

A map of the United States is shown within a blue circular border. The map is overlaid with a grid of small squares in green, yellow, and blue. The text "VA HEALTH CARE ATLAS" and "FY- 2000" is centered over the map. The word "Canada" is at the top, "Mexico" is at the bottom, and "Gulf of Mexico" is at the bottom right.

VA HEALTH CARE ATLAS

FY- 2000

Diagnostic Codes Used to Define Cohort (Chronic Heart Failure)

ICD-9 code	Description
39891	RHEUMATIC HEART FAILURE (CONGESTIVE)
40201	MALIGNANT HYPERTENSIVE HEART DISEASE WITH CONGESTIVE HEART FAILURE
40211	BENIGN HYPERTENSIVE HEART DISEASE WITH CONGESTIVE HEART FAILURE
40291	UNSPECIFIED HYPERTENSIVE HEART DISEASE WITH CONGESTIVE HEART FAILURE
40401	HYPERTENSIVE HEART AND RENAL DISEASE, MALIGNANT, WITH CONGESTIVE HEAR
40403	HYPERTENSIVE HEART AND RENAL DISEASE, MALIGNANT, WITH CONGESTIVE HEAR
40411	HYPERTENSIVE HEART AND RENAL DISEASE, BENIGN, WITH CONGESTIVE HEART F
40413	HYPERTENSIVE HEART AND RENAL DISEASE, BENIGN, WITH CONGESTIVE HEART F
40491	HYPERTENSIVE HEART AND RENAL DISEASE, UNSPECIFIED, WITH CONGESTIVE HE
40493	HYPERTENSIVE HEART AND RENAL DISEASE, UNSPECIFIED, WITH CONGESTIVE HE
428	HEART FAILURE*
4280	CONGESTIVE HEART FAILURE
4281	LEFT HEART FAILURE
4289	HEART FAILURE, UNSPECIFIED

Highlights

Table 7.1

National Overview

In FY-2000, the VHA had 173,062 CHF patients with either a primary or secondary diagnostic code of one or more of the codes listed above. This number represents approximately five percent (5.22%) of the total patient population during the fiscal year (Table 7.1). As with most patients seen in the VHA, the majority of patients were male (98.35%), with only 1.65% female.

As expected, older age groups are more highly represented than younger ages. Less than 2% of CHF patients were in the age bracket under 45, 8.8% were aged 45-54, and 15.32% were between the ages of 55-64; on the other end of the age spectrum, 36.02% of CHF patients were aged 65-74 and an additional 38.51% were 75 years of age or older. The proportion of CHF patients who were married is about sixty percent nationally (59.2%). The “Means Test” categories show that 31.38% were Priority 1 - 3 (service-connected injured) veterans and 56.18% were Priority 5 (low income).

VISN Overview

The volume of patients with CHF ranged from a high of 16,677 individuals in South Central network (VISN 16) to a low of 4,269 in the Central Plain network (VISN 14).

VISNs with less than 5 percent of their total patient population with CHF include: New England (VISN 1), New York/New Jersey (VISN 3), Stars and Stripes (VISN 4), Sunshine (VISN 8), Heart of Texas (VISN 17), Southwest (VISN 18), Northwest (VISN 20) and the Desert Pacific (VISN 22) networks. Networks with 6% CHF patients or more include: Ohio (VISN 10), Veterans in Partnership

(VISN 11), Great Lakes (VISN 12) and Heartland (VISN 15). The percentage of CHF patients who are married ranges from a low of 46.05% in the Desert Pacific (VISN 22) to a high of 64.03 in the Sunshine network (VISN 8). The majority of patients with CHF are in Priority Group 5 (low income) across all VISNs.

Table 7.2

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

As an example of what the data show and how to interpret the findings, examine the Great Lakes network (VISN 12). In this particular network, 4.56% of the total patients seen at a VA facility in fiscal year 2000 had a primary diagnosis of CHF. This group of patients accounted for 12.29% of the total bed-days of care in VISN 12, 16.7% of total discharges in VISN 12, and 8.04% of outpatient visits in VISN 12 made by all patients of VA health care services in the network for all medical conditions.

Table 7.3

Table 7.3 is similar to Table 7.2 except that patients who only had a **secondary** diagnosis of CHF are examined rather than patients who had a primary diagnosis. This table compares utilization by the CHF secondary diagnosis group for all health conditions they had during the year (i.e., includes both CHF-specific utilization and utilization for all other non-CHF care the patient may have received) with utilization by all VISN patients for all conditions.

Using the example of VISN 12, the data can be interpreted as follows: 2.17% of the patients in VISN 12 had at most a secondary diagnosis of CHF, but never a primary diagnosis. This group of patients accounted for 6.77% of the total bed-days of care, 6.73% of total discharges and 2.94% of outpatient visits utilized by all patients in the network for all conditions.

Table 7.4

Table 7.4 compares resource utilization specifically directed at treating CHF. In other words, we examine the utilization for which the primary diagnosis (DXLSF) was a defining diagnosis for the CHF, with utilization for all conditions by all patients in each network.

For example, in VISN 12 4.56% of the patients had some utilization for which the primary diagnosis was CHF. Utilization specifically directed at treating the CHF accounted for 2.66% of all bed-days of care, 3.87% of all discharges, and .85% of all outpatient visits.

Table 7.5

Table 7.5 combines the information from Tables 7.2 and 7.4, comparing utilization by the CHF primary diagnosis group specifically directed at treating their condition with utilization by this same group for all conditions. For example, in VISN 12, 4.56% of the patients had some utilization for CHF. These patients accounted for 41,053 bed-days of care in FY-2000, of which 8,885 or about 22%, were utilized specifically for treating their CHF (i.e., primary diagnosis (DXLSF) of CHF). Similarly, 23.17% of the discharges for patients in the CHF primary diagnosis group resulted from

inpatient stays to treat their disease, and 10.55% of the outpatient visits made by these patients were for specifically for the treatment of CHF.

Costs

Cost data are reported for utilization of VA services by VA patients with CHF in Table 7.6 and Table 7.7. Veterans with CHF are identified by a CHF diagnosis for at least one inpatient or outpatient service received. We separately report for veterans who had at least one primary diagnosis of CHF and veterans whose only diagnoses of CHF are secondary to another diagnosis. Costs are for VA utilization and include inpatient, outpatient, and pharmacy services for all causes, not just for CHF-specific use. That is, we report all VA costs for all causes for individuals identified as having CHF.

There were 173,006 individuals with at least one primary or secondary diagnosis of CHF for whom cost data were available, and these costs averaged \$14,959 per veteran. Breaking these costs down by whether or not the veteran had at least one primary diagnosis of CHF, we have an average cost of \$15,164 per veteran for those with at least one primary care diagnosis of CHF and \$14,688 per veteran for those patients with only secondary diagnoses.

Focusing on those patients with at least one primary diagnosis of CHF, the \$14,959 costs per veteran are distributed as follows: 54.12% are for inpatient medical/surgical services, 11.03% are for other inpatient services, 24.46% are for outpatient services, and 10.38% are for pharmaceutical services. Across VISNs, overall costs per veteran with a primary diagnosis of CHF ranged from \$11,619 (VISN 15) to \$19,648 (VISN 3) per veteran.

