.35	369,514	13,847	3.75	29,275	2,481	8.47	1,891,761	37,578	1.99
Sunshine (8)	308,906		37,435	12.12	392,501	23,893	6.09	41,850	3,914	9.35	3,109,217	67,937	2.19
Mid-South (9)	165,501		22,069	13.33	316,108	15,871	5.02	34,579	2,945	8.52	1,483,519	41,039	2.77
Ohio (10)	117,463		19,392	16.51	191,574	8,361	4.36	18,945	1,356	7.16	1,327,847	37,832	2.85
Vets in Partnership (11)	142,393		19,918	13.99	311,786	9,131	2.93	23,779	1,724	7.25	1,368,643	34,759	2.54
Great Lakes (12)	142,079		18,488	13.01	334,130	12,018	3.60	30,157	1,912	6.34	1,715,017	36,797	2.15
Upper Midwest (13)	96,279		9,338	9.70	107,644	7,109	6.60	16,092	1,283	7.97	934,533	14,385	1.54
Central Plains (14)	73,699		9,519	12.92	76,697	3,791	4.94	9,898	762	7.70	674,604	15,698	2.33
Heartland (15)	148,229		19,761	13.33	211,861	8,883	4.19	25,568	1,925	7.53	1,458,394	32,901	2.26
South Central (16)	294,286		41,440	14.08	454,315	25,521	5.62	47,751	4,338	9.08	2,750,358	72,307	2.63
Heart of Texas (17)	151,601		20,270	13.37	297,463	11,946	4.02	25,932	1,843	7.11	1,544,273	38,425	2.49
Southwest (18)	154,764		18,925	12.23	167,362	10,211	6.10	23,822	1,973	8.28	1,574,259	38,254	2.43
Rocky Mt. (19)	95,866		10,430	10.88	132,102	6,668	5.05	15,065	1,142	7.58	959,415	19,858	2.07
Northwest (20)	143,215		13,375	9.34	181,076	8,530	4.71	24,296	1,664	6.85	1,488,150	25,039	1.68
Sierra Pacific (21)	149,020		17,096	11.47	214,370	7,747	3.61	19,163	1,075	5.61	1,630,530	28,960	1.78
Desert Pacific (22)	178,204		15,036	8.44	231,584	9,763	4.22	25,132	1,667	6.63	2,119,773	28,320	1.34
National	3,314,672		411,680	12.42	5,687,535	243,696	4.28	544,201	40,954	7.53	35,314,892	793,430	2.25

Ischemic Heart Disease

**Table 10.5:
Resource Utilization for Treatment of Ischemic Heart Disease Compared to Overall Utilization by the Ischemic Heart Disease Cohort (Primary Diagnosis Group), FY-2000**

Veterans Integrated Service Network (VISN)	Total Patients	Total Patients IHD		Bed Days of Care			Discharges			Outpatient Visits		
	N	N	%	Total	IHD		Total	IHD		Total	IHD	
				N	N	%	N	N	%	N	N	%
New England (1)	158,204	22,829	14.43	52,541	12,850	24.46	6,784	1,680	24.76	372,585	44,924	12.06
Upstate NY (2)	100,499	13,955	13.89	25,165	5,282	20.99	3,125	857	27.42	195,978	25,842	13.19
NY/NJ (3)	166,593	21,379	12.83	49,331	11,782	23.88	5,291	1,410	26.65	291,012	40,948	14.07
Stars and Stripes (4)	202,472	30,131	14.88	47,595	9,399	19.75	6,380	1,597	25.03	336,221	53,075	15.79
Capitol (5)	88,163	11,553	13.10	32,587	5,946	18.25	4,047	903	22.31	162,427	19,881	12.24
Mid-Atlantic (6)	161,081	18,818	11.68	57,193	15,147	26.48	7,865	2,503	31.82	254,004	38,671	15.22
Atlantic (7)	201,514	22,869	11.35	52,461	13,847	26.39	7,019	2,481	35.35	277,684	37,578	13.53
Sunshine (8)	308,906	37,435	12.12	78,113	23,893	30.59	11,196	3,914	34.96	502,188	67,937	13.53
Mid-South (9)	165,501	22,069	13.33	62,250	15,871	25.50	9,892	2,945	29.77	280,215	41,039	14.65
Ohio (10)	117,463	19,392	16.51	40,384	8,361	20.70	5,396	1,356	25.13	273,773	37,832	13.82
Vets in Partnership (11)	142,393	19,918	13.99	43,588	9,131	20.95	6,602	1,724	26.11	247,325	34,759	14.05
Great Lakes (12)	142,079	18,488	13.01	57,160	12,018	21.03	7,807	1,912	24.49	285,760	36,797	12.88
Upper Midwest (13)	96,279	9,338	9.70	21,762	7,109	32.67	3,676	1,283	34.90	111,961	14,385	12.85
Central Plains (14)	73,699	9,519	12.92	15,027	3,791	25.23	2,562	762	29.74	106,820	15,698	14.70
Heartland (15)	148,229	19,761	13.33	37,328	8,883	23.80	6,382	1,925	30.16	237,711	32,901	13.84
South Central (16)	294,286	41,440	14.08	114,011	25,521	22.38	15,706	4,338	27.62	557,784	72,307	12.96
Heart of Texas (17)	151,601	20,270	13.37	53,298	11,946	22.41	7,162	1,843	25.73	287,102	38,425	13.38
Southwest (18)	154,764	18,925	12.23	36,716	10,211	27.81	6,491	1,973	30.40	282,282	38,254	13.55
Rocky Mt. (19)	95,866	10,430	10.88	23,621	6,668	28.23	3,706	1,142	30.81	145,383	19,858	13.66
Northwest (20)	143,215	13,375	9.34	33,605	8,530	25.38	5,647	1,664	29.47	202,686	25,039	12.35
Sierra Pacific (21)	149,020	17,096	11.47	32,669	7,747	23.71	4,329	1,075	24.83	258,029	28,960	11.22
Desert Pacific (22)	178,204	15,036	8.44	35,784	9,763	27.28	5,445	1,667	30.62	275,806	28,320	10.27
National	3,314,672	411,680	12.42	1,002,189	243,696	24.32	142,510	40,954	28.74	5,944,736	793,430	13.35

