



PARKINSON'S DISEASE: Demographic and Geographic Distribution of ICD-9 Code 332.0 within the VHA

Eugene C. Lai, MD, PhD ^{1,2}, Suzanne Moore, BA, ¹Christine Hartman, PhD ^{2,3}

¹Veterans Affairs Parkinson's Disease Research, Education and Clinical Center, ²Baylor College of Medicine, ³Houston Center for Quality of Care and Utilization Studies



OBJECTIVE

To describe the demographic and geographic distribution of veterans with an ICD-9 diagnostic code for Parkinson's Disease (332.0) within the VA Health Care System

METHODS

ICD-9 diagnostic code 332.0 was used to approximate the occurrence of Parkinson's disease (PD) nationally among VHA patients. VA Medical SAS databases were queried to find patients within the VHA with a primary or secondary diagnosis code of 332.0, retaining one record for each unique individual. Demographic variables such as age, race/ethnicity, and period of service were collected along with geographic variables such as VISN, county and station. Information on the number of VA patients seen per VISN and per county was derived from datasets available on the web site for the Planning Systems and Support Group. After the PD patient information was merged with VA facility geographic information, ArcGIS software was used to create the maps. The maps display color shading to show differences in the distribution of PD patients per thousand patients seen by both VISN and county. Graduated size symbols represent the differing number of patients seen per VA facility.

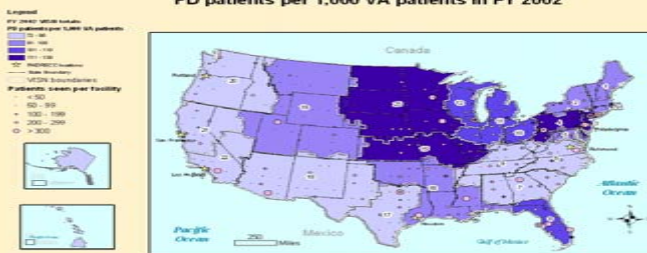
RESULTS

A total of 42,513 unique patients with at least one occurrence of ICD-9 code 332.0 were seen nationally during FY2002. Patients were 98.5% male and their mean age was 74.9. Although information on race was missing for 36.7% of the records, geographic information was relatively complete. The average age per VISN was 74.7 and the average rate of PD patients seen per 1,000 VA patients was 95.9. Age and rate were correlated ($r = 0.65$), with patients in VISNs with a higher rate tending to be slightly older.

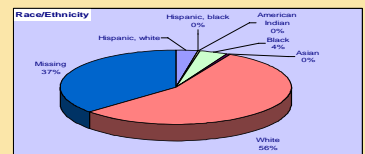
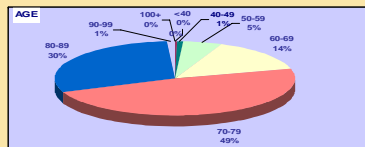
CONCLUSIONS

A substantial number of veterans with Parkinson's disease (PD) seek medical care through the VHA. The combined use of VA national databases with GIS mapping provides additional information on the location and regional characteristics of veterans with Parkinson's disease. Each PADRECC is assigned a sphere of responsibility encompassing several VISNs, thus, further research into regional differences will aid in planning the treatment and care of this veteran population.

**Parkinson's Disease: ICD-9 Code 332.0 distribution by VISN
PD patients per 1,000 VA patients in FY 2002**



Age and race distribution for all PD patients



Patient PD rate and age distribution by VISN

VISN	PD Total	VISN Total	PD Prev/1,000	Avg age
1	1,987	212,236	94	75.6
2	1,228	125,363	98	75.5
3	2,278	195,273	117	76.1
4	2,951	262,310	113	75.0
5	894	94,286	95	74.4
6	1,746	217,242	80	73.6
7	2,069	251,641	82	74.1
8	4,183	406,375	103	75.8
9	1,805	206,771	87	74.4
10	1,659	154,267	108	74.8
11	2,005	191,684	105	74.8
12	2,109	192,729	109	75.1
15	2,211	193,591	114	75.1
16	3,455	383,314	90	74.5
17	1,512	198,347	76	74.4
18	1,685	210,718	80	74.9
19	1,186	120,308	99	74.2
20	1,249	171,895	73	74.2
21	1,683	187,752	90	75.0
22	1,703	227,024	75	74.0
23	2,925	229,392	128	75.1

**Parkinson's Disease: VHA Patients with an ICD Code of 332.0
Distribution by County of patients seen FY2002**