Table 7.1:
Overall Prevalence Statistics – Chronic Heart Failure, FY-2000

Veterans Integrated Service Network	Total Number of Patients	Patients with Congestive Heart Failure		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	7,334	4.64	98.06	1.94	0.68	5.82	11.64	36.46	45.39	57.68	41.82	35.90	50.52
Upstate NY (2)	100,499	5,212	5.19	97.99	2.01	0.71	6.24	11.30	35.76	45.99	55.70	43.30	29.87	57.62
NY/NJ (3)	166,593	7,973	4.79	98.88	1.12	0.90	6.36	11.79	36.23	44.71	54.96	43.90	28.46	46.11
Stars and Stripes (4)	202,472	10,092	4.98	98.46	1.54	1.09	7.78	14.16	36.57	40.40	59.41	39.84	28.97	54.92
Capitol (5)	88,163	4,758	5.40	98.44	1.56	1.70	9.14	13.58	36.15	39.43	51.03	48.11	29.61	60.72
Mid-Atlantic (6)	161,081	8,320	5.17	98.31	1.69	2.09	10.25	16.67	35.64	35.35	62.06	37.10	36.84	54.62
Atlantic (7)	201,514	10,351	5.14	98.55	1.45	2.14	11.97	17.47	35.47	32.95	61.52	37.93	33.56	55.90
Sunshine (8)	308,906	13,995	4.53	98.19	1.81	1.26	7.62	15.31	35.34	40.46	64.03	34.54	36.53	52.06
Mid-South (9)	165,501	9,181	5.55	99.04	0.96	1.46	10.21	15.53	36.33	36.48	63.25	36.39	33.12	57.84
Ohio (10)	117,463	7,455	6.35	98.36	1.64	1.65	10.36	16.34	36.78	34.88	55.99	43.65	27.38	62.80
Vets in Partnership (11)	142,393	9,930	6.97	98.69	1.31	1.22	8.99	15.74	37.36	36.69	58.13	41.58	24.96	60.07
Great Lakes (12)	142,079	9,557	6.73	98.18	1.82	1.31	8.34	14.39	35.98	39.98	54.38	45.15	23.51	61.33
Upper Midwest (13)	96,279	5,559	5.77	98.40	1.60	0.79	5.56	11.39	37.56	44.70	62.13	36.77	32.00	49.81
Central Plains (14)	73,699	4,269	5.79	98.43	1.57	1.03	5.76	11.97	40.22	41.02	62.45	36.89	25.60	55.02
Heartland (15)	148,229	10,214	6.89	98.68	1.32	1.72	9.41	15.47	37.28	36.12	62.23	37.18	25.70	60.89
South Central (16)	294,286	16,677	5.67	98.43	1.57	1.70	11.39	18.16	35.46	33.30	61.83	37.07	31.74	60.41
Heart of Texas (17)	151,601	7,495	4.94	98.53	1.44	1.43	11.17	17.20	34.32	35.89	60.99	38.27	38.31	52.66
Southwest (18)	154,764	7,632	4.93	97.69	2.31	1.28	7.14	15.45	36.56	39.56	61.57	37.62	36.16	52.97
Rocky Mt. (19)	95,866	5,231	5.46	98.03	1.97	1.19	7.97	15.18	36.00	39.67	60.60	38.85	30.99	56.53
Northwest (20)	143,215	6,804	4.75	97.53	2.47	1.21	8.95	17.53	34.82	37.49	54.76	44.74	39.62	51.90
Sierra Pacific (21)	149,020	7,999	5.37	97.77	2.23	1.13	8.80	15.61	33.03	41.43	54.07	45.06	38.47	52.63
Desert Pacific (22)	178,204	7,971	4.47	97.89	2.11	2.26	12.01	20.66	32.98	32.08	46.05	52.80	34.01	56.84
National	3,314,672	173,062	5.22	98.35	1.65	1.35	8.80	15.32	36.02	38.51	59.20	40.06	31.38	56.18

Table 7.2:
Overall Resource Utilization – Chronic Heart Failure (Primary Diagnosis Group) Compared to All Users, FY-2000

Veterans Integrated Service Network (VISN)	Total Patients	Total Patients Congestive Heart Failure		Bed Days of Care			Discharges			Outpatient Visits		
				Total	CHF		Total	CHF		Total	CHF	
	N	N	%	N	N	%	N	N	%	N	N	%
New England (1)	158,204	4,197	2.65	303,134	27,461	9.06	24,413	2,869	11.75	1,990,550	93,853	4.71
Upstate NY (2)	100,499	2,897	2.88	120,203	17,147	14.27	11,871	1,800	15.16	1,093,796	62,140	5.68
NY/NJ (3)	166,593	4,351	2.61	405,186	34,566	8.53	24,128	3,416	14.16	1,854,064	88,989	4.80
Stars and Stripes (4)	202,472	5,503	2.72	284,688	28,935	10.16	24,122	3,472	14.39	1,846,937	95,040	5.15
Capitol (5)	88,163	2,960	3.36	222,405	18,857	8.48	17,107	2,199	12.85	1,007,572	50,627	5.02
Mid-Atlantic (6)	161,081	4,450	2.76	361,832	33,210	9.18	31,256	3,786	12.11	1,491,680	77,566	5.20
Atlantic (7)	201,514	5,790	2.87	369,514	33,143	8.97	29,275	3,801	12.98	1,891,761	92,812	4.91
Sunshine (8)	308,906	7,827	2.53	392,501	44,090	11.23	41,850	5,292	12.65	3,109,217	144,717	4.65
Mid-South (9)	165,501	4,857	2.93	316,108	36,822	11.65	34,579	4,836	13.99	1,483,519	82,368	5.55
Ohio (10)	117,463	4,558	3.88	191,574	26,025	13.58	18,945	2,950	15.57	1,327,847	88,502	6.67
Vets in Partnership (11)	142,393	5,210	3.66	311,786	29,596	9.49	23,779	3,644	15.32	1,368,643	89,766	6.56
Great Lakes (12)	142,079	6,472	4.56	334,130	41,053	12.29	30,157	5,036	16.70	1,715,017	137,894	8.04
Upper Midwest (13)	96,279	3,035	3.15	107,644	15,858	14.73	16,092	2,385	14.82	934,533	53,789	5.76
Central Plains (14)	73,699	2,059	2.79	76,697	9,537	12.43	9,898	1,424	14.39	674,604	35,628	5.28
Heartland (15)	148,229	5,711	3.85	211,861	25,762	12.16	25,568	3,862	15.10	1,458,394	96,197	6.60
South Central (16)	294,286	9,329	3.17	454,315	54,590	12.02	47,751	6,291	13.17	2,750,358	150,434	5.47
Heart of Texas (17)	151,601	4,173	2.75	297,463	26,143	8.79	25,932	3,352	12.93	1,544,273	79,516	5.15
Southwest (18)	154,764	4,486	2.90	167,362	20,796	12.43	23,822	3,189	13.39	1,574,259	89,572	5.69
Rocky Mt. (19)	95,866	3,107	3.24	132,102	15,221	11.52	15,065	2,033	13.49	959,415	58,159	6.06
Northwest (20)	143,215	3,890	2.72	181,076	20,617	11.39	24,296	3,060	12.59	1,488,150	78,393	5.27
Sierra Pacific (21)	149,020	5,046	3.39	214,370	18,639	8.69	19,163	2,341	12.22	1,630,530	96,181	5.90
Desert Pacific (22)	178,204	5,091	2.86	231,584	24,278	10.48	25,132	3,341	13.29	2,119,773	113,534	5.36
National	3,314,672	98,379	2.97	5,687,535	602,346	10.59	544,201	74,379	13.67	35,314,892	1,955,677	5.54