**Table 10.6:
FY-2000 Cost of Ischemic Heart Disease (Primary Diagnosis)**

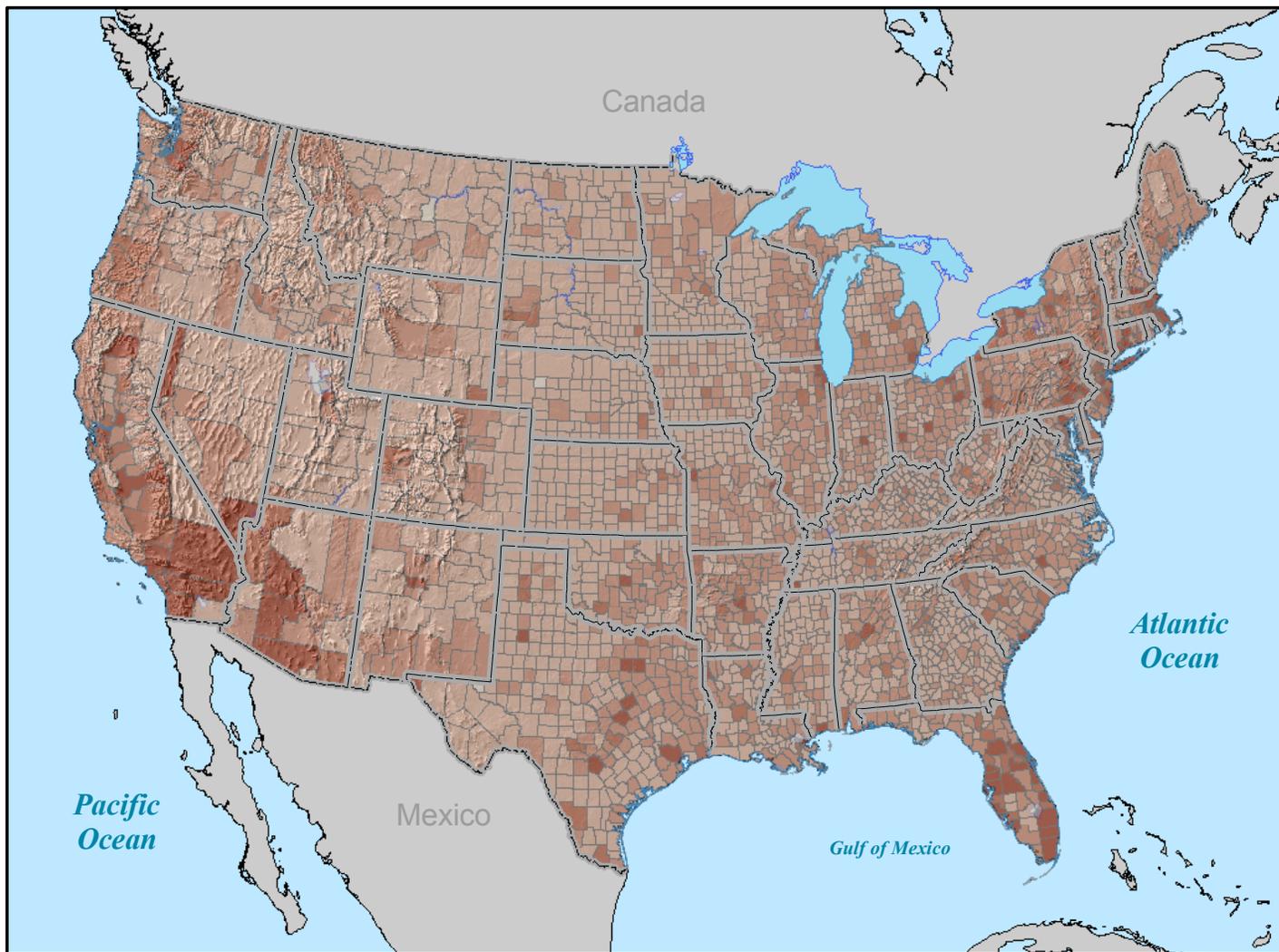
Veterans Integrated Service Network	No. of Patients	Outpatient		Inpatient Med/Surg		Inpatient Other		Pharmacy		Total
		\$	%	\$	%	\$	%	\$	%	
New England (1)	22896	71,364,055	35.86%	87,980,235	44.21%	16,241,969	8.16%	23,436,302	11.78%	199,022,562
Upstate NY (2)	14008	32,645,181	35.75%	35,186,616	38.53%	7,851,416	8.60%	15,643,035	17.13%	91,326,248
NY/NJ (3)	21470	54,621,993	31.05%	74,744,921	42.48%	17,786,540	10.11%	28,789,512	16.36%	175,942,967
Stars and Stripes (4)	30211	51,654,131	28.64%	74,947,311	41.56%	17,629,250	9.78%	36,113,914	20.02%	180,344,606
Capitol (5)	11589	28,164,100	29.28%	47,359,774	49.24%	8,376,113	8.71%	12,291,129	12.78%	96,191,117
Mid-Atlantic (6)	18906	45,930,848	28.69%	80,464,612	50.27%	10,611,940	6.63%	23,065,515	14.41%	160,072,915
Atlantic (7)	22966	50,426,285	30.58%	77,333,205	46.90%	11,195,754	6.79%	25,937,889	15.73%	164,893,132
Sunshine (8)	37641	84,458,571	34.42%	101,249,984	41.26%	17,498,012	7.13%	42,167,498	17.18%	245,374,064
Mid-South (9)	22157	52,656,065	29.60%	88,277,590	49.62%	10,058,340	5.65%	26,914,577	15.13%	177,906,571
Ohio (10)	19448	45,453,899	33.31%	54,226,883	39.74%	14,932,104	10.94%	21,834,073	16.00%	136,446,958
Vets in Partnership (11)	20002	57,582,331	34.29%	70,030,106	41.71%	15,485,946	9.22%	24,808,242	14.78%	167,906,626
Great Lakes (12)	18566	54,815,101	32.95%	74,845,736	44.99%	15,797,879	9.50%	20,883,640	12.55%	166,342,355
Upper Midwest (13)	9371	20,859,968	25.00%	48,283,565	57.88%	4,748,934	5.69%	9,533,664	11.43%	83,426,131
Central Plains (14)	9573	18,982,263	33.94%	23,030,037	41.18%	3,343,670	5.98%	10,570,101	18.90%	55,926,071
Heartland (15)	19857	42,387,308	33.19%	57,700,338	45.19%	9,191,207	7.20%	18,413,900	14.42%	127,692,753
South Central (16)	41608	106,807,327	31.77%	153,891,981	45.77%	26,779,409	7.97%	48,725,679	14.49%	336,204,397
Heart of Texas (17)	20354	40,884,849	25.70%	78,985,876	49.66%	15,106,987	9.50%	24,084,378	15.14%	159,062,090
Southwest (18)	19028	44,425,591	33.93%	59,214,181	45.22%	9,806,779	7.49%	17,487,861	13.36%	130,934,412
Rocky Mt. (19)	10487	21,685,571	26.57%	42,963,586	52.64%	5,425,858	6.65%	11,547,880	14.15%	81,622,895
Northwest (20)	13408	38,301,405	30.33%	61,310,101	48.55%	11,194,968	8.86%	15,477,954	12.26%	126,284,429
Sierra Pacific (21)	17176	47,082,940	33.58%	61,219,728	43.67%	13,979,691	9.97%	17,915,889	12.78%	140,198,247
Desert Pacific (22)	15107	50,958,728	30.81%	86,776,997	52.47%	10,584,226	6.40%	17,059,560	10.32%	165,379,512
National	411643	1,062,148,512	31.53%	1,540,023,363	45.72%	273,626,991	8.12%	492,702,194	14.63%	3,368,501,059