Table 7.3:
Overall Resource Utilization – Chronic Heart Failure (Secondary Diagnosis Group) Compared to All Users, FY-2000

Veterans Integrated Service Network (VISN)	Total Patients	Total Patients Congestive Heart Failure		Bed Days of Care			Discharges			Outpatient Visits		
				Total	CHF		Total	CHF		Total	CHF	
	N	N	%	N	N	%	N	N	%	N	N	%
New England (1)	158,204	3,137	1.98	303,134	20,855	6.88	24,413	1,804	7.39	1,990,550	52,472	2.64
Upstate NY (2)	100,499	2,315	2.30	120,203	12,513	10.41	11,871	1,163	9.80	1,093,796	38,193	3.49
NY/NJ (3)	166,593	3,622	2.17	405,186	26,264	6.48	24,128	1,790	7.42	1,854,064	54,764	2.95
Stars and Stripes (4)	202,472	4,589	2.27	284,688	21,478	7.54	24,122	1,909	7.91	1,846,937	54,821	2.97
Capitol (5)	88,163	1,798	2.04	222,405	14,439	6.49	17,107	1,043	6.10	1,007,572	25,449	2.53
Mid-Atlantic (6)	161,081	3,870	2.40	361,832	26,768	7.40	31,256	2,486	7.95	1,491,680	56,063	3.76
Atlantic (7)	201,514	4,561	2.26	369,514	31,837	8.62	29,275	2,681	9.16	1,891,761	61,470	3.25
Sunshine (8)	308,906	6,168	2.00	392,501	33,329	8.49	41,850	3,163	7.56	3,109,217	90,116	2.90
Mid-South (9)	165,501	4,324	2.61	316,108	28,193	8.92	34,579	3,250	9.40	1,483,519	58,925	3.97
Ohio (10)	117,463	2,897	2.47	191,574	18,365	9.59	18,945	1,606	8.48	1,327,847	44,543	3.35
Vets in Partnership (11)	142,393	4,720	3.31	311,786	25,204	8.08	23,779	2,315	9.74	1,368,643	61,450	4.49
Great Lakes (12)	142,079	3,085	2.17	334,130	22,625	6.77	30,157	2,030	6.73	1,715,017	50,413	2.94
Upper Midwest (13)	96,279	2,524	2.62	107,644	12,033	11.18	16,092	1,556	9.67	934,533	34,859	3.73
Central Plains (14)	73,699	2,210	3.00	76,697	7,956	10.37	9,898	909	9.18	674,604	28,751	4.26
Heartland (15)	148,229	4,503	3.04	211,861	17,590	8.30	25,568	2,329	9.11	1,458,394	58,921	4.04
South Central (16)	294,286	7,348	2.50	454,315	40,256	8.86	47,751	4,057	8.50	2,750,358	92,306	3.36
Heart of Texas (17)	151,601	3,322	2.19	297,463	19,182	6.45	25,932	1,836	7.08	1,544,273	47,040	3.05
Southwest (18)	154,764	3,146	2.03	167,362	14,237	8.51	23,822	1,773	7.44	1,574,259	49,595	3.15
Rocky Mt. (19)	95,866	2,124	2.22	132,102	10,083	7.63	15,065	1,168	7.75	959,415	32,617	3.40
Northwest (20)	143,215	2,914	2.03	181,076	15,824	8.74	24,296	2,022	8.32	1,488,150	46,809	3.15
Sierra Pacific (21)	149,020	2,953	1.98	214,370	12,220	5.70	19,163	1,226	6.40	1,630,530	44,775	2.75
Desert Pacific (22)	178,204	2,880	1.62	231,584	15,798	6.82	25,132	1,642	6.53	2,119,773	58,480	2.76
National	3,314,672	74,683	2.25	5,687,535	447,049	7.86	544,201	43,758	8.04	35,314,892	1,142,832	3.24

Table 7.4:
Resource Utilization for Treatment of Chronic Heart Failure (Primary Diagnosis Group) Compared to Overall Resource Utilization by All Users, FY-2000

Veterans Integrated Service Network (VISN)	Total Patients	Total Patients Congestive Heart Failure		Bed Days of Care			Discharges			Outpatient Visits		
	N	N	%	Total	CHF		Total	CHF		Total	CHF	
				N	N	%	N	N	%	N	N	%
New England (1)	158,204	4,197	2.65	303,134	6,360	2.10	24,413	759	3.11	1,990,550	8,319	0.42
Upstate NY (2)	100,499	2,897	2.88	120,203	4,128	3.43	11,871	467	3.93	1,093,796	6,514	0.60
NY/NJ (3)	166,593	4,351	2.61	405,186	7,646	1.89	24,128	960	3.98	1,854,064	8,911	0.48
Stars and Stripes (4)	202,472	5,503	2.72	284,688	7,699	2.70	24,122	1,004	4.16	1,846,937	10,146	0.55
Capitol (5)	88,163	2,960	3.36	222,405	4,551	2.05	17,107	665	3.89	1,007,572	5,564	0.55
Mid-Atlantic (6)	161,081	4,450	2.76	361,832	8,900	2.46	31,256	992	3.17	1,491,680	7,767	0.52
Atlantic (7)	201,514	5,790	2.87	369,514	7,739	2.09	29,275	1,043	3.56	1,891,761	10,409	0.55
Sunshine (8)	308,906	7,827	2.53	392,501	9,713	2.47	41,850	1,386	3.31	3,109,217	15,409	0.50
Mid-South (9)	165,501	4,857	2.93	316,108	8,881	2.81	34,579	1,303	3.77	1,483,519	8,642	0.58
Ohio (10)	117,463	4,558	3.88	191,574	5,643	2.95	18,945	725	3.83	1,327,847	8,761	0.66
Vets in Partnership (11)	142,393	5,210	3.66	311,786	7,381	2.37	23,779	986	4.15	1,368,643	10,657	0.78
Great Lakes (12)	142,079	6,472	4.56	334,130	8,885	2.66	30,157	1,167	3.87	1,715,017	14,544	0.85
Upper Midwest (13)	96,279	3,035	3.15	107,644	3,661	3.40	16,092	613	3.81	934,533	6,585	0.70
Central Plains (14)	73,699	2,059	2.79	76,697	2,051	2.67	9,898	319	3.22	674,604	3,281	0.49
Heartland (15)	148,229	5,711	3.85	211,861	6,249	2.95	25,568	990	3.87	1,458,394	9,586	0.66
South Central (16)	294,286	9,329	3.17	454,315	11,989	2.64	47,751	1,559	3.26	2,750,358	18,759	0.68
Heart of Texas (17)	151,601	4,173	2.75	297,463	6,655	2.24	25,932	932	3.59	1,544,273	8,352	0.54
Southwest (18)	154,764	4,486	2.90	167,362	4,709	2.81	23,822	855	3.59	1,574,259	9,169	0.58
Rocky Mt. (19)	95,866	3,107	3.24	132,102	3,181	2.41	15,065	495	3.29	959,415	7,018	0.73
Northwest (20)	143,215	3,890	2.72	181,076	5,212	2.88	24,296	778	3.20	1,488,150	8,732	0.59
Sierra Pacific (21)	149,020	5,046	3.39	214,370	3,509	1.64	19,163	507	2.65	1,630,530	9,802	0.60
Desert Pacific (22)	178,204	5,091	2.86	231,584	5,989	2.59	25,132	925	3.68	2,119,773	11,345	0.54
National	3,314,672	98,379	2.97	5,687,535	140,731	2.47	544,201	19,430	3.57	35,314,892	208,272	0.59

Table 7.5:
Resource Utilization for Treatment of Chronic Heart Failure Compared to Overall Utilization by the Chronic Heart Failure Cohort (Primary Diagnosis Group), FY-2000

Veterans Integrated Service Network (VISN)	Total Patients	Total Patients Congestive Heart Failure		Bed Days of Care			Discharges			Outpatient Visits		
	N	N	%	Total N	CHF N	%	Total N	CHF N	%	Total N	CHF N	%
New England (1)	158,204	4,197	2.65	27,461	6,360	23.16	2,869	759	26.46	93,853	8,319	8.86
Upstate NY (2)	100,499	2,897	2.88	17,147	4,128	24.07	1,800	467	25.94	62,140	6,514	10.48
NY/NJ (3)	166,593	4,351	2.61	34,566	7,646	22.12	3,416	960	28.10	88,989	8,911	10.01
Stars and Stripes (4)	202,472	5,503	2.72	28,935	7,699	26.61	3,472	1,004	28.92	95,040	10,146	10.68
Capitol (5)	88,163	2,960	3.36	18,857	4,551	24.13	2,199	665	30.24	50,627	5,564	10.99
Mid-Atlantic (6)	161,081	4,450	2.76	33,210	8,900	26.80	3,786	992	26.20	77,566	7,767	10.01
Atlantic (7)	201,514	5,790	2.87	33,143	7,739	23.35	3,801	1,043	27.44	92,812	10,409	11.22
Sunshine (8)	308,906	7,827	2.53	44,090	9,713	22.03	5,292	1,386	26.19	144,717	15,409	10.65
Mid-South (9)	165,501	4,857	2.93	36,822	8,881	24.12	4,836	1,303	26.94	82,368	8,642	10.49
Ohio (10)	117,463	4,558	3.88	26,025	5,643	21.68	2,950	725	24.58	88,502	8,761	9.90
Vets in Partnership (11)	142,393	5,210	3.66	29,596	7,381	24.94	3,644	986	27.06	89,766	10,657	11.87
Great Lakes (12)	142,079	6,472	4.56	41,053	8,885	21.64	5,036	1,167	23.17	137,894	14,544	10.55
Upper Midwest (13)	96,279	3,035	3.15	15,858	3,661	23.09	2,385	613	25.70	53,789	6,585	12.24
Central Plains (14)	73,699	2,059	2.79	9,537	2,051	21.51	1,424	319	22.40	35,628	3,281	9.21
Heartland (15)	148,229	5,711	3.85	25,762	6,249	24.26	3,862	990	25.63	96,197	9,586	9.96
South Central (16)	294,286	9,329	3.17	54,590	11,989	21.96	6,291	1,559	24.78	150,434	18,759	12.47
Heart of Texas (17)	151,601	4,173	2.75	26,143	6,655	25.46	3,352	932	27.80	79,516	8,352	10.50
Southwest (18)	154,764	4,486	2.90	20,796	4,709	22.64	3,189	855	26.81	89,572	9,169	10.24
Rocky Mt. (19)	95,866	3,107	3.24	15,221	3,181	20.90	2,033	495	24.35	58,159	7,018	12.07
Northwest (20)	143,215	3,890	2.72	20,617	5,212	25.28	3,060	778	25.42	78,393	8,732	11.14
Sierra Pacific (21)	149,020	5,046	3.39	18,639	3,509	18.83	2,341	507	21.66	96,181	9,802	10.19
Desert Pacific (22)	178,204	5,091	2.86	24,278	5,989	24.67	3,341	925	27.69	113,534	11,345	9.99
National	3,314,672	98,379	2.97	602,346	140,731	23.36	74,379	19,430	26.12	1,955,677	208,272	10.65

Table 7.6:
FY-2000 Cost of Chronic Heart Failure (Primary Diagnosis)

Veterans Integrated Service Network	No. of Patients	Outpatient		Inpatient Med/Surg		Inpatient Other		Pharmacy		Total
		\$	%	\$	%	\$	%	\$	%	
New England (1)	4213	19,561,100	26.21%	40,873,066	54.76%	8,506,493	11.40%	5,698,216	7.63%	74,638,875
Upstate NY (2)	2909	11,432,195	26.66%	21,332,430	49.76%	5,963,779	13.91%	4,145,375	9.67%	42,873,779
NY/NJ (3)	4367	19,371,541	22.58%	49,000,576	57.11%	9,965,132	11.61%	7,467,037	8.70%	85,804,286
Stars and Stripes (4)	5520	15,283,499	20.14%	42,880,063	56.50%	8,960,965	11.81%	8,771,890	11.56%	75,896,417
Capitol (5)	2968	9,627,469	22.41%	24,817,662	57.76%	5,296,797	12.33%	3,226,034	7.51%	42,967,962
Mid-Atlantic (6)	4472	14,195,257	21.92%	36,815,729	56.86%	6,998,163	10.81%	6,740,886	10.41%	64,750,035
Atlantic (7)	5817	17,244,066	22.98%	42,677,776	56.87%	6,984,105	9.31%	8,140,088	10.85%	75,046,035
Sunshine (8)	7870	26,016,161	26.94%	46,938,689	48.60%	11,653,825	12.07%	11,968,864	12.39%	96,577,539
Mid-South (9)	4883	15,486,774	20.64%	45,778,707	61.00%	6,191,712	8.25%	7,589,653	10.11%	75,046,845
Ohio (10)	4574	15,104,775	24.48%	29,794,034	48.29%	9,645,857	15.63%	7,151,139	11.59%	61,695,804
Vets in Partnership (11)	5234	21,064,813	27.75%	35,849,204	47.22%	10,534,482	13.88%	8,471,126	11.16%	75,919,624
Great Lakes (12)	6492	27,090,001	27.84%	49,783,749	51.15%	10,579,606	10.87%	9,869,399	10.14%	97,322,755
Upper Midwest (13)	3043	9,386,096	20.85%	27,425,513	60.93%	3,962,859	8.80%	4,235,567	9.41%	45,010,034
Central Plains (14)	2071	6,254,195	25.31%	13,040,606	52.78%	2,274,846	9.21%	3,137,215	12.70%	24,706,862
Heartland (15)	5722	18,017,723	27.10%	34,870,931	52.45%	6,543,891	9.84%	7,051,701	10.61%	66,484,246
South Central (16)	9373	28,576,172	23.75%	63,584,934	52.86%	12,538,710	10.42%	15,597,896	12.97%	120,297,713
Heart of Texas (17)	4195	12,631,723	20.48%	35,829,663	58.10%	6,830,195	11.07%	6,381,590	10.35%	61,673,172
Southwest (18)	4516	14,512,208	26.57%	29,352,017	53.74%	5,256,008	9.62%	5,499,701	10.07%	54,619,933
Rocky Mt. (19)	3120	8,550,047	21.33%	23,663,826	59.05%	3,540,677	8.83%	4,321,315	10.78%	40,075,865
Northwest (20)	3893	14,972,522	25.02%	33,774,890	56.43%	5,419,485	9.05%	5,684,001	9.50%	59,850,898
Sierra Pacific (21)	5060	18,608,985	28.15%	31,678,479	47.92%	9,463,348	14.32%	6,352,438	9.61%	66,103,251
Desert Pacific (22)	5105	21,887,383	26.01%	47,417,886	56.35%	7,452,378	8.86%	7,391,274	8.78%	84,148,921
National	98360	364,874,704	24.46%	807,180,429	54.12%	164,563,313	11.03%	154,892,405	10.38%	1,491,510,851