Ischemic Heart Disease

**Table 10.7:
FY-2000 Cost of Ischemic Heart Disease (Secondary Diagnosis)**

Veterans Integrated Service Network	No. of Patients	Outpatient		Inpatient Med/Surg		Inpatient Other		Pharmacy		Total
		\$	%	\$	%	\$	%	\$	%	\$
New England (1)	9,198	20,789,628	24.80%	30,989,099	36.96%	23,244,761	27.72%	8,820,602	10.52%	83,844,091
Upstate NY (2)	6,574	14,010,211	22.18%	23,986,130	37.97%	17,967,010	28.44%	7,210,885	11.41%	63,174,236
NY/NJ (3)	10,859	21,799,628	21.09%	42,495,875	41.12%	26,174,521	25.33%	12,874,679	12.46%	103,344,704
Stars and Stripes (4)	11,423	17,010,938	18.64%	35,635,867	39.04%	24,248,857	26.56%	14,387,532	15.76%	91,283,194
Capitol (5)	4,303	8,779,289	17.45%	22,350,067	44.44%	14,975,592	29.77%	4,192,081	8.33%	50,297,029
Mid-Atlantic (6)	10,584	19,736,151	22.65%	34,192,645	39.24%	20,423,531	23.44%	12,795,389	14.68%	87,147,716
Atlantic (7)	12,123	22,965,216	21.87%	44,966,901	42.82%	23,766,995	22.63%	13,315,308	12.68%	105,014,419
Sunshine (8)	20,101	40,287,617	27.33%	53,116,519	36.03%	33,028,731	22.40%	21,003,447	14.25%	147,436,314
Mid-South (9)	10,482	20,046,710	21.76%	45,038,763	48.89%	14,407,190	15.64%	12,629,239	13.71%	92,121,902
Ohio (10)	6,464	12,901,008	19.90%	25,484,774	39.31%	20,362,779	31.41%	6,074,328	9.37%	64,822,890
Vets in Partnership (11)	11,357	22,564,996	25.62%	27,589,426	31.32%	24,373,878	27.67%	13,561,885	15.40%	88,090,185
Great Lakes (12)	8,447	20,443,309	22.42%	39,588,448	43.41%	20,977,282	23.00%	10,185,037	11.17%	91,194,076
Upper Midwest (13)	6,584	13,529,109	21.90%	31,754,761	51.41%	9,511,261	15.40%	6,970,454	11.29%	61,765,585
Central Plains (14)	6,295	10,735,999	26.08%	15,790,028	38.35%	6,723,374	16.33%	7,921,557	19.24%	41,170,958
Heartland (15)	11,172	18,559,114	26.21%	29,809,409	42.10%	11,153,263	15.75%	11,278,818	15.93%	70,800,604
South Central (16)	19,163	33,423,839	24.30%	58,028,886	42.20%	24,527,656	17.84%	21,540,128	15.66%	137,520,510
Heart of Texas (17)	8,075	14,920,923	19.33%	32,292,177	41.83%	19,896,385	25.77%	10,083,819	13.06%	77,193,303
Southwest (18)	8,740	15,888,210	24.74%	28,604,759	44.54%	11,678,310	18.18%	8,051,197	12.54%	64,222,475
Rocky Mt. (19)	4,790	8,960,198	24.06%	18,211,821	48.90%	4,966,574	13.33%	5,106,132	13.71%	37,244,724
Northwest (20)	7,671	17,297,819	23.13%	34,033,338	45.52%	14,334,949	19.17%	9,106,055	12.18%	74,772,161
Sierra Pacific (21)	7,195	16,137,180	23.30%	27,341,243	39.47%	18,498,885	26.71%	7,292,510	10.53%	69,269,818
Desert Pacific (22)	6,783	19,635,270	23.77%	40,046,977	48.47%	15,691,212	18.99%	7,247,420	8.77%	82,620,879
National	198176	410,422,359	23.00%	741,347,913	41.55%	400,932,997	22.47%	231,648,504	12.98%	1,784,351,773