Chronic Heart Failure

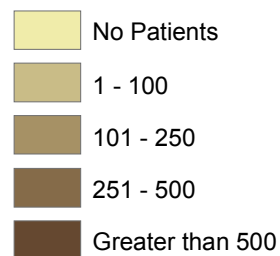
Table 7.7:
FY-2000 Cost of Chronic Heart Failure (Secondary Diagnosis)

Veterans Integrated Service Network	No. of Patients	Outpatient		Inpatient Med/Surg		Inpatient Other		Pharmacy		Total
		\$	%	\$	%	\$	%	\$	%	\$
New England (1)	3,152	10,436,521	19.80%	27,580,152	52.32%	10,815,836	20.52%	3,884,139	7.37%	52,716,648
Upstate NY (2)	2,316	6,900,198	19.90%	16,188,158	46.69%	8,513,888	24.56%	3,070,113	8.85%	34,672,356
NY/NJ (3)	3,635	11,663,496	17.62%	32,702,937	49.42%	16,198,259	24.48%	5,615,444	8.49%	66,180,136
Stars and Stripes (4)	4,600	8,099,614	14.54%	27,348,176	49.09%	13,859,373	24.88%	6,406,327	11.50%	55,713,489
Capitol (5)	1,804	4,819,391	16.33%	15,486,856	52.47%	7,286,661	24.69%	1,920,744	6.51%	29,513,652
Mid-Atlantic (6)	3,883	10,232,635	18.47%	28,783,488	51.95%	10,762,124	19.43%	5,622,790	10.15%	55,401,037
Atlantic (7)	4,584	11,414,406	17.54%	37,265,459	57.27%	10,741,342	16.51%	5,651,399	8.68%	65,072,607
Sunshine (8)	6,193	15,435,411	21.54%	34,426,171	48.04%	13,824,198	19.29%	7,973,672	11.13%	71,659,452
Mid-South (9)	4,335	10,889,623	18.39%	35,003,439	59.11%	7,338,981	12.39%	5,985,483	10.11%	59,217,527
Ohio (10)	2,905	7,372,547	16.69%	20,236,812	45.82%	10,854,715	24.58%	5,701,513	12.91%	44,165,587
Vets in Partnership (11)	4,746	13,376,476	23.10%	24,890,508	42.99%	13,048,058	22.54%	6,581,897	11.37%	57,896,939
Great Lakes (12)	3,109	9,612,886	17.91%	28,201,638	52.55%	11,671,447	21.75%	4,184,719	7.80%	53,670,690
Upper Midwest (13)	2,532	6,155,576	16.66%	21,773,734	58.94%	5,800,839	15.70%	3,212,764	8.70%	36,942,914
Central Plains (14)	2,214	4,841,441	21.72%	10,416,026	46.72%	3,842,389	17.24%	3,192,969	14.32%	22,292,826
Heartland (15)	4,530	9,565,989	21.66%	22,809,757	51.64%	6,743,604	15.27%	5,050,157	11.43%	44,169,507
South Central (16)	7,372	16,786,534	18.53%	50,768,940	56.04%	13,339,433	14.72%	9,706,475	10.71%	90,601,381
Heart of Texas (17)	3,339	7,078,924	16.13%	23,939,985	54.53%	7,868,375	17.92%	5,011,548	11.42%	43,898,831
Southwest (18)	3,173	7,698,969	19.18%	21,866,845	54.48%	7,410,636	18.46%	3,159,826	7.87%	40,136,276
Rocky Mt. (19)	2,134	4,769,533	17.57%	15,686,509	57.77%	3,721,173	13.70%	2,975,025	10.96%	27,152,240
Northwest (20)	2,918	8,625,321	18.25%	27,253,577	57.67%	7,651,184	16.19%	3,731,384	7.90%	47,261,466
Sierra Pacific (21)	2,954	8,294,657	20.00%	20,344,384	49.05%	9,419,496	22.71%	3,421,121	8.25%	41,479,659
Desert Pacific (22)	2,895	11,522,797	20.35%	33,103,588	58.47%	7,887,309	13.93%	4,102,332	7.25%	56,616,026
National	74646	205,592,947	18.75%	576,077,142	52.54%	208,599,320	19.03%	106,161,839	9.68%	1,096,431,247

Map 7.1



Number of Patients



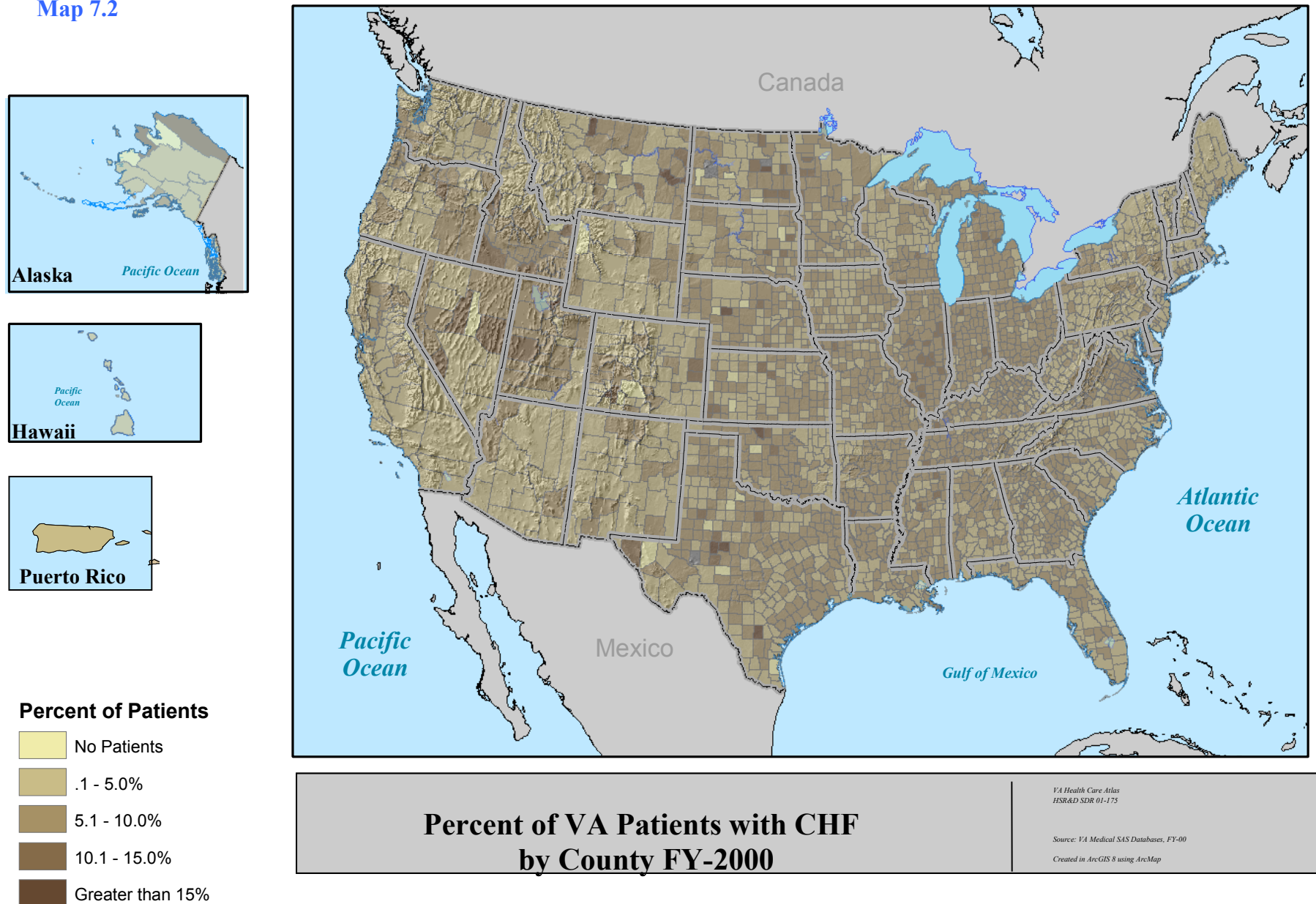
**Number of VA Patients with CHF
by County FY-2000**

VA Health Care Atlas
HSR&D SDR 01-175

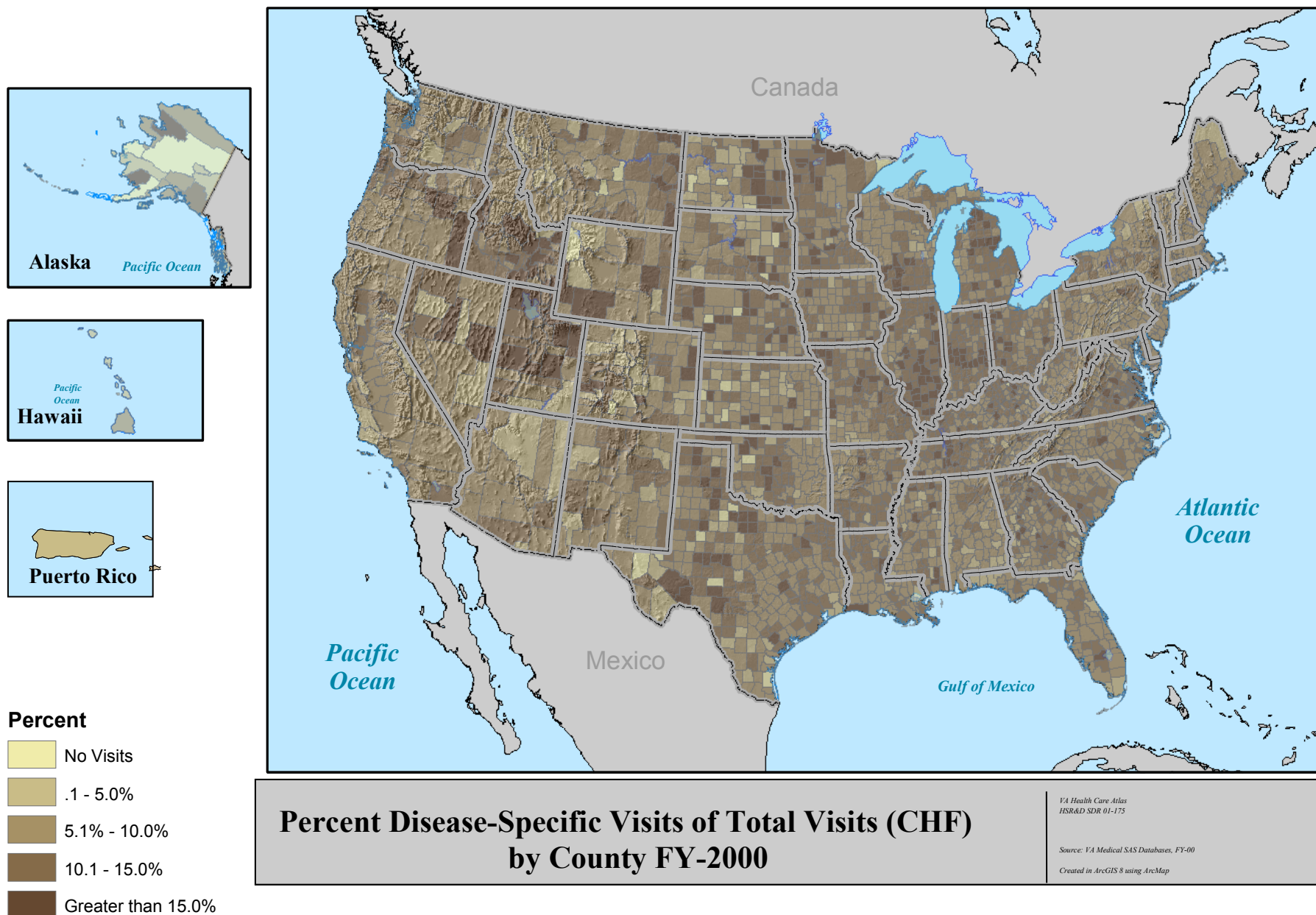
Source: VA Medical SAS Databases, FY-00
Created in ArcGIS 8 using ArcMap