Map 10.1



Number of Patients

-  No Patients
-  1 - 100
-  101 - 500
-  501 - 1,000
-  Greater than 1,000

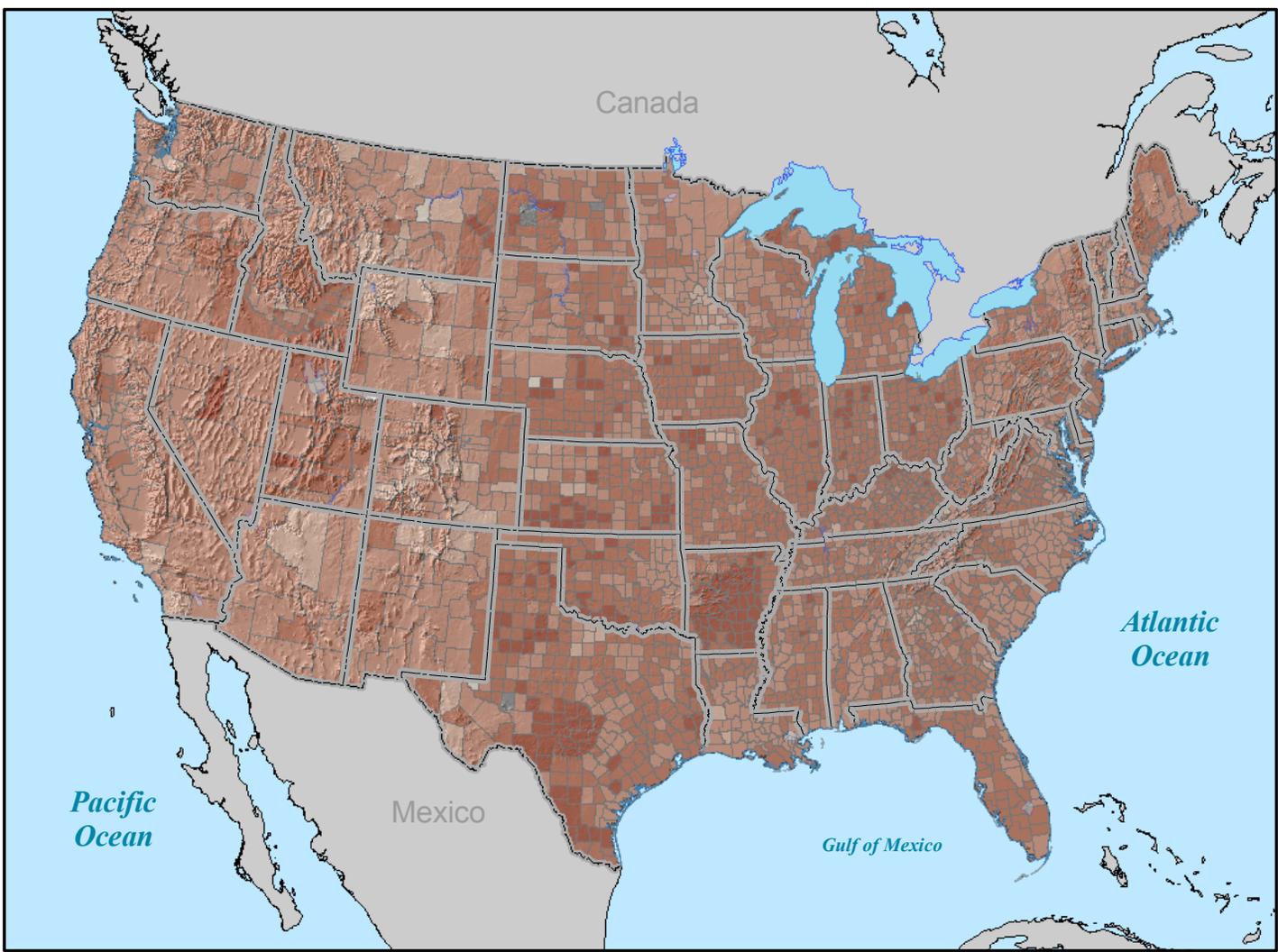
Number of VA Patients with Ischemic Heart Disease by County FY-2000