Chronic Heart Failure

Map 7.2

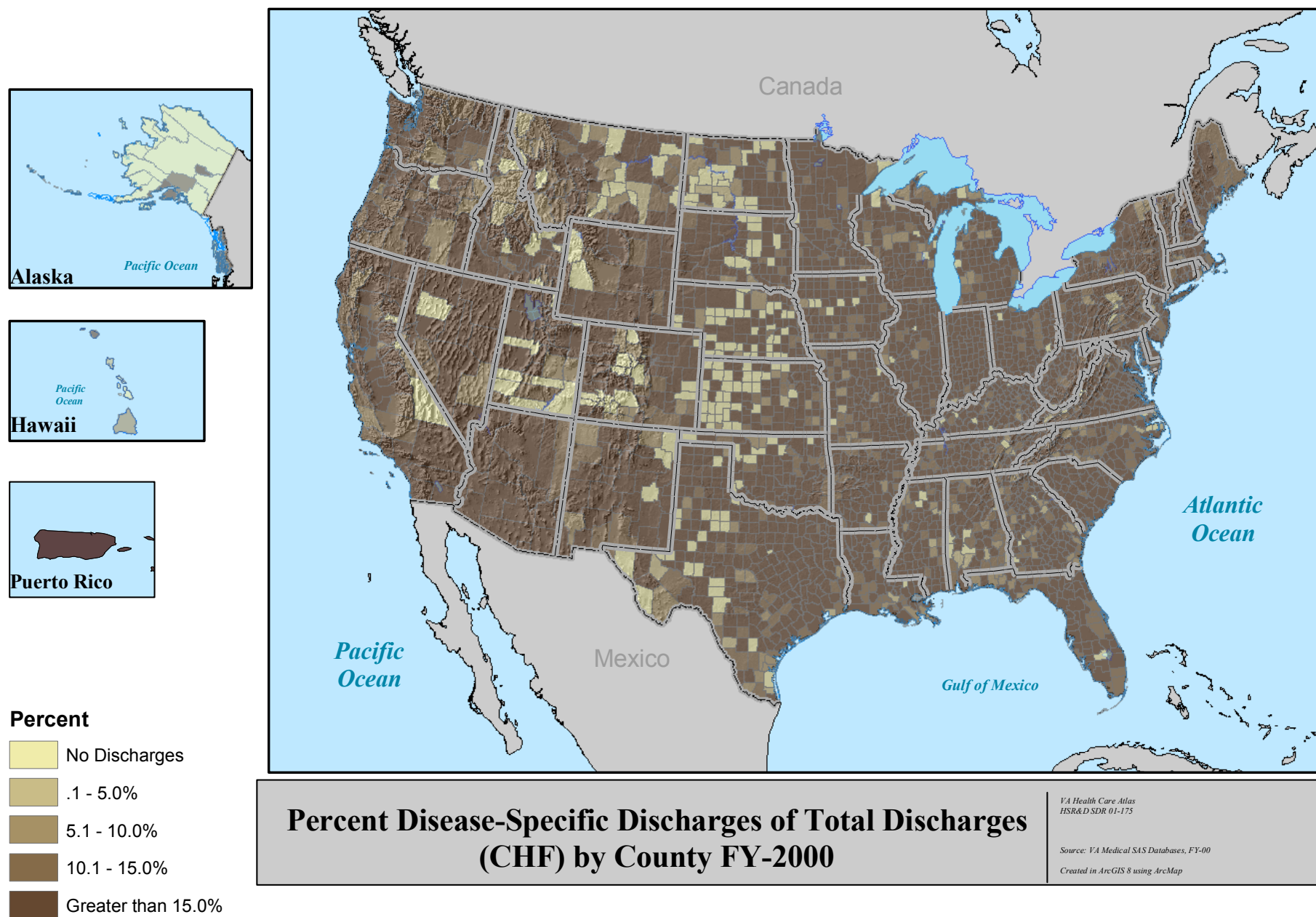


Map 7.3

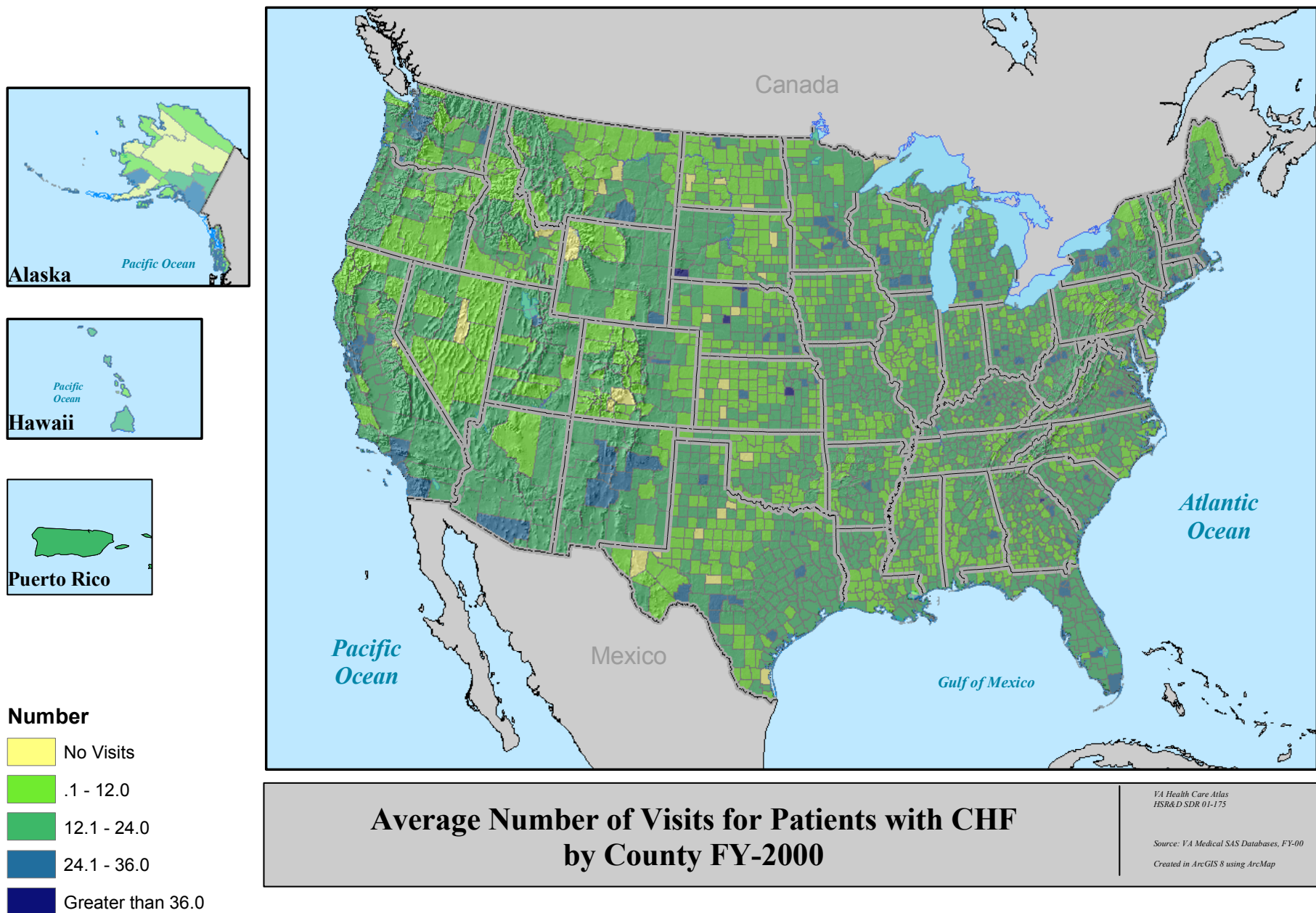


Chronic Heart Failure

Map 7.4



Map 7.5

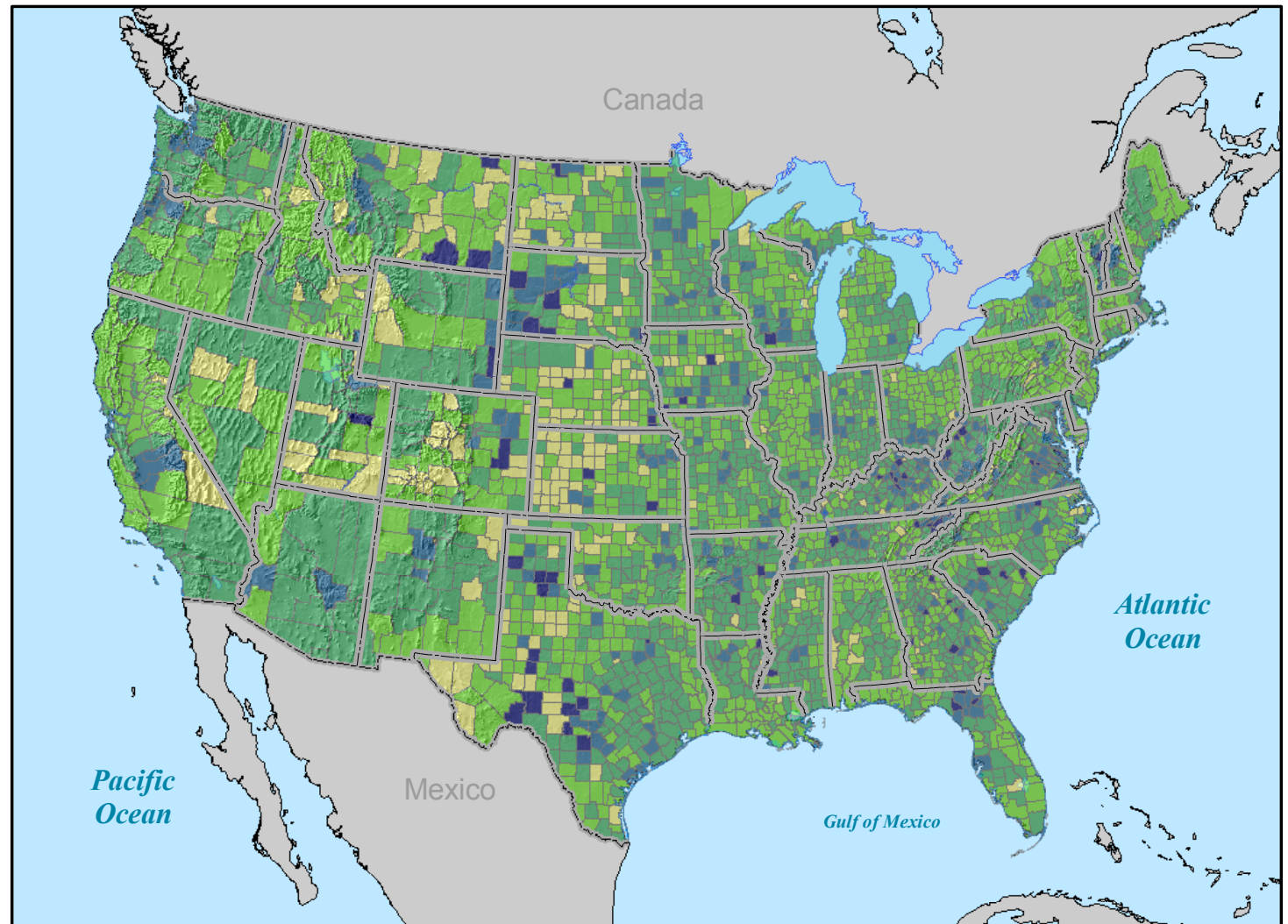
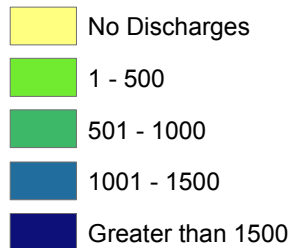