VA Health Care Atlas
HSR&D SDR 01-175

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

Ischemic Heart Disease

Map 10.2



Percent of Patients

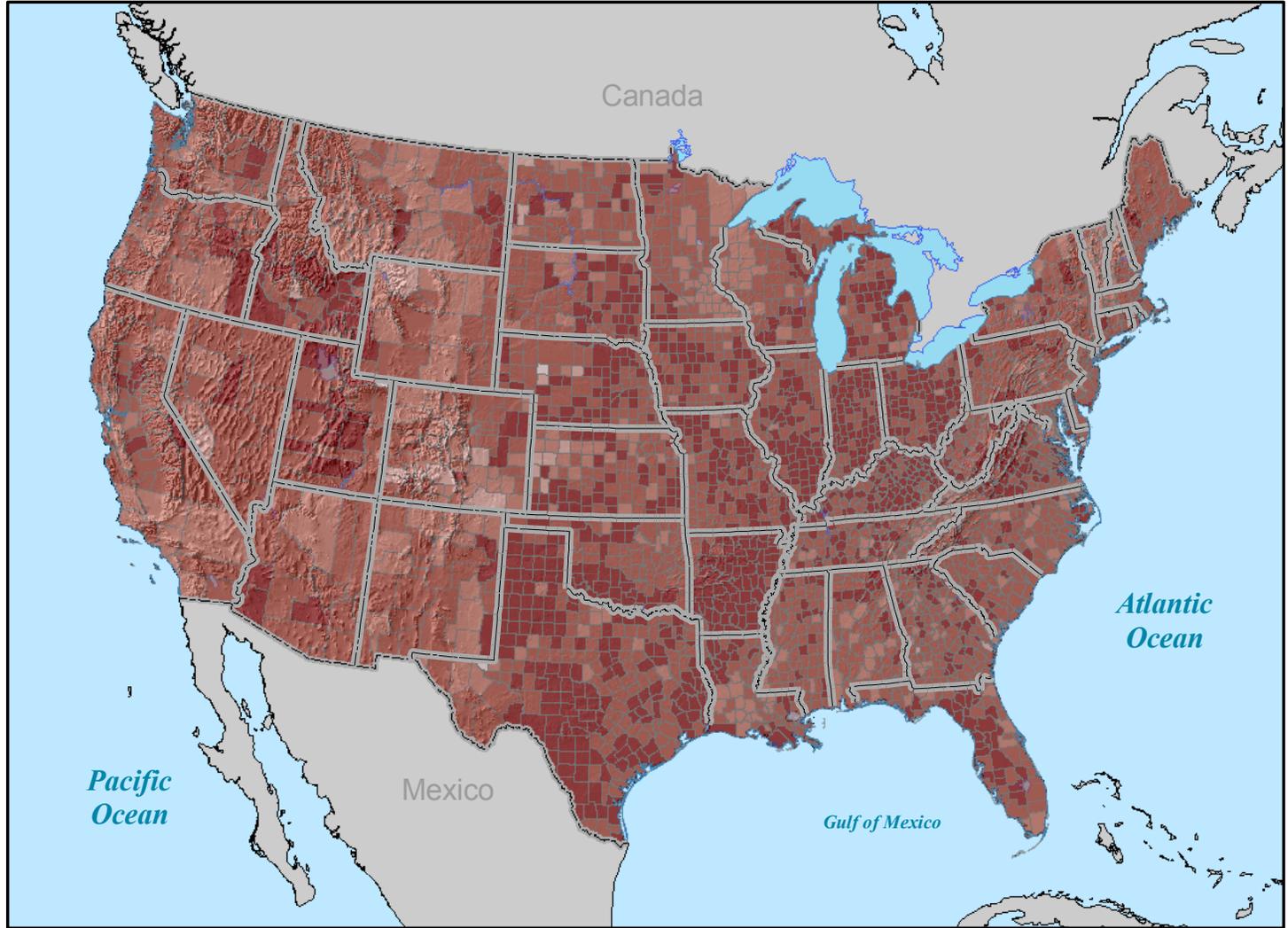
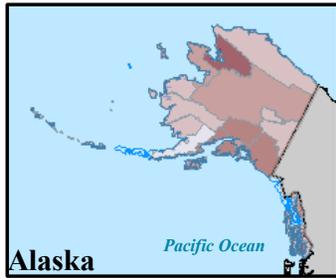
-  No Patients
-  .1 - 10.0%
-  10.1 - 20.0%
-  20.1 - 30.0%
-  Greater than 30%

Percent of VA Patients with Ischemic Heart Disease 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 10.3



Percent

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

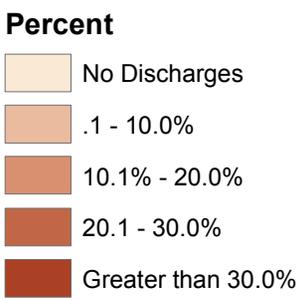
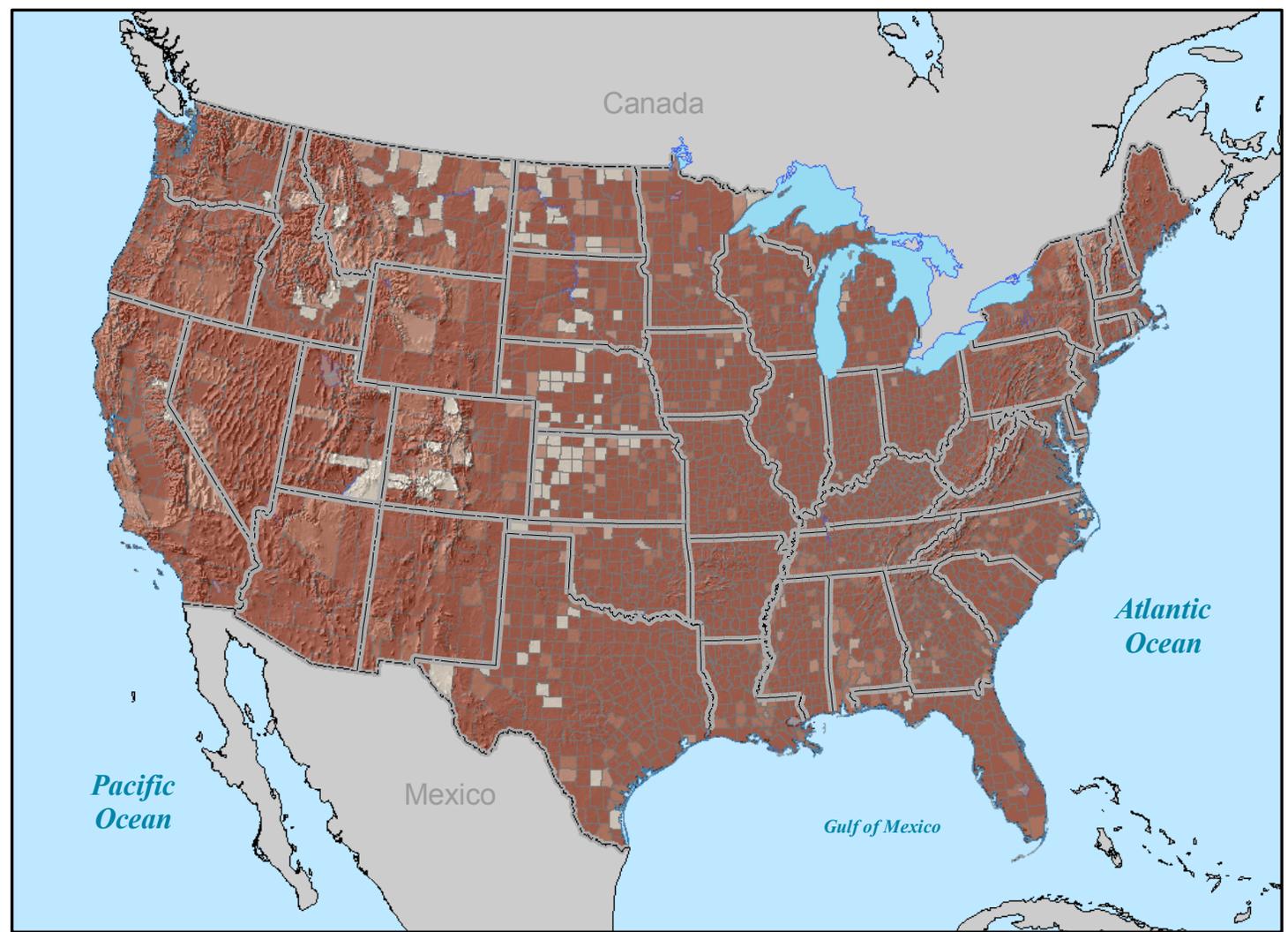
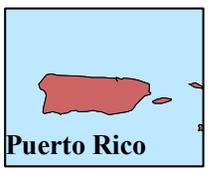
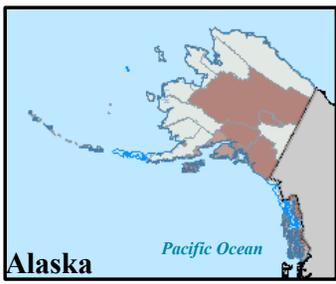
**Percent Disease-Specific Visits of Total Visits (IHD)
by County FY-2000**