Chronic Heart Failure

Map 7.6



Number per 1,000



Disease Specific Discharges per 1,000 Patients with CHF 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

Chronic heart failure affects 6 or 7 out of every 100 adults age 65-74, and these numbers are increasing. Hospital and resource use associated with heart disease is tremendous, with heavy utilization of both inpatient and outpatient services. CHF is a lethal disease: approximately two-thirds of those veterans with CHF die within five years of their initial hospitalization. Because of the seriousness and prevalence among veterans, CHF was identified as an important QUERI group. Therapies that can relieve or control symptoms of these heart conditions are available, yet are often underused. For example, national surveys have repeatedly shown that life-prolonging treatment with angiotensin converting enzyme agents is underused in people with CHF. In addition, significant proportions of patients do not receive advice on salt restrictions and/or have poorly controlled high blood pressure. The Chronic Heart Failure Quality Enhancement Research Initiative (CHF QUERI) was created to employ the QUERI process to create measurable, rapid and sustainable improvements in quality of care and in the health outcomes of veterans with chronic heart failure. Since its inception in 1998, CHF QUERI has focused on creating the infrastructure for the CHF Coordinating Center, investigating best practices, and creating a presence as a resource for heart failure research and practice within VA.

CHF QUERI is located at the HSR&D Center of Excellence in Houston, Texas and is co-chaired by Rebecca Beyth, MD, MS (Research Coordinator) and Mark Dunlap, MD (Clinical Coordinator). Researchers or other interested parties are encouraged to contact the CHF QUERI Coordinator to learn more about VHA's current research foci and ongoing projects in the area of CHF:

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Web Site: <http://www.hsrhouston.med.va.gov/chfqueri>

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

Research Focus and Translation Activities

The CHF QUERI Coordinating Center, in collaboration with VISN 16, will conduct a two-year project to develop, implement and monitor a case management and educational intervention at several VISN 16 facilities designed to improve the care of patients with CHF and to reduce hospital readmission rates. Outcomes to be measured include weight management, medication compliance, reductions in hospital readmission rates, use of urgent care, multi-stay ratio, and one-year survival. CHF is a high-utilization condition for VHA. For example, in 1997 nearly 14 percent of all CHF discharges from VA hospitals were followed by a readmission within 14 days. In that same year, more than half (53.7 percent) of the patients discharged with a diagnosis of CHF were readmitted within 180 days. From the viewpoint of the health care system, this heavy use of services should be a major financial concern. From the viewpoint of the patient, it signifies frequent cyclical decompensation in a disease that is already associated with poor functional status, an inability to pursue normal daily activities, and constant disruption of home and family life. It is important to recognize that a growing body of literature suggests that many of these admissions are preventable. Prior work conducted by CHF QUERI shows that 1 in 5 of these readmissions is attributable to substandard care, in that patients are discharged before readiness for discharge criteria (i.e., clinical stability, education of the patient and family, and plan for follow-up medical care) are met. Therefore, measures to insure readiness for

discharge prior to hospital discharge may be the first in a series of steps toward reducing heart failure readmissions. Other work suggests that comprehensive care programs can reduce the risk of hospital admission, improve functional status, and possibly lower medical costs. The central intent of most of these programs has been to emphasize compliance with recommended therapy, to enhance patient education (including self-weight monitoring and salt restriction), and to provide careful outpatient surveillance and follow up. CHF QUERI is developing strategies that will facilitate the sustainability of this project so that it may continue after QUERI investigators have completed their specific work. In addition, we will facilitate a national roll-out of this successful program. This program is expected to generate savings because of reduced hospital stays, thus VISN and facility leadership will see the value in providing continued support for the program.

The following are just a few of the exciting CHF QUERI projects:

- *CHF Database Cohort:* This database contains demographic, clinical, and VA resource utilization information from FY97 through FY-2000 on over 285,000 veterans with heart failure. Information is available on hospital use (i.e., bed days of care in acute and extended care facilities, multi-stay rate), outpatient use (i.e., total visits as well as visits to primary care, cardiology, urgent care, and other specialists), diagnostic and therapeutic cardiac procedures, and mortality. The database can also be used to monitor patient and system outcomes. As facilities obtain performance feedback reports, they can modify care to improve such measures as readmissions, which can lead to cost savings.
- *Validating CHF diagnostic accuracy in outpatient clinic (OPC) file:* The results will be posted on the CHF QUERI website and disseminated to CHF researchers and clinicians through peer-reviewed manuscripts and various presentations. This study includes 13 VA hospitals and 600 medical charts. The significance of this study is that it will be the first study to document the validity of CHF diagnoses in the OPC file. The results will be posted on the CHF

QUERI website and disseminated to CHF researchers and clinicians through a peer reviewed manuscript.

- *Costs of care:* The CHF QUERI Coordinating Center will design and conduct a study of the cost of treating patients with CHF. The Allocation Resource Center reports monthly costs of care for all patients in VHA. The costs of patients in the CHF cohort will be extracted from the Austin database that stores these data. Total and average costs for CHF patient costs will then be calculated for each facility.
- *Appropriate use of medication:* The CHF QUERI Coordinating Center is conducting a study to evaluate the appropriate use of spironolactone in patients with heart failure. In addition to standard pharmacological therapy, spironolactone had been reported to substantially reduce the risk of morbidity and death among patients with severe heart failure. However, there have been some reports that this drug is associated with serious hyperkalemia. The CHF QUERI study is utilizing data in the CHF database that is being merged with the PBM (Pharmacy Benefits Management) database to further assess this possible side effect of spironolactone.