VA Health Care Atlas
HSR&D SDR 01-175

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

Ischemic Heart Disease

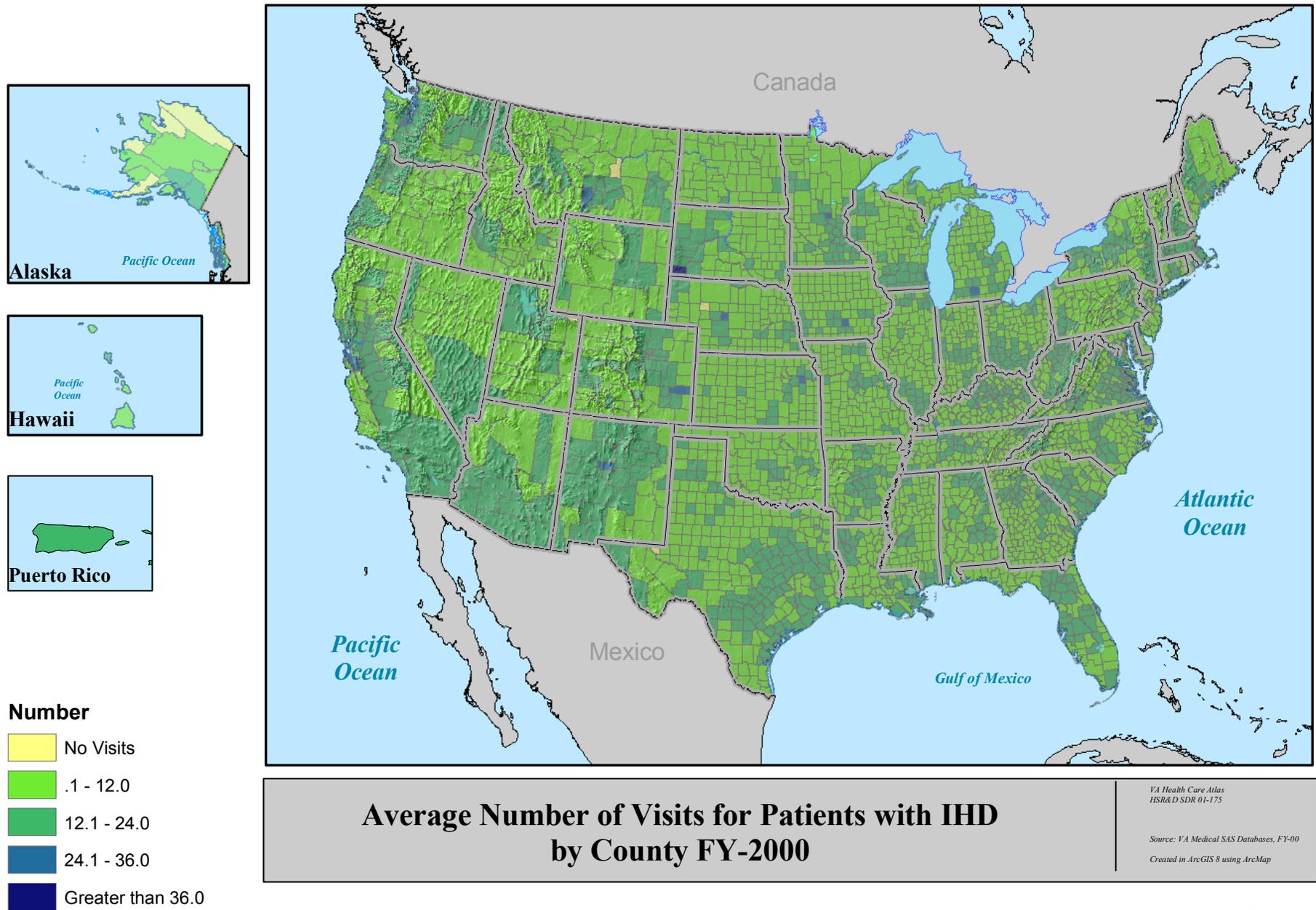
Map 10.4



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

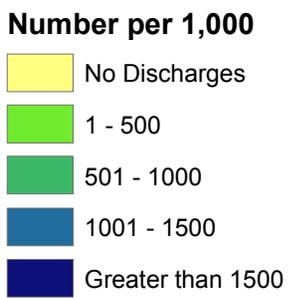
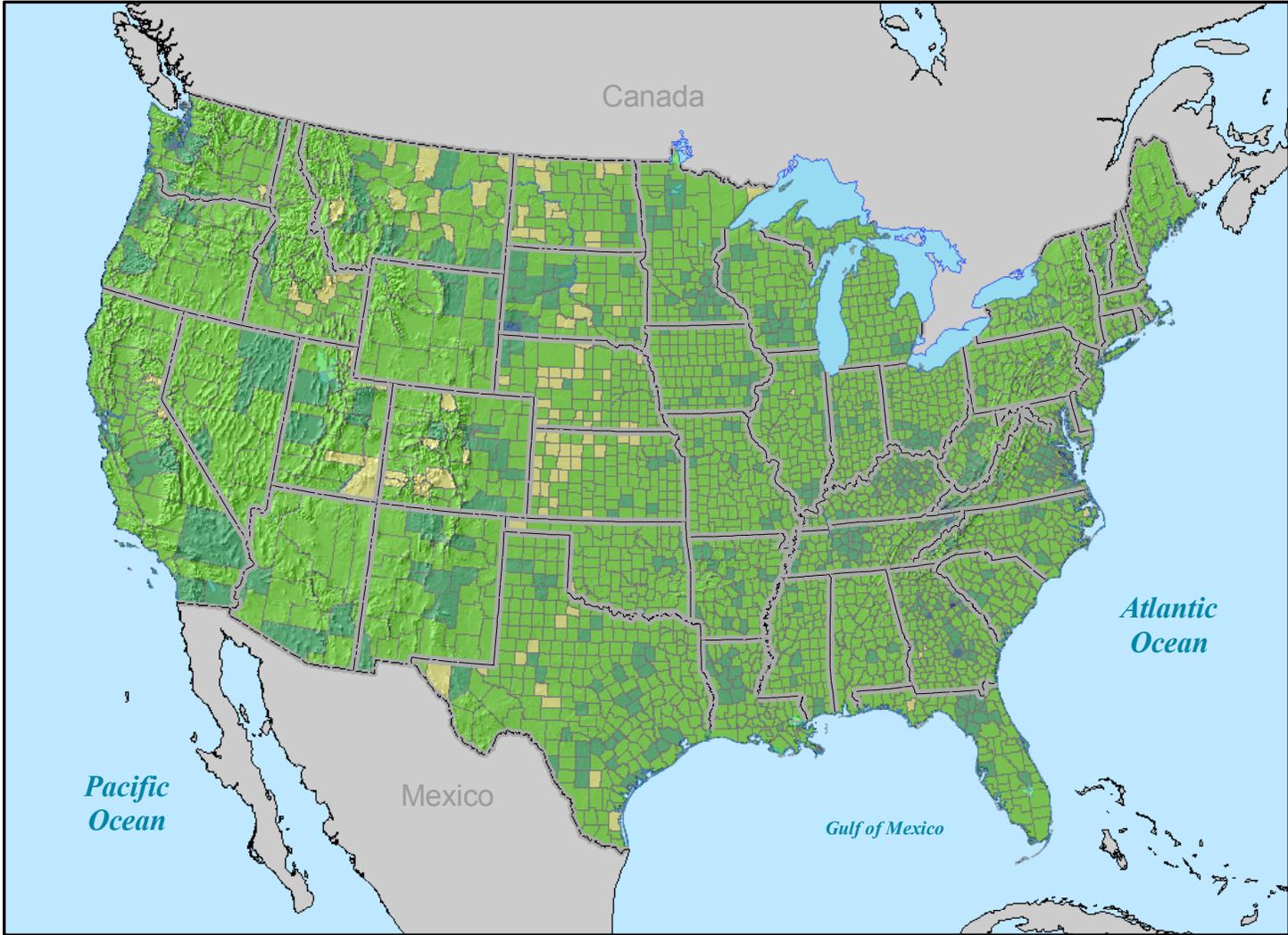
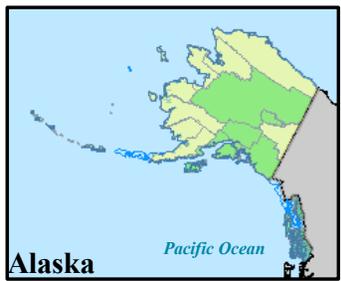
VA Health Care Atlas
HSR&D SDR 01-175
Source: VA Medical SAS Databases, FY-00
Created in ArcGIS 8 using ArcMap

Map 10.5



Ischemic Heart Disease

Map 10.6



Disease Specific Discharges per 1,000 Patients with IHD 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

Ischemic heart disease (IHD) is the leading cause of death in the United States for both men and women, with \$100 billion in direct and indirect costs. It is also one of the most frequent indications for hospitalization within VHA. The IHD QUERI, located at the HSR&D Center of Excellence in Seattle, Washington is co-chaired by a research expert and a clinician. The Research Coordinator is Stephan Fihn, MD, MPH and the Clinical Coordinator is Ken Morris, MD. Researchers or other interested parties are encouraged to contact the IHD QUERI Coordinator to learn more about VHA's current research foci and ongoing projects in the area of Ischemic Heart Disease:

Sandra L. Piñeros, MPH
QUERI Administrative Coordinator
VA Puget Sound Health Care System
1660 S. Columbian Way
Seattle, WA 98108
Telephone: 206/764-2822
FAX: 206/764-2935
E-mail: sandra.pineros@med.va.gov

A summary of IHD-QUERI 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

The Ischemic Heart Disease Quality Enhancement Research Initiative (IHD QUERI) utilizes the QUERI process to reduce the gap between guideline recommended therapies and actual VA practice, thus improving the quality of care and health outcomes of veterans with ischemic heart disease. IHD QUERI is currently focused on one clinical problem within the broad scope of IHD that is characterized by both high risk and high volume: outpatient management of lipid risk reduction. IHD QUERI is moving to translate results of this research into practice.

The current translation focus for IHD QUERI is the Translation Plan to Improve Lipid Management for IHD Patients. This project consists of three major activities: the first has been completed, and the other two activities are being implemented.

- *Key Players Study*: The intervention component of the Lipid Measurement and Management System (LMMS) included implementing pilot interventions in medical centers in Veterans Integrated Service Network 20 (VISN 20) to improve concordance with secondary prevention guidelines. The objective of the Key Players study was to learn more about the interventions, including the barriers and facilitators to implementing interventions at each site. The study also attempted to understand the organization of the intervention team and how key players came into their roles.
- *Repeated Rapid Cycle Evidence-Based Quality Improvement Interventions Project (VISNs 19 & 20)*: The repeated rapid cycle interventions in VISN 20 have progressed as the Key Players information from each site has been collected and analyzed. Since establishing the themes that emerged from each site about the organizational strengths and weaknesses related to the original intervention(s), IHD QUERI investigators have contacted the intervention teams at each site and shared their findings. Several facilities are continuing the Lipid Clinic interventions, while some plan to implement the National Lipid Clinical Reminders, or site-specific reminders similar to the national reminders. For VISN 19, IHD QUERI will review the most current information available on optimal care for patients with IHD, and then will provide the VISN with this data. In addition, they will share information and lessons learned through the process evaluation in VISN 20. Each team will then select an intervention strategy for their facility and draft a project management plan.

- *National Lipid Clinical Reminders:* IHD QUERI will complete the development of electronic clinical reminders for lipid management using the national Clinical Reminder package from the Computerized Patient Record System (CPRS). Once developed, the clinical reminders will be a central intervention to be implemented first in VISN 20, followed by VISN 19. There will be two reminders for this package. The first reminder will identify all patients with a diagnosis of IHD who do not have a current LDL value (measured within the past 15 months). The second reminder will identify those IHD patients whose LDL values are above guideline levels. This reminder will post the target LDL (≤ 120 mg/dL), a note that this is the guideline recommended level for secondary prevention of IHD, and a list of recommended lipid-lowering agents.

The IHD-QUERI is advancing care in these areas:

- *Lipid Management for Low HDL Cholesterol*

This translation project to improve low HDL among patients with IHD uses patient education and three different prompting systems to improve management of HDL, as well as LDL among IHD patients in VA. The overall purpose is to improve the clinical outcomes of veterans with IHD through implementation of evidence-based lipid management, focusing on low HDL levels.

- *Improving Hypertension Management*

This study uses patient group visits to address issues identified by patients as affecting management of hypertension. Its goal is to improve quality care in hypertension treatment by translating VA Clinical Practice Guidelines through group outpatient visits with nurse follow-up.

- *Improving Guideline Concordance for Patients with Chronic Stable Angina*

This project uses facilitated consultation and provider feedback to improve concordance with guideline recommendations for optimal care of patients with chronic stable angina. The goal of the project is to determine whether coordinated team care results in improved control of angina in patients with IHD compared to routine primary care. The study will employ a multi-modal intervention that involves case-finding, serial measurement of general and condition-specific health-related quality of life, management suggestions and facilitated consultation from cardiologists, and educational efforts by opinion leaders.

- *Vascular Health Clinical Reminder Project*

This project will develop national clinical reminders for a full set of recommendations to improve care of patients with coronary and other vascular disease through the use of facilitated deployment of reminders in a targeted set of VA facilities